

SOIL REPORT

Swofford – Lowcountry Highway

January 17, 2021

Prepared By:

Tyler Sgro, L.P.S.C. #119, South Carolina

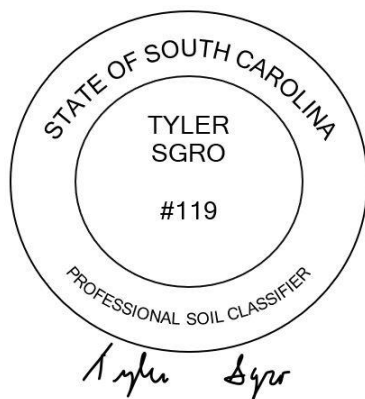
Davis Horizons

843-754-6307

tyler@davishorizons.com

Prepared For:

Stan Swofford



Site Location and Characteristics

The project site is located on or adjacent to Lowcountry Highway in the Yemassee area of Colleton County, South Carolina. The following characteristics and conditions were noted on 1/16/2021. The sampled areas are nearly level with elevations not ranging more than 5 inches between sample points. The area is a scrub-shrub vegetated, formerly forested portion of the site.

Soil Sampling Methodology

In order to measure site elevations, a Trimble R10-2 external GNSS receiver was used to measure elevations at each soil boring location. Fixed real-time kinematic (RTK) positioning was obtained in order to maximize data accuracy. Elevation error was measured to not exceed 1 inch, based on data provided from the GNSS receiver. Orthometric elevation data was recorded at each data point and recorded on the subsequent data sheet. Elevation ranges between the soil borings were obtained by computing the difference between elevation points.

Soil colors described in the data sheets were determined using a Munsell Soil Color Book. Soil textures described in the enclosed data sheets were determined using field techniques provided by the United States Department of Agriculture, Natural Resource Conservation Service (see: Thien, S.J., 1979. *Flow Chart to Determine Soil Texture by Feel*). As the designated repair area is contiguous with the drain field, a total of three data points were taken during the investigation, with two located in the drain field, and one located in the repair area..

SCDHEC Regulations and Standards

This site was examined for suitability for an onsite wastewater system as outlined in SCDHEC Regulations 61-56. Based on the observations described in the enclosed data sheets, estimated zone of seasonal saturation (ZOS), elevation gradient in the sampled area, and depth to limiting soil textures, the recommended standard for the investigated area is the 270/271 System – Alternative trench width and depth systems.

The criteria used to determine the estimated zone of seasonal saturation (ZOS) was primarily based on the presence of wetness characteristics, described as low chroma soil colors identified with a Munsell Soil Color Book and/or evidence of redoximorphic reactions. The presence of low chroma soil colors and redoximorphic features are indicative of the prolonged presence of water and/or a fluctuating water table. In addition, other criteria, such as position on the landscape, surface color (estimate of organic carbon), and experience of the Soil Classifier were utilized to obtain the ZOS. The data in this report is intended to be used for land use planning purposes, as well as supplemental soil data that can be submitted to SCDHEC and/or a Professional Engineer to assist in the onsite wastewater permitting process. The point data utilized to inform this report does not guarantee the denial or issuance of a permit for an on-site wastewater system and is solely a recommendation, based on the observations of the Soil Classifier during the site visit. The final decision of issuance or denial of permits is a decision made by SCDHEC.

Design Criteria and Recommendations

A ZOS of 21 inches will be used as part of the system recommendation. The apparent water table was not observed during sampling. A minimum of a six-inch separation between the ZOS and the bottom of the trenches is required for this system recommendation. Horizons with more than trace amounts of organic carbon content existed to maximum depths of 8 inches. These soil horizons with more than trace amounts of soil organic carbon do not need to be removed. However, the root mat should be removed prior to adding fill material if required. Based on the recommended system design, a 6 inch aggregate depth is suggested. Also, backfill will be necessary for the installation of the recommended system. Soil textures and amounts of backfill needed for the recommended system can be found within the system standard descriptions within the 61-56 Regulations. A restrictive layer was not observed in the soil profile.

Class III textures are the most limiting texture in the upper 35 inches, with Class I textures being the most limiting texture in the upper 18 inches of the soil profile. A long-term acceptance rate (LTAR) of 0.5 gallons per day (GPD)/square foot (SF) will be utilized for the loading rate². If applicable based on system recommendations, upon the completion of the construction of the drain field/disposal area, the fill material over this area will be immediately seeded and protected with straw or mulch or sodded to establish a permanent vegetative cover. The final grading plan will be designed to remove surface water from the drain field/disposal area.

Based on the recommended system, a septic tank with a maximum flow capacity of 1500 gallons per day (gpd) can be installed. The minimum total linear footage required for the trench lines is 173 feet, with a proposed design of 180 total linear feet.

Soil Classification

The soils in this area formed in sandy and loamy marine sediments typical of the Coastal Plain. Thus, the soil conditions reflect drainage characteristics typical of soils of the mapped series below. This soil classification was based on the observed soil morphology observed within depths to 35 inches. To ensure an accurate classification, soil observations would need to be made to a depth of 60 inches in non-sandy soils. Descriptions to these depths are not necessary to make interpretations for onsite wastewater disposal systems. The soil observations provided in this report and the below classification are derived by soil conditions in the observed sampled locations/area only. Any inclusions within these locations/area that were observed are also noted below.

Similar to soils of the Lynchburg series: Fine-loamy, siliceous, semiactive, thermic Aeric Paleaquults

Other Considerations



Adherence to Report:

The depth to the ZOS, water table separation, LTAR, and the land preparation prescriptions outlined in this report are site condition minimums that must be adhered to in the design and installation of an onsite wastewater disposal system. Any expenses incurred due to deviations from the soil prescriptions outlined in this report that result in system malfunctions or repairs will be the liability of the responsible party.

Notification Regarding Wetlands:

It is the responsibility of the landowner and/or equipment operators to avoid regulated impacts to waters of the United States (WOTUS), including wetlands. Should any part of the proposed onsite wastewater system be located in WOTUS, including wetlands, approval from the appropriate State and/or Federal agency [i.e., US Army Corps of Engineers, SCDHEC, etc.] must accompany the application for an onsite wastewater system. It is recommended that the landowner and/or equipment operators contact the applicable State and/or Federal agencies prior to initiating site work in order to avoid regulated impacts to WOTUS, including wetlands.

Footnotes:

1. Where applicable, fill material should be inspected and approved by Tyler Sgro prior to placement of material and system installation.
2. Long-term acceptance rates (LTAR) are **estimated** using the South Carolina Department of Health and Environmental Control, Bureau of Environmental Health Long Term Acceptance Rate Standard for Onsite Wastewater Systems. The long-term acceptance rate is based on the most hydraulically limiting naturally occurring soil texture from the ground surface to 6 inches below the bottom of the proposed absorption trenches/disposal tubing. Estimates on the acceptance rates are based on soil texture.