



Water Supply Wells

Oregon Department of Water Resources

Presented to:
OREGON HEALTH AUTHORITY
Public Health Division
Drinking Water Services
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by
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Special thanks to:
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Region 2 Plan Review Coordinator
OREGON HEALTH AUTHORITY
Public Health Division
Drinking Water Services



Water Supply Wells

Role of the Water Resources Department vs. Health Authority

Well Construction – OWRD vs. OHA

Well Rehabilitation

WRD

Water Supply Wells

Role of the OWRD vs. OHA:

OWRD Mission Statement

The Department's mission is to serve the public by practicing and promoting responsible water management through two key goals:

- 1) To directly address Oregon's water *supply* needs
- 2) To restore and protect streamflows and watersheds in order to ensure the long-term sustainability of Oregon's ecosystems, economy, and quality of life

Water Supply Wells

Role of the OWRD vs. OHA:

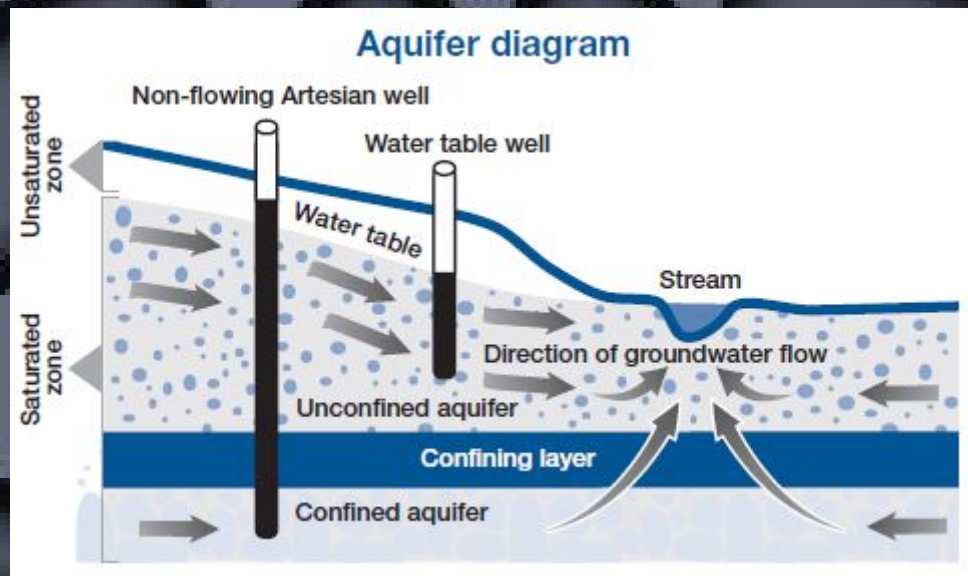
OHA Drinking Water Services Statement

Access to safe drinking water is essential to human health. Each person on Earth requires at least 20 to 50 liters of clean, safe water a day for drinking, cooking and simply keeping themselves clean. Oregon Drinking Water Services works to help keep drinking water safe for Oregonians.

Oregon Drinking Water Services (DWS) administers and enforces drinking water *quality* standards for public water systems in the state of Oregon. DWS focuses resources in the areas of highest public health benefit and promotes voluntary compliance with state and federal drinking water standards. *DWS also emphasizes prevention of contamination through source water protection*, provides technical assistance to water systems and provides water system operator training.

Water Supply Wells

What is Groundwater?



Water Supply Wells

Role of the OWRD vs. OHA:

What is the well for?

PRIVATE DOMESTIC WELL: A water well used by no more than *three* residences to supply water for drinking, culinary or household uses, and is not used as a public water supply.

PUBLIC WATER SYSTEM (PWS): A system that provides the public with piped water for human consumption. A PWS has more than *three* service connections or supplies water to a public or commercial establishment that *operates at least 60 days per year, and is used by 10 or more individuals per day.*

A map of the state of Ohio is shown in the background. Overlaid on the map is a large, semi-transparent watermark that reads 'WRD' in a bold, serif font, positioned in the lower right quadrant of the slide.

Water Supply Wells

Setbacks

Two sets of State rules for setbacks

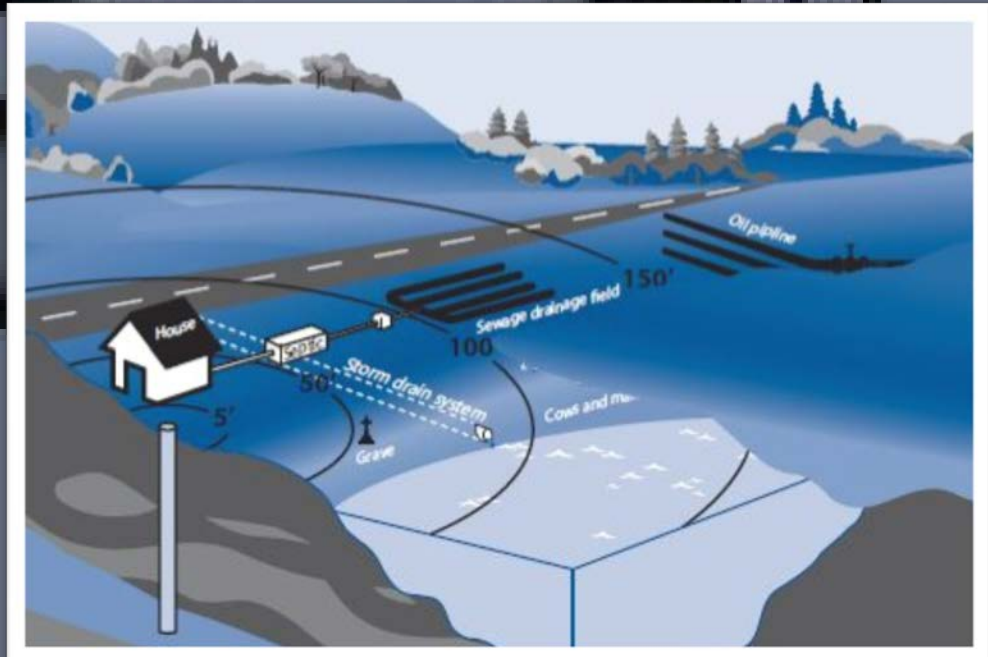
- OWRD water supply wells
- OHA “Public Drinking Water” wells

Water Supply Wells

Setbacks

OWRD water supply wells (690-210-0030):

- 5 feet from permanent structures
- 25 feet from residential UST or AST
- 50 feet from any potential source of groundwater contamination (e.g. septic tanks, closed sewer, storm drains, animal feed/holding, and commercial/industrial UST or AST)
- 100 feet from septic drain field, sewage disposal structure, neighboring water supply wells
- 500 feet from hazardous waste treatment, storage, or disposal facility



Water Supply Wells

Setbacks

OHA Public Drinking Water wells (333-061-0050):

- 50 feet from gravity sewer line or septic tank
- 100 feet “Sanitary hazards” setback
 - Includes: animal yard, fertilizer
- 100 feet “Ownership” setback
 - Except public rights-of-way
 - Or obtain perpetual restrictive easement (if no, apply for waiver)
- 100 feet roadway setback
 - Allowed within 100 feet IF...
 - Well draws from confined aquifer
 - Well is protected from surface runoff & hazardous liquid spills
 - Exemption for above ground storage of sanitary hazards if secondary containment provided

Water Supply Wells

Setbacks

Summary:

OWRD	OHA
<i>USTs & ASTs</i>	
25' residential / 50' comm/indust	100' unless AST w 2° containment
<i>Animal feed or holding area</i>	
50'	100'
<i>Hazardous waste treatment/storage/disposal facility</i>	
500'	100'
<i>Property Ownership</i>	
n/a	100'
<i>Roadways</i>	
n/a	Confined/runoff

Water Supply Wells

Setbacks



Water Supply Wells

Setbacks



Water Supply Wells

Setbacks



Water Supply Wells

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Water Supply Wells

Setbacks

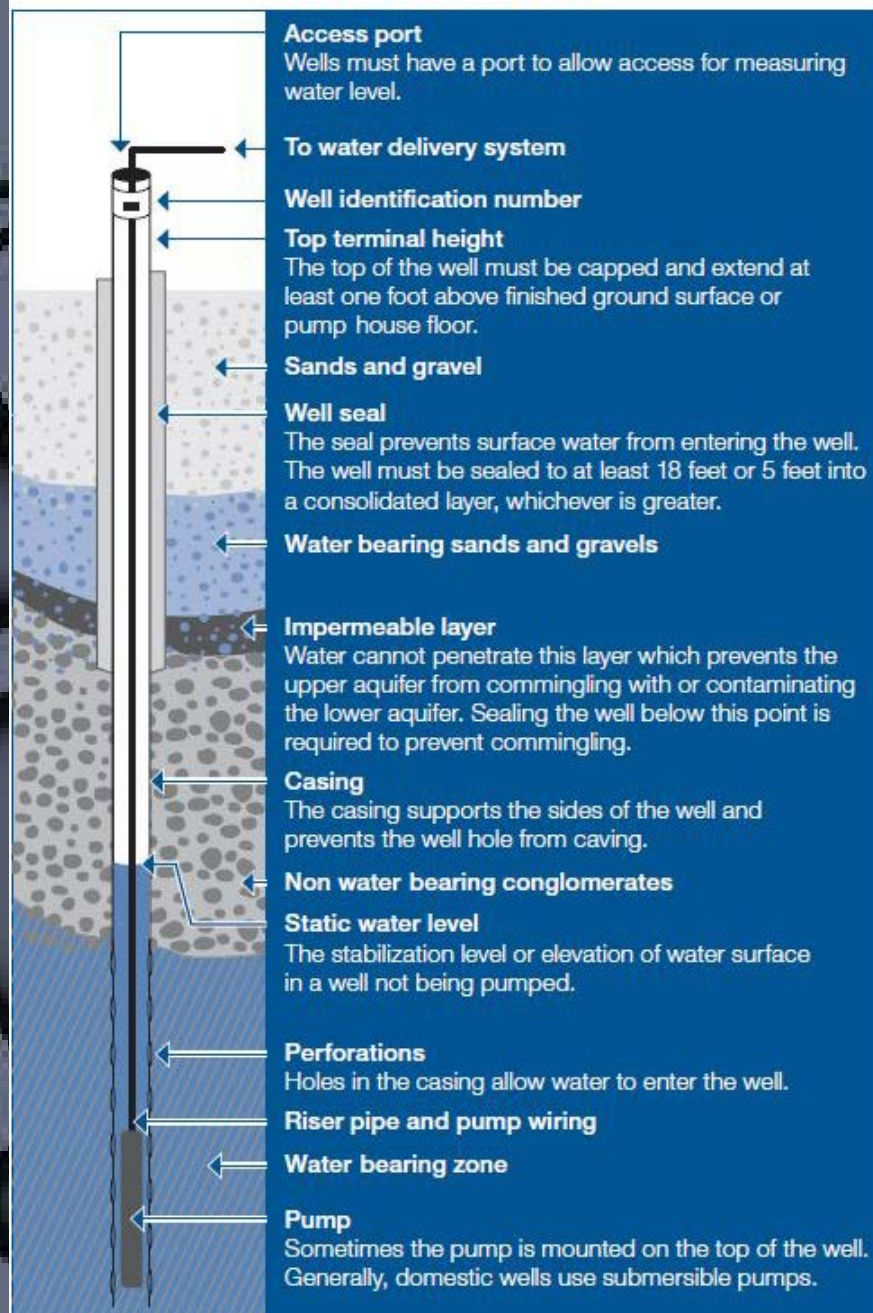


Water Supply Wells

What does a Water Supply Well look like?

OAR 690-210

Water well diagram



Water Supply Wells

OHA Construction Standards

- Sanitary seal (annulus per OWRD and casing opening)
- Built to OWRD's requirements
- Access to measure depth to water (OWRD sounding tube)
- Vent (not if pitless) with screened return bend
- Sample tap
- Ability to pump total flow to waste (more than a hose bib)
- Method to determine total output of well (e.g. flow meter)
- Concrete slab (not if pitless), sloped away from casing
- Casing 12 inches above slab, 24" above 100-year flood elevation
- Ground graded away from well
- Protect pump controls; insulated, heated, securable, lights (if >doghouse); pump removable

Water Supply Wells

Groundwater Rights and Exempt Uses:

Under Oregon law, “all water within the state from all sources of water supply belongs to the public.” In general you must obtain a water right permit before using water from any well. However, there are exceptions called “exempt uses” (see ORS 537.545).

These uses are excused from applying for a water right permit, but must be beneficial and without waste.

The logo for the Western Rural Development (WRD) is located in the bottom right corner. It consists of the letters 'WRD' in a bold, serif font, with a stylized mountain range in the background.

Water Supply Wells

Exempt Uses of Groundwater Include:

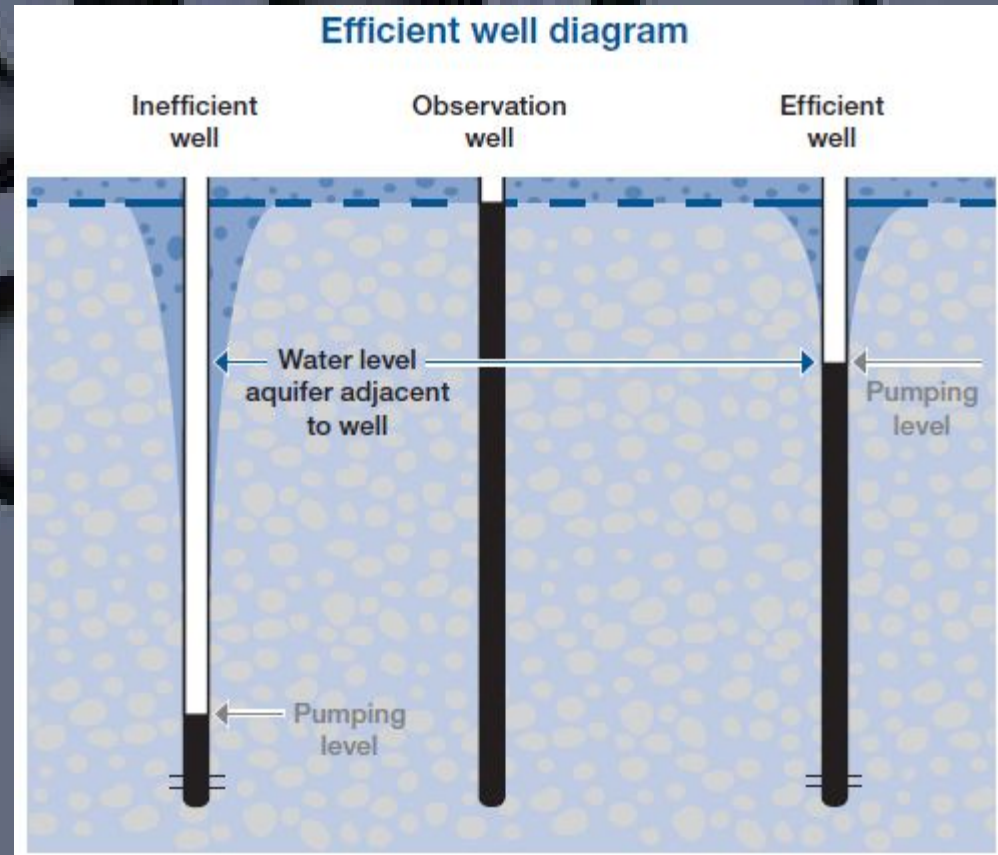
- Single or group domestic uses up to 15,000 gallons per day;
- Stock watering;
- Irrigation of any lawn or noncommercial garden of 1/2-acre or less;
- Down-hole heat exchangers;
- Single industrial or commercial purpose up to 5,000 gallons per day; or
- Irrigation of school property up to 10 acres in critical groundwater areas.

WRD

Water Supply Wells

Well Efficiency and Rehabilitation:

- Supply problems may occur when the pump is turned on and the water level drops sharply to meet demand.
- Well production will be severely reduced and damage to the pump may occur if the water level drops to the pump intake level.
- Supply problems can also happen with aging wells due to the buildup of mineral deposits, silt or bacteria.
- Well efficiency declines over time.



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Water Supply Wells

Well Maintenance:

- Well cap - Periodically check the sanitary seal/well cap on top of the well casing to ensure it is tight fitting and in good repair. If the well cap is vented make sure the vent is screened and free of debris.
- Well casing - Minimum well construction standards require sound casing a minimum one foot above land surface to prevent overland flow of water from entering the well. Ensure the casing is not damaged or compromised in any way and remains above land surface.
- Well shelter - Do not store poisons, pesticides, petroleum products or other hazardous materials in the shelter or near your well if it is contained within a shelter or pump house. Do not use it to shelter animals. Ensure there is no damage to your shelter.

Water Supply Wells

Well Maintenance:

- Back-Siphon Prevention - If a chemical is used to treat well water, it shall not be allowed to come into contact with the inside of the well casing above the water level. Down well treatment of well water will only be allowed if a commercial water treatment system is used. Delivery pipes or tubes designed for use with the treatment chemicals shall be used to place the chemicals into the water in the well. This rule does not apply when disinfecting the well and the pumping equipment.

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

WRD



Thanks!

Oregon Department of Water Resources

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