

ON-SITE SOIL AND SITE EVALUATION

**1st Pass Soils Evaluation
1075 Calvin Edney Road
PIN# 9757-22-7154
Madison County, North Carolina**

Prepared for:

Prepared by:
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INTRODUCTION

Alternative Septic Services conducted an onsite wastewater feasibility study / first pass soils evaluation on a 6.65 acre at 1075 Calvin Edney Road in Mars Hill (Madison County), North Carolina. The evaluation was performed to determine soil conditions and to see if drainfields are able to be accommodated with “non-engineered” onsite wastewater systems.

The soil/site evaluation was performed evaluating the soil with excavated pits in specific areas where a drainfield is likely to be proposed. The soils were described under moist soil conditions. In this evaluation, GPS (capable of sub-meter accuracy), Madison County (GIS) data, and aerial photography were used to determine locations of test locations, property lines, areas to evaluate, and other noteworthy features (please note that all locations are approximate). The property was evaluated in accordance with North Carolina statutes for waste disposal (“18E Regulations”, (January 2024)) as part of the planning process to evaluate areas of soil with potential for subsurface wastewater disposal.

In order to determine the potential of a site to accommodate onsite wastewater systems, a thorough analysis and understanding about the characteristics of the site, especially the soil, are necessary to determine how the system will perform. The soil functions as a biological, chemical and physical treatment medium for the wastewater, as well as a porous medium to disperse the wastewater in the receiving environment as it percolates to the groundwater. Therefore, a careful and thorough site evaluation with emphasis on soil characteristics is necessary to assess the capacity of the site to hydraulically accept wastewater.

PRIMARY INVESTIGATOR’S CREDENTIALS

Steven J. Melin: N.C. Licensed Soil Scientist (Certification # 1254; AOWE #10010E)
S.C. Licensed Soil Classifier (Certification #82)

Education: M.S. Natural Resource Administration - Soil Science Emphasis, North Carolina State University; Raleigh, NC

B.S. Watershed Management, Soil Science Minor, University of Wisconsin-Stevens Point, Stevens Point, WI

SITE FEATURES (+Noteworthy features which can restrict onsite wastewater)

The site was investigated during January (2024) by making observations of the landscape (slope, drainage patterns, past use, etc.) as well as soil properties (depth, texture, structure, seasonal wetness, restrictive horizons, etc.) with excavated pits to depths ≥ 48 inches when possible. Soil color was determined with a Munsell Soil Color Chart. These pits (15 total) were excavated in specific landscape positions on the parcel where a drainfield is likely. Each pit was GPS'ed in the

field. A description of each pit is attached and the attached maps display the locations of noteworthy features.

No wells were encountered at the site during the investigation. It is assumed that municipal water is not available to the home and wells will be required. Please note that wells require a 100' setback (supply lines also require setbacks). In certain circumstances (individual well and no saporlite), this setback may be reduced to 50' (which is consistent with this lot).

SOIL CHARACTERISTICS

Fifteen (15) pits / soils evaluations were logged on the property and their locations were recorded using a global positioning system (GPS). Pits were logged to depths >48" when possible. Soil properties including depth(s) of horizons, texture, structure, consistency, seasonal wetness, restrictive horizons, etc. were done at each test site in addition to making observations of the landscape (slope, drainage patterns, past use, etc. (when possible)). From these observations, potential areas for wastewater disposal were identified. Please note that a description of each soil profile is attached. (Appendix).

All of the pits west of Calvin Edney Road described during this investigation are consistent with "conventional" systems or 25% Reduction type systems (which are the most common system and cost effective systems in NC). There is some variability in depths and textures based on each test site, however on average, 75 linear feet of 25% Reduction material will be required per bedroom (or 225 linear feet for a 3-bedroom house (in addition to 100% repair)). Please note that additional pits or borings will be required for permitting in addition to marking of the house site, driveway and well locations.

The test pits east of Calvin Edney Road are consistent with drip irrigation type systems. This area will need to be cleared and reevaluated for permitting of a potential drip irrigation system. Additionally, it may be possible to pump the lot to an offsite area across the road.

CONCLUSIONS

Overall, the soils data gathered at the site is consistent with data approved by the local permitting authority (Madison County Health Department) for "non-engineered" onsite wastewater systems in the area west of Calvin Edney Road. It should be noted that not all areas were investigated, nor were septic drainfields delineated.

Please note that any potential property lines as well as homes will need to be marked in the field for permitting at the site. Please note that additional excavated pits (or auger borings) may also be required for final permitting.

Please note that the placement of structures/houses, wells and driveways must allow adequate area for septic drainfields. It is recommended that we work together during the planning and permitting

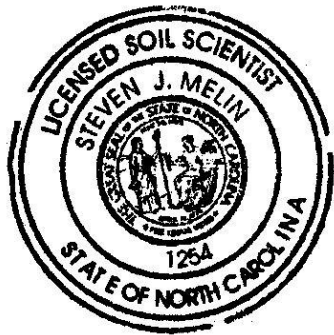
process to ensure that the lot configuration will allow adequate space for the use of onsite wastewater systems.

The findings presented herein represent Alternative Septic Service’s professional opinion based on our site and soils evaluation and knowledge of the current laws and regulations governing on-site wastewater systems in North Carolina (“18E Regulations” off the North Carolina Administrative Code). This report is provided for preliminary planning purposes. Individual Improvement / Authorization to Construct Permits must be issued by the Madison County Health Department.

Please note that there are alternatives to permitting directly with the Health Department which include the Engineered Option Permit (2016) or the Authorized Onsite Wastewater Evaluator (2022).

We appreciate the opportunity to provide you with our services. If you have any questions please do not hesitate to contact us.

Sincerely,



Steven J. Melin #1254

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