

**WATER RESOURCES DEPARTMENT
OREGON ADMINISTRATIVE RULE
CHAPTER 690
DIVISION 200
WATER SUPPLY WELL CONSTRUCTION STANDARDS**

690-200-0050

Definitions

The Water Resources Commission uses the definitions of the words listed below in the administration and enforcement of Oregon's Ground Water Law and the Rules and Regulations for the Construction and Alteration of Wells. No other definitions of these same words apply:

(1) "Abandonment, Permanent" means to remove a well from service by completely filling it in such a manner that vertical movement of water within the well bore and within the annular space surrounding the well casing, is effectively and permanently prevented. If a portion of a well is to be abandoned in order to prevent commingling, waste, or loss of artesian pressure, the abandonment shall conform with the requirements of OAR chapter 690, Division 220 for water supply wells. This term is synonymous with "decommission."

(2) "Abandonment, Temporary" means to remove a drilling machine from a well site after completing or altering a well provided the well is not immediately put into service, or to remove a well from service with the intent of using it in the future.

(3) "Access Port" means a minimum 1/2-inch tapped hole and plug or a 1/2-inch capped pipe welded onto the casing in the upper portion of a water supply well, or a minimum 1/2 inch dedicated probe/transducer pipe to permit entry of water-level measuring devices into the water supply well in order to determine the water level.

(4) "Air Gap" means a complete physical break between the outlet end of the discharge pipe or other conduit and the discharged substance. The break shall be at least twice the inside diameter of the pipe or conduit. (Back-siphon prevention)

(5) "Airline" means a water level measuring device consisting of a pressure gauge attached to an airtight line or pipe of known length, within the water supply well bore, extending from land surface to below the pumping level. The device will allow the water level to be computed by measuring the stable air pressure remaining in the line after completely purging water from within the line.

(6) "Air/Vacuum Relief Valve" means a device to automatically relieve or break vacuum. (Back-siphon prevention)

(7) "Altering a Well" means the deepening, reaming, hydrofracturing, casing, re-casing, perforating, re-perforating, installation of liner pipe, packers, seals, and any other material change in the design or construction of a well.

(8) "Annular Space" means the space between the drillhole wall and the outer well casing.

(9) "Aquifer" means a geologic formation, group of formations, or part of a formation that contains saturated and permeable material capable of transmitting water in sufficient quantity to

1 supply wells or springs and that contains water that is similar throughout in characteristics such
2 as potentiometric head, chemistry, and temperature (see Figure 200-2).

3 (10) "Artesian Aquifer" means a confined aquifer in which ground water is under sufficient head
4 to rise above the level at which it was first encountered, whether or not the water flows at land
5 surface. If the water level stands above land surface, the well is a flowing artesian well (see
6 Figure 200-2).

7 (11) "Artesian Water Supply Well" means a water supply well in which ground water is under
8 sufficient pressure to rise above the level at which it was first encountered, whether or not the
9 water flows at land surface. If the water level stands above land surface the well is a flowing
10 artesian water supply well.

11 (12) "Automatic Low-Pressure Drain" means a self-activating device designed and constructed
12 to intercept incidental leakage and drain that portion of an irrigation pipeline or any other
13 method of conveyance whose contents could potentially enter the water supply when operation
14 of the irrigation system pumping plant fails or is shut down. (Back-siphon prevention)

15 (13) "Back-Siphon Prevention Device" means a safety device used to prevent water pollution or
16 contamination by preventing flow of a mixture of water and/or chemicals in the opposite
17 direction of that intended. (Back-siphon prevention)

18 (14) "Bored Well" means a well constructed with the use of earth augers turned either by hand or
19 by power equipment.

20 (15) "Buried Slab Type Well" means a dug well in which well casing is used to case the upper
21 hole. A slab, sealed with cement grout, is placed between the upper hole and lower drillhole, and
22 the remainder of the annulus is filled with concrete.

23 (16) "Casing" means the outer tubing, pipe, or conduit, welded or thread coupled, and installed
24 in the borehole during or after drilling to support the sides of the well and prevent caving. Casing
25 can be used, in conjunction with proper seal placement, to shut off water, gas, or contaminated
26 fluids from entering the hole, and to prevent waste of ground water.

27 (17) "Casing Seal" means the water tight seal established in the well bore between the well
28 casing and the drillhole wall to prevent the inflow and movement of surface water or shallow
29 ground water in the well annulus, or to prevent the outflow or movement of water under artesian
30 or hydrostatic pressures.

31 (18) "Check Valve" means a certified device designed and constructed to close a water supply
32 pipeline, chemical injection line, or other conduit in a chemigation system to prevent reverse
33 flow in that line. (Back-siphon prevention)

34 (19) "Chemigation" means the method of applying agricultural chemicals and fertilizer through
35 an irrigation system.

36 (20) "Clay" means a fine-grained, inorganic material having plastic properties and with a
37 predominant grain size of less than 0.002 mm.

38 (21) "Commission" means the Oregon Water Resources Commission.

39 (22) "Committee" means the Oregon Ground Water Advisory Committee created by ORS
40 536.090.

1 (23) "Community Well" means a water supply well, whether publicly or privately owned, which
2 serves or is intended to serve more than three connections for residences or other connections for
3 the purpose of supplying water for drinking, culinary, or household uses.

4 (24) "Confined Animal Feeding or Holding Area" means the concentrated confined feeding or
5 holding of animals or poultry, including but not limited to horse, cattle, sheep, swine, and dairy
6 confinement areas, slaughterhouse or shipping terminal holding pens where the animal waste is
7 allowed to build up on the ground. Pastures and areas adjacent to buildings where animals and
8 animal waste is confined by a physical barrier such as concrete are exempt.

9 (25) "Confining Formation" means the "impermeable" stratum immediately overlying an artesian
10 (confined) aquifer (see Figure 200-2).

11 (26) "Consolidated Formation" means materials that have become firm through natural rock-
12 forming processes. It includes, but is not limited to, such materials as basalt, sandstone, shale,
13 hard claystone, and granite.

14 (27) "Contamination" means an impairment of water quality by chemicals, radionuclides,
15 biologic organisms or other extraneous matter whether or not it affects the potential or intended
16 beneficial use of water.

17 (28) "Continuing Education" means that education required as a condition of licensure under
18 ORS 537.747, to maintain the skills necessary for the protection of ground water, the health and
19 general welfare of the citizens of Oregon and the competent practice of the construction,
20 alteration, abandonment, conversion, and maintenance of water supply wells, monitoring wells,
21 and geotechnical holes.

22 (29) "Continuing Education Committee" means the Well Constructor Continuing Education
23 Committee authorized under Chapter 496, Oregon Laws 2001 (ORS 537.765).

24 (30) "Continuing Education Course" means a formal offering of instruction or information to
25 licensees that provides continuing education credits.

26 (31) "Continuing Education Credit" (CEC) means a minimum of 50 minutes of instruction or
27 information approved by the Continuing Education Committee.

28 (32) "Converting" a well means changing the use of an existing well or hole not previously used
29 to either withdraw or monitor water such that the well or hole can be used to either withdraw or
30 monitor water.

31 (33) "Deepening a well" means extending the well bore of an existing well through previously
32 undisturbed native material. Deepening is a type of alteration.

33 (34) "Department" means the Oregon Water Resources Department.

34 (35) "Director" means the Director of the Department or the Director's authorized
35 representatives.

36 (36) "Documentation of Completion" means written evidence or documentation demonstrating
37 attendance and completion of a continuing education course, including but not limited to: a
38 certificate of completion, diploma, transcript, certified class roster, or other documentation as
39 approved by the Continuing Education Committee.

1 (37) "Domestic Well" means a water supply well used to serve no more than three residences for
2 the purpose of supplying water for drinking, culinary, or household uses, and which is not used
3 as a public water supply.

4 (38) "Drawdown" means the difference in vertical distance between the pumping level and the
5 static water level in a well.

6 (39) "Drive Point Well" means a well constructed by driving into the ground a well-point fitted
7 to the end of a pipe section or series of pipe sections.

8 (40) "Dug Well" means a well in which the excavation is made by the use of digging equipment
9 such as backhoes, clam shell buckets, or sand buckets. (See Hand dug well)

10 (41) "Excavation" means a free-standing cavity with greater width than depth constructed in the
11 earth's surface which has a primary purpose other than seeking water or water quality
12 monitoring.

13 (42) "Figure", when used herein, refers to an illustration and is made a part of the primary article
14 and section by reference.

15 (43) "Filter Pack Well" means a well in which the area immediately surrounding the well screen
16 or perforated pipe within the water-producing zone is filled with graded granular material.

17 (44) "Geologic Formation" means an igneous, sedimentary, or metamorphic material that is
18 relatively homogeneous and is sufficiently recognized as to be distinguished from the adjacent
19 material. The term is synonymous with "formation."

20 (45) "Geologist" means an individual registered by the State of Oregon to practice geology.

21 (46) "Geotechnical hole" means a hole constructed to collect or evaluate subsurface data or
22 information, monitor movement of landslide features, or to stabilize or dewater landslide
23 features. Geotechnical holes are not monitoring wells or water supply wells as defined below.
24 Various classes and examples of geotechnical holes are listed in OAR 690-240-0035(6) - (9).

25 (47) "Grout" means approved cement, concrete, or bentonite sealing material used to fill an
26 annular space of a well or to abandon a well.

27 (48) "Grout Pipe" means a pipe which is used to place grout at the bottom of the sealing interval
28 of a well.

29 (49) "Hand dug well" means a well in which the excavation is only made by the use of picks,
30 shovels, spades, or other similar hand operated implements. (See Dug Well)

31 (50) "Hazardous Materials Training" means training as defined by OAR 437-002-0100 Adoption
32 by Reference Subdivision H Hazardous Materials 1910.120 Hazardous Waste Operations and
33 Emergency Response.

34 (51) "Hazardous Waste" means a substance as defined by ORS 466.005.

35 (52) "Hazardous Waste Disposal Site" means a geographical site in which or upon which
36 hazardous waste is disposed.

37 (53) "Hazardous Waste Storage Site" means the geographical site upon which hazardous waste is
38 stored.

39 (54) "Hazardous Waste Treatment Site" means the geographical site upon which or a facility in
40 which hazardous waste is treated.

Language to be deleted is in italic and bracketed: *[example]*

New language is in bold: **example**

1 (55) "Health Hazard" means a condition where there are sufficient concentrations of biological,
2 chemical, or physical, including radiological, contaminants in the water that are likely to cause
3 human illness, disorders, or disability. These include but are not limited to, naturally occurring
4 substances, pathogenic viruses, bacteria, parasites, toxic chemicals, and radioactive isotopes.
5 Sufficient concentrations of a contaminant include but are not limited to contaminant levels set
6 by the Oregon Department of Environmental Quality and Oregon Health Division.

7 (56) "Health Threat" means a condition where there is an impending health hazard. The threat
8 may be posed by, but not limited to: a conduit for contamination, or a well affecting migration of
9 a contaminant plume, or the use of contaminated water. A well in which the construction is not
10 verified by a water supply well report or geophysical techniques may be considered a conduit for
11 contamination in certain circumstances. Those circumstances include, but are not limited to: an
12 unused and neglected well or a well for which no surface seal was required. A well in which the
13 casing seal, sanitary seal, or watertight cap has failed, or was inadequately installed may be
14 considered a conduit for contamination.

15 (57) "Horizontal Well" means a well that intentionally deviates more than 20 degrees from true
16 vertical at any point.

17 (58) "Hydrofracturing" means the use of high pressure liquid, sand, packers or other material to
18 open or widen fractures in consolidated formations for the purpose of increasing well yield.

19 (59) "Hydrologic Cycle" is the general pattern of water movement by evaporation from sea to
20 atmosphere, by precipitation onto land, and by return to sea under influence of gravity.

21 (60) "Impermeable Sealing Material" means cement, concrete, or bentonite which is used to fill
22 the open annulus between the lower and upper sealing intervals.

23 (61) "Inspection Port" means an orifice or other viewing device from which the low-pressure
24 drain and check valve may be observed.

25 (62) "Jetted Well" means a well in which the drillhole excavation is made by the use of a high
26 velocity jet of water.

27 (63) "Leakage" means movement of surface and/ or subsurface water around the well casing or
28 seal.

29 (64) "Liner Pipe" means the inner tubing, pipe, or conduit installed inside the well casing or
30 lower well bore. The liner pipe is used to protect against caving formations and is not
31 permanently affixed to the drillhole wall or casing.

32 (65) "Lower Drillhole" means that part of the well bore extending below the surface seal interval
33 in a well.

34 (66) "Mineralized Water" means any naturally occurring ground water containing an amount of
35 dissolved chemical constituents limiting the beneficial uses to which the water may be applied.

36 (67) "Monitoring Well" means a well designed and constructed to determine the physical
37 (including water level), chemical, biological, or radiological properties of ground water.

38 (68) "Monitoring Well Constructor" means any person who has a current[*effective*] **water**
39 [*monitoring*] well constructor's license **with a monitoring well endorsement** issued in
40 accordance with ORS 537.747(3).

1 (69[8]) "**Monitoring Well Constructor's License**" means a **Water Well Constructor's**
2 **License with a monitoring well endorsement issued in accordance with ORS 537.747(3).**

3 (70[69]) "Municipal or Quasi-Municipal Well" means a water supply well owned by a
4 municipality or nonprofit corporation that may be used as a community or public water supply.

5 (71[0]) "Order" means any action satisfying the definition given in ORS Chapter 183 or any
6 other action so designated in ORS 537.505 to 537.795.

7 (72[1]) "Other Hole" means a hole other than a water supply well, a monitoring well, or
8 geotechnical hole, however constructed, in naturally occurring or artificially emplaced earth
9 materials, through which ground water can become contaminated. Holes constructed under ORS
10 Chapters 517, 520, and 522 are not subject to these rules. Other holes are regulated under OAR
11 690-240. Examples of other holes are listed in 690-240-0030.

12 (73[2]) "Perched Ground Water" means ground water held above the regional or main water
13 table by a less permeable underlying earth or rock material (see Figure 200-2).

14 (74[3]) "Permeability" means the ability of material to transmit fluid, usually described in units
15 of gallons per day per square foot of cross-section area. It is related to the effectiveness with
16 which pore spaces transmit fluids.

17 (75[4]) "Person" includes individuals, corporations, associations, firms, partnerships, joint stock
18 companies, public and municipal corporations, political subdivisions, the state and any agencies
19 thereof, and the Federal Government and any agencies thereof.

20 (76[5]) "Petcock Valve" is a valve used to contain pressure which when opened will drain the
21 line or pipe.

22 (77[6]) "Piezometer" means a type of monitoring well designed solely to obtain ground water
23 levels. Piezometers are prohibited in areas of known or reasonably suspected contamination.
24 This term is synonymous with "observation well." (See OAR 690-240)

25 (78[7]) "Pitless Adaptor" means a commercially manufactured unit or device designed for
26 attachment to one or more openings through a well casing, which will permit water service pipes
27 to pass through the wall of a well casing or extension thereof and prevent entrance of
28 contaminants into the well or ground water.

29 (79[8]) "Pitless Unit" means a commercially manufactured unit extending the upper terminal of
30 the well casing to above land surface, constructed and installed so as to prevent the entrance of
31 contaminants into the well and to protect the ground water supply, conduct water from the well,
32 and provide full access to the well and water system parts therein.

33 (80[79]) "Porosity" means the ratio of the volume of voids in the geologic formation being
34 drilled to the overall volume of the material without regard to size, shape, interconnection, or
35 arrangement of openings.

36 (81[0]) "Potable Water" means water which is sufficiently free from biological, chemical,
37 physical, or radiological impurities so that users thereof will not be exposed to or threatened with
38 exposure to disease or harmful physiological effects.

39 (82[1]) "Potentiometric Surface" means the level to which water will rise in tightly cased
40 artesian wells (see Figure 200-2).

1 (83[2]) "Pressure Grouting" means a process by which grout is confined within the drillhole or
2 casing by the use of retaining plugs or packers and by which sufficient pressure is applied to
3 drive the grout slurry into the annular space or zone to be grouted.

4 (84[3]) "Professional" means any person licensed or registered by the State of Oregon to
5 construct monitoring wells, water supply wells, or practice geology or civil engineering.

6 (85[4]) "Public-at-Large" means a person not actively engaged in the well industry.

7 (86[5]) "Public Water System" means a system for the provision to the public of piped water for
8 human consumption, if such a system has more than three service connections or supplies water
9 to a public or commercial establishment which operates a total of at least 60 days per year, and
10 which is used by ten or more individuals per day or is a facility licensed by the Oregon Health
11 Division.

12 (87[6]) "Public Well" means a water supply well, whether publicly or privately owned, other
13 than a municipal well, where water is provided for or is available through the single user for
14 public consumption. This includes, but is not limited to, a school, a farm labor camp, an
15 industrial establishment, a recreational facility, a restaurant, a motel, or a group care home.

16 (88[7]) "Pumping Level" means the level of the water surface in a well while it is being pumped
17 or bailed.

18 (89[8]) "Pump Test" means the procedure involving pumping water for a specified period of time
19 to determine the yield characteristics of an aquifer.

20 (90[89]) "Refusal to Renew" means a provision in an order, or as allowed by ORS 537.747, that
21 prohibits renewal of a well constructor's license, for a specified term not to exceed one year from
22 the expiration date of the current license.

23 (91[0]) "Remediation Well" means a well used for extracting contaminants and/or contaminated
24 ground water from an aquifer. This term is synonymous with "extraction well" and "recovery
25 well."

26 (92[1]) "Respondent" means the person against whom an enforcement action is taken.

27 (93[2]) "Responsible Party" means the person or agency that is in charge of construction or
28 maintenance and is either in violation as specified in a notice of violation or who may benefit
29 from that violation.

30 (94[3]) "Rough Drilling Log" means a record kept on the well site of the information needed to
31 complete the well report for the well being constructed.

32 (95[4]) "Revoke" means termination of a well constructor's license.

33 (96[5]) "Sand" means a material having a prevalent grain size ranging from 2 millimeters to 0.06
34 millimeters.

35 (97[6]) "Sanitary Seal" means a tight fitting properly sized threaded, welded, or gasketed cap
36 placed on the top of the permanent well casing to prevent entry of water and foreign material.

37 (98[7]) "Sealant": See Grout

38 (99[8]) "Silt" means an unconsolidated sediment composed predominantly of particles between
39 0.06 mm and 0.005 mm in diameter.

1 (100[99]) "Slope Stability Geotechnical Hole" means a geotechnical hole excavated, drilled or
2 bored for studying and/or monitoring movement of landslide features, including water levels, or
3 other mass-wasting features to detect zones of movement and establish whether movement is
4 constant, accelerating, or responding to remedial measures. Hole(s) excavated, drilled or bored
5 for the purpose of slope remediation or stabilization shall be considered a slope stability
6 geotechnical hole. Slope stability geotechnical holes are not monitoring wells, piezometers, or
7 water supply wells.

8 (101[0]) "Sponsor" means an institution, professional organization, individual, or business that
9 offers continuing education courses to licensees. This term is synonymous with provider.

10 (102[1]) "Static Water Level" means the stabilized level or elevation of water surface in a well
11 not being pumped.

12 (103[2]) "Stratum" means a bed or layer of a formation that consists throughout of approximately
13 the same type of consolidated or unconsolidated material.

14 (104[3]) "Sump" means a hole dug to a depth of ten feet or less with a diameter greater than ten
15 feet in which ground water is sought or encountered.

16 (105[4]) "Suspension" means the temporary removal of the privilege to construct wells under an
17 existing license for a period of time not to exceed one year.

18 (106[5]) "System Interlock" means an interlocking mechanism used to link irrigation pumps and
19 chemical injection units, other pumps, or supply tanks so designed that in the event of irrigation
20 pump malfunction or failure, shutdown of the chemical injection units will occur. (Back-siphon
21 prevention)

22 (107[6]) "Unconsolidated Formation" means naturally occurring, loosely cemented, or poorly
23 indurated materials including clay, sand, silt, and gravel.

24 (108[7]) "Underground Injection" means the emplacement or discharge of fluids to the
25 subsurface.

26 (109[8]) "Underground Injection System" means a well, improved sump, sewage drain hole,
27 subsurface fluid distribution system, or other system or ground water point source used for the
28 emplacement or discharge of fluids.

29 (110[09]) "Upper Oversize Drillhole" means that part of the well bore extending from land
30 surface to the bottom of the surface seal interval.

31 (111[0]) "Violation" means an infraction of any statute, rule, standard, order, license, compliance
32 schedule, or any part thereof and includes both acts and omissions.

33 (112[1]) "Water Supply Well" means a well, other than a monitoring well, that is used to
34 beneficially withdraw or beneficially inject ground or surface water. Water supply wells include,
35 but are not limited to, community, dewatering, domestic, irrigation, industrial, municipal, and
36 aquifer storage and recovery wells.

37 (113[2]) "Water Supply Well Constructor" means any person who has a current[, *effective*] water
38 [*supply*] well constructor's license **with a water supply well endorsement** issued in accordance
39 with ORS 537.747(3).

40 **(114) "Water Supply Well Constructor's License" means a Water Well Constructor's**
41 **License with a water supply well endorsement issued in accordance with ORS 537.747(3).**

Language to be deleted is in italic and bracketed: [*example*]

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New language is in bold: **example**

1 (115[3]) "Water Supply Well Drilling Machine" means any power-driven driving, jetting,
2 percussion, rotary, boring, digging, augering machine, or other equipment used in the
3 construction or alteration of water supply wells.

4 (116[4]) "Water Table" means the upper surface of an unconfined water body, the surface of
5 which is at atmospheric pressure and fluctuates seasonally. The water table is defined by the
6 levels at which water stands in wells that penetrate the water body (see Figure 200-2).

7 (117[5]) **"Water Well Constructor's License" means a license to construct, alter, deepen,**
8 **abandon or convert wells issued in accordance with ORS 537.747(3). Endorsements are**
9 **issued to the license and are specific to the type of well a constructor is qualified to**
10 **construct, alter, deepen, abandon or convert.**

11 (118) "Well" means any artificial opening or artificially altered natural opening, however made,
12 by which ground water is sought or through which ground water flows under natural pressure, or
13 is artificially withdrawn or injected. This definition shall not include a natural spring, or wells
14 drilled for the purpose of exploration or production of oil or gas. Prospecting or exploration for
15 geothermal resources as defined in ORS 522.005 or production of geothermal resources derived
16 from a depth greater than 2,000 feet as defined in ORS 522.055 is regulated by the Department
17 of Geology and Mineral Industries.

18 [ED. NOTE: Figures referenced are available from the agency]

19 Stat. Auth.: ORS 536.027, 536.090 & 537.505 - 537.795

20 Stats. Implemented: ORS 536.090 & 537.505 - 537.795

21 Hist.: WRD 9, f. & ef. 12-9-77; WRD 9-1978, f. 12-12-78, ef. 1-1-79; WRD 12-1982, f. & ef.
22 12-14-82; Renumbered from 690-060-0050 & 690-064-0000 by WRD 13-1986, f. 10-7-86, ef.
23 11-1-86; WRD 7-1988, f. & cert. ef. 6-29-88; WRD 21-1990, f. & cert. ef. 12-14-90; WRD 1-
24 1991, f. & cert. ef. 2-8-91; WRD 8-1993, f. 12-14-93, cert. ef. 1-1-94; WRD 2-1995, f. 5-17-95,
25 cert. ef. 7-1-95; WRD 7-2001, f. & cert. ef. 11-15-01; WRD 1-2003, f. & cert. ef. 3-14-03; WRD
26 4-2004, f. & cert. ef. 6-15-04