WINTERIZING YOUR UNDERGROUND SPRINKLER SYSTEM

It's that time of the year to think about winterizing your irrigation system to avoid damage caused by freezing. By taking the necessary steps to protect your system now, you will avoid costly springtime repairs.

Blowing out your irrigation system with an air compressor has proven to be the most popular and sure way of draining irrigation systems in the Midwest. We strongly recommend this method.

Drainage Procedure

The following sequence for drainage should be followed in order, and tailored to your particular installation:

1. Several days or a week before actual draining:
   A. Locate irrigation drawing.
   B. Turn off water supply.
   C. Open drains that flow directly into tile lines, creeks or ponds.
   D. Insert sprinklers at the high and low points of the lines to replace the water as the low heads drain.
2. Connect suitably sized air compressor near the source of water. Note: A piping system of 3'' and less can be blown quickly with one 125 cfm compressor. Piping systems 4'' - 8'' can be blown faster with less chance for error with two 125 cfm compressors.
3. Beginning at the water source, open each sprinkler outlet until you get air and no water, then close, on one branch of the main line and follow it to the dead end. Do the same on each branch of the main line until you have air and no water coming from each outlet. Be sure to allow compressor to build up pressure so the water will be moved with a large volume of air.
4. Repeat step 3 to check drainage.
5. Starting again at the water source and working toward the end of each lateral, crack the drain valves slightly to be sure air and no water escapes. Close the drain, wait a minute, and repeat. Water may have collected at the low points. Note: Drains and standing surface water usually occur at low points in the terrain. Closed drains will prevent the surface water from entering the pipe line through the drain valve (along with stones from the drainage sump), and eliminate the drain closing chore during spring turn-on.

Pumphouse Drainage

The basic piping system is now drained and special attention is needed to properly drain the pump-house. Ome small slip at this state of drainage could be very expensive.

6. Pumphouse drainage:
   A. Starting at the discharge line in the pumphouse wall, trace the flow of water in the piping through gate valves and check valves, and open necessary drains.
   B. Drain pump volutes by removing the bottom plug or opening drainage cock.
   C. Remove or drain suction drop pipe.
   D. Remove water from pressure reducing valve covers by blowing out or loosening cover bolts.
   E. Turn pump motors off and protect windings against possible rodent nesting.
   F. Drain water from pressure gauges, switches, tank sight glasses, tank air chargers, and other special items subject to freeze in pumphouse.
7. Program automatic valves to operate once a day for 5 minutes to prevent the solenoid plunger from sticking and reduce the moisture in the solenoid coil and automatic controller contacts.

Before going out and renting an air compressor and blowing your system, take several hours with your blueprint and the above procedure. Write down in sequence the steps you plan to take when you start actual drainage. The steps can be listed by thinking of yourself as entering the pipeline at the source of water and your job is to push the water out on top of the ground as you move through the pipe. What routes will you have to follow to push all of the water out the dead end of every line? The same route you took entering the pipes at the source to get to the dead ends must be followed by the wall of air you will put into the system when blowing out.

Frost damage repairs have got to rate near the top of the bad job list. In addition they occur at a critical time of year from a manpower standpoint, and can cause several weeks of anguish if the dirt is not properly flushed after the repair is made. Now is the time to think about any necessary pump and sprinkler repair required for next year's operation. Get the necessary part on order and make the repairs conveniently in the winter rather than wait for the spring rush.

Take the time to properly drain your irrigation this fall.

Century/Rain-Aid

HOW TO MEASURE THE WATER CONTENT OF RAIN AND SNOW

Water from rain and snow plays an important part in recharging our ground water supplies. The following was prepared by the U.S. Geological Survey, Dept. of the Interior, to answer the most frequently asked questions about water equivalent of both rain and snow.

Rain: One inch of rain over one acre (43,560 square feet) amounts to 27,154 gallons of water. What happens to this water depends on several factors, amongst them being rate of rainfall, topography, soil condition, humidity, vegetation density, extent of urbanization, etc. Of the total amount of water USGS estimates that 25% would run off immediately, about 15% would evaporate, about 40% would be taken up by surface soils and the other 20% would finally filter into the aquifers. These figures can of course vary greatly, for example the direct runoff would be excessive in a highly urbanized area because of the density of pavements, roads and other impervious areas.

Snow: One inch of snow fatling evenly on one acre of ground is equivalent to about 2,700 gallons of water say USGA hydrologists. This figure however is based on rule of thumb that 10 inches of snow is equal to one inch of water and this figure can vary greatly depending upon whether it is heavy wet snow or powdery snow. Wet snow has a very high water content and four or five inches of this type of snow may contain one inch of water. The dry powdery snow may require 15 or more inches to equal one inch of water. Thus one inch of very wet snow over one acre might amount to more than 5,300 gallons of water while one inch of powdery snow might only yield 1,300 gallons of water. Not all snow is converted to liquid either for some of it ''sublimates'' which is going from a solid directly into a vapor, thus skipping the liquid state.

Measuring snow: The do-it-yourselfer can measure the water content of snow. Collect a sample in a straight sided container having one end open, don't spoon or pack the sample into the container, rather press the container into the snow filling it to its full length. After the snow is melted measure the depth of the liquid and compare this to the depth of the snow originally in the container. By measuring the total snow fall and applying the ratio of water content the total water content of the snowfall in a limited area is estimated.

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