



Preparing an Operational Evaluation Level Report for Disinfectants/Disinfectant Byproduct Rule

Public water systems that exceed an Operational Evaluation Level at one or more locations in the distribution system shall submit a completed report (Ohio EPA Form 5031) to the appropriate Ohio EPA district office within 90 days of notification of an OEL exceedance.

Ohio Administrative Code (OAC) 3745-81-24(D) requires all public water systems monitoring for Total Trihalomethanes (TTHM) and Haloacetic Acids, five (HAA5) to meet Operational Evaluation Levels (OELs).

How are OELs determined?

A public water system has exceeded the OEL at any monitoring location where the sum of the two previous quarters' results plus twice the current quarter's result, divided by four to determine an average, exceeds an MCL as shown on the equation to the right.

$$\frac{1Q + 2Q + (2 \times 3Q)}{4} > 0.080 \text{ (TTHM) or } > 0.060 \text{ (HAA5)}$$

The OEL applies to each location a public water system monitors for TTHM and HAA5. *OELs are not violations*, but designed to warn water systems of potential future MCL exceedances. However, water systems who do not submit the required report (Ohio EPA Form 5031) *within 90 days of notification will receive a reporting violation* (per OAC 3745-81-24 (D)(21)(a)).

How do I complete Section 1 (Source Water and Treatment)?

Noteworthy changes in source water could include:

- *Surface water sources*: change in intake drawing from a creek to drawing from an impoundment supplied by the creek. Also identify any algal blooms or taste and odor events in the source water.
- *Ground water sources*: a change in which wells were operating during the time frame of an OEL exceedance.
- *Purchased water sources*: changes in the amount of water purchased from the wholesaler could have had an impact on TTHM/HAA5 formation. Always check with the wholesaler(s) for changes in their source water.

Note any significant changes in treatment including:

- increasing or decreasing critical chemical feeds
- a change in specific types or manufacturer chemicals
- PWS purchasing water should check with their wholesaler(s) on possible treatment changes.

How do I calculate the average daily fluctuation of water in our storage tanks for Section 3?

The *Percent Daily Fluctuation* is the difference in elevation between the high and low water levels for each drain/fill event, as shown in the equation to the right.

$$\frac{(\text{high water level} - \text{low water level})}{\text{high water level}} \times 100 = \%$$

For example, a 105-foot tall standpipe has a high water level of 100 feet and is the point at which the supplying pump(s) shut off. The tank then drains to 85 feet of water depth, which is the low water level that directs the supplying pumps to turn on and the tank begins filling.

Therefore, the percent fluctuation of this drain/fill event is calculated as shown in the equation to the right.

$$\frac{(100 - 85)}{100} \times 100 = 15\%$$

Drain/fill events may happen several times a day and for this example, the percent daily fluctuation is always 15 percent. If the tank drains/fills three times a day, the percent daily fluctuation is still 15 percent (do not add 15 percent together three times to 45 percent.) If the daily fluctuation varies, use the largest daily fluctuation.

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The same calculation applies for elevated tanks: use the sidewall depth of the bowl as the working volume and ignore the elevation of the riser pipe since this volume is inconsequential. A water system has a 140-foot tall elevated tank with a 42-foot bowl depth. The recorded high water level is 40 feet and the recorded low water level is 30 feet. The percent daily fluctuation of each drain/fill event is calculated, as shown in the equation on the right.

$$\frac{(40-30)}{40} \times 100 = 25\%$$

Where do I find disinfectant residual monitoring information for Section 4?

The average plant tap chlorine residual may be obtained from the Plant-Distribution Monthly Operating Report. The number of disinfection samples includes both the daily distribution system residual samples and the number of disinfection samples collected with total coliform sampling as required of the water system.

Review the results of all disinfectant residual samples and determine the number of samples where:

- the free chlorine residual was less than 0.2 mg/L or
- the combined chlorine residual was less than 1.0 mg/L.

Repeat for each month of the quarter on the report form, as indicated.

For Water Systems Filing Repeat OEL Reports

Systems previously exceeding an OEL may request to limit the scope of the OEL report, but are still required to complete and submit a report within 90 days of the OEL exceedance letter.

The purpose of completing repeated reports is to provide Ohio EPA with an update on the status of operational changes identified earlier and to provide additional considerations for improving water quality. Please note that you must complete an OEL Report every time you exceed an OEL including quarterly monitoring periods in which a LRAA MCL is incurred.

Water systems approved to limit the scope of the report may use the space in Section 5 to capture this information or choose to complete other sections of the report, if desired or requested by Ohio EPA. Additional information on the operating conditions of the water system may also be provided as an attachment to the OEL report or through a separate letter addressed to Ohio EPA.

Submission and contact information

Compliance with OELs is determined in Central Office in Columbus. For clarification on OEL calculations call (614) 644-2752 and ask to speak with someone in the Compliance Assurance Section. For questions regarding completion of the OEL report, contact your district office. Please provide clear and accurate information on the operating conditions of the water system over the previous quarter in all sections of the report. Send completed OEL reports to your local district office.

Central Office 50 W. Town St., Ste. 700 Columbus, OH 43215 (614) 644-2752	Central District Office 50 W. Town St., Ste. 700 Columbus, OH 43215 (614) 728-3778
Northeast District Office 2110 E. Aurora Rd. Twinsburg, OH 44087 (330) 963-1200	Southeast District Office 2195 Front St. Logan, OH 43138 (740) 385-8501
Northwest District Office 347 N. Dunbridge Rd. Bowling Green, OH 43402 (419) 352-8461	Southwest District Office 401 E. Fifth St. Dayton, OH 45402 (937) 285-6357

