

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

In the Matter of Aquifer Storage and Recovery    )  
(ASR) Limited License Application #016,         )  
Yamhill County

FINAL ORDER  
APPROVING 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.

**FINDINGS OF FACT**

1. On NOVEMBER 2, 2009, the city of Lafayette submitted an application for an ASR Limited License for ASR testing pursuant to ORS 537.534 and OAR 690-350-0020.
2. With assistance from Oregon Department of Environmental Quality and Oregon Department of Human Services, the Department determined that the application was complete on MARCH 5, 2010.
3. The Department provided public notice of the application in the Department's weekly public notice on MARCH 9, 2010. A 30-day comment period followed.
4. ASR Limited License Application #016 referenced Certificate 16623 as source water for the proposed ASR testing.
5. The Department received no adverse comments related to the possible issuance of an ASR limited license.
6. The Department received comments and recommendations on the application from Oregon Department of Environmental Quality and Oregon Department of Human Services.

**DISCUSSION**

The Department has evaluated the application and finds that, as conditioned, the proposed ASR testing satisfies the rule requirements of OAR 690-350-0020(4)(d): it will not impair or be detrimental to the public interest, it 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 it will not expand the use under existing water rights.

**CONCLUSIONS OF LAW**

The application for and language in ASR Limited License #016 are consistent with the requirements of ORS 537.534 and OAR 690-350-0020.

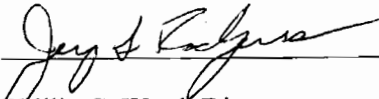
**APPEAL RIGHTS**

This is an order in other than a contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60-day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-0080, you may either petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the Director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

**ORDER**

Now, THEREFORE, IT is Ordered, ASR Limited License Application #016 is approved pursuant to ORS 537.534 and OAR 690-350-0020, and ASR Limited License #016 is issued as limited by the conditions contained therein.

Dated at Salem, Oregon on May 21, 2010.



*For* Phillip C. Ward, Director

Water Resources Department

This order was produced by Donn Miller and Jen Woody.

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

## CERTIFICATE OF SERVICE

I certify that on May 24, 2010, I mailed the attached final order approving ASR testing and ASR Limited License #016 by certified mail and first class postage prepaid to:

City of Lafayette  
c/o Justin Boone  
PO Box 55  
Lafayette, OR 97127

Matt Kohlbecker  
GSI Water Solutions, Inc.  
55 SW Yamhill Street, Suite 400  
Portland, OR 97204

*Donn Miller*

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Donn Miller  
Oregon Water Resources Department

**AQUIFER STORAGE and RECOVERY (ASR) LIMITED LICENSE #016**

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

City of Lafayette  
c/o Justin Boone  
PO Box 55  
Lafayette, OR 97127

Telephone: 503.864.2451

The licensee may divert up to 0.66 cubic foot per second (cfs) from Blue Bird Spring (also known as Big Spring), in the Millican Creek Basin, using authorization of Certificate 16623.

The point of diversion from Blue Bird Spring is T3S, R3W, Section 33 SW ¼ NW ¼.

The licensee may store up to 460 million gallons in a basalt aquifer using one well. The maximum injection rate at the well is 0.66 cfs (296 gallons per minute (gpm)). The maximum recovery rate of stored water is 200 gpm through the same well. The maximum storage duration is the five-year duration of this limited license.

The ASR well is the following:

<u>Well Name</u>	<u>Well Location</u>
Well No. 10 (YAMH 51004)	T3S/R3W - Section 32, SW ¼ SE ¼

The duration of this limited license is five years, expiring on the fifth anniversary of issuance.

**This is a final order in other than contested case.** Pursuant to ORS 536.075 and OAR 137-004-080 and OAR 690-01-005 you may either petition the Director for reconsideration of this order or petition for judicial review of this order. As provided in ORS 536.075, this order is subject to judicial review under ORS 183.484. Any petition for judicial review of the order must be filed within the 60 day time period specified by ORS 183.484(2).

## Page 2 - ASR Limited License #016

Except as modified by other provisions of this limited license, the licensee is authorized to pursue the project schedule, monitoring, and other features noted in the ASR test plan and the ASR pilot testing objectives for Well No. 10. 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 test plan are provided in the application document entitled:

City of Lafayette  
Aquifer Storage and Recovery  
Limited License Application and  
Pilot Test Work Plan  
October 2009

Prepared By  
GSI Water Solutions, Inc.

The features of ASR testing should strive to provide data 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 well, aquifer, springs and nearby wells; accounting of ASR inputs, withdrawals, and storage; water quality testing needs; and well hydraulics at the ASR well.

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 injection notice shall include the limited license number, the location(s) of the injection source water diversion(s), the quantity of water to be diverted from the source(s), 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.

**Page 3 - ASR Limited License #016**

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 Department of Human Services (ODHS) and Oregon Department of Environmental Quality (DEQ) water quality or treatment standards;
- (ii) to address needed technological changes as requested by DEQ or ODHS 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;
- (ii) to address any other unintended, injurious effects of the ASR activity; or
- (iii) failure to maintain compliance with all conditions of this limited 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 limited license.

5) Priority/Protection. This limited 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 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) before any injection activity begins. Also, all pilot test discharges to waterways must be covered by a DEQ National Pollution Discharge Elimination System (NPDES) permit.

**7) 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 (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.

8) Water Quality Sampling.

(A) Injection Water. The licensee shall sample and analyze injection water for the constituents described in the test plan dated October 2009.

(B) Receiving Aquifer Water. The licensee shall sample and analyze receiving aquifer water at the ASR well for the constituents described in the test plan dated October 2009.

(C) Withdrawal of Stored Water. The licensee shall sample and analyze water withdrawn from storage for the constituents described in the test plan dated October 2009.

(D) Additional Constituents. In addition to the constituents listed in the test plan, the licensee shall identify agricultural land use upgradient and within the recharge zone of Blue Bird Spring. The licensee shall meet with the appropriate landowners to identify agricultural chemicals and/or waste management practices employed that may impact spring water quality. Prior to injecting water from Blue Bird Spring, the licensee shall test spring water for these constituents.



**Page 6 - ASR Limited License #016**

9) 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 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 2010 lasts from October 1, 2009 through September 30, 2010.) (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 the 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 the ASR well, any water withdrawn from the ASR well shall be considered a draft of natural ground water, requiring separate or additional authorization. This limited 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.

10) Annual Reporting.

(A) 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 first report shall be due in 2011 and include results from water year 2010. The report shall detail the several kinds of data collected during the water 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. The report shall include the amount of water diverted under each of the water rights available for ASR and how those diversions have occurred within the limits of the authorized rights.

(B) As pertinent, annual reporting shall include the formatting and additional information cited in Condition 11 below.

**Page 7 - ASR Limited License #016**

11) Special Reporting Condition. The licensee 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 locations) 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.

12) Well Tag Condition for Licensee Wells. Prior to Water Year 2011, the licensee 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 well. If a well does not have a Well ID Number, the licensees 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.

13) 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.

14) Use of Recovered Water. The licensee shall use any recovered water for the purposes described in the base water rights that authorize diversion.

15) 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.

**Page 8 - ASR Limited License #016**

16) Publicity. The licensee shall maintain a public information program about the ASR project, which may include press releases, neighborhood meetings, brochures, or other features. 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.

17) Other Measures. The licensee shall take any 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. The licensee shall resolve these issues prior to submittal of an ASR permit application.

18) 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.

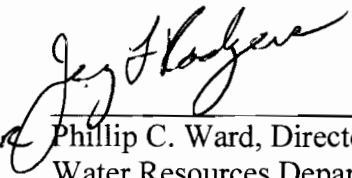
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This license is issued with proper conditions upon finding that:

- 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 use under an existing water right.

This license shall be in effect beginning MAY 24, 2010, and shall expire MAY 24, 2015.

WITNESS my hand this 21<sup>ST</sup> day of MAY, 2010.

  
For Phillip C. Ward, Director  
Water Resources Department