CHLORITE, BROMATE, AND CHLORINE DIOXIDE MONTHLY OPERATING REPORT

Division of Drinking and Ground Waters

PUBLIC WATER SYSTEM INFORMATION

PWS Name:_____

STU Name:_____

PWS #:_____STU #:_____

LABORATORY INFORMATION

Analytical Lab:_____ID:_____

Reporting Period:_____

NOTICE: This report is required under Sections 6109.04 and 6109.12, Ohio Revised Code. Non-Compliance may result in civil penalties up to a maximum of $25,000 per violation per Section 6109.13 and 6109.33.

Routine sampling at the entry point to the distribution system. If a sample result exceeds the chlorite MCL or the chlorine dioxide MRDL, place an “x” in the column after it to show that follow-up samples had to be taken the next day in the distribution system.

Date	Sample Location	Chlorite, mg/L		Chlorine Dioxide, mg/L	
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					

Routine monitoring for chlorite in the distribution system:

Date	Sample Location	Chlorite, mg/L

Follow up distribution system monitoring due to an exceedance of the chlorite MCL or chlorine dioxide MRDL. Add additional pages, if necessary. If there is additional chlorination in this portion of the distribution system (that is, after the entry point), place an “x” here: _____.

Date	Sample Location	Chlorite, mg/L	Chlorine Dioxide, mg/L

Bromate and bromide monitoring:

Date	Bromate Concentration, mg/L	Bromide Concentration, mg/L

I Certify under penalty of law that I have personally examined and am familiar with the data submitted in this MOR; that the data in this report is true, accurate and complete; and I am aware that falsification thereof could result in the imposition of fines and penalties including revocation or suspension of my certification as a public water system operator.

Name of Certified Operator and Certification Number

Signature of Responsible Official

Date

Instructions for Completing the Chlorite, Bromate, and Chlorine Dioxide Monthly Operating Report (EPA 5116)

General information for all systems:

1. Public water system information (page 1)

   Print or type the name of the public water system (PWS) and the name of the source treatment unit (STU).

   Enter the PWS ID number and STU ID number.

2. Laboratory information (page 1)

   Enter the Reporting period, Analytical Lab Name, and Analytical Lab ID number.

3. Sign off (page 2)

   Print or type the name of the certified Operator and the Operator's Certification Number. The Responsible official must sign and date the form.

4. Reporting

   Return the completed report to your district office no later than 10 days after the end of the month for which you are reporting.

For systems using Chlorine Dioxide as a disinfectant:

5. *A. Routine monitoring for chlorite and chlorine dioxide*

   Routine samples are required **daily** for both chlorite and chlorine dioxide at the entry point to the distribution system. On page 1 of the report, enter the date and location for each sample. Enter the chlorite and chlorine dioxide results in mg/L.

   Routine samples are also required **monthly** for chlorite in the distribution system, as detailed in the next paragraph. Record the date, location, and result in mg/L for each of these samples on page 2 of the report.

   Sampling in the distribution system occurs as follows: Collect one sample each near the first customer (sample ID FC00x), at a location representative of average residence time (sample ID AT00x), and at a location representative of maximum residence time (sample ID MT00x), where "x" is a numeral associated with that particular sampling location, per your D/DBP sample monitoring plan. These groups of samples are referred to as "three-sample sets."

   B. Additional samples that may be required for chlorite

   If any routine daily sample exceeds the chlorite maximum contaminant level (MCL), place an "x" in the column on page 1 following the column for chlorite results and take a three-sample set for chlorite in the distribution system the following day. This is in addition to the routine daily sample required at the entrance to the distribution system that next day.

   Compliance with the MCL for chlorite shall be based on an arithmetic average of each three-sample set taken in the distribution system. If the arithmetic average of any three-sample set exceeds the MCL, the system is in violation of the MCL and must notify the public according to rule 3745-81-32 of the Ohio Administrative Code (OAC). This notification, and other public notification described in these

instructions, is in addition to submitting the MOR to the director within 10 days following the end of the month being reported.

Any additional distribution system sampling for chlorite shall be conducted in the same manner (as three-sample sets, at the specified locations). If a system conducts additional distribution system monitoring for chlorite because of an MCL exceedance at the entry point, **these results may be used to fulfill the routine monthly monitoring requirements.**

All samples taken and analyzed shall be included in determining compliance, even if that number is greater than the minimum required.

C. Additional samples that may be required for chlorine dioxide

Compliance with the maximum residual disinfectant level (MRDL) for chlorine dioxide shall be based on consecutive daily samples. A public water system is in compliance with the MRDL when daily samples are taken at the entrance to the distribution system and no two consecutive daily samples exceed the MRDL.

If any daily sample exceeds the MRDL place an "x" in the column on page 1 following the column for chlorine dioxide results and take a three-sample set for chlorine dioxide in the distribution system on the following day. This is in addition to the routine sample required at the entrance to the distribution system. If either chlorine dioxide or chloramines are used to maintain a disinfectant residual in the distribution system, or if chlorine is used to maintain a disinfectant residual in the distribution system and there are no disinfection addition points after the entrance to the distribution system (i.e., no booster chlorination), the public water system shall take the three samples as close to the first customer as possible, at intervals of at least six hours. Otherwise, the three-sample set must be taken at the locations described for chlorite, above.

D. Reduced monitoring

Daily routine monitoring for chlorite at the entrance to the distribution is **not** eligible for reduced monitoring. Routine monthly monitoring for chlorite in the distribution **may be** reduced to once per quarter if there are twelve consecutive months' worth of distribution system results in which no result exceeds the MCL for chlorite (contact your district office to see if your system qualifies).

Monitoring for chlorine dioxide is **not** eligible for reduced monitoring.

6. <u>Report the Average of the sampling data</u>

Record the arithmetic average of the daily samples in the appropriate columns.

7. <u>Reporting Maximum Contaminant Level/Maximum Residual Disinfection Level exceedances</u>

Report whether or not an MCL was exceeded and if the exceedance was an acute or nonacute MRDL exceedance for the appropriate parameters monitored.

An **acute** MRDL violation occurs when:

Any daily sample taken at the entrance to the distribution system exceeds the MRDL, and on the following day one or more of the three samples taken in the distribution system exceeds the MRDL. Failure to conduct the follow-up monitoring in the distribution will result in an acute violation. The public water system shall take immediate corrective action to lower the level of chlorine dioxide below the MRDL and shall notify the public according to the procedures for acute health risks in rule 3745-81-32 of the OAC. The public water system must notify its District Office as soon as possible but no less than 24 hours of determining it has an acute MRDL violation.
A **non-acute** MRDL violation occurs when:

Any two consecutive daily samples taken at the entrance to the distribution system exceed the MRDL but all distribution system samples taken are below the MRDL. Failure to monitor at the entry point after the MRDL has been exceeded is also a non-acute violation. The public water system shall take corrective action to lower the level of chlorine dioxide below the MRDL at the point of sampling and shall notify the public according to the procedures for nonacute health risks in rule 3745-81-32 of the Administrative Code.

For systems using Ozone:

8. Bromate monitoring

Enter the sample date. Enter the Bromate result in mg/L.

Routine monitoring for bromate shall be one sample per month for each treatment plant in the system using ozone. The sample shall be taken at the entrance to the distribution system while the ozonation system is operating under normal conditions.

Public water systems may use data collected under the provisions of this rule to qualify for reduced monitoring. Public water systems may use another data set to qualify for reduced monitoring, provided it has been approved by the director.

Reduced monitoring: public water systems required to analyze for bromate may reduce monitoring from monthly to once per quarter, if the system demonstrates that the average source water bromide concentration is less than 0.05 mg/L, based upon representative monthly bromide measurements for one year. The public water system must continue bromide monitoring to remain on reduced bromate monitoring. The public water system may remain on reduced bromate monitoring until the running annual average source water bromide concentration, computed quarterly, is equal to or greater than 0.05 mg/L based upon representative monthly measurements. If the running annual average source water bromide concentration is equal to or greater than 0.05 mg/L, the public water system shall resume routine monitoring.

Compliance with the MCL for bromate shall be based on a running annual arithmetic average, computed quarterly, of monthly samples. For months in which the public water system takes more than one sample, the average of all samples taken during the month shall be used to compute the monthly average.

If the average of samples covering any consecutive four-quarter period exceeds the MCL, the public water system is in violation of the MCL and must notify the public according to rule 3745-81-32 of the OAC. Public notification is in addition to reporting to the director according to rule 3745-81-75 of the OAC.

All samples taken and analyzed shall be included in determining compliance, even if that number is greater than the minimum required.

If, during the first year of monitoring any individual quarter's average will cause the running annual average of that system to exceed the MCL, the public water system is in violation at the end of that quarter.

Failure to complete the required monitoring is a monitoring violation. The public water system will be in violation for the entire period covered by the running annual average. If a public water system fails to complete twelve consecutive months of monitoring, compliance with the MCL for the last four-quarter compliance period shall be based on an average of the available data.