



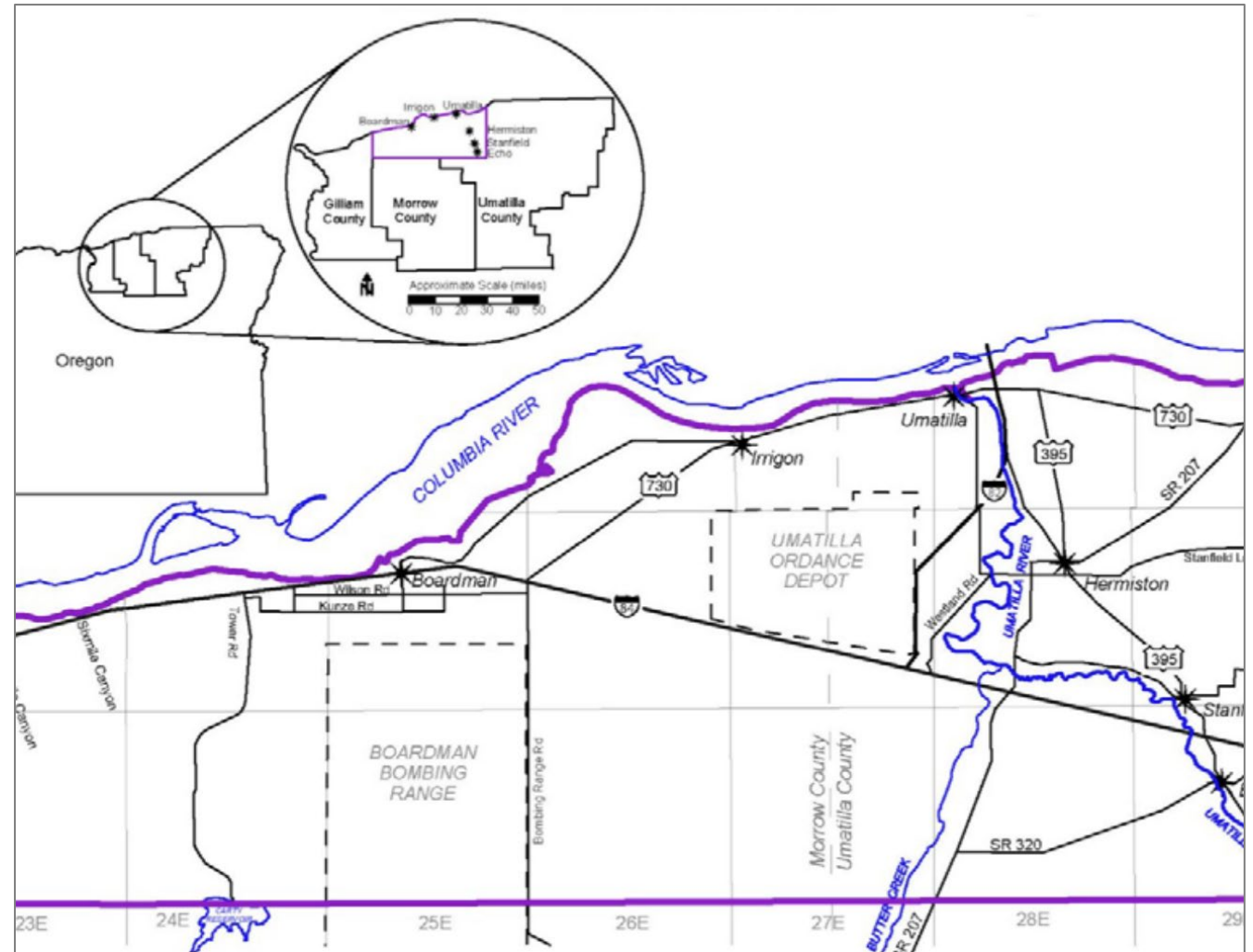
Backflow Prevention

Wells used for irrigation in combination with the use of fertilizers or chemicals are required to have a functional backflow device installed.

Why are we here?

- Groundwater contamination is a serious concern for community health
- The Governor has directed state agencies to focus and develop a plan for nitrate reduction in LUBGWMA
- Backflow devices on chemigation systems are required to help prevent point source contamination
- We want to help you navigate the rule requirements for back-siphon prevention devices

LUBGWMA: Lower Umatilla Groundwater Management Area



Chemigation and Fertigation



CHEMIGATION

Any process whereby chemicals are added to irrigation water applied to land, crops or plants through an irrigation system



FERTIGATION

The injection of fertilizers, used for soil amendments, water amendments and other water - soluble products into an irrigation system

Backflow

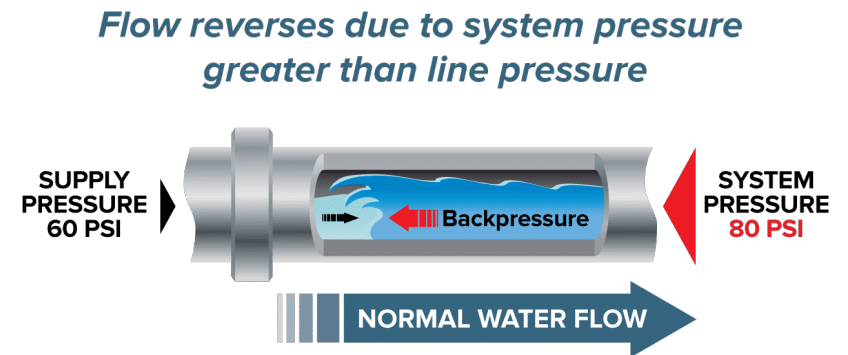
Back-Siphonage: a drop in distribution system pressure below atmospheric pressure (partial vacuum), Negative Pressure

Possible Causes: interruptions to water supply, pump failure, power outages, preventer malfunctions etc.



Backpressure: an elevation of pressure downstream of the distribution system: Positive Pressure

Possible Causes: Booster Pumps, interconnection with higher pressure systems, elevated piping etc.



Backflow of any kind threatens the health and safety of the community

Law and Rule

Oregon Administrative Rule 690-215-0017

Back-siphon prevention devices shall be installed on any irrigation system connected to a groundwater source when chemicals or fertilizers are applied through the system.



Oregon Revised Statutes 537.780

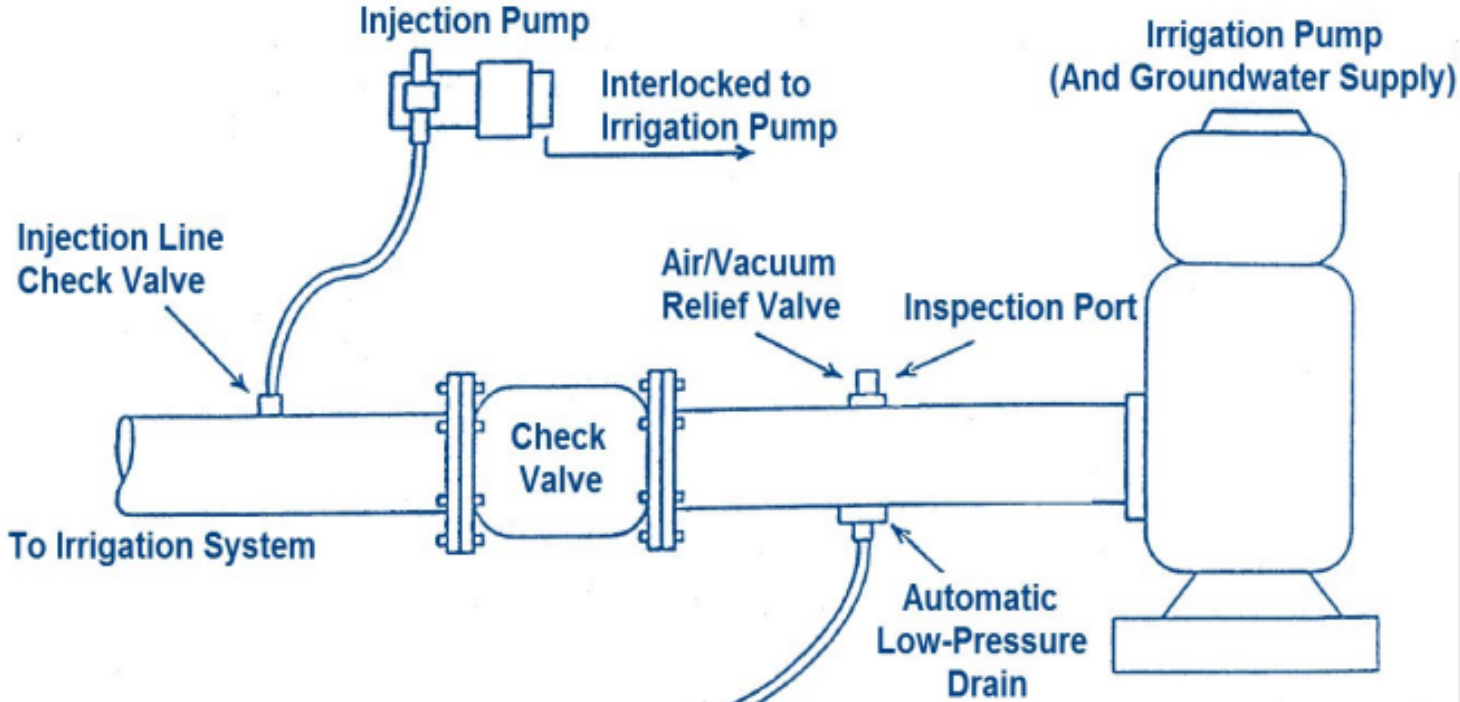
General standards for enforcement and inspection of back siphon prevention devices



- Rules modeled after the Federal Insecticide, Fungicide, Rodenticide Act (FIFRA)
- Backflow prevention equipment has been required in Oregon since the mid-1990s

Requirements for Chemigation and Fertigation Systems Connected to Wells

For Irrigation systems with mainline 4-inch diameter and greater



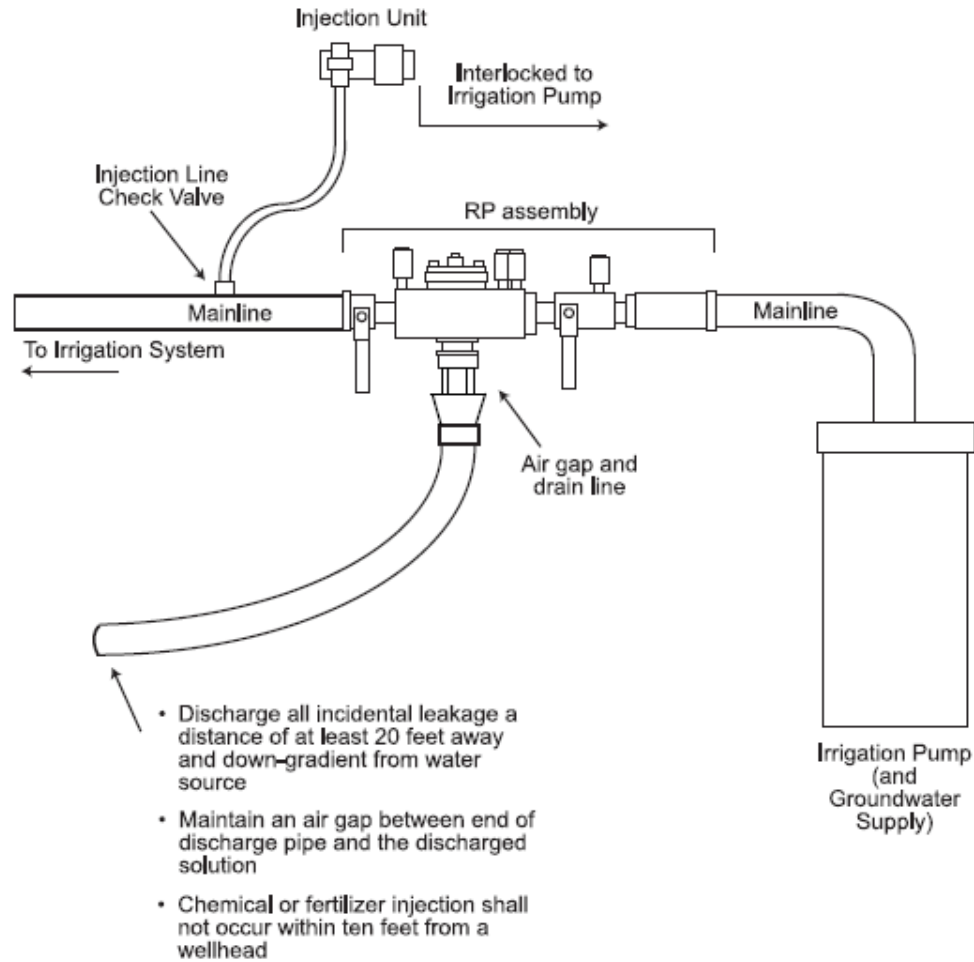
- Discharge solution a minimum of 20 feet and down-slope from well
- Maintain an Air gap between end of discharge pipe and the discharged solution

- As shown in the diagram, effective backflow devices must include all the following:**
- Automatic low-pressure drain
 - Inspection port
 - Irrigation line check valve
 - Air/vacuum relief valve
 - Chemical injection line check valve
 - System interlock

For irrigation systems with mainline less than 4-inch diameter

Backflow Prevention Device

Figure 215-2



Backflow prevention device using a reduced pressure principle backflow prevention assembly (RP).

Common Systems

Fresno-with label



Pierce-with label



Required Components



**Air Vent &
Vacuum Relief**



Check Valve



**Low-pressure
drain**



**Injection Line
Check Valve**

Pressure Drains Non-Compliance Issues

Low Pressure Drain and Hose

**Minimum 20-ft drain hose
must be attached to the drain**

**Pressure Drains can not
have a shut off valve**



Compliance Inspections

Initial Site Visits: Spring 2025

Field Staff will inspect groundwater irrigation systems documenting the following:

- Status of fertigation/chemigation
- Backflow System setup
- Location of backflow(s) and point of appropriation (the well)

Compliance Status

In Compliance

- ✓ No further action

Non-Compliance

- ✓ Attempt to Notify Owner/Operator
- ✓ Notice of Violation
- ✓ Notice of Assessment



A Few Resources

Chemigation in the Pacific Northwest

<https://oregonexplorer.info/content/chemigation-the-pacific-northwest>

Guidelines – Chemigation

<https://pnwhandbooks.org/insect/pesticide-application/guidelines-chemigation>

Oregon Back-Siphon Prevention Devices Rule

Oregon Administrative Rule 690-215-0017

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WATER RESOURCES
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