



June 30, 2021

Justin Ford, PE  
Murraysmith, Inc.  
Via email

**Re: Cascade Well #7 (PR#160-2019)  
Rockwood PUD (PWS ID#00668)  
Conditional Approval**

Dear Mr.Ford:

Thank you for your submittal to the Oregon Health Authority's Drinking Water Services (DWS) of additional plan review information for the Cascade Well #7 project for Rockwood PUD. On May 10, 2021, our office received two submittals. One was from GSI Water Solutions, Inc and contained the well log, waiver request, pump test information and raw water quality data. The second submittal was from Murraysmith and contained plans and specifications.

The project includes installation of a well, drilled to a depth of 818 feet in March 2021. A regional geologist reviewed the well log construction details and noted that the well meets current construction standards.

The well was drilled to a depth of 818 feet, backfilled with pea gravel to a final depth of 802 feet. The well is cased to 633 feet and the casing seal extends to 632.5 feet. A liner extends beneath the casing to a depth of 797 feet. A sand filter pack has been placed between the liner and the borehole wall from 620 to 802 feet below ground level. Water enters the well through the filter pack and the well screens, which are included as part of the liner at various intervals below 620 feet.

The well draws water from a deep confined sand and gravel aquifer. The aquifer is overlain by 36 feet of silt that acts as a confining layer. Water in the aquifer is under pressure, rising roughly 399 feet above the top of the aquifer to a depth of 204.5 feet below ground level.

Results from a sensitivity analysis suggest that the well construction has a low sensitivity to nearby land use practices and the aquifer is not highly sensitive to nearby land use practices.

As noted in DWS' October 28, 2019 site plan evaluation letter, the water system does not have the required 100' radius of control around the well. A construction standard waiver request was submitted; the approved waiver is attached to this letter.

**The plans are approved with the following conditions:**

- All items in contact with potable water must meet NSF Standard 61 or equivalent.
- The submitted results included positive sample results for total coliform. One sample must be taken from the well head's raw water sample tap and analyzed for coliform bacteria using the presence/absence method. If the water system has a raw water coliform sample result for this well using this method that is negative for total coliforms, the result can be submitted in lieu of taking a new sample. Please note that this is a raw water sample and not a distribution system sample.

**Until we receive verification that construction is complete, the conditions have been met and final approval has been issued, the facility is not approved for use.** Upon completion of the project, the engineer must verify in writing that construction was completed according to the submitted plans. If substantial changes are made, a set of as-built drawings must be submitted. Documentation demonstrating how the above conditions were met should reference Plan Review #160-2019 and can be emailed to me at [Carrie.L.Gentry@dhsosha.state.or.us](mailto:Carrie.L.Gentry@dhsosha.state.or.us) or mailed to:

Attn: Carrie Gentry  
OHA-Oregon Drinking Water Services  
PO Box 14450  
Portland, OR 97293-0450

In addition to the above conditions, I have the following comments:

- Note that increased lead and copper sampling will be required once final approval is issued. The water system will be required to conduct two 6-month rounds at the original number of sample sites (60), with the new well in use.
- Once final approval is issued, the water system will be required to conduct additional sampling. The water system may qualify for an initial monitoring reduction (still to be determined), but at a minimum, a quarterly radionuclide schedule will be set up at the

entry point.

If you have any questions, please feel free to call me at (971) 201-9794.

Sincerely,

A handwritten signature in black ink, appearing to read 'C. Gentry', written in a cursive style.

Carrie Gentry, PE  
Regional Engineer  
Drinking Water Services

cc: Jeremy Hudson, PE, District Engineer, Rockwood PUD  
DeEttaFosbury, RG, Supervising Hydrogeologist, GSI Water Solutions, Inc.

encl: Approved construction standard waiver