

Site Suitability for Domestic Sewage Treatment and Disposal Systems

E NC Hwy 130
Fairmont, NC
Robeson County
PIN#: 0509-02-011

Prepared for: Pete Reese, Reelvest

Prepared by: Erik Severson, Severson Soil Consulting, PLLC

Report Date: 6/12/2023

SYNOPSIS

This report shows the findings of a preliminary soil and site evaluation of the referenced parcel in Robeson County, NC. The report shows that there was an area of provisionally suitable soils found on the property. The soil and site conditions were suitable for the installation of an in-ground conventional system. This report is intended to assist the permitting authority pursuant to citing onsite wastewater systems. All applicable setbacks must be maintained.

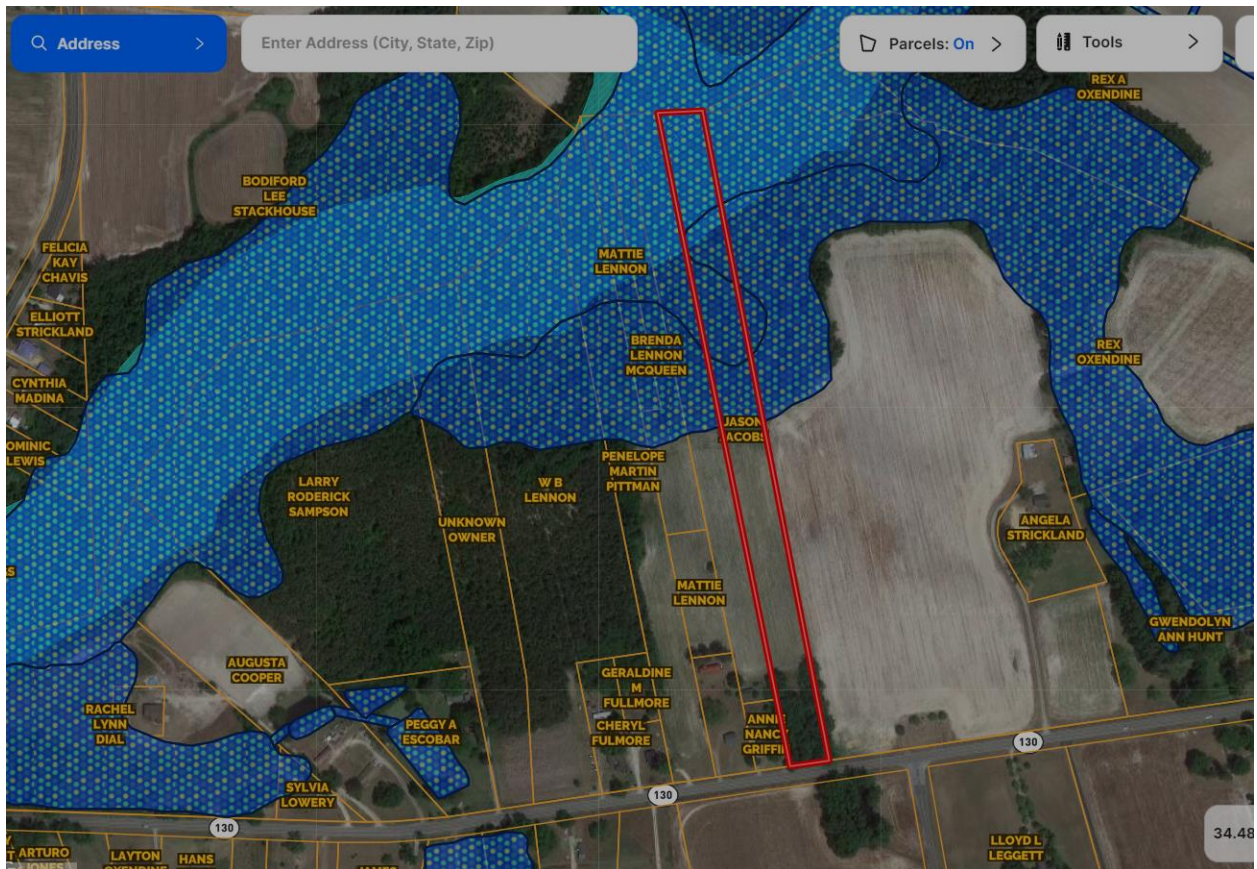


Figure 1. Property Location (5.3 acres)

To: Pete Reese
Re: Soil Feasibility for parcel:

E NC Hwy 130
PIN#: 0509-02-011

Pete, 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 recommended criteria found in the “Laws and Rules for Sewage Treatment and Disposal Systems”, 15NCAC 18A.1900. From this evaluation, SSC sketched an area suitable for the installation of a septic system. All dimensions, locations are approximate.

Site Description

The parcel lay in the lower Coastal Plain physiographic province. Three soils mapped on the property were Norfolk (NoB), Goldsboro GoA), and Bibb (Figure 2). The Bibb soil is unsuitable for any septic system. Norfolk soils are typically suitable for septic systems.

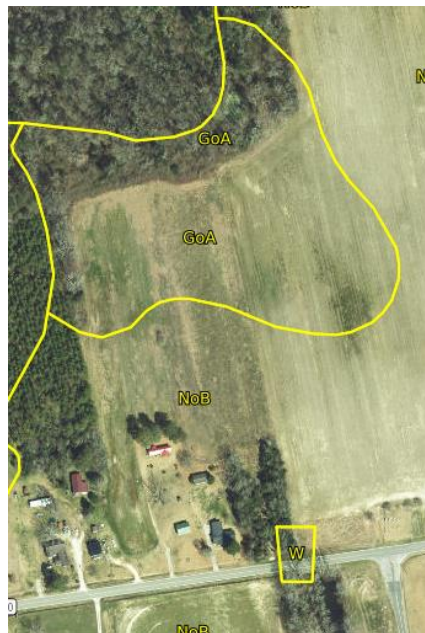


Figure 2. Soil map of the of the subject property.

Soil Borings and Observations

Over 16 soil borings and observations were advanced on the 5.3-acre parcel (figure 3). Their depths of suitable soils categorized the borings. The red dots had suitable soils to 30" (in ground conventional septic system) and were the Norfolk soils. The brown dots were the Goldsboro soils (suitable soils to 24"). The yellow dot was the Rains soils (unusable). The Bibb soils were on a floodplain and were not evaluated. The recommended loading rate (LTAR) Norfolk soils are 0.4 gallons per day per square foot (GPD/ft²).



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

The soil map showed a water feature by the road frontage. This was not seen during the evaluation. It may be across the road on another property. However, the road frontage area was disturbed in part due the presence of an old dilapidated home and outbuildings.

Required Area

The required linear footage of trench product is calculated by dividing the flow rate for a four bedroom dwelling (4-BR= 480 gpd) by the long-term acceptance rate, LTAR (0.4 GPD/ft²). Then dividing that by 3 feet (for a 3-foot wide trench), and finally multiplying by 0.75 to account for a 25% reduction in linear footage for an accepted status product.

$$480\text{gpd} / 0.4 \text{ gpd/ft}^2 = 1,200 \text{ ft}^2 / 3\text{ft wide trench} \times 0.75 = 300 \text{ linear feet of trench product}$$

Assuming a potential configuration of 3- 100-foot lines, the minimum area needed for the primary drainfield would be 2,400 ft². The minimum total area required would then be 4,800 ft² including primary and a 100% repair area. If the drainfield configuration is 4-75 foot lines, then the minimum area for primary and repair is 5,000 ft².

Usable Area

The usable area, north of NC 130, is 0.91 ac in size (39,640 ft²). The area in red shown in figure 4 below is *8 times* the minimum needed area for a primary and reserve drainfield to service a 4- bedroom dwelling.



Figure 4. Usable area on the parcel, north of Hwy 130.

Permitting

Prior to the issuance of a septic permit, the lot will require a soil and site evaluation by the Robeson County Health Department or other permitting authority. The specific trench product type and final 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 or permitting authority. However, the areas of suitable soil have 8 times the minimum needed space for a conventional system and repair depending on the final 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,

Erik D. Severson



Erik D. Severson, Ph. D., LSS
North Carolina Licensed Soil Scientist #1275