# RECONNAISSANCE SOIL & SITE EVALUATION

Patrick Baker Tract
Stoneridge Road
Stem, NC

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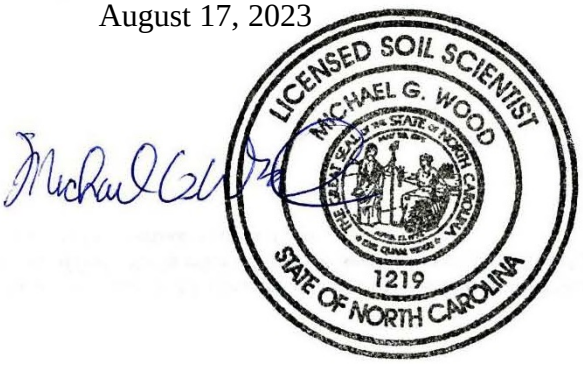



Michael G. Wood, LSS

## INTRODUCTION AND SITE DESCRIPTION

A Reconnaissance Soil & Site Evaluation was performed on an approximately 23.75-acre Patrick Baker Tract located on Stoneridge Road, Stem, NC (Granville County MAPN:089800282942). Wood Soil Consultants (WSC) was retained to evaluate the soil and site conditions and identify suitable areas for placement of an on-site subsurface wastewater system for single-family residence. The property was evaluated in accordance with the "Laws and Rules for Sewage Treatment and Disposal Systems", amended December 6, 2018.

The study area is wooded. There is a creek running through the tract. There are multiple drainage features on the tract marked in red as "Unsuitable Topography" on Figure 1.

## INVESTIGATION METHODOLOGY

The field survey was conducted on June 16, 2023, by Michael G. Wood, LSS and Ethan T. Wood. Soil borings were advanced with hand-augers and soil color determined using a Munsell Soil Color Chart. Observations of the landscape as well as soil properties (depths, texture, structure, soil wetness, restrictive horizons, etc.) were recorded. Soil borings were described per the USDA-NRCS, *Field Book for Describing and Sampling Soils, Version 3.0.* Soil borings and site features are noted in Figure 1.

## FINDINGS

Twenty-four (24) soil borings were advanced their placements located on Figure 1.

**Provisionally Suitable for Conventional Type Systems.** Borings Provisionally Suitable for Conventional Systems include Gravel, Accepted, Alternative, Shallow-Placed, and prefabricated permeable block panel systems. While the particulars and costs between the system types can vary considerably, these are generally the preferred system types. This soil appeared adequate to support a long-term acceptance rate (LTAR) of 0.20 to .35 GPD/sq-ft.

**Provisionally Suitable for Low-profile Chamber Systems.** Low-Profile Chamber systems are designed similarly to Conventional Type systems but are not allotted any reduction in drainfield size, thus will require more space than the typical Conventional Type systems. These soils require a minimum of 20" of suitable soil when factoring in slope corrections. This soil appeared adequate to support a LTAR of 0.20 GPD/sq-ft.

**Provisionally Suitable for Subsurface Drip Systems.** Subsurface Drip systems require a minimum of 13" of suitable soil. Soil with a restriction less than 17" will require the septic system to include a pretreatment unit that treats the wastewater to Treatment Standards II. Subsurface Drip systems are substantially more costly to install than Conventional Type and Low-Profile Chamber Systems. LTAR often need to be confirmed via in-situ hydraulic conductivity measurements, but these are expected to support an LTAR of 0.10 GPD/sq-ft.

**Unsuitable.** Borings were rated as Unsuitable due to a restrictive horizon occurring within 12 inches of the ground surface.

## DISCUSSION

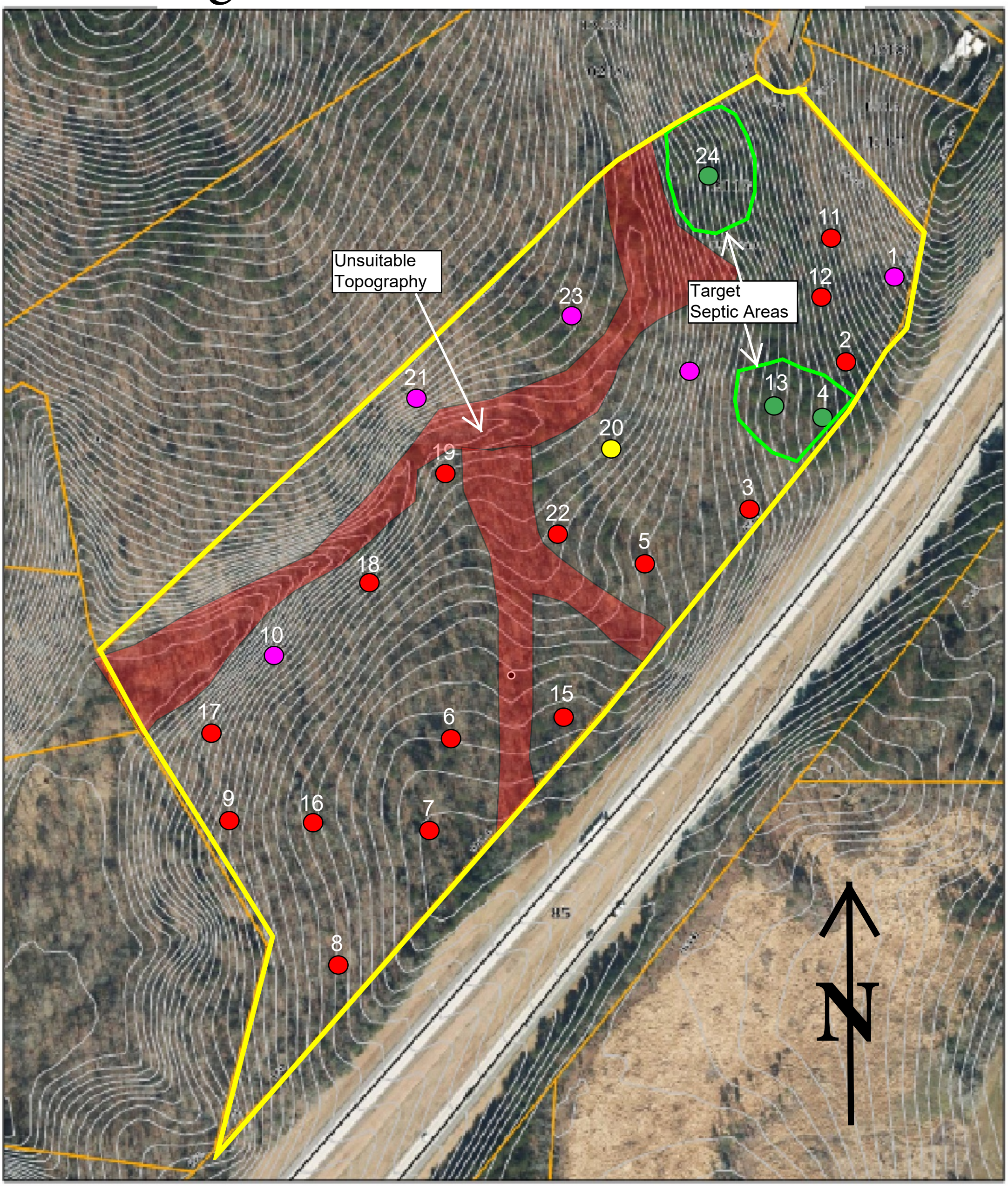
Two areas were identified that are Provisionally Suitable for Conventional Type and are noted as "Target Septic Areas" on Figure 1. This area is recommended to be targeted for drainfields for any future developments. A field delineation of the drainfield would be required to determine the number of bedrooms the area can support and system particulars (Conventional, Low-Profile, LTAR, trench depth, etc.)

## CONCLUSION

The findings presented herein represent WSC's professional opinion based on our Reconnaissance Soil and Site Evaluation and knowledge of the current laws and rules governing on-site wastewater systems in Granville County and North Carolina. The area noted Target Septic Area should be targeted for future development.

This Reconnaissance Soil and Site Evaluation is for general information purposes only. The data collected will not meet the standards of the Engineered Option Permit (EOP) process. Soils naturally change across a landscape and contain many inclusions. As such, attempts to quantify them are not always precise and exact. Due to this inherent variability of soils and the subjectivity when determining limiting factors, there is no guarantee that a regulating authority will agree with the findings of this report.

# Figure 1. Patrick Baker Tract




- Conventional Type
- Low-Profile Chamber
- Drip
- Unsuitable