GEORGIA DEPARTMENT OF PUBLIC HEALTH

Manual for On-Site Sewage Management Systems

SECTION K | FIELD INSPECTIONS

Environmental Health Section

Georgia Department of Public Health

SECTION K – FIELD INSPECTIONS

1) Preface

All on-site sewage management systems must be inspected before they are put into operation. This section gives details on what to look for and how to properly inspect the various parts of a system.

2) Request for Inspection

All of the following information must be provided to the County Environmental Health Office when requesting a field inspection:

A. Name and phone number of contractor/installer

B. Property owner name

C. Location of property

D. Installation permit number

E. Directions to property

F. Time system will be ready for inspection

It is very important that the contractor/installer has a copy of the installation permit on site. If a copy cannot be made available in a timely fashion, the inspection must be discontinued and rescheduled.

3) Inspection of Septic Tanks

All installed septic tanks must be inspected carefully to verify that they have been installed in accordance with the permit and the specifications required in the regulations and this Manual. The list below represents important points to check during an inspection:

A. The septic tank must be located as marked on the plan. If the tank has been installed at another location, the new location must be approved. The tank must not be installed where it would violate setback requirements.

B. A septic tank must not be installed where it could be flooded, unless it has been designed and installed to remain watertight.

C. The tank must remain visible for inspection prior to backfilling.

D. All septic tanks must be level, side to side and inlet end to outlet end. The inlet and outlet must be located in the right directions so that the effluent will flow to the treatment and disposal field.

E. Septic tank walls must not be cracked, have honeycombs or show other defects that may cause the tank to weaken or leak. Reinforcing steel must be covered with at least 1-inch of concrete to keep it from corroding and must not be visible.

F. The baffle wall must be located between two thirds and three-fourths of the tank length from the inlet end and must have a four-inch diameter opening at least the size of the inlet

to allow the effluent to flow to the outlet. The top of the baffle wall must leave a two-inch slot for gas passage. Waste concrete may be in this slot--simply break it out to open up the two-inch slot.

G. The sanitary tee must be undamaged and extend into the liquid one-fourth of its depth. The tank outlet must be two inches below the inlet.

H. All joints in the tank must be sealed and watertight. Joints must be sealed with a nominal one-inch diameter bead of mastic or other approved sealer along its joints.

I. A septic tank riser over each access opening is required if the top of the tank is more than 12 inches in the ground. The riser is required to extend to finished grade or to no deeper than 12 inches below finished grade. For easy access, pump tanks should have a riser over the pump access opening and the riser should extend to finished grade.

J. Tank risers must be large enough to allow easy access to the tank access openings and must have a strong lid.

K. Pipes must enter and exit the tank through the knockouts provided. The outlet pipe from the tank must be sealed to be sure that it will not leak.

L. Where not inspected by a building or plumbing inspector, the inlet pipe from the house must have a minimum slope of 1/8 inch per foot so the sewage will flow to the septic tank. This pipe must be sealed on the inside and outside of the tank to prevent groundwater from leaking into the septic tank or effluent from escaping into groundwater.

4) Inspection of Conveyance Piping

The conveyance piping must be inspected to be sure that there are no leaks and that the pipe (s) will not block the flow of the effluent to the distribution device or the treatment and disposal trenches. A separation of at least two feet of undisturbed or compacted soil is needed between the septic tank and the distribution device or trench. This separation reduces the problem of effluent leaking back around the pipe to the septic tank. Conveyance pipes must be solid, non-perforated NSF/ANSI schedule 40 PVC.

A. The pipes must be installed in trenches with bottoms of undisturbed or compacted soil so the soil will not settle and break the pipe.

B. All conveyance pipes must have an adequate slope to allow the sewage to flow by gravity to the distribution device or trench. The slope of the pipe can be determined by measuring the height of the pipe at the septic tank outlet and at the distribution device or trench inlet and the length of the pipe. The slope is the height divided by length.

C. The conveyance pipes must be installed to meet all required setback distances.

D. All the joints in the conveyance pipe, its connections to the septic tank and the distribution device or trench must be watertight.

5) Inspection of Distribution Devices

Distribution devices include distribution boxes, flow splitters and other flow diversion devices. All of these devices must be inspected for proper installation and so that the effluent will flow equally to all the trenches.

A. Be certain that the distribution box, flow splitter or other flow diversion device is installed at the proper location and as marked on the plans. Check that the location meets all setback distances.

B. All distribution devices must be installed on firm earthen foundation secured by concrete or concrete foundation to prevent the soil from settling. If the soil settles, the device can tilt so that the effluent is not evenly distributed and possibly leak from the device. A good test is to stand on the box and try to rock it. It must not rock or tilt.

C. Test all distribution devices, especially distribution boxes, to be sure that the outlets are at the same level. The testing must be done by pouring water into the distribution box in its installed location and watching for the water to flow out of the outlets at the same time and with the same flow from each outlet. Measuring with a builder's level or another instrument is not accurate for this purpose. This means the contractor must have water on site.

D. Check the connections of the conveyance pipes to the distribution device to make sure there are no leaks.

E. Inspect distribution boxes to be sure that they are watertight and sturdy.

F. One way to check for a leaking distribution box is to check the water level early in the inspection and then at the end of the inspection. If the water level has dropped below the outlet, there is a leak in the box.

G. Be sure that the distribution box inlet is two inches higher than the outlet so the effluent will flow out to the treatment and disposal trenches. Distribution boxes may be installed backwards, so it is important to check the orientation.

H. For gravity systems, make certain the distribution box outlets are at least six inches below the septic tank outlet so the full trench depth can be used without directing effluent back into the septic tank (four-inch tank to box and two- inch box to perforated distribution pipe).

6) Inspection of Trenches

Absorption trenches are where most of the bacterial treatment takes place in on-site sewage disposal. Proper installation of trenches is critical to the overall performance of the system.

A. The trenches must be installed on the contour so that the entire trench is at the same level.

B. The absorption field must be located in the proper place on the site and at the place marked on the plan. If the field has been relocated, check that all setback requirements have been met. It is very important that the relocated absorption field NOT be placed in an area where the soil is unsuitable.

C. The absorption field must not be placed under driveways, roads or buildings. The heavy compaction of the soil under a driveway, road or building could keep the effluent from flowing into the soil.

D. The number of trenches, the length of each trench and the total area of the trench bottom must be as shown on the permit.

E. The width and depth of the trenches must be as shown on the permit.

F. Trenches must be spaced properly, which means that the trenches must be spaced at least seven feet on center and there will be at least four feet of undisturbed soil between the edges of the trenches.

G. Trenches cannot be more than 36 inches wide.

H. Corrugated pipes used in the trenches must be stamped ASTM F667 approved, must be located in the center of the trench and be covered with aggregate. The pipe must be four inches corrugated polyethylene (PE) tubing with three ½ -inch to ¾-inch holes around the pipe every four inches along the pipe length. The holes must be oriented toward the bottom of the trench as much as possible.

I. The aggregate or gravel in the trench must be hard and resist crumbling when wet with the effluent. Only washed stones must be used so that the fines have been removed. Fines can plug the soil or fill in the spaces between the crushed stone.

J. There must be six inches of aggregate under the pipe, and the aggregate must surround the pipe on all sides, with 2 inches of aggregate covering the pipe. Acceptable sizes are one half (1/2) inch to two (2) inches in diameter. To avoid grinding the stone together and making more fines, aggregate must not be driven over with equipment. The stone is not to be mixed with the soil at the bottom of the stockpile. Placing a piece of plywood or sheet plastic under the stockpile can reduce the amount of soil that mixes in with the stone.

K. Use of other aggregate must comply with paragraphs I and J above as appropriate.

L. Trenches shall not be dug when soil is wet due to the potential for smearing and compaction. If the soil can be rolled into a wire, it is too wet.

7) Inspection of a Subsurface Emitter System

The following is a brief checklist of actions and technical areas that must be addressed during on-site inspection of a subsurface emitter system. This will require both initial and final on-site inspections. The final on-site inspection must be performed after all landscaping and dwelling construction are completed.

A. *Initial On-site Inspection Check List*

1. *System is installed according to permit and site plan*

a. Treatment units used

(1) Aerobic/aeration unit, or

(2) Other approved treatment unit

b. Dosing system

(1) Tank size as designed

(2) Dosing pump (designed for wastewater effluent)

(3) Record pump make and model number as specified

(4) Ready access provided for maintenance

(5) All separation distances are correct

2. *Make a field drawing/sketch of system layout*
    a. Emitter field properly sited
    b. Emitter lines have appropriate amount of footage NOTE: Use of a measuring wheel or tape measure required.
    c. Emitter trenches at proper depth
3. *System Operational Demonstration*
    a. Field Dosing by timing device
    b. Emitters designed for wastewater
    c. Emitters function properly
    d. Pressure relief valves present
    e. Check valves present
    f. Return lines properly routed to treatment unit
    g. Filter back flushes properly
    h. Filter readily accessible for maintenance
    i. Safety provisions are adequate
        (1) Tamper proof lids on risers, etc.
        (2) Electrical component connections inspected by appropriate authority.
            - All connector boxes sealed
            - All wiring routed through conduit pipe
            - Electric components connected to power source
    j. Air compressors function
    k. Air compressor alarms function
    l. Pumps function
    m. High water alarm functions
    n. Drainfield piping contains a zone splitter valve
    o. Name and phone number of maintenance point of contact posted beside visual alarm

B. *Final Onsite Inspection Checklist*
1. *Landscaping*
    a. Appropriate groundcover
    b. Surface water drainage appropriate
2. *Documentation*
    a. Owner provided copy of maintenance contract and warranty provisions

b. Owner provided copy of inspection documentation

8) Inspection of Wisconsin Mound Systems

A. See Section F.

B. See Section O – Appendix 3 and 4 for Inspecting and Troubleshooting Wisconsin Mounds.

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