SEVERSON SOIL CONSULTING, PLLC

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Site Suitability for Domestic Sewage Treatment and Disposal Systems

175 North Berne Landing Rd
New Bern, NC
Pamlico County
Property#: C05-7-9

Prepared for: Harsh Ahluwalia

Prepared by: Erik Severson, Severson Soil Consulting, PLLC

Report Date: 4/30/2025

SYNOPSIS

This report shows the findings of a preliminary soil and site evaluation of the referenced parcel in Pamlico County, NC (red box in figure below). The site evaluation revealed sufficient area for the installation of a conventional septic system for a three-bedroom dwelling on the property. This report is intended to aid the permitting authority to evaluate the site.

Figure 1. Property Location

Harsh, this is a summary of my findings:

Severson Soil Consulting, PLLC (SSC) conducted a preliminary onsite wastewater soil feasibility study on the above referenced parcel to determine the area of soils, suitable for a subsurface onsite wastewater disposal system. The soil and site evaluation were performed by using a hand auger boring during moist soil conditions based on the criteria in the Rules and Laws Governing Onsite Wastewater Systems (18E rules). From this evaluation, SSC sketched an area suitable for the installation of a septic system. All dimensions, locations are approximate.

Site Description

The 3.5–acre tract was off North Berne Landing, near New Bern NC (in red, figure 1). The site lay in the Lower Coastal Plain physiographic province. There was one mapping unit of interest in the NRCS soil map, CnB; Conetoe 0 to 5 percent slopes (figure 2).

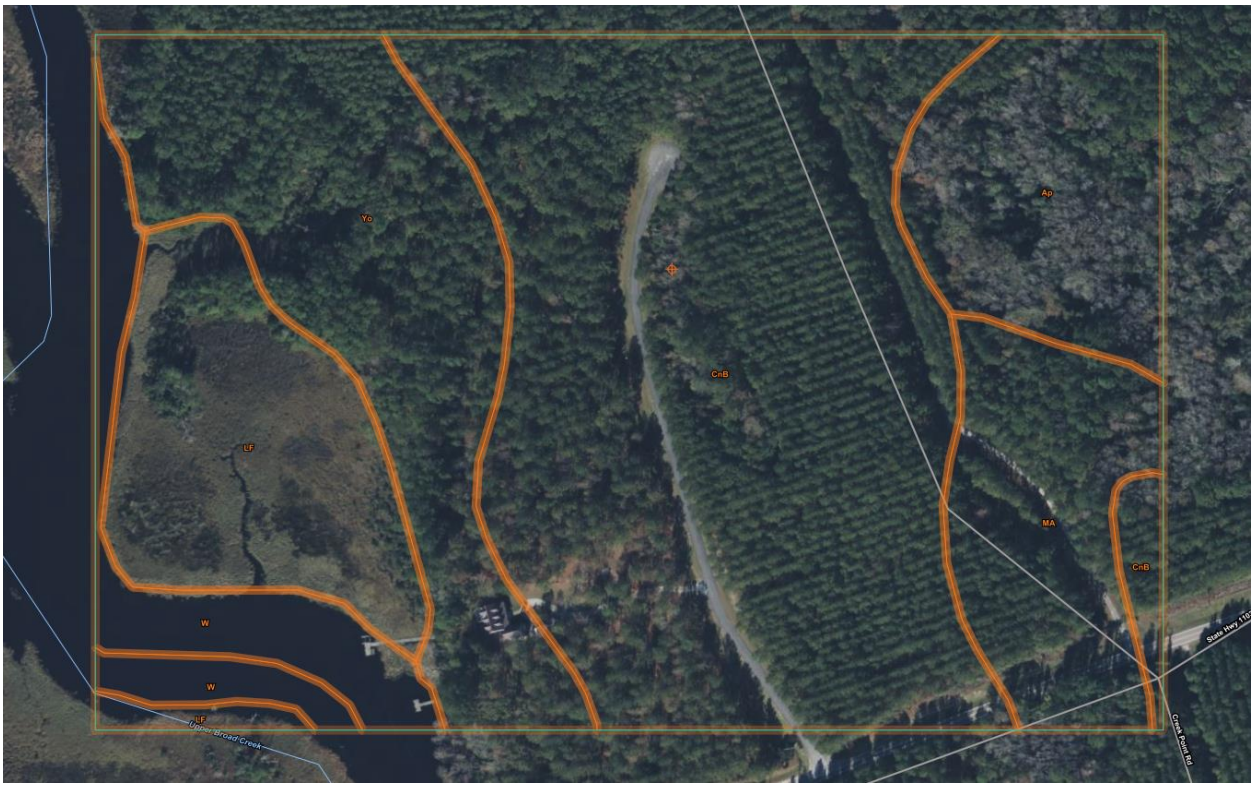


Figure 2. Soil map of the of the subject property (Web Soil Survey).

Soil Borings

Over 10 soil borings and observations were advanced on the parcel as seen in figure 3 below. Their depths to suitable soils categorized the soils: the red dots represent suitable soils to 36" and were the Conetoe (figure 3) soils. The recommended LTAR (long term acceptance rate) for these soils are 0.45 gallons per day per foot squared (GPD/ft2). The black dots represent bottomland forests and were unsuitable.

Figure 3. Soil boring locations within the lot as located by the onX Hunt application.

Required Area

A conservative estimate of the required linear footage needed for a conventional trench accepted status drainfield product is calculated by dividing the flow rate for a four-bedroom dwelling (3-BR= 360 gpd) by the long-term acceptance rate, LTAR (0.3 GPD/ft2). Then dividing that number by a 3-foot-wide trench bottom and finally multiplying that number by 0.75 (to account for a 25% reduction trench product).

[(360gpd / 0.45 gpd/ft2) / 3ft wide trench)] x 0.75= 200 Linear Feet

The required space of suitable soils was calculated based upon a 3-foot-wide trench and a 9-foot minimum center to center spacing of each trench. Assuming three 66-foot-long trench lengths, the minimum total area required would then be 3,000 ft2 including primary and a 100% repair area (1,500 ft2 x 2). Other drainfield lengths and configurations could be employed, such as additional shorter or longer lines.

If a higher loading rate is used, the result will be a lesser amount of trench product required than the example above.

Usable Area

The usable soil area encompasses the upper half of the property (see figure 4 below). It was located on a broad ridge top and sideslope in mature pine trees. It was 0.47 acres or 20,473 ft2 in size. This area is over 6 times the needed space for a drainfield and repair area servicing a three-bedroom property.

Figure 4. Usable soil area

Permitting

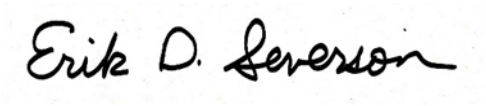
Prior to the issuance of a septic permit, the lot will require a soil and site evaluation by the Pamlico County Health Department of other permitting authority. The specific trench product type and soil loading rate will be determined by their assessment. The areas for proposed drainfields shall not be impacted by home sites, pools, garages, nor be mechanically altered from the natural lay of the land. Regulatory setbacks to property lines, roads, wells, etc. are to be maintained.

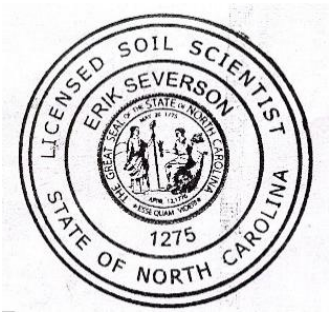
Exact locations of future drainfields, repair areas, buffer from property lines (current and future), building foundations, pools, decks, and well locations are not addressed in this report. Those items should be fully considered as the plans develop for the potential future use of the site. Depending on the position of the house location, house size, property lines and setbacks that may encroach on available usable space, this lot may require a septic system utilizing a pump.

Due to the subjective nature of the permitting process, zoning, variability of naturally occurring soil, and unforeseen circumstances, SSC cannot guarantee that areas delineated as suitable for on-site wastewater disposal systems will be permitted, as the permits are issued by the local governing agency. However, the areas of suitable soil have at least 6 times the needed space for a conventional system and repair depending on the loading rate. This report may be used to assist the local permitting agency to issue a septic permit.

Thank you for your business. Please do not hesitate to ask for more information regarding this report.

Sincerely,





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