



PUBLIC HEALTH DIVISION
Drinking Water Services

Kate Brown, Governor

Oregon
Health
Authority

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December 21, 2022

Ben Klayman
Medford Water Commission
200 S Ivy Street, Room 177
Medford, OR 00513

**Re: New Filtration (PR#88-2022)
Medford Water Commission (PWS ID#00513)
Conditional Approval**

Dear Ben Klayman:

Thank you for your submittal to the Oregon Health Authority's Drinking Water Services (DWS) of plan review information for new rapid sand filtration for Medford Water Commission. The DWS Springfield office received design drawings, studies, and a plan review fee of \$3,300.

The project includes the design and construction of four new high loading rate filters at the water system's Robert A. Duff Water Treatment Plant. The four new granular media filters are being constructed as part of the existing water treatment plant's upgrade to 65 million gallon per day (MGD) capacity. The new filters will be physically separated from the existing filters in a new seismically resilient filter structure. The Robert A. Duff Water Treatment Plant is located on the northwest side of White City, 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 water system shall meet the applicable sections of OAR 333-061-0032(4).
- Per OAR 333-061-0050(4)(c), for the first year of operation, the maximum daily IFE turbidity and corresponding FLR must be recorded and submitted monthly, in addition to required monitoring. If the finished water turbidity MCL or IFE triggers are exceeded, allowance of the higher filter loading rate (above EPA criteria) will be reconsidered.
- Due to the limited duration of the submitted filter pilot study, the new high loading rate filters will be limited to being used between June 1st through September 30th per OAR 333-061-0050(4)(c).
- Per OAR 333-061-0036(5)(b), the water system will need to provide a minimum of one turbidity profile for each new individual filter during the month of operation.
- Per OAR 333-061-0050(4), for the first year of operation, the following treatments processes need to be monitored, and the water system should be prepared to produce plant data if requested supporting the following:
 - Pre-Ozonation: the ozone contactors have a hydraulic capacity up to 67 MGD at typical target ozone dose of 1 mg/L.
 - Coagulation: the PAX dosing system is capable of the full range of chemical dosing from 7 MGD up to 67 MGD plant flow. The flash mix system is capable of adequate mixing up to the design flowrates.
 - Flocculation: verify the three-stage flocculation process upgraded in 2018 has 30 minutes of detention time at peak 67 MGD flow and 24 minutes with one basin out of service.
 - Sedimentation: verify plate settlers installed in 2018 produce a maximum loading rate of 0.33 gpm/sf at the maximum plant flow of 67 MGD.
 - Filter aid polymer: the polymer dosing system upgraded in 2018 is capable of the full range of plant flows.
- Identification of controls provided to preclude or prevent, adverse effects resulting from 'on-off' operation, start-up of dirty filters, and rapid adjustments to the filtration rate (i.e., another filter taken offline, differences in rewash rate, etc.).
- Provide data analysis for estimates of *Cryptosporidium* and *Giardia* log removal the new filters at the 12 gpm/ft² loading rate. Provide data analysis for particle counts in specific size ranges.

Disinfection-

- Per OAR 333-061-0036(5)(b), prior to use of filter loading rates resulting in a water treatment plant total filter output greater than what has already been permitted, the water treatment plan must undergo a new tracer study.

Operation and Maintenance-

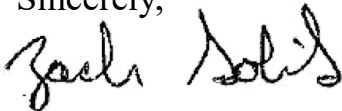
- Per OAR 333-061-0065, the water system shall update all applicable operation and maintenance protocols. Only operators certified at the necessary level (T4) shall

operate high loading rate filters.

Until we receive verification that the conditions have been met and final approval has been issued, the new filters 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 #88-2022 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,

A handwritten signature in black ink that reads "Zach Golik". The signature is written in a cursive, slightly slanted style.

Zach Golik, PE
Regional Engineer
Drinking Water Services

CC: Julie Wray, DWS Portland