

HAL OWEN & ASSOCIATES, INC.

SOIL & ENVIRONMENTAL SCIENTISTS

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15 December 2023

Justin Tahilramani

Reference: Preliminary Soil and Wetland Investigation
Raynor McLamb Road; PIN 0545-76-6895

Dear Tahilramani,

A site investigation has been conducted for the above referenced property, located on the southern side of Raynor McLamb Road (SR 2042), Stewart's Creek Township, Harnett County, North Carolina. The purpose of this investigation was to determine the site's ability to support subsurface sewage waste disposal systems; and to determine the existence of areas that meet the criteria for wetlands and surface waters on the property.

All sewage disposal rating and determinations were made in accordance with "Laws and Rules for Sewage Treatment and Disposal Systems, 15A NCAC 18A .1900". This report represents my professional opinion as a Licensed Soil Scientist but does not guarantee or represent permit approval for this lot by the local Health Department. An improvement permit will need to be obtained from the Health Department that specifies the proposed home size and location, and the design and location of each septic system to be installed.

All wetland determinations were made in accordance with the 1987 US Army Corps of Engineers Wetland Delineation Manual and subsequent regional supplements. All stream determinations were made in accordance with the NC Division of Water Resources *Methodology for Identification of Intermittent and Perennial Streams and their Origins, Version 4.11*. This report represents my professional opinion but does not represent the exact wetland boundaries or concurrence by the US Army Corps of Engineers ([USACE](#)) or the NC Division of Water Resources ([NCDWR](#)).

PRELIMINARY SOIL INVESTIGATION

The soils were evaluated under moist soil conditions through the advancing of auger borings. This evaluation included observations of soil morphology (texture, structure, clay mineralogy, organics), topography, and landscape position. Soils in the investigated portions of the site were observed to range from suitable to unsuitable for subsurface sewage waste disposal (see attached map).

Soils rated as suitable are excellent for septic systems and are characterized as deep, well drained, loose and sandy textured. Lots can be designed that contain as little as 15,000 square feet in areas dominated by suitable soils and serviced by public or community water supplies. Developing lots with individual wells will necessitate an additional 5,000 square feet at minimum. You should expect that 40 to 50 feet of accepted status (25% reduction) drainline would be required per bedroom in the residence.

Clayey textured subsoil layers were observed throughout the provisionally suitable portion of the property. Provisionally suitable soils will function adequately as sewage waste disposal sites but will require additional drainline due to clayey textured subsoil characteristics. Inclusions of soils that rate as provisionally suitable for modified or alternative systems were observed within this area. These soils are limited in soil depth to the extent that systems that can be installed ultra shallow will likely be required. This requirement will necessitate the addition of approximately six inches of approved soil to completely cover the system. You should expect that 65 to 100 feet of accepted status (25% reduction) drainline would be required per bedroom in the residence.

The soils shown as provisionally suitable for low profile chamber systems are limited in soil depth to the extent that low profile chamber type drainlines installed ultra shallow will likely be required. Due to ultra shallow trench depths, the addition of approximately six inches of approved soil will be necessary to completely cover the system. You should expect that 115 to 160 feet of low profile chamber drainlines would be required for the initial system per bedroom in the home.

Densities should be adjusted to allow for additional drainline in areas dominated by provisionally suitable soil types. It is recommended that lots be designed that contain at least 20,000 square feet in areas dominated by provisionally suitable soils and serviced by public or community water supplies. Developing lots with individual wells will necessitate an additional 10,000 square feet at minimum.

The unsuitable soil area is so rated due to inadequate soil depth to excessive soil wetness conditions and/or unsuitable landscape position. The ability to utilize alternative systems or make modifications to this area to allow for septic systems is minimal. Some of this area will likely support building foundations, and homes could be sited in this area. Septic systems that utilize pumps to conventional drainlines are recommended if you wish to locate homes on unsuitable soils and attempt to maximize the usable portion of the property. However, it is necessary that at least 10,000 square feet of usable soil be incorporated into each lot in such a way that it will be completely available for waste disposal.

PRELIMINARY WETLANDS INVESTIGATION

The site investigation was accomplished by direct examination of the physical attributes of the site and soil auger borings taken at various points across the site. Wetland determinations were based on the three-parameter approach involving indicators of hydrophytic vegetation, hydric soils, and wetland hydrology. Under normal circumstances, positive indicators of each of these parameters must be present for an area to satisfy the criteria for wetlands.

Wetland areas were observed on the property and are approximately shown on the attached map.

Current environmental regulations require a Clean Water Act §404 permit from the US Army Corps of Engineers and a matching §401 water quality certification from the NC Division of Water Resources for any activity that impacts jurisdictional waters; which includes filling, draining, and mechanized land clearing of the area. It is encouraged that you use care and good judgment when working in or around wetland areas. Additional information about regulatory requirements and permitting can be provided at your request.

A more detailed site investigation can be provided in potential development areas (specifically driveway access) to identify and delineate these features.

I appreciate the opportunity to provide this service and trust that you will feel free to call on me again in the future. If you have any questions or need additional information, please contact me at your convenience.



Sincerely,

A handwritten signature in black ink that reads "Britt Wilson". The signature is written in a cursive, flowing style.

Britt Wilson
Licensed Soil Scientist

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SOIL MAP

