



# Piedmont ENVIRONMENTAL ASSOCIATES, PA

9/1/2017

Project # 893

Walton Family  
207 Kingsmill Drive  
Advance, NC 27006

Dear Waltons,

This report details the findings of a preliminary site soil evaluation performed on approximately 78 acres located at 240 Wyo Road in Davie County. The evaluation was conducted at the clients request in order to determine the site's suitability for the installation of sub-surface wastewater disposal systems to serve domestic strength wastewater. This report does not address systems receiving more than 3,000 gallons per day of flow.

The evaluation was conducted by James L. Beeson, Chris Murray, and Edwin Stott who are licensed soil scientists. The evaluation was conducted during dry soil conditions on August 30<sup>th</sup>, 2017 with the use of a hand-auger. Characteristics that affect the suitability of sub-surface systems include soil depth to expansive clay, seasonal high water table, rock, and unusable saprolite. Topography and slope also affect the suitability of an area for septic systems. The evaluation of these components was conducted on the site. The level of the evaluation was preliminary for the entire area.

Your desire is to subdivide the property into approximately 8 tracts and to create home sites for each of the tracts. We discussed dividing the property into two major areas one being the north side of the creek just south of the pet cemetery and the other the south side of the same creek. Your hope was to have four tracts on each side of the creek. We did not discuss whether the existing dwelling was one of those tracts or not.

The findings of the evaluation are conveyed as shaded areas on the accompanying map. The red stripped areas are areas that I feel confident in and would expect to get permits on these areas. The purple cross hatched areas if used will require some further work with the local health department in order to get those areas permitted and will be more difficult to permit. Please keep in mind that this was somewhat of a preliminary, some usable areas may have been omitted unintentionally.

The amount of usable area required for a dwelling is approximately 10,000 square feet per house. This area must meet all setbacks listed in Attachment I (please find enclosed). This does include the area for the initial installation and the required repair area which has to meet the State requirements as well, be left intact, and may be used to install another system should the primary system ever fail.

The areas on the map have been designated with a number and a square footage of area in order to illustrate the type of area that it is and the size of that area. The description of the area is as follows:

Area 1 consists of approximately 14,000 square feet of usable material. The soil here is boulder and may require a backhoe in order for the local health department to evaluate. This area could be used for no more than one dwelling

Area 2 has approximately 56,000 square feet of usable area consisting of creek sediment greater than 50 feet from the edge of the water. This area is large and can be broken into sub-fields to serve more than one dwelling. In fact it may be able to support four dwellings.

Area 3 has 31,000 square feet of conventional type soil and is large enough to support two dwellings with both system and repair. Please keep in mind that systems that serve one house must be located a minimum of 20 feet which will eliminate some of the usable area between the fields which serve different houses.

Area 4 contains approximately 53,000 square feet of area that although the soil contains expansive clay that the underlying material is usable. This layer is called "saprolite" and can be used. The system would be a conventional type system and would function just like any other system. The only caution is that this layer is highly variable and will need to be further evaluated with a backhoe in order to determine its variability. The health department is required to look at backhoe pits before they can issue a permit using the saprolite layer. This area is large enough to be subdivided if the health department agrees that it is usable.

Area 5 contains almost 20,000 square feet of usable soil. Much of this area is shallower than necessary for a conventional system but also coarse enough to allow the installation of a fill-conventional system which is more expensive than a regular conventional system but may be cheaper than pumping a great distance to a normal conventional system.

Area 6 has some potential to be used but needs to be more closely evaluated with a backhoe in order to look at the variability of the saprolite. Of all the area I am the least confident that this area would yield a permit.

Reflecting back on our original desire to place four lots north of the creek and four lots south of the creek the south side of the creek will be much easier than the north side. In order to proceed I would suggest that we propose the tract configurations with the help of the surveyor. We can then use off-site easements to allow tract that do not contain any usable areas to access usable soils on another tract. The surveyor will be familiar with local zoning regulations and be able to accurately design the proposed tracts. I would also suggest that we obtain permits on all proposed tracts. Some of these areas may be

difficult to permit. The local health department still has to evaluate the proposed areas and issue permits. If tracts are offered for sale the offer to purchase normally includes a requirement that the tract can be permitted. This process can take a month or more before the permit is issued and can also include some difficulties in obtaining a permit. For this reason you should not use this map to transfer any property or assume that the suggested area will be permitted by the county health department. I'm sure you will have further questions so feel free to call at any time.

Sincerely,



James L. Beeson

## Attachment I

### .1950 Location of Sanitary Sewage Systems

- (c) Every sanitary sewage treatment and disposal system shall be located at least the minimum horizontal distance from the following:
- |  |          |
|--|----------|
| (1) Any private water supply source including a well or spring   | 100 feet |
| (2) Any public water supply source   | 100 feet |
| (3) Streams classified as WS-I   | 100 feet |
| (4) Water classified as S.A.<br>from mean high water mark  | 100 feet |
| (5) Other coastal waters<br>from mean high water mark  | 50 feet  |
| (6) Any other stream, canal, marsh, or other surface waters  | 50 feet  |
| (7) Any Class I or Class II reservoir<br>from normal pool elevation  | 100 feet |
| (8) Any permanent storm water retention pond<br>from flood pool elevation  | 50 feet  |
| (9) Any other lake or pond<br>from normal pool elevation   | 50 feet  |
| (10) Any building foundation   | 5 feet   |
| (11) Any basement  | 15 feet  |
| (12) Any property line   | 10 feet  |
| (13) Top of slope of embankments or cuts of 2 feet or more<br>vertical height  | 15 feet  |
| (14) Any water line  | 10 feet  |
| (15) Drainage systems:   |          |
| (A) Interceptor drains, foundation drains and storm water diversions   |          |
| (i) upslope  | 10 feet  |
| (ii) sideslope   | 15 feet  |
| (iii) downslope  | 25 feet  |
| (B) Groundwater lowering ditched and devices   | 25 feet  |
| (16) any swimming pool   | 15 feet  |
| (17) any other nitrification field (except repair area)  | 20 feet  |
| (b) Ground absorption, sewage treatment and disposal systems may be located closer than 100 feet from a private well supply, except springs and uncased wells located downslope and used as a source of drinking water, repairs, space limitations and other site-planning considerations but shall be located the maximum feasible distance and, in no case, less than 50 feet. |          |
| (c) Nitrification fields and repair areas shall not be located under paved areas or areas subject to vehicular traffic. If effluent is to be conveyed under areas subject to vehicular traffic, ductile iron or its equivalent pipe shall be used. However, pipe specified in Rule .1955 (e) may be used if a minimum of 30 inches of compacted cover is provided over the pipe. |          |

**Note: Systems over 3000 GPD or an individual nitrification fields with a capacity of 1500 GPD or more have more restrictive setback requirements, see .1950 (a) (17) (d) for specifics.**