HAL OWEN & ASSOCIATES, INC.

SOIL & ENVIRONMENTAL SCIENTISTS

P.O. Box 400, 266 Old Coats Road
Lillington, NC 27546-0400
Phone (910) 893-8743 / Fax (910) 893-3594
E-mail: service@halowensoil.com

2 October 2009

Mr. Jay Lamm
389 Silas Moore Road
Coats, NC 27521

Reference: Existing System Investigation
Estate of William Russell Lamm
NC PIN 1601-82-5786

Dear Mr. Lamm,

A site investigation has been conducted for the above referenced property, located on the eastern side of Johnson Road (SR 1554), Grove Township, Harnett County, North Carolina. The purpose of the investigation was to determine the existence of a subsurface sewage waste disposal system and to make surface observations relative to its apparent operation. All soil ratings and determinations were made in accordance with "Laws and Rules for Sewage Treatment and Disposal Systems, 15A NCAC 18A .1900". Public water supply appears to be in use at the property.

It is my understanding that you wish to classify the existing home as a three bedroom home, and the existing septic system needs to be modified to support a daily flow of 360 gallons. The existing septic system appeared to be functioning properly on the day of the investigation and appears to be located within any setback requirements for this property (see attached map). Subsurface auger borings confirmed the location of the gravel nitrification lines beside the home, as indicated on the Operations Permit (copy attached). The septic tank does not need to be modified. The permit indicates that three 70-foot long lines were installed which corresponds to a long term application rate of 0.38 gallons per day per square foot. A soil investigation was conducted immediately below the lower drainlines and additional usable soil area was observed. Near the home the soils were sandier and appeared adequate to support a long term application rate of 0.5 gallons per day per square foot, but further from the home the soils were friable sandy clay loams and appeared adequate to a long term application rate of 0.4 gallons per day per square foot. **It appears that the addition of one seventy foot long drainline below the existing system would be adequate to provide the septic needs of a three bedroom home.** The use of an accepted status product (EZ Flow or chambers) but without the 25% reduction is recommendable. These products are easier to install in an existing system situation and cause much less impact to the remainder of the yard.

This is a good opportunity to have the septic tank pumped out and inspected. Practicing water conservation in the home, such as promptly repairing leaky fixtures and running washing machines and dishwashers only when full, will help to avoid overloading the septic system. Also, disposal of oils, fats, and grease into the septic system should be avoided because they could clog drainlines and conveyance pipes. A list of other useful suggestions is attached for your use.

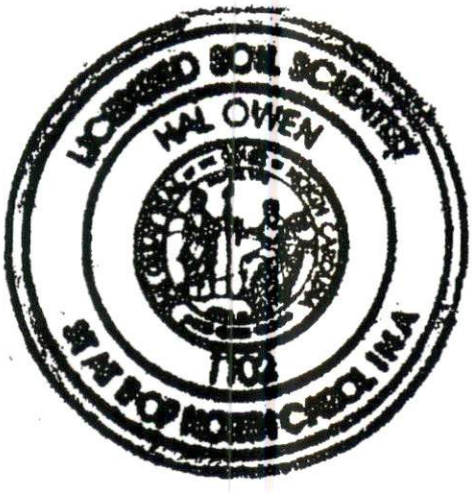
It also appears that an adequate amount of provisionally suitable soil exists on this lot to 100 % repair a three-bedroom system if it should fail. The area in the northwestern corner (above the driveway) appears adequate to support 100% repair, utilizing an effluent pump to a drainfield designed for serial distribution to 300 feet of gravel or accepted status drainlines installed with ditch bottoms 18 to 24 inches below surface. The soils in this northwestern corner appear adequate to support an application rate of 0.4 gallons per day per square foot.

The area in front of the home (see map) appears adequate to support about 200 feet of conventional drainline installed 12 to 18 inches below surface. The soils are not as good here so this represents only about half of one system. The front yard typically has little competition for other uses and can easily be designated to serve as the repair area for the septic system.

An additional area of usable soil exists in the northeastern portion of the lot but is encumbered by landscape position, complex slopes and possibly competition from other uses (storage buildings, work shop etc.).

However, some additional repair area is available south of the existing system that could be utilized without the need for a pump. The existing nitrification lines could be modified by extending them each 50 to 55 feet, but not within 10 feet of the property line. It may also be possible to install a second drainline below the existing drainfield, but this area may become too wet and has complex surface topography. Additional investigation and system layout is needed to better determine how many additional drainlines can be installed below the existing system.

I appreciate the opportunity to provide this service and hope to be allowed to assist you again in the future. If you have any questions or need additional information, please contact me at your convenience.



Sincerely,

Hal Owen
Licensed Soil Scientist

Soil and Existing System Investigation

for Jay Lamm (NC PIN 1601-82-5786)

~~Septe~~ 2 October 2009