

Site Suitability for Domestic Sewage Treatment and Disposal Systems

Vandiford Thomas Road
Lot 5
Snow Hill, NC
Green County
Parcel #: 0504671

Prepared for: Cassandra Gettleman, Reelvest

Prepared by: Erik Severson, Severson Soil Consulting, PLLC

Report Date: 6/13/2025

SYNOPSIS

This report shows the findings of a preliminary soil and site evaluation of the referenced parcel in Greene County, NC (yellow box in figure below). The site evaluation revealed sufficient area of either an above ground mound or an advanced pre-treatment to drip septic system for a four-bedroom dwelling on the property. The drip system requires a maintenance contract with a certified subsurface operator and would need to be designed by a professional engineer. This report is intended to aid the permitting authority to evaluate the site.



Figure 1. Property Location (Lot 5)

Cassandra, 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 16.17-acre tract was off Vandiford Thomas Road, near the its intersection with Albritton Road in Snow Hill, NC (figure 1). The potential drainfield site lay in the lower Coastal Plain physiographic province in an open farmed field. There were two mapping units of interest in the NRCS soil map, NoA, Norfolk soils, and GoA, Goldsboro soils; (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 of suitable soils categorized the soils. The yellow dots represent soils that were suitable to 18–19” and the purple dot was soils that were 13–17” to a seasonal high-water table (SHWT) both of which were the Lynchburg Soils. The black dots are soils <12 to the SHWT and were the Rains Soils. The recommended LTAR (long term acceptance rate) for the Lynchburg soils are 0.3 gallons per day per foot squared (GPD/ft²) for a mound system or 0.15 GPD/ft² for an advanced pre-treated to drip system.



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

Required Area

Mound Systems:

The minimum area needed for a 4-bedroom mound system would be 18,816 ft² (9,408 ft² primary plus repair) using a 0.3 GPD/ft² loading rate of the most hydraulically limiting layer within 24 inches of the ground surface. There are no reductions in trench lengths allowed with accepted status products. The mound (or otherwise known as an aerial fill system) would be a total of 24 inches from the ground surface (18 inches of sand plus 6 inches of approved group 2 or 3 soil cap).

Drip Systems:

The minimum area for a 4-bedroom drip system plus repair area would be 7,200 ft² (including a 20% safety factor) using a 0.15 GPD/ft² loading rate.

The drip system would require a maintenance contract with a certified subsurface operator. An advanced pre-treatment drip system would need to be designed by a professional engineer.

Usable Area

The usable soil area was near the rear of the open field near the property line with the adjacent lot (see figure 4 below). It was located on a broad gentle sideslope. It was 1.0 acres or 43,560 ft² in size. This area is 2.4 times the needed space for an above ground mound drainfield and repair area servicing a four-bedroom property. This area is 6 times the needed space for an above ground mound drainfield and repair area servicing a four-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 a Licensed Soil Scientist or Authorized Onsite Wastewater Evaluator. The specific trench product type and soil loading rate will be determined by the assessment of an authorized designer (usually a Professional Engineer). 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 2.4–6 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,

Erik D. Severson



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