

June 23, 2015

Vicki Whisler
London Water Coop
72654 London Rd.
Cottage Grove, OR 97424

RE: Corrective action plan required for the London Water Co-op public water system,
PWS OR4100239

Dear Ms. Whisler,

This letter is to notify you that a corrective action plan is now required to address the insufficient water treatment at the London Water Coop (LWC) water system reported between September 2014 and March 2015. Specifically, the CT (CT is the Chlorine concentration x contact Time) that is currently being achieved is not adequate to fully disinfect the water according to Oregon Administrative Rule (OAR) 333-061-0032. The LWC water system does not provide enough chlorine contact time before customers drink it to prevent disease causing organisms from being present in drinking water. The organisms that we are concerned about include bacteria, viruses, and parasites.

The Oregon Health Authority, Drinking Water Services process for tracking compliance at public water systems requires that a written correction action plan be created to address the issue. Correction of the insufficient contact time was expected to have already been completed, but unfortunately is behind schedule.

A tracer study to determine the time that water is in contact with chlorine is required for all surface water systems. To meet this requirement HBH engineering and DWS staff personnel conducted a tracer study in July 2014. At a flow rate of 12 GPM, the contact time measured was 26 minutes, which is inadequate for 1.0 log giardia disinfection as required for LWC water system. When the 26 minutes of contact time was used, LWC did not meet CT requirements as documented in the September 2014 through March 2015 monthly surface water treatment report submitted to Drinking Water Services (DWS).

To correct this situation, personnel at the London Water Coop water system have been working with Rob Henry from HBH engineering through the DWS' Circuit Rider

technical assistance program. Rob Henry conducted a second tracer study at a flow rate of 6 gpm in May of 2015. The contact time measured was 46 minutes. Unfortunately the 6 gpm maximum flow rate that was used is insufficient for a community of 50 people/22 connections. Also, at cold temperatures the required CT cannot be realistically met.

At this time London must address this ongoing violation. HBH wrote a report, (see attached disinfectant contact time tracer study report dated June 2015), at the end of the report there are 3 conclusions and recommendations, the report states;

Using the current tank configuration and levels, it is clear that the water treatment plant does not provide adequate contact time for the tested flows. The water system should consider the following changes to increase contact time:

- 1. Increase the operational depth and volume of the reservoirs. This would require the water treatment plant to operate more frequently. Using a reasonable chlorine concentration of 0.8 mg/L, it would be necessary to achieve a contact time of at least 80 minutes. Assuming a baffle factor of 0.04, the minimum operational volume of the reservoirs would need to be 24,000 gallons. Since the maximum volume is 20,000 gallons, increasing the depth alone will not be sufficient.*
- 2. Change the reservoir piping to allow the tanks to run in series. Based on previous experience, running unbaffled tanks in series increases the baffle factor to 0.3 or higher. With a baffle factor of 0.3, the system could maintain the existing low tank level of 4.5 feet. Using a baffle factor of 0.3, the total required volume for 80 minutes of contact time at 12gpm is 3200 gallons.*
- 3. Potentially restrict flow out of the reservoirs. This was discussed during Test #2. This was also discussed with OHA staff. OHA staff was not in favor of this option due to the potential complexities of the solution. At a minimum, the system would need a pressure tank, and likely a separate pumping system after the flow restriction. This option would also require the minimum depth in the reservoirs to be higher. THIS OPTION IS NOT RECOMMENDED.*

Please notify me in writing which option you wish to pursue or propose another plan within 30 days, no later than July 24th, 2015. Any option chosen will most likely require a new tracer study.

A tier 2 public notice is required to be delivered to all customers within 30 days of receiving a treatment technique violation (failure to meet CT is a treatment technique

violation). We have not received a copy of any public notices from LWC for the September 2014-March 2015 violations as required by OAR 333-061-0042. **Please use the attached public notice to distribute to all the LWC customers within 30 days of the date of this letter and provide a copy to me with the date it was distributed.**

Your immediate attention to this matter is much appreciated. Please contact me at 541-726-2587, extension 31 if you have any questions.

Respectfully,

A handwritten signature in black ink, appearing to read 'Casey Lyon', with a long horizontal flourish extending to the right.

Casey Lyon, R.E.H.S.
Oregon Health Authority,
Drinking Water Services

cc: Brad Daniels, Oregon Health Authority, Drinking Water Services