

What chemicals need to be looked for in drinking water when distribution systems are impacted or damaged by wildfires?

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This information represents water quality data from wildfire impacted water systems reviewed from California, Oregon, Colorado, New Mexico, and Canada since 2017 for public water systems and private water systems.

These recommendations may be updated as additional wildfire response and recovery events become available.

VOCs – Volatile Organic Compounds

Water should be screened for tentatively identified compounds.

Acetonitrile	Chlorodibromomethane	Ethyl-tert-butyl ether (ETBE)	1,2,4-Trichlorobenzene
Acetone	Chloromethane	Iodomethane	1,1,1-Trichloroethane
Acrolein	4-Chlorotoluene	Isopropylbenzene	1,1,2-Trichloroethane
Acrylonitrile	Dibromochloromethane	Methylene chloride**	Trichloroethylene
Benzene**	1,2-Dichlorobenzene	Methyl ethyl ketone (MEK) **	Trichloromethane
Bromochloromethane	1,4-Dichlorobenzene	Methyl iso butyl ketone (MIBK)	1,2,4-Trimethylbenzene
Bromodichloromethane	1,1-Dichloroethane	Methyl-tert-butyl ether (MTBE)**	1,3,5-Trimethylbenzene
Bromoform	1,2-Dichloroethane	Naphthalene**	Vinyl chloride**
<i>n</i> -Butylbenzene	1,1-Dichloroethene	Styrene**	<i>ortho</i> -Xylene
sec-Butylbenzene	<i>cis</i> -1,2-Dichloroethene	<i>tert</i>-Butyl alcohol (TBA) **	<i>meta</i> -Xylene
tert-Butylbenzene	<i>trans</i> -1,2-Dichloroethylene	Tetrachloroethylene	<i>para</i> -Xylene
Carbon disulfide	1,2-Dichloropropane	Tetrahydrofuran (THF) **	
Carbon tetrachloride	Ethanol	Toluene**	
Chlorobenzene	Ethylbenzene	1,2,3-Trichlorobenzene	

Chemicals detected in previous drinking water distribution system water samples after wildfires. Asterix and (**) bolded name indicates the chemical exceeded a short- or long-term drinking water exposure level. Updated: August 13, 2023.

SVOCs – Semi-Volatile Organic Compounds

Water should be screened for tentatively identified compounds.

1-Methylnaphthalene	2-Nitroaniline	Anthracene	Fluoranthene
1,1'-Biphenyl	2,2'-Oxybis(1-chloropropane)	Azobenzene	Fluorene
1,2-Dichlorobenzene	2,4-Dinitrophenol	Benzaldehyde	Hexachloroethane
1,2-Dinitrobenzene	2,4-Dinitrotoluene	Benzo(a)anthracene	Isophorone
1,2-Diphenylhydrazine	2,4,6-Tribromophenol	Benzo(b)fluoranthene	<i>N</i> -Nitroso-di- <i>n</i> -propylamine
1,2,4-Trichlorobenzene	2,6-Dinitrotoluene	Benzoic acid	<i>N</i> -Nitrosodimethylamine
1,3-Dinitrobenzene	3-Nitroaniline	Benzyl alcohol	<i>N</i> -Nitrosodiphenylamine
1,4-Dichlorobenzene	4-Chloro-3-Methylphenol	Bis(2-chloroethyl)ether	Naphthalene
1,4-Dinitrobenzene	4-Chloroaniline	Bis(2-ethylhexyl)phthalate	Nitrobenzene
1,4-Dioxane	4-Nitrophenol	Butyl benzyl phthalate	Pentachlorophenol
2-Chloronaphthalene	Acenaphthene	Caprolactam	Phenanthrene
2-Fluorobiphenyl	Acenaphthylene	Di- <i>n</i> -butyl phthalate	Phenol
2-Fluorophenol	Acetophenone	Di- <i>n</i> -octyl phthalate	Pyrene
2-Methylnaphthalene	Aniline	Diethyl phthalate	

Chemicals detected in previous drinking water well samples and leaching from damaged water meters after wildfires. Sometimes NO VOCs were detected, but SVOCs were found indicating contamination was present. Updated: August 13, 2023.

Disclaimer

Few post-fire drinking water system chemical testing efforts have been designed to identify which chemicals are the most significant in damaged drinking water systems after wildfires.

The lists provided here may be expanded as additional public and private drinking water systems damaged by wildfire undergo testing.

Commercial laboratories need to be selected that are capable to screen for, at least, these compounds. Different field conditions may warrant more extensive testing.

Post-wildfire drinking water samples also must be collected in VERY specific ways, otherwise laboratory results have no public health protection value.

Utilities and agencies should engage professionals who have direct experience making these decisions. Failure to do so can result in allowing communities to be exposed to contaminated water that can cause acute and long-term harms, wasted water sampling and analysis funds, wasted time, and contribute to preventable health impacts.