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<http://healthoregon.org/dwp>

July 21, 2017

Kirk Barham  
13000 Whiskey Creek Rd. W.  
Tillamook, OR 97141

**RE: Water System Tracer Study**

Dear Kirk,

I have received the **Disinfection Contact Time Tracer Study for OPRD Cape Lookout State Park, PWS# 4191068** conducted by Civil West Engineering Services on May 31, 2017. The parameters used during the study and results are as follows:

Total tank volume:	88,077 gallons (24 feet)
Tank level at time of the study (average):	21.2 feet
Tank volume used for tracer study (average):	77,801 gallons
Peak Hourly Demand Flow:	66.8 gpm
Measured contact time (T):	50 minutes

The submitted tracer study results are acceptable to this office subject to the following:

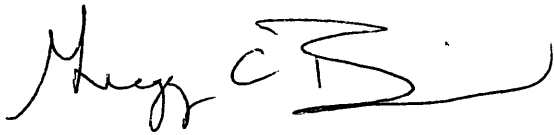
- **Use a contact time (T) of 50 minutes.** When filling out the Surface Water Monthly Operating Report, a Contact Time (T) of 50 minutes is usable as long as the system is operated within the parameters above (i.e. the reservoir does not drop below 21.2 feet and the Peak Hourly Demand Flow leaving the tank does not increase over 10% of 66.8 gpm which is 73.5 gpm).
- **CT parameters must be measured at 1<sup>st</sup> user.** Chlorine residual, pH and temperature must be measured daily when the plant is in use from the sample tap at the pump house for purposes of calculating CT required.

The filter treatment plant is credited with a 2-log removal of Giardia. The disinfection process must gain the additional 1-log to meet the required 3-log total removal/inactivation of Giardia. Therefore, when using the EPA CT tables, continue using the 1-log column when determining CT required. *When using the EPA CT tables, make sure and round down for temperature, and round up for pH and chlorine residual when determining CT required.*

Please be aware that based on this revised contact time number, you may need to raise the minimum chlorine residual. A quick analysis of past monthly surface water reports shows that free chlorine residual would need to be a minimum of ~1 ppm in the summer and ~1.2 ppm in the winter to meet the CT required using a contact time of 50 minutes.

If you have any questions or concerns, please contact me at (971) 673-0410. Your cooperation is appreciated.

Sincerely,

A handwritten signature in black ink, appearing to read "Gregg Baird". The signature is fluid and cursive, with the first name "Gregg" written in a larger, more prominent script than the last name "Baird".

Gregg Baird, REHS  
Oregon Health Authority  
Drinking Water Services  
<http://healthoregon.org/dwp>