APPLICATION FOR A MINE OPERATING PERMIT
FORM MR-400 DATE VERSION ADOPTED 7/1/94

"The South Carolina Mining Act," Sections 48-20-10 through 48-20-310, Code of Laws of South Carolina, 1976, as amended provides in part: "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obtained from the Department an operating permit which covers the affected land and which has not been terminated, been revoked, suspended for the period in question, or otherwise become invalid.“ (Section 48-20-60)

1. Name of Company: Luck Stone Corporation

Check form of business entity: Corporation __x__ Partnership ___
Limited Partnership ___ Sole Proprietorship ___

2. Name of Proposed Mine: Chester Quarry

3. Home Office Address: 515 Stone Mill Dr.; P.O. Box 29682
   Richmond, Va 23242
   County Chester
   (Street and P.O. Box) (City) (State) (Zip Code)
   (Telephone No.) (Fax. No.)

4. Local Office Address: Local Office not yet established
   Same as above
   (Street and P.O. Box) (City) (State) (Zip Code)
   (Telephone No.) (Fax. No.)

5. Designate to which office Official Mail is to be sent:
   Home Office __x__ Local Office ___

6. Name of company personnel and their title to be the contact for official business and correspondence: Chuck Stilson, PE

7. Location of Mine: SC Hwy 9
   Chester, SC
   State or County Hwy No. Nearest Town or City

8. Locate accurately on a county map, USGS 7.5' Topographic Map, or draw a detailed map to scale of: (1) how to get to your local office and (2) how to get to the mine and attach to this application.
9. If land is leased, complete the following:

A. Name of landowner: NA

   Landowner's Address: ____________________________
   Street and PO Box ____________________________
   City ____________________________
   State ____________________________
   Zip Code ____________________________
   Telephone Number ____________________________

B. Date lease became effective ____________________________

   Date of lease termination ____________________________
   Name of lessee ____________________________

II. GENERAL CHARACTERISTICS OF MINE:

1. Material(s) to be mined Metadiorite

2. Mining Method:

   A. List equipment to be used for mining and provide a brief description as to how the mine will be operated.
   Typical equipment to be used in the mining process includes hydraulic excavator, off road haul trucks, blast hole
   drill(s), bull dozers, wheel loaders, hydraulic rock breakers, road scraper and possibly pans. The mining process will
   start with timbering and clearing of existing vegetation and stripping overburden. Removed overburden to be placed
   in permanent storage areas at designated locations. The metadiorite will be drilled, explosives loaded and blasted to
   fragment stone into manageable sizes to facilitate loading into haul trucks and crushing by primary crusher.

   B. Will there be a process plant located at the mine site within the boundary of the permitted area? If so, please
   provide a brief description of the plant equipment and function of the plant.
   The process plant will consist of a primary, secondary and possibly tertiary crushers with conveyors to move and
   stockpile stone. Screens will be used to size stone for processing and creating marketable products.

3. Do you anticipate blasting as part of the mining operation? x Yes No If yes, provide the distance to
the nearest inhabited structure not owned or leased by the applicant. Also, provide as an attachment to this
application the names and addresses of all the owners of all structures within one-half mile from the nearest point
of blasting during the life of the proposed mine. How will flyrock be prevented from being projected from the permitted
area?
   The nearest inhabited structure to planned blasting operations is greater than 1,000 feet. 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 land owners within this 0.5 mile zone is attached. A final list with Chester County tax map showing
   the ½ mile radius will be provided to DHEC to comply with R.89-150 A after the mine operating permit is issued. Pre-
   blast surveys will be completed before blasting operations begin.

4. Has this site been mined in the past? If so, please indicate the present condition of the land.
   No

5. What is the expected maximum depth of this mine? Provide any addition information about the final depth of the
mine that would be useful to the Department. (Ex. Final depth of pit will be level to adjacent road, elevation above
Mean Sea Level (MSL)).
   Average depth of mining will be approximately 450 feet from ground surface with a maximum depth of 500 feet. Final
   pit floor elevation will be 50 feet msl.
III. DETERMINATION OF PERMITTED ACREAGE, AFFECTED ACREAGE AND RECLAMATION BOND

B) Total acres for which permit is being requested:

<table>
<thead>
<tr>
<th>Acres</th>
</tr>
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<tbody>
<tr>
<td>276.6</td>
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Permitted acres owned by the operator

<table>
<thead>
<tr>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
</tr>
</tbody>
</table>

Permitted acres leased by the operator

Note: 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).

2. Total affected acreage:

<table>
<thead>
<tr>
<th>B) Area used for sediment control ponds</th>
<th>0.9</th>
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</thead>
<tbody>
<tr>
<td>Total affected acreage:</td>
<td></td>
</tr>
<tr>
<td>B) Area used for stockpiles of unprocessed minerals</td>
<td>0.0</td>
</tr>
<tr>
<td>C) Area used for spoil (overburden) banks, topsoil and disposal refuse (exclusive of tailings impoundments)</td>
<td>84.5</td>
</tr>
<tr>
<td>D) Areas used for on-site processing facilities and stockpiles of processed minerals</td>
<td>59.7</td>
</tr>
<tr>
<td>E) Areas used for tailings pond (waste material from mineral processing)</td>
<td>0.0</td>
</tr>
<tr>
<td>F) Area for access or haul roads</td>
<td>11.2</td>
</tr>
<tr>
<td>G) Area for excavation during the period of this permit (Pit Phases I &amp; II) OR</td>
<td></td>
</tr>
<tr>
<td>If mining and reclamation are to be done in segments, state the size of each segment (acres) _______. Multiply the size of the segments by 3 and enter the resulting number. --- &gt; NA</td>
<td></td>
</tr>
<tr>
<td>H) TOTAL OF 2A THROUGH 2G</td>
<td>237.1</td>
</tr>
</tbody>
</table>
3. Check acreage to be bonded: total affected acreage calculated from Section 2.

_____ 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)
__x__ 25.00 + acres (bond amount - $25,000 or greater)

Affected 249.0 Buffer 27.6 Future Reserves 0.0 Total Permit Area 276.6 (Phase II)

Applicant may submit a reclamation cost estimate for mines that will affect greater than 25 acres. Estimate should be based upon requirements in Regulation 89-20 B.

A reclamation bond estimate is being provide to the Department in a separate submittal titled “Chester Quarry – Reclamation Bond Cost Estimate”. A reclamation bond estimate is based upon Phase I quarry development. This includes Phase I Pit (45.8 acres), processing plant east of Rocky Creek (36.7 acres), Overburden Storage Southeast (41.5 acres), access/haul roads (10.5 acres) and 11.0 acre of vegetative filter for a total of 145.5 bonded acres.

The use of a vegetative filter (VF) provides redundant sediment control consisting of land that will not be disturbed by mining, but will be managed for timbered production or other similar non-mining related uses. The vegetative filters are considered affected areas because they are part of the overall sediment control strategy to protect water resources. For purposes of estimating the reclamation bond, it is assumed, as a worst-case scenario, that approximately 25% of the 41.7 acres of vegetative filter (VF) (approximately 11 acres) may be impacted and in need of reclamation. The reclamation bond estimate provides a reclamation cost for these 11 acres of vegetative filter. The remaining 30.7 acres of the VF will not require reclamation practices and have a reclamation bonding rate of $0/acre.

4. Will this operation be covered by a blanket bond? If so, please list your company's other permitted mining operations in South Carolina giving mine names, permit numbers and state the present reclamation bond amount on file with this Department.
   No

5. Number of years for which this permit is requested. 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, Form MR-500.
   __x__ 100 years

IV. PROTECTION OF NATURAL RESOURCES

1. Will there be a waste water treatment system at your mine site? _____ Yes  __x__ No
   Waste water generated from washing the stone is circulated through a series of settling basins to remove fines created from the rock crushing and screening process. The clarified water in the last pond in the closed looped system will be recycled to the plant and water reused. The treatment of the wash water from the plant is typical Best Management Practices using settling ponds to remove suspended solids. Should it become necessary to release water from the wash water system, the release will be directed to the NPDES outfall designated for discharge for waste water and groundwater.

2. Will there be a point source discharge from your plant or mine requiring an NPDES Permit? If no, provide information as to how stormwater and groundwater will be managed.  __x__ Yes  ____ No
   The point source discharge from the mine will be primarily groundwater from mine dewatering and stormwater routed in to the pit. Should it become necessary to release water from the wash water system, the release will be directed to the NPDES outfall designated for discharge for waste water and groundwater.
3. Will there be air contaminant emissions from your plant or mine requiring an Air Quality Permit?

  x Yes  No

UPDATE: The application for the Air Construction permit was developed and submitted to DHEC’s Bureau of Air Quality. The requirements in this permit upon its issuance will be protective of air quality.

4. Do you anticipate pumping of groundwater? If yes, describe.

  x Yes  No

Chester Quarry is located Piedmont with crystalline rocks at shallow depths. Groundwater seepage is expected into the pit from the saprolite (weathered metadiorite) and the fractures in the upper zone of the metadiorite. The groundwater seepage will collect in the pit sump(s), stored there (along with stormwater) until pumped to surface ponds to be used for process water and dust suppression.

UPDATE: The hydrogeologic assessment to estimate the extent of groundwater drawdown from mine dewatering was conducted by Soils & Materials Engineering (S&ME), report completed and submitted to DHEC September 20, 2019.

5. Will jurisdictional wetlands be affected, filled or altered in any fashion that will require a Section 404 Dredge and Fill Permit?

  x Yes  No

S&ME conducted a wetland delineation and has submitted a jurisdictional determination request (Chester Greenfield Site) to the US Army Corps of Engineers. This request is attached to this application in Appendix G. Exhibit #3 of the JD request provides a map of the delineated wetlands. Wetlands will be avoided where feasible but, to have a coherent mine plan, impacts to wetlands will be necessary. These impacts will be permitted through the Corps either by a Nationwide permit or Individual 404 permit.

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

  Yes  x No

S&ME conducted a Cultural Resource Survey. The report Cultural Resource Survey Chester Greenfield Site Chester County, South Carolina indicates that one archaeological site (38CS419) and one isolated find (IF-1) were identified. However, neither of these two sites are recommended for eligibility in the National Register of Historic Places (NRHP). The report has been submitted to SC Department of Archives and History's State Historic Preservation Office (SHPO) for review and concurrence with these findings and recommendations.

7. Will any part of the permitted area be used as a solid waste disposal site? If no, describe how waste, trash, scrap metal material, garbage will be handled.

  Yes  x No

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

*NOTE:* For questions 1-7 that need additional space for explanations, please provide additional information on an attached sheet to this application.

8. 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 site is located in the Catawba River Basin and within the Southern Outer Piedmont ecoregion of South Carolina. Most of the site has been used for silvicultural practices for decades. The site consists of planted pine stands, cutover forestland, pasture land and aquatic features (wetlands and tributaries). The site does not provide suitable habitat for federally listed species in Chester County. Refer to S&ME’s Protected Species Assessment Chester Greenfield Site Chester, SC (Appendix G) for more specific information.

The primary surface drainage within the mine permit area is Rocky Creek. Rocky Creek flows south through the approximate center of the property. A tributary to Rocky Creek flows from the northeast and connects with Rock Creek in the approximately mid-section of the mine permit area.

The permit area contains US Army Corps jurisdictional and non-jurisdictional wetlands and aquatic features as determined by S&ME. Where possible, wetlands will be avoided both jurisdictional and isolated. Attached is the Jurisdictional Determination Request (Appendix F) to the U.S. Army Corps of Engineers for the Chester Quarry property.
9. State the land cover and land uses on the permitted land area and contiguous tracts of land to the permitted land area.

The site consists of planted pine stands, cutover forestland, pasture land and aquatic features – wetlands and tributaries. Land cover within the planned mine permit area is primarily pine trees as managed forest using accepted silvicultural practices. The timber will be managed and harvested using appropriate silvicultural practices.

Surrounding areas contain managed timberlands, agricultural field, industry and rural residences.

10. 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. Attach any supporting documents (engineering designs, calculations, sediment & erosion control plan, setbacks, geotechnical information, acid prediction test etc.) to this application.

(1) UPDATE: During Phase I, two sediment basins will be located along the southern boundary of the process plant area, one basin in the northeast corner of the pit; one basin in the southwest corner of the pit and one adjacent to the Northeastern Overburden Storage. Basin locations are based upon topography and are being designed to control the sediment from a 25 year-24 hour storm event. The erosion and sediment control plan (Appendix C) developed by S&ME provides maps and design calculations for the sediment control basins. The erosion and sediment control plan will be updated when mining activities expand west of Rocky Creek into northwest overburden storage and process yard. Additionally, brush barriers, silt fencing and stormwater diversions will be used where and as necessary, typically around the down gradient perimeter of any land disturbances, to provide sediment control for mine disturbed areas not feasible to route into a sediment control basin or pit. To increase the effectiveness of sediment control, land disturbance will be kept to a minimum to what is necessary to support mining activities and non-vegetated areas will be graded and seeded as soon as feasible to reduce erosion.

To provide redundancy and back up to the primary sediment control practices (e.g. brush barriers, silt fencing, etc.), existing vegetation and/or timbered areas where stumps and woody debris from accepted timbering practices are left on the ground will be used as vegetative filters (VF) to trap and control any inadvertent sediment from mine areas.

(2) Proper mine designs, 3:1 slope in the unconsolidated overburden and benching of metadiorite highwalls will maintain slope stability.

(3) Not applicable to this geology

V. SAFETY

1. 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 be permitted.

Lands neighboring the mine are primarily woodlands, timber management, agricultural and rural residential. The mine permit area is bounded respectively to the north and south by CSX Railroad and SC Hwy 9. There are scattered residential housing and industrial buildings throughout the general area, but the highest concentration of residences is located northwest of the mine permit area. Industrial buildings and land zoned by Chester County for industrial uses, are located north, east and southeast of the mine permit area. South of the mine permit area there is Orr Baptist Church, but only sparsely located rural residences. SC Hwy 9 east of the mine permit area is generally an industrial corridor to Interstate I-77. The eastern property boundaries for the Chester Park Elementary School of Inquiry and Chester Middle School are located 0.8 mile west of the mine permit area. The closest point of blasting from the Chester Quarry to school property is approximately 1.25 miles. The school buildings closest to the quarry property will be approximately 1.5 miles to the nearest blasting to be conducted at the quarry.

The mining operations will present no direct physical hazards to the surrounding community due to buffers and distance between mining activity to inhabited structures. The mining operations will not use chemicals in the mining or processing of the metadiorite; consequently, there will be no potential for chemical contamination to soil, water and air from mining activities.
Blasting
Explosives will be used to mine the metadorite. 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 in excess of 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
The potential for Chester Quarry to adversely impact wells on neighboring properties is considered low. This concept is based on the geology, experience at other quarries in the Piedmont and surface hydrology in and around the mine permit area. Furthermore, S&ME has conducted fracture analysis of the planned pit area to determine basic information on the location and orientation of fractures that are conduits for groundwater flow in crystalline rock formations. This information is being used to design a hydrogeologic assessment of the Chester Quarry to determine any potential impacts to the groundwater levels from pit development and dewatering the open pit. The hydrogeologic assessment study at the time of the mine operating permit application submittal is ongoing and will be provided to the Department upon its completion. Once submitted it will be in Appendix D of the mine operating permit application. UPDATE: The hydrogeologic assessment to estimate the extent of groundwater drawdown from mine dewatering was conducted by Soils &Materials Engineering (S&ME). The report was submitted to DHEC September 20, 2019.

Luck Stone intends to develop a Groundwater Monitoring Plan to provide a methodology to track groundwater drawdown in the permit area. This information will be used to assess, on a continuing basis, the unlikely possibility of adverse impacts on neighboring wells. The data from the observation wells will be used in determining whether the quarry is a factor should a neighboring well experience a malfunction. Groundwater monitoring wells will be placed at strategic locations at the perimeter of the mine permit area to observe the response to groundwater dewatering in the mine. Upon approval and issuance of the mine permit, the monitoring wells will be constructed. UPDATE: The Groundwater Monitoring Plan was developed and submitted to DHEC December 18, 2019.

During mining if a neighboring well is determined to be impacted due to pit dewatering of the Chester Quarry open pit, Luck Stone commits to repairing the impacted well or re-drilling a new well to ensure the affected neighbor has water. Luck Stone will also provide a temporary water supply to the neighbor until the repair or replacement well is completed.

2. Describe methods to be used to prevent an adverse effect on the purposes of a publicly-owned park, publicly-owned forest, or publicly-owned recreation area. If any of these facilities are within one (1) mile of the proposed affected property, please locate on mine location map and the submitted U.S.G.S topographic map for this application.

A publicly-owned park, publicly-owned forest, or publicly-owned recreation area is not within one mile of the mine permit area.

3. Describe measures to be taken for screening the operation from view from public highways, public parks or residential areas.
Location of homes near the mine are mostly located to the north and northwest. Earthen berms will be constructed along the northern boundary of the mine permit area. The berms will provide visually screening of the process plant and open pit. SC Hwy 9 (Lancaster Hwy), is south and adjacent of the mine permit boundary. Overburden storage southeast will contain the initial overburden stripping from the pit. The sloping and revegetation of the overburden storage area will provide visual screening of the active pit from SC Hwy 9. As pit expands west during Phase II pit development, overburden will be placed in the northwest overburden storage. The sloping and revegetation of the overburden storage will provide visual screening of the active phase II pit from any residential developments west of the mine permit area. Properties east of the mine permit area are industrial in nature.
VI. MINE MAP

1. Provide the U.S.G.S. topographic map(s) that contains the proposed mine site. The proposed permitted area should be outlined on this submitted topographic map.

2. Attach two (2) copies of a map of the site (referred to as the MINE MAP) that shows the following:

   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.

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

4. Provide letter from an attorney attesting to (1) the ownership if 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.

We hereby certify that all information and details contained hereinabove, within any supporting documents and on the map are true and correct to the best of our knowledge. We fully understand that any willful misrepresentation of facts will be cause for permit revocation.

![Signature]

Signature of Applicant/Operator or his Authorized Representative

BENJAMIN A. THOMPSON

Printed Name of Applicant/Operator or his Authorized Representative

DIRECTOR

Title

June 10, 2019

Date

Department Use Only

Application No. Date Application Approved Date Bond Rec'd

Bond Amount Blanket or Single Bond Permit Issuance Date

ACTION TAKEN ON THIS APPLICATION

Approved Denied Approve with additional Terms and Conditions

By: DIVISION DIRECTOR

Date:

DHEC 3102 (08/1997)

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