



**MEMORANDUM**

**TO:** Water Resources Commission

**FROM:** Justin Iverson, Groundwater Section Manager  
Brenda Bateman, Technical Services Division Administrator

**SUBJECT:** Agenda Item E, August 17, 2017  
Water Resources Commission Meeting

**Groundwater Policy Discussion**

**I. Introduction**

This report provides a foundation for continuing discussions about groundwater policy by describing the technical review process applied to applications for new groundwater right allocations. This is an informational item.

**II. Background**

At the October 2016 Commission meeting, staff presented an overview of groundwater management in Oregon and outlined recently completed and ongoing work. The Commission directed the Department to develop a long-term groundwater work plan that identifies priority actions and objectives, as well as potential timelines and associated costs. A sub-committee composed of Commissioners Eric Quaempts and Meg Reeves was designated to work with staff during development of the work plan.

The current draft version of the 2017 Integrated Water Resources Strategy (IWRS) update includes a new recommended action (11E) titled “Develop Additional Groundwater Protections.” At the January 2017 Commission meeting, staff used the framework of the proposed 2017 update to the IWRS to outline eight potential priorities and offered a brief narrative to further explain what each action involves and how the work plan generally could address each action (see Attachment 1). At the May 2017 Commission meeting, Director Byler announced the intention to complete an agency-wide strategic plan. The groundwater work plan, and other work plans that follow, will connect to the priorities identified under the strategic plan.

**III. Basis in Statute and Rule**

The Legislative Assembly has recognized, declared, and found that the right to reasonable control of all water within the state from all sources of water supply belongs to the public. The

Groundwater Act of 1955 (Oregon Revised Statute [ORS] 537.505 to 537.795 and ORS 537.992) establishes the authority for groundwater management and monitoring statewide to ensure the preservation of the public welfare, safety, and health. The Act directs the state to determine rights to the use of groundwater and to manage groundwater in conjunction with surface water within a single prior appropriation system, recognizing the hydraulic connection between the two water sources. ORS 537.769 notes that groundwater protection is a matter of statewide concern and ORS 537.775 says that wells shall be constructed and operated so they do not unduly interfere with other wells or surface water.

The Groundwater Act also directs the state to determine the extent, capacity, quality, and other characteristics of its groundwater bodies, which are used to inform resource management decisions. Other important aspects of the state's groundwater management policy provide that rights to use groundwater be protected, reasonably stable groundwater levels be determined and maintained, and groundwater overdraft be prevented.

In addition to the protections set forth in statute, the Water Resources Commission has adopted numerous administrative rules to further guide agency responsibilities and functions related to groundwater management. See Oregon Administrative Rules, Chapter 690, including Divisions 8, 9, 10, 200-240, 310, 380, 400, and 410.

#### **IV. Discussion**

Staff, commissioners, and stakeholders continue to discuss groundwater management priorities. This section details the manner in which the groundwater section performs technical reviews of applications for new groundwater allocations to provide a baseline for continuing discussions of groundwater policy with the Commission.

Hydrogeologists in the groundwater section assist the water rights section by performing a technical review of applications to appropriate groundwater. The criteria for reviewing applications and the general process of the review, from acceptance of an application through final order for a permit, are summarized in Attachment 2. The groundwater technical review is only one component of the Initial Review.

Groundwater technical reviews are documented on a standard form, included as Attachment 3. The groundwater review form is designed to:

1. Step the hydrogeologist through the required evaluation, as laid out in statute and rule;
2. Document the hydrogeologist's evaluation of a groundwater application; and
3. Provide consistency of evaluation methodologies among groundwater section staff.

The groundwater review form has four sections, which are discussed in more detail below.

##### Section A: General Information

Section A summarizes the pertinent application information reviewed by a hydrogeologist, including the location of the well (point of appropriation), the target aquifer (source), and the

rate, volume, and seasonality of the proposed use. The hydrogeologist notes any basin rules or other administrative conditions.

#### Section B: Groundwater Availability and Public Interest Review

Section B documents findings of the public interest review required by OAR 690-310-130 and 140, which require a determination that groundwater is available<sup>1</sup> and that the use may be made without injury to other water rights and according to any applicable rules of the Commission. Note that Section B addresses only groundwater considerations, while potential impacts to surface water are addressed in Section C.

In areas where groundwater levels are declining with time regardless of climatic cycles (i.e., in response to groundwater extraction, as opposed to cyclic drought and surplus annual precipitation trends), the groundwater resource is found to be over-appropriated. If there are no water level data available within a reasonable distance of the proposed new use, the reviewer may find the resource “cannot be determined to be over appropriated.” In this case, the reviewer will suggest water level and water use measurement and reporting permit conditions be placed on the permit in order to collect data to assess the status of the resource in that area.

Injury may be found where the reviewer determines that the potential for substantial or undue interference (OAR 690-008-001(8)) is likely to occur to an existing appropriator if the proposed use were exercised.<sup>2</sup> In addition, the reviewer may find a proposed use is not within the capacity of the resource if exercising the proposed use would likely result in over appropriation or would significantly impair the function or character of the aquifer (e.g., degrade the thermal or chemical quality of the aquifer).<sup>3</sup>

Any of the above considerations may be addressed through permit conditions. Some examples of common permit conditions include water level and use measurement and reporting requirements, special well construction standards, limitations to development of a specific aquifer, and limitations on use if specified groundwater level declines. Permit conditions can be difficult to administer or enforce; therefore, the agency needs to weigh the benefits of issuing a conditioned water right, with the challenges of implementing the conditions.

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<sup>1</sup> “Water is available” is defined in OAR 690-300-110 (57) as a source that is not over-appropriated during any period of the proposed use. “Over-Appropriated” is defined in OAR 690-400-0010 (11) as the appropriation of groundwater resources by all water rights in excess of the average annual recharge to a groundwater source over the period of record or resulting in the further depletion of already over-appropriated surface water. The appropriation of groundwater resources by all water rights refers to consumptive use, which is the amount of water withdrawn and not returned to the aquifer by all groundwater rights.

<sup>2</sup> “Injury” is defined in Division 380-0100(3) as resulting in another, existing water right not receiving previously available water to which it is legally entitled.

<sup>3</sup> “The capacity of the resource” is defined in Division 400-0010(4) as the ability of a surface water or groundwater resource to sustain a balance of public and private uses without causing over-appropriation or otherwise significantly impairing the function or character of the resource.

### Section C: Groundwater / Surface Water Considerations

Section C documents hydrologic findings and prescriptive assumptions that determine the potential for a proposed groundwater allocation to substantially interfere with surface water as defined in the Division 009 rules.

When determining hydraulic connection, available information such as well logs, groundwater reports, relative groundwater and surface water elevations, stream baseflow and seepage run data are assessed and cited in the review form. The reviewer first identifies the aquifer intended as the groundwater source for the application and determines whether or not it is confined or unconfined. The reviewer then determines hydraulic connection between the aquifer and proximal surface water bodies.

All wells located a horizontal distance less than one-quarter mile from a surface water source that produce water from an unconfined aquifer are assumed to be hydraulically connected to the surface water source by rule.

Wells determined to be hydraulically connected within 1 mile of a surface water source are then assessed against Division 9 criteria, under which the wells are assumed to have the potential to cause substantial interference with surface water if:

1. The wells are within  $\frac{1}{4}$  mile of a hydraulically connected stream;
2. The rate of appropriation is greater than 5 cubic feet per second (cfs);
3. The rate of appropriation is greater than 1 percent of the pertinent adopted minimum perennial streamflow or instream water right or the 80 percent exceedance flow for the pertinent Water Availability Basin; or,
4. The rate of appropriation would result in a stream depletion of greater than 25 percent of the rate of appropriation after 30 days of continuous use, as determined by a numerical or analytical groundwater flow model.

Finally, OAR 690-9-0040(5) describes a number of additional considerations, such as cumulative impacts, under which the Department may make a finding of potential for substantial interference. Application of these additional considerations may merit further conversation as part of the work plan discussions.

If the groundwater technical review indicates one or more proposed points of appropriation have the potential to cause substantial interference with surface water, the application caseworker in the Water Rights Services Division assesses whether the proposed groundwater use would impair or detrimentally affect the public interest due to its potential impact on surface water sources.

### Section D: Well Construction

Section D is used to identify any apparent well construction deficiencies that may exist in a proposed point of appropriation. If a deficiency is suspected, the application will be routed to the Well Construction and Compliance Section for review. Any wells found to be deficient are required to be reconstructed or repaired to meet well construction standards before water may be appropriated under a new permit.

## **V. Conclusion**

Staff will continue to communicate with the subcommittee and also meet with stakeholders to solicit their ideas and input regarding groundwater appropriation. The Department will brief Commissioners on its continuing progress at subsequent Commission meetings.

### Attachments:

1. Draft WRD Groundwater Work Plan Priorities
2. Criteria for Reviewing an Application
3. GW Review Form – Public Interest Review for Groundwater Applications

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## Attachment 1: Draft WRD Groundwater Work Plan Priorities

This draft uses the framework of the Integrated Water Resources Strategy as its foundation. Where the IWRS is a high-level document that describes what generally needs to happen, other documents—such as this work plan—discuss the “who, when, and how” in more detail.

Topmost issues are as follows, not yet in priority order:

- **Conduct additional groundwater investigations (IWRS 1A).** Oregon has a need for additional basin studies to further understand the relationship between groundwater and surface water, and the availability of both. Conducting groundwater investigations is a priority for the state, which typically evaluates groundwater resources at the basin scale through cooperative, cost-share programs. These groundwater investigations typically result in a conceptual model of the basin, including a description of the geology of the basin and a water budget showing overall volumes of groundwater recharge, discharge, and dynamic storage, as well as a numerical groundwater flow model that is used make predictions regarding the outcome of potential future management or physical scenarios. The Department has completed cooperative basin studies in three basins in Oregon (Deschutes, Willamette, and Klamath) and is currently working with the USGS on a study in the Harney Basin.
  - *The work plan will highlight and prioritize additional basins for subsequent groundwater studies, propose timelines and milestones for their completion, and identify data that should be collected now to support future basin studies in these areas.*
- **Assess and adjust groundwater administrative areas (IWRS 1A).** The State of Oregon has more than 20 groundwater administrative areas, designated because water levels were declining at unsustainable levels. These areas should be periodically re-evaluated to assess water level trends, boundary accuracy, and whether these designated areas are meeting the goals of groundwater stabilization, groundwater recovery, and protection of existing water users.
  - *The work plan will set out a process for evaluating existing designated areas and highlight the areas of the state where the Department needs to dedicate resources to determine whether additional groundwater designations are required, and if so, to what degree.*
- **Improve groundwater data collection, analysis, and sharing (IWRS 1B, 1C, 2B, 5A).** Oregon’s surface water and groundwater resources, by their very nature, are ever-changing. By day, month and year, water resources managers need up-to-date information in order to manage the resource and make sound decisions. This requires measuring baseline conditions and evaluating trends over time and the effectiveness of our water management programs. Monitoring priorities have been identified in the Department’s 2016 *Monitoring Strategy*.

- *This work plan will highlight the resources necessary to expand and maintain the state’s monitoring networks and to collect and share data.*
- **Invest in updated scientific modeling tools (IWRS 1C).** Increasingly, communities are asking state agencies for technical assistance in modeling future scenarios related to climate change, energy and economic development, and the implications of various land use policies on water resources and management. These scenarios are helpful for demonstrating what the range of results would be if a community were to invest in one water project instead of another, or if it were to invest in a combination of projects. Many of these data-intensive efforts are typically outside the financial and technical capacity of local government.
  - *The work plan will describe and prioritize the tools and scientists needed for creating and testing future scenarios to support decision-making and prioritizing investments in water resources projects.*
- **Modernize well construction and compliance program (IWRS 7A, 12A).** Oregon’s well construction standards are designed to protect groundwater resources and the public by preventing contamination, waste, and loss of artesian pressure. With several thousand drilled each year, state oversight is critical to ensure wells are constructed using proper methods, materials, and equipment. The state licenses and bonds water well constructors to ensure they have the equipment, knowledge, and experience required for proper well construction. In addition, any construction, alteration, deepening, or abandonment of a well must be done in accordance with groundwater laws and general standards.
  - *This work plan will lay out what can be done within existing resources and authority and highlight the areas where additional investments and updated statutes and rules are needed to modernize the well construction and compliance program.*
- **Improve protection of groundwater resources during the permitting and enforcement process (IWRS 10).** As Oregon’s water resources near full allocation, decision-making and permit writing becomes ever more complicated. Caseworkers must refer to water availability data, rules, and reviews from other agencies to make decisions. Department staff are required to have technical skills, consult with colleagues and other agencies, and serve as the point of contact for customers who are trying to conduct business efficiently. The tools they use to complete their work are customized to fit the agencies’ mission and purpose.
  - *This work plan will lay out the steps necessary to incorporate groundwater considerations more effectively into permitting and enforcement processes.*
- **Develop a groundwater mitigation program (IWRS 10D).** In many parts of Oregon, groundwater interacts directly with surface water. Oregon water law recognizes this important connection as a fundamental aspect of the water code, and the State manages groundwater-surface water sources as one, where appropriate. This is called conjunctive management. Generally, the Water Resources Department denies or limits groundwater applications in instances where use from a groundwater aquifer can substantially interfere

with a surface water source that is already fully appropriated or protected by a Scenic Waterway designation. One example of conjunctive management is based on the hydraulic connection between groundwater and surface water within the Deschutes Groundwater Study Area. Because of this connection, new groundwater withdrawals must now be mitigated with a similar amount of water placed instream, to offset the impact to surface water flows. Defined mitigation programs would be beneficial elsewhere in the state, but do not currently exist.

- *This work plan will identify areas where defined mitigation programs are needed and the components necessary to create groundwater mitigation programs in these locations.*
- **Assist communities with groundwater storage projects.** (IWRS 10B, 11A). Oregon can improve access to groundwater storage by encouraging the increased use of Aquifer Storage and Recovery (ASR) and Artificial Recharge (AR) for water storage. The use of these techniques is gaining interest, particularly in the northwest and north central regions of Oregon, due to the smaller environmental footprint, cost, and potential associated benefits to water quality. Areas of the state designated as “groundwater limited” or “critical groundwater areas” should also be evaluated for ASR and AR projects. The State has issued limited licenses to 16 entities for testing the use of ASR and 6 for testing AR. It takes time and resources for the state to assist communities who are interested in pursuing these groundwater storage techniques.
  - *The work plan will describe the technical assistance the Department can currently provide to communities who are interested in pursuing these techniques.*



<p><b>Criteria for Reviewing an Application For a Permit to Use Surface or Ground Water</b></p>
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Water right permits provide permission from the Water Resources Department to begin using water beneficially. The standards and procedures used by the Department in evaluating water right permit applications are described in Oregon Revised Statute (ORS) Chapter 537 (<http://landru.leg.state.or.us/ors/>) and in Oregon Administrative Rules (OAR) Chapter 690, Divisions 5 and 310 (<http://www.wrd.state.or.us/law/oar1999.shtml>).

This is a summary, prepared by the Water Resources Department, of criteria and procedures that are generally applicable to applications for a permit to use surface or ground water. The summary is necessarily general, and may not specifically address every applicant's fact situation. The summary is intended as general guidance for applicants, and not as a substitute for reference to applicable statutes and rules.

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In reviewing permit applications under ORS 537.130 to 537.220 and ORS 537.615 to 537.635, the Department will consider the following criteria:

- Compliance with applicable basin program or provisions [OAR 690-500 to 690-520], any applicable interstate compacts [ORS Chapter 542], and statewide administrative rules [ORS 536.300 & OAR 690-410]
- Compliance with statewide planning goals [OAR 690-005-0030]
- Compliance with acknowledged land use comprehensive plans [OAR 690-005-0035]
- Water availability [OAR 690-310-080 & OAR 690-310-150]
- Completeness of application [OAR 690-310-070]
- Impairment or detriment to the public interest with regard to sensitive, threatened, or endangered fish species [OAR 690-033]
- Injury to existing water rights of record [OAR-690-310-150]
- Compliance with Scenic Waterway requirements [ORS 390.835]
- Public interest standards [ORS 537.153]
- For ground water permit applications: Potential for substantial interference with surface water [OAR 690-09]
- For ground water permit applications: Consistency of the proposed well with minimum well construction standards [OAR 690-200]
- For ground water permit applications: Consistency with designations of critical groundwater areas [ORS 537.735]

## **Water Use Permit Application Procedures and Review**

The Water Resources Department processes a permit application using the following procedure:

**1. Completeness Determination**

The Department evaluates whether the application contains all of the information required under OAR 690-310-040. The Department also determines whether the proposed use is prohibited by statute. If the Department determines that the application is incomplete, all fees have not been paid, or the use is prohibited by statute, the application and all fees submitted are returned to the applicant.

**2. Initial Review**

The Department reviews the application to determine whether water is available during the time requested, whether the proposed use is restricted or limited by rule and statute, and whether other issues may preclude approval of or restrict the proposed use. An initial review report containing preliminary determinations is mailed to the applicant.

**3. Public Notice**

If the permit application is not withdrawn by the applicant within 14 days of the mailing of the initial review, the Department gives public notice of the application in the weekly notice published by the Department. The public comment period is 30 days from publication in the weekly notice.

**4. Proposed Final Order Issued**

The Department reviews any comments received. Within 60 days of completion of the initial review report, the Department issues a proposed final order explaining the proposed decision to deny or approve the application. A proposed final order proposing approval of an application will include a draft permit.

**5. Public Notice**

Within 7 days of issuing the proposed final order, the Department gives public notice in the weekly notice. Notice includes information about the application and the proposed final order. Protest requests must be received by the Department within 45 days after publication of the proposed final order in the weekly notice.

**6. Final Order Issued**

Within 60 days of the close of the period for receiving protests, the Director of the Water Resources Department determines whether to issue a final order or to schedule a contested case hearing. After a contested case hearing or if there is no contested case hearing, a final order is issued approving or rejecting the application or modifying the proposed final order. If the application is approved, a permit is issued. The permit specifies the details of the authorized use and any terms, limitations, or conditions that the Department deems appropriate.

# Standard Application Completeness Checklist

Minimum Requirements (OAR 690-310-0040)(ORS 537.400)

This is the checklist used by WRD staff

Application \_\_\_\_\_ Township \_\_\_\_\_

Priority Date \_\_\_\_\_ Range \_\_\_\_\_

Use(s) \_\_\_\_\_ Section \_\_\_\_\_

Rate \_\_\_\_\_ POD Loc \_\_\_\_\_

County \_\_\_\_\_ POU Loc \_\_\_\_\_

W.M. \_\_\_\_\_ Caseworker \_\_\_\_\_

Applicant/Organization Name, Mailing Address and Telephone Number.

Source of water. If stored water, is the stored water component filed out, including a non-expired agreement for stored water must be included. (ORS 537.400) **NOTE:** *A surface water application cannot be filled at the same time as a Reservoir or Alt Reservoir if it will be for the use of the stored water under the PROPOSED Reservoir application (E2).*

The proposed source **is** or **is not** (circle one) withdrawn from further appropriation, or Division 538. If it is, return application and fees.

Property ownership indicated.

If applicant does not own all the land, the affected landowner's name and mailing address must be listed.

If applicant does not own all the land, a statement declaring the existence of either written authorization or an easement permitting access to land crossed by the proposed ditch canal or other work must be submitted.

Groundwater development section (Page 3 and 4, Section B) or a well log report.

Proposed use of water. If supplemental, list primary water right acreage if applicable.

Enclosed Supplemental Form for each proposed use.

Form I (Irrigation)

Form M (Municipal or Quasi-Municipal)

Form R (Mining)

Form Q (Commercial or Industrial)

Spring Description Sheet

Amount of water from *each* source in gallons per minute (GPM), cubic feet per second (CFS), or acre feet (AF)

Period of use

Water management section (Please estimate if the water system has not been designed).

- Resource Protection Section (Page 6, Section 5).
  - Project schedule (If system is already completed, indicate "existing").
  - For reservoir applications storing more than 9.2 acre feet, and a dam height of more than 10 feet, preliminary plans and specifications for dam and impoundment are required.
    - If the above is statement is checked, the map must be prepared by a CWRE.
  - **All** applicants (or the authorized agent with title or authority if for an organization or corporation), must sign the application in ink. *Signature must be an original "wet" signature.*
  - You must include a Legal description of the property involved that includes a metes and bounds, or other government survey description. A copy of the deed, land sales contract or title insurance policy can provide this information, or you may submit a lot book report prepared by a title company. The Department will not accept a copy of the tax bill.
  - A completed Land-Use Form or receipt signed and dated by the appropriate planning department officials. *Date of signature must be within the past 12 months. Signature must be an original "wet" signature.*
  - The map must meet all the minimum requirements of OAR 690-310-0050.
    - Township, Range, Section
    - Place of use, 1/4, 1/4's and tax lot clearly identified
    - Location of each diversion point well or dam by reference to a recognized public land survey corner
    - Number of acres per 1/4, 1/4, if irrigation, nursery, or agriculture
    - Reference corner on map
    - Each point of diversion coordinate
    - Location of main canals, ditches, pipelines or flumes (if POA/POD is outside of POU)
    - Even map scale not less than 4" = 1 mile (example: 1" = 100 ft, 1" = 200 ft, etc.)
    - North Directional Symbol
    - Other \_\_\_\_\_
  - Fees: Amount of water requested \_\_\_\_\_
 

Base Fee \$ _____	Additional Use @ _____ = _____
1st CFS/AF _____	Total Exam Fees \$ _____
____ Addtn'l CFS/ AF @ _____ = _____	Total Paid \$ _____
____ Addtn' POD @ _____ = _____	Amount Due \$ _____
- Reviewed by: \_\_\_\_\_ Date : \_\_\_\_\_

**PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS**

TO: Water Rights Section Date \_\_\_\_\_  
 FROM: Groundwater Section \_\_\_\_\_  
 SUBJECT: Application G- \_\_\_\_\_ Reviewer's Name \_\_\_\_\_  
 Supersedes review of \_\_\_\_\_ Date of Review(s) \_\_\_\_\_

**PUBLIC INTEREST PRESUMPTION; GROUNDWATER**

**OAR 690-310-130 (1)** *The Department shall presume that a proposed groundwater use will ensure the preservation of the public welfare, safety and health as described in ORS 537.525.* Department staff review groundwater applications under OAR 690-310-140 to determine whether the presumption is established. OAR 690-310-140 allows the proposed use be modified or conditioned to meet the presumption criteria. **This review is based upon available information and agency policies in place at the time of evaluation.**

**A. GENERAL INFORMATION:** Applicant's Name: \_\_\_\_\_ County: \_\_\_\_\_

A1. Applicant(s) seek(s) \_\_\_\_\_ cfs from \_\_\_\_\_ well(s) in the \_\_\_\_\_ Basin, \_\_\_\_\_ subbasin

A2. Proposed use \_\_\_\_\_ Seasonality: \_\_\_\_\_

A3. Well and aquifer data (**attach and number logs for existing wells; mark proposed wells as such under logid**):

Well	Logid	Applicant's Well #	Proposed Aquifer*	Proposed Rate(cfs)	Location (T/R-S QQ-Q)	Location, metes and bounds, e.g. 2250' N, 1200' E fr NW cor S 36
1						
2						
3						
4						
5						

\* Alluvium, CRB, Bedrock

Well	Well Elev ft msl	First Water ft bls	SWL ft bls	SWL Date	Well Depth (ft)	Seal Interval (ft)	Casing Intervals (ft)	Liner Intervals (ft)	Perforations Or Screens (ft)	Well Yield (gpm)	Draw Down (ft)	Test Type

Use data from application for proposed wells.

A4. **Comments:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

A5.  **Provisions of the** \_\_\_\_\_ Basin rules relative to the development, classification and/or management of groundwater hydraulically connected to surface water  **are**, or  **are not**, activated by this application. (Not all basin rules contain such provisions.)  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

A6.  **Well(s) #** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, tap(s) an aquifer limited by an administrative restriction.  
 Name of administrative area: \_\_\_\_\_  
 Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**B. GROUNDWATER AVAILABILITY CONSIDERATIONS, OAR 690-310-130, 400-010, 410-0070**

B1. Based upon available data, I have determined that groundwater\* for the proposed use:

- a.  is over appropriated,  is not over appropriated, or  cannot be determined to be over appropriated during any period of the proposed use. \* This finding is limited to the groundwater portion of the over-appropriation determination as prescribed in OAR 690-310-130;
- b.  will not or  will likely be available in the amounts requested without injury to prior water rights. \* This finding is limited to the groundwater portion of the injury determination as prescribed in OAR 690-310-130;
- c.  will not or  will likely to be available within the capacity of the groundwater resource; or
- d.  will, if properly conditioned, avoid injury to existing groundwater rights or to the groundwater resource:
  - i.  The permit should contain condition #(s) \_\_\_\_\_;
  - ii.  The permit should be conditioned as indicated in item 2 below.
  - iii.  The permit should contain special condition(s) as indicated in item 3 below;

- B2. a.  Condition to allow groundwater production from no deeper than \_\_\_\_\_ ft. below land surface;
- b.  Condition to allow groundwater production from no shallower than \_\_\_\_\_ ft. below land surface;
- c.  Condition to allow groundwater production only from the \_\_\_\_\_ groundwater reservoir between approximately \_\_\_\_\_ ft. and \_\_\_\_\_ ft. below land surface;
- d.  Well reconstruction is necessary to accomplish one or more of the above conditions. The problems that are likely to occur with this use and without reconstructing are cited below. Without reconstruction, I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Groundwater Section.

**Describe injury** –as related to water availability– that is likely to occur without well reconstruction (interference w/ senior water rights, not within the capacity of the resource, etc): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

B3. Groundwater availability remarks: \_\_\_\_\_

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**C. GROUNDWATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040**

C1. **690-09-040 (1):** Evaluation of aquifer confinement:

Well	Aquifer or Proposed Aquifer	Confined	Unconfined
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

**Basis for aquifer confinement evaluation:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

C2. **690-09-040 (2) (3):** Evaluation of distance to, and hydraulic connection with, surface water sources. All wells located a horizontal distance less than ¼ mile from a surface water source that produce water from an unconfined aquifer shall be assumed to be hydraulically connected to the surface water source. Include in this table any streams located beyond one mile that are evaluated for PSI.

Well	SW #	Surface Water Name	GW Elev ft msl	SW Elev ft msl	Distance (ft)	Hydraulically Connected?			Potential for Subst. Interfer. Assumed?	
						YES	NO	ASSUMED	YES	NO
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Basis for aquifer hydraulic connection evaluation:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Water Availability Basin the well(s) are located within:** \_\_\_\_\_

C3a. **690-09-040 (4):** Evaluation of stream impacts for each well that has been determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that surface water source, and not lower SW sources to which the stream under evaluation is tributary. Compare the requested rate against the 1% of 80% *natural* flow for the pertinent Water Availability Basin (WAB). If Q is not distributed by well, use full rate for each well. Any checked  box indicates the well is assumed to have the potential to cause PSI.

Well	SW #	Well < ¼ mile?	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

C3b. **690-09-040 (4):** Evaluation of stream impacts by total appropriation for all wells determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. **Complete only if Q is distributed among wells.** Otherwise same evaluation and limitations apply as in C3a above.

	SW #		Q <sub>w</sub> > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Q <sub>w</sub> > 1% ISWR?	80% Natural Flow (cfs)	Q <sub>w</sub> > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
			<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
			<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
			<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
			<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

C4a. **690-09-040 (5):** Estimated impacts on **hydraulically connected surface water sources greater than one mile** as a percentage of the proposed pumping rate. Limit evaluation to the effects that will occur up to one year after pumping begins. This table encompasses the considerations required by 09-040 (5)(a), (b), (c) and (d), which are not included on this form. Use additional sheets if calculated flows from more than one WAB are required.

<b>Non-Distributed Wells</b>													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
<b>Distributed Wells</b>													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
(A) = Total Interf.													
(B) = 80 % Nat. Q													
(C) = 1 % Nat. Q													
(D) = (A) > (C)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(E) = (A / B) x 100		%	%	%	%	%	%	%	%	%	%	%	%



(A) = total interference as CFS; (B) = WAB calculated natural flow at 80% exceed. as CFS; (C) = 1% of calculated natural flow at 80% exceed. as CFS; (D) = highlight the checkmark for each month where (A) is greater than (C); (E) = total interference divided by 80% flow as percentage.

**Basis for impact evaluation:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
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\_\_\_\_\_

C4b. **690-09-040 (5) (b) The potential to impair or detrimentally affect the public interest is to be determined by the Water Rights Section.**

- C5.  **If properly conditioned**, the surface water source(s) can be adequately protected from interference, and/or groundwater use under this permit can be regulated if it is found to substantially interfere with surface water:
  - i.  The permit should contain condition #(s) \_\_\_\_\_;
  - ii.  The permit should contain special condition(s) as indicated in "Remarks" below;

C6. **SW / GW Remarks and Conditions:** \_\_\_\_\_  
\_\_\_\_\_  
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**References Used:** \_\_\_\_\_  
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**D. WELL CONSTRUCTION, OAR 690-200**

D1. Well #: \_\_\_\_\_ Logid: \_\_\_\_\_

D2. **THE WELL does not appear to meet current well construction standards based upon:**

- a.  review of the well log;
- b.  field inspection by \_\_\_\_\_;
- c.  report of CWRE \_\_\_\_\_;
- d.  other: (specify) \_\_\_\_\_

D3. **THE WELL construction deficiency or other comment is described as follows:** \_\_\_\_\_

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D4.  **Route to the Well Construction and Compliance Section for a review of existing well construction.**

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**Water Availability Tables**

**Well Location Map**

**Water-Level Trends in Nearby Wells**