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REC. OF STATE

CERTIFICATE AND ORDER  
FOR FILING  
**PERMANENT**  
ADMINISTRATIVE RULES WITH THE SECRETARY OF STATE

I HEREBY CERTIFY that the attached copy is a true, full and correct copy of PERMANENT rule(s) adopted on November 19, 1993  
(Date)

by the Water Resources Commission  
(Department) (Division)

to become effective January 1, 1994  
(Date)

The within matter having come before the Water Resources Commission  
(Department) (Division) after

all procedures having been in the required form and conducted in accordance with applicable statutes and rules and being fully advised in the premises:

Notice of Intended Action published in Secretary of State's Bulletin: NO  YES  Date Published: September 1, 1993

NOW THEREFORE, IT IS HEREBY ORDERED THAT the following action be taken: (List Rule Number(s) or Rule Title(s) on Appropriate Lines Below)

Adopted:  
(New Total Rules)

Amended:  
(Existing Rules)

OAR 690-200 through OAR 690-235, "Water Supply Well Construction and Maintenance Rules" and OAR 690-240, "Monitoring Well Construction and Maintenance Rules"

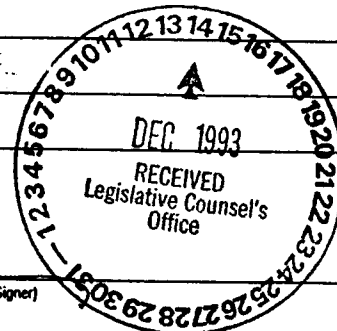
Repealed:  
(Total Rules Only)

Administrative Rules of the Water Resources Department  
(Department) (Division)

DATED this 14 day of December, 19 93

By: *M. D. ...*  
(Authorized Signer)

Title: Director



Statutory Authority: ORS 536.090 and 537.505 through 537.795 or

Chapter(s) \_\_\_\_\_, Oregon Laws 19 \_\_\_\_\_ or

House Bill(s) \_\_\_\_\_, 19 \_\_\_\_\_ Legislature; or Senate Bill(s) \_\_\_\_\_, 19 \_\_\_\_\_ Legislature

Subject Matter: Water Supply and Monitoring Well Construction Rules. Ground Water Advisory Committee Rules. These rules pertain to proper construction, maintenance and abandonment techniques to be used related to water supply and monitoring wells. Division 235 provides guidance to the Ground Water Advisory Committee.

Information Contact: Rob Carter/Beth Patrino  
(Rule Coordinator)

Phone: 378-8455 (exts. 296/299)

## DIVISION 220

### ABANDONMENT OF WELLS

#### Temporary Abandonment

690-220-005 Any well to be temporarily removed from service, temporarily abandoned due to a recess in construction, or temporarily abandoned before commencing service, shall be capped with a watertight seal, watertight welded steel cap, or threaded cap. In the event that temporary abandonment is to be of 90 days or less, the temporary steel cap may be welded to the well casing with a minimum of four (4) separate welds, evenly spaced, each at least one-half (1/2) of an inch in length. Steel or cast iron caps shall be at least three-sixteenths (3/16) of an inch in thickness. **During the temporary abandonment, the well must be maintained to the standards prescribed in OAR 690-215.**

{adopted 2-18-77; amended: 1-1-79; renumbered from 690-63-005 11-1-86}

#### Permanent Abandonment

690-220-030 Any well that is to be permanently abandoned shall be completely filled in such a manner that vertical movement of water within the well bore, including vertical movement of water within the annular space surrounding the well casing, is effectively and permanently stopped. **If a dry or non-producing well is to be permanently abandoned, it shall be abandoned in accordance with these standards.**

{adopted 2-18-77; amended: 1-1-79; renumbered from 690-63-010 11-1-86}

#### Abandonment of Uncased Wells in Unconsolidated Formations

690-220-040 Uncased wells to be abandoned that extend only into unconsolidated materials shall be completely filled with cement grout or concrete. **This class of wells may be abandoned using unhydrated bentonite with special standard approval.** (See Figure 13, 1986.)

{adopted 2-18-77; amended: 1-1-79; renumbered from 690-63-011 11-1-86}

#### Abandonment of Uncased Wells in Consolidated Formations

690-220-050 Uncased wells to be abandoned that penetrate a water-bearing rock formation shall be filled with concrete or cement grout, or alternating layers of cement grout or concrete and clean gravel throughout the water-producing horizon. A concrete or cement grout plug shall be constructed from the top of the rock formation to a depth of at least twenty (20) feet below the top of the rock formation. The remainder of the well above the rock formation shall be filled to land surface with cement grout or concrete. Plugs of cement

grout or concrete, at least three (3) feet in length, shall be placed in non-producing zones between all water-bearing zones. In all cases, a cement grout or concrete plug, at least three (3) feet in length, shall be constructed in a non-producing stratum immediately above the uppermost water-bearing zone. **This class of wells may be abandoned using unhydrated bentonite with special standard approval.** (See Figure 14, 1986.)

{adopted 2-18-77; amended: 1-1-79; renumbered from 690-63-012 11-1-86}

#### **Abandonment of Cased Wells**

690-220-060 If the well casing or the liner pipe is not removed during the abandonment of a well, the casing or liner shall be thoroughly ripped or perforated. **Perforations are not required in the sealed interval provided proof of the original seal can be verified with the original well report.** The annular space between the casing or liner and the drillhole wall shall be effectively and completely filled with cement grout applied under pressure. The remainder of the well shall be filled with cement grout or concrete. Uncased horizons in a cased well to be abandoned shall be filled in accordance with rules 690-220-030 through 690-220-050. The casing of wells to be abandoned may be severed below land surface and removed. (See Figure 15, 1986.)

{adopted 2-18-77; amended: 1-1-79; renumbered from 690-63-013 11-1-86}

#### **Abandonment of Artesian Wells**

690-220-070 The flow of artesian wells to be abandoned shall be confined or restricted by cement grout applied under pressure, or by the use of a suitable well packer, or plug placed at the bottom of the confining formation immediately above the artesian water-bearing zone. Cement grout or concrete shall be used to effectively fill the well to land surface. (See Figure 16, 1986.)

{adopted 2-18-77; amended: 1-1-79; renumbered from 690-63-015 11-1-86}

#### **Abandonment of Driven and Jetted Wells**

690-220-080 A cement grout or concrete plug shall be placed opposite all perforations or openings in the well casing. The remainder of the well shall be filled with cement grout, or concrete.

{adopted 2-18-77; amended: 1-1-79; renumbered from 690-63-020 11-1-86; 6-24-88}

#### **Abandonment of Filter or Gravel Pack Wells**

690-220-090 Filter or gravel pack wells may be abandoned only with prior written approval of the Director of the method proposed for abandonment of the particular well. Any method

of abandonment proposed must ensure that all perforated sections of the casing will be pressure grouted throughout, and that the remainder of the well is filled with cement grout, or concrete.

{adopted 2-18-77; amended: 1-1-79; renumbered from 690-63-016 11-1-86}

### **Abandonment of Dug Wells**

690-220-095

(1) Abandonment of a dug well shall be approved by the department before work is started. The department shall be notified of the proposed abandonment. The notification shall include:

- (a) Location;
- (b) Name of the owner;
- (c) Well diameter;
- (d) Well depth;
- (e) Depth to water;
- (f) Type of well casing or liner material if any; and
- (g) The proposed method of abandonment.

(2) A method to be used in the abandonment will be approved by the department if the method will adequately protect the groundwater resource. Dug wells penetrating more than one water bearing zone shall be abandoned in a manner to eliminate the possibility of leakage from one water bearing zone to another.

(3) The well shall be abandoned by a licensed well constructor, a landowner with a landowner well construction permit and bond or in the presence of the watermaster or other department representative.

{adopted 6-24-88}

### **Obstructions and Possible Contaminants**

690-220-100 All obstructions or debris which may interfere with effective sealing operations shall be removed from the well to be abandoned. Any foreign matter capable of causing groundwater contamination shall be removed prior to placing any sealing material.

{adopted 2-18-77; amended: 1-1-79; renumbered from 690-63-026 11-1-86}

### **Removal of Well Casing During Abandonment**

690-220-110 If the casing of a well is removed during abandonment, the well shall be plugged and sealed in accordance with rules 690-220-030 through 690-220-050 and shall be filled with sealing materials as the casing is removed.

{adopted 2-18-77; amended: 1-1-79; renumbered from 690-63-021 11-1-86}

### **Cement Grout**

690-220-120 Cement grout for use in abandonment operations shall conform to the requirements of rule 690-210-310.

{adopted 2-18-77; amended: 1-1-79; renumbered from 690-63-031 11-1-86}

### **Concrete**

690-220-130 Concrete for use in abandonment operations shall conform to the requirements of rule 690-210-430.

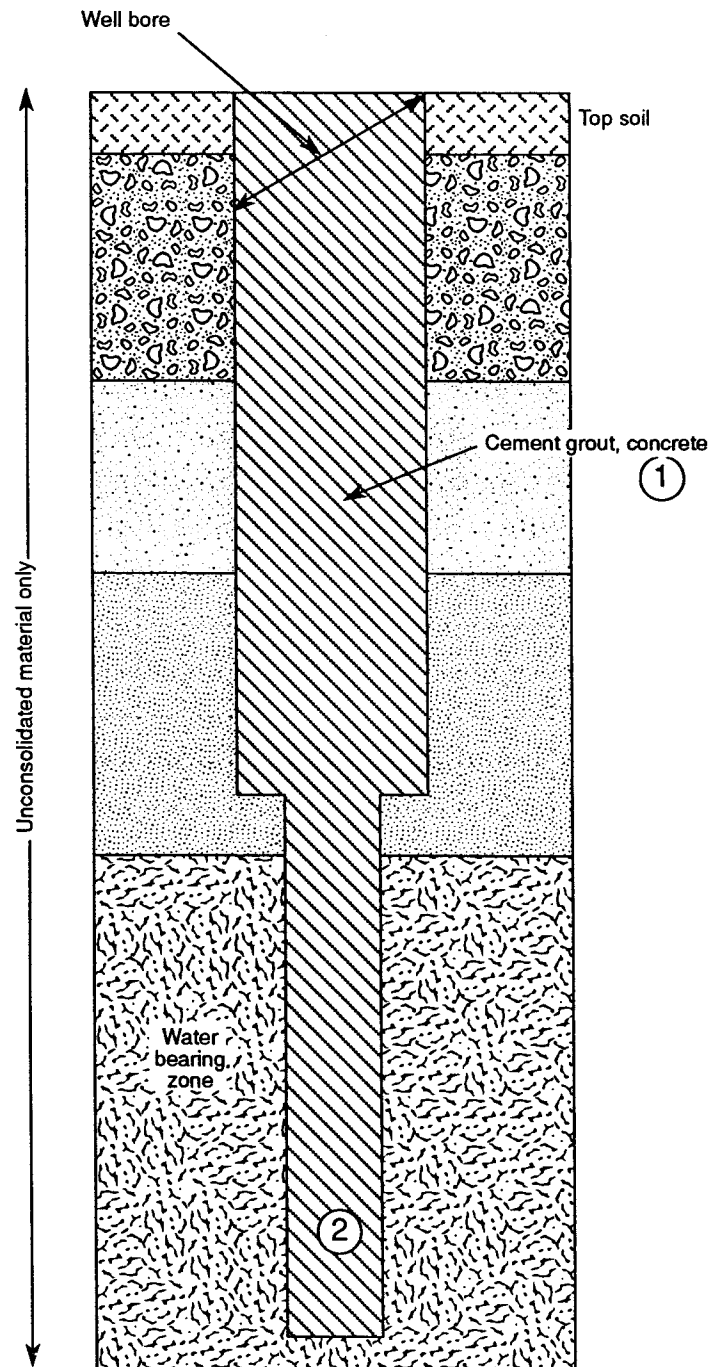
{adopted 2-18-77; amended: 1-1-79; renumbered from 690-63-035 11-1-86}

### **Method of Placement of Concrete or Cement Grout**

690-220-140 Concrete or cement grout used as a sealing material in abandonment operations shall be introduced at the bottom of the well or required sealing interval and placed progressively upward to the top of the well. All such sealing materials shall be placed by the use of a grout pipe, tremie, or by dump bailer in order to avoid segregation or dilution of the sealing materials.

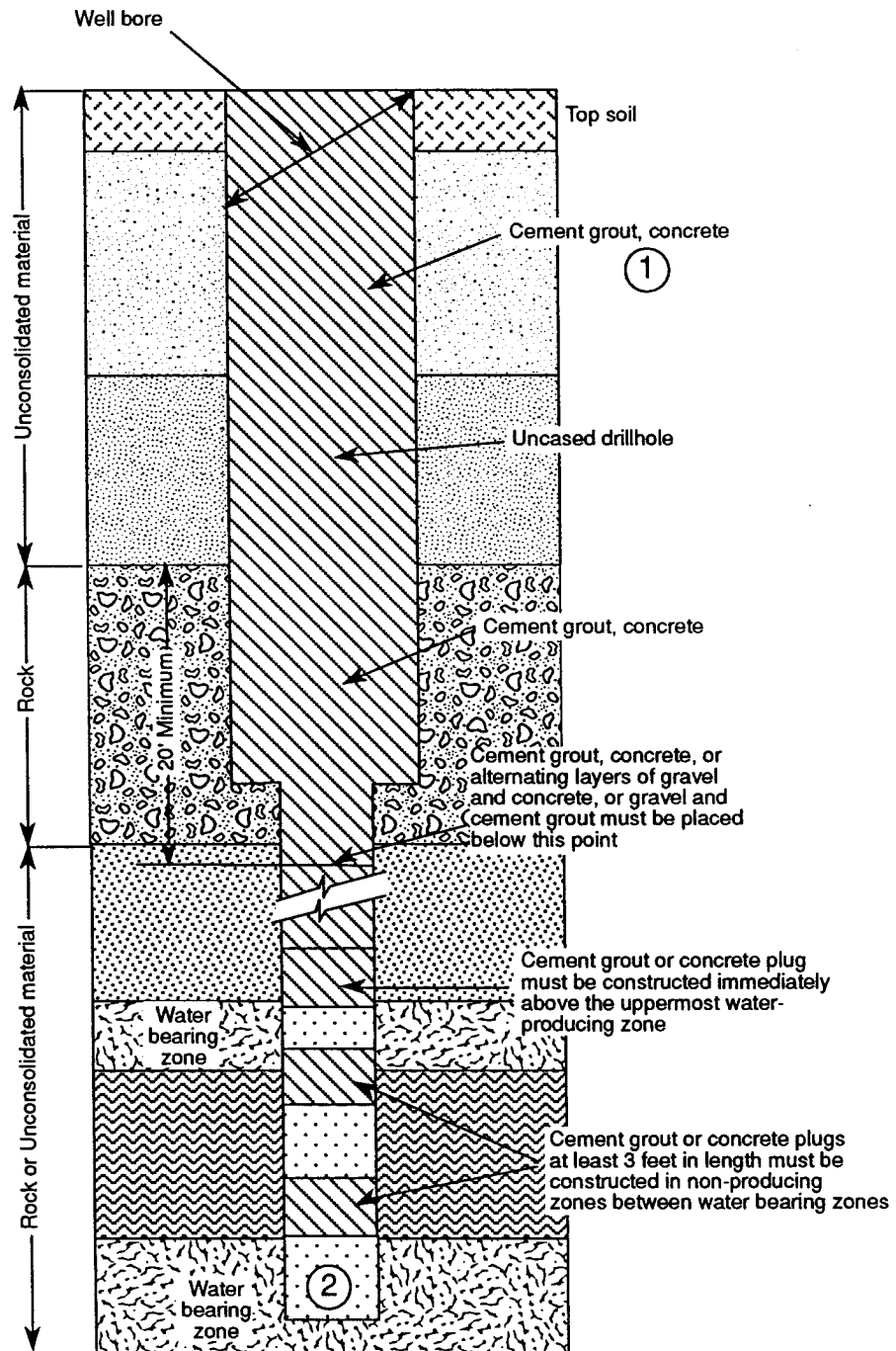
{adopted 2-18-77; amended: 1-1-79; renumbered from 690-63-040 11-1-86}

ABANDONMENT OF UNCASED WELLS IN UNCONSOLIDATED FORMATIONS  
(690-220-040)



- ① In all wells to be abandoned, cement grout and concrete must be placed by grout pipe, tremie, or dump bailer
- ② In all wells to be abandoned, sealing material must be introduced at the bottom of the well and placed progressively upward

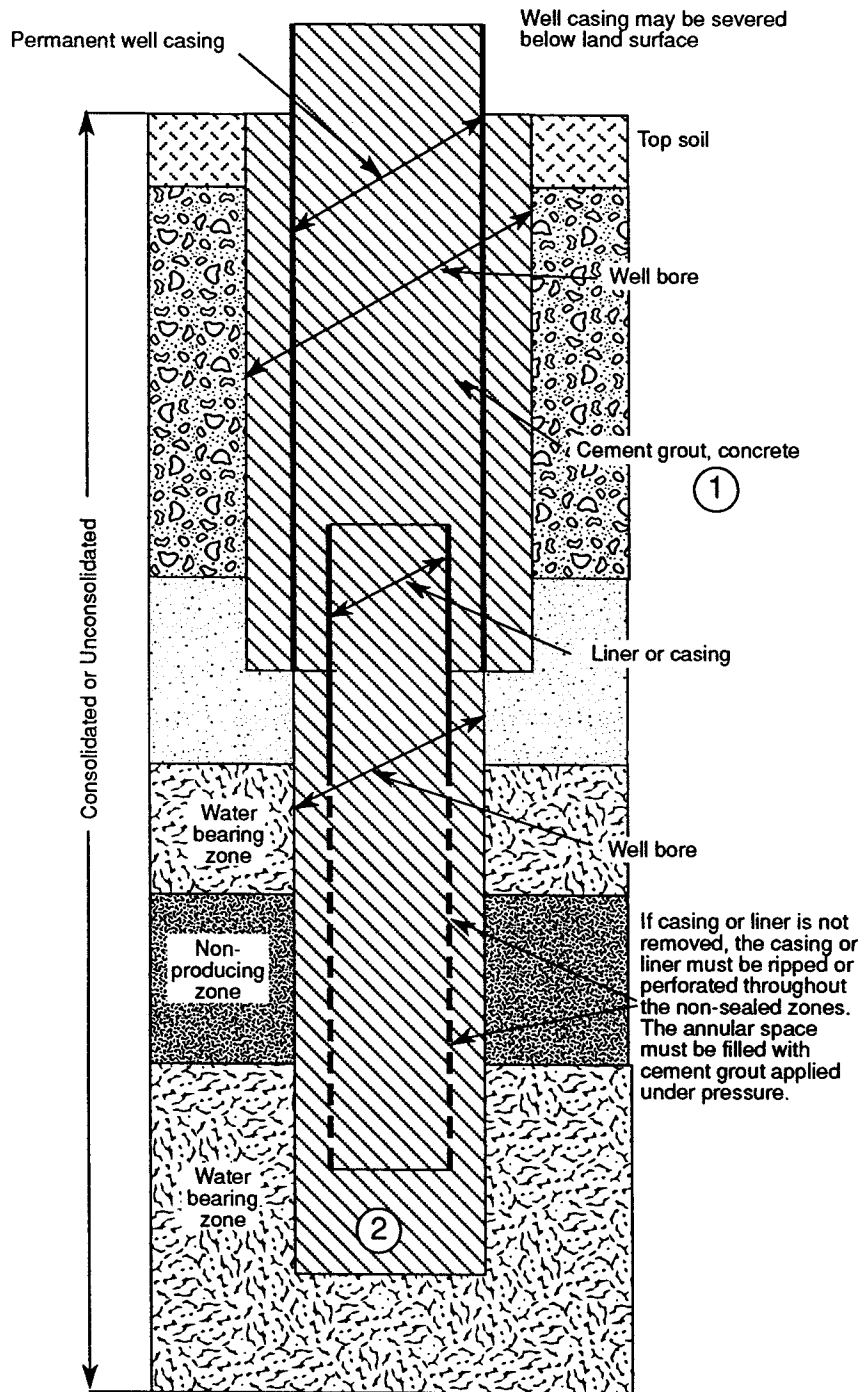
ABANDONMENT OF UNCASSED WELLS IN CONSOLIDATED FORMATIONS  
(690-220-050)



① In all wells to be abandoned, cement grout and concrete must be placed by grout pipe, tremie, or dump bailer

② In all wells to be abandoned, sealing material must be introduced at the bottom of the well and placed progressively upward

ABANDONMENT OF CASED WELLS  
(690-220-060)

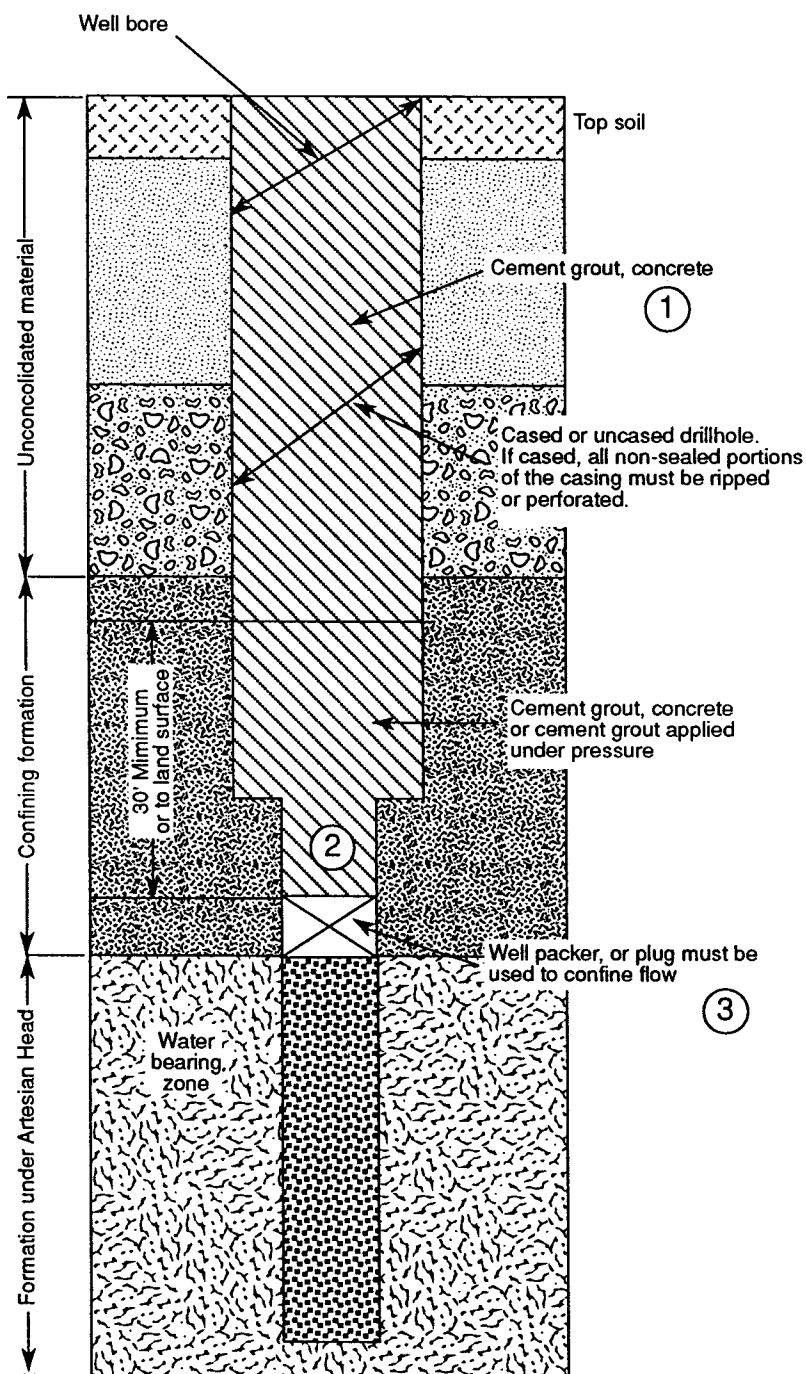


① In all wells to be abandoned, cement grout and concrete must be placed by grout pipe, tremie, or dump bailer

② In all wells to be abandoned, sealing material must be introduced at the bottom of the well and placed progressively upward



ABANDONMENT OF ARTESIAN WELLS  
(690-220-070)



- ① In all wells to be abandoned, cement grout and concrete must be placed by grout pipe, tremie, or dump bailer
- ② In all wells to be abandoned, sealing material must be introduced at the bottom of the well and placed progressively upward
- ③ Preshaped or precast plugs should be several times longer than the diameter of the well to prevent filing