

Post-Wildfire Monitoring Guidance for Drinking Water Systems

OHA-Drinking Water Services October 2020

Public water systems served by surface water and with significant burn areas in their watersheds may experience post-fire impacts to water quality, particularly after precipitation events.

The following potential water quality changes may create challenges for treating surface water:

- Increased suspended sediment and turbidity, as well as increased risk of landslides, flooding, and debris flows,
- Increase in total organic carbon (TOC), which can lead to disinfection by-products and increased coagulant use during treatment,
- Increased pH, which can affect coagulation and corrosion control,
- Increased manganese and iron, which can lead to filter clogging, increased chlorine demand and aesthetic concerns, and
- Increases in nutrients like nitrogen and phosphorus, possibly leading to algal or cyanobacterial growth.

DWS recommends conducting raw water monitoring daily for: turbidity, pH, total alkalinity and TOC. Iron and Manganese consider testing weekly. During first flush (a precipitation event exceeding 1 inch in a 24-hour period) and subsequent high turbidity event DWS recommends sampling for Nitrate and Nitrite. The objective of conducting raw water monitoring is to identify changes in water quality that can impact treatment processes and to assess the watershed conditions for restoration needs.

If structures, vehicles, or other infrastructure was burned, there is a risk that additional contaminants may enter the water supply. Some fire retardants may also contain additional contaminants including heavy metals. If your intake is in close proximity downstream of urban areas that have burned and the area has not been cleaned up or stormwater controls are not in place, consider monitoring the finished water at the Entry Point to the distribution system for Inorganic Compounds (IOCs). DWS has another guidance document titled *Post Wildfire VOC Guidance* that discusses VOC sampling in the distribution system.

- Other considerations
 - Most fire retardants contain primarily water, nutrients such as nitrogen and phosphorus and iron oxide (red dye). Some retardants may contain additional contaminants (occasionally cyanide). Consider obtaining the Material Safety

Data Sheets (MSDSs) from emergency managers to assist in determining potential contaminants.

- DEQ and other local partners like the county soil and water conservation district are gathering raw water monitoring data to assess the watershed conditions for restoration priorities and needs. Please send raw water data to Josh Seeds at DEQ, SEEDS.Joshua@deq.state.or.us
- Technical assistance and resources are available to water systems and their communities. Contact [OHA-DWS](#) for technical assistance with selecting analytes, infrastructure damage or treatment optimization (971) 673-0405. The [Drinking Water Protection Program at DEQ](#) can provide technical assistance to address longer term watershed evaluation, stabilization and restoration.