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GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENT
LANSING



TO: Local Health Departments
Attn: Environmental Health Directors
Field Sanitarians

FROM: Joseph Crigier
Well Construction Unit
Drinking Water and Environmental Health Section
Environmental Resource Management Division

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SUBJECT: Chemical Injection Systems on Irrigation Wells

It has come to the attention of the Michigan Department of Natural Resources and Environment (DNRE) that some lawn irrigation companies are installing chemical injection systems next to irrigation wells. Usually these systems consist of a large (50 gallons or greater) buried chemical storage tank, a pump, and piping along with an injector plumbed into the main water line. The chemical pump is energized when the water pump turns on and the chemical is pumped directly into the water line from the well. The chemicals used in these systems are typically fertilizer or rust inhibitors.

These irrigation wells are regulated under Part 127, Water Supply and Sewer Systems, of the Public Health Code, 1978 PA 368, as amended, being §333.12701 *et seq.* of the Michigan Compiled Laws, and the administrative rules (Code). As such, the wells are subject to the provisions of the Code which requires that the wells be located where they are not subject to contamination. R 325.1622 of the Code states the following:

"(1) The following minimum horizontal distances shall be maintained when locating a well: (c) One hundred and fifty feet from a preparation or storage area of fertilizers, agricultural chemicals or other chemical that might contaminate the soil or ground water."

"(4) A well owner shall be responsible for maintaining the isolation distances that are specified in the provisions of provisions of R 325.1622 and R 325.1624 for the property that is owned by the well owner."

During the inspection of these, one local health department (LHD) noted that most chemical storage tanks are located well within the 150 feet isolation distance. One was found to have only 8 feet of isolation. In these instances, the chemical storage tanks were installed after the well was installed, the property owner was notified by the LHD that tanks were too close and had to be moved for the irrigation well to be approved for use.

Since these wells are regulated under Part 127, LHDs should require construction permits to install the well and conduct inspections of the completed well. It is recommended that when a well construction permit application is submitted for an irrigation well, the applicant should be advised that if a chemical injection system is to be installed that the storage tank must be properly located. In some instances a deviation to the 150 feet isolation may be issued. The deviation should be based upon the location and depth of the well, the penetration of a protective clay layer, groundwater flow direction, and other factors. The deviation should not be issued for an isolation distance of less than 50 feet.

Remember, all irrigation wells with at-grade sprinkler heads and/or chemical injection need to have a properly installed backflow protection device. Pop-up and at-grade sprinkler heads are considered submerged inlets that need the installation of at least a pressure vacuum breaker to protect the well. If chemical injection is added, then a reduced pressure principle device is required.