

June 14, 2012

Mr. Mark Gunter
Rockaway Beach Water District
P.O. Box 5
Rockaway Beach, OR 97136

**Re: Plan Review - New Membrane Treatment Plant
(PWS 00708; PR# 222-2009)
Final Approval**

Mr. Gunter:

The Oregon Drinking Water Program (DWP) received confirmation [Brad Crement, P.E. (HBH Consulting Engineers, Inc)] earlier today that the referenced project was completed in accordance with the previously submitted plans and specifications. In addition, DWP received final documentation regarding the required disinfection tracer study with recommended contact times on June 13, 2012. The project included the installation of a new WesTech Ultrafiltration Membrane treatment plant with UF 120 modules (two trains – total capacity of 900 gpm).

At the time, DWP grants *final approval* of the plan review. Please note the required operational parameters:

- The physical integrity testing (*Direct Integrity Test*) must be done on each filter group *at least daily*.
- The operation and maintenance manual must include a Diagnosis and Repair Plan such that the ability to remove pathogens is not compromised.
- The membrane unit is approved for 4.0-log giardia, 4.0-log crypto, provided peak flow through each module is limited to 48 gpm with a maximum system TMP of 21 psi.
- The Direct Integrity Test must use a minimum static pressure of 16.3 psig at the beginning of the test. The SCADA system must be programmed to

indicate a failure of the direct integrity test (with auto-shutoff) if pressure decay during the test exceeds 1.57 psi/min.

- The system is required to achieve 0.5 log Giardia inactivation after filtration, which is accomplished through liquid sodium hypochlorination and the following minimum disinfection contact times:
 - Clearwell flow 0 – 500 gpm *37 minutes*
 - Clearwell flow 501 -900 gpm *23 minutes*
- Maximum combined effluent turbidity must never exceed 5 NTU (5.49 NTU) and must not exceed 1 NTU (1.49 NTU) in 95% of the daily readings.

If you have questions, please contact me at 971.673.0406, or via email at fred.n.kalish@state.or.us.

Sincerely,



Fred Kalish, P.E.
Regional Engineer
Drinking Water Program

Cc: Brad Crement, PE, HBH Consulting Engineers, Inc., 3216 Portland Rd,
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