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July 3, 2014

Ms. Mary Rothling  
Oregon Water Resources Department  
Ground Water Rights Section  
725 Summer Street NE, Suite A  
Salem, OR 97301-1266

RECEIVED BY OWRD

JUL 08 2014

SALEM, OR

**SUBJECT:** Revised Application for Permit (G-17221) to Use Groundwater for Ontario Asset Holdings, LLC

Dear Ms. Rohling,

Cascade Earth Sciences is providing a revised application for a new groundwater review for permit G-17639.

Per a May 20, 2014, email from Jerry Grondin, a hydrogeologist in the Oregon Water Resources Department (OWRD) Groundwater Section, a request for reconsideration for use of reconditioned Well 2 (MALH 54102 and MALH 53047), rather than proposed Well 3 yet to be constructed, could be made within 60 days of the permit issuance. To do this, a new groundwater review is required and fee paid.

Upon issuance of Permit G-17639 (Application G-17221) on May 15, 2014, it was discovered that when a decision was made to recondition existing Well 2 rather than drill and construct proposed Well 3, a revised application for changing the point of appropriation was not submitted to the OWRD. We were made aware that this should have been done. Since the OWRD was involved in the review of the well design documents for the reconditioned Well 2, submitted to the drinking water program, we thought this was sufficient notice. We believe that Well 2 is a better location, is near to the proposed Well 3 location on the same property and avoids a another aquifer penetration.

It should also be noted that the intent of the original application was to obtain water from the alluvium as it was stated. The groundwater review assumed the source of water to be from the Glens Ferry Formation based on a proposed depth of the screen for Well 3. The proposed depth of the screen was based on electro-seismic data that indicated water at that depth for Well 3 was the best water bearing zone. Our intent was to obtain water from the alluvium at the depth that the electro-seismic suggested.

Reconditioning of Well 2 began on November 7, 2013 and was completed on January 9, 2014. Well 2 is screened to obtain groundwater from the alluvium, as it was originally intended in the application and did prior to reconditioning. Data obtained in the course of the reconditioning work indicates that one aquifer, to a depth of 600 feet, is present in the vicinity of the site.

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To aid in your groundwater review, the following data indicates that one aquifer is present through the alluvium and upper portion of the Glenn Ferry Formation:

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- Continuous drill cuttings from reconditioned Well 2 are predominantly gray or “gleyed,” from 365 feet to 600, which is an indicator for reduced or saturated conditions and being within groundwater of one saturated zone.
- Groundwater quality data collected from just above 360 feet below ground surface (bgs), between 360 and 600 feet bgs and from the final constructed well at 278 feet bgs were nearly the same.
- The presence of 6 milligrams per liter of nitrate in the groundwater below 360 feet is an indication of impacts from land surface and an indicator for one saturated zone.
- The 1990 USGS Hydrogeology of the Ontario Area - Malheur County, Oregon reports that “There is probably leakage of water from the upland gravels to the underlying sediments.” Our observations during well construction confirm this.

Additional details on the above data are included in the Water Supply Completion Report (attached). A check in the amount of \$300.00 is enclosed to process the new groundwater review.

Please review the enclosed application and supporting documents and contact me with any questions. I am the agent for this application and will address all questions. Thank you in advance for your assistance.

Sincerely,  
**CASCADE EARTH SCIENCES**



Steel Maloney  
Principal Hydrologist

SBM/lvw

Enc: Application and Fee  
Water Supply Completion Report  
C: Paul Halberstadt, Sr. Director Ontario Asset Holdings  
John Blair, Sr. Director Ontario Asses Holdings  
PN: 2013210019-003  
Doc: Groundwater Rights Application CL Rev 26-JUN14.docx

G-17639