

**Water Resources Department
Chapter 690
Division 9**

GROUNDWATER INTERFERENCE WITH SURFACE WATER

690-009-0010

Basis for Regulatory Authority, Purpose, and Applicability

(1) The right to reasonable control of the groundwater of the State of Oregon has been declared to belong to the public. Through the provisions of the Ground Water Act of 1955, ORS 537.505 to 537.795, the Water Resources Commission has been charged with administration of the rights of appropriation and use of the groundwater resources of the state.

(2) These rules establish criteria to guide the Department in determining whether a proposed or existing groundwater use will substantially interfere (as defined in OAR 690-008-0001(10)) with a surface water source. These rules apply to all wells, as defined in ORS 537.515 (9), and to all proposed and existing appropriations of groundwater except the exempt uses under ORS 537.545. The authority under these rules may be locally superseded where more specific direction is provided by the Commission after the effective date of adoption of these rules.

Statutory/Other Authority: ORS 537

History:

WRD 17-1988, f. & cert. ef. 11-4-88

690-009-0020

Definitions

Unless stated otherwise, as used in these rules:

(1) "Department" means the Water Resources Department, its Director, and all personnel employed by the Department.

(2) "Effective and timely manner" means that regulation will result in the addition of any water to the surface water source during the relevant time period.

(3) "Hydraulic Connection" or "Hydraulic Interconnection" means saturated conditions exist that allow water to move between two or more sources of water, either between groundwater and surface water or between groundwater sources.

(4) "Potential for Substantial Interference", or "PSI", means that a groundwater use will cause streamflow depletion based on the assessments described in OAR 690-009-0040, and therefore may cause or may have caused substantial interference with a surface water source, based on the definitions in OAR 690-008-0001.

(5) "Proposed groundwater use" means an application to appropriate groundwater pursuant to ORS 537.621, ORS 537.143, or ORS 536.750 that is under consideration with the Department.

(6) “Streamflow depletion” means a reduction in the flow of a surface water source due to pumping a hydraulically connected groundwater source. Streamflow depletion encompasses both:

(a) captured groundwater that would otherwise discharge to a surface water source; and,

(b) induced infiltration from a surface water source to recharge the hydraulically connected groundwater source.

Statutory/Other Authority: ORS 537

History:

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690-009-0040

Determination of Hydraulic Connection and Potential for Substantial Interference

(1) Hydraulic connection and the potential for substantial interference with a surface water source shall be determined by the Department according to these rules. These determinations shall be based upon the application of generally accepted hydrogeologic principals using best available information concerning the hydrologic system of interest and the well(s) under consideration.

(a) Appropriate information that is provided in the application or in the public comment period for the application shall be considered in the process of making these determinations.

(b) Best available information includes, but is not limited to, pertinent water well reports, aquifer test analyses, hydrologic and geologic studies and reports, groundwater and surface water elevation data, available numerical and analytical groundwater flow models, and any other information that is used in applying generally accepted hydrogeologic principals and methodologies.

(2) A determination of hydraulic connection is a prerequisite for a determination of the potential for substantial interference.

(3) A determination of the potential for substantial interference with a surface water source shall at a minimum include application of the generally accepted hydrogeological principles described in the following subsections to the specific use and wells under consideration:

(a) “The Source of Water Derived from Wells: Essential Factors Controlling the Response of an Aquifer to Development” by C. V. Theis, 1940; and,

(b) “Streamflow Depletion by Wells – Understanding and Managing the Effects of Groundwater Pumping on Streamflow” by P. M. Barlow and S. A. Leake, 2012.

(4) The potential for substantial interference with a surface water source exists if the well(s) under consideration will, over the full term of the proposed or authorized groundwater use, obtain water from streamflow depletion.

(5) For the purposes of issuing a permit for a proposed groundwater use, a finding of potential for substantial interference with a surface water source may mean that water is not available for the

proposed groundwater use if the use will substantially interfere with a surface water source as per the definitions in OAR 690-008-0001 and OAR 690-300-0010.

(6) For the purposes of groundwater controls in OAR 690-009-0050, a finding of potential for substantial interference with a surface water source may precede the control actions described in that rule.

Statutory/Other Authority: ORS 537

History:

WRD 17-1988, f. & cert. ef. 11-4-88

690-009-0050

Ground Water Controls

These rules apply to the control or regulation of groundwater where it is determined that an existing groundwater appropriation will cause or has caused substantial interference with a surface water source as described in OAR 690-009-0040 and OAR 690-008-0001(10)(a).

(1) The Department shall review existing groundwater appropriations to determine the potential to cause substantial interference with a surface water source on a case-by-case basis, in accordance with OAR 690-009-0040, whenever the Department has cause to believe that substantial interference with a surface water source may exist.

(2) Whenever the Department determines that substantial interference with a surface water supply exists, the Department shall control those groundwater appropriations that have been determined under section (1) of this rule to have the potential to cause substantial interference. The controls shall be similar to or compatible with, but not more restrictive than controls on the affected surface water source, in accordance with the relative dates of priorities of the ground water and surface water appropriations:

(a) Prior to controlling the use of any well greater than 500 feet from a surface water source, the Department shall determine whether any control would provide relief to the surface water supply in an effective and timely manner. The Department shall make the determination on the basis of the best available information, employing at least one of the following methods:

(A) Suitable equations and graphical techniques that are described in pertinent publications (such as "Computation of Rate and Volume of Stream Depletion by Wells," by C.T. Jenkins, in Techniques of Water-Resources Investigations of the United States Geological Survey: Book 4, Chapter D1);

(B) A computer program or groundwater model that is based on such or similar equations or techniques

(b) The Department shall control the use of wells greater than one mile from a surface water source only through a critical groundwater area determination in accordance with ORS 537.730 through 537.740.

(3) As necessary, the Department shall determine the horizontal distance between any well in question and the nearest surface water source on the basis of the edge of the surface water source as also determined by the Department.

Statutory/Other Authority: ORS 537

History:

WRD 17-1988, f. & cert. ef. 11-4-88