

OREGON ADMINISTRATIVE RULES  
WATER RESOURCES DEPARTMENT  
CHAPTER 690  
DIVISION 217

REQUIREMENT FOR PUMP TESTING OF NONEXEMPT WELLS

**690-217-0005**

**Purpose and Basis for Authority**

(1) ORS 537.772 states "The owner or operator of any well, except wells used for purposes listed in ORS 537.545, shall conduct a pump test at least once every ten years and report the results of that test to the Water Resources Commission."

(2) The purpose of these rules is to present standards and procedures for pump tests required by ORS 537.772.

Stat. Auth.:ORS Ch. 537

Hist.: WRD 25-1988, f. & cert. ef. 12-20-88

**690-217-0010**

**Definitions**

The following definitions apply to OAR Chapter 690, Division 217:

(1) "Air Line": A tube or pipe installed in a well specifically for the purpose of determining the water level by measuring the air pressure required to purge it of water.

(2) "Commission": Water Resources Commission.

(3) "Electric Water Level Measuring Tape": A device manufactured specifically for measuring depth to water in wells and consisting of a reel, electric cable with permanent depth markings, and an indicating buzzer, light or meter.

(4) "Electronic Pressure Transducer": A submersible electronic pressure sensing device designed and constructed specifically for measuring water levels, usually connected to an electronic device to display or record pressure data.

(5) "Flowing Artesian Well": A well which penetrates an aquifer with sufficient pressure to cause water to flow from the well without pumping.

(6) "Pump Test": A controlled procedure in which water is withdrawn from a well at a constant rate for a specified period of time and in which the water level in the well is measured at specified intervals before, during and after pumping.

(7) "Pump Test Report": The form provided by the Water Resources Department for reporting the results of pump tests required by ORS 537.772.

(8) "Static Water Level": The distance between the water level in a well and ground level when no water is being withdrawn from the well and the effects of previous withdrawals are no longer noticeable.

Stat. Auth.:ORS Ch. 537

Hist.: WRD 25-1988, f. & cert. ef. 12-20-88

*Note: These rules were filed with the Office of the Secretary of State and took effect on June 20, 2006. The rules are subject to non-substantive modifications such as renumbering and correction of typographical errors pursuant to ORS 183.360(2)(a) when published by the Secretary of State.*

## 690-217-0015

### Policy Statement

(1) The owner of a well which is the source of water listed on a water right permit or certificate shall conduct, or cause to be conducted, pump tests and report the results to the Water Resources Commission as outlined in OAR 690-217-0005 to 690-217-0055.

(2) The Water Resources Commission delegates to the Water Resources Director (the Director) all authority pertaining to implementation of these rules.

(3) If there is a reason why a pump test cannot be performed on a well, the owner may request from the Director an exemption from the pump test requirement. Requests shall be in writing and include the reason why a pump test cannot be performed. Exemptions, or conditioned exemptions, shall be granted if the reasons are found to be valid and eliminating the problem would place an unreasonable burden on the well owner. Exemptions shall be granted for public water supply wells if pump testing will cause interruption of service to customers.

(4) If there is a reason why a pump test cannot meet all of the specifications outlined in OAR 690-217-0005 to 690-217-0055, the well owner may request from the Director exceptions to the pump test requirements. Requests shall be in writing and include the reason why a pump test cannot meet the requirements. Exceptions, or conditioned exceptions, shall be granted if the reasons are found to be valid and meeting the full specifications would place an unreasonable burden on the well owner.

(5) The pump test requirement shall be waived, if requested, in situations where the water right is for land temporarily taken out of production under a government program.

(6) Pump tests shall not be required of wells with diameters greater than 36 inches and depths less than 30 feet.

(7) Pump tests shall not be required of collector-type wells or infiltration galleries.

(8) Transferring the point of diversion of a ground water right shall have no effect on the pump testing schedule unless specifically mentioned as a condition of the transfer.

(9) Pump tests are intended to provide aquifer and well information for ground water resource characterization and to help solve well problems.

Stat. Auth.:ORS Ch. 537

Hist.: WRD 25-1988, f. & cert. ef. 12-20-88

## 690-217-0020

### Requirements for Pump Tests

(1) For water right applications received on or after December 20, 1988, a pump test as described in OAR 690-217-0005 to 690-217-0055 is required before a certificate of water right will be issued. The results of the test shall be submitted on the pump test report form.

(2) For water right permits or certificates with priority dates before December 20, 1988, a pump test as described in OAR 690-217-0005 to 690-217-0055 and subsequent pump test requirements every ten years shall be waived unless required by the Director. The Director may require pump tests as provided in ORS 537.772 in specific cases or areas as determined to be necessary. Such areas may

*Note: These rules were filed with the Office of the Secretary of State and took effect on June 20, 2006. The rules are subject to non-substantive modifications such as renumbering and correction of typographical errors pursuant to ORS 183.360(2)(a) when published by the Secretary of State.*

include, but are not limited to, critical ground water areas or serious water management problem areas as defined in OAR 690-085-0020.

(3) If a landowner owns multiple wells producing from the same aquifer and has tested one of those wells, he may request exemptions for all other of those wells which are within five miles of the tested well and which produce water from the same aquifer. If a well is more than five miles from the tested well, or produces from a different aquifer, it must be tested separately. Requests for exemptions shall be in writing and include water well reports or other documentation showing the water producing zones for each well.

(4) In cases where a well provides the source of water for more than one water right permit or certificate, it shall be indicated on the pump test report that the pump test applies to multiple water rights. The permit or certificate numbers of all the water rights the pump test applies to shall be listed on the pump test report.

Stat. Auth.:ORS Ch. 537

Hist.: WRD 25-1988, f. & cert. ef. 12-20-88, WRD 5-2006, f. & cert. ef. 6-20-06

### **690-217-0025**

#### **Pump Test Specifications for Wells Other than Flowing Artesian Wells**

The pump tests for wells other than flowing artesian wells shall be conducted such that the following minimum specifications are met:

(1) The well shall be idle for a period of at least sixteen hours prior to the pump test.

(2) The static water level in the well shall be measured within the hour prior to the test at least three times no less than twenty minutes apart.

(3) The pumping phase of the test shall be at least four hours.

(4) The pump discharge shall be controlled as much as possible to maintain a constant rate during the test and shall be as close as reasonably possible to the anticipated pumping rate during normal use of the well. Discharge shall be recorded at the beginning of the test and once every hour thereafter.

(5) Water level measurements during the first ten minutes of pumping shall be timed no more than two minutes apart. Water level measurements from ten to thirty minutes of pumping shall be timed no more than five minutes apart. After 30 minutes of pumping, drawdown measurements shall be taken no more than 15 minutes apart for the duration of the test.

(6) After pumping stops, water level measurements shall be taken for four hours or until the well reaches 90 percent recovery from the maximum drawdown, whichever occurs first. Recovery water level measurements shall be taken on the same schedule as described in section (5) of this rule for drawdown measurements.

Stat. Auth.:ORS Ch. 537

Hist.: WRD 25-1988, f. & cert. ef. 12-20-88

### **690-217-0030**

#### **Pump Test Specifications for Flowing Artesian Wells with Pumps**

(1) Pump tests for flowing artesian wells with pumps shall be conducted such that the following minimum specifications are met.

(2) The well shall be shut in for at least sixteen hours prior to the test and the shut-in pressure recorded within the hour prior to the test at least three times no less than twenty minutes apart.

*Note: These rules were filed with the Office of the Secretary of State and took effect on June 20, 2006. The rules are subject to non-substantive modifications such as renumbering and correction of typographical errors pursuant to ORS 183.360(2)(a) when published by the Secretary of State.*

(3) The pump test shall be conducted in the same manner as outlined for non-flowing wells in OAR 690-217-0025 except that water levels above ground shall be determined by the use of a pressure gauge and reported as pounds per square inch (PSI). If at any time during the test the pressure drops below zero PSI, indicating the water level in the well has dropped below ground level, the water level shall be measured by a method listed in OAR 690-217-0045.

Stat. Auth.:ORS Ch. 537

Hist.: WRD 25-1988, f. & cert. ef. 12-20-88

#### **690-217-0035**

##### **Pump Test Specifications for Flowing Artesian Wells Without Pumps**

If a flowing artesian well is not fitted with a pump and is normally used in an open discharge fashion, the test shall be conducted in the following manner:

(1) The well shall be shut in for 16 hours prior to the test and the shut-in pressure recorded in the hour prior to the test.

(2) The well shall be allowed to flow for a measured period of time of at least four hours, during which time the flow rate is to be measured and kept as constant as possible.

(3) After the flowing period, the well shall be shut in and the pressure build-up recorded on the same schedule as described in OAR 690-217-0025(5) for water level recovery data collection in non-flowing well tests. Pressure build-up shall be recorded for four hours or until the pressure reaches 95 percent of the pretest shut-in pressure.

Stat. Auth.:ORS Ch. 537

Hist.: WRD 25-1988, f. & cert. ef. 12-20-88

#### **690-217-0040**

##### **Nearby Wells and Streams**

(1) If the well to be tested is within one-quarter mile of a stream, lake or other surface water body, it shall be noted on the pump test report along with the distance between the well and that surface water body. The approximate elevation difference between the land surface at the well and the surface of the water body shall also be noted.

(2) In order for pump test information to be valid, the possible effects from pumping of nearby wells must be evaluated. If there are other wells not exempted under ORS 537.545 which are within 1000 feet of the well to be tested, and which were pumping for all or part of the pump test, the approximate distance to these wells and the approximate pumping rate of each shall be included on the pump test report. If pumping from a nearby well started or stopped during the test or within 24 hours prior to the test, the time the pumping started or stopped shall be included on the pump test report if known or available.

Stat. Auth.:ORS Ch. 537

Hist.: WRD 25-1988, f. & cert. ef. 12-20-88

#### **690-217-0045**

##### **Acceptable Techniques for Measurement of Water Level and Discharge**

*Note: These rules were filed with the Office of the Secretary of State and took effect on June 20, 2006. The rules are subject to non-substantive modifications such as renumbering and correction of typographical errors pursuant to ORS 183.360(2)(a) when published by the Secretary of State.*

(1) Water level measurements shall be taken by one of the following methods:

(a) An electric water level measuring tape specifically designed for this purpose. Depth markings on the tape shall be no more than five feet apart, and shall be accurate to 0.5 percent. All water level measurements shall be reported to a precision of at least one-tenth of a foot;

(b) A calibrated electronic pressure transducer coupled with an appropriate output device or data logger. The accuracy and precision of the transducer and output device or data logger shall meet those outlined in subsection (1)(a) of this rule for electric water level measuring tapes. If an electronic pressure transducer is used for water level measurement, the manufacturer's name, the serial number and calibration date of the device must be supplied in the pump test report;

(c) An air line and pressure gauge. Air line measurements shall be accepted only where water levels deeper than 300 feet below ground level are encountered or expected. Air line accuracy shall be verified by at least one water level measurement with an electric water level measuring tape;

(d) An acoustic sounding device designed and manufactured specifically for measuring the depth to water in wells;

(e) The wetted steel tape method. This method may be used for static water level measurements only.

(2) Measurements of air line pressure of shut-in pressure of flowing artesian wells shall be with a calibrated pressure gauge with marked intervals of one PSI or less.

(3) Discharge from the pump shall be physically measured by a standard and acceptable method. In no case will visually estimated flow rates be accepted. Acceptable methods include:

(a) A properly installed flow meter which is functional and calibrated within reasonable limits;

(b) A properly installed weir or flume;

(c) A properly installed calibrated orifice plate and manometer;

(d) Known volume/time calculations (including calibrated bucket and stopwatch up to 60 gallons per minute); and

(e) Properly used ultrasonic flow measuring devices.

Stat. Auth.:ORS Ch. 537

Hist.: WRD 25-1988, f. & cert. ef. 12-20-88

#### **690-217-0050**

##### **Qualifications for Conducting Pump Tests**

Only pump tests conducted by the well owner, a full-time employee of the well owner who routinely works with and is familiar with wells and pumps, or a qualified individual authorized by the well owner shall be accepted by the Director. Individuals in the following groups will be considered qualified and authorized provided they have significant experience conducting pump tests:

(1) Oregon licensed water well constructors.

(2) Oregon registered professional geologists or certified engineering geologists.

(3) Certified water rights examiners.

(4) Oregon registered professional engineers.

(5) Individuals whose primary occupation involves, wholly or in significant part, pump installation, service or testing.

Stat. Auth.:ORS Ch. 537

*Note: These rules were filed with the Office of the Secretary of State and took effect on June 20, 2006. The rules are subject to non-substantive modifications such as renumbering and correction of typographical errors pursuant to ORS 183.360(2)(a) when published by the Secretary of State.*

Hist.: WRD 25-1988, f. & cert. ef. 12-20-88

**690-217-0055**

**Pump Test Reports**

Results of pump tests shall be reported on the pump test report form supplied by the Water Resources Department. The person conducting the pump test shall be responsible for completing and certifying the pump test report. The well owner shall sign and submit the pump test report.

Stat. Auth.:ORS Ch. 537

Hist.: WRD 25-1988, f. & cert. ef. 12-20-88

*Note: These rules were filed with the Office of the Secretary of State and took effect on June 20, 2006. The rules are subject to non-substantive modifications such as renumbering and correction of typographical errors pursuant to ORS 183.360(2)(a) when published by the Secretary of State.*