

# Environmental and Soil Service, Inc

P.O. Box 82  
Pinetops, N.C 27864  
(252) 827-4348 Office  
(252) 531-3471 Cell  
E-mail: [esssoil@aol.com](mailto:esssoil@aol.com)



December 15, 2020

Directed Trust Company FBO Robert M Rogers Roth IRA  
Directed Trust Company FBO Joseph M Martin Roth IRA  
3033 N. Central Ave Suite 400  
Phoenix, AZ 85012

## **Subject: Preliminary evaluation for septic system suitability of Parcel 0577-03001 (+/- 6.6 Acres) located on County Line Rd., Vance County, NC.**

As requested, ESS has completed a preliminary evaluation of the referenced property to determine suitability of the soils for a septic system proposed to serve a typical four (4) bedroom residence. The property was evaluated using the North Carolina Laws and Rules for Sewage Treatment and Disposal Systems as a reference. Hand augured borings were used to analyze the soils.

### **General Site Information**

The site was located in northwestern Vance County approximately 240 feet from the Warren County line. The site was wooded with a dense pine cutover on the front (northeastern) corner of the property. There were various older deciduous trees on the remainder of the property.

Property lines were not clearly marked and no survey was available to ESS; therefore, Vance County GIS maps were used as a reference. GIS maps may not be an accurate depiction of actual property lines.

### **Soil Borings and Septic System Suitability tattered**

A series of ten (10) hand auger soil borings were conducted across the site to determine varying soil characteristics. Tables 1 gives a brief description of findings at each soil boring.

Table 1

Boring #	Depth to SWC (inches)	Soil Horization	LTAR (gpd/ft <sup>2</sup> )	Septic System Type
B1	+48	Sandy Loam 0 - 10"	0.4	Conventional In Ground
		Sandy Clay Loam 10 - 21",		
		Sandy Loam 21 - 40"		
		Silty Loam 48"		
B2	24	Sandy Loam 12"	0.3	Ultra-Shallow (6" cap) Conventional
		Sandy Clay Loam 12 - 22'		
		Sandy Clay 22 - 36"		
		Sandy Clay Loam Saprolite 48" With some quartz		
B3	15	Sandy Loam 0 - 10"	0.4	Fill (mound)
		Sandy Clay Loam 10 - 21"		
		Sandy Clay 21 - 28"		

B4	18	Sandy Loam 0 - 12" Sandy Clay Loam 12 - 30"	0.4	Fill (mound)
B5	+36	Sandy Loam 0 - 6"	0.3	Conventional In Ground
		Sandy Clay/Clay 6 - 30"		
		Sandy Clay Loam 30 - 36"		
B6	+38	Sandy Loam 0 - 11"	0.3	Conventional In Ground
		Clay Loam/Clay 11 - 29"		
		Sandy Clay Loam 29 - 38"		
B7	+45	Sandy Loam 0 - 12"	0.3	Conventional In Ground
		Clay Loam/Clay 12 - 31"		
		Sandy Clay Loam/Silty Clay Loam 31 - 42"		
		Sandy Loam 42 - 45"		
B8	+42	Sandy Loam 0 - 12"	0.3	Conventional In Ground
		Sandy Clay/Clay Loam 12 - 26"		
		Silty Clay Loam 26 - 36" With Some Saprolite		
		Sandy Loam/Silty Loam Saprolite 36 - 42"		
B9	36	Sandy Loam 0 - 19"	0.3	Conventional In Ground
		Sandy Clay Loam 19 - 36"		
B10 (Off Property)	37	Sandy Loam 0 - 10"	0.3	Would Need More Studies
		Sandy Clay 10 - 20"		
		Sandy Clay Loam 20-30" (50% Soil/50% Saprolite)		
		Sandy Loam Saprolite 30 - 48" (Some Quartz)		

SWC = Soil Wetness Condition, LTAR = Long Term Acceptance Rate (gallons/day/ft<sup>2</sup>), NA = Not Applicable

### **Proposed Septic System**

Based on our findings it appears the site will meet the criteria for the installation of an in ground conventional septic system. The recommended conventional LTAR for the primary septic system is 0.3 gallons/day/ft<sup>2</sup>. Given a four (4) bedroom residence and conventional drain lines, the primary system would require 534 linear feet of drain line. In today's market accepted innovative drain lines are being installed in lieu of conventional rock drain lines due to the ease of installation and the 25% reduction that is allowed in the size of the drain field. In this case, when utilizing accepted innovative drain lines, the primary septic system would require 400 linear foot of accepted drain lines. The proposed primary system has five (5) drain lines each being eighty (80) feet in length (Figure 1). The proposed repair area is proposed to be the same as the primary septic system.

Given the slope of the land, which in general is from northeast to southwest, as long as the residence is placed north of the proposed septic system, there should be no problem achieving gravity flow from the plumbing of the house to the septic system drain field.

### **General Comments**

The findings of this report are based on soil indicators and morphological features present at the time of the fieldwork. Some soil conditions, such as drainage, may vary from reported findings because of influences that may not show up in common indicators or morphological features.

Drain lines should be placed to follow the contour of the land. Relative elevations were not determined for the layout of the septic system drain lines. QL2 Lidar data was used to layout the drain fields; therefore, slight adjustments may be needed in the orientation of the drain lines.

Based on our findings it appears the area proposed for the primary septic system and repair area are the best areas available; however, the site may not be limited to the layout.

If a well is needed it is required, if possible, to be installed one-hundred (100) feet away any septic system or repair area. In no case can the well be placed closer than fifty (50) feet from a septic system or repair area.

Any disturbance of the soils in the form of filling or excavating can change the suitability class of the soils and in many cases render the site unusable. Any filling or excavating of areas planned for septic systems should be done only as a requirement of an improvement permit obtained from the local health department.

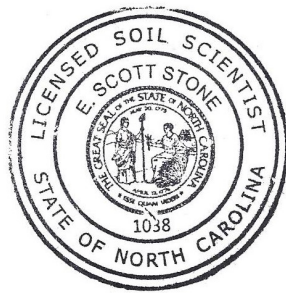
This report is preliminary in nature and is submitted for information and planning purposes only. The local health department issues permit for septic systems. The findings of this report must be reviewed by the local health department.

If you any questions or if we can be of further assistance please call 252-827-4348 or 252-531-3471.

Respectfully Submitted,



Scott Stone  
Licensed Soil Scientist



Attachment





**ESS**  
**ESS**

Environmental and Soil Service Inc  
P.O. Box 82  
Pinetops, NC 27864

**Parcel: 0577-03001 Vance County, NC**

Esri Community Maps Contributors, State of North Carolina DOT,  
BuildingFootprintUSA, Esri, HERE, Garmin, SafeGraph, INCREMENT P,  
METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, NC CGIA,  
GeoEye, Maxar, Microsoft

12/16/2020

Figure 1

