

**BEFORE THE WATER RESOURCES DEPARTMENT
OF THE STATE OF OREGON**

In the Matter of Aquifer Storage and Recovery)
(ASR) Limited License Application #010,)
Washington County

SUMMARY ORDER
APPROVING RENEWED ASR TESTING

AUTHORITY

Oregon Revised Statute (ORS) 537.534 and Oregon Administrative Rule (OAR) 690-350-0020 establish the process by which an application for ASR testing under an ASR limited license may be submitted and approved. Oregon Administrative Rule (OAR) 690-350-0010 describes general provisions for ASR under Oregon law.

BACKGROUND

The City of Tualatin began ASR testing under ASR LL #010 in 2004. The license was renewed in 2009. Condition 1 of ASR Limited License #010 provides for renewal pursuant to OAR 690-350-0020(5)(c), and describes the following terms for renewal: The license may be renewed if the licensee demonstrates to the Director's satisfaction that further testing is necessary and that the licensee complied with the terms of the license. On April 1, 2014, the Department received application for renewal ASR Limited License #010. The Department determined the renewal request was complete on April 3, 2014.

FINDINGS OF FACT

1. On April 1, 2014, The City of Tualatin submitted a request for renewal of ASR Limited License #010. The Department determined it was complete on April 3, 2014.
2. The Department provided public notice of the application in the Department's weekly public notice on April 8, 2014. A 30-day comment period followed.
3. The Department received no adverse comments related to the possible renewal of ASR Limited License #010.
4. The Department sought comments and recommendations from Oregon Department of Environmental Quality (DEQ) and Oregon Health Authority Drinking Water Program (OHA) related to the possible renewal. Comments were received from DEQ and OHA supporting the renewal of ASR LL #010.
5. The Department evaluated the renewal request and comments and determined the proposed renewal is consistent with Condition 1 of the ASR Limited License and OAR 690-350-0020(5)(c). The licensee has demonstrated to the Director's satisfaction that further testing is necessary and that the licensee complied with the terms of the license. The renewal request presented reasons for the renewal and also provided specific details that addressed compliance with the ASR limited license.

CONCLUSIONS OF LAW

The request to renew ASR Limited License #010 for five years is consistent with the requirements of OAR 690-350-0020(5)(c) and Condition 1 of ASR Limited License #010.

ORDER

Now, THEREFORE, it is ORDERED, ASR Limited License #010 shall be valid through the fifth anniversary of its renewal, pursuant to ORS 537.534 and OAR 690-350-0020(5)(c), and Condition 1 of the original ASR limited license.

Except as modified by other provisions of this license, the licensee is authorized to pursue the project schedule, monitoring, and other features noted in the original and subsequent ASR pilot test plans. That plan may be amended and approved pursuant to condition (4)(A)(iii). The project schedule in the ASR test plan may be reasonably adjusted by the licensee to reflect the license issuance date or other delays. Features of that ASR testing plan are provided in the application documents entitled:

City of Tualatin
Aquifer Storage and Recovery
Limited License Application

Pilot Test Plan
Prepared by
Murray, Smith & Associates, Inc.
In association with
Groundwater Solutions, Inc.
December, 2003

ASR Limited License No. 10,
City of Tualatin Testing Program
Monitoring Plan for 2014 to 2018
February 28, 2014

ASR testing must provide data and analysis that address the following: the appropriate target storage volume; loss of stored ASR water and natural water by virtue of ASR activities; water-quality changes due to ASR activities; well construction sufficiency for ASR purposes; water-level response in the ASR wells, aquifer, springs and nearby wells; accounting of ASR inputs, withdrawals, and storage; water-quality testing needs; and well hydraulics at the ASR wells.

The licensee may divert up to 3,000 gpm from the Bull Run River, a tributary of the Sandy River, using authorization of ORS 538.420.

The points of diversion on the Bull Run River under ORS 538.420 are located at T1S/R5E, Section 25, SW1/4 SW1/4.

The licensee may store up to 475 million gallons in a basalt aquifer using five injection wells. The maximum injection rate at each well is 550 gpm. The licensee may recover up to 700 gpm of stored water per well through the same five wells. The maximum storage duration is the five-year duration of this limited license.

With the authorization of individual ASR well test plans, up to FIVE ASR wells are potentially allowed at a combined rate up to 2,750 gpm (550 gpm per well) for injection and up to 3,500 gpm (700 gpm per well) for recovery. These wells consist of the following:

<u>Well Name</u>	<u>Well Log</u>	<u>Well Location</u>
ASR Well No. 1	WASH 61623	1875 feet South, 815 feet West of NE corner of Section 34, T2S/R1W
Site 2	PROPOSED	T2S/R1W - Section 35, NE1/4 SE1/4
Site 3	PROPOSED	T3S/R1W - Section 1, NW1/4 NW1/4
Site 4	PROPOSED	T2S/R1W - Section 26, SW1/4 SE1/4
Site 5	PROPOSED	T2S/R1W - Section 25, SW1/4 NE1/4

Other Conditions:

- 1) **License Renewal.** The license may be renewed if the licensee demonstrates to the Director's satisfaction that further testing is necessary and that the licensee complied with the terms of the license.
- 2) **Notice Prior to Injection and Recovery.** The licensee shall give notice, in writing, to the watermaster not less than 15 days in advance of either initiating any injection under the license or recovering stored water. The injection notice shall include the license number, the location of the injection source water diversion, the quantity of water to be diverted from that source, the time of injection, and the place of injection. The recovery notice shall include the license number, the location of the recovery well(s), the time of recovery, and the quantity of water to be recovered.
- 3) **Record of Use.** The licensee shall maintain a record of injection and recovery, including the total number of hours of injection and recovery and the total metered quantity injected and recovered. The record of use may be reviewed by Department staff upon request.
- 4) **Modification/Revocation.** The Department shall notify the licensee in writing and allow the licensee to respond when considering the following actions:
 - (A) The Director may modify the ASR limited license for any of the following reasons:
 - (i) to reflect changes in Oregon Health Authority Drinking Water Program (OHA) and Oregon Department of Environmental Quality (DEQ) water quality or treatment standards;
 - (ii) to address needed technological changes as requested by DEQ or OHA to minimize constituents regulated under OAR 333-61-030 (ORS 448.131 and .273) or OAR 340-40 (ORS 468B.165);
 - (iii) upon written request from the applicant for minor adjustments to the authorization in the limited license.
 - (B) The Director may revoke, suspend or modify the ASR limited license for any of the following reasons:
 - (i) to prevent or mitigate injury to other water rights, instream water rights, minimum perennial streamflows or aquifer water quality;
 - (ii) to address any other unintended, injurious effects of the ASR activity; or
 - (iii) failure to maintain compliance with all conditions of this license.

(C) The Department may offer an additional public comment opportunity consistent with the notice and comment provisions of OAR 690-350-020 prior to modifying the license.

- 5) **Priority/Protection.** This license does not receive a priority date and is not protected under ORS 540.045.
- 6) **Compliance with Other Laws.** The injection of acceptable water into the aquifer as well as its storage and recovery under this license shall comply with all applicable local, state or federal laws. This shall include but not be limited to compliance with the Oregon Department of Environmental Quality's (DEQ's) Underground Injection Control registration program as authorized under the Safe Drinking Water Act (40 CFR 144.26). Also, all pilot test discharges to waterways must be covered by a DEQ National Pollution Discharge Elimination System (NPDES) Permit.
- 7) **Detailed Testing Plans.** A licensee shall submit a detailed plan of testing for each injection well as the project develops. A licensee shall obtain Department approval of a detailed plan before injection testing at a well may begin. The Department may approve, condition, or reject a detailed plan.
- 8) **Water Quality Conditions and Limits.**
 - (A) The licensee shall minimize, to the extent technically feasible, practical and cost-effective, the concentration of constituents in the injection source water that are not naturally present in the aquifer;
 - (B) Except as otherwise provided in (C) of this condition, if the injection source water contains constituents regulated under OAR 333-61-030 (ORS 448.131 and 448.273) or OAR 340-40 (ORS 468B.165) that are detected at greater than 50 percent of the established levels (MCLs or MMLs in the cited rules), the licensee shall employ technically feasible, practical and cost-effective methods to minimize concentrations of such constituents in the injection source water;
 - (C) Constituents that have a secondary contaminant level or constituents that are associated with disinfection of the injection source water may be injected into the aquifer up to the standards established under OAR 333-61-030 (ORS 448.131 and 448.273);
 - (D) The Department may, based upon valid scientific data, further limit certain constituents in the injection source water if the Department finds that those constituents will interfere with or pose a threat to the maintenance of the water resources of the state for present or future beneficial uses;
 - (E) If during the course of ASR testing, a constituent which is regulated under OAR 333-61-030 (ORS 448.131 and .273) or OAR 340-40 (ORS 468B.165) is detected above the 50% level prescribed in condition (8)(B) or the 100% level prescribed in condition (8)(C), the licensee shall immediately stop injection activities upon receipt of lab data and notify the Department within five days.

9) **Water Quality Sampling.**

- (A) Injection Water. The licensee shall sample and analyze injection water for the constituents regulated under OAR 333-61-030 (ORS 448.131 and .273) or OAR 340-40 (ORS 468B.165) as well as other constituents as described in the current approved monitoring and test plans.
- (B) Wells. The licensee shall sample receiving aquifer water at the well prior to any storage at the well. The licensee shall sample for the constituents regulated under OAR 333-61-030 (ORS 448.131 and .273) or OAR 340-40 (ORS 468B.165) as well as other constituents as described for wells in the current approved monitoring and test plans.
- (C) Withdrawal of Stored Water. The licensee shall analyze water withdrawn from storage for the constituents regulated under OAR 333-61-030 (ORS 448.131 and .273) or OAR 340-40 (ORS 468B.165) as well as other constituents as described in the current approved monitoring and test plans and OAR 690-350-020(3)(b)(F)(iv).

10) **Water Level Monitoring.** The licensees shall monitor water levels in wells in the manner described in the approved monitoring and test plans. The licensee shall submit a detailed water level monitoring plan for testing at each subsequent injection well. The Department shall approve, condition or reject the plan.

11) **Recovery.** The availability of stored water for recovery is based on the following factors:

- (A) Available stored water is determined on a well-by-well basis. The licensee may recover up to 95% of the quantity injected under this license during the water year that the water was injected. After that water year, the availability of stored water shall be further diminished each water year such that the licensee may only recover up to 95% of any water year-to-water year storage carryover. (For example, water year 2014 lasts from October 1, 2013 through September 30, 2014.) Data collected by the licensee may be useful in consideration of modifications to this recovery provision under the limited license.
- (B) Any water withdrawn from an ASR well identified in this limited license shall first be debited against the quantity available in the aquifer by virtue of ASR storage. When the ASR storage is depleted at an ASR well, any water withdrawn from an ASR well shall be considered a draft of natural ground water, requiring separate or additional authorization. This license does not authorize withdrawal of more water than was injected.
- (C) The availability of stored water is a running account that is subject to determination at any time.

12) **Reporting.**

- (A) Annual Water Year ASR Report. Except as otherwise noted, the licensee shall provide the Department a written report of the results of ASR testing for each water year by February 15th of the following water year. The report shall detail the several kinds of data collected during the water year (including the water-quality results in a DEQ-specified format), analyze those data to show the ASR project impacts on the aquifer, indicate the testing/development progress made under the terms of the license, and account for the injection of stored water, withdrawals of stored and natural water, and the new-year carryover storage at the ASR well. Annual reports shall be sealed and signed by a professional(s) registered or allowed, under Oregon law, to practice geology.

(B) As pertinent, data shall be submitted as described in Special Reporting Condition 18.

- 13) **Protection for Existing Users.** In the event of conflicts with existing appropriators, the licensees shall conduct all testing so as to mitigate the injurious effects. In addition, the licensees shall cooperate with the efforts of the Department to protect existing water rights and the water quality of existing users that rely upon the receiving aquifer and the injection source water.
- 14) **Use of Recovered Water.** The licensee shall use any recovered water for the purposes described in ORS 538.420.
- 15) **Additional Conditions on an Informal Basis.** The Department may suggest additional conditions to the licensees. Provided that those conditions are agreed to and undertaken by the licensees, the Department may forego formal changes to this license. This informal process does not extend to condition reductions. These additional conditions may be part of any license renewal or permit.
- 16) **Other Measures.** The licensees shall take additional measures, as appropriate, to address ASR-related issues such as landslide activation, seepage, streamflow increases, interference with nearby wells, aquifer storage limitations, and water quality protection. Further, the licensee shall notify the Department upon resolution of such issues. The licensee shall resolve these issues prior to submittal of an ASR permit application.
- 17) **Carryover Storage.** At the end of testing under this license, the licensees shall provide an accounting to the Department of the residual stored water based on the methods of determination given in this license. The Department shall consider this residual for carryover to a permanent ASR permit based on information which discloses the aquifer's ability to retain stored water.
- 18) **Special Reporting Condition.** The licensees shall provide the following information to the Department:
 - (A) Submission of any and all hydrogeologic data collected and reports developed for the project, including but not limited to cuttings analysis, video logs, geophysical logs, aquifer tests and step tests.
 - (B) Submission of digital water level data for all ASR wells and any other wells measured in conjunction with the project (in a Department specified format), including annual report data.
 - (C) Submission of annual reports with locations and elevations for all project wells (actual locations of built wells and proposed locations for proposed wells) and locations and elevations for all non-project wells that have been used for collecting water levels or other data pertinent to the project (in a Department specified format).
 - (D) Notification in the annual report of any changes in well construction to the ASR limited license file.
 - (E) Associating all project well data with the Department Well Identification Number (Well ID Number), the Department Well Log ID, if available, and the project Well Name.

- 19) **Well Tag Condition for Licensee Wells.** Prior to testing, the licensees shall ensure that their wells have been assigned a Department Well Identification Number (Well ID Number). A tag showing the Well ID Number shall be permanently attached to the wells. If a well does not have a Well ID Number, the licensee shall apply for one from the Department and attach it to the well. The Well ID Number shall be used as a reference in any correspondence regarding the well, including any reports of water use, water level, or pump test data.
- 20) **Well Construction.** Injection and recovery wells shall be open to a single aquifer in the Columbia River Basalt Group and shall meet applicable well construction standards (e.g., OAR 690-200 and OAR 690-210). Following well completion, the wells shall be thoroughly developed to remove cuttings and drilling fluids. A video log of the wells shall be collected to demonstrate to the satisfaction of the Department that each well is only open to a single aquifer. Additional data that help characterize the water-bearing-zone characteristics, including water quality and temperature, may also be provided to the Department. The wells shall be designed to limit the irretrievable loss of injected water to unsaturated zones.
- 21) **Cuttings.** During drilling of new project wells, the licensee shall collect cuttings at a minimum of 10- foot intervals and at major formation changes. The licensee shall describe and analyze them to the degree necessary to determine the formation, member and flow unit within the Columbia River Basalt of the water-bearing zone, and provide a split of the washed cuttings to the Department.

Dated at Salem, Oregon on May 21, 2014.



E., Timothy Wallin
for Phillip C. Ward, Director

If you have questions about the Department or any of its programs please contact our Customer Service Group at 503-986-0801. Address all other correspondence to: Groundwater Section, Oregon Water Resources Department, 725 Summer St NE, Suite A, Salem OR 97301-1266, Fax: 503-986-0902.

Mailing List

Scheduled Mailing Date:

Application:

ASR Limited License #010

Original mailed to Applicant:

**City of Tualatin
c/o Mick Wilson and Jerald Postema
18800 SW Martinazzi Avenue
Tualatin, OR 97062**

Copies Mailed
by: _____ (STAFF)
on: _____ (DATE)

Copies sent to WRD:

1. Jake Constans, Watermaster, District 18
2. Mike McCord, Region Manager
3. File

Copies sent to other interested persons (CWRE, Agent, Commenter, etc.):

1. Tom Pattee, Oregon Health Authority Drinking Water Program
2. Jack Arendt, Oregon Department of Environmental Quality
3. Chris Augustine, GSI Water Solutions, Inc.