



December 22, 2016

Happy Holidays!

All of us here at Manitoba Onsite Wastewater Management Association wish you and your family a joyful holiday season and all the best in the New Year.

Engineer Offers Tips to Prevent Frozen Septic Systems

Little snow cover, dry soil conditions and very cold temperatures can lead to freezing problems in septic systems, but an agricultural engineer at North Dakota State University says problems can be prevented by taking some precautions now.

"Last winter many people had problems with frozen septic systems. In addition, many shallow water and sewer pipes also experienced freezing problems," says Tom Scherer of the NDSU Extension Service. "The lack of snow cover, dry soil conditions and very cold air temperatures over an extended period of time caused these problems. This winter we could see similar weather conditions."

Fresh snow is an excellent insulator, Scherer notes. "Ten inches of fresh fluffy snow containing about 7 percent water is approximately equal to a six-inch-layer of fiberglass insulation with an R-value of R-18. Of course, the insulating capacity of snow will decrease as it becomes compacted but any accumulation over 12 inches will provide significant frost protection."

However, problems can occur when there is very little snow to cover bare soil or mown areas. Under those conditions, frost will penetrate deep into the ground.

"Frozen septic system problems can be avoided by making some preparations before the cold weather and snow arrive," Scherer says.

A typical septic system has four main parts where freezing problems can occur:

- The pipe from the house to the septic tank.
- The septic tank and for some systems, a pump lift station.
- The pipe from the septic tank to the soil treatment system.
- The soil treatment system.

"A common problem area is the pipe from the house to the septic system where it exits the basement wall. Often the wind keeps snow from accumulating right next to the house on the north and west sides of buildings, allowing frost to penetrate deeper in that area," Scherer says. "Low flow from dripping faucets, high efficiency furnaces and leaking toilets will slowly freeze where the pipe leaves the basement wall until it blocks the pipe."

If you have experienced this problem, first fix any leaky fixtures in the house. Next, place some type of mulch (hay, straw, bags of leaves, etc) at least a foot thick and at least 5 feet wide over the exit point, shovel snow over the area or place a snow fence in the area to trap snow.

Scherer notes that water holds a great deal of heat and with daily use septic tanks rarely freeze, even in the coldest weather. However, when the house is vacant for a week or more, water does not enter the tank to keep it warm and it may freeze. "If you have a septic system that is used infrequently during the winter, protect the system from freezing by placing a layer of mulch at least a foot deep over the tank and extend it at least 5 feet past the edges of the tank. Using a snow fence to trap snow over the tank will also help," he says.



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The pipe from the septic tank to the soil treatment area is subject to the same problems as the pipe from the house to the septic tank. If problems have occurred in the past, fix leaky fixtures and place mulch above the pipe to prevent them from occurring again.

Improper slope and/or slumping of the pipe due to soil settling or vehicle traffic may also cause problems. Often, the pipe slumps right next to the septic tank due to soil settling around the tank after construction.

The soil treatment system (often called the drainfield) is subject to freezing if the area above it is always wet and soggy, Scherer says. This condition indicates that the effluent is not infiltrating properly and there may be other problems with the drainfield. If your drainfield is soggy or wet, now is the time to bring in a septic system installer for a professional examination. "The solution may be simple and inexpensive or it could be complicated and require extensive renovation of the drainfield," he says.

A new drainfield without a grass cover is subject to freezing and should be mulched. It is especially important to mulch around exposed inspection pipes, risers and the manhole. Distribution boxes are also subject to freezing and should be mulched.

The drainfield should never be used as a traffic area for people, vehicles or animals, Scherer says. During winter months, place a snow fence or other suitable barrier around the drainfield to discourage any traffic on the area and help maintain a thicker layer of snow insulation.

"A frozen septic system can be a real headache in the middle of the winter," he says. "With a little effort now, many potential freezing problems can be eliminated. Take the time to examine your system. This winter, don't drive any vehicles such as ATV's, snowmobiles or automobiles over any part of the septic system. Compacted snow will not insulate nearly as well as undisturbed snow. If we do happen to get a good layer of snow, don't get carried away while plowing and remove the snow cover from any part of the septic system."

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Upcoming Industry Events

[2017 MWWA ANNUAL CONFERENCE & TRADE SHOW](#)

January 29th - February 1st 2017

Portage la Prairie, MB

[WWETT Expo Education Day](#)

Water & Wastewater Equipment, Treatment & Transport Show

Feb. 22 - 25, 2017

Indiana Convention Center - Indianapolis, Indiana