

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

In the Matter of Aquifer Storage and Recovery)
(ASR) Limited License Application #012,)
Clackamas 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

On February 20, 2007, the Department issued ASR Limited License # 012 to Sunrise Water Authority. That license authorized ASR testing for five years at up to five wells in a deep alluvial aquifer. Condition 1 of ASR Limited License # 012 provides for renewal pursuant to OAR 690-350-0020(5)(c), and describes the following terms for 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 license.

FINDINGS OF FACT

1. On February 16, 2012, Sunrise Water Authority submitted a request for a five-year time extension (renewal) for ASR Limited License #012.
2. The Department provided public notice of the application in the Department's weekly public notice on March 6, 2012. A 30-day comment period followed.
3. The Department received no public comments related to the possible renewal of an ASR limited license.
4. The Department sought comments and recommendations from Oregon Department of Environmental Quality and Oregon Health Authority Drinking Water Program related to the possible renewal. Comments were received from Oregon Department of Environmental Quality and Oregon Health Authority Drinking Water Program supporting renewal of ASR LL #0012.
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 limited license. The request letter 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 #012 for five years is consistent with the requirements of OAR 690-350-0020(5)(c) and Condition 1 of ASR Limited License #012.

ORDER

Now, THEREFORE, it is ORDERED, ASR Limited License #012 shall be valid through the fifth anniversary of its renewal, pursuant to ORS 537.534, OAR 690-350-0020(5)(c), and Condition 1 of the original ASR limited license.

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 pilot test work plan for SWA Well 2W (also called CLAC 53332). 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:

Aquifer Storage and Recovery Deep Alluvial Aquifer
Limited License Application and
Pilot Test Work Plan
Prepared for Oregon Department of Water Resources
Prepared by Groundwater Solutions, Inc.
On Behalf of Sunrise Water Authority
July, 2006

The ASR testing must 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.

The licensee may divert up to 3,750 gpm (8.36 cfs) from the Clackamas River, tributary of the Willamette River, using authorizations of Permits S-34426, S-43170 as amended by Special Order, S-46120 as amended by Special Order, S-35297 as amended by Special Order and Certificates 37794 and 79899 for municipal use.

The points of diversion on the Clackamas River are T2S, R2E, SE ¼ NE ¼ Section 16 and NE ¼ NE ¼ Section 30.

The licensee may store up to 600 million gallons in a deep alluvial aquifer within the Troutdale Formation. 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 3,750 gpm (750 gpm per well) for injection and 5,500 gpm (1,100 gpm per well) for recovery. These wells consist of the following:

<i>Well Name</i>	<i>Well Location</i>
SWA Well 2W (CLAC 53332)	1100' North, 1300' East from SW corner of Section 1, T2S/R2E

SWA ASR 2 (proposed)	located at E ¼ corner of Section 10, T2S/R2E
SWA ASR 3 (proposed)	located at NW corner of Section 12, T2S/R2E
SWA ASR 4 (proposed)	located at NE corner of Section 12, T2S/R2E
SWA ASR 5 (proposed)	located at N ¼ corner of Section 6, T2S/R3E

Other 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 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 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 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 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 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.** The licensee shall submit a detailed testing plan for each injection well as the project develops. The plan shall include precise well location and construction information, in addition to other testing features, and shall be sealed and signed by a professional(s) registered or allowed, under Oregon law, to practice geology. The licensee shall obtain Departmental 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 (9)(B) or the 100% level prescribed in condition (9)(C), the licensee shall stop injection activities immediately 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 pilot test plan dated July 2006.
- (B) **Receiving Aquifer Water.** 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 pilot test plan dated July 2006.

(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 pilot test work plan July 2006 and OAR 690-350-020(3)(b)(F)(iv).

10) **Water Level Monitoring.** The licensee shall monitor water levels in wells in the manner described in the pilot test plan dated July 2006. The licensee shall submit a detailed water level monitoring plan for testing at each subsequent injection well, and that plan shall be sealed and signed by a professional(s) registered or allowed, under Oregon law, to practice geology. The licensee shall obtain Departmental approval of a detailed plan before injection testing at a well may begin. The Department may approve, condition, or reject a monitoring 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 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 2013 lasts from October 1, 2012 through September 30, 2013. Data collected by the licensee may be useful in consideration of proposed 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 limited license does not authorize withdrawal of more water than was available from injection.

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

12) **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 report shall detail the several kinds of data collected during the water year (including the water quality results in condition 9, in a DEQ-specified format), analyze those data to show the ASR project impacts on the aquifer, analyze for loss, 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. The annual report shall be sealed and signed by a professional(s) registered or allowed, under Oregon law, to practice geology.

(B) As pertinent, annual reporting shall include the formatting and additional information cited in Condition 13 below.

13) **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.
- 14) **Well Tag Condition for Licensee Wells.** 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 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.
- 15) **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.
- 16) **Use of Recovered Water.** The licensee shall use any recovered water for the use allowed in the appropriate diversion authorization.
- 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, 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.

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.

Dated at Salem, Oregon on May 4, 2012.



E. Timothy Wallin, Water Rights Program Manager
for Phillip C. Ward, Director

This order was produced by 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.

BEFORE THE WATER RESOURCES DEPARTMENT OF THE STATE OF OREGON

In the Matter of Aquifer Storage and Recovery) (ASR) Limited License Application #012,) Clackamas 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 JULY 31, 2006, SUNRISE WATER AUTHORITY submitted an application for an ASR Limited License for ASR testing pursuant to ORS 537.534 and OAR 690-350-0020.
2. The Department provided public notice of the application in the Department's weekly public notice on SEPTEMBER 19, 2006. A 30-day comment period followed.
3. ASR Limited License Application #012 referenced the following water rights as source water for the proposed ASR testing: Permits S-34426, S-43170 as amended by Special Order, S-46120 as amended by Special Order, S-35297 and Certificates 37794, and 79899.
4. The Department received adverse comments related to the possible issuance of an ASR limited license from WaterWatch of Oregon.
5. WaterWatch raised several issues that consider the proposed use of water under an ASR limited license as a new appropriation activity.
6. WaterWatch noted that the application seeks to access water for ASR testing under several rights with one needing an extension of time.
7. WaterWatch raised the concern that the ASR testing may cause adverse impacts to water quality in the aquifer, seeps, springs, creeks, river and biota.
8. WaterWatch contended that the proposed use appears to expand the underlying water rights because the water proposed for storage is water that is not now being used at those times proposed for ASR storage.
9. WaterWatch believes that the state should require the applicant to pay for an independent scientific review of the pilot period if granted the limited license and during any permitted implementation as well.
10. The Department received comments and recommendations from Oregon Department of Environmental Quality and Oregon Department of Human Services on the application.

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.

DISCUSSION

There are several water right issues that need to be addressed. The appropriation of Clackamas River water has occurred previously and is not an issue with this application per rules in OAR 690-350-0010, -0020, and -0030. The proposed use is not an expansion since the declaration in ORS 537.531 makes ASR inherent in all water rights. Finally, the Department has conditioned the ASR limited license to ensure that the annual ASR report includes 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.

Adverse water quality impacts from the injected water are extremely remote based on available information and the assessment from the Oregon Department of Environmental Quality. The proposed testing will address the water quality concern from losses to surface water due to head buildup. Condition 4 in the attached ASR limited license provides for revocation if problems are found and, as such, speaks to the Department's authority to terminate the limited license as WaterWatch proposed.

The Department has the statutory oversight authority for ASR and is capable of providing the needed review. Review of ASR projects will continue to be made in coordination with the Oregon Department of Environmental Quality and Oregon Department of Human Services (Drinking Water Program).

The Department has evaluated the application and associated comments and recommendations 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 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 #012 are consistent with the requirements of ORS 537.534 and OAR 690-350-0020.

ORDER

Now, THEREFORE, IT is Ordered, ASR Limited License Application #012 is approved pursuant to ORS 537.534 and OAR 690-350-0020, and ASR Limited License #012 is issued as limited by the conditions contained therein.

Dated at Salem, Oregon on February 20 2007.



for
Phillip C. Ward, Director
Water Resources Department

This order was produced by Donn Miller.

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.

AQUIFER STORAGE and RECOVERY (ASR) LIMITED LICENSE #012

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

Sunrise Water Authority
c/o Tim Janssen
10602 SE 129th Avenue
Portland, OR 97236

Telephone: 503.761.0220

The licensee may divert up to 3750 gpm from Clackamas River, tributary of the Willamette River, using authorizations of Permits S-34426, S-43170 as amended by Special Order, S-46120 as amended by Special Order, S-35297 as amended by Special Order and Certificates 37794 and 79899.

The points of diversion on the Clackamas River are T2S, R2E, SE ¼ NE ¼ Section 16 and NE ¼ NE ¼ Section 30.

The licensee may store up 600 million gallons in a deep alluvial aquifer within the Troutdale Formation using five injection wells. The maximum injection rate at each well is 750 gpm. The licensee may recover up to 1,100 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 3750 gpm (750 gpm per well) for injection and up to 5500 gpm (1100 gpm per well) for recovery. These wells consist of the following:

<i>Well Name</i>	<i>Well Location</i>
SWA Well 2W	T2S/R2E - Section 1, SW ¼ SW ¼
SWA ASR 2	T2S/R2E - Section 10, E ¼ Corner
SWA ASR 3	T2S/R2E - Section 12, NW Corner
SWA ASR 4	T2S/R2E - Section 12, NE Corner
SWA ASR 5	T2S/R3E - Section 6, N ¼ Corner

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.

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).

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Except as it conflicts with 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 for SWA Well 2W. 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:

Aquifer Storage and Recovery
Deep Alluvial Aquifer

Limited License Application and
Pilot Test Work Plan

Prepared for
Oregon Department of Water Resources

Prepared By
Groundwater Solutions, Inc.

On Behalf of
Sunrise Water Authority
July, 2006

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 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.

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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.

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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 (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 pilot test plan dated July 2006.

(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 pilot test plan dated July 2006.

(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 pilot test plan July 2006 and OAR 690-350-020(3)(b)(F)(iv).

10) Water Level Monitoring. The licensee shall monitor water levels in wells in the manner described in the pilot test plan dated July 2006 and subsequent documents. The licensee shall submit a detailed water level monitoring plan for testing at each subsequent injection well.

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 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 2006 lasts from October 1, 2005 through September 30, 2006.) (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 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.

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12) Reporting. 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 2008 and include results from water year 2007. 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. As may be reasonably requested by the Department, the licensee shall provide electronic submittals of all data, well cuttings, geophysical logs, and other information concerning ASR testing.

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) 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.

16) 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.

17) 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.

18) 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.

19) 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 use under an existing water right.

This license shall be in effect beginning February 20, 2007, and shall expire February 20, 2012.

WITNESS my hand this 20th day of February, 2007.



f^{or}

Phillip C. Ward, Director
Water Resources Department

CERTIFICATE OF SERVICE

I certify that on February 20, 2007, I mailed the attached final order approving ASR testing and ASR Limited License #012 by certified mail and first class postage prepaid to:

Sunrise Water Authority
c/o Tim Jannsen
10602 SE 129th Avenue
Portland, OR 97236

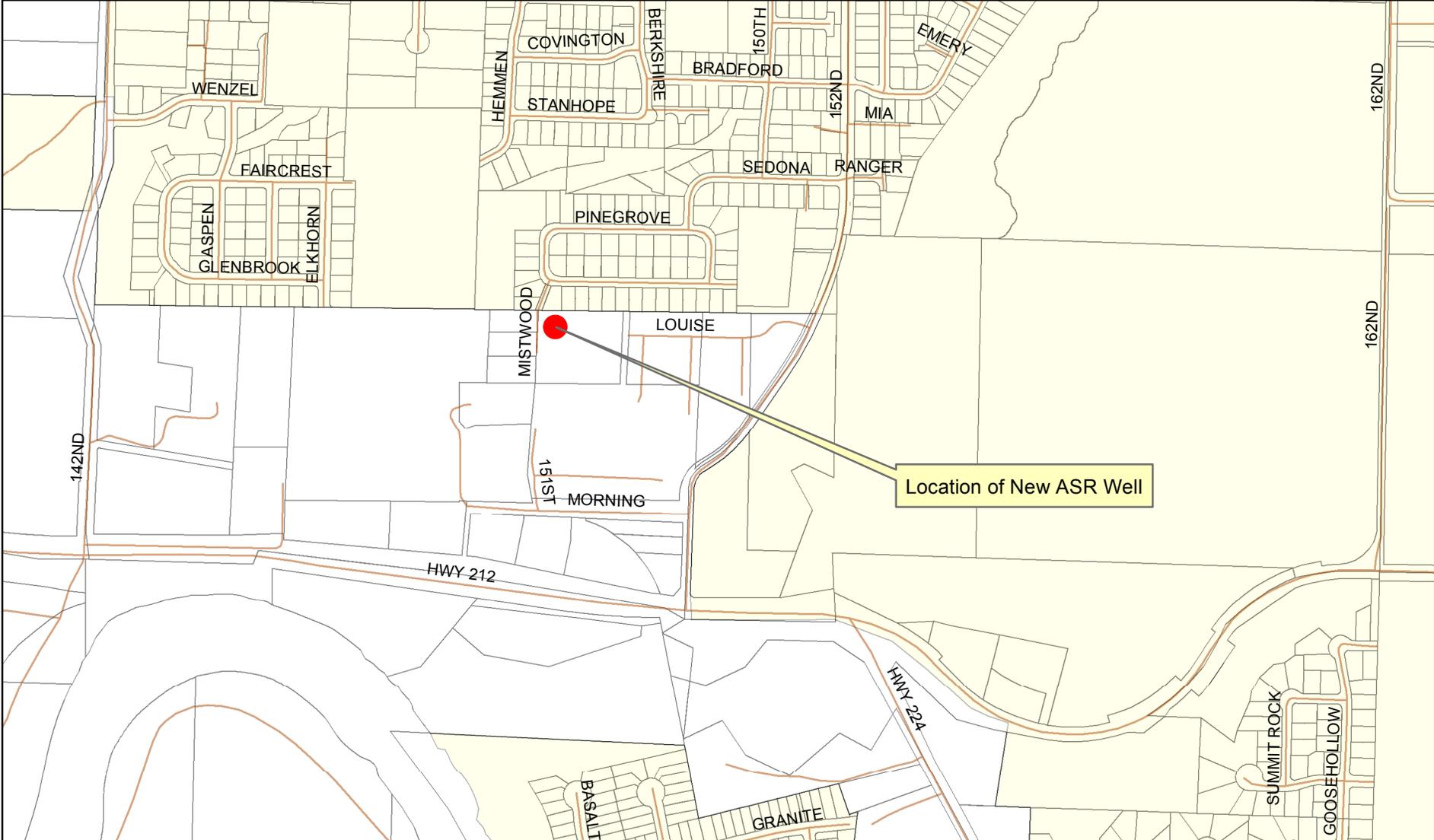
Lisa Brown
WaterWatch of Oregon
213 SW Ash Street, Suite 208
Portland, OR 97204

Jeff Barry
Groundwater Solutions Inc
55 SW Yamhill St. Suite 400
Portland, Oregon 97204



Donn Miller
Oregon Water Resources Department

Sunrise Water Authority New ASR Well Site Location



1 inch = 600 feet

Shelley Matthews

From: Quigley Karen M <karen.m.quigley@state.or.us>
Sent: Wednesday, December 23, 2015 2:35 PM
To: Shelley Matthews
Subject: Re: Request: List of Tribes Impacted by Water Supply Project
Attachments: image002.jpg

Hello, Shelley,

Those are the 3 Tribes.

Contact info is on our website. Robert, David and Kathleen prefer emails (with a followup phone call if you don't hear back).

Website is www.Oregon.legislature.gov/cis

Click on contact info and then Cultural Resources contacts.

Thanks,

Karen

Oreg

Sent from my Verizon Wireless 4G LTE DROID

Shelley Matthews <smatthews@crwater.com> wrote:

Hello Karen,

Please disregard the prior message, I failed to mention the location of Sunrises service area and a map of the district for your reference.

I work for Clackamas River Water and I'm preparing a grant application on behalf of our partner organization (formal 190 partnership to share resources), Sunrise Water Authority, for submission to the Oregon Water Resources Department. If funded, grant money would be used to install an ASR well within Sunrise's service district. The well would facilitate capture, treatment and storage of water in winter and spring when surface water is abundant, conserving water instream during the dry season (summer and early fall) to help maintain instream requirements and support aquatic ecosystems.

Sunrise's service district includes the cities of Happy Valley and Damascus in the Portland Metro Area, as well as some neighboring areas of unincorporated Clackamas County. I've attached a map of their service area for your review.

Would you please provide us with a list of Indian Tribes affected by this water supply project, as well as their contact information. Preliminary research indicates that the Warm Springs, Siletz and Grand Ronde Tribes may have an interest in the impacts of this project. If I'm mistaken, or there are other tribes I should add to the list, please let me know.

Thank you for your time and assistance.

Shelley Matthews



Clackamas River Water

Shelley Matthews

Sr. Finance and Accounting Specialist

Clackamas River Water

16770 SE 82nd Drive

P.O. Box 2439

Clackamas, OR 97015-2439

p: [503-722-9237](tel:503-722-9237)

f: 503.656.7086

smatthews@crwater.com

Shelley Matthews

From: Shelley Matthews
Sent: Tuesday, January 12, 2016 11:50 AM
To: 'david.harrelson@grandronde.org'
Subject: FW: Cultural Resource Interest in Water Supply Project?
Attachments: Map of SWA Service Area.pdf

Hi David,

I just realized that I keyed your e-mail address in incorrectly. I apologize. On 12/28/15, Robert Kentta (Siletz) informed me that he was forwarding a copy on to you so maybe you've already received it.

I will be sending the application for this project to the Oregon Water Resources Department this Friday along with responses I received from the Tribes. If possible, please let me know what interest, if any, you have in this project and if you would like to receive further information on the status of the project should we receive grant funding.

Thank you,

Shelley

From: Shelley Matthews
Sent: Wednesday, December 23, 2015 3:20 PM
To: 'david.harrelson@grandronde.org'
Subject: Cultural Resource Interest in Water Supply Project?

Hello David,

I work for Clackamas River Water (municipal water district) and I'm preparing a grant application on behalf of our partner organization (formal 190 partnership to share resources), Sunrise Water Authority, for submission to the Oregon Water Resources Department. If funded, grant money would be used to install an Aquifer Storage Recovery well within Sunrise's service district. The well would facilitate capture, treatment and storage of water in winter and spring when surface water is abundant, conserving water instream during the dry season (summer and early fall) to help maintain instream requirements and support aquatic ecosystems.

Sunrise's service district includes the cities of Happy Valley and Damascus in the Portland Metro Area, as well as some neighboring areas of unincorporated Clackamas County. I've attached a map of their service area for your review.

Karen Quigley at the LCIS has indicated that our project has the potential to affect cultural resources important to the Grand Ronde Tribe. Would you please let me know if you have an interest in this project and would like any further data or information on the project at this time, or in future if the funding is received and we proceed with implementation.

Thank you for your time and assistance.

Shelley Matthews



Clackamas River Water

Shelley Matthews

Sr. Finance and Accounting Specialist

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smatthews@crwater.com

Shelley Matthews

From: Shelley Matthews
Sent: Wednesday, December 30, 2015 12:17 PM
To: 'Robert Kentta'
Cc: tjannsen@sunrisewater.com
Subject: RE: Cultural Resource Interest in Water Supply Project?

Hi Robert,

Thank you for making us aware of the specific issues and concerns you've addressed. I'm forwarding your response to the Engineer at Sunrise Water Authority who will oversee implementation of this project should it be funded.

Applications are due to OWRD by Jan 19, 2016. OWRD has indicated they will award funds next Summer and if our project is selected for funding we anticipate project implementation will commence Fall 2016.

I contacted the Siletz, Grand Ronde and Warm Springs Tribes as recommended by Karen Quigley at the LCIS, including David Harrelson. The grant application does not indicate that SHPO should be contacted as well, and I hadn't, but thanks for forwarding it on to Dennis.

We'll keep you and others informed of any further progress on this ASR project.

Thanks,

Shelley

From: Robert Kentta [<mailto:rkentta@ctsi.nsn.us>]
Sent: Monday, December 28, 2015 12:30 PM
To: Shelley Matthews
Cc: Mike Kennedy; Stan van de Wetering; david.harrelson@grandronde.org; GRIFFIN Dennis * OPRD
Subject: RE: Cultural Resource Interest in Water Supply Project?

Hi Shelley

I've forwarded to our Natural Resources Manager (Mike Kennedy) and Aquatics Biologist (Stan V) and am copying them both on this reply.

My office would be most concerned about impacts from construction, staging areas, transmission pipes, associated system development, etc... and making sure that we, and the State Historic Preservation Office area aware of all locations of possible disturbance and that proper Cultural Resources surveys, and testing (as appropriate and recommended) are done, and that a strong Inadvertent Discovery Plan (IDP) is adopted, and included in all contracts, and that all contractors and subs are made clearly to understand the provisions and their need to comply with applicable laws.

Mike and Stan may be submitting further responses and/or questions from their areas of concern. I assume that they will want to see intake design and other info, to make sure that juvenile Lamprey and Salmonids are adequately protected from being caught up in pumping action, etc.

From the brief description, it appears that your goal is to capture and store water during ample flows to take pressure off the water resources during low flow seasons/periods. That is commendable. I hope that Conservation of the resource is also a strong message with your group.

I will copy David Harrelson at the Grand Ronde Tribe and Dennis Griffin at the SHPO, just in case they have been left off your contacts list somehow.

Robert Kentta
Cultural Resources Director
Confederated Tribes of Siletz Indians

From: Shelley Matthews [<mailto:smatthews@crwater.com>]
Sent: Wednesday, December 23, 2015 3:26 PM
To: Robert Kentta
Subject: Cultural Resource Interest in Water Supply Project?

Hello Robert,

I work for Clackamas River Water (municipal water district) and I'm preparing a grant application on behalf of our partner organization (formal 190 partnership to share resources), Sunrise Water Authority, for submission to the Oregon Water Resources Department. If funded, grant money would be used to install an Aquifer Storage Recovery well within Sunrise's service district. The well would facilitate capture, treatment and storage of water in winter and spring when surface water is abundant, conserving water instream during the dry season (summer and early fall) to help maintain instream requirements and support aquatic ecosystems.

Sunrise's service district includes the cities of Happy Valley and Damascus in the Portland Metro Area, as well as some neighboring areas of unincorporated Clackamas County. I've attached a map of their service area for your review.

Karen Quigley at the LCIS has indicated that our project has the potential to affect cultural resources important to the Siletz tribe. Would you please let me know if you have an interest in this project and would like any further data or information on the project at this time, or in future if the funding is received and we proceed with implementation.

Thank you for your time and assistance.

Shelley Matthews



Shelley Matthews
Sr. Finance and Accounting Specialist

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16770 SE 82nd Drive
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Clackamas, OR 97015-2439

p: [503-722-9237](tel:503-722-9237)
f: 503.656.7086

Shelley Matthews

From: Shelley Matthews
Sent: Tuesday, January 12, 2016 12:02 PM
To: 'kathleen.sloan@ctwsbnr.org'
Subject: FW: Cultural Resource Interest in Water Supply Project?
Attachments: Map of SWA Service Area.pdf

Hi Kathleen,

I believe I sent this to the wrong person initially. I want to bring this water supply project to the attention of the Warm Springs Tribe. Please review my message below for further details.

I will be sending the grant application, along with any responses received from the tribes to the Oregon Water Resources Department this Friday.

Thank you in advance for your input.

Shelley Matthews

From: Shelley Matthews
Sent: Wednesday, December 23, 2015 3:21 PM
To: robert.brunoe@ctwsbnr.org
Subject: FW: Cultural Resource Interest in Water Supply Project?

Sorry, here's that map...

From: Shelley Matthews
Sent: Wednesday, December 23, 2015 3:16 PM
To: 'robert.brunoe@ctwsbnr.org'
Subject: Cultural Resource Interest in Water Supply Project?

Hello Robert,

I work for Clackamas River Water (municipal water district) and I'm preparing a grant application on behalf of our partner organization (formal 190 partnership to share resources), Sunrise Water Authority, for submission to the Oregon Water Resources Department. If funded, grant money would be used to install an Aquifer Storage Recovery well within Sunrise's service district. The well would facilitate capture, treatment and storage of water in winter and spring when surface water is abundant, conserving water instream during the dry season (summer and early fall) to help maintain instream requirements and support aquatic ecosystems.

Sunrise's service district includes the cities of Happy Valley and Damascus in the Portland Metro Area, as well as some neighboring areas of unincorporated Clackamas County. I've attached a map of their service area for your review.

Karen Quigley at the LCIS has indicated that our project has the potential to affect cultural resources important to the Warm Springs Tribe. Would you please let me know if you have an interest in this project and would like any further data or information on the project at this time, or in future if the funding is received and we proceed with implementation.

Thank you for your time and assistance.

Shelley Matthews



Shelley Matthews

Sr. Finance and Accounting Specialist

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Clackamas, OR 97015-2439

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f: 503.656.7086

smatthews@crwater.com

Shelley Matthews

From: Shelley Matthews
Sent: Thursday, December 31, 2015 1:36 PM
To: 'GRIFFIN Dennis * OPRD'
Subject: RE: Aquifer Storage Recovery, Sunrise's Service District
Attachments: Map of SWA Service Area.pdf

Hi Dennis,

I've copied the information and attached the map that I provided to the Siletz, Grand Ronde and Warm Springs Tribes (see black text below). I contacted Karen Quigley and the Tribes during the pre-application process as recommended in the grant guidelines by the Oregon Water Resources Department. We have not begun implementation and my correspondence is just "heads-up" at this point.

Sunrise Water Authority has hired a consultant to identify a specific site within their service boundary for the project because we must have that level of information to submit an application. I should have a location by mid-January and will get that to you and the aforementioned tribes. If our project is funded, we would not begin implementation until next Fall.

I work for Clackamas River Water (municipal water district) and I'm preparing an application for a Water Supply Development grant on behalf of our partner organization (formal 190 partnership to share resources), Sunrise Water Authority (Clackamas County), for submission to the Oregon Water Resources Department. If funded, grant money would be used to install an Aquifer Storage Recovery well within Sunrise's service district. The well would facilitate capture, treatment and storage of water in winter and spring when surface water is abundant, conserving water instream during the dry season (summer and early fall) to help maintain instream requirements and support aquatic ecosystems.

Sunrise's service district includes the cities of Happy Valley and Damascus in the Portland Metro Area, as well as some neighboring areas of unincorporated Clackamas County. I've attached a map of their service area for your review.

Karen Quigley at the LCIS has indicated that our project has the potential to affect cultural resources important to the Siletz, Grand Ronde and Warm Springs tribes. Would you please let me know if you have an interest in this project and would like any further data or information on the project at this time, or in future if the funding is received and we proceed with implementation.

Dennis, please let me know if you would like any further correspondence on this and I'll keep you informed as the project progresses.

Shelley Matthews

P.S., You may recognize my name. I sent you a request for a cultural resources survey last September for a grant application we submitted to the Oregon State Marine Board for a Boating Facility grant to expand and upgrade the restroom and parking lots at Riverside Park (owned by CRW).



Shelley Matthews

Sr. Finance and Accounting Specialist

Clackamas River Water

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smatthews@crwater.com

From: GRIFFIN Dennis * OPRD [<mailto:Dennis.Griffin@oregon.gov>]

Sent: Thursday, December 31, 2015 11:14 AM

To: Shelley Matthews

Subject: Re: Aquifer Storage Recovery, Sunrise's Service District

Shelley,

Robert Kentta from the Siletz Tribe contacted us to see if we had any concerns about the proposed Aquifer Storage Recovery project within Sunrise's service district. This well is said to be able to facilitate capture, treatment and storage of water in winter and spring when surface water is abundant, conserving water instream during the dry season (summer and early fall) to help maintain instream requirements and support aquatic ecosystems. I will drop her a line and find out more about this. Our office has no idea where this project is being proposed nor the degree of ground disturbance that it will involve. Can you provide us with information about this project so that we can assess its potential to affect any known archaeological properties? Many thanks!

\ Dennis /

Dennis Griffin, Ph.D, RPA

State Archaeologist

Oregon State Historic Preservation Office

(503)986-0674

Dennis.Griffin@oregon.gov

Please note: My address has changed and it is now @Oregon.gov rather than the earlier @state.or.us.



Clackamas River Water

Jon Unger
Grant Program Director
Oregon Water Resources Department
725 Summer St NE, Ste. A
Salem, OR 97301

January 19, 2016

Dear Mr. Unger

We at Clackamas River Water District are conscious of the potential environmental impacts withdrawals have on the Clackamas River. Our agency is in support of one of our fellow water providers, the Sunrise Water Authority, working to develop an aquifer storage and recovery (ASR) system that is being proposed to be sited on CRW property. The ASR is designed to take available winter time water, treat it, and store it underground for later use in the summer.

Sunrise's plan to expand that system is supported by Clackamas River Water District. We encourage the state to help fund the construction of a new well and further Sunrise's capacity in its ASR system. This project is good for the Clackamas River and will help reduce summertime withdrawals from the river.

Sincerely,

A handwritten signature in cursive script that reads "Lee E. Moore, Sr.".

Lee E. Moore, Sr.
General Manager



14275 S. Clackamas River Drive * Oregon City, OR 97045
Voice: (503) 723-3510 * Fax (503) 723-3508

January 19, 2016

Oregon Water Resource Department
Attn: Jon Unger, Grant Administrator
725 Summer Street NE, Suite A
Salem, Oregon 97301

Re: Support for OWRD Grant

Dear Proposal Review Team,

The Clackamas River Water Providers (CRWP) is a coalition of municipal drinking water providers that draw water from the Clackamas River and is made up of representatives from the City of Estacada, the City of Lake Oswego, City of Tigard, Clackamas River Water, the North Clackamas County Water Commission (City of Gladstone and Oak Lodge Water District), South Fork Water Board (Oregon City and West Linn), and Sunrise Water Authority (Happy Valley and Damascus). Collectively we provide drinking water to almost 300,000 people in Clackamas County. One of our top priorities is to protect and conserve our water resources by identifying, preventing, and mitigating activities that have known or potentially harmful impacts on drinking water quality so that the Clackamas River can be preserved as a high quality drinking water source.

Last year, the CRWP completed an Alternative Water Supply Study to identify various water supply alternatives for Clackamas River Water Providers members. This Study looked at possible source options outside the Clackamas basin, as well as the expansion of local groundwater and aquifer storage and recovery, that could provide additional water in an emergency event or to augment summer supply.

One of our members, the Sunrise Water Authority, has been working to develop an aquifer storage and recovery (ASR) system that is designed to take available winter time water, treat it, and store it underground for later use in the summer. CRWP members are conscious of the potential environmental impacts our withdrawals have on the Clackamas River and have an aggressive public outreach and education campaign to help our customers conserve water, but the addition of a robust ASR program in the Basin will aid in reducing direct withdrawals from the river during environmentally sensitive periods of low flow.

We encourage the state support Sunrise Water Authority's proposal for funding through the OWRD Water Supply Development Grant to help fund the construction of a new well and further Sunrise's capacity in its ASR system. This project will help Sunrise to become more resilient, and is also good for the Clackamas River. Both of which will benefit all CRWP members.

Sincerely,

Kim Swan

Kim Swan
Water Resource Manager
Clackamas River Water Providers



10602 S.E. 129th Avenue, Happy Valley, OR 97086-6218
tel: 503.761.0220 • fax: 503.761.7406
www.sunrisewater.com

Dear Oregon Water Resources Department,

I write on behalf of the Board of Commissioners of Sunrise Water Authority, to express the Board's ongoing support of Sunrise's work at developing an aquifer storage and recovery (ASR) system.

Over the last year, the Board and staff have worked together to develop a preemptive solution for the treatment and storage of water available during the winter months, in order to extend that supply into the summer when it naturally decreases, while water demand continues to rise.

The availability of water during potential future drought periods would reduce the likelihood of curtailment among Sunrise's customer base. Moreover, Sunrise's ability to utilize the ASR system would benefit the environment by reducing withdrawals on the Clackamas River.

The Board encourages you to consider providing assistance in funding Sunrise's ASR system. Thank you for your time.

Sincerely,

A handwritten signature in black ink that reads "Ron Blake".

Ron Blake, Vice Chair
Board of Commissioners