

UNL Extension: Acreage Insights

Acreage eNews-August 2013

<http://acreage.unl.edu>

Maintaining A Septic System Drainfield

By [Sharon Skipton](#), UNL Extension Water Quality Educator, and [Jan Hygnstrom](#), UNL Extension Project Manager



Most acreage residents rely on their own private systems for wastewater treatment and disposal. For most, it will be a septic tank used in combination with a traditional drainfield.

Understanding Septic Drainfield Design

In a septic tank/drainfield system, wastewater flows from the household wastewater plumbing into an underground septic tank. There, waste components naturally separate, with heavier solids settling to the bottom forming sludge, and lighter solids floating to the top, forming scum. Bacteria begin to treat wastewater by partially decomposing the solids. The liquid (effluent) flows through the outlet to the subsurface drainfield, also called a soil absorption field, leach field, soil treatment area, or laterals. A system will have a header, drop box, or distribution box between the septic tank and the drainfield to distribute effluent evenly between the drainfield trenches.

The drainfield usually consists of a series of underground parallel trenches. For older drainfields, each trench has a distribution pipe embedded in gravel or rock. Most drainfields installed since the late 1990s have plastic chambers in the trench, and no gravel or rock.

The effluent flows through the distribution pipes or chambers where it moves through holes in the pipe or chambers down into the soil. The soil filters out remaining small solids and pathogens (disease-causing microorganisms). Also, bacteria and other microorganisms in the soil treat pathogens and other contaminants in the effluent. Water, carrying dissolved substances such as nitrate, slowly moves down to groundwater.

Drainfield Maintenance

Proper maintenance of a septic tank and drainfield is critical to keep the system functioning properly. This protects human health and the environment. In addition, it delays the need to repair or replace a system, thereby saving money.

While the drainfield does not require extensive maintenance, a few precautions will help ensure proper functioning and a long service life. The drainfield should not be inundated with excess water, as extra water will reduce the ability of wastewater to percolate through the soil as needed for proper treatment. The drainfield should not be compacted; compaction will prevent the drainfield from treating wastewater properly. The structural integrity of the drainfield must be maintained. Follow these tips to protect the drainfield.

Do not inundate with excess water:

- Divert surface water runoff from roofs, downspouts, and impervious areas like concrete driveways or patios away from the drainfield.
- Do not add large amounts of water to the drainfield by using automatic irrigation systems. Irrigate only as necessary to maintain the grass cover.

Do not compact the drainfield:

- Do not drive vehicles or agricultural equipment over the drainfield.
- Do not site dog kennels or other animal confinement units over the drainfield.
- Do not construct driveways, sidewalks, patios, or buildings over the septic tank or drainfield.
- Do not place additional soil over the drainfield other than to fill slight depressions. A slight mounding will ensure runoff of surface water.

Maintain the structural integrity of the drainfield:

- Keep rodents and other burrowing animals out of the drainfield area.
- Take care when planting trees or other deep-rooted plants. Determine the distance from the trunk to the dripline (outermost edges of branch tips of mature plant). Plant the tree or shrub at least twice that distance from the drainfield. Do not plant trees with invasive root systems, such as cottonwoods or silver maples, as they may clog or damage pipes.
- Establish and maintain grass over the drainfield. Do not plant vegetables or other annuals that require digging in the soil due to potential contact with pathogens. In addition, the soil will be bare at times, reducing evapotranspiration of water to the air.
- Mow grass frequently to encourage growth.
- Reserve a replacement drainfield area and manage it the same as the present drainfield.