



PUBLIC HEALTH DIVISION
Drinking Water Services

Tina Kotek, Governor

Oregon
Health
Authority

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September 22, 2023

Mark Cleaner
Callahan's Restaurant
7100 Old HWY 99S
Ashland, OR 97520

**Re: Surface Water Filtration (PR#20-2022)
Callahan's Restaurant (PWS ID#91551)
Filtration Conditional Approval**

Dear Mark Cleaner:

The Oregon Health Authority Drinking Water Services (DWS) has received revised plan review information from the Callahan's Mountain Lodge public water system regarding installation of surface water filtration. On September 6th, 2023, DWS received un-engineered drawings for the installation of cartridge filtration. The DWS region two management has permitted the submitted plan review material to be reviewed without being prepared and approved by a licensed engineer. The previously paid fee for the source reconstruction plan review has been credited toward this surface water filtration plan review per managerial request.

The project includes the installation of cartridge style surface water filtration and modification of existing water storage. The proposed cartridge filtration is a Harmsco model number HC/40-LT2 with a Harmsco filter vessel model number MUNI-40-MP. The new filter installation is near the establishment's water sources at the Callahan's Mountain Lodge south of Ashland, Oregon.

The project shall adhere to all applicable DWS Oregon Administrative Rules (OAR). The submitted plan review material has been reviewed and the following items were noted as specific conditions of final approval:

General-

- Per OAR 333-061-0050(1)(e), only materials designed for potable water service

and meeting NSF Standard 61: Drinking Water System Components - Health Effects or equivalent shall be used in those elements of the water system which are in contact with potable water.

Water treatment facilities (other than disinfection)-

- The proposed Harmsco cartridge filter and housing has been reviewed in relation to OAR 333-061-0050(4), OAR 333-061-0060 and the DWS's list of cartridge and bag filters that have been shown to meet the State's challenge study criteria. The proposed HC/40-LT2 filter cartridge with the Hurricane MUNI 40 MP housing are models meeting the DWS challenge study criteria. The challenge study credits provided to this filter and housing combination with 2.0 log removal credit for *Cryptosporidium* and 2.5 log removal credit for *Giardia*. The challenge study assigns no viral removal credit for this filtration and housing. The submitted plan review information did not indicate a pre-filter will be installed prior to the Harmsco cartridge filter.
- Per OAR 333-061-0050(4)(a)(B), investigations shall be undertaken by the water supplier prior to the selection or installation of treatment facilities to determine the physical, chemical, and microbiological characteristics of the raw water as appropriate. These investigations shall include a determination of the seasonal variations in water quality, as well as a survey to identify potential sources of contamination which may affect the quality of the raw water. No investigative information or pilot study information has been submitted demonstrating the selected filter is appropriate for the physical, chemical, and microbiological characteristics of the raw water sources being used. Prior to DWS giving final approval to the proposed surface water filtration, the water system shall demonstrate the proposed water treatment facilities shall be capable of producing water which consistently does not exceed MCLs through all seasonal variations (i.e., Fall, Winter, Spring, Summer) or one calendar year from beginning of active use of the new filtration. The water system shall monitor and record both raw water turbidity (prior to any filtration and raw water storage) and finished water turbidity daily through live pilot study period. If the proposed filtration is found to be incapable producing consistently compliant finished water through all seasonal variations, the water system shall revise its water treatment scheme with new or additional treatment systems.

During this live pilot study period, the water system must perform required Long Term 2 Enhanced Surface Water Treatment Rule (LT2) monitoring as part of using water sources designated Groundwater Under the Direct Influence of surface water (GWUDI) public water system. As part of LT2 monitoring requirements, raw water must be sampled for *E. coli* every 2 weeks for one year. If the running average of the results is above a trigger level (100 counts per 100 ml), the system

must sample for *Cryptosporidium* monthly for 2 years. Systems can also choose to sample for *Cryptosporidium* in lieu of *E. coli*. Once the new treatment systems are substantially complete, the water system shall begin monitoring on an DWS approved LT2 sampling schedule. Any new or inactivated water source wishing to be introduced to the water system shall be introduced prior to beginning this monitoring. LT2 monitoring needs to be performed at a combined source raw water sample.

- Per OAR 333-061-0050(4)(a)(D), laboratory equipment shall be provided so that the water supplier can perform analyses necessary to monitor and control the treatment processes. Demonstrate with as-built information (i.e., photos, equipment manuals, etc.) that the Callahan's Mountain Lodge has the necessary laboratory equipment (i.e., bench top turbidimeter and calibration standards, chlorine analyzer and appropriate reagent, pH analyzer and standards, etc.).
- Per OAR 333-061-0050(4)(a)(E), sampling taps shall be provided before and following the treatment process and before the first user when any form of water treatment is used at a public water system. Install a sample tap immediately after the Harmsco Filter housing location and test finished water turbidity at that location.
- Per OAR 333-061-0050(4)(c)(D), regardless of the filtration method used, the water system must achieve a minimum of 0.5-log reduction of *Giardia lamblia* and a 1.0-log reduction of viruses from disinfection alone after filtration treatment. The Callahan's Mountain Lodge shall demonstrate with as-built information that the previously approved chlorination 4-log disinfection system is operating under the same physical conditions (i.e., flow rates, chlorine dosages, etc.). The water system will need to demonstrate the minimum log activation is still obtained by the chlorine disinfection system.

It was noted that the 10,000-storage tank appears to now be plumbed after the water treatment building (filtration and disinfection). If the water system is desiring to utilize the existing 10,000-gallon storage tank for chlorine contact time, the water system will need to have a tracer study performed.

Finished Water Storage-

- Per OAR 333-061-0050(6), the finished water storage (any storage after treatment) shall meet the applicable portion of subsection (A) through (S) of this rule. If the 10,000-gallon storage tank will be replumbed to being located after the water treatment building, demonstrate (i.e., pictures) that access hatches, vents and overflows/drains meet these rules. Demonstrate the two "lodge" finished water storage tanks meets the requirements of this rule.

Pumping Facilities-

- It is recommended to verify that the gravity flow from the various water sources can sustain a 5 gallon-per-minute input flow to the new booster pump under all seasonal variations. With successful demonstration of the conditions listed in this letter, the "Spring #1", SRC-AA (surface water source) may be reconnected if additional source water capacity is needed.

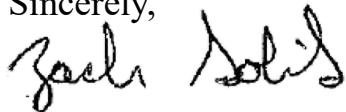
Disinfection of facilities-

- Per OAR 333-061-0050(10), disinfect all new or impacted portions of the public water system facilities prior to utilizing them for potable water for human consumption per the applicable portions of subsection (a) through (i) of this rule.

Until we receive verification that the conditions have been met and final approval has been issued, the new filtration and associated changes are not approved for use. Documentation demonstrating how the above conditions were met should reference Plan Review #20-2022 and can be emailed to me at zachariah.cunningham-golik@dhsosha.state.or.us.

If you have any questions, please feel free to call me at 541-231-9077.

Sincerely,



Zach Golik, PE
Regional Engineer
Drinking Water Services

CC: Julie Wray, DWS Portland