OhioEPA

# Public Water System
# Consumer Confidence Report
# Instruction Guide and Template Guide

**Ohio Environmental Protection Agency**
**Division of Drinking and Ground Waters**

**www.epa.ohio.gov/ddagw**

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# Introduction

This Consumer Confidence Report (CCR) Instruction Guide was developed to assist public water system officials who are preparing drinking water quality CCRs required by Ohio Administrative Code (OAC) Chapter 3745-96. This guide contains instructions on the use of the Ohio EPA CCR Template and is available in both a paper version and in an electronic format. The electronic version is formatted such that any windows driven word processor can read it and it allows for easy editing. It should be noted that use of the Template will not guarantee an acceptable CCR as it requires a significant amount of input from the user. Each Section of the Template is numbered in reference to the same Section numbers in this guide. After completing your CCR, the Section numbers should be deleted from the final version before sending it to your customers.

# CCR Instructions

## Section 1: Report Title

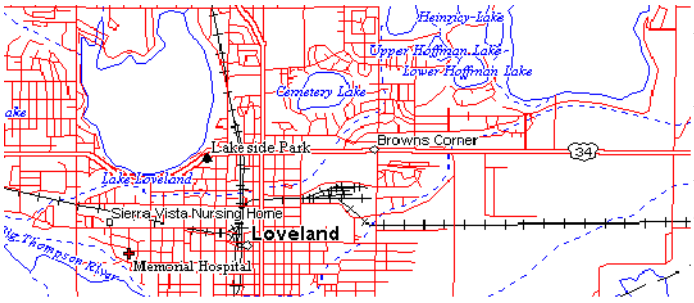
Supply a title for your CCR. Please be sure that the name of the water system appears near the top of the report. A suggested title of 'Drinking Water Consumer Confidence Report' has been used in the template but it may be changed. Incorporate the year that the report is for in the title or near the top of the report. For example, the report that is prepared in 2012 will be for report year 2010.

## Section 2: Introduction

A general introduction has been provided in the template but it may be modified to be more specific to your water system or you may write a completely different introduction. This part of the report should be a short explanation of what the customer is about to read. If applicable, you may wish to include in your introduction, statements such as "Your drinking water met all Ohio EPA standards".

## Section 3: Source Water Information

Describe the primary type(s) of source water (ground water, surface water, purchased or a blend), and the commonly-used name(s) (if such a name exists) and locations of your water source(s). You may wish to provide a simple map of your system and its sources.




*Example: The City of Loveland obtains its source water from Lake Loveland and Big Thompson River. Attached is a map showing the location of the City's water sources. Both Lake Loveland and Big Thompson River are considered surface water sources and require extensive treatment before it can be used as drinking water.*

Auxiliary, emergency, or back-up connections need to be identified. In addition, the amount of water received from the connection(s), the length of time that water was received, and the frequency that the connection is used must be provided. An auxiliary, emergency or back-up connection is defined as a connection not meant to be used on a continuous basis and is only used during extraordinary conditions such as drought, source failure, line breaks, fires and other periods of usually high water demand. However, if your system has used water from a connection with another public water system as a **primary source,** that water supplier's water quality information must be contained within your report.

**Source Water Assessment Information**
The Ohio EPA conducted a source water assessment of all public water system sources in the State of Ohio. You are required to notify consumers of the availability of the source water assessment and how to obtain a copy. Include a brief summary of your source water susceptibility to contamination based on the findings of the source water assessment. The Ohio EPA provided the summary as part of the source water assessment process. This summary or equivalent language must be included in each CCR. We encourage you to also include other information about potential sources of contamination, such as information from wellhead protection plans, sanitary surveys and government reports. This is your opportunity to educate your customers about the potential impacts that they and others may have on the quality of their water. You may wish to provide pollution prevention tips or information on local watershed cleanup activities.

## Section 4 & 5: Required Health Information

These two sections shall appear as written in the template in each CCR, as required by regulation. Additional information may be included but must not detract from the required text.

## Section 6: About Your Drinking Water

This paragraph provides some general information on the water quality monitoring that the water system conducted. This paragraph is *not required* but some form of introduction to the water quality monitoring results is recommended. If using the format presented in the template, be sure to indicate only the type of monitoring that was conducted for the report year.

## Section 7: Monitoring & Reporting & Enforcement Action Violations

This paragraph is to describe any violations for monitoring, reporting (including failure to issue Lead Consumer Notices) or of the terms of an administrative order, bilateral compliance agreement or judicial order that may have occurred during the reporting year. You must also include the length of time the water system remained in violation and the steps taken to correct the violation. If no violations occurred, this paragraph may be deleted from the final report. Include separate paragraphs for different types of violations but you may combine multiple violations of the same type.

As an example: The City of Loveland had bacteria monitoring violations during the months of March and October 2011 and a lead and copper monitoring violation for the July - Dec 2011 monitoring period. Their report will contain at least two paragraphs describing the violations similar to the following:

*"During the months of March & October of 2011, the City of Loveland Water Department failed to collect the required number of Total Coliform Bacteria samples as required by the Ohio EPA. The Water Department returned to compliance with bacteria sampling requirements in the month following each violation.*

*In addition, the City of Loveland Water Department failed to issue Lead Consumer Notices to homes where lead and copper samples were collected during the January – June 2011 monitoring period. The Notices were issued on February 16, 2012. Those notices indicated the lead level at the home in which the sample was collected.*

*Steps have been taken to ensure that all sampling will be conducted as required by enacting a more comprehensive management plan. This plan assigns responsibilities for sampling and contains contingency measures if the assigned Water Department personnel are absent."*

Violations concerning failure to complete the proper lead and/or copper corrosion control study or recommendation, plan approval or treatment installation must be addressed in the CCR. An explanation of the steps that have been or will be taken to correct the violation(s) and to ensure future violations will not occur must be included. As an example: If the City of Loveland failed to submit a corrosion control study by the required date, then something similar to the following would appear in the report. Note in the above example the original exceedance was in 2010, but the due date for the corrosion control study was in 2011. Therefore this is a 2011 violation that needs to be reported in the 2011 CCR.

*"The City of Loveland was in violation for failure to complete the proper lead and copper corrosion control study by July 1, 2011, as required by Ohio EPA for a lead action level exceedance as indicated by our June - December 2010, sample results. The Water Department has taken the following steps to return to compliance: The firm Engineers "R" Us was hired to conduct the required corrosion control study to determine the most effective means for controlling lead levels in the water system. Their recommendations are expected by September 30, 2012. Once we receive their report, plans will be made to install effective treatment as soon as possible."*

Violations of the terms of an administrative order, bilateral compliance agreement or judicial order that occurred during the reporting year must be described in the CCR. An example is as follows:

*"On October 9, 2009 the Ohio EPA issued Unilateral Orders to our water system, requiring corrective measures for violations of Ohio's safe drinking water law. On January 29, 2011 our water system received additional Unilateral Orders, which placed conditions on our 2011 public water system license and required compliance with the October 9, 2009 Unilateral Orders. We have not met all the terms and requirements of the October 9, 2009 Unilateral Orders.*

## Section 8: Water Quality Monitoring Info - Table of Detected Contaminants

An essential part of the report is the Table of Detected Contaminants. It shows the compliance level for each detected contaminant (**the level reported to Ohio EPA for compliance determination**) and the range of levels of each contaminant detected during the year. For each detected contaminant, the Table also shows: Maximum Contaminant Level (MCL), Maximum Contaminant Level Goal (MCLG) and the likely or known source of that contaminant (See Figure 2). The reporting units, MCLG, MCL, and likely sources of contamination for regulated contaminants are listed in Appendix A.

The Table is to include the most recent data for detected contaminants only. **The Table is not to include any data older than five years or contaminants that are not detected.** The **Table of Detected Contaminants** must contain **only** data for regulated contaminants; contaminants subject to a MCL, treatment technique (TT), or action level (AL), data collected in accordance with the USEPA's

Information Collection Rule (ICR), Initial Distribution System Evaluation (IDSE) monitoring results and unregulated contaminants for which Ohio EPA requires monitoring. A list of these contaminants is provided in Appendix A. A brief statement is required indicating that the data presented in the CCR are from the most recent testing done in accordance with the regulations.

Operational tests such as pH, hardness, alkalinity, iron and manganese levels, etc. are not to be included in this table. It is recommended that information obtained from operational testing be included but in a separate optional section of the report as many customers are interested in this information. You may wish to include these operational testing results immediately following the required Table of Detected Contaminants. If you wish to include operational data it is recommended that an average level and range be provided in the report as well as an explanation of the reasons for the sampling and what the results mean to the water customer.

In the CCR Template, as in Figure 2, header lines have been included for each contaminant group: Bacteriological, Radioactive, Inorganic, Synthetic Organic, and Volatile Organic Contaminants. Add or delete lines in the table as needed. If a contaminant was detected, include that contaminant in the Table under the appropriate contaminant group and fill in the columns with the MCLG, MCL, Level Found, Range of Detections and Sample Year. Indicate if the Level Found constitutes a violation of an MCL or TT or an action level exceedance, and indicate the Typical Source(s) of Contaminants as appropriate. The units used to report the level found, the MCLG and the MCL and the Range of Detections must all be the same as in Appendix A. Appendix A also contains the Typical Sources of Contaminants for regulated contaminants to be used in the Table. Unregulated Contaminants, also listed in Appendix A, for which sampling was conducted and detected must appear in the Table, but if the Typical Source of that Contaminant is unknown then "unknown" would be appropriate to put in that column.

**Figure 2: Example Table of Detected Contaminants**

| Contaminants (Units) | MCLG | MCL | Level Found | Range of Detections | Violation | Year Sampled | Typical Source of Contaminants |
|---|---|---|---|---|---|---|---|
| **Microbiological Contaminants** | | | | | | | |
| Turbidity (NTU) | NA | TT | 4.97 | 0.2 - 4.97 | NO | 2011 | Soil runoff. |
| Turbidity (% meeting standard) | NA | TT | 92% | 92%-100% | YES | 2011 | |
| **Inorganic Contaminants** | | | | | | | |
| Lead (ppb) | 0 | AL=15 | <2.0 | NA | NO | 2010 | Corrosion of household plumbing systems. |
| | One out of 20 samples was found to have lead levels in excess of the lead action level of 15 ppb. | | | | | | |
| Copper (ppm) | 1.3 | AL=1.3 | <0.02 | NA | NO | 2010 | Corrosion of household plumbing systems. |
| | Zero out of 20 samples was found to have copper levels in excess of the copper action level of 1.3 ppm. | | | | | | |
| Nitrate (ppm) | 10 | 10 | 0.16 | <0.05 - 0.16 | NO | 2009 | Runoff from fertilizer use; Erosion of natural deposits. |
| **Residual Disinfectants** | | | | | | | |
| Total Chlorine (ppm) | MRDL=4 | MRDLG=4 | 1.14 | 0.5-2.18 | NO | 2009 | Water additive used to control microbes. |

| Volatile Organic Contaminants | | | | | | | |
|---|---|---|---|---|---|---|---|
| Total Trihalomethanes TTHMs (ppb) | 0 | 80 | 57.3 | 28 - 120 | NO | 2011 | By-product of drinking water chlorination. |
| Haloacetic Acids HAA5 (ppb) | 0 | 60 | 35.5 | 27-44 | NO | 2011 | By-product of drinking water chlorination. |
| IDSE TTHM | NA | NA | NA | 55-81 | NA | 2007 | By-product of drinking water chlorination. |
| IDSE HAA5 | NA | NA | NA | 35-59 | NA | 2007 | |
| Chloroform (ppb) | NA | NA | 27.15 | NA | NO | 2007 | By-product of drinking water chlorination. |

Table 1 below, is to assist in calculating the values to be reported in the Level Found column and the Range column in the Table of Detected Contaminants. The values reported in these columns are determined depending on the contaminant and whether a MCL, TT, or AL exceedance occurred.

Note: This table is for Regulated Contaminants only (as listed in Appendix A). Unregulated Contaminants and non-regulated contaminants are discussed later in this section.

**Table 1: Compliance Determinations for Regulated Contaminants**

| Contaminant(s) | Calculation Method | Example |
|---|---|---|
| Total Coliform Bacteria (TC) | If minimum number of required samples are less than 40/month, report the highest number of positive samples collected in any one month. | System collects 20 TC samples/ month. In July, 2 samples were TC positive. In Aug, 3 samples were TC positive. System reports: Level Found : 3; Range: 0 - 3 |
| | If minimum number of required samples greater than or equal to 40/month, report the highest monthly percentage of samples that were positive. | Water system collects 60 TC samples/ month. In July, 2 samples were TC positive. In Aug., 6 samples were TC positive. This system would report: Level Found:10%; Range: 0% - 10% |
| Fecal Coliform/ E. Coli (Dist. samples) TCR | Report the highest number of positive samples collected in any one month | Water system collects 3 E. Coli samples in May. One sample was positive. This system reports: Level Found:1;Range:NA |
| Fecal Coliform/ E. Coli (Raw source samples) GWR | Report the total number of positive samples collected in the reporting year. | System collects raw samples from three wells on two separate occasions in 2009. 4 of the 6 samples were positive. Systems reports: Level found: 4 |
| Total Organic Carbon (TOC) | Report lowest quarterly annual average of monthly compliance ratios. Refer to TOC Calculated Values. | See Example 1. Range: highest monthly calculated value and lowest monthly calculated value. |
| Turbidity | Report the highest single value AND the lowest monthly percentage of samples meeting the turbidity limits. The range is the lowest to the highest single sample. | The highest single turbidity level was 4.97 and lowest monthly percentage of samples meeting turbidity limits was 92%. Report: Level Found 4.97 & 92%. |

| Contaminant(s) | Calculation Method | Example |
|---|---|---|
| | | Range: 0.2-4.97 See Figure 2. |
| Lead/Copper | Report the 90th % sample result AND the number of samples found to have lead and copper levels greater than the action level. A range is not required. | See Example 2. |
| Nitrate ($NO_3$)/ Nitrite ($NO_2$) | If only one sample was collected for the year, report that sample result. | Water system collects one $NO_3$ sample with the result of 1.2 mg/L. Report Level Found: 1.2; Range: NA. |
| | If more than one sample was collected such as is required for surface water systems and no MCL exceedance occurred, report the highest sample result. | Water system collects 5 samples with the following results: 1.1, 1.3, 0.8, 0.5 & 0.9 mg/L. Report: Level Found: 1.3; Range: 0.5 - 1.3 |
| | If a MCL exceedance occurred in a sample and a check sample was collected, report the average of those two samples. If more than one MCL exceedance occurred and check samples were collected each time, report the highest of the averages. | Water system collects 5 $NO_3$ samples with the following results: 8.1, 9.3, 9.8, 11.5 & a check sample of 9.5 mg/L. This system would report: Level Found: 10.5; Range: 8.1 - 11.5 |
| Antimony; Asbestos; Barium; Beryllium; Cadmium; Chromium; Cyanide; Mercury; Selenium; Thallium | If only one sample was collected for the year, report that sample result. | Water system collects one Barium sample with the result of 0.6 mg/L. Report: Level Found: 0.6; Range: NA. |
| | If sampling annually or once every three years and a MCL exceedance occurred, report the average results of the original sample and the required repeat sample. | Water system collects annual Barium sample with result of 3.6 mg/L with a check sample of 1.8 mg/L. Report: Level Found: 2.7; Range: 1.8 - 3.6 |
| | If sampling more than annually, report the highest running annual average. | See Example 3. |
| Fluoride | If only 1 sample was collected for the year report that sample result. If a resample was collected, report the average of the two samples. | Water system collects one Fluoride sample with the result of 0.2 mg/L. Report: Level Found: 0.2; Range: NA. |
| | If fluoride levels are adjusted, report the highest entry point monthly average for the year and the range of entry point results from daily samples. | Obtain this information from the Fluoride Monthly Operational Report form 5011. |
| Arsenic | If only one sample was collected for the year, report that sample result. | Water system collects one sample with the result of 0.6 mg/L. Report: Level Found: 0.6; Range: NA. |
| | If more than one sample was collected and no MCL violation occurred, report the | Water system collects five samples with the following results: 20, 30, 21, 26 & 29 |

| Contaminant(s) | Calculation Method | Example |
|---|---|---|
| | highest sample result. | µg/L. This system would report: Level Found: 30; Range: 20 – 30 |
| | If sampling at a frequency greater than annual, report the highest quarterly running annual average. | Most recent 7 quarterly samples of 11, 9, 10, 8, 15, 12, 9 µg/L. System reports: Level Found:11.25ug/L Range: 8-15 ug/L |
| Bromate | Report the highest running annual average of monthly samples. | See Example 4. |
| Chlorite | Report the highest average of the sample result within each three sample sets. | Report the highest sample set average under Level Found and the Range of the individual samples. |
| Total Chlorine | Report the highest quarterly running annual average of the chlorine residuals measured during the Total Coliform sampling procedure. | Report the highest quarterly running annual average under Level Found and the Range of the highest and lowest monthly levels. |
| Chlorine Dioxide | Report the highest entry point result and the range of entry point results from daily samples. | Obtain this information from the MORs. Also report the range of entry point samples. |
| VOC's/SOC's | If only one sample was collected for the year, report that sample result. | Water system collects one Toluene sample with the result of 0.6 mg/L. Report: Level Found: 0.6; Range: NA. |
| | If sampling annually and a MCL violation occurred, report the average results of the original sample and the required repeat sample. | Water system collects one Toluene sample with the result of 1.8 mg/L with a check sample result of 0.9 mg/L. Report: Level Found: 1.35; Range: 0.9 to 1.8 |
| | If sampling more than annually report the highest running annual average. | See Example 3. |
| Haloacetic Acids (HAA5) | If only one sample was collected for the year, report that sample result. | System collects 1 HAA5 sample result = 24 ug/L. Report: 24 ppb; Range NA |
| | Add the results of the five HAAs for each set and report the highest running annual average of the HAA5 sums. | See Table 4 and Example 4. |
| Total Trihalomethanes (TTHMs) | If only one sample was collected for the year, report that sample result. | System collects one TTHM sample result 65 ug/L. Level found: 65 ppb; Range:NA |
| | Add the results of the four THMs for each set and report the highest running annual average of the TTHM sums. | See Table 4 and Example 4. |
| IDSE TTHMS & HAA5 (Report separately from | IDSE TTHMs. Report only the range; lowest to highest. | System collects three TTHMs. 81 ug/L, 55 ug/L and 75 ug/L. Level Found: NA Range: 55-81 ug/L. |

| Contaminant(s) | Calculation Method | Example |
|---|---|---|
| TTHM & HAA5 sample results) | IDSE HAA5. Report only the range; lowest to highest. | System collects three HAA5s. 33 ug/L, 45 ug/L and 59 ug/L. Level Found: NA Range: 33-59 ug/L. |
| Radiological Contaminants (Alpha & Beta) | If only one sample was collected for the year, report that sample result. | Water system collects one Gross Alpha with sample result 3.1 pCi/L. Report: Level Found: 3.1; Range: NA. |
| | If sampling more than one annually, report the highest running annual average. | See Example 3. |
| Combined Radium | Combined Radium is the sum of Radium 226 and Radium 228. If only one sample was collected for the year, report that sample result. | Water system collects one Radium 226 and 228 sample with results of 3.2 and 1.1 pCi/L, respectively. Report: Level Found: 4.3 pCi/L; Range NA. |
| | If multiple samples are collected, report an average of the Combined Radium results. | Water system collects samples with Combined Radium results of 5.2 pCi/L and 3.1 pCi/L. This system would report: Level Found: 4.2; Range: 3.1 - 5.2 |

**Initial Distribution System Evaluation (IDSE) monitoring results**

Include a separate section in the Table of Detected Contaminants report sample results for Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5) that were collected to meet the Stage 2 D/DBP Rule for the **IDSE.** TTHM and HAA5 sampling for the IDSE have no affect on routine TTHM and HAA5 reporting until 2012. D**o not include IDSE results with TTHM and HAA5 running annual average calculations that are performed to determine compliance with TTHM and HAA5 MCLs.** Report the IDSE TTHM and HAA5 range of detections (low-high) only from the current CCR year. Also, include a brief explanation in your CCR explaining the purpose of and the monitoring requirements for the IDSE. Recommended language is as follows:

> *"Under the Stage 2 Disinfectants/Disinfection Byproducts Rule (D/DBPR), our public water system was required by USEPA to conduct an evaluation of our distribution system. This is known as an Initial Distribution System Evaluation (IDSE), and is intended to identify locations in our distribution system with elevated disinfection byproduct concentrations. The locations selected for the IDSE may be used for compliance monitoring under Stage 2 DBPR, beginning in 2012. Disinfection byproducts are the result of providing continuous disinfection of your drinking water and form when disinfectants combine with organic matter naturally occurring in the source water. Disinfection byproducts are grouped into two categories, Total Trihalomethanes (TTHM) and Haloaetic Acids (HAA5). USEPA sets standards for controlling the levels of disinfectants and disinfectant byproducts in drinking water, including both TTHMs and HAA5s."*

**Detected Unregulated Contaminants**

Contaminants for which Ohio EPA requires monitoring but there are no current MCLs, treatment techniques or action levels are called unregulated contaminants. They are listed in Appendix A. The average value of detected unregulated contaminants should be reported in the Table of Detected Contaminants. If only one sample was collected for the most recent year or monitoring period, report

that value on the Table of Detected Contaminants. A range of values is not applicable. Special Example 5 includes calculations for an unregulated contaminant where multiple samples were taken during the most recent monitoring period. If the most recent sampling period for any of these contaminants is within 5 years of the current calendar year, and they were detected, the information must be included in the current CCR. For example, if the last sampling for sulfate was 2007 and the 2011 CCR is being prepared, any detected contaminants from the 2007 sampling must be included in the current report.

## Example 1: Total Organic Carbon (TOC) Compliance Calculation

Sampling for TOC as required by the Disinfection/Disinfection By-Products Rule is required for all surface water systems and all ground water systems with sources under the influence of surface water. TOC sampling for purposes of Disinfectants/Disinfection By-Products Rule compliance is determined by a running annual average of the quarterly TOC Values as calculated in the example below.

**Figure 3: Monthly TOC Value or Compliance Ratio Calculation**

| | |
|---|---|
| Source Water Total Alkalinity | 65 mg/L |
| Source Water TOC | 4 mg/L |
| Finished Water TOC | 2 mg/L |
| Actual Monthly TOC% removal | {1- (2 mg/L Finished TOC ÷ 4 mg/L Source TOC)} x 100 = 50% |
| % TOC removal required *(From Table 2 below)* | 25% |
| TOC Value or Monthly Compliance Ratio | Divide the actual monthly % TOC removed by the % TOC removal required. 50% ÷ 25% = 2 |

**Table 2: Required TOC Removal**

| | Source Water Alkalinity (mg/L as $CaCO_3$) | | |
|---|---|---|---|
| **Source Water TOC (mg/L)** | 0 - 60 mg/L | >60 - 120 | >120 |
| 2.0 - 4.0 | 35% | 25% | 15% |
| >4.0 - 8.0 | 45% | 35% | 25% |
| >8.0 | 50% | 40% | 40% |

To calculate compliance with the TOC requirements, add each monthly TOC Value for the most recent three months and divide by three. This is done each quarter giving a quarterly running annual average. Therefore, for any given CCR report year, a water system will have four quarterly running annual average TOC Values. Refer to "Instructions for Completing the Surface Water Treatment Plant Monthly Operation Report".

Report the lowest running quarterly annual average of TOC values under "Level Found" and the range of monthly TOC Values under "Range". A statement similar to the following should be included to explain the meaning of the TOC value reported.

*The value reported under "Level Found" for Total Organic Carbon (TOC) is the lowest ratio between percent of TOC actually removed to the percentage of TOC required to be removed. A value of greater than one (1) indicates that the water system is in compliance with TOC removal requirements. A value of less than one (1) indicates a violation of the TOC removal requirements.*

Note the level found for **TOC** is the **lowest** monthly running annual average and the Level Found for **Total Chlorine** is the **highest** monthly running annual average.

## Example 2: Lead and Copper Reporting

The need for additional action is triggered by 90th percentile lead/copper sample results and therefore, the 90th percentile must be determined. First, list the sample results in order from the lowest to the highest level. Then, take the total number of samples and multiply by 0.9. In Figure 4 below, 10 samples were collected; 10 samples x 0.9(90%) = 9th sample result, i.e., 12 ppb lead, 1.0 ppm copper).

**Figure 4: Example lead and copper sampling results**

| Ranked Order | 1st | 2nd | 3 rd | 4th | 5th | 6th | 7th | 8th | 9th | 10th |
|---|---|---|---|---|---|---|---|---|---|---|
| Sampling Sites | site 5 | site 3 | site 7 | site 8 | site 10 | site 9 | site 2 | site 4 | site 1 | site 6 |
| Lead (ppb) | <2.0 | <2.0 | <2.0 | <2.0 | 3 | 4 | 8 | 10 | 12 | 22 |
| Copper (ppm) | <0.30 | <0.30 | <0.30 | <0.30 | <0.30 | <0.30 | 0.97 | 0.98 | 1.0 | 1.2 |

The Table of Detected Contaminants must also include the number of sample sites that exceeded the lead and copper action level. Note that a range of detections is not required for lead or copper. See Appendix D "Example Consumer Confidence Report".

**Reporting TTHMs and HAA5s**

Reporting for TTHMs and HAA5s is dependent on the size and type of system. Table 4 shows what to report in the Table of Detected Contaminants.

Table 4 TTHM and HAA5 Reporting

| System Type & Size | Sample Freq. | TTHM/HAA5 MCL | Report Level for Table |
|---|---|---|---|
| SW & PSW disinfects <500 | 1/yr in 3rd quarter | 80/60 ppb | single sample result * |
| SW & PSW disinfects 500 - 9,999 | 1/quarter | 80/60 ppb | raa based on 4 quarters |
| SW & PSW disinfects >/= 10,000 | 4/quarter | 80/60 ppb | raa based on 7 quarters |
| PSW no disinfection 25-9,999 | 1/quarter | 80/60 ppb Trigger Level** | raa based on 7 quarters |
| PSW no disinfection >/= 10,000 | 1/quarter | 80/60 ppb Trigger Level** | raa based on 7 quarters |
| GW & PGW disinfects < 10,000 | 1/yr in 3rd quarter | 80/60 ppb | single sample result* |
| GW & PGW disinfects >/= 10,000 | 1/quarter | 80/60 ppb | raa based on 4 quarters |
| PGW no disinfection any size*** | NA | NA | NA |

SW=surface water GW=ground water PSW=purchased SW PGW purchased GW raa= running annual average

*In accordance with 3745-81-24(D) (15), for systems monitoring less frequently than quarterly, compliance is achieved if the average of samples taken that year does not exceed the MCL for TTHMs or HAA5s. If the average exceeds the MCL, quarterly monitoring is required. The system is not in violation of the MCL until 1 year of quarterly monitoring is completed unless the result of fewer than four quarters of monitoring will cause the raa to exceed the MCL. In that case the system is in violation at the end of that quarter. Systems required to increase their monitoring frequency to quarterly shall calculate the level found by including the sample which triggered the increased monitoring plus the following quarter of monitoring.

**Purchased surface water systems that do not disinfect that exceed a trigger level are not in violation of a MCL. However,

exceedance of a trigger level requires reporting information in the CCR. The exceedance must be described, along with the duration of the exceedance, and the action taken to optimize the operation of the distribution system that will minimize the level of TTHM and HAA5 present in the system.

***PGW that do not add a disinfectant are not required to sample for TTHMs or HAA5s.

## Example 3: Quarterly Running Annual Averages with Single Sample Per Quarter

Below is the method for calculating a quarterly running annual average for a system collecting a single sample per quarter. This procedure is the same for any contaminant where compliance is based on a running annual average.

***Step 1*** Collect all the past seven quarters of sample results for the detected contaminant and order them by date from the earliest to the most resent results. For the report year 2011 this will require data from samples collected on or after April 1, 2010, through December 31, 2011.

***Step 2*** In Figure 5, the Sample Value row shows the actual reported value from the laboratory form for each sample collected.

***Step 3*** Calculate the quarterly annual running average* for the 2011 quarters as follows:

Annual Running Average [Jan - Mar 2009]: (1.5 + 2.5 + 1.1 + 0) ÷ 4 = 1.28, round to 1.3

Annual Running Average [Apr - Jun 2009]: (2.5 + 1.1 + 0 + 1.6) ÷ 4 = 1.30, round to 1.3

Annual Running Average [Jul - Sept 2009]: (1.1 + 0 + 1.6 + 2.7) ÷ 4 = 1.35, round to 1.4

Annual Running Average [Oct - Dec 2009]: (0 + 1.6 + 2.7 + 1.2) ÷ 4 = 1.38, round to 1.4

* Note: A less than detect value (<) is counted as a zero value for averaging.

***Step 4*** Determine the highest quarterly value and range of individual sample values to be used in the Table of Detected Contaminants.

**Figure 5: Quarterly Running Annual Average Calculation (with single sample each quarter)**

| | 2010 Atrazine Results (µg/l) | | | 2011 Atrazine Results (µg/l) | | | |
|---|---|---|---|---|---|---|---|
| Quarter | Apr-Jun | Jul- Sept | Oct- Dec | Jan-Mar | Apr-June | Jul - Sept | Oct-Dec |
| Sample Value (ug/l) | 1.5 | 2.5 | 1.1 | **<0.5** | 1.6 | **2.7** | 1.2 |
| Running Annual Average | | | | 1.3 | 1.3 | **1.4** | **1.4** |
| CCR Report Values | | | | Highest Compliance Value = 1.4 µg/l<br>Range of Values = <0.5µg/l to 2.7 µg/l | | | |

## Example 4: Quarterly Running Annual Averages with Multiple Samples per Quarter

Below is the method for calculating a running annual average where multiple samples have been collected quarterly. This procedure will be the same for any contaminant where compliance is based on a running annual average however, the example provided is for Total Trihalomethanes (TTHMs). ***Note:*** *Data used for this calculation when determining compliance with TTHMs will come from Ohio EPA Sample Submission Report for Total Trihalomethane Form, not the VOC Sample Submission Form.*

***Step 1*** Collect the past seven quarters of sample results for the detected contaminant and order the results by

date from the earliest to the most recent results. For the report year 2011 this will require data from sample collected on or after April 1, 2010 through December 31, 2010. {For TTHMs, the result is the sum of four compounds (chloroform, bromoform, bromodichloromethane, and dibromochloromethane) for each sample collected and are displayed in µg/l.} In the example below three samples were collected during each calendar quarter.

***Step 2*** Average the results for each quarter. *Note that less than detect values are considered zero for the purposes of summing results and quarterly averaging.* A table similar to Figure 6 will help organize the results and help prevent calculation errors.

***Step 3*** Average each four quarters to determine running annual averages. There will be four running annual averages calculated by averaging the quarterly averages as follows:

Annual Running Average #1: (48.3 + 99.3 + 45.3 + 33.7) ÷ 4 = 56.6
Annual Running Average #2: (99.3 + 45.3 + 33.7 + 51.0) ÷ 4 = 57.3
Annual Running Average #3: (45.3 + 33.7 + 51.0 + 79.7) ÷ 4 = 52.4
Annual Running Average #4: (33.7 + 51.0 + 79.7 + 44.0) ÷ 4 = 52.1

***Step 4*** Report results. The value to be reported in the Table Detected Contaminants from the example above is 57.3 under Level Found and the Range of Detections would be 28 to 120 (based on the lowest & highest individual TTHM results over the entire 7 quarters).

**Figure 6: Quarterly Running Annual Average Calculation (with multiple samples each quarter)**

| | 2010 TTHM Results (µg/L) | | | 2011 TTHM Results (µg/L) | | | |
|---|---|---|---|---|---|---|---|
| Quarter | Apr-Jun | Jul- Sep | Oct- Dec | Jan-Mar | Apr-June | Jul - Sep | Oct-Dec |
| Sample #1 | 30 | 102 | 60 | **28** | 35 | 85 | 55 |
| Sample #2 | 55 | **120** | 45 | 33 | 42 | 83 | 44 |
| Sample #3 | 80 | 76 | 31 | 40 | 76 | 71 | 33 |
| Qtr Ave. | 48.3 | 99.3 | 45.3 | 33.7 | 51.0 | 79.7 | 44.0 |
| Running Annual Average | | | | 56.6 | **57.3** | 52.4 | 52.1 |
| CCR Report Values | | | | Highest Compliance Value = 57.3 µg/L<br>Range of Values = 28 µg/L - 120 µg/L | | | |

## Example 5: Calculation for Unregulated Contaminants

Unregulated contaminants are calculated by averaging all results within the most recent sample year. As an example, assume your system sampled three times for sulfate during 2007 as in Figure 7.

***Step 1*** Collect all the sample results for the detected contaminant and order them by date from the earliest to the most recent results. For the report year 2011, this will require data from samples collected on or after January 1, 2007 through December 31, 2007.

***Step 2*** Calculate the average value for sulfate as follows:
Sample #1: 150 mg/L
Sample #2: 120 mg/L
Sample #3: 132 mg/L
Average Value = (150 + 120 + 132) ÷ 3 = 134 mg/L

***Step 3*** Report the average value for sulfate as 134 mg/L and a range of values of 120 - 150 mg/L in the Table

of Detected Contaminants.

**Figure 7: Example calculation for unregulated contaminants**

| 2011 Sulfate Results | |
|---|---|
| **Sample Date** | **Sample Result (mg/L)** |
| 02/24/2007 | 150 |
| 05/31/2007 | 120 |
| 10/15/2007 | 132 |
| Average Value | 134 |
| CCR Report Values | Average Value = 134 mg/L<br>Range of Values = 120 mg/L - 150 mg/L |

## Section 9: Additional Turbidity Information

Include this section if you are treating surface water. This section is meant to provide information on the reasons for measuring turbidity and to explain the results reported in the Table. This section may be modified to better help your customers understand the meaning and reasons for monitoring turbidity.

## Section 10: Violation Description & Health Effects Information for MCL, Treatment Technique, CT Violations & Action Level Exceedances

This paragraph is to describe the type of MCL, Treatment Technique, Filtration or Disinfection (CT) violation or Action Level exceedance that occurred during the reporting year, the length of time the water system remained in violation or exceeded the action level and the steps taken to correct the violation or exceedance.

This section must also contain specific statements on the health effects for each contaminant that has a MCL, is subject to a treatment technique or contact time (CT) or exceeded an action level. If your public water system had any of these violations, then the required health effects information for that contaminant must be included in your report. **The health effects statements as presented in Appendix B must appear in your CCR as written.** Additional information may be added but must not detract from the required text. All other health effects statements for which there were no violations or exceedances, should **not** be included in the report.

If no violations occurred, delete this paragraph from the final report. Include separate paragraphs for different types of violations and combine multiple violations of the same type. As an example: If the City of Loveland had a filtration violation during the month of April 2011, their report would contain a paragraph similar to the following describing the violation:

*The City of Loveland Water Department failed to provided adequate filtration during the month of April, 2011.* ***Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.*** *City of Loveland Water Department has taken the following steps to correct this violation and prevent future violations form occurring: The filters have been upgraded by replacing the filter media and steps have been taken to ensure proper cleaning and operation of the filters.*

The text that is in bold italics (as provided in Appendix B) must appear in the report for filtration and disinfection violations. The rest of the paragraph may be modified as needed to help your customers to

better understand the reasons for the violation and actions taken to correct the violation.

## Section 11: Nitrate Educational Information

This section is required if the nitrate level reported in the Table of Detected Contaminants was greater than 5 mg/L and less than 10 mg/L. This text must appear as written. Additional information may be included but may not detract from the required text.

"*Nitrate in drinking water at levels above 10 ppm is a health risk for infants less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice form your health care provider*."

**Note:** This educational language is different than the verbiage required for a Nitrate MCL violation.

## Section 12: Arsenic Educational Information

This section contains educational information on health affects of arsenic. The language to be included is dependant on the levels detected. If the arsenic level reported in the Table of Detected Contaminants was greater than 5µg/L and up to and including 10 µg/L, include the following text as written:

"*While your drinking water meets the EPA's standard for arsenic, it does contain low levels of arsenic. The EPA's standard balances the current understanding of possible health effects of arsenic against the cost of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems."*

Additional information may be included but must not detract from the required text. ***Note:*** *If an arsenic MCL violation occurred, language different than that above is required.* If the level detected is greater than 10µg/L, replace this section with the health effects language for arsenic contained in Appendix B.

## Section 13: Lead Educational Information

The following paragraph must be included in the CCR.

*"If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. [Name of Public Water System] is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 800-426-4791 or at http://www.epa.gov/safewater/lead."*

**Note:** Additional language is also required (see Appendix B) if a lead action level is exceeded.

## Section 14: Total Trihalomethane Information (TTHMs) Trigger Level Exceedance

This section contains a health effects statement for TTHMs when the trigger level is exceeded. **This**

**applies only to purchased surface water systems that do not provide supplemental disinfection (s**ee Table 4). This statement must be included if the highest running annual average is equal to or greater than 80 µg/L. ***Note:*** *The health effects language is the same language required with a MCL violation (see Appendix B)*.

## Section 15: Cryptosporidium Information

This section needs to be included if Cryptosporidium was detected either in the **RAW** or finished water. This section must include a summary of the results and an explanation of the significance of the results. This monitoring may not be required but if conducted, the results and their meaning must be included in the CCR. Recommended wording has been provided but may be expanded upon if you desire. You may need to adjust the first two sentences to summarize the sampling that was conducted. Assume City of Loveland Water Department collected ten Cryptosporidium samples from the raw water and one sample contained Cryptosporidium. The following example of what may appear in the report:

*"The City of Loveland Water Department monitored for Cryptosporidium in the source water during 2011. Cryptosporidium was detected in 1 sample of 10 collected from the raw water. It was not detected in the finished water. Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes cryptosporidium, the most commonly used filtration methods cannot guarantee 100% removal. Monitoring of source water indicates the presence of these organisms. Current test methods do not enable us to determine if the organisms are dead or if they are capable of causing disease. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease and it may be spread through means other than drinking water."*

## Section 16: Finished Water Radon Monitoring Information

This section only needs to be included if sampling for radon was detected in the finished water. This monitoring is not required but if conducted the results and their meaning must be included in the report. This section must include a summary of the results and an explanation of the significance of the results. Recommended wording is provided in the Template. It may be expanded upon if desired. The number of samples collected will determine the format of the first sentence of this section. If more than one sample was collected, report the average of all finished water results.

## Section 17: Ground Water Rule (GWR) Information

There are three conditions under the GWR that requires notification in the CCR: violations for failure to monitor and failure to meet treatment technique requirements; Significant Deficiency violations; and Fecal indicator-positive ground water source water samples.

Violations for failure to monitor and failure to meet treatment technique requirements must be described in the CCR. Report what the violation is for, the time period in which it occurred and what the system is doing to correct the violation (see Section 7 & Section 10).

Violations of Significant Deficiencies require a Special Notice in the CCR. An example of suggested language for failing to address a significant deficiency is as follows:

*"We were informed by the Ohio EPA that a significant deficiency (list the deficiency) had been identified on (letter date). We were directed to correct the deficiency by (deadline) but we failed to do so. We (are implementing/have completed) the corrective action plan which is (describe specific action plan) by (deadline) as prescribed by the Ohio EPA."*

Note: Significant deficiency violation information must be included in the CCR every year until the significant deficiency has been corrected.

Fecal indicator-positive ground water source samples must be reported in the Table of Detected Contaminants as follows:

| Contaminant (Units) | MCLG | MCL | Value | Range of Detections | Violation | Year Sampled | Typical Source of Contaminants |
|---|---|---|---|---|---|---|---|
| **Fecal indicator (E. coli)** | **NA** | **TT** | **Positive (E. coli)** | **NA** | **No** | **2011** | **Human and animal fecal waste** |

A Special Notice for fecal indicator-positive ground water source samples must also be included in the body of the report. An example of suggested language (plus mandatory language **in bold**) is as follows:

*"On (date) we were informed that one of our routine bacteria samples collected on (sample date) was total coliform positive. As required by the Ground Water Rule, we collected (a sample / # samples) from (list source) for fecal contamination analysis. The (source) sample was positive for fecal contamination (E. coli). Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps and associated headaches.* ***Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune system.*** *In response, we sent notices to all of our customers within 24 hrs of learning of this positive sample. (Explain how the situation was or will be resolved and list the date of completion or proposed date of completion.)"*

Note: A Special Notice for fecal contamination must be included in your CCR every year until Ohio EPA determines the situation has been corrected.

## Section 18: License to Operate (LTO) Information

All community public water systems are required to report the status of their License to Operate (LTO) in the CCR for that given year. One of four possible situations describes the status of a LTO and it must be included in the report.

A green LTO was issued without any conditions. A statement similar to the following must be included in the CCR: *"We have a current, unconditioned license to operate our water system."*

A yellow LTO was issued under certain ongoing conditions or violations that continue to need to be met. Therefore, statements similar to the following must be included in the CCR: *"We have a conditioned license to operate our public water system. The conditions require us to address ongoing violations. For more information on these violations, contact (name and phone number)."*

A red LTO was issued to systems with revoked or suspended license. Statements similar to the following must be included in the CCR: *"Our license to operate this public water system was (suspended/revoked) based on ongoing violations. Until we address our violations and obtain a license to operate from the Ohio EPA, we are prohibited to operate this public water system. For more information on all of our violations, contact (name and phone number)."*

For systems that fail to pay the LTO, statements similar to the following must be included in the CCR: *"We did not have a current license to operate in 2011 as required by the Ohio EPA. We plan to pay the fee as soon as possible. To prevent this from happening in the future, we plan to pay the fee immediately upon request from the Ohio EPA."*

## Section 19: Meeting Monitoring Violation Requirements

A water system that fails to monitor, exceeds the secondary maximum contaminant level (SMCL) for fluoride or does not make unregulated contaminant monitoring results available, will be issued a violation. Also, the director has the authority to decide if other specific violations or situations warrant a violation. The public water system is then required to provide notice to all persons served by the water system as soon as possible but by no later than one year after the system learns of the violation or situation. Methods of delivery include mail, hand delivery and posting in the CCR. If the CCR is the chosen method to deliver the monitoring violation, the following elements must be included in the CCR.

a) A description of the violation or situation including the contaminant(s) of concern, the MCL and contaminant level(s) (as applicable);

b) When the violation or situation occurred;

c) For the SMCL for fluoride, or special situation, potential adverse health effects from the violation or situation, including standard health effects language, (Appendix B);

d) Standard language for monitoring and testing procedure violations, including the language necessary to fill in the blanks:

"We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During (*compliance period*), we (*'did not monitor or test' or 'did not complete all monitoring or testing'*) for (*contaminant(s))* and therefore cannot be sure of the quality of your drinking water during that time."

e) The population at risk including subpopulations particularly vulnerable if exposed to the contaminant in the drinking water;

f) Whether alternative water supplies should be used; what actions consumers should take, including when they should seek medical help, if known;

g) What the system is doing to correct the violation or situation;

h) When the water system expects to return to compliance or resolve the situation;

i) The name, business address, and phone number of the water system owner, operator or designee of the public water system as a source of additional information concerning the notice, and;

j) A statement to encourage the notice recipient to distribute the public notice to other persons served, using the following standard language: "Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, apartments, nursing homes, schools, businesses). You can do this by posting this notice in a public place or distribution copies by hand or mail."

## Section 20: Public Participation Information

This section lets customers know how, when and where they will be given the opportunity to express their concerns and have questions answered. The first part of this section provides a space to provide information on public meetings of the water system's governing body (Water Board, Board of Public Affairs, Council, etc.) This should include the date and time of their regularly scheduled meetings and where such meetings are held.

An additional line has been included for a water system contact person who is familiar with the report and will be available to answer questions. **Both parts of this section are required.**

Community water systems that serve a large portion of non-English speaking residents (defined as 10% or more of the residents speak the same non-English language), the report shall contain the following:

a) Information in the appropriate language or languages regarding the importance of the CCR (see "Language Translations" on the Ohio EPA website at: *www.epa.state.oh.us/ddagw/ccr.html*).
b) A telephone number or address where such residents may contact the community water system to obtain a translated copy of the CCR or assistance in the appropriate language.

## Section 21: Definitions

The CCR must include definitions of key terms that customers may need to understand the contaminant data. The definitions in the template are required if used in the CCR. **MCL and MCLG definitions are mandatory in all CCRs.** Definitions for TT, MRDL, MRDLG, CT and AL are required if referenced in the Table of Detected Contaminants. Be sure to include definitions of any terms not used in everyday language. This will help prevent questions concerning the meaning of the results.

## Responsibility of Wholesalers and Purchased Water Systems

By **April 1st annually**, public water systems that sell water (wholesalers) to community public water systems, need to provide them with specific information about their water. (Public water systems which purchase water are called purchased or satellite water systems.) This information will in turn, enable satellite systems to complete and deliver their CCR by the July 1st deadline.

The required information to be provided includes: all applicable source water information Table of Detected Contaminants and definitions of terms used in the Table.

Source water information (Section 3) includes the type of water (surface water or ground water) and the commonly used name (if any) and location of the body or bodies of water. Also include source water assessment information as prepared by the Ohio EPA.

For the Table of Detected Contaminants, only plant tap monitoring detections need to be provided by the wholesaler. The satellite system then needs to expand the Table to include any contaminants detected within the satellite system. This includes total coliform positive sample results, lead and copper information, and total chlorine levels.

The wholesaler shall provide any information that may be pertinent to the source or water treatment plant such as that for turbidity (Section 9), MCL and treatment technique violations (Section 10), nitrate education information (Section 11), arsenic education information (Section 12), total trihalomethane information (Section 14), Cryptosporidium information (Section 16) and Ground Water Rule information (Section 17). Note that this information needs to be provided to the purchaser only if required to be reported by the wholesaler. The satellite system is then required to report this information in their CCR.

## The Template -Putting It All Together

After filling in all sections of the CCR template that apply to your water system, it will be necessary to compile the report in an easy-to-read format. Delete all text that does not apply to your system and is not required. Be sure to exclude the short instructions that are contained within the template which are meant to assist in its use and development of a custom CCR. These instructions appear in italic surrounded by braces ***{instructions}***. Delete the Section numbers once the template is completed.

You may change the order of any text contained in the report if you feel it will make it easier for your customers to understand. Also feel free to include additional public education information. Such information can be used to help educate your customers on basic water system operations and requirements or to answer commonly asked questions.

Formatting your report to be aesthetically pleasing can greatly influence your customer's opinion. A report which is a large amount of plain text printed on standard paper will not be received as well as one which has been carefully presented. Use bolded or italics text to highlight important topics. Include graphics, text boxes, and boarders if possible to make a more presentable report.

# Instructions for Submission of CCR Reports to Ohio EPA

1. Send a copy of the CCR and the CCR Certification Form (Appendix C) to the Ohio EPA, Central Office, PO Box 1049, Columbus, OH 43216-1049 by no later than July 1 of the year following the report year, i.e., July 1, 2011 for 2010 CCRs.

2. "Good Faith Effort" – Water systems are required to make a good faith effort to reach those customers that do not receive a water bill. An adequate good faith effort will be tailored to the consumers who are served by the system and should include a mix of methods appropriate to the particular system. Some suggested methods include posting the reports on the Internet, mailing to postal patrons in metropolitan areas, advertising the availability of the report in the news media, publication in a local newspaper, posting in public places such as cafeterias or lunch rooms of public buildings, delivery of multiple copies for distribution by single-billed customers such as apartment buildings or large private employers, and delivery to community organizations.

3. Water systems must have extra reports that are available upon request.

4. Water systems serving one 100,000 or more consumers are required to post the current report to a publicly-accessible site on the Internet for at least a one year period.

5. Water systems are required to retain a copy of their CCR for at least three years.

# Appendix A

# Table of Regulated Contaminants with MCL, MCLG and Potential Source of Contaminants and List of Unregulated Contaminants

# REGULATED CONTAMINANTS

| Contaminant (units) | MCL | MCLG | Typical Sources of Contaminant |
|---|---|---|---|
| **Microbiological Contaminants** | | | |
| Total Coliform Bacteria | Systems that collect 40 or more samples per month, 5% monthly samples are positive; Systems that collect fewer than 40 samples per month, 1 monthly positive sample. | 0 | Naturally present in the environment |
| Fecal coliform and *E. coli* | A routine sample and a repeat sample are total coliform positive and one is also fecal coliform or *E. coli* positive. | 0 | Human and animal fecal waste |
| Total Organic Carbon | TT | n/a | Naturally present in the environment |
| Turbidity (NTU) | TT | n/a | Soil runoff |
| **Radioactive Contaminants** | | | |
| Beta/photon emitters | 4 mrem/yr (AL=50 pCi/L) | 0 | Decay of natural and man-made deposits |
| Alpha emitters (pCi/l) | 15 | 0 | Erosion of natural deposits |
| Combined radium (pCi/l) | 5 | 0 | Erosion of natural deposits |
| Uranium (ppb) | 30 | 0 | Erosion of natural deposits |
| **Inorganic Contaminants** | | | |
| Antimony (ppb) | 6 | 6 | Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder |
| Arsenic (ppb) | 10 | 0 | Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes |
| Asbestos (MFL) | 7 | 7 | Decay of asbestos cement water mains; Erosion of natural deposits |
| Barium (ppm) | 2 | 2 | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits |
| Beryllium (ppb) | 4 | 4 | Discharge from metal refineries and coal-burning factories; Discharge from electrical, aerospace, and defense industries |
| Bromate (ppb) | 10 | 0 | By-product of drinking water chlorination |
| | | | |

| Contaminant (units) | MCL | MCLG | Typical Sources of Contaminant |
|---|---|---|---|
| Cadmium (ppb) | 5 | 5 | Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries & paints |
| Chloramines (ppm) | MRDL=4 | MRDL=4 | Water additive used to control microbes |
| Chlorite (ppm) | 1.0 | 0.8 | By-product of drinking water chlorination |
| Chromium (ppb) | 100 | 100 | Discharge from steel and pulp mills; Erosion of natural deposits |
| Copper (ppm) | AL=1.3 | 1.3 | Corrosion of household plumbing systems; Erosion of natural deposits. |
| Cyanide (ppb) | 200 | 200 | Discharge from steel/metal factories; Discharge from plastic and fertilizer factories |
| Fluoride (ppm) | 4 | 4 | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories |
| Lead (ppb) | AL=15 | 0 | Corrosion of household plumbing systems; Erosion of natural deposits |
| Mercury [inorganic] (ppb) | 2 | 2 | Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from crop land |
| Nitrate (ppm) | 10 | 10 | Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits |
| Nitrite (ppm) | 1 | 1 | Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits |
| Selenium (ppb) | 50 | 50 | Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines |
| Thallium (ppb) | 2 | 0.5 | Leaching from ore-processing sites; Discharge from electronics, glass, and drug factories |
| **Synthetic Organic Contaminants including Pesticides and Herbicides** | | | |
| 2,4-D (ppb) | 70 | 70 | Runoff from herbicide used on row crops |
| 2,4,5-TP [Silvex](ppb) | 50 | 50 | Residue of banned herbicide |
| Acrylamide | TT | 0 | Added to water during wastewater treatment |
| Alachlor (ppb) | 2 | 0 | Runoff from herbicide used on row crops |
| Atrazine (ppb) | 3 | 3 | Runoff from herbicide used on row crops |
| Benzo(a)pyrene [PAH] | 200 | 0 | Leaching from linings of water storage tanks |

| Contaminant (units) | MCL | MCLG | Typical Sources of Contaminant |
|---|---|---|---|
| (nanograms/l) | | | and distribution lines |
| Carbofuran (ppb) | 40 | 40 | Leaching of soil fumigant used on rice and alfalfa |
| Chlordane (ppb) | 2 | 0 | Residue of banned termiticide |
| Dalapon (ppb) | 200 | 200 | Runoff from herbicide used on rights of way |
| Di(2-ethylhexyl) adipate (ppb) | 400 | 400 | Discharge from chemical factories |
| Di(2-ethylhexyl) phthalate (ppb) | 6 | 0 | Discharge from rubber and chemical factories |
| Dibromochloropropane (ppt) | 200 | 0 | Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards |
| Dinoseb (ppb) | 7 | 7 | Runoff from herbicide used on soybeans and vegetables |
| Diquat (ppb) | 20 | 20 | Runoff from herbicide use |
| Dioxin [2,3,7,8-TCDD] (ppq) | 30 | 0 | Emissions from waste incineration and other combustion; Discharge from chemical factories |
| Endothall (ppb) | 100 | 100 | Runoff from herbicide use |
| Endrin (ppb) | 2 | 2 | Residue of banned insecticide |
| Epichlorohydrin | TT | 0 | Discharge from industrial chemical factories; An impurity of some water treatment chemicals |
| Ethylene dibromide (ppt) | 50 | 0 | Discharge from petroleum refineries |
| Glyphosate (ppb) | 700 | 700 | Runoff from herbicide use |
| Heptachlor (ppt) | 400 | 0 | Residue of banned pesticide |
| Heptachlor epoxide (ppt) | 200 | 0 | Breakdown of heptachlor |
| Hexachlorobenzene (ppb) | 1 | 0 | Discharge from metal refineries and agricultural chemical factories |
| Hexachlorocyclopentadiene (ppb) | 50 | 50 | Discharge from chemical factories |
| Lindane (ppt) | 200 | 200 | Runoff/leaching from insecticide used on cattle, lumber, gardens |
| Methoxychlor (ppb) | 40 | 40 | Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock |
| Oxamyl [Vydate] (ppb) | 200 | 200 | Runoff/leaching from insecticide used on apples, potatoes and tomatoes |
| PCBs [Polychlorinated biphenyls] (ppt) | 500 | 0 | Runoff from landfills; Discharge of waste chemicals |
| Pentachlorophenol (ppb) | 1 | 0 | Discharge from wood preserving factories |

| Contaminant (units) | MCL | MCLG | Typical Sources of Contaminant |
|---|---|---|---|
| Picloram (ppb) | 500 | 500 | Herbicide runoff |
| Simazine (ppb) | 4 | 4 | Herbicide runoff |
| Toxaphene (ppb) | 3 | 0 | Runoff/leaching from insecticide used on cotton and cattle |
| **Volatile Organic Contaminants** | | | |
| Benzene (ppb) | 5 | 0 | Discharge from factories; Leaching from gas storage tanks and landfills |
| Carbon tetrachloride (ppb) | 5 | 0 | Discharge from chemical plants and other industrial activities |
| Chlorobenzene (ppb) | 100 | 100 | Discharge from chemical and agricultural chemical factories |
| o-Dichlorobenzene (ppb) | 600 | 600 | Discharge from industrial chemical factories |
| p-Dichlorobenzene (ppb) | 75 | 75 | Discharge from industrial chemical factories |
| 1,2-Dichloroethane (ppb) | 5 | 0 | Discharge from industrial chemical factories |
| 1,1-Dichloroethylene (ppb) | 7 | 7 | Discharge from industrial chemical factories |
| cis-1,2-Dichloroethylene (ppb) | 70 | 70 | Discharge from industrial chemical factories |
| trans-1,2-Dichloroethylene (ppb) | 100 | 100 | Discharge from industrial chemical factories |
| Dichloromethane (ppb) | 5 | 0 | Discharge from pharmaceutical and chemical factories |
| 1,2-Dichloropropane (ppb) | 5 | 0 | Discharge from industrial chemical factories |
| Ethylbenzene (ppb) | 700 | 700 | Discharge from petroleum refineries |
| Haloacetic Acids [HAA5] (ppb) | 60 | n/a | By-product of drinking water chlorination |
| Styrene (ppb) | 100 | 100 | Discharge from rubber and plastic factories; Leaching from landfills |
| Tetrachloroethylene (ppb) | 5 | 0 | Discharge from factories and dry cleaners |
| 1,2,4-Trichlorobenzene (ppb) | 70 | 70 | Discharge from textile-finishing factories |
| 1,1,1-Trichloroethane (ppb) | 200 | 200 | Discharge from metal degreasing sites and other factories |
| 1,1,2-Trichloroethane (ppb) | 5 | 3 | Discharge from industrial chemical factories |
| Trichloroethylene (ppb) | 5 | 0 | Discharge from metal degreasing sites and other factories |
| TTHMs [Total Trihalomethane] (ppb) | 80 | n/a | By-product of drinking water chlorination |

| Contaminant (units) | MCL | MCLG | Typical Sources of Contaminant |
|---|---|---|---|
| Toluene (ppm) | 1 | 1 | Discharge from petroleum factories |
| Vinyl Chloride (ppb) | 2 | 0 | Leaching from PVC piping; Discharge from plastics factories |
| Xylenes (ppm) | 10 | 10 | Discharge from petroleum factories; Discharge from chemical factories |
| **Residual Disinfectants** | | | |
| Total Chlorine (ppm) | MRDL = 4 | MRDLG=4 | Water additive used to control microbes. |
| Chlorine Dioxide (ppb) | MRDL = 800 | MRDLG = 800 | Water additive used to control microbes. |

## UNREGULATED CONTAMINANTS

Unregulated contaminants for which monitoring is required by Ohio EPA are listed below. If you monitor for and detect any of these contaminants at levels above the reporting limit, be sure to include the results in your Table of Detected Contaminants. Presently, there are no MCL or Action Levels for these contaminants. We encourage you to include more information on the potential health effects of these contaminants if the results may indicate a health concern. You can call the Safe Drinking Water Hotline (800-426-4791) for this information or find it on the EPA's web site at www.epa.gov. For these contaminants, EPA recommends that the report contain an explanation of the significance of the results, noting the existence of the health advisory or proposed MCL. The units to be used when reporting these compounds should be **ppb** unless otherwise noted in the list below.

Aldicarb
Aldicarb sulfone
Aldicarb sulfoxide
Aldrin
Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromoform (tribromomethane)
Bromomethane (methyl bromide)
Butachlor
sec-Butylbenzene
n-Butylbenzene
tert-Butylbenzene
Carbaryl
Chlorodibromomethane (or Dibromochloromethane)
Chloroethane
Chloroform (trichloromethane)
Chloromethane
o-Chlorotoluene
p-Chlorotoluene
Dibromomethane
Dicamba
m-Dichlorobenzene
Dichlorodifluoromethane
1,1-Dichloroethane
2,2-Dichloropropane
1,3-Dichloropropane
1,1-Dichloropropene
1,3-Dichloropropene
Dieldrin
Fluorotrichloromethane
Hexachlorobutadiene
3-Hydroxycarbofuran
Isopropylbenzene
p-Isopropyltoluene
Methomyl
Metolachlor
Metribuzin
Naphthalene
Nickel
Propachlor
n-Propylbenzene
Sulfate ***(ppm)***
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
1,2,3-Trichlorobenzene
1,2,3-Trichloropropane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene

## NON-REGULATED CONTAMINANTS

A **non-regulated** contaminant is one in which Ohio EPA does not require testing and does not have a MCL. If you sample for and detect a **non-regulated** contaminant, you are not required to include it in the Table of Detected Contaminants.

# Appendix B

# Mandatory Health Effects Language

# for MCL, MRDL, TT, CT Violations, and AL Exceedances

# Mandatory Health Effects Language for MCL, MRDL, TT, CT Violations and AL Exceedances

## Microbiological Contaminants

***{Total Coliform Bacteria}***
Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.

***{Fecal Coliforms/E Coli.}***
Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.

***{Disinfection and Filtration (CT)}***
Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

***{Total Organic Carbon}***
Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection by-products. These by-products include trihalomethanes (THM) and haloacetic acids (HAAs). Drinking water containing these by-products in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.

***{Turbidity}***
Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

## Inorganic Contaminants

***{Antimony}***
Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.

***{Arsenic}***
Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

***{Asbestos}***
Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.

***{Barium}***
Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.

***{Beryllium}***
Some people who drink water containing beryllium well in excess of the MCL over many years could experience intestinal lesions.

***{Bromate}***
Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.

***{Cadmium}***
Some people who drink water containing cadmium well in excess of the MCL over many years could experience kidney damage.

***{Chloramines}***
Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.

***{Chlorite}***
Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.

***{Chromium}***
Some people who drink water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.

***{Copper}***
Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor.

***{Cyanide}***
Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.

***{Fluoride}***
Some people who drink water containing fluoride well in excess of the MCL over many years could get

bone disease, including pain and tenderness of the bones. Children may get mottled teeth.

***{Lead}***
Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

***{Mercury}***
Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.

***{Nitrate}***
Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.

***{Nitrite}***
Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.

***{Selenium}***
Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.

***{Thallium}***
Some people who drink water containing thallium well in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines or liver.

## Radioactive Contaminants

***{Beta/Photon emitters}***
Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.

***{Alpha emitters}***
Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.

***{Combined Radium 226/228}***
Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may

have an increased risk of getting cancer.

***{Uranium}***
Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.

## Synthetic Organic Contaminants Including Pesticides and Herbicides

***{2,4-D}***
Some people who drink water containing the weed killer 2,4-K well in excess of the MCL over many years could experience problems with their kidneys, liver or adrenal glands.

***{2,4,5-TP (Silvex)}***
Some people who drink water containing Silvex in excess of the MCL over many years could experience liver problems.

***{Acrylamide}***
Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.

***{Alachlor}***
Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.

***{Atrazine}***
Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.

***{Benzo(a)pyrene (PAH)}***
Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.

***{Carbofuran}***
Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.

***{Chlordane}***
Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.

***{Dalapon}***
Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.

***{Di (2-ethylhexyl) adipate}***
Some people who drink water containing Di (2-ethylhexyl) adipate well in excess of the MCL over many years could experience toxic effects such as weight loss, liver enlargement or possible reproductive difficulties.

***{Di (2-ethylhexyl) phthalate}***
Some people who drink water containing di (2-ethylhexyl) phthalate well in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.

***{Dibromochloropropane (DBCP)}***
Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.

***{Dinoseb}***
Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.

***{Dioxin (2,3,7,8-TCDD)}***
Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.

***{Diquat}***
Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.

***{Endothall}***
Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.

***{Endrin}***
Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.

***{Epichlorohydrin}***
Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.

***{Ethylene dibromide}***
Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.

***{Glyphosate}***
Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.

***{Heptachlor}***
Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.

***{Heptachlor epoxide}***
Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.

***{Hexachlorobenzene}***
Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.

***{Hexachlorocyclopentadiene}***
Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.

***{Lindane}***
Some people who drink water containing Lindane in excess of the MCL over many years could experience problems with their kidneys or liver.

***{Methoxychlor}***
Some people who drink water containing Methoxychlor in excess of the MCL over many years could experience reproductive difficulties.

***{Oxamyl (Vydate)}***
Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.

***{PCBs (Polychlorinated biphenyls)}***
Some people who drink water containing PBCs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.

***{Pentachlorophenol}***
Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.

***{Picloram}***
Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.

***{Simazine}***
Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.

***{Toxaphene}***
Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.

## Volatile Organic Contaminants

***{Benzene}***
Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.

***{Carbon Tetrachloride}***
Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

***{Chlorobenzene}***
Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.

***{o-Dichlorobenzene}***
Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.

***{p-Dichlorobenzene}***
Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.

***{1,2-Dichloroethane}***
Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.

***{1,1-Dichloroethylene}***
Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

***[Cis-1,2-Dichloroethylene}***
Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

***{trans-1,2-Dicholoroethylene}***
Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.

***{Dichloromethane}***
Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.

***{1,2-Dichloropropane}***
Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.

***{Ethylbenzene}***
Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.

***{Haloacetic Acids (HAA)}***
Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

***{Styrene}***
Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.

***{Tetrachloroethylene}***
Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.

***{1,2,4-Trichlorobenzene}***
Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.

***{1,1,1-Trichloroethane}***
Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.

***{1,1,2-Trichloroethane}***
Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.

***{Trichloroethylene}***
Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

**{*Total Trihalomethanes (TTHM's)*}**
Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems and may have an increased risk of getting cancer.

***{Toluene}***
Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.

***{Vinyl Chloride}***
Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.

***{Xylenes}***
Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.

## Residual Disinfectants

***{Total Chlorine}***
Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in the excess of the MRDL could experience stomach discomfort.

***{Chlorine Dioxide}***
Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia.

# Appendix C

# Certification Document

# CERTIFICATION THAT THE CCR WAS DISTRIBUTED

**Mail this form and your CCR to OEPA Central Office, DDAGW, POB 1049, Cols., OH 43216-1049**

I hereby certify that the attached CONSUMER CONFIDENCE REPORT was distributed to all customers on the public water system and that the information is correct and consistent with the compliance monitoring data previously submitted to the Ohio EPA.

| | Required Methods of Distribution | Actual Methods of Distribution<br>*Fill in all appropriate blank(s)* |
|---|---|---|
| 1 | Mail or hand deliver a copy of the CCR to each customer (service connection) and make the CCR available upon request. | Date(s)of mail delivery: _____ or<br>Date(s) of hand delivery: |
| 2 | Keep CCRs on hand so they are available upon request. | Contact name:<br><br>Contact phone no. of contact for requests: (_____)<br><br>Location(s) where CCRs are kept on hand: |
| 3 | Publish CCR on the Internet. (Systems with a population of 100,000 or more.) | Date CCR posted on the Internet:_____Web site address: |
| 4 | Make "Good Faith" efforts to reach non-bill paying consumers. (Check all that apply.) | ____ Post the CCR on the Internet @<br>____ Mail the CCR to postal patrons within the service area. (Attach zip codes used.)<br>____ Advertise availability of the CCR in news media. (Attach copy of the announcement.)<br>____ Publication of CCR in local newspaper (attach copy).<br>____ Post the CCR in public places (attach a list of locations).<br>____ Deliver multiple copies to single bill addresses serving many people i.e., apt. bldgs, businesses, lg. private employers.<br>____ Other |
| 5 | Wholesalers | Date information was delivered to each master metered community public water system |
| 6 | Include public notification in CCR to satisfy a Tier 3 monitoring violation or the fluoride secondary MCL | Contaminant for which public notification was included<br>_____<br><br>Date or date range of violation<br>_____ |

_____
Signature of Responsible Official

_____
Printed Name and Title of Responsible Official

Date _____
For Calendar Year _____

_____
Name of Public Water System

_____
PWS ID County

For OEPA Use Only
Date received
Date reviewed
Reviewer

# Appendix D

# Example Consumer Confidence Report

# City of Oakmount Water Department
# Drinking Water Consumer Confidence Report for 2011

**What's the source of your drinking water?**
The City of Oakmount Water Department drinking water source is received from Morris Creek and Oakmount Reservoir. Water is drawn from Morris Creek at the Main Street Bridge and is pumped to the Oakmount Reservoir. The Oakmount Reservoir is located north of town off Johnson Road one mile east of State Route 66. Both of these surface water sources require extensive treatment prior to being used for drinking water.

Protecting our drinking water source from contamination is the responsibility of all area residents. Please dispose of hazardous chemicals in the proper manner and report polluters to the appropriate authorities. Only by working together can we ensure an adequate safe supply of water for future generations.

The City of Oakmount also has an emergency connection with the Washington County Water District which is only used when the Water Treatment Plant is not operating properly or during drought conditions. During 2011 we used 1.5 million gallons from this connection over two days on July 3rd and 4th. On average this connection is used for approximately five days each year. This report does not contain information on the water quality received from the Washington County Water District but a copy of their consumer confidence report can be obtained by contacting John McRight at (513)555-1234.

**What are sources of contamination to drinking water?**
The sources of drinking water; both tap water and bottled water include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the land surface or through the ground, it dissolves naturally-occurring minerals and in some cases, radioactive material and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include: (A) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plant, septic systems, agricultural livestock operation, and wildlife; (B) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result form urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; (C) Pesticides and herbicides, which may come form a variety of sources such as agriculture, urban storm water runoff, and residential uses; (D) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban Strom water runoff, and septic systems; (E) radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791).

**Who needs to take special precautions?**
Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ

transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infection. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

**About your drinking water**

The EPA requires regular sampling to ensure drinking water safety. The City of Oakmount Water Department conducted sampling for bacteria, inorganic, radiological, and volatile organic contaminant sampling during 2008. Samples were collected for a total of 61 different contaminants most of which were not detected in the City of Oakmount water supply.

We have a current, unconditioned license to operate our water system.

Listed below is information on those contaminants that were found in the City of Oakmount drinking water.

Table of Detected Contaminants

| Contaminants (Units) | MCLG | MCL | Level Found | Range of Detections | Violation | Year Sampled | Typical Source of Contaminants |
|---|---|---|---|---|---|---|---|
| **Microbiological Contaminants** | | | | | | | |
| Turbidity (NTU) | NA | TT | 4.97 | 0.2 - 4.97 | NO | 2011 | Soil runoff. |
| Turbidity (% meeting standard) | NA | TT | 92% | 92%-100% | YES | 2011 | |
| Total Organic Carbon | NA | TT | 2.16 | 1.73-2.82 | NO | 2011 | Naturally present in the environment. |
| **Inorganic Contaminants** | | | | | | | |
| Lead (ppb) | 0 | AL=15 | <2.0 | NA | NO | 2008 | Corrosion of household plumbing systems. |
| | One out of 20 samples was found to have lead levels in excess of the Action Level of 15 ppb. | | | | | | |
| Copper (ppm) | 1.3 | AL=1.3 | 1.0 | NA | NO | 2008 | Corrosion of household plumbing systems. |
| | Zero out of 20 samples was found to have copper levels in excess of the Action Level of 1.3 ppm. | | | | | | |
| Nitrate (ppm) | 10 | 10 | 0.16 | <0.05 - 0.16 | NO | 2011 | Runoff from fertilizer use; Erosion of natural deposits. |
| Sulfate (ppm) | NA | NA | 134 | 120 - 150 | NO | 2007 | Erosion of natural deposits. |
| **Volatile Organic Contaminants** | | | | | | | |
| TTHMs (ppb) [Total Trihalomethane] | 0 | 80 | 67.3 | 28 - 120 | NO | 2009 | By-product of drinking water chlorination. |
| HAA5 (ppb) [Haloacetic Acids] | 0 | 60 | 41.2 | 39.0-44.5 | NO | 2009 | By-product of drinking water chlorination. |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| IDSE TTHMs (ppb)* | NA | NA | NA | 55-81 | NO | 2009 | By-product of drinking water chlorination. |
| IDSE HAA5 (ppb)* | NA | NA | NA | 33-59 | NO | 2009 | By-product of drinking water chlorination. |
| Chloroform (ppb) | NA | NA | 27.15 | NA | NO | 2006 | By-product of drinking water chlorination. |
| **Residual Disinfectants** | | | | | | | |
| Total Chlorine (ppm) | MRDLG 4 | MRDL 4 | 1.2 | 0.8-2.1 | NO | 2011 | Water additive used to control microbes. |

Turbidity is a measure of the cloudiness of water and is an indication of the effectiveness of our filtration system. The turbidity limit set by the EPA is 0.3 NTU in 95% of the daily samples and shall not exceed 1 NTU at any time. As reported above the highest recorded turbidity result was 4.97 NTU and lowest monthly percentage of samples meeting the turbidity limit was 92% which resulted in a violation.

The value reported under "Level Found" for Total Organic Carbon (TOC) is the lowest running annual average ratio between the percentage of TOC actually removed to the percentage of TOC required to be removed. A value of greater than one (1) indicates that the water system is in compliance with TOC removal requirements. A value of less than one indicates a violation of the TOC removal requirements. The value reported under the "Range" for TOC is the lowest monthly ratio to the highest monthly ratio.

The City of Oakmount Water Department failed to provide adequate filtration during the months of February and March, 2011 and failed to provide adequate chlorination during the month of July, 2011. Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. The City of Oakmount Water Department has taken the following steps to correct this violation and prevent future violations form occurring: Modifications to operational procedures and treatment chemical dosages have been made that should ensure that future violations do not occur.

*Under the Stage 2 disinfectants/Disinfection Byproducts Rule (D/DBPR), our public water system was required by USEPA to conduct an evaluation of our distribution system. This is known as an Initial Distribution System Evaluation (IDSE, and is intended to identify locations in our distribution system with elevated disinfection byproduct concentrations. The locations selected for the IDSE may be used for compliance monitoring under Stage 2 DBPR, beginning in 2012. Disinfection byproducts are the result of providing continuous disinfection of your drinking water and form when disinfectants combine with organic matter naturally occurring in the source water. Disinfection byproducts are grouped into two categories, Total Trihalomethanes (TTHM) and Haloaetic Acid (HAA5). USEPA sets standards for controlling the levels of disinfectants and disinfectant byproducts in drinking water, including both THMs and HAAs.

Also, if present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Oakmount is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline o*r at http://www.epa.gov/safewater/lead.*

**How do I participate in decisions concerning my drinking water?**
Public participation and comment are encouraged at regular meetings of the City Council which meets monthly as announced in the Oakmount Times Recorder.

**For more information** on your drinking water, contact Joe Doe, Chief Operator at (614) 555-1234.

**Definitions of some terms contained within this report.**
Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Contaminant level (MCL): The highest level of contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Residual Disinfectant Level (MRDL): The highest residual disinfectant level allowed.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of residual disinfectant below which there is no known or expected risk to health.

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Parts per Million (ppm) are units of measure for concentration of a contaminant. A part per million corresponds to one second in approximately 11.5 days.

Parts per Billion (ppb) are units of measure for concentration of a contaminant. A part per billion corresponds to one second in 31.7 years.

The "<"symbol: A symbol which means 'less than'. A result of "<5" means that the lowest level detected was 5 and the contaminant in that sample was not detected.

Picocuries per liter (pCi/L): A common measure of radioactivity.

IDSE: Initial Distribution System Evaluation