Mines - Individual Operating Permit New

version 2.0

(Submission #: HPX-REXY-TNFQB, version 1)

Details

Submission ID HPX-REXY-TNFQB

Form Input

Form Instructions

The South Carolina Mining Act,&#65533; Sections 48-20-10 through 48-20-310, Code of Laws of South Carolina, 1976, as amended provides in part: &#65533;No operator may engage in mining without having first obtained from the Department an operating permit which covers the affected land and which has not been terminated, been revoked, suspended for the period in question, or otherwise become invalid.&#65533; (Section 48-20-60)

Applicant Information

How are you applying for this permit?
As a Business Entity

Type of Business Entity
Limited Liability Company (LLC)

Applicant (Business Entity)

Organization Name
Vulcan Construction Materials, LLC

Phone Type	Number	Extension
Mobile	864-894-9203	

Fax
NONE PROVIDED

Office Address

201 Brown Road

Piedmont, SC 29673

United States

Additional Contact(s) (1 of 2)

Contact Roles
Mining Contact
Mining Billing

Contact

Prefix
NONE PROVIDED

First Name	Last Name
Salley	*Lewis*

Title
Environmental Specialist

Organization Name
Vulcan Construction Materials, LLC

Phone Type	Number	Extension
Mobile	864-894-9203	

Email
lewiss@vmcmail.com

Address

201 Brown Road

Piedmont, SC 29673

United States

Additional Contact(s) (2 of 2)

Contact Roles
Consultant

Contact

Prefix
NONE PROVIDED

First Name	Last Name
Craig	*Kennedy*

Title
Principal

Organization Name
Kennedy Consulting Services, LLC

Phone Type	Number	Extension
Mobile	803-960-2562	

Email
craigkennedy.kcs@gmail.com

Address

PO Box 364

Irmo, SC 29063

United States

Site Information

Name of Proposed Mine
Vulcan Construction Materials, LLC/ Orangeburg Limestone Quarry

County
Orangeburg

Proposed Mine Address

Addidas Road

Eutawville, SC 29048

Proposed Mine Physical Location
33.35945699790895,-80.29197681462672

Is the land to be mined owned or leased by the mine operator (both can be chosen, if applicable)?
Leased

Parcel(s) leased by mine operator:

Tax Map Parcel Number	Landowner name (as shown on county tax records)
0363-00-02-013.000	Vulcan Lands, Inc.
0363-00-02-003.000	Vulcan Lands, Inc.
0363-00-02-004.000	Vulcan Lands, Inc.
0363-00-02-011.000	Vulcan Lands, Inc.
0363-00-02-005.000	Vulcan Lands, Inc.
0363-00-02-017.000	Vulcan Lands, Inc.

Will river dredging take place under this permit?
No

MR-400 Application for a Mine Operating Permit

General Characteristics of Mine

Materials to be mined:
Limestone

Provide a detailed description of how the mine will be operated, including a list of equipment to be used.
Detailed description of how the mine will be operated is provided in an upload in the "Additional Information to Consider" section.

Will there be a process plant located at the mine site within the boundary of the permitted area?
Yes

An Air Construction permit may be required.

Provide a brief description of the plant equipment and function of the plant.
The process plant will not be at a fixed location as with typical rock quarries. The dragline will remove the fragmented limestone and stack it along the active pit in an upland area to allow gravity to drain excess moisture. The mobile crusher will follow behind the mine equipment as they advance in the mining process. A front-end loader will feed the crusher from the fragmented limestone stockpile. The stone will be crushed and screened to specification. A washed stone product is not anticipated to be produced at this quarry. Customer trucks will be loaded from this stockpile.

Do you anticipate blasting as part of the mining operation?
Yes

Distance to the nearest inhabited structure not owned or leased by the applicant.
1,000 feet

How will flyrock be prevented from being projected from the permitted area?
Flyrock will be prevented with proper blast design and procedures developed and implemented under the direction of a SC Licensed Blaster. A preliminary list of structure owners within this 1/2 mile zone is attached.

Additional Blasting Information Template
Please download the excel spreadsheet, fill out and resubmit on the attachment below.
Additional Blasting Information Template Link

Additional blasting information
DHEC - Pre-Blast Survey List for Orangeburg Limestone Quarry.xlsx - 09/19/2023 10:34 AM
00587200-C02-EXISTING CONDITIONS-REV B.pdf - 09/20/2023 02:02 PM
Comment
NONE PROVIDED

Has the site been mined in the past?
No

What is the expected maximum depth of this mine? Provide any additional information about the final depth of the mine that would be useful to the Department.
Total depth 110 feet; pit floor elevation approximately -10 feet msl

Determination of Permitted Acreage, Affected Acreage, & Reclamation Bond

Permitted acreage should include the following: 1) acres of land to be affected (excavation, processing plant, stockpiles, etc.); 2) future area(s) to be mined and 3) land to be used for buffer zones around the affected land. The permitted area should be the property described in the LAND ENTRY AGREEMENT(S) (FORMS MR-600 or MR-700).

Total acres for which permit is being requested

Acres owned by the mine operator	Acres leased by the mine operator
	693.2

Total Permitted Acres
693.2

Affected acreage may include: 1. Area used for sediment control ponds, 2. Area used for stockpiles of unprocessed minerals, 3. Area used for spoil (overburden) banks, topsoil and disposal refuse (exclusive of tailings impoundments), 4. Areas used for on-site processing facilities and stockpiles of processed minerals, 5. Areas used for tailings pond (waste material from mineral processing), 6. Area for access or haul roads, 7. Area for excavation during the period of this permit.

Total Affected Acres
451.9

Will mining and reclamation be done in segments?
No

Bond Amount (based on total affected acreage above)
See warning below

Applicant may submit a reclamation cost estimate for mines that will affect greater than 25ac. Estimate should be based upon requirements in Regulation 89-200B. and accurately reflect the costs of an independent, third-party contractor.

Reclamation Cost Estimate
NONE PROVIDED
Comment
Reclamation bond estimate will be submit once DHEC's technical review of the application is complete.

0.00 - 9.99 acres (bond amount - $10,000)
10.00 -14.99 acres (bond amount - $15,000)
15.00 - 24.99 acres (bond amount - $25,000)
25.00 + acres (bond amount - $25,000 or greater)

Applicant may submit a reclamation cost estimate for mines that will affect greater than 25 acres. Estimate should be based upon requirements in Regulation 89-200 B, and accurately reflect the costs of an independent, third-party contractor.

Future Reserves Acreage
79.7

Buffer Acreage
161.6

Number of years for which this permit is requested:
Life of Mine

The requested number of years the permit is requested should coincide with the Schedule of Reclamation as proposed by the applicant in the RECLAMATION PLAN.

Protection of Natural Resources

Please describe how waste or process water will be treated.
Washing crushed stone will not be a part of this mining operation; so no wastewater from this process will be generated. However, minor amounts of wastewater will be generated from dust control in the mobile process plant. The wastewater will runoff into the pit water and any solids will settle within the pit or discharge channel.

Which type of permit from the Bureau of Water will/have you applied for?
NPDES General Permit for Discharges Associated with Nonmetal Mineral Mining Facilities (SCG730000)

Provide information as to how stormwater and groundwater will be managed.
Stormwater from the pit, mobile crusher and stockpile areas will be routed into the pit. Stormwater from the overburden storage area will be routed through two stormwater sediment basins designed by professional engineers. The discharges from these basins will be into the waters of the US.

Mine dewatering will be limited to lowering groundwater level in the active pit to desaturate the overburden. The groundwater from the pump station will be routed to channels along the perimeter of the planned pit to allow for infiltration into the shallow groundwater system as recharge to the groundwater system. Anticipate approximately 50% of the volume of water pumped through the channels will infiltrate into the groundwater system with the remaining volume discharging into the waters of the US through permitted NPDES outfalls.

Please provide any sediment & erosion control designs in support of your application.
Orangeburg Ovbn Sed Ponds Design_Final.pdf - 09/19/2023 10:47 AM
00587200-C05-ESC MAP-REV B.pdf - 09/20/2023 02:05 PM
00587200-C06-ESC DETAILS-REV B.pdf - 09/20/2023 02:06 PM
00587200-C07-ESC DETAILS 2-REV B.pdf - 09/20/2023 02:06 PM
Comment
NONE PROVIDED

Will there be air contaminant emissions from your plant or mine requiring an Air Quality Permit?
Yes

An application for an Air Quality permit will need to be completed.

Do you anticipate pumping of groundwater?
Yes

Describe pumping of groundwater.
The mine dewatering pump station will be located at or near the active mine area. As mining advances through the phases, the dewatering pump station will periodically relocate for efficient operation to desaturate the overburden while maintaining groundwater levels at compliance levels at the permit boundary. The discharge from the dewatering pump station will be routed to pit area perimeter channel for groundwater recharge. The discharge for phase 1 will be into infiltration/recharge channel on perimeter of the southern 1/3 of the pit. As mining advances into phases 2 - 4, the perimeter recharge channel will transition to the full perimeter of the pit.

Please provide any groundwater modeling reports, groundwater monitoring plans, or groundwater contingency plans in support of your application.
20.0157528.00 Memo-DrillingKTesting_Orangeburg Quarry 10-5-22.pdf - 09/18/2023 03:12 PM
20.0157528.00 Memo-Numerical GW Flow Model Update_Orangeburg Quarry 1-6-23.pdf - 09/18/2023 03:12 PM
Orangeburg Limestone Groundwater Monitoring Plan - Sept 25, 2023.pdf - 09/25/2023 03:53 PM
Comment
NONE PROVIDED

Will jurisdictional wetlands be affected, filled or altered in any fashion that will require a Section 404 Dredge and Fill Permit?
No

Please provide any wetland delineation and/or USACE jurisdictional determinations or other permits in support of your application.
1Orangeburg_Site_AJD_NWPR__11JAN2021_SAC-2019-01789signed.pdf - 09/18/2023 03:25 PM
Comment
NONE PROVIDED

Are there any known cultural or historic sites located within the proposed area to be permitted?
Yes

Please indicate these areas on your mine map with an appropriate undisturbed buffer distance.

Please provide any cultural or historic reports in support of your application.

Brockington_Orangeburg Quarry Tract_CRS_FINAL_21-RP0083_Mining.pdf - 09/19/2023 09:57 AM

Comment

The two archeological sites, 38OR420 & 38OR421, were determined to have potential for possible listing in the National Registration of Historic Places (NRHP). It was decided not to conduct the intensive survey to make a final determination on the listing but to avoid disturbing the two sites and adding a 50-foot buffer for protection.

Will any part of the permitted area be used as a laydown yard to temporarily store equipment, such as spare parts, scrap metal, or other waste?

Yes

Describe how waste, trash, scrap metal material, or garbage will be handled.

Scrap metal and used mine materials are typically stored on-site for reuse and recycling when the opportunity arises. Trash, garbage, and waste materials will be removed from mine and disposed of in appropriately permitted landfills.

Describe the wildlife or freshwater, estuarine or marine fisheries in the area of the mining operation. Also provide information about any ponds and/or streams that may be located in the proposed permitted area.

The 693 acres is comprised of significant wetlands in the northwest section with limited upland areas. There are additional wetlands on the south end of the property. Wetlands will be avoided and protected with buffers. Stream flows from the northwest wetlands and exits the property in the southeast corner. The interior of the property was altered by the previous landowner with a ring dike to enable the flooding of hundred plus acres for hunting. Southern end of property is a mixture of planted pines and hardwoods with small Corps non-jurisdictional depressions. The previous owner managed the property for hunting and timber.

Please provide any threatened or endangered species reports in support of your application.

End Spp- Vulcan Orangeburg_Aug 31.pdf - 09/18/2023 03:31 PM

Comment

NONE PROVIDED

State the land cover and land uses on the permitted land area and contiguous tracts of land to the permitted land area.

Property is primarily woodlands with interior field with ring dike with ability to flood for hunting purposes. Adjacent land use to the north and west is rural residential. Mine property bordered to the west by Addadis Road. Lands south and east of the property are woodlands, fields, and active open pit limestone quarry.

Describe measures to be taken to insure against (1) substantial deposits of sediment in neighboring streams, rivers lakes or ponds; (2) landslides; (3) acid water formation and discharge.

(1) For the pit area, the primary strategy for managing stormwater will be to route stormwater into the pit for containment and storage for dust control. Minor amounts of process water will settle either within the pit water or in the perimeter discharge channel that is designed to allow settling and appropriate treatment to meet NPDES limits. For the overburden storage in the southeast corner of the property, two sediment ponds are designed by Synterra Consultants to receive and treat stormwater runoff. Additionally, where sediment control is necessary, Best Management Practices (e.g., brush barriers, silt fencing and stormwater diversions, etc.) will be used where and as necessary to provide sediment control for mine disturbed areas.
(2) The limestone is competent rock to hold a near vertical slope beneath the ponded water. Overburden will be graded to 3:1 slope.
(3) Acid water formation will not form in a limestone quarry.

Safety

Describe methods to be used during the time the mine operating permit is active to prevent physical hazards to persons and to any neighboring dwelling, house, school, church, hospital, commercial or industrial building or public road. If applicable, provide the zoning designation for the property to permitted.
Location of the mine in a rural area limits potential physical hazards to neighboring homes, businesses, etc. Most rural homes in the area are located along Addidas Road and over 1000 feet from the open pit. Extensive wetlands are located along a significant portion of Addidas Road that provides a physical barrier. Overburden storage will be located in the southeast corner of the permit area and will also function as a berm for visual screening and barrier.

Blasting
Explosives will be used to mine the limestone. Blasting is a common technique in mining and used in a variety of settings ranging from rural to urban areas. Blasting operations will be under the direction of a SC Licensed Blaster. The closest inhabited structure to blasting operations is 1,000 feet and there will be no blasting within 250 feet of the mine permit boundary. Explosives will not be stored on site and only transported to the site on the actual days blasting operations are planned.

Ground vibration from blasting will be controlled through properly designed blasting operations that minimize vibration and maintain them at acceptable levels that prevent damage to structures. All blasting will be monitored with a seismograph. Owners of all structures within 1/2 mile of blasting will be offered the opportunity to have a pre-blast inspection of their structure(s) to establish baseline conditions. This baseline information will be beneficial should there become concerns of vibration damages in the future.

Groundwater Withdrawals
GZA GeoEnvironmental, Inc. (GZA) conducted a hydrogeologic evaluation and numerical groundwater flow modeling of the Orangeburg quarry site. The reports are being submitted as part of this mine operating permit application. This information is used in estimating groundwater drawdown and volumes of groundwater to be discharged.

The mining operation will be a wet mine with limited mine dewatering to desaturate the overburden. The base of the limestone stratum to be mined is at approximately -11 feet mean sea level (msl), which generally corresponds to a maximum mine depth of approximately110 feet below ground surface. Drawdown of groundwater will be limited to this limestone and the overlying sand and clay unconsolidated sediments.

During dewatering, groundwater levels will be maintained at 2 feet or above the top of the limestone stratum at the mine permit boundary. This will reduce the ultimate distance of groundwater drawdown under the influence of pumping at the mine and minimize exaggerated low groundwater levels beyond the mine permit area. Furthermore, maintaining groundwater above the limestone will greatly reduce or eliminate the potential for land surface collapses (sinkholes) due to mine dewatering.

Groundwater monitoring wells will be placed at strategic locations around the perimeter of the mine permit area to observe the response to groundwater dewatering in the mine. The perimeter groundwater monitoring wells will become compliance points where the groundwater level will be maintained at 2 feet or above top of limestone. Upon approval and issuance of the mine permit, the monitoring wells will be constructed, top of limestone located within each well and elevation for top of casing determined.

Attached to the Application for Mine Operating Permit is the Orangeburg Quarry Groundwater Monitoring Plan.

Are there any publicly-owned parks, publicly-owned forests, or publicly-owned recreation areas within one (1) mile of the proposed affected area?
No

Describe measures to be taken for screening the operation from view from public highways, public parks or residential areas.
The site is in a rural location. Limited rural residences are located along Addidas Road, and several residences are north of the pit area. The mine facilities, except for the overburden storage area, are approximately 1,000 feet east of Addidas Road and existing vegetation will visually screen the operation. Along the eastern and southern boundaries, the adjacent landowner is another mining company.

Mine Map

Attach a copy of a map of the site (referred to as the MINE MAP) that shows A through P, if applicable (see below):
00587200-C04-PIT PHASES MAP-REV B.pdf - 09/20/2023 02:08 PM
00587200-C03-MINE LAND USE-REV B.pdf - 09/25/2023 03:51 PM
Comment
NONE PROVIDED

A. Outline of the area to be affected by mining during the number of years for which the permit is requested. See Section III, Question 1 on page 3 of this application form.

B. Outline of the permitted area that shows the buffers zones, future mine areas and areas to be affected by mining.

C. Outline of the planned pits or excavations for which your company has detailed plans. If your company has reason to believe that additional land may be mined in the future within the permitted area but is not feasible to show as planned excavations; indicate these areas as FUTURE RESERVES on this site map.

D. Outline of areas for the storage of naturally occurring soil that will be suitable for the establishment of vegetation in final reclamation.

E. Outline of planned areas for disposal of refuse, exclusive of tailings ponds.

F. Outline of planned spoil, overburden or other similar waste material disposal areas.

G. Locations of planned access and haul roads on the area to be affected.

H. Outline of planned tailings ponds.

I. Locations of sediment control pond(s) and other sediment control structures within the affected area. Outline of areas on which temporary or permanent vegetation will be established to control erosion during the mine operation.

J. Location and name (if appropriate) of streams, lakes, wetlands and existing drainage ditches within the area to be permitted. Use arrows to indicate direction of water flow in such streams and drainage ditches.

K. Boundary for the 100 year floodplain, where appropriate.

L. Outline of areas for stockpiles of unprocessed minerals.

M. Outline of area of previously mined land that will not be affected.

N. Outline of the area to be occupied by processing facilities including stockpiles of processed minerals if such facilities are to be an integral on-site part of the mining operation.

0. Show location of the two permanent survey control points.

P. A legend showing the name of applicant, name of the proposed mine, north arrow, county, scale, date of preparation and name and title of person who prepared the site map. THE REQUIRED SITE MAP SHALL HAVE A NEAT, LEGIBLE APPEARANCE AND BE OF SUFFICIENT SCALE TO CLEARLY SHOW THE REQUIRED INFORMATION LISTED ABOVE. THE BASE FOR THE MAP SHALL BE EITHER A SPECIALLY PREPARED LINE DRAWING, AERIAL PHOTOGRAPH, ENLARGED USGS TOPOGRAPHIC MAP OR A RECENTLY PREPARED PLAT.

Adjacent Land Owner List Template
Please download the excel spreadsheet, fill out and resubmit on the attachment below.
Adjacent Land Owner List Template

Attach the most recent county tax map that shows all adjacent land owners of the permitted mine site. Provide name and addresses of all land owners contiguous to the proposed permitted mine site.

Adjacent Landowners List - Vulcan Orangeburg Limestone Quarry with Tax Map.pdf - 09/18/2023 03:54 PM
DHEC - Orangburg Limestone Quarry Adjacent Landowner List.xlsx - 09/18/2023 03:57 PM
Comment
NONE PROVIDED

Attach letter from an attorney attesting to (1) the ownership of the property, (2) ownership of the mineral rights and (3) that the applicant has the legal right to mine the proposed mineral resource on the property as described in this application.

Attorney Letter_Orangeburg Quarry Executed.pdf - 09/18/2023 03:57 PM
Comment
NONE PROVIDED

Additional Information for consideration

Description of Mine Operations for Vulcan's Orangeburg Limestone Quarry.pdf - 09/18/2023 05:23 PM
Vulcan Orangeburg Limestone Map Set - 8 sheets.zip - 09/25/2023 03:55 PM
Comment
NONE PROVIDED

MR-500 Reclamation Plan for an Individual Mine Operating Permit

Environmental Protection

Describe practices to protect adjacent resources such as roads, wildlife areas, woodland, cropland and others during mining and reclamation.
The mine permit area is located in a rural area with land cover consisting of hardwood and managed pine forests for timber. On land neighboring the mine permit area, the land uses include agricultural, managed timberlands, rural residential. Of the 693 acres of permitted land, undisturbed buffers are used to provide additional protection to adjacent properties, creeks, and other sensitive areas.

Describe proposed methods to limit significant adverse effects on adjacent surface water and groundwater resources.
Proper reclamation of the mine site will include stabilizing all overburden storage piles with vegetation, removal of mine equipment both mobile and stationary, cleanup of any spillage of petroleum products, removal of scrap material. Once mining is terminated, groundwater levels will rebound to approximate original levels. The mining process will not use chemicals in the mining or processing of crushed stone; consequently, there is no potential for chemical contamination to groundwater resources.

Describe proposed methods to limit significant adverse effects on known significant cultural or historic sites within the proposed permitted area.
The two archeological sites, 38OR420 & 38OR421, were determined to have potential for possible listing in the National Registration of Historic Places (NRHP). It was decided not to conduct the intensive survey to make a final determination on the listing but to avoid disturbing the two sites and adding a 50-foot buffer for protection.

Describe method to prevent or eliminate conditions that could be hazardous to animal or fish life in or adjacent to the permitted area.
Proper reclamation of the mine site will include stabilizing all overburden storage piles with vegetation, removal of mine equipment both mobile and stationary, cleanup of any spillage of petroleum products, removal of scrap material. Setbacks established buffers and soil stabilization of mine disturbed areas will protect any nearby streams and fisheries. Establishing 3:1 slopes around the pit and overburden storage areas will remove hazardous conditions for the public and indigenous animal populations.

Describe how applicant will comply with State air quality and water quality standards as established by the S.C. Department of Health and Environmental Control.
This will be a wet mining operation. Groundwater will be lowered to establish a dry work bench and to desaturate the overburden. The limestone will be drilled, blasted, and extracted through the groundwater residing within the pit. This will significantly minimize dust from the pit area. The limestone when mined will have significant moisture content that will minimize dust generation from the crushing and screening in the portable crusher. Additionally, dust suppression water sprays will be used as necessary to control dust from the mobile plant. Water trucks will be used on haul road to control fugitive dust from mobile equipment and customer trucks.

To operate the mine and processing plant, the mine operator will obtain the Air Quality Construction Permit and ultimately the Air Quality Operating Permit. These permits set the quantity of air particulates that can be emitted to be protective of air quality standards.

During mining and until reclamation is complete and approved by DHEC, water quality will be protected by routing stormwater and process water into the pit to allow appropriate settling time to ensure compliance with NPDES water quality discharge limits.

With the termination of mining all mobile mine equipment and processing plant equipment will be removed from site. Once the process plant equipment is removed from site, the Air Quality Operating Permit can be terminated. Stone stockpiles, fines and barren soils, potential sources of dust after mining, will be either removed (stone stockpiles) or stabilized with vegetation to eliminate windblown dust.

Reclamation of Affected Area

State useful purpose(s) the affected land is being proposed for reclamation.
Grassland
Lake or Pond

Feasibility Documentation Attachment
NONE PROVIDED
Comment
The feasibility of reclaiming the quarry is not in question. The high-water table allows for easy reclamation of the pit to a lake. Once limited dewatering operations cease, the groundwater level will rebound to pre-mine levels. Reclaiming the terminal walls of the pit uses typical mining equipment to slope the overburden.

Will the final maximum surface gradient (slope) in soil, sand, or other unconsolidated materials be steeper than 3 Horizontal : 1 Vertical (18 degrees or 33 percent)?
No

How will the final slopes in unconsolidated material be accomplished?
All final slopes will be accomplished by grading.

If the slope will be by backfilling, demonstrate that
there is adequate material to accomplish the stated final gradient. If gradient is to be achieved by bringing in material from outside the permitted area, state the nature of the material and approximate quantities. If the gradient is to be achieved by grading, show that there is adequate area for grading to achieve gradient (i.e., adequate distance between the property line and edge of highwall).

Final slopes calculations or other supporting information attachment(s)

NONE PROVIDED

Comment

All slopes will be constructed by grading. Backfilling to achieve 3:1 slope will not be necessary.

Describe the plan for revegetation or other surface treatment of affected area(s). The revegetation plan shall include but not be limited to the following: (a) planned soil test; (b) site preparation and fertilization; (c) seed or plant selection; (d) rate of seeding or amount of planting per acre; (e) maintenance.
(a) Planned Soil Test
Soil analysis will be performed to determine the need for pH adjustment and nutrients. Different soils will be sampled separately. Soil samples will be taken in advance of planting. Soil samples will be submitted to the cooperative NRCS or Clemson extension services or commercial lab for analysis.

(b) Site Preparation & fertilization
Grading, shaping, and other earth moving will be completed to the extent necessary to permit seeding or planting. Tillage shall be the minimum needed to break compaction; incorporate fertilizers when incorporation of them is required; and provide enough loose soil to cover the seed when seed are to be drilled or covered by harrowing or cultipacking.

Soil amendments will be added as necessary to promote conditions suitable for plant growth (i.e., organic matter). Agricultural limestone will be uniformly spread and incorporated as soon as possible to allow for the pH adjustment. Incorporation also benefits relatively immobile nutrients such as phosphorus when needed. Type and rate of fertilization will be determined bases upon soil analysis.

(c) & (d) Seed or Plant Selection and Seeding Rates
Plants shall be selected based on species characteristics, site and soil conditions, the planned land use and maintenance of the area, the time of year the planting is made, and the needs and desires of the land user. Availability of seed will be one of the criteria for plant selection.

Coastal Plain
Spring Seeding Mix

Grass or legume Optimum
Planting Date Seeding Rate
(# per acre) Comments
Browntop millet April- August 10 Serve as short term cover
Bermudagrass (common)
or
Coastal Panicgrass March–June

March-May 4

20 broadcast, 12 drilled Hulled (chaff removed)

Pure Live Seed (PLS)
Annual lespedeza (Kobe) Feb. - April 10 Use scarified seed and inoculate

Coastal Plain
Fall Seeding Mix
Grass or legume Optimum
Planting Date Seeding Rate
(# per acre) Comments
Rye (Abruzzi) or Oats Sept-Nov. 10 Serve as short term cover
Bermudagrass (common)
or
Switchgrass Aug-Oct

Oct-May 8

10 Unhulled (in chaff)
Crimson clover (optional) Sept-Oct 10 Serve as short term cover, inoculate

(e) Maintenance
The revegetated site will be maintained through periodic inspections to detect areas with significant erosion, seed germination failure or significant plant die off. Additionally, site will be inspected after significant storm events to detect wash outs or gullies in planted areas. Damaged areas will be repaired where necessary by fixing erosion damage and reseeding as necessary.

Does the possibility exist for (a) acid rock drainage; (b) where the National Pollutant Discharge Elimination Systems (NPDES) Permit has discharge limitation parameters other than pH and Total Suspended Solids (TSS); (c) chemically treated tailings or stockpiles (excludes fertilizer or lime for revegetation purposes)?
No

Describe the methods to control contaminants and permanently dispose any mine waste. This includes any soil, rock (overburden), mineral, scrap, tailings, fines, slimes, or other material directly connected with the mining, cleaning, and preparation of mineral substances mined. It also includes all waste material deposited on or in the permit area from any source.
Any accumulated sediment removed from the overburden sediment ponds will be placed in the overburden storage area. The limestone product will not include a washed stone, so no tailings will be generated. Any other non-mining waste will be removed from the site and disposed of in a permitted solid waste facility.

Describe the method of reclaiming settling and/or sediment ponds.
The sediment ponds at the overburden storage area will remain. They will function as stormwater detention ponds to reduce the outflow velocity to minimize erosion and scouring.

Describe the method of restoring or establishing stream channels, stream banks, and site drainage to a condition to minimize erosion, siltation, and other pollution.
Not applicable - no streams will be diverted or relocated by mining.

What are the maintenance plans to insure that the reclamation practices established on the affected land will not deteriorate before released by the Department?
Areas that have undergone final reclamation practices will be maintained through periodic inspections and conducting any necessary repairs in a timely manner.

For final reclamation, submit information about practices to provide for safety to persons and to adjoining property in all excavations. Identify areas of potential danger (vertical walls, unstable slopes, unstable surface on clay slimes, etc.) and provide appropriate safety provisions.
The following mine segments will be reclaimed to provide safety to persons and adjoining areas.
Highwalls -- The overburden will be sloped to a 3:1 gradient around the pit perimeter. With the sloped overburden and high-water table, no exposed vertical highwalls will remain.
Unstable Slopes -- All overburden storage areas (i.e., berms) will have an overall 3h:1v gradient and vegetated. Soils place to 3:1 gradient are stable and are not prone to landslides.

What provisions will be taken to prevent noxious, odious, or foul pools of water from collecting and remaining on the mined area? For mines to be reclaimed as lakes or ponds, provide supporting information that a minimum water depth of four (4) feet on at least fifty percent (50%) of the pond surface area can be maintained.
The final pit will be reclaimed as a lake and will meet the above referenced regulatory requirement for sufficient depth. Areas of the affected land not reclaimed to ponds will be properly graded to prevent unwanted pools of water from collecting and prevent foul water from forming.

Identify any structures (e.g. buildings, roads) that are proposed to remain as part of final reclamation. Provide justification for leaving any structures.
Not able to determine what buildings or other structures will remain in post reclamation of the mine. Near the end of mining, Vulcan will identify which structures, if any, will remain in post reclamation.

Attach a copy of a map of the area (referred to as the RECLAMATION MAP) that shows the reclamation practices and conservation practices to be implemented. The following should be shown (A through P - see below):
00587200-C08-RECLAMATION MAP-REV B.pdf - 09/20/2023 02:09 PM
Comment
NONE PROVIDED

A. The outline of the proposed final limits of the excavation during the number of years for which the permit is requested.

B. The approximate final surface gradient(s) and contour(s) of the area to be reclaimed. This would include the sides and bottoms of mines reclaimed ponds and lakes.

C. The outline of the tailings disposal area.

D. The outline of disposal areas for spoil and refuse (exclusive of tailings ponds).

E. The approximate location of the mean shore line of any impoundment or water body and inlet and/or outlet structures which will remain upon final reclamation.

F. The approximate locations of access roads, haul roads, ramps or buildings which will remain upon final reclamation.

G. The approximate locations of various vegetative treatments.

H. The proposed locations of re-established streams, ditches or drainage channels to provide for site drainage.

I. The proposed locations of diversions, terraces, silt fences, brush barriers or other Best Management Practices to be used for preventing or controlling erosion and off-site siltation.

J. Proposed locations of the measures to provide safety to persons and adjoining property.

K. Segments of the mine that can be mined and reclaimed as an ongoing basis.
L. The boundaries of the permitted area.

M. The boundaries of the affected area for the anticipated life of the mine.

N. The boundaries of the 100-year floodplain, where appropriate.

O. Identify sections of mine where the final surface gradient will be achieved by grading and/or backfilling.

P. A legend showing the name of the applicant, the name of the proposed mine, the north arrow, the county, the scale, the date of preparation and the name and title of the person who prepared the map.

THE REQUIRED RECLAMATION MAP SHALL HAVE A NEAT, LEGIBLE APPEARANCE AND BE OF SUFFICIENT SCALE TO CLEARLY SHOW THE REQUIRED INFORMATION LISTED ABOVE. THE BASE FOR THE MAP SHALL BE EITHER A SPECIALLY PREPARED LINE DRAWING, AERIAL PHOTOGRAPH, ENLARGED USGS TOPOGRAPHIC MAP OR A RECENTLY PREPARED PLAT. RECLAMATION MAP SHOULD BE THE SAME SCALE USED FOR THE SITE MAP.

Schedule for Implementation of Conservation and Reclamation Practices

As stated in Section 48-20-90 of the S.C. Mining Act, reclamation activities, to the extent feasible, must be conducted simultaneously with mining operations. Identify which areas or segments of the mine are not feasible to reclaim simultaneously with mining. Provide reasons why reclamation can not proceed simultaneously with mining in these areas.
The pit of a rock quarry cannot be mined and reclaimed in segments. Once the pit expands to a terminal wall the overburden can be sloped and revegetated.

Overburden storage area will be reclaimed in sections as soon as feasible.

Schedule for Implementing Conservation and Reclamation Practices

Conservation & Reclamation Practices	Segment # or Area	Planned Amount	Planned Year	*Applied Amount	*Applied Year	Notes
MARK 50' WETLAND BUFFER	ENTRANCE & OFFICE	5,600 LF	2024			NONE PROVIDED
MARK 50' WETLAND BUFFER	OVBN STORAGE & INFILTRATION CHANNEL	2,000 LF	2024			NONE PROVIDED
MARK BUFFERS FOR ARCHAEOLOGICAL SITES	38OR420 & 38OR421	2,000 LF	2024			NONE PROVIDED
MARK 50' PROPERTY LINE BUFFERS	ADJACENT TO OVBN STORAGE & ENTRANCE	6,600 LF	2024			NONE PROVIDED
MARK 50' PROPERTY LINE BUFFERS	NORTH OF PIT ALONG PHASE 1 INFILTRATION CHANNEL	2,000 LF	2024			NONE PROVIDED
Construction sediment control ponds 1 & 2	OVBN STORAGE	2	2025			NONE PROVIDED
SLOPE, GRADE, FERTILIZE AND VEGETATE	TERMINAL PIT WALL OVBN IN PHASE 1	TBD	TBD			WHEN AND WHERE FEASIBLE
SLOPE, GRADE, FERTILIZE AND VEGETATE	TERMINAL PIT WALL OVBN IN PHASE 2	TBD	TBD			WHEN AND WHERE FEASIBLE

Conservation & Reclamation Practices	Segment # or Area	Planned Amount	Planned Year	*Applied Amount	*Applied Year	Notes
SLOPE, GRADE, FERTILIZE AND VEGETATE	TERMINAL PIT WALL OVBN IN PHASE 3	TBD	TBD			WHEN AND WHERE FEASIBLE
SLOPE, GRADE, FERTILIZE AND VEGETATE	TERMINAL PIT WALL OVBN IN PHASE 4	TBD	TBD			WHEN AND WHERE FEASIBLE
SLOPE, GRADE, FERTILIZE AND VEGETATE	OVBN STORAGE	100 AC	TBD			WHERE AND WHEN FEASIBLE, CONDUCT RECLAMATION ACTIVITIES IN SECTIONS AS FINAL PLACEMENT OF VOERBURDEN ALLOWS
REMOVE EQUIPMENT & STOCKPILES	PERMIT AREA	TBD	END OF MINING			NONE PROVIDED
GRADE, FERTILIZE AND VEGETATE DISTURBED AREAS	PERMIT AREA	TBD	END OF MINING			NONE PROVIDED

*Applied fields to be completed by department

MR-700 Land Entry Agreement for Land Leased by Mine Operator

MR-700 Document Link

MR-700 Signatures Attachment

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Comment

NONE PROVIDED