# INTRODUCTION

The following narrative, together with the schematic plan submitted as a part of Carolina Sunrock's application will describe the manner in which operations will be carried on at a site about 3.5 miles north of Louisburg in Franklin County, NC. The Operations will include a Granite Quarry, Aggregate Processing Plant and a Washed Sand Plant.

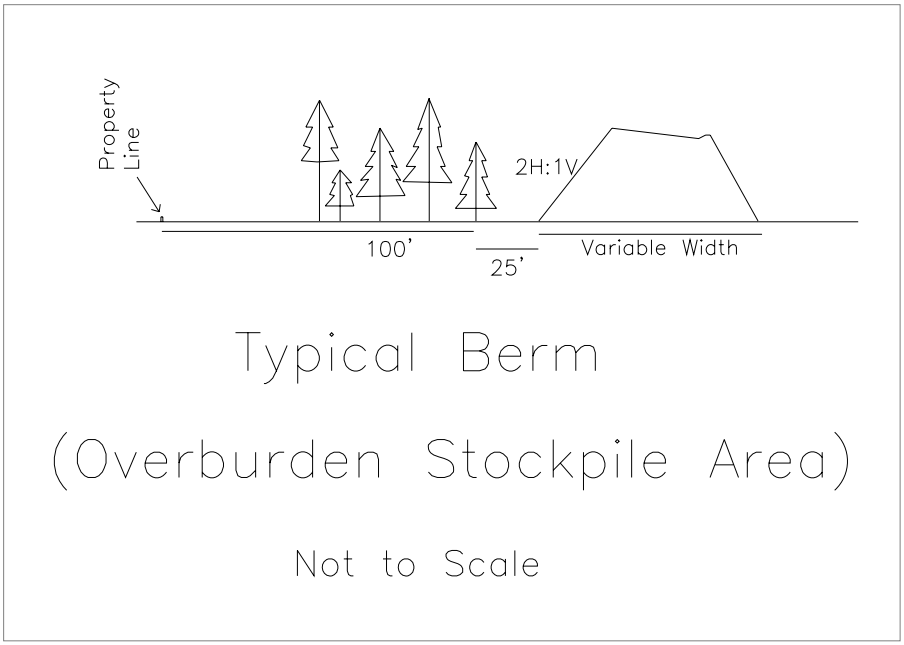
The proposed plan of operations contemplates that all mining and processing activity, will be conducted on a 480.46 acre tract. Appendix A contains the Conceptual Site Development Plans (Map 1 and 1A) showing the various components of the operation. Exhibit 1 (next page) is an aerial photograph identifying the proposed site location along with other existing landmarks and the local highway network. Additional exhibits in Appendix C show typical processes as discussed in the following narrative. It is proposed that there be an initial rock quarry and sand mining area of approximately 20 acres, which will grow to approximately 295 acres over the life of the operation, depending upon economic conditions. Over 25% (126 acres) of the property will remain as a vegetated buffer and wildlife habitat. A site plan with the proposed plant locations, topography, initial pit opening, buffers, ponds, 100 year flood boundary, potential structure locations and adjoining property owners can be found in Appendix B. A typical plan for the proposed stone crushing plant, sand processing plant can be found in Appendix C along with a set of typical drawings and pictures. Appendix D contains typical drawings for the scale house/office, shop and employee building/lab (schematic with approximate dimensions only, final design will be determined after permit is issued and prior to applying for a building permit). Appendix E contains the Sound Studies. A copy of the 4th Quarter 2007 "SUNROCK Newsletter" is enclosed in Appendix F along with a copy of the current "North Carolina Mining Permit Application." This application addresses all requirements of the Franklin County, Special Use Permit. Additional issues and greater detail will be dealt with in the Mining Permit Application as regulated by the North Carolina Department of Environment and Natural Resources (NCDENR).

# PLAN OF OPERATIONS NARRATIVE

Details of the company's plan of operations are discussed on the following pages.

## Berms

Vegetated, landscaped berms will be an integral part of the overall plan of operations for this site. Berm heights will vary but will typically be 10 to 20 feet high, depending on the particular location. These berms are constructed from overburden removed to expose rock prior to mining and are top-dressed so that they will support appropriate vegetation and landscaping.




In addition to providing screening, these berms attenuate noise and reduce the dispersion of dust. The location of these berms will be assigned as needed. See Exhibits 2 and 3 for examples of berms at other mine sites.

## Setbacks and Buffers

A minimum 50 foot setback from the Property Lines, streams and wetlands will be maintained for sand and gravel mining and a minimum of 200 feet to the edge of the rock quarry. A minimum of 50 feet from streams and wetlands will be maintained.

An undisturbed buffer area of at least 100 feet from property lines will be maintained for all mining areas. All buffer areas are shown on Maps 1 and 1A in Appendix A.

## Wildlife Habitat and Undisturbed Areas

The portion of the 480.46 acre tract not needed for pit development, plant location, access roads, and stone storage is about 126 acres and will remain in vegetated buffers and wildlife habitat.

## Buildings To Be Erected

The company will construct a small office and scale house, an equipment maintenance/shop building and an employee building on the property. Approximate, proposed locations are shown on Map 1. The company does not presently anticipate locating any other buildings intended for occupancy on the property, although there may be a need for small out buildings for equipment purposes. Conceptual Site Development Plan (MAPS 1 & 1A) can be seen in Appendix A.

## Reclamation Obligations

Upon the cessation of mining, the property will be reclaimed in accordance with a plan submitted to and approved by the NCDENR. In addition NCDENR requires a Reclamation Bond to assure that reclamation will be completed after mining is completed. That plan will essentially consist of the re-grading and re-vegetation of disturbed areas, such that the site could have a productive future use. The quarry will fill with water once mining ceases. It could serve as a water reservoir as well as for recreational or industrial use. Exhibit 4 depicts an example of a water impoundment in a reclaimed quarry and Exhibit 5 shows a golf course in a reclaimed quarry site.

Extraction and Processing of Stone and Sand

The company expects production in years one through five at this site to average approximately 300,000 - 500,000 tons per year. Normal operating hours will be from 7:00 a.m. to 6:00 p.m., Monday through Friday, and on Saturdays from 7:00 a.m. to noon. Normal operating hours are subject to the fluctuations of the market and occasionally will be outside of these hours to meet specialized job needs which require the delivery of aggregate at other times.

The initial step in the process will be to establish approved erosion control systems, remove vegetation and then excavate overburden from the pit area as required to continue expansion of the operation. This sequence of events follows a detailed systematic mine plan as detailed in the permit application which is approved and regulated by the land Quality Section of the NCDENR.

A portion of the overburden removed to gain access to the stone deposit will be processed through a sand plant and washed to produce a variety of construction related sand products for utilization by our customers. A portion will also be used to construct the berms discussed above and for office and plant site development. After the overburden has been stripped, explosives will be used to release the stone. The use of explosives follows special design parameters and procedures to ensure compliance with North Carolina regulation. That stone, called shot rock, will then either be loaded into vehicles or placed on conveyors for transport to the primary crusher. The long term plan is to use conveyors almost exclusively, thereby reducing the need for trucking and its related impacts within the site. The shot rock is then dumped into the primary crusher (see Exhibit 6), which reduces the material from something often approaching the size of a small boulder to a range of sizes running from four or five inches in diameter down to fractions of an inch.

After the stone leaves the primary crusher, it is conveyed to screening towers and to secondary crushers. Secondary crushers and screening towers (see Exhibit 7) are necessary to sort the stone into various product sizes and, in the case of larger pieces, to reduce them in size.

After the stone has been processed through the screening towers and secondary crushers, it will be transported by conveyors and trucks (see Exhibit 8) to several different stockpiles, depending upon the size and, sometimes, the expected use of the stone. See Appendix C for a schematic of a typical stone processing plant. A customer desiring to purchase a particular size of stone will have his truck loaded by conventional rubber- tired loading equipment at the stockpile. From there, the truck will proceed to

the scale house, where it will be weighed and a ticket noting the amount and type of aggregate will be given to the driver. The truck will then exit the property using the site access road as shown on the site plan schematic (MAPS 1 & 1A, Appendix A).

The preparation of sand for commercial use consists of four basic processes: extraction, sorting, washing, and in some cases crushing. Sand is extracted from the location at which it occurs by an excavator. The excavator simply scoops the sand up and places it into trucks or onto conveyor belts for transportation to the plant. The sand is sorted through a series of screens that separate differently sized particles. The sand is washed, and the smaller particles are sent to the sand classifying tank where the particles are further separated. Some larger particles may be crushed if smaller particles are needed. See a schematic drawing of a typical Sand Plant in Appendix C.

Dust Control Measures

At all points during the processing of the sand and stone, wet suppression is utilized to control dust (see Exhibit 9). These wet suppression techniques normally use spray bars and are effective in controlling the dust generated in the process of crushing and conveying the stone. Water will be sprayed on the roads and plant areas to keep dust down (see Exhibit 10). The sufficiency of the Company's compliance with National Ambient Air Quality Standards will be evaluated by the State in connection with the Company's application for an Air Quality Permit. See Section 11 for additional discussions on air quality.

Erosion Control Measures

Prior to development of the site, Carolina Sunrock will develop a plan that complies with the NCDENR Erosion Control regulations as well as all applicable Franklin County regulations. Sediment from all disturbed areas will be controlled with channels and sediment basins, or by proposed BMP (best management practice) facilities constructed for compliance to ensure watershed protection.

Site Entry

There is an existing entrance to the site from NC 39/US401 toward the south end of the property between two houses. A gate will be maintained at this entrance. However, the primary entrance to the site will be moved to the north end of the property as shown on Maps 1 & 1A. To facilitate traffic flow, deceleration and turning lanes will be constructed with the coordination of NC Department of Transportation. These lanes are shown on Maps 1 & 1A. A gate will be constructed and maintained at this main entrance as well.

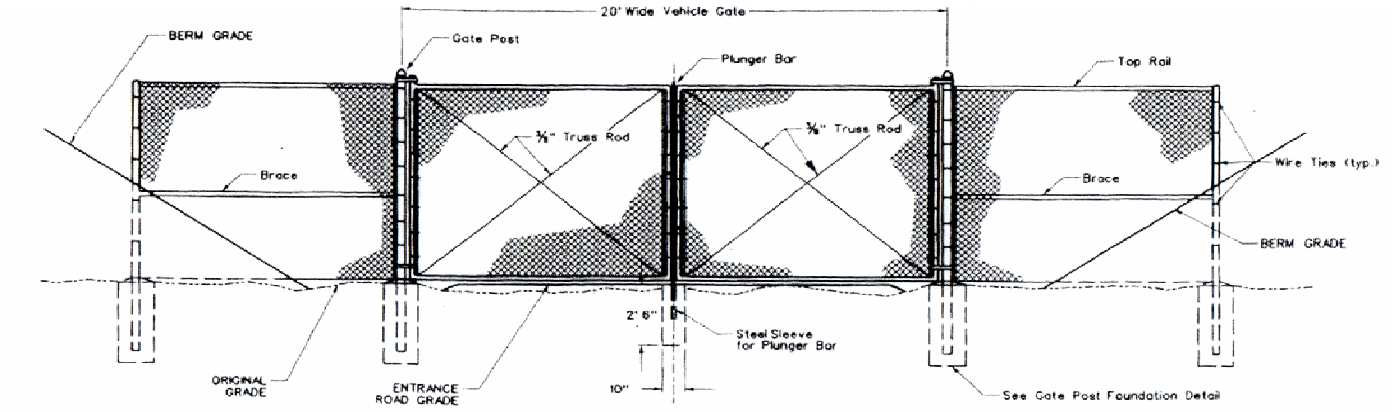
There is also and existing small farmer's access road along the property line off of Beasley Road on the west side of the property. A gate will be maintained at this entrance as also.

Noise Study

Vibra-Tech, Inc., one of the most respected noise, blasting and seismic analysis experts in the United States, has conducted a background noise study to determine the pre-development noise level in the vicinity of the proposed facility. In addition, noise measurements were taken around Carolina Sunrock's Kittrell plant while in full operation. These studies will assist in the planning and plant design stages to help minimize noise and reduce the potential for adverse affects to the neighbors. Results of the studies indicate that the level of sound generated by the proposed operation on even the closest neighboring homes will be at or below the ambient noise levels that currently exist. A more detailed discussion is included in Section 5 of this application.

Fencing and Security

The entrance to the quarry will be closed and locked by a security gate after operating hours. A typical Entrance Gate Detail is shown below. A fence, a minimum of 6 feet high, will be installed around the active mining area, and will be extended as the excavation area expands.




**Typical Entrance Gate Detail**

Not to Scale

## Blasting

All blasting will be conducted by professional blasting companies, experts in the field of explosives utilization and safety. In addition, every blast at the Louisburg Facility will be monitored by a seismograph as required by NCDENR, the results of which are analyzed by an independent vibration monitoring company. Blasting will be done in accordance with State blasting regulations designed not to exceed allowable vibration and noise limits. Blasting will be restricted to the hours between 8:00 am and 5:00 pm, Monday through Friday. Please refer to Section 7- Blasting, for a more detailed discussion.

## Parking and lighting

All parking will be confined to areas within the property. Adequate parking will be provided for employees and visitors and will be expanded as necessary. A minimum of 15 car spaces will be constructed initially. The approximate location of parking is shown on Maps 1 & 1A, Appendix A. Outdoor security lighting will be designed and constructed for night time security purposes. Lights will be located so that they will not impact any surrounding property. Please refer to the Conceptual Site Development Plan for more details.

## Landscaping

Much of the area surrounding the property will be left in its natural state. The entrance and berms will be appropriately enhanced and maintained to be attractive and to blend into the adjacent areas. The berms will be vegetated with a mix of grasses, shrubs and trees to provide soil stability and enhance views.

## Utilities

The Company does not require utility services from any County Department. Drinking water needs on the site will be served by wells drilled by the Company, and a suitable septic field will be identified and constructed in conjunction with the County Health Department. Please refer to the Conceptual Site Development Plan in Appendix A for more details.

## Fire Prevention

The Company's proposed project does not pose any unusual fire risks. The operations pose no risk of fire significantly different than any other business. Diesel fuel and

related products will be stored on site for use in equipment, but all storage will be done strictly in accordance with state, local and federal regulations. No explosives will be stored on the property but brought to the site as needed. All explosives will be handled in accordance with state and federal regulations applicable to them with respect to their transportation and handling.

## Mine Phasing

Mining will gradually progress across the mine site. For permitting purposes, several phases have been identified with approximate time frames suggested for each phase. However more that one phase may be open at the same time to facilitate or obtain different products or to transition from one phase to the next (see the chart on Map 4). The proposed periods of times when each section will be mined are estimates. The actual times will be based on economic or market conditions, geologic anomalies, weather or permitting conditions and requirements.

## Site Screening

In areas where the proposed setbacks and existing vegetated buffers do not provide satisfactory abatement of screening, noise or dust, additional measures, such as augmentation of existing vegetation or construction of berms will be utilized as feasible to mitigate impacts on neighbors. Average noise levels at the property lines should not exceed the background levels generated along US Highway 401, with the exception of site development and construction of mitigation measures. Typically berms would be constructed with 2 horizontal to 1 vertical or flatter side slopes and be stabilized with permanent vegetation and/or evergreen shrubs or conifers to mitigate visibility of the operation, dust or noise. Berm height and width will be unique to the area of concern.

ECONOMIC IMPACT

After meetings with the County Planning Office, Chamber of Commerce, and Economic Development Office, Carolina Sunrock has determined there will be a great deal of growth along the NC 39/US 401 corridor in Franklin County in the near future.

Franklin County is poised for growth in that it is developing a diverse economic base and is strategically located along NC 39/US 401. Louisburg in particular is located at the intersection of a number of major roads including US 401, NC 39, NC 56, NC 561 and NC 581, all of which serve the rest of Franklin County and the surrounding region.

Sunrock has studied the stone and sand demand in the County, and in comparing the past ten year period with the next ten year period, Sunrock is projecting average demand for construction aggregate to grow at an annual rate more rapidly than the national average for the construction industry.

The construction aggregate needs of the Louisburg and Franklin County areas with the exception of sand are currently being serviced from plants located at Franklinton and North Raleigh as well as Henderson and Kittrell, North Carolina (see, Exhibit 11). A local source for sand and crushed stone will shorten haul distances to points of usage in much of Franklin County, thereby reducing haul distances, costs and traffic in some cases. Reduced haulage costs will reduce the cost of these materials in the area and thereby enhance the opportunity for economic development. In addition, another aggregate source will make prices in the area more competitive. Materials from this property will help supply the needs from Carolina Sunrock's ancillary or accessory businesses at other locations.

At startup, Sunrock expects an employed staff of ten people. These people and the business itself will have a positive impact on the community with wages, real estate taxes and general business activity. The Mining Industry standard is that for every employee on site, nine additional jobs are created that will positively impact Franklin County and surrounding areas. In addition to its own employees, Sunrock engages a large number of additional people as subcontractors and service providers. These include private truck drivers, equipment suppliers, fuel suppliers and the like. In Sunrock's experience, most employees, subcontractors and service suppliers come from within a 30 miles radius of each site. The economic impact will be very significant, in the form of payroll, real estate taxes as well as purchase of parts, supplies and services.

Sunrock's capital investment as well as site preparation expenses for this site will exceed $3,000,000 over the next five years, and this investment will be supported by the future growth in the area which will demand an additional source of sand and stone.

The life of this operation may exceed 75 years.  Thereby providing long term economic benefits and employment to Franklin County and surrounding areas.  This benefit will grow over time if the production levels at the site and economic development in Franklin County continue to grow.

TRAFFIC IMPACT

N. C. Department of Transportation periodically conducts traffic surveys in the Louisburg area that can be used in assessing the impacts of the proposed operations located in this part of Franklin County. An analysis was done to evaluate the traffic impact on roadways serving the site. Please see the attached traffic count map in Exhibit 12 for a complete list of 2006 traffic counts on roads that could be impacted by Sunrock's presence. Below is a chart for the traffic on NC Highway 39/US 401 at the traffic count location closest to the entrance to the site.

NC DOT Average Daily Traffic Count for Franklin County

Highway 39/401 south of SR 1414

| Year | ADI |
|---|---|
| 1999 | 7600 |
| 2000 | 7600 |
| 2001 | 8200 |
| 2002 | 7800 |
| 2003 | 8100 |
| 2004 | 8400 |
| 2005 | 8500 |
| 2006 | 7500 |
| Average | 7,960 |

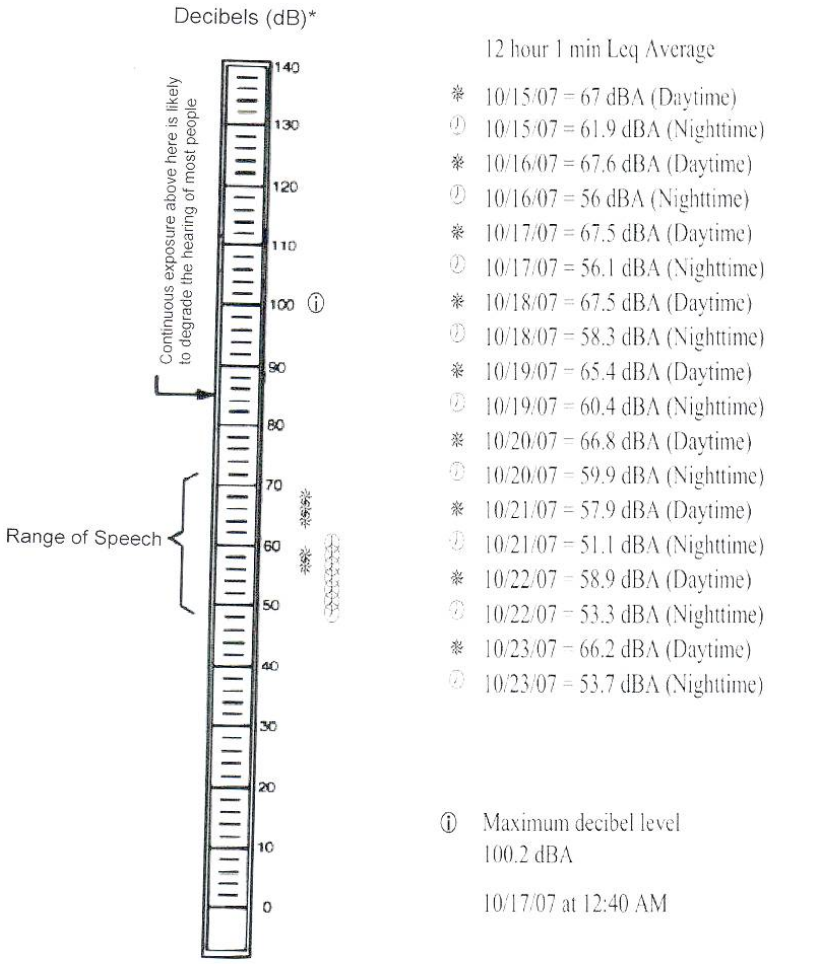
(This data taken from NCDOT Traffic Survey Maps Provided on the NCDOT Website for Public Information.)

NC Highway 39/US 401 is a two-lane roadway carrying an average of about 8000 vehicles per day adjacent to the proposed site. Based on proposed quarry production tonnage and employment, the quarry is initially expected to generate 70 round trips for trucks, 20 for employees and 10 for deliveries and maintenance. This equates to only 200 additional vehicles per day or a 2.5% increase in traffic density. NCDOT has been contacted about this proposed project and there are on-going discussion regarding the entrance requirements on US 39/401 to handle the ingress and egress of the proposed truck traffic increase

The Louisburg Community offers a unique traffic hub for distribution of goods with its major Roads System including US 401, NC 39, NC 56, NC 581 and Secondary Roads.

NOISE IMPACT

Vibra –Tech, Inc. has conducted a background sound study to determine the pre-development sound level in the vicinity of the proposed facility. This study will assist in planning and plant design stages to help minimize noise and reduce the potential for adverse affects to the neighbors. From October 15 through October 23, 2007 a sound meter was placed along NC Highway 39/US 401 at the location shown on Map 1 and in the Vibra –Tech Report presented in Appendix E. It was placed just outside of the highway right-of-way. Continuous sound levels were recorded for both day and night conditions. The highest sound level of 100.2 dBA (decibels on the A scale. See Appendix E for a more detailed discussion of these noise measurement units.) was recorded on October 17, 2007 at 12:40 am. The lowest average sound level was during the night of October 21. The results are summarized below:




Graph from The Noise Guidebook, US Department of Housing and Urban Development (HUD) Office of Community Planning and Development

VIBRA-TECH

To assess the impact of the proposed operation on nearby houses, sound levels were measured at Sunrock's Kittrell operation in Vance County on January 11, 2008 with the processing plant in full operation. The operation in Kittrell will be very similar to that proposed for this site in Louisburg. Measurements were taken at different distances from the primary crusher, typically the loudest component of a processing plant. The results are summarized below:

| Sound Measurements at Kittrell Quarry – January 11, 2008 | |
|---|---|
| Ambient conditions: Low broken clouds, sw wind 15+, gusting to 25 mph | |
| Distance to Primary Crusher | Average Noise Level |
| 100 ft | 77 dB – Only plant running<br>84 dB – with transitory events<br>(rock breaker , truck unloading) |
| 200 ft | 76 dB Only plant running |
| 740 ft | 67 dB (wind may have created much of this noise) |

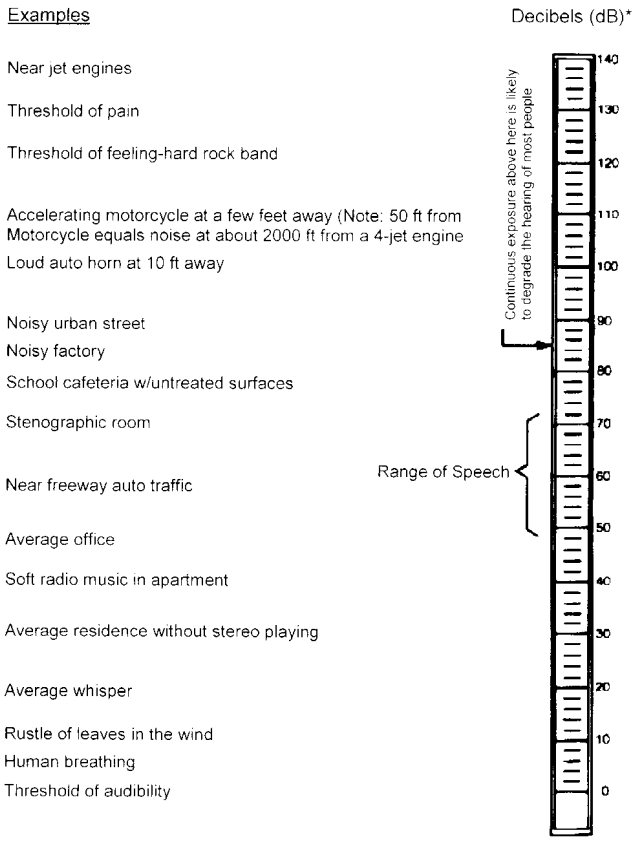
Map 3 represents the straight line distances from the closest edge of the proposed plant (in Green) and the closest edge of the proposed mining area (in Rust) to the closer homes that neighbor the facility. These distances are to the nearest edge of the operation area. The actual plant components would be further away, in some cases a thousand feet or more. The homes along Highway 39/401 range in distance from 310 to 650 feet from the plant area with an average distance of 441 feet. They range in distance from 1655 to 3219 feet from the pit area with an average of 2323 feet. The homes along Beasley Road range in distance from 3945 to 5396 feet from the plant area with an average of 4747 feet. They range in distance from 781 to 1549 feet from the pit area with an average of 965 feet.

Based on the measured noise levels at Kittrell and the distances between homes and the closest operations areas, the projected typical sound level for the average house

along Highway 39/401 would be less than 65dB during full operation. For the house closest to the edge of the Plant area (not the plant itself), the maximum sound level would be about 68dB during full operation. These levels compare to the existing week day sound level of 66.8dB.

To further understand the impacts of the proposed operation, the following chart shows average noise levels from a variety of different activities.

Common Sound Levels




*dB are "average" values as measured on the A-scale of a sound-level meter
(From *Concepts in Architectural Acoustics: M. David Egan, McGraw Hill, 1972.)*

Graph from The Noise Guidebook. US Department of Housing and Urban Development, ( HUD) Office of Community Planning and Development

## REAL ESTATE VALUES

Over the years, studies have been made by many mining companies to address the question of potential impacts that quarry and sand operations have on near by property values as a result of mining operations. The results of these studies are that properties in close proximity to quarries are selling for the same prices, require the same marketing periods, and have rates of appreciation equal to similar properties in the same jurisdiction located some distance from a quarry operation. Therefore, based on these studies and Sunrock's knowledge of land values around its quarries, Sunrock believes that their operation in Franklin County will not negatively affect land prices in the area.

Experience has shown that no matter how remote the areas are that quarries are opened in, residences, industries, and commercial entities will locate near to the stone operation. Exhibits 13 through 15 show examples of various types of development that have occurred around pre-existing quarry operations.

Particular attention should be given to Photos 2 and 3 as they are examples of development around quarries in the region around Louisburg. Photo 2 shows recent development of Wakefield Plantation, a mixed use development in northern Wake County. It is located as close as 845 feet from Hanson Aggregate's North Raleigh quarry. Photo 3 shows the location of the Old Liberty Golf Course and residential community that was recently approved near Franklinton, Franklin County. It is as close as 580 feet from Martin Marietta's Franklinton quarry.

# BLASTING

Blasting is perhaps the most misunderstood aspect of a modern quarry. Many people assume that quarries blast numerous times daily. In fact, blasting is typically done one or two times per week and the blast is over in a fraction of a second. At most, blasting occupies less than two minutes of actual cumulative time during the year.

Because modern blasting techniques have become so sophisticated, mining operators are able to fracture a large amount of rock in a safe and environmentally sensitive way. In contrast to the procedures used twenty years ago, today smaller blasting charges, coupled with sophisticated millisecond delays in detonations reduce the impact of blasting greatly. Additionally, a recent process known as seismic mapping enables mining operators to detonate very small "mini-blasts" and trace the pattern of the blasting waves created by those mini-blasts. Those blasting waves allow the operator to predict the effects of a larger, production sized blast.

Blasting waves are typically measured in what is called peak particle velocity, which is a measurement of the velocity of a horizontally moving particle. The maximum peak particle velocity allowed under North Carolina law is 2.0 inches per second. Studies by the United States Department of Interior have found that everyday human activities in a house, as well as the effect of temperature and humidity changes, impact a house by an amount equal to 0.5 to 1.0 inch per second and in some cases higher, such as the slamming of a door. Blasting levels at structures adjacent to Sunrock's quarry properties are designed not to exceed 0.5 inches per second, as recorded by independent consultants. Those blasting reports are a matter of public record. In this case, Sunrock has retained Vibra-Tech, Inc., to record and analyze its blasting. Exhibit 16 depicts interior wall stresses generated as a result of mine blasting and various household activities.

Blasting also generates air pressure created by the rapid outward movement of the rock face upon detonation; much like what a driver experiences when meeting a semi-tractor trailer and feeling his vehicle shudder against the air pressure created by the truck. This air pressure creates sound, or air blast and is also regulated. Conformance to the North Carolina limit of 132 dBL (decibels) precludes cosmetic and/or structural damage to adjacent structures. The predicted level of air blast (113 dBL) is the equivalent loading on a structure of a 9 mph wind gust.

To further reduce the impact of blasting on neighbors, blasting will be limited to the hours between 8:00 am and 5:00 pm, Monday through Friday, with no blasting on weekends or legal Holidays.

HYDROLOGY IMPACTS

The hydrogeologic layers near the proposed quarry consist of three principal units: 1) the thin unconsolidated soil, composed of sand, clay and silt; 2) fractured and weathered granite, and 3) unweathered and sparsely fractured granite with the size and number of fractures in the rock decreasing with depth. This system is similar to a layer of sand on a slab of concrete. Rainfall infiltrates vertically downward until it reaches the water table. At that point, the water moves horizontally to discharge points such as springs or nearby streams. The water table is the top of the fully saturated zone in the soil and rock. Because the soil and fractured and weathered bedrock are relatively porous, and water moves only very slowly through the unweathered rock, the water table is normally in the soil or weathered rock zones. The inability of the poorly connected fractures in the bedrock to transmit water over significant distances causes the flow paths to be shallow and local in nature. Small isolated ground-water basins are developed and are bounded by adjacent topographic ridges and nearby stream valleys (see Exhibit 17).

Like most metamorphic and igneous rock quarries such as granite quarries, this site has many attributes that minimize hydrological impacts from quarry development. Four factors ensure that the development of the quarry will not result in impacts upon the water supplies of homes near the site:

1) The nature of the ground-water flow system combined with the topographic relief creates isolated flow cells. These flow cells prevent the quarry impact from migrating beyond their respective boundaries (ridges and streams).

2) The poor capability of the granite to transmit groundwater results in a very limited water-level decline. Experience with metamorphic and igneous rock quarries in similar settings is that the actual area of bedrock experiencing complete dewatering is limited to within tens of feet of the quarry face. This is supported by the fact that most quarries in gneiss and granite have on-site wells for the shop and scale house that provide reliable water supplies for their own needs (see Exhibit 18).

3) The primary pathway for the movement of water within gneiss and granite is along fractures which decrease in frequency and size with increasing depth, limiting deeper circulation of the ground water, and keeping the water level declines from the quarry close to the face of the quarry. In addition, there has never been a well in the State of North Carolina that has been adversely affected by an igneous rock quarry. Exhibit 19 is a copy of an interoffice memo within the

Division of Land Quality (the main State regulatory agent that issues the quarry permit) pertaining to impact of wells by quarrying activities

4) Domestic wells in the region derive their yield from natural precipitation from a radius of approximately 200 feet around the well. No domestic well will be affected by quarry operations, as the nearest well is located 2400 feet from the initial quarry boundary and an estimated 781 feet from the maximum quarry boundary that might be reached in 100 years.

Bear Swamp Creek and its surrounding wetlands form a major ground water divide. During periods of low precipitation the creek becomes a recharge zone and during high precipitation periods, a discharge zone. Therefore, the creek forms a ground water divide separating the quarry from the wells supplying the homes along NC Highway 39/US 401.

Monitoring wells will be installed as required by the NC Division of Water Quality. Typically one well would be constructed up slope and one well down slope of the proposed mining areas. These wells would be utilized to monitor the existing water level surrounding the mining areas to help determine if any mining was affecting the surrounding ground water levels.

# WATERSHED IMPACTS

## Evaluation of Water Quality Impacts from the Louisburg Facility

A preliminary evaluation was made of the possible pollutant discharges from the proposed quarry to be located in Franklin County. This evaluation included estimation of annual loads of phosphorus, nitrogen and suspended solids released from the site in storm water run-off and point source discharges. These chemicals are mainly generated from fertilizer application, animal waste (both wild and domestic), malfunctioning septic systems and through natural decomposition of plant materials and are transported by storm water run-off. Annual loads for phosphorus, nitrogen and solids from the proposed quarry and sand plants will be significantly less than from other possible land uses, i.e. farming, golf course, and nursery. Our products and their processing do not create nor do we utilize materials that produce these or other chemicals that can contribute to off-site pollution. The very low pollutant loads from the quarry and sand plants are due to the extensive erosion and sedimentation control and storm water management measures to be used throughout this project. These include:

1. Storm water run-off from essentially all disturbed areas of the quarry will be retained and treated in storm water control ponds for reuse or discharge.

2. A Storm Water Discharge (NPDES) Permit will be applied for and issued by the NCDENR, Division of Water Quality to cover discharge of excess storm water in the event of excessive rainfall events. The majority of the retained water will be utilized in the materials washing process and will be recycled in the facility operation or utilized for dust control rather than being discharged.

In addition, The County has required a Total Nitrogen and Total Phosphorus Loading Worksheet to be completed for this site. After consultation with Ms. Kelly Johnson with the NC Division of Water Quality, Stormwater Section, the worksheet was completed and is included in this section. An explanation of assumptions is also included.

In summary, potential water quality impacts on the downstream reservoir will be much less than they actually are as the property sits today.

# Nutrient Calculations Explanations

Carolina Sunrock LLC
Proposed Franklin County Facility

Pre Development:

A. Transportation Impervious:
   Existing roads:
      North of Creek – 78,195 sq ft -1.8 acres
      South of Creek- 66,713 sq ft –1.5 acres
      3.3 acres

B. Roof - Impervious:
   2 – Tobacco Barns – 20' x 20' – 800 Sq Feet
   Hunting Camp – 30' x 30' - 900 Sq Ft
      Associated out bldgs 344 sq ft
      2044 Sq Ft - 0.05 acres

C. Managed Pervious:
   Total Acreage 480.46 – (A+B+D) 63.35 = 417.2 acres
   All placed in Pasture Category.

D. Wooded pervious:
   7 lateral streams - 8,383 linear feet
      30 foot buffers along each side – 502,980 sq ft – 11.5 acres
   Wetlands associated with Bear Swamp Creek – 2,111,096 Sq Ft – 48.5 Acres
   60.0 acres

Post Development:

A. Transportation Impervious:

| | | |
|---|---|---|
| New roads – Entrance | 37,566 sq ft | |
| Creek crossing – new- | 48,546 sq ft | |
| Creek crossing expansion – | 3,521 sq ft | |
| | 89,633 sq feet | = 2.06 acres |
| Plant area | | = 60.0 acres |
| | | 62.06 acres |

B. Roof Impervious:

| | | |
|---|---|---|
| Shop employee bldg | 10,000 sq ft | |
| Lab | 790 | |
| Scale house | 1144 | |
| Control bldg | 790 | |
| Control bldg | 790 | |
| Lab | 790 | |
| | 14,244 sq ft | = 0.33 acres |

C. Managed Pervious:
   100 foot unexcavated buffer (County required) = 25 acres

D. Wooded pervious: 60.0 acres (pre)
   Subtract area at new entrance (permitted wetland encroachment). -0.9 acres
   Subtract area of lateral creek crossing near scales (permitted). -0.2 acres
   Add berm/overburden stockpile areas outside of County required buffers. 5.0 acres
   Add 100 foot undisturbed buffer. 58.0 acres
   121.9 acres

The following was omitted as per advice from Kelly Johnson, NC Division of Water Quality:

Pit and recycling ponds omitted because - no run-off during less than 25 year 24 hour storm event.
Pit #1 – 140 acres
Pit #2 - 107 acres
Concrete weir – 0.13 acres (included in plant area)
Recycle ponds – (included in plant area)
Water Supply Pond(s) – (included in plant area)

VISUAL IMPACTS

The proposed quarry and related processing facilities are designed to minimize views of the operation from surrounding areas. All of the activities are in the valley of Bear Swamp Creek, below the sight line of most surrounding areas. Adjacent properties will be further screened by the 100 foot undisturbed buffer as well as the vegetated berm that will be constructed around much of the site.

Exhibit 20 presents two cross sections showing the relationship of nearby houses to the processing plant area, the activity that will be closest to the homes along NC Highway 39/US 401. The locations of these cross sections are shown on Map 4 in Appendix B. The full cross sections are included on that map. As the cross sections show, the area below the plant will be cut down to an elevation of approximately 260 ft mean sea level (msl). This will lower the elevation of the plant and further reduce their visibility.

The cross sections further demonstrate that the undisturbed buffer and the regrading and lowering of the plant area will virtually eliminate views of the plant. Additional vegetation, such as wax myrtles or hollies, will be planted along the inside of the undisturbed buffer to further screen views where appropriate.

AIR QUALITY

Potential air emissions (dust) from the proposed quarry will be controlled by approved Best Management Practices (BMP's) such as a water spray system. This system will meet or exceed all North Carolina and EPA emission limitations. The quarry, as proposed, will have very low emissions and will not cause or contribute to any violation of any ambient air quality standard at any nearby location. The sand plant is considered a saturated materials operation as water is required to properly wash and separate the sand.

The possible air quality impact of the quarry will be determined using EPA approved air quality models. Computer modeling (if required) will be used to estimate the impact of the quarry operations at selected locations around the proposed site. Air quality impact will be determined at locations where impact is expected to be highest, such as the property lines closest to operations and at potentially sensitive locations such as nearby houses.

Modeling would be conducted under conditions designed to produce the highest possible impacts. All equipment will be assumed to be operating at maximum capacity and meteorological conditions (i.e. wind speed and direction) will be selected to insure that the maximum possible impacts will be estimated.

Even under the adverse operational and meteorological conditions assumed, in order to receive an air quality permit, the models must show that the quarry will not cause air quality problems at any location. The concentrations of particles which could cause a health problem (i.e. those particles less than 10 microns in diameter) will be very low, below permissible limits.

Each potential emission point on the plant is required to be tested once production has begun to insure compliance with the air quality permit requirements. These test results must be provided to the State to indicate compliance with the permit conditions. In addition the State provides periodic, unannounced inspections to insure compliance with the permit.

Operations will be conducted to minimize the amount of dust generated at the site. The entrance road to the site will be paved for several hundred feet to reduce dust. Internal roads will be sprayed with water as needed to also minimize dust. Because most of the mined material will be transported to the processing plant by conveyors, the number of haul trucks will be greatly reduced, as well as dust that might be generated by such

activities.  All sources of dust generation throughout the processing plants will be controlled using an approved BMP in order to meet permit requirements.

ADJACENT PROPERTIES

Map 3 in Appendix B shows all of the individual properties around the proposed project site. The map indicates the owners of each property and which properties have homes on them. Also shown are the distances from the houses to the nearest edge of both the Plant and Reserve areas.

Pike's Greenacres Wildlife Preserve, located adjacent to the northern property boundary (See Maps 1 & 1A) will provide extra green space to buffer any potential impacts between the proposed facility and development to the north.

You don't have to look far to see that mining activities are very compatible neighbors with conservation areas and Parks, just look at the William B Umstead State Park in Wake County. The park is bordered by Hanson Aggregates, Crabtree Quarry and Wake Stone Corporation's Triangle Quarry. See Exhibit 21.

REGULATORY AGENCIES

The Mining Industry is one of the most heavily regulated industries in the Country. There are at least 8 agencies that have jurisdiction on mine sites, not counting such oversight as safety, labor issues, etc.  The following chart summarizes the major oversight responsibilities.

## CONCLUSION

Carolina Sunrock is confident that the materials presented in the foregoing sections of this text address the criteria set forth in the Franklin County Zoning Ordinance regarding issuance of a Special Use Permit for mining and associated processing activities in the County; however, company representatives and qualified experts in any area of concern are available for further discussions as necessary. Additionally, these same industry professionals will be present at the Planning Board and County Commissioners Meetings to supplement any information and answer any questions as required.