

LIST OF ALTERNATIVE CHEMIGATION SAFETY EQUIPMENT

PR Notice 87-1, the Label Improvement Program for Chemigation, issued March 11, 1987 requires that the labeling of agricultural pesticides intended for application through irrigation systems must include the use of certain types of safety devices to protect ground water from pesticide contamination. As a result of comments and new information received subsequent to issuance, a list of alternative devices to those included in PR Notice 87-1 has been considered and approved for use. In some cases these alternative devices may be less expensive, more reliable, or more available than some of those devices originally required. Be advised that all of the devices originally included in PR Notice 87-1 are still acceptable and that the PR Notice 87-1 is, in its entirety, still in effect. Devices required in PR Notice 87-1 which have no listed alternatives are still required components of all chemigation systems. The original devices as required in PR Notice 87-1 and their corresponding alternatives are listed below:

Original Device

Functional normally closed, solenoid-operated valve located on the intake side of the injection pump.

Alternative Device 1

Functional spring-loaded check valve with a minimum of 10 psi cracking pressure. The valve must prevent irrigation water under operating pressure from entering the pesticide injection line and must prevent leakage from the pesticide supply tank on system shutdown. This valve must be constructed of pesticidally resistant materials. [Note: This single device can substitute for both the solenoid-operated valve and the functional, automatic, quick closing check valve in the pesticide injection line.]

Alternative Device 2

Functional normally closed hydraulically operated check valve. The control line must be connected to the main water line such that the valve opens only when the main water line is adequately pressurized. This valve must prevent leakage from the pesticide supply tank on system shutdown. The valve must be constructed of pesticidally resistant materials.

Alternative Device 3

Functional vacuum relief valve located in the pesticide injection line between the positive displacement pesticide injection pump and the check valve. This alternative is appropriate for only those chemigation systems using a positive displacement pesticide injection pump and is not for use with venturi injection systems. This valve must be elevated at least 12 inches above the highest fluid level in the pesticide supply tank and must be the highest point in the injection line. The valve must open at 6 inches water vacuum or less and must be spring loaded or otherwise

constructed such that it does not leak on closing. It must prevent leakage from the pesticide supply tank on system shutdown. The valve must be constructed of pesticidally resistant materials.

Original Device

Functional main water line check valve and main water line low pressure drain.

Alternative Device 1

Gooseneck pipe loop located in the main water line immediately downstream of the irrigation water pump. The bottom side of the pipe at the loop apex must be at least 24 inches above the highest sprinkler or other type of water emitting device. The loop must contain either a vacuum relief or combination air and vacuum relief valve at the apex of the pipe loop. The pesticide injection port must be located downstream of the apex of the pipe loop and at least 6 inches below the bottom side of the pipe at the loop apex.

Alternative Device 2 – Pumping Over the Hill

The pipe laid in the crest of the hill is downstream of the irrigation water pump. At the crest of the hill, the pipe must contain either a vacuum relief valve or combination air and vacuum relief valve. The bottom of the pipe in the crest of the hill must be at least 24 inches above the highest sprinkler or other type of emitting device, and the chemical injection port shall be located downstream of the crest of the hill and at least six (6) inches below the bottom side of the pipe at the crest of the hill.

Alternative Device 3 – Pumping Down the Hill

The field is downstream of the irrigation water source. A vacuum relief valve or combination air and vacuum relief valve is upstream of the injection of the chemical. The inlet pipe must be at least 24 inches above the highest sprinkler or other type of emitting device, and the chemical injection port shall be located downstream of the inlet pipe and at least six (6) inches below the bottom side of the inlet pipe.

Alternative Device 4 – Artesian Well

A free flowing artesian well with a shut off pressure greater than zero. A pressure gage is placed at the well head.

Alternative Device 5 – Injection at the Pivot Point

The volume of the mainline is greater than the volume of the lateral and riser of the pivot. The mainline is sloped down hill with the base of the pivot riser is at least 24 inches below the bottom of the inlet pipe. Injection is done at the center pivot riser. A vacuum relief or combination air and vacuum relief valve is upstream of the injection of the chemical.

Original Device

Positive displacement pesticide injection pump.

Alternative Device 1

Venturi systems including those inserted directly into the main water line, those installed in a bypass system, and those bypass systems boosted with an auxiliary water pump. Booster or auxiliary water pumps must be connected with the system interlock such that they are automatically shut off when the main line irrigation pump stops, or in cases where there is no main line irrigation pump, when the water pressure decreases to the point where pesticide distribution is adversely affected. Venturies must be constructed of pesticidally resistant materials. The line from the pesticide supply tank to the venturi must contain a functional, automatic, quick closing check valve to prevent the flow of liquid back toward the pesticide supply tank. This valve must be located immediately adjacent to the venturi pesticide inlet. This same supply line must also contain either a functional normally closed solenoid-operated valve connected to the system interlock or a functional normally closed hydraulically operated valve which opens only when the main water line is adequately pressurized. In bypass systems as an option to placing both valves in the line from the pesticide supply tank, the check valve may be installed in the bypass immediately upstream of the venturi water inlet and either the normally closed solenoid or hydraulically operated valve may be installed immediately downstream of the venturi water outlet.

Original Device

Vacuum relief valve.

Alternative Device 1

Combination air and vacuum relief valve.