

AQUIFER STORAGE and RECOVERY (ASR) LIMITED LICENSE #002

The Oregon Water Resources Commission issues this limited license for ASR TESTING to:

Tualatin Valley Water District Telephone: (503) 642-1511
c/o Gary Pippin
P.O. Box 745
Beaverton, OR 97075

and

City of Beaverton Telephone: (503) 526-2646
c/o David Winship
P.O. Box 4755
Beaverton, OR 97096

The licensee may divert up to 10 MGD from a combination of Bull Run River, a tributary of the Sandy River (up to 2MGD) and the Tualatin River, a tributary of the Willamette River. Respectively, these diversions use authorization of ORS 538.420 and water right Permit S-45455.

The point of diversion on the Bull Run River is located at T1S/R5E, Section 26 SE1/4 SE1/4 and the point of diversion on the Tualatin River is located at T1S/R3W, Section 8 SW1/4 SW1/4.

The licensee may store up to 1.2 billion gallons in a basalt aquifer using 10 injection wells. The licensee may recover for MUNICIPAL USE a combined withdrawal of up to 10 MGD of stored water through the same 10 wells. The maximum storage duration is the five years duration of this limited license.

TEN ASR wells for injection and recovery are authorized at a rate up to 1.5 MGD. These wells consist of the named wells and any seven of the 10 numbered wells as follows:

<u>Well No.</u>	<u>Well Location within T1S/R1W WM.</u>
ASR #1	Section 17, SE1/4 SW1/4
Schuepbach	Section 17, SE1/4 SW1/4
ASR #2	Section 20, NE1/4 NW1/4
Hanson Road	Section 21, SE1/4 SW1/4
ASR #3	Section 28, SW1/4 NW1/4
ASR #4	Section 28, NW1/4 NW1/4
ASR #10	Section 29, SE1/4 SW1/4
ASR #9	Section 30, NW1/4 SW1/4

<u>Well No.</u>	<u>Well Location within T1S/R2W WM.</u>
ASR #7	Section 23, NW1/4 SE1/4
Grabhorn	Section 23, SE1/4 SE1/4
ASR #5	Section 24, NW1/4 SW1/4
ASR #6	Section 24, SW1/4 NE1/4
ASR #8	Section 25, NE1/4 SE1/4

The duration of this limited license is five years. This time was the requested limited license duration. This limited license expires on the fifth anniversary of issuance.

Except as it conflicts with provisions of this limited license, the licensee is authorized to pursue the project schedule, monitoring, and other features noted in the conceptual ASR test plan. 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 conceptual ASR testing plan are provided in the application documents entitled:

Aquifer Storage and Recovery
Pilot Test Work Plan and Wellhead Facility Design
Prepared for Tualatin Valley Water District
Prepared by CH2M HILL
June 1997

and

TVWD/Beaverton ASR Limited License Application
Response to OWRD Letter Dated August 15, 1997
March 13, 1998

This limited license is issued with the following conditions:

- 1) License Renewal. The limited 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 limited 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 limited license or recovering stored water. The licensee shall give verbal notice to the watermaster within 2 days of initiating recovery of stored water for emergency demand. The injection notice shall include the limited 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 limited 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 permittee 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 Division (HD) and Oregon Department of Environmental Quality (DEQ) water quality or treatment standards;

(ii) to address needed technological changes as requested by DEQ or HD 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. (For purposes of this license, a well location change to an adjacent 1/4 1/4 section is a minor adjustment.)

(B) The Director may revoke or modify the ASR limited license for any of the following reasons:

(i) to prevent or mitigate injury to other water rights, minimum perennial streamflows or aquifer water quality; or

(ii) to address any other unintended, injurious effects of the ASR activity.

(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 limited license.

5) Priority/Protection. This limited license does not receive a priority date and is not protected under ORS 540.045. The diversion of water for this ASR testing under the authority of Certificate 12033 retains the priority date and protection of that water right.

6) Compliance with Other Laws. The injection of acceptable water into the aquifer as well as its storage and recovery under this limited 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). Likewise, for those ASR wells within the area covered by the DEQ National Pollution Discharge Elimination System (NPDES) MS4 Permit Number 101309, pilot test recovery discharges to the storm sewer system must be approved by the permittee, the Unified Sewerage Agency of Washington County, et al.

For those wells outside the area covered by this NPDES Permit, the licensee may need to obtain a discharge permit directly from the DEQ.

7) Detailed Testing Plans. The licensee shall submit a detailed plan of testing for each injection well as the project develops. The 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 .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 .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 (7)(B) or the 100% level prescribed in condition (7)(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. Prior to initiating injection, 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 others constituents as described in the pilot test work plan dated June 1997.

(B) Wells. As each new ASR well is brought on-line, 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 others constituents as described for wells in the pilot test work plan dated June 1997. The licensee shall sample receiving aquifer water at ASR observation wells as described in the same pilot test plan.

(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 others constituents as described in the pilot test work plan dated June 1997 and OAR 690-350-020(3)(b)(F)(iv).

10) Monitoring.

(A) Water Level Monitoring. The licensee shall monitor water levels in wells in the conceptual manner described in the pilot test work plan dated June 1997. The licensee shall submit a detailed water level monitoring plan for testing at each injection well. The detailed plan shall include both a method for establishing a baseline pre-injection water level as well as a method of tracking the static water level during the recovery of stored water for purposes of compliance with condition (12)(C).

(B) Streamflow Monitoring. The licensee shall monitor streamflow in Johnson Creek in the conceptual manner described in the pilot test work plan dated June 1997. The licensee shall submit a detailed water level monitoring plan for testing at each injection well. The licensee shall consider the water quality monitoring of stream/surface water in the detailed plan.

(C) Impacts on Tyco Property. The licensee shall describe in the detailed plan for the Hanson Road well how testing will monitor the impacts to the contamination at the nearby Tyco property at Hall Blvd and Hwy 217.

11) Injection. Due to the shallow and aged seals at the Schuepbach and Hanson Road wells, the licensee shall apply no hydraulic pressure to the seals at these wells during injection.

12) 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 limited license during the year that the water was injected. After that year, the availability of stored water shall be further diminished each year such that the licensee may only recover up to 95% of any year-to-year storage carryover. (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.

(C) The licensee may not recover any stored water from an ASR well when the static water level at the ASR well is lower than the baseline pre-injection water level elevation. (The current baseline pre-injection water level elevation at the three named wells is approximately 170 feet msl). The Department shall acknowledge a baseline level at an injection well with the approval of a detailed test plan for that injection well. The Department may approve a different value for the baseline pre-injection water level elevation if the licensee provides data and analysis during the license period that supports a different value.

(D) The availability of stored water is a running account that is subject to determination at any time.

13) Reporting. Except as otherwise noted, the licensee shall provide the Department a written report of the results of ASR testing for each year by February 15th of the following year. The first report shall be due in 1999 and include results from 1998. The report shall detail the several kinds of data collected during the year (including the water quality results in condition 9), analyze those data to show the ASR project impacts on the aquifer, indicate the testing/development progress made under the terms of the limited license, and account for the injection of stored water, withdrawals of stored and natural water, and the new-year carryover storage at each well.

14) Protection for Existing Users. In the event of conflicts with existing appropriators, the licensee shall conduct all testing so as to mitigate the injurious effects. In addition, the licensee 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.

15) Use of Recovered Water. The licensee shall use any recovered water for municipal purposes as described in ORS 538.420 and water right permit S-45455. This use includes storm water discharges authorized in the ASR testing program.

16) Periodic Meetings. The licensee shall alert the Ground Water/Hydrology Section of the Department of the meetings of the licensee's technical review group of the ASR project in order that Department staff may attend and track the periodic progress of the testing project.

17) Additional Conditions on an Informal Basis. The Department may suggest additional conditions to the licensee. Provided that those conditions are agreed to and undertaken by the licensee, 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.

18) **Publicity.** The licensee shall maintain a public information program about the ASR project, which may include press releases, neighborhood meetings, brochures, or other activities. This program shall include information on potential project impacts and how to report possible impacts to the licensee. The licensee shall share such reports with the watermaster within five days of receipt.

19) **Other Measures.** The licensee shall take any additional measures appropriate to address the ASR-related issues of landslide activation, seepage, streamflow increases, aquifer boundary determination, aquifer storage efficiency, and water quality protection so that these issues can be addressed during review of the ASR permit application.


20) **Carryover Storage.** At the end of testing under this limited license, the licensee 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.

This license is issued with proper conditions upon finding that:

- i) The proposed ASR testing will not impair or be detrimental to the public interest;
- ii) The proposed ASR testing will produce information that will adequately describe the water quality and quantity response in the aquifer and at nearby wells and springs due to ASR activities; and
- iii) The proposed use will not expand and use under an existing water right.

This license shall be in effect beginning July 22, 1998, and shall expire July 22, 2003.

WITNESS my hand this 22 day of July, 1998.



Water Resources Department
Martha O. Pagel
Director