

PRELIMINARY SOIL AND SITE EVALUATION

Union County Parcel: 09072008A01
2512 Old Camden Road
Monroe, NC 28110

Prepared For:

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INTRODUCTION & SITE DESCRIPTION

This Preliminary Soil and Site Evaluation was performed on a portion of a 4.9- acre parcel located at 2512 Old Camden Road, Monroe, North Carolina (Union County Parcel: 09072008A01).

Thompson Environmental Consulting, Inc. (TEC) was retained to determine whether the soils are suitable for onsite subsurface wastewater treatment and disposal. The property was evaluated in accordance with North Carolina statutes for waste disposal (“Laws and Rules for Sewage Treatment and Disposal Systems”, September 30, 2024).

INVESTIGATION METHODOLOGY & SITE PHYSICAL CHARACTERISTICS

Individual soil borings were evaluated, and soil color was determined with a Munsell Soil Color Chart. Observations of the landscape (slope, drainage patterns, etc.) as well as soil properties (depth, texture, structure, seasonal wetness, restrictive horizons, etc.) were recorded.

The project study area is currently undeveloped and is vegetated with a mixed deciduous forest.

FINDINGS

Field survey was conducted on November 18, 2025, during which eleven soil borings were advanced using a hand-held auger. Their locations are depicted in the attached Figure 1.

Suitable for Conventional-Type Systems: Soil borings classified as suitable for Conventional-Type Systems, including Gravel, Accepted, Alternative, Shallow-Placed Systems, and Prefabricated Permeable Block Panel Systems, are marked as green points within a green polygon in the attached Figure. While system types can vary significantly in terms of design and cost, these are generally preferred. The soil in this area appears capable of supporting a long-term acceptance rate (LTAR) of 0.3 GPD/sq-ft.

Suitable for Low-Profile Chamber Systems: Low-Profile Chamber Systems, which resemble Conventional-Type Systems, require more space as they do not receive reductions in drainfield size. These soils must provide a minimum of 20 inches of suitable soil when slope corrections are considered and are represented as orange points within purple polygons in the attached Figure. This soil appears adequate for an LTAR of 0.275 GPD/sq-ft.

Provisionally Suitable for Subsurface Drip Systems: Subsurface Drip Systems necessitate a minimum of 13 inches of suitable soil. For soil depths restricted to less than 17 inches, the septic system will require a pretreatment unit capable of achieving Treatment Standards II. These systems are significantly more expensive than Conventional-Type and Low-Profile Chamber Systems. LTARs often need confirmation through in-situ hydraulic conductivity measurements, but the expected LTAR is 0.10 GPD/sq-ft. These areas are represented as purple points within purple polygons in the attached Figure.

DISCUSSION

Soils within the green polygon shown in Figure 1 is classified as 'Suitable' for the installation of a Conventional-Type System. These soils are compatible with Gravel, Accepted, Low-Profile Chamber, Alternative, and Shallow Placed Systems drainfield products. For the initial installation of an Accepted System supporting a 4-bedroom residence, approximately 7,500 square feet of suitable soil must be allocated and preserved.

The soils outlined within the purple polygon in the attached figure are deemed 'Provisionally Suitable' for Subsurface Drip Dispersal drainfield products. While supplemental soil analysis is necessary to determine the actual LTAR for the site, TEC recommends an LTAR of 0.1 GPD/sq/ft based on prior evaluations of similar soils.

At this LTAR, approximately 9,600 square feet of suitable soil must be allocated and preserved for the installation and repair area of a Subsurface Drip Dispersal System for a 4-bedroom residence.

CONCLUSION

The findings presented herein represent TEC's professional opinion based on our Soil and Site Evaluation and knowledge of the current laws and rules governing on-site wastewater systems in North Carolina. 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.

