

August 11, 1994

GMP # 57

MEMORANDUM

TO: District Directors
Environmental Health Managers
Environmental Health Supervisors
Environmental Health Specialists

FROM: Gary L. Hagy, Assistant Director
Division of Onsite Sewage and Water Services

SUBJECT: Water Softener Regeneration Discharge into Drainfields

The effect of water softener regeneration brine on septic tank drainfield systems has been the subject of much debate. The concerns expressed involved the effect of the brine on the bacteria in the septic tank, the effect of the brine on the hydraulic conductivity of the soils, and the effect of the hydraulic loading on the system.

Research conducted at the University of Wisconsin-Madison by the Small Scale Waste Management Project, College of Agriculture and Life Sciences, University of Wisconsin-Madison and the Geological and Natural History Survey, University of Wisconsin-Extension, for the Water Quality Association indicates that the discharge of water softener brine into septic systems does not have an adverse effect on the operation of a septic system (E. J. Tyler, date unknown). The conclusions of the research indicated that the brine had no adverse effect on the bacteria in the tank nor did it adversely affect the soil's hydraulic conductivity. In fact, in some soils, the brine might enhance the soil's hydraulic conductivity. Also, the slow discharge of approximately 50 gallons per regeneration of brine into septic system is not of sufficient volume to cause any deleterious hydraulic loading problems. Moreover, most modern units regenerate during the early morning hours when water use is usually at its lowest.

According to Raymond B. Reneau, Jr., Ph.D., of Virginia Polytechnic Institute and State University, similar studies conducted by them yielded similar results (Ray Reneau, personal conversation 1994). The only concern was hydraulic overloading.

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Therefore, it is the Department's policy that water softener regeneration waste should not adversely affect the operation of septic tank drainfield systems if they are operated within the following criteria:

1. The regeneration cycle discharges 60 gallons of brine or less to the septic system per cycle.
2. No more than 180 gallons of brine shall be discharged to the septic system per week.

Any proposal for the use of a water softener within the limits of the above criteria does not require alteration of the design criteria for onsite sewage systems. Proposals for use of water softeners outside of these limits require increasing the design of the sewage disposal system to accommodate the additional hydraulic loading.

Attachment

pc: Patrick Theisen
Dan McNew
DOSWS Staff

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ONSITE - POLICY - WATER SOFTENERS