

# HAL OWEN & ASSOCIATES, INC.

SOIL & ENVIRONMENTAL SCIENTISTS

P.O. Box 400, Lillington NC 27546-0400

Phone (910) 893-8743 / Fax (910) 893-3594

www.halowensoil.com

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29 August 2014

Mrs. Lucia Turlington  
Turlington Real Estate Group  
128 E Broad St.  
Dunn NC 28334

Reference: Existing System Investigation and System Design  
Land Grant S/D Lot 2

Dear Mrs. Turlington,

A site investigation was conducted on 27 August 2014 for the above referenced property, which is located on the eastern side of NC Hwy 27 in the Neill's Creek Township of Harnett County, North Carolina. The purpose of the investigation was to determine the ability of this lot to support a subsurface sewage waste disposal system and 100 % repair area for a four-bedroom home. Public water supply will be utilized for this lot. This report represents my professional opinion but does not guarantee or represent permit approval for any lot by the local Health Department.

This lot has an existing home with an existing septic system. It is our understanding that an addition was built on to the rear of the home which encroached into the existing drainfield and added another bedroom. An investigation of the existing system showed the top two drainlines no longer meet setback requirements from the foundation of the home. The lower three drainlines, each 80 feet long, appear to still be usable. It was determined that the best course of action would be to abandon the existing drainfield and construct a new one behind the detached garage. This action will free up the grassed area in the back yard, where the present drainfield is located, for the potential installation of a swimming pool in the future.

The replacement septic system is proposed as one 430-ft long line using accepted status drainlines (25% reduction) and serial distribution. A long term application rate of 0.3 gal/day/sqft is recommended. The existing 1000 gallon septic tank should be adequate to handle effluent from the home. A new supply line and distribution box will need to be set. The drainlines should be installed on contour with trench depths at 18 to 24 inches below surface. Adequate space is available in the front yard (2000 sqft) and at the back of the lot (5700 sqft) to 100% repair the septic system should it fail. The area from the existing water line to the property line was not included in this calculation, nor was the additional right of way area.

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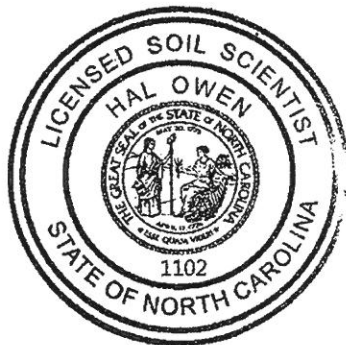
It is recommended that care be taken to preserve the life of your septic system. The septic tank, pump tank, and distribution boxes should be kept accessible for pumping and adjustment. Your septic system should be inspected periodically and the septic tank pumped out every 3 to 5 years by a professional contractor. 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.

A copy of this report and the attached septic system design information has been submitted to the Harnett County Health Department for review and the permitting process. 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



## **Day-to-Day Management**

### ***Don't use too much water.***

- ◆ The drainfield does not have unlimited capacity.
- ◆ Typical daily water use is 50 gallons per person.
- ◆ The soil drainfield usually has a maximum daily design capacity of 120 gallons per bedroom, even for short periods of time.
- ◆ Overloads can occur seasonally, daily, or on the weekend.
- ◆ Water conservation will extend the life of your system.
- ◆ Repair dripping faucets and toilets.

### ***Limit disposal to sewage.***

- ◆ Don't use your septic tank as a trash can for cigarette butts, tissues, sanitary napkins, cotton swabs, cat box litter, coffee grounds, or disposable diapers.
- ◆ Restrict the use of your garbage disposal. These add quite a lot of extra solids.
- ◆ Don't pour grease or cooking oil down the drain.
- ◆ Don't poison your system with harmful chemicals such as solvents, oils, paints, thinners, discarded medications, disinfectants, pesticides, poisons, and other substances.
- ◆ Save money. Commercial septic tank additives are usually not necessary.

### ***Protect the system from physical damage (site maintenance).***

- ◆ Keep the soil over the drainfield covered with vegetation to prevent soil erosion.
- ◆ Don't drive vehicles over the system.
- ◆ Avoid construction over the system and repair area.
- ◆ Maintain the natural shape of the land immediately downslope of the system, and protect this area from excavation (cutting and filling).

- ◆ Don't cover the tank or drainfield with asphalt or concrete.

### ***Dispose of all wastewater in an approved system.***

- ◆ Don't put in a separate pipe to carry wash waters to a side ditch or the woods. This is illegal.

## **Periodic Maintenance and Repair**

### ***Home and yard (site maintenance):***

- ◆ Protect and maintain the site of your septic tank and drainfield.
- ◆ Cut down and remove trees that like wet conditions. This includes willows, elms, sweetgums, and some maples.
- ◆ Landscape the yard to divert surface waters away from the tank and drainfield.
- ◆ Be sure that the water from the roof, gutters, and foundation drains does not flow over the system.
- ◆ If your system is at the base of a slope, then consider installing a french drain to divert underground waters.
- ◆ Maintain drainage ditches, subsurface tiles, and drainage outlets so that water can flow freely from them.

### ***Septic tank:***

- ◆ Install risers over the tank if it is buried 6 inches or deeper. They provide easy access for measuring and pumping solids as well as cleaning the effluent filter.
- ◆ Measure how quickly sludge and scum accumulate in the tank. Have your professional pumper record this information.
- ◆ Have solids pumped out of the tank as needed. Most septic tanks have two compartments; get both pumped.
- ◆ Cooperative Extension Service publication *AG-439-13, Septic Systems and Their Maintenance*, contains more information on pumping frequency.

- ◆ Don't wait until your drainfield fails to have your tank pumped. By then, the drainfield may be ruined. With septic systems, an ounce of prevention is worth a ton of cure!

### ***Regulations and precautions:***

- ◆ Hire a state-certified subsurface system operator for any system with a pump. One will be required by law for low pressure pipe (LPP) systems installed or repaired after July 1, 1992, any subsurface drip irrigation systems, aerobic treatment units (ATUs), peat biofilters, sand biofilters, textile biofilters, and other complex systems.
- ◆ A list of state-certified subsurface system operators can be obtained from the N.C. Water Pollution Control System Certification Commission at (919) 733-0026.
- ◆ Be sure the pump and electrical components continue working properly between scheduled maintenance visits.
- ◆ Sewage contains germs that can cause diseases. Never enter a septic tank. Toxic and explosive gases in the tank present a hazard. Old tanks may collapse. Electrical controls present a shock and spark hazard. Secure the septic tank lid so that children cannot open it.
- ◆ Don't attempt to repair a failing system yourself. Get a repair permit and hire an experienced contractor.

For more information about septic systems, contact your county Extension agent or local health department.

### **Prepared by**

**Michael T. Hoover**, Extension Soil Science Specialist,  
Department of Soil Science,  
North Carolina State University