

STATE OF COLORADO

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Executive Director and Chief Medical Officer

Dedicated to protecting and improving the health and environment of the people of Colorado

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Colorado Department
of Public Health
and Environment

December 3, 2012

JACK E. BARKER
ALPENSEE WD
PWSID # CO0159119
PO BOX 134
DUMONT, CO 80436

**RE: Reduced Monitoring Granted
 Total Trihalomethanes and Haloacetic Acids**

Dear Mr. Barker:

The Water Quality Control Division (the "Division") has granted ALPENSEE WD (the "System") a reduced monitoring schedule for the disinfection byproducts, total trihalomethanes (TTHM) and haloacetic acids (HAA5), under the Stage 1 Disinfectants and Disinfection Byproduct (DBP) Rule. The System is now required to sample for TTHM and HAA5 on a three year frequency. Therefore, System is not required to sample under the Stage 1 DBP Rule in 2013.

The System is required to comply with the Stage 2 DBP Rule on October 1, 2013 with the first sample required in 2014. This reduction does not apply to the Stage 2 DBP Rule. The System may request to remain on a reduced frequency if it meets the criteria of Article 7.8.8(a) of the *Colorado Primary Drinking Water Regulations* (the "Regulations"), specifically:

- The System received a 40/30 Certification, a Very Small System (VSS) Waiver under the Initial Distribution System Evaluation (IDSE) requirements or was not required to comply with the IDSE requirements, and
- All of the System's monitoring locations chosen for the Stage 2 DBP Rule were sampled under the Stage 1 DBP Rule and meet the requirements for reduced monitoring.

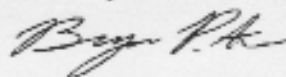
If the System meets the criteria for immediate reduced monitoring under Stage 2 DBP Rule and would like to request reduced monitoring, please fill out the enclosed Stage 2 DBP Sample Site Plan. Please retain a copy of the Sample Plan to comply with the Monitoring Plan requirements of Article 1.12 of the Regulations.

You may submit the form and any maps via electronic mail to bryan.pilson@state.co.us. If electronic submission is not possible, you may either fax the forms to (303) 758-1398 or mail to the following address:

CDPHE_WQCD
ATTN: CAME - Stage 2 DBP Sample Plan
4300 Cherry Creek Drive South
Denver, CO 80246-1530

If you have any questions regarding the Stage 2 DBP Rule, please refer to the enclosed Sample Site Selection Guide and Frequently Asked Questions. You can also contact me by telephone at 303-692-3318 or by Email at bryan.pilson@state.co.us.

Sincerely,



Bryan Pilson
Drinking Water Compliance Specialist
Water Quality Control Division

Enclosures: Stage 2 Disinfection Byproducts Sample Site Plan
Stage 2 Frequently Asked Questions (FAQs) and Site Selection Guide

cc: Drinking Water File CO0159119

STAGE 2 DISINFECTION BYPRODUCTS SAMPLE SITE PLAN

PWSID#: _____ System Name: _____

I, _____ have reviewed this Disinfectants and Disinfection Byproducts Rule sampling plan, and that the provided information is true and correct to the best of my knowledge.

Signature _____ Date _____ Revision?

If the system was required to complete an Initial Distribution System Evaluation (IDSE) Report, monitoring must be conducted per the recommendations of the IDSE Report, unless changes have been approved by the Division.

TTHM and HAA5 monitoring is required in a determined month(s) based on peak historical disinfection byproduct formation as described below:

Stage 2 Compliance Monitoring Framework		
If the peak historical month is:	Annual or triennial Systems must monitor in:	Quarterly Systems must monitor in:
June	June	March, June, September, December
July	July	January, April, July, October
August	August	February, May, August, November

Calendar month of highest disinfection byproduct formation: _____

Routine Monitoring Frequency: Quarterly Annual Three Year

Number of sample sites required: individual TTHM and HAA5 sites or 1 dual sample site

Fill in only one. If high TTHM and high HAA5 site are in same location, complete top section. If high TTHM and high HAA5 are in separate locations, complete the lower section.

STAGE 2 TTHM and HAA5 Sampling Sites		
State Sample Point ID (assigned by WQCD)	Sample Site Name/Address	Analyte
DBP001		TTHM and HAA5
OR		
DBP001		TTHM
DBP002		HAA5

Check box if chosen sample sites have been monitored under the Stage 1 DBP Rule and represent the highest TTHM and HAA5 levels in the system.

Map of Stage 2 DBP Sample Sites

Provide a map of the distribution system showing locations of all Stage 2 DBP sample sites. You may provide this detail all in one map or in several different maps. Hand drawn schematics or aerial maps (Google maps) are acceptable.

Stage 2 Disinfectants/Disinfection Byproduct (D/DBP) Rule

Frequently Asked Questions

Who has to comply with the Stage 2 D/DBP Rule (Stage 2)? *Community and non-transient, non-community (NTNC) systems that serve water treated with a chemical disinfectant.*

When do I have to comply with Stage 2? *Stage 2 has staggered start dates. The start date is based on the population served of the largest system within the combined distribution system of all buying and selling water systems. That means if one system meets an earlier start date, then all systems connected to that system in any way must comply by that date too. Those systems within a combined distribution system with a system serving $\geq 100,000$ must begin Stage 2 monitoring on April 1, 2012. Systems serving between 50,000 - 99,999 begin on October 1, 2012. Systems serving $< 50,000$ begin on October 1, 2013.*

What are the major changes between Stage 1 and Stage 2? *There are several changes. The big change is that compliance is based on a locational running annual average (LRAA) instead of a system-wide average. Second, sampling is based on population and water type, instead of number of treatment plants. Third, Stage 2 requires sampling in the month with the highest DBP formation and any additional required monitoring every 90 days afterward.*

Under Stage 1 my system was on a quarterly schedule, now I have to sample every 90 days. How should I schedule my sample dates? *The Water Quality Control Division (Division) will require systems on quarterly monitoring to sample in the month with the highest DBP formation and every subsequent third month afterward. Samples must still be collected within each calendar quarter.*

Is there any change in how I submit my samples to the laboratory? *Since location is now very important, submitted samples must contain the state assigned ID AND a local identifier (e.g. DBP001: 101 Main St).*

- ▶ **How do I determine my historical peak DBP formation month?** *If you were not required to submit an IDSE report which would have required a determination, review your system's historical DBP data and find the month with the highest sample result. If you're still unsure, the peak month is likely August or the month with the warmest water temperature.*

I'm on a reduced DBP schedule under Stage 1, do I qualify for a reduced DBP Schedule under Stage 2 immediately? *Depends, as long as all of your sample locations from Stage 1 will become your Stage 2 sample points, you are likely to qualify for an immediate reduction. You will need to request a reduction in writing to the Division for approval.*

I'm a water hauler, when and where do I collect my Stage 2 DBP sample? *Samples should be collected from your largest hauled water tank, prior to delivery to the last customer.*

What if I can't sample at a Stage 2 DBP site? *If a site becomes unavailable (e.g. vacant site/fire), sample from the nearest available site that is representative of the previous site. After sampling, submit a Sample Site Change form to the Division within 10 days.*

If my system increases or decreases in size how do I change a site to reflect new water characteristics in my system? *In instances where the sample site should be moved dramatically from a former site, the system should submit a Sample Site Change form to the Division. The Division will approve the new site, and then the system can sample at the new site. The new site will start a new LRAA and compliance will be determined after four quarters of sampling.*

I receive treated water from another system, how do I control my system's DBPs? *First see if the wholesale system can change their system hydraulics to deliver water to your system with less transit time. If that is not possible, your receiving system may need to install treatment to reduce DBPs.*

Stage 2 Disinfectants/Disinfection Byproduct (D/DBP) Rule

Sample Site Selection Guide

To understand how to select sample sites, let's first look at the differences between the Stage 1 D/DBP Rule and the Stage 2 D/DBP Rule. In the Stage 1 DBP Rule, systems were required to sample at locations in the distribution system representing the oldest water or maximum residence time. Therefore the selection of sample sites was based solely on geography or system hydraulics. In the Stage 2 DBP Rule, the sample site selection criteria were revised to specifically target sites with the highest TTHM and HAA5 levels within the system.

As part of the Stage 2 D/DBP Rule, many systems had to complete an Initial Distribution System Evaluation (IDSE), which required them to find their high TTHM and HAA5 sites. Small systems or ones with historically low DBP levels are allowed to select their sites based on historical data or best professional judgment. When systems are selecting sites, they should follow these general guidelines:

High TTHM sites: TTHM forms over time as chlorine reacts with natural organic matter in the water. Therefore, water that has had the most amount of time to react will likely have the highest TTHM levels. These sites are where the chlorine residuals are lowest in the distribution system. This is near the ends of the distribution system or in isolated service areas where water age is high due to low water usage. Do not choose sample sites on dead-end service lines where there are no customers.

High HAA5 sites: HAA5 forms with the reaction of disinfectants and natural organic material, but then can degrade over time in the distribution system, making finding the high sites challenging. High HAA5 sites are more likely to be in areas with hydraulic mixing and lower free chlorine residual but still above 0.2 mg/L. For a well maintained distribution system with moderate water age and disinfectant residuals above 0.2 mg/L, a high HAA5 site may be at the end of the distribution system at the same location as a high TTHM site. Other potential sites to be considered may be downstream from a distribution storage tank or where pressure zones meet. For consecutive systems, this could be just downstream from the master meter or from a booster chlorinator.

Surface Water or GWUDI systems serving less than 3,300 people or Groundwater systems serving less than 500 people: These systems must identify a high TTHM and a high HAA5 sample site in their distribution system. The system is then required to sample one TTHM at the high TTHM site and one HAA5 at the high HAA5 site; these are called individual sample sites. If the distribution system is well maintained with moderately low water age and residual disinfectant levels greater than 0.2 mg/L throughout the system, the TTHM and HAA5 sites will likely be in the same location. Sampling both TTHM and HAA5 at the same site is called a dual sample.

Surface Water or GWUDI systems serving more than 3,300 people or Groundwater systems serving more than 500 people: These systems must identify high TTHM and high HAA5 locations in their distribution system. The system is then required to sample both TTHM and HAA5 at each site; these are called dual samples. For systems that must sample at two locations, one dual sample must be collected at a high TTHM site and one dual sample at a high HAA5 site. For systems required to collect four or more samples, high TTHM and high HAA5 sites must be equally represented. If high TTHM and high HAA5 sites are at the same location, systems must choose the next area within the distribution system that is likely to represent high TTHM or HAA5.

When selecting sample sites, be sure that there is easy access to sample taps year-round.

Remember: In the absence of data, just make a thoughtful and justifiable choice on where the high TTHM and high HAA5 sites are located within your system. You do not need to sample throughout your distribution system to justify the sample locations.