

Disinfection Byproducts in Montana

Compliance with the Stage 2 Disinfection Byproduct (DBP) Rule is required for Community (C) and Non-Transient Non-Community (NTNC) Public Water Systems that use a disinfectant other than ultraviolet light. This rule complies with the Administrative Rules of Montana ([ARM 17.38.213](#)), which adopts the Code of Federal Regulations ([40 CFR 141.130 for Stage 1 Subpart L](#)) and ([40 CFR 141.620 for Stage 2 Subpart V](#)).

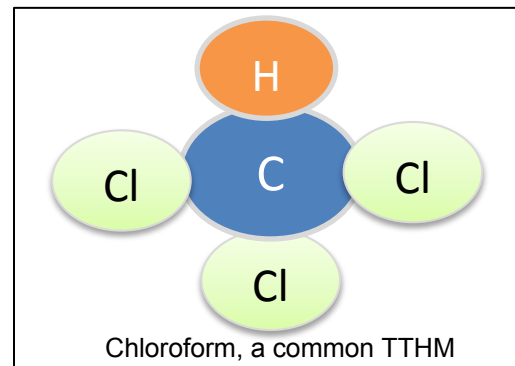
What are Disinfection Byproducts?

Disinfection Byproducts (DBPs) are a group of contaminants that can form when disinfectants used to control microbial pathogens combine with naturally occurring organic matter in the source water. There are more than 500 DBPs that have been detected in treated drinking water and many more that continue to be identified and quantified. In general, surface water sources are more susceptible to DBP formation as they have higher organics, although there are some groundwater systems that have elevated DBPs.

Montana DEQ requires water systems that use chlorine and/or chloramines to monitor for the following DBPs*:

- Total Trihalomethanes (**TTHM**)
- Five Haloacetic acids (**HAA5**)

*Water systems that use ozone as the primary disinfectant are required to monitor for Bromate



What are the Health Risks of DBPs?

Some people who consume water with DBPs in excess of the Maximum Contaminant Level (MCL) over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer. The EPA has set the MCLs at 80 micrograms per liter ($\mu\text{g/L}$) for TTHMs and 60 $\mu\text{g/L}$ for HAA5. These numbers are computed for your water system on a locational running annual average (LRAA). For water systems sampling quarterly, the LRAA is an average of the last 4 quarters of data at each sampling location. Because of this, your water system may have single detections above the MCL without having an MCL violation.

What are the Requirements for Public Water Supplies in Montana?

Sampling requirements depend on source water type (groundwater or surface water), population served, and historical concentrations. Since surface waters systems typically have significantly higher organic matter, the monitoring for surface water systems is weighed heavier than groundwater systems that don't typically have high organic content. See tables on next page showing the routine and reduced monitoring requirements.

Routine Monitoring Requirements

Source Type	Population	Monitoring Frequency	Amount of Samples*
Surface Water	<500	Yearly	1 Dual
Surface Water	500-3,300	Quarterly	2 Individual (1 Highest TTHM/1 Highest HAA5)
Surface Water	3,301 - 9,999	Quarterly	2 Dual
Surface Water	10,000 - 49,999	Quarterly	4 Dual
Surface Water	50,000 - 249,999	Quarterly	8 Dual
Groundwater	<500	Yearly	1 Dual
Groundwater	500-9,900	Yearly	2 Dual
Groundwater	10,000 - 99,999	Quarterly	4 Dual

Reduced Monitoring Requirements

Source Type	Population	Monitoring Frequency	Amount of Samples*
Surface Water	<500	Yearly	1 Dual
Surface Water	500-3,300	Yearly	2 Individual (1 Highest TTHM/1 Highest HAA5)
Surface Water	3,301 - 9,999	Yearly	2 Dual
Surface Water	10,000 - 49,999	Quarterly	2 Dual
Surface Water	50,000 - 249,999	Quarterly	4 Dual
Groundwater	<500	Triennial	2 Individual or 1 Dual
Groundwater	500-9,900	Yearly	2 Individual or 1 Dual
Groundwater	10,000 - 99,999	Quarterly	2 Dual

-*Dual samples are those that are taken at same location; **Individual** samples are broken out and taken at separate locations. The reason for this is that TTHMs/ HAA5s are unique and often found at varying concentrations throughout the distribution system.

-Please keep in mind that the samples are due in the peak historical week and month - meaning the week of highest historical detections or the week with highest average temperature. Most reduced monitoring schedules are for the **2nd week of August**.

If you would like to access your online monitoring schedule, please follow this link:

http://degrpts.deq.mt.gov/reports/rwservlet?SDWIS&report=COMPMONTR_ITSD.rep¶mform=yes

More Information

EPA website with many helpful links and documents

<http://www2.epa.gov/dwreginfo/stage-1-and-stage-2-disinfectants-and-disinfection-byproducts-rules>

Quick Reference Guide for Disinfection Byproducts

<http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100C8XW.txt>

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