Preparing Your Drinking Water Consumer Confidence Report

Guidance for Water Suppliers

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Disclaimer

This document provides guidance to water suppliers on the U.S. Environmental Protection Agency's (EPA's) current interpretation of the Consumer Confidence Report (CCR) Rule. This document provides guidance on how to implement national policy. This document is not a substitute for EPA's regulations; nor is it a regulation itself. Thus, it does not impose legally binding requirements on EPA, states, or water suppliers and may not apply to a particular situation based upon its circumstances. This document does not confer legal rights or impose legal obligations upon any member of the public. While EPA has made every effort to ensure the accuracy of the discussion in this guidance, statutes, regulations, or other legally binding requirements determine the obligations of the regulated community. In the event of a conflict between the discussion in this document and any statute or regulation, this document would not be controlling.

The general description provided here may not apply to a particular situation based upon the circumstances. Interested parties are free to raise questions and objections about the substance of this guidance and the appropriateness of the application of this guidance to a particular situation. EPA and other decision makers retain the discretion to adopt approaches on a case-by-case basis that differ from those described in this guidance, where appropriate. EPA may change this guidance in the future.

Throughout this document, the terms "state" and "states" are used to refer to all types of primacy agencies including states, U.S. territories, Native American tribes, and EPA Regions that maintain state primacy.

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Contents

Acronyms

AL	Action Level
CCR	Consumer Confidence Report
CDC	Centers for Disease Control
CFR	Code of Federal Regulations
DBPP	Disinfection Byproduct Precursor
DER	Department of Environmental Resources
DWSRF	Drinking Water State Revolving Fund
EPA	Environmental Protection Agency
FBRR	Filter Backwash Recycling Rule
FDA	Food and Drug Administration
GWR	Ground Water Rule
HAA5	Five Haloacetic Acids
IDSE	Initial Distribution System Evaluation
IESWTR	Interim Enhanced Surface Water Treatment Rule
LCR	Lead and Copper Rule
LT1ESWTR	Long-Term 1 Enhanced Surface Water Treatment Rule
LT2ESWTR	Long-Term 2 Enhanced Surface Water Treatment Rule
LRAA	Locational Running Annual Average
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
MDL	Method Detection Limit
mg/L	Milligrams per Liters
mrem	Millirem
MRDL	Maximum Residual Disinfectant Level
MRDLG	Maximum Residual Disinfectant Level Goal
ND	Non Detect
NPDWR	National Primary Drinking Water Regulation
NTU	Nephelometric Turbidity Units
pCi/L	Picocuries per Liter
ppb	Parts per Billion
ppm	Parts per Million
ppt	Parts per Trillion
PWS	Public Water Systems

RAA	Running Annual Average
SDWA	Safe Drinking Water Act
Stage 1 DBPR	Stage 1 Disinfectants and Disinfection Byproducts Rule
Stage 2 DBPR	Stage 2 Disinfectants and Disinfection Byproducts Rule
SWAP	Source Water Assessment Program
SWTR	Surface Water Treatment Rule
TCR	Total Coliform Rule
TOC	Total Organic Carbon
TT	Treatment Technique
TTHM	Total Trihalomethanes
WHP	Wellhead Protection Program

Introduction

This document is intended to be used by water suppliers who are preparing their annual drinking water consumer confidence reports (CCRs) [40 CFR Part 141, Subpart O]. This guide explains the requirements for report content, format, and distribution that the U.S. Environmental Protection Agency (EPA) established in the CCR Rule, published in the *Federal Register* on August 19, 1998 (63 FR 44512), and in subsequent revisions to the rule through calendar year 2008.

As the system operator/manager, you are a guardian of the quality of your drinking water supply and of the public health in your community. It is important to communicate to your customers, and your customers have the right to know, the source of their water and what is in the water they drink. CCRs help consumers make informed choices that affect the health of themselves and their families. They also encourage consumers to consider and appreciate the challenges of delivering safe drinking water. Educated consumers are more likely to help protect their drinking water sources and to understand the true costs of safe drinking water.

Water suppliers, states, and EPA work to educate consumers about the sources, quality, and delivery of their drinking water, and to increase their involvement in decisions about it. Systems and states encourage citizens to participate in decision-making regarding source water assessment and protection programs and use of the Drinking Water State Revolving Fund (DWSRF), which provides funding for infrastructure upgrades and treatment improvements. Consumers who are familiar with the basic drinking water information in CCRs will be able to participate more effectively in these processes.

Since the last revision of this document in April 2005, EPA has published the:

- Stage 2 Disinfectants and Disinfection Byproducts Rule (Stage 2 DBPR) – January 4, 2006.
- Long-Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) – January 5, 2006.
- Ground Water Rule (GWR) – November 8, 2006.
- Lead and Copper Rule (LCR) Short Term Regulatory Revisions and Clarifications (LCR Revisions) – October 10, 2007.
- Miscellaneous corrections to existing rules.
- Miscellaneous revisions or additions to analytical methods, detection limits and compliance dates.

These rules create new requirements that may be subject to inclusion in a CCR. (Note: if you are uncertain about which requirements apply to your system and when, contact your state.)

- **Stage 2 DBPR:** Based on a system's schedule under the Stage 2 DBPR, systems will change from reporting their system-wide running annual average (RAA) to reporting the highest locational running annual averages (LRAAs) for total trihalomethanes (TTHM) and five haloacetic acids (HAA5). Systems will also report the range of sample results for all monitoring locations. If more than one location exceeds the TTHM or HAA5 maximum contaminant level (MCL), the system must include the location running annual average for all locations that exceed the MCL.

  During the calendar years that the water system collects samples for the Initial Distribution System Evaluation (IDSE), systems must include IDSE sample results when reporting the range of TTHM and HAA5.

  Systems must also report in their CCR if they failed to monitor for TTHM or HAA5.

  Information regarding this new rule is on pages 12 and 36-40 of this document.

- **LT2ESWTR:** Based on a system's schedule under the LT2ESWTR, a surface water system must report violations in their CCR related to this rule. These include:

  – Treatment technique violations for: failure to address an uncovered finished water reservoir (i.e., cover or treat); failure to determine and report a bin classification (filtered systems); failure to calculate and report a mean *Cryptosporidium* level (unfiltered systems); failure to provide, install or maintain a required level of additional treatment (filtered systems); failure to achieve the required inactivation level or maintain it once achieved (unfiltered systems); and failure to install a second disinfectant (unfiltered systems).

  – Monitoring and reporting violations for failure to monitor for *Cryptosporidium* for any three months, failure to monitor for *E. coli* and turbidity, and failure to notify the state before making a change to a disinfection practice. In addition, positive results of any *Cryptosporidium* monitoring must be reported in the CCR, whether taken for compliance with LT2ESWTR or voluntarily.

  Note: Surface water systems that collected *E. coli* samples at the source under LT2ESWTR are not required to report these results in their CCR. However, they are required to discuss if they failed to monitor for *E. coli* at the source.

  Information regarding this new rule is on pages 14-15 and 48 of this document.

- **GWR:** Beginning with the report due July 1, 2010, a ground water system must report any detection of a fecal indicator (*E. coli*, enterococci, coliphage) at the source and provide special notice regarding the detect. A ground water system must also provide special notice for any significant deficiency that is uncorrected by the end of the calendar

year. In addition, a ground water system must report violations of the GWR in their CCR which include:

  - Treatment technique violations for failure to maintain 4-log treatment of viruses for more than 4 hours for systems required to treat to 4-log; failure to take corrective action within the required timeframe or be in compliance with a state-approved corrective action plan and schedule for a fecal indicator-positive source sample; and failure to take corrective action within the required timeframe or be in compliance with a state-approved corrective action plan and schedule for a significant deficiency.

  - Monitoring and reporting violations for failure to conduct source water monitoring for fecal indicators or failure to conduct compliance monitoring.

  Information regarding this new rule is on pages 13, 15, 20-22, and 59-51 of this document.

- **LCR Revisions:** Beginning with the report due July 1, 2009, systems whose states adopted the LCR Revisions before January 1, 2009, must include a statement about lead in every report released to the public. For systems whose states have not adopted the revisions by January 1, 2009, the lead information statement must be included in reports due by July 1, 2010.

  Information regarding these modifications is on page 25 of this document.

This document includes recommendations for improving the effectiveness of your CCR, examples of reporting formats, and completed CCRs. Additional information for completing your CCR is available on the EPA Web site at: www.epa.gov/safewater/ccr/index.html. You can find specific information about:

- Appendix A to Title 40 of the Code of Federal Regulations (CFR), Part 141, Subpart O (referred to as Appendix A to Subpart O in the remainder of this document) which lists contaminants, their MCLs in traditional MCL units, conversion factors for converting traditional MCL units to the more easily understood MCLs in CCR units, maximum contaminant level goals (MCLGs), major sources of contaminants, and health effects language (located on EPA's Web site at www.epa.gov/safewater/ccr/regulations.html and in Appendix F of this guidance document).

- The list of unregulated contaminants applicable for monitoring during 2008 through 2010 under the Unregulated Contaminant Monitoring Rule (located on EPA's Web site at www.epa.gov/safewater/ccr/regulations.html).

I. What is a consumer confidence report?

In 1996, Congress amended the Safe Drinking Water Act (SDWA). Among other things, this amendment added a provision requiring that all community water systems deliver to their customers a brief water quality report annually. These CCRs summarize information that your water system already collects to comply with regulations. The CCR Rule does not require you to engage in any new monitoring to complete your CCR.

The CCR includes information on your source water, the levels of any detected contaminants, compliance with drinking water rules (including monitoring requirements), and some educational language. Most reports will fit on a few sheets of paper. A report that contains *too much* information or is full of technical jargon can discourage consumers from learning about their drinking water. Beyond a mandatory requirement, a CCR is an opportunity to communicate the value of water (both as a product and as a service), to promote wise use, to build community trust and customer satisfaction, and to encourage investment in resource protection and infrastructure (AwwaRF, 2008).

II. Who must prepare a consumer confidence report?

Every community water system (serving at least 15 service connections and/or 25 people year round) must prepare and distribute a report. These systems typically include cities, towns, homeowners associations, residential subdivisions, manufactured housing communities, and other institutions where people live full-time such as nursing homes and prisons.

A system may contract with a laboratory to provide monitoring data analysis or CCR development assistance. If the system chooses to use a laboratory to assist with the development of the CCR, the system must work with the laboratory to make sure that all of the required elements are included in the CCR. Otherwise, a system may need to add the missing elements. Regardless of whether the laboratory or system prepares the CCR, the system is ultimately responsible for the content and must always distribute the CCR to its customers.

Wholesale systems (drinking water systems that sell water to one or more systems) are not responsible for creating a CCR for their consecutive systems (systems that purchase water from the wholesale system), nor are they responsible for providing data on contaminants that the consecutive system monitors (such as total coliforms, lead, or TTHMs). However, wholesale systems are responsible for providing the consecutive system with relevant source information and monitoring and compliance data so that the consecutive system can include this information in their CCR. In some cases, a consecutive system will contract with the wholesale system to produce the report. There are several options in this relationship. If the consecutive system had no new data to add, it could simply send out the wholesale system's CCR with a cover letter explaining their relationship. If the consecutive system did need to add data, it might choose to reprint the wholesaler system's CCR with a new title/letterhead and the additional data. Either of

these options is acceptable. Regardless of who produces the report, the consecutive system is still responsible for ensuring that its customers receive a report containing all required content.

III. When must a water system distribute its report?

You must deliver your annual report to consumers by July 1 of each year. The reports are based on calendar-year data, so your report will include data collected between January and December of the previous calendar year. For example, data collected between January and December 2010 must be reported in the 2010 CCR, which is due to customers by July 1, 2011. A new community water system must deliver its first report by July 1 of the year after its first full calendar year in operation, and annually thereafter.

A wholesale system must provide the consecutive system with monitoring data and other information by April 1 of each year unless the two systems make a different contractual agreement. This gives the consecutive system enough time to prepare their CCR before the deadline of July 1.

IV. What content is required in the report?

This guidance describes EPA's requirements for a CCR (using the words "must" and "shall") and suggestions (using the words "encourage," "should," and "may") that will help your customers understand the report. Your state's CCR Rule may require more information, so be sure to check with your state drinking water program or other relevant state or local authorities.

EPA encourages you to tailor the content of your CCR to local conditions. If you think that an added picture or graph would help your customers to understand your report, add it. If your customers would benefit from an explanation of your need for new treatment facilities, tell them. Provide information to your consumers in a way that they understand. For example, when discussing units of measure, explain it in terms that a consumer may understand: if an Olympic-sized swimming pool were filled with ping-pong balls, a ppb would be equivalent to one ping ball in that pool. As long as any additional educational information is consistent with, and not detracting from, the purpose of the report, you may add it. For example, the CCR Rule does not require a title for your report. However, you should give your report a title to catch the customer's attention. You may call the report a "Consumer Confidence Report," a "Water Quality Report," or choose another title.

Customers are most interested in a clear statement of whether or not their drinking water meets all EPA and state standards. Although it is not required by the regulations, you will help your customers if you tell them whether their water met all drinking water standards. Be cautious in using the word "safe" since water that meets standards and is safe for most people might not be safe for infants, chemotherapy patients, or people with HIV/AIDS. Also, using the term "safe" if you have had an MCL or action level (AL) exceedance can be misleading to the customer.

EXAMPLE–Last year, as in years past, your tap water met all EPA and state drinking water health standards. Local Water vigilantly safeguards its water supplies and once again, we are proud to report that our system has never violated a maximum contaminant level or any other water quality standard. [or, if you had a violation, begin with: Last year, we conducted more than __ tests for over 80 contaminants. We only detected __ of those contaminants, and found only __ at a level higher than EPA allows. As we told you at the time, our water temporarily exceeded drinking water standards. For more information, see the paragraph marked Violation on the back.] This brochure is a snapshot of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to EPA and state standards. We are committed to providing you with this information because informed customers are our best allies.

Examples of CCRs are included in Appendix E of this document.

Research conducted by the American Water Works Association Research Foundation (AwwaRF, 2004) described three important phases in facilitating customer understanding of the information in a CCR:

- **Initial Sort:** Customers are less likely to discard the CCR as "junk mail" if it looks professional, distinct, and prominently displays the utility's name. However, glossy full-color reports are not necessary.

- **Skimming:** For the reader who chooses to skim the document, important and concise messages about water quality that are prominently displayed will attract attention. However, statements about the safety of water should not be over-stated, and specific warnings regarding health risks for sensitive sub-populations must be included. The use of color will draw attention and can be used to guide the reader through the CCR. Maps, simple tables, and photographs present information quickly and effectively.

- **Reading:** If the above challenges are addressed, a customer will hopefully choose to read the entire CCR. The document should not be designed to persuade the reader, it should inform the reader. A brief table of contents at the very beginning will help to guide the reader. Contaminant tables should be simple and should not require special instructions. The use of large fonts in an uncrowded format is desirable. Discussions regarding detected contaminants are helpful and should promote credibility.

Eight basic items must be included in all CCRs. They are:

Basic CCR Requirements	
Item 1: Required Information about the Water System • Name/phone number of contact person • Information on public participation opportunities • Information for non-English speaking populations, if applicable	**Item 5: Information on Monitoring for *Cryptosporidium*, Radon, and Other Contaminants** • Warning for vulnerable populations about *Cryptosporidium*, if detected • Explanation of radon and its presence in the finished water, if detected • Explanation of unregulated contaminants and their presence in drinking water, if detected
Item 2: Source(s) of Water • Type, name, and general location of water sources • Availability of source water assessment • Information on significant sources of contamination, if available	**Item 6: Compliance with Other Drinking Water Regulations** • Explanation of violations, potential health effects, and steps taken to correct the violations • Special notices for GWR
Item 3: Definitions (specific language) • MCL • MCLG • Others as needed	**Item 7: Variances and Exemptions** • Explanation of variance/exemption, if applicable
Item 4: Reported Levels of Detected Contaminants • Table summarizing data on detected regulated & unregulated contaminants • Known or likely source of each detected contaminant • Health effects language and explanation for any violations or exceedances	**Item 8: Required Educational Information (specific language)** • Explanation regarding contaminants that may reasonably be expected to be found in drinking water, including bottled water • Information to customers that some people may be more vulnerable to contaminants in drinking water • Explanation of contaminants and their presence in drinking water, if detected • Informational statements on arsenic and nitrate, if necessary, and lead, always required

Each item is discussed in detail below.

Item 1: Required Information about the Water System

You must provide the following information about your water system:

- The name and telephone number of a person at the water system who can answer questions about the report.

- A list of known opportunities for public participation in decisions that affect drinking water quality (e.g., time and place of regularly scheduled water board or city/county council meetings). If you do not have regularly scheduled meetings, you should tell customers how to get information when meetings are announced.

Systems that have a large proportion of *non-English speaking residents* must include information in the appropriate language(s) expressing the importance of the CCR or the CCR must contain a phone number or address where residents may contact your system to obtain a translated copy of the CCR or assistance in the appropriate language. The state or EPA will make the determination of which systems need to include this information.

Translations of the following text are provided in Appendix A of this document:

> *"This report contains important information about your drinking water. Have someone translate it for you, or speak with someone who understands it."*

Item 2: Source(s) of Water

Describe your water source(s) (ground water, surface water, or a blend) including the commonly used name(s) (if such a name exists), and the general location(s). EPA encourages you to provide a simple map of your system's sources without a detailed description of their locations for security reasons.

For some more complicated systems, explaining your various interconnections and back-up sources may be difficult, but it is important that consumers understand that the source of their water may vary during the year. Remember to include in your table of detected contaminants (Item 4) monitoring data for any "additional" sources if you use water from them. If your situation is complex, you may need to describe the types of sources and how they are used.

If a source water assessment has been completed, you should have a copy of it. Let customers know how to obtain the results of the assessment. In addition, include in the CCR a brief summary of your source water's susceptibility to contamination based on the findings of the assessment.

In cases where the information is available, EPA encourages you to highlight potential significant sources of contamination in the source water area. Including this information in the CCR is an opportunity for you to provide customers with an explanation for why a contaminant is present in the source water.

EPA also encourages public water suppliers to use the CCR as a way to discuss appropriate source water protection actions that are in the planning stages or are already in place. This discussion is an ideal opportunity to invite public participation in locally based source water protection efforts as well. Systems may also wish to provide tips for consumers in the CCR on

ways they can protect the source water. **Remember, this is your opportunity to educate your customers about the impacts they and others have on the quality of source water.**

Examples of how to include the source water assessment information and source water protection tips in your CCR are available in Appendix D, Tables D-2 and D-3 of this document.

Item 3: Definitions

Every CCR must include definitions of key terms that consumers will need to understand the contaminant data. You must use the definitions listed below.

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

- **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.

Include the following definition only if your water system operated under a variance or exemption during the calendar year that the CCR describes:

- **Variances and Exemptions:** State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

Include the following definitions only if your CCR requires the use of these terms:

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

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

- **Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

- **Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

Item 4: Reporting Levels of Detected Contaminants

An essential part of the CCR is the table that shows the highest level of each detected contaminant (this is usually the value you report to the state to determine compliance) and the range of levels of that contaminant you found during the CCR calendar year (assuming more than one sample was collected). A detected contaminant is any "regulated" or "unregulated" (as required under 40 CFR 141.40) contaminant detected at or above its method detection limit (MDL).

See the EPA Web site at www.epa.gov/safewater/ccr/regulations.html for a list of contaminants and MDLs. **Do not include in the table, contaminants that are not detected or are detected below the MDL.** Your state may have lower MDLs that take precedence over EPA's. If you are unsure of the MDL for a contaminant, and your laboratory reports a value greater than zero, include that in your CCR.

The main table of **detected** contaminants must contain only data about regulated contaminants (contaminants subject to an MCL, MRDL, TT, or AL), and unregulated contaminants for which EPA or the state requires monitoring under 40 CFR 141.40. See Item 5 for special instructions about *Cryptosporidium* and radon. You may make several tables to separate regulated contaminants from those that do not have MCLs (such as lead and copper or turbidity), or those that are currently unregulated. You may want to organize your table(s) by contaminant type (e.g., microbial, inorganic) or sampling site (e.g., treatment plant, distribution system). Appendix B of this document provides examples for interpreting and reporting detected contaminants in your CCR.

To ensure that consumers can easily compare detected contaminant levels to their MCLs, your table must display the MCL for each contaminant in units that express it as a number greater than 1.0. Report the MCLG and level of the detected contaminant in the same units as the MCL. For example, atrazine is usually reported in parts per million (ppm) [or milligrams per liters (mg/L)]. It is easier for customers to see that your water contains atrazine at a level 10 times lower than the MCL if you report the MCL as 3 parts per billion (ppb) and the detected level as 0.3 ppb than if you were to report the MCL as 0.003 ppm and the detected level as 0.0003 ppm. In this case, you convert by multiplying the detected level and MCL by 1000. Appendix A to Subpart O (available on the EPA Web site at www.epa.gov/safewater/ccr/regulations.html and in Appendix F of this document) includes conversion factors for each contaminant for converting the MCL to a number equal to or greater than 1.0. When you round results to determine compliance, round before multiplying the results by the factor listed in the table. If the MCL units for a contaminant are already expressed in a number greater than 1.0 (e.g., the MCL for barium is 2 ppm), there is no conversion factor to apply to the MCL or detected contaminant level.

Report any additional monitoring data (i.e., voluntary monitoring data) in another section of the CCR, separated from the detected contaminant data. If you want to list all the contaminants that you monitored for but did not detect, you must do so outside of the table of detected

contaminants. If you choose to report on secondary MCLs, or if your state requires this reporting, do so outside of the main table.

The CCR includes data from monitoring completed during the previous calendar year. However, if you have monitoring waivers, or for another reason monitor less than once per year, use your most recent data even though it is outside of the calendar year. For example, if you monitor once every three years for lindane and detect lindane in a sample, report the same detection level each of the three years until you take a new sample. In addition, you do not need to report monitoring results that are more than 5 years old.

If the CCR contains detection data that is not from the calendar year indicated, the table must show the date of monitoring and the CCR must contain a brief statement explaining that the data presented is from the most recent monitoring done in compliance with regulations.

> *EXAMPLE–The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.*

THE TABLE MUST CONTAIN THE FOLLOWING, FOR EACH DETECTED CONTAMINANT:

1) If the contaminant is regulated by a MCL or MRDL:

   a) The MCL or MRDL, expressed as a number equal to or greater than 1.0.

   b) The MCLG or MRDLG, expressed in the same units as the MCL or MRDL.

   c) The level of that contaminant expressed in the same units as the MCL and MCLG or MRDL and MRDLG.

2) If the contaminant is regulated by a treatment technique (TT):

   a) Put the letters "TT" in place of the MCL.

   b) Put "N/A" (not applicable) in place of the MCLG when no MCLG is listed in Appendix A to Subpart O (available on the EPA Web site at www.epa.gov/safewater/ccr/regulations.html and in Appendix F of this document).

3) If the contaminant is regulated as an action level (AL):

   a) The AL expressed as a number equal to or greater than 1.0.

   b) The MCLG expressed in the same units as the AL for copper and zero for lead.

4) If the contaminant is unregulated:

   a) The average level of that contaminant and the range of results.

5) The level of the contaminant must be represented as follows:

   a) If compliance is determined based on annual or less frequent sampling (many inorganic chemical contaminants), include the highest detected level at any sampling point and the range of detected levels, if applicable (example table provided in Appendix B).

   b) If compliance is determined based on a running annual average of all the samples taken from a sampling point (i.e., contaminants monitored more frequently than annual), include the highest average as reported to the state for compliance purposes and the range of detected levels. As stated above, a detected contaminant is any regulated or unregulated contaminant (as required under 40 CFR 141.40) detected at or above its MDL.

   c) For TTHM and HAA5 samples:

      – If compliance is determined based on a system-wide running annual average [under the Stage 1 Disinfectants and Disinfection Byproducts Rule (Stage 1 DBPR)], include the system-wide average and the detected range for the system (example table provided in Appendix B).

      – If compliance is determined based on a locational running annual average (under the Stage 2 DBPR), include the highest locational running annual average for TTHM and HAA5 and the range of individual samples results for all monitoring locations. If more than one monitoring location exceeds the TTHM or HAA5 MCL, include the locational running annual averages for all locations that exceed the MCL (example table provided in Appendix B).

      – If you conducted sampling for the Initial Distribution System Evaluation (IDSE) under the Stage 2 DBPR, during the calendar years that the water system collected samples for the IDSE, systems must include IDSE sample results when reporting the range of TTHM and HAA5 but not the average.

   d) For turbidity:

      – For turbidity regulated as a MCL for systems that must install filtration but have not (40 CFR 141.13), include the highest monthly average.

      – For turbidity regulated as a TT for systems that have met criteria for avoiding filtration (40 CFR 141.71), include the highest single measurement found in any month. You should explain the reasons for measuring turbidity.

> *EXAMPLE–Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants.*

- For turbidity regulated as a TT for systems that filter, include the highest single measurement and the lowest monthly percentage of samples meeting the turbidity limits specified in 40 CFR 141.73, §141.173, or §141.551 for the relevant filtration technology (example table provided in Appendix B). You should also explain the reasons for measuring turbidity.

> *EXAMPLE–Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.*

e) For lead and/or copper:

- Include the 90th percentile value from the most recent sampling (if it is a number greater than zero) and the number of sites that exceeded the action level (do not report related water quality parameter data) (example table provided in Appendix B).

f) For total coliforms, fecal coliforms and *E. coli* under the Total Coliform Rule (TCR):

- For systems that collect fewer than 40 samples per month, include the highest number of positive samples collected in any one month (example table provided in Appendix B).

- For systems that collect 40 or more samples per month, include the highest percentage of positive samples collected in any one month (example table provided in Appendix B).

- For fecal coliforms and *E. coli*, include the number of positive samples collected that year.

g) For fecal indicator-positive source samples under the GWR:

- For *E. coli*, list the MCL and MCLG as zero.

- For enterococci or coliphage, list "TT" in the column for MCL and "N/A" in the column for MCLG.

- For all fecal indicator-positive ground water source samples (*E. coli*, enterococci, or coliphage), include the total number of positive samples for the year and special notice language provided in the table or elsewhere in the CCR. Refer to Item 6 for more information on special notice language requirements for fecal indicator-positive ground water source samples.

h) In addition to detected contaminants, the CCR Rule requires that all violations of treatment techniques be reported in a detected contaminant table(s). TT violations are listed below and are organized by rule (refer to Item 6 for specific information about failure to install adequate filtration or disinfection equipment or processes or a failure of those processes, violations associated with acrylamide and epichlorohydrin, and violations associated with LCR).

- Surface Water Treatment Rule (SWTR)
  - Failure to install adequate filtration or disinfection equipment or processes.
  - Failure of the filtration or disinfection equipment or process.
  - TT violation associated with acrylamide and epichlorohydrin.
  - Failure to have redundant components for disinfection.
  - Failure to maintain a distribution system disinfectant residual.
  - Failure to maintain at least 0.2 ppm disinfectant residual at the entry point for more than 4 hours.
  - Failure to meet inactivation requirements at the treatment plant (CT value).
  - Failure to meet watershed control program requirements.
- Filter Backwash Recycling Rule (FBRR)
  - Failure to return recycle flows through the processes of the existing filtration system or to an alternate state-approved location (conventional and direct filtration systems only).
- LT2ESWTR
  - Failure to cover an uncovered finished water reservoir, provide treatment of the reservoir's discharge, or be in compliance with a state-approved schedule to cover the reservoir(s) or treat the reservoir(s) discharge by April 1, 2009.
  - Filtered systems
    - Failure to determine and report bin classification.
    - Failure to provide or install an additional level of treatment using a microbial toolbox option by the required date.
    - Failure to achieve required treatment credit to meet the bin classification requirements using a microbial toolbox option.

- Unfiltered systems
    - Failure to calculate and report mean *Cryptosporidium* level.
    - Failure to install a second disinfectant to treat for *Cryptosporidium* by required date.
    - Failure to achieve required inactivation level by required date.
    - Failure to maintain required inactivation level based on mean *Cryptosporidium* results.

– LCR

- Failure to meet corrosion control treatment, source water treatment, lead service line replacement, or public education requirements.

– Stage 1 DBPR

- Failure to remove required amount of total organic carbon (TOC) [disinfection byproduct precursor (DBPP)] (conventional filtration systems only).

– GWR

- Failure to maintain at least 4-log treatment of viruses for ground water systems that are required to treat.
- Failure to take corrective action, if necessary based on a fecal indicator-positive sample.
- Failure to take corrective action, if necessary based on a significant deficiency.

EPA recommends that systems include TT violations listed in (h) above in a table adjacent to the main detected contaminant table. The table must include an explanation of the violation, the length of the violation, any potential adverse health effects, and steps taken to correct the violation. The following is an example (see Appendix B for additional examples).

TT Violation	Explanation	Length	Steps Taken to Correct the Violation	Health Effects Language
Failed to maintain 4-log treatment of viruses	On January 10, 2011, state inspection of our water system identified a malfunctioning chlorine pump. As a result, the water from one of our wells (Well 1) was not adequately disinfected for 2 weeks.	2 Weeks	As directed by the Department of Public Health, we took immediate action to resolve this problem by repairing the malfunctioning chlorine pump. Regular testing since the pump was repaired has demonstrated that we are once again providing water that meets the state's standards for disinfection to our customers.	Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.

i) If you detect beta particles in your water at or below 50 picocuries per liter (pCi/L), you should report the detected level in pCi/L. So that consumers may have a standard against which to compare that detected level, you should include "50 pCi/L*" in the MCL column (rather than the actual MCL of 4 mrem/year) and include a footnote to the table that says, "*EPA considers 50 pCi/L to be the level of concern for beta particles." If you detect beta particles above 50 pCi/L, you must determine the actual radioactive constituents present in the water to calculate the dose exposure level in mrem/year, and must report both the detected level and MCL as mrem/year (example table provided in Appendix B).

j) The likely source of the contaminant, to the best of your knowledge. If the source of contamination is known, the CCR should identify a specific point source, such as "Al's chicken houses" or the "Super-shiny Paper Mill." If you lack reliable information on the specific source of a contaminant, include one or more of the typical sources listed in the table in Appendix A to Subpart O (available on the EPA Web site at www.epa.gov/safewater/ccr/regulations.html and in Appendix F of this document) that is most applicable to your situation.

k) Clear highlighting of any contaminant detected in violation of a MCL, MRDL or TT, or exceeding an AL. This indication could, for example, take the form of a different color type, a larger or bolder font, or a large star. Near, but not in the table, include an explanation of the length of the violation/exceedance, the potential adverse health effects, and actions you took to address the violation/exceedance. Refer to the table in Appendix A to Subpart O (available on the EPA Web site at www.epa.gov/safewater/ccr/regulations.html and in Appendix F of this document) for health effects language.

l) The average of all of the year's monitoring results and the range of detections for any detected unregulated contaminants for which state or federal rules require monitoring (40

CFR 141.40). The list of unregulated contaminants applicable for monitoring during 2008 through 2010 under the Unregulated Contaminant Monitoring Rule is located on the EPA Web site at www.epa.gov/safewater/ccr/regulations.html.

– You may wish to explain the reasons for unregulated contaminant monitoring with a statement such as:

> *EXAMPLE–Unregulated contaminant monitoring helps EPA to determine where certain contaminants occur and whether the Agency should consider regulating those contaminants in the future.*

Multiple Distribution Systems

If your system supplies water through two or more distribution systems that are not physically interconnected and that are fed by different raw water sources, you must issue a CCR that includes information on the source water, the levels of any detected contaminants, and compliance with drinking water rules for all distribution systems. You may issue one or multiple reports to your customers. If you issue one report, make sure to include a separate column of detection data for each service area in the main table of detected contaminants.

Including Tier 3 Public Notices in CCRs

If you are required to provide Tier 3 public notice for a monitoring violation or other type of violation or situation, you may consider including the notice in your CCR. If you use the CCR for public notification, make sure you meet the content requirements under the Public Notification Rule. Also, remember that the timing and delivery requirements for CCRs differ from those for public notices. Be careful to adhere to the Public Notification requirement that Tier 3 public notice be completed no later than 12 months from the date the violation or situation occurred. To minimize the timing conflict, you can publish the CCR early–as soon after the end of the calendar year as possible; or mail a separate public notice for the violations occurring in January through June of the current year in the same envelope as your CCR covering the previous calendar year's violations.

Item 5: Information on Monitoring for *Cryptosporidium*, Radon, and Other Contaminants

Reporting on *Cryptosporidium*

If your system has performed monitoring that indicates the presence of *Cryptosporidium* in either its source water or its finished water, you must include the detected results in your CCR. It is recommended that you distinguish whether the data are linked to samples collected at the source or samples collected in the finished water by putting the results on different lines in the table. If

the results of your monitoring indicated the presence of *Cryptosporidium*, you must include the following information separate from the detected contaminant table:

- A summary of the results of the monitoring. You may choose whether or not to report the actual analytical results as a part of this summary.
- An explanation of the significance of the results. Tell customers if they need to be concerned by the information that the CCR provides.

> *EXAMPLE*–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 percent removal. Our monitoring indicates the presence of these organisms in our source water and/or finished water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of* Cryptosporidium *may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people, infants and small children, and the elderly 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.*

Reporting on Radon

If your system has performed monitoring that indicates the presence of radon in its finished water, you must include in your CCR:

- The results of monitoring (the analytical values reported by the laboratory).
- An explanation of the significance of the results. Tell customers if they need to be concerned by the information that the CCR provides.

EXAMPLE--Radon is a radioactive gas that you cannot see, taste, or smell. It is found throughout the U.S. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will in most cases be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. (You should pursue radon removal for your home if the level of radon in your air is 4 picocuries per liter of air (pCi/L) or higher. There are simple ways to fix a radon problem that are not too costly. For additional information, call your state radon program or call EPA's Radon Hotline (800-SOS-RADON).

Reporting on Additional Monitoring

If your system has performed voluntary monitoring that indicates the presence of contaminants that you were not required to monitor for in your finished water, EPA strongly encourages you to report any results that may indicate a health concern. Public knowledge of potential problems is in your interest as well as your customers'. EPA considers any detection above a proposed MCL or health advisory level to indicate concern. Call the Safe Drinking Water Hotline or visit EPA's Web site for this information. For these contaminants, EPA recommends that the CCR contain:

- The results of monitoring.
- An explanation of the significance of the results, noting the existence of the health advisory or proposed MCL.

Item 6: Compliance with Other Drinking Water Regulations

National Primary Drinking Water Regulation (NPDWR) Violations

If your water system violated one of the following requirements during the year covered by your CCR, you must describe the violation(s) in your CCR. Just as you must explain the potential health effects of any MCL violation, you must provide a clear and readily understandable explanation of any other violation, potential adverse health effects (if any), and the steps the system has taken to correct the violation. For health effects language, refer to the table in Appendix A to Subpart O on EPA's Web site at www.epa.gov/safewater/ccr/regulations.html or in Appendix F of this document.

1) Treatment techniques.

   - Filtration and disinfection requirements contained in the SWTR. If the violation was a failure to install adequate filtration or disinfection equipment or processes, or there was a failure of that equipment or process, include the following language:

   > *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.*

   - Lead and copper control requirements. If the violation was a failure to meet corrosion control treatment, source water treatment, or lead service line requirements, include the health effects language for lead or copper from Appendix A to Subpart O.

   - Acrylamide and Epichlorohydrin. If you violate either treatment technique, you must include the relevant health effects language from Appendix A to Subpart O.

   Note: EPA recommends that systems include TT violations listed here in a table adjacent to the main detected contaminant table. See Item 4 for more discussion on presenting TT violations.

2) Monitoring and reporting of compliance data. If your system failed to take a sample on time (i.e., failure to monitor), the CCR should say "health effects unknown." If your system took the samples accurately and on time, but mailed the results late, you do not need to discuss health effects.

3) Record keeping requirements.

4) Special monitoring requirements.

5) Violation of a variance, an exemption, or an administrative or judicial order.

Special Notice for Systems Required to Comply with the GWR

The GWR requires that you provide special notice in their CCRs for the following two situations:

Special Notice for Uncorrected Significant Deficiencies[1]

If you are a ground water system that receives notice from the state of a significant deficiency, you must inform your customers of any significant deficiencies that are not corrected by December 31 of the year covered by your CCR. The CCR must include the following information:

- The nature of the significant deficiency and the date it was identified by the state.
- The state-approved plan and schedule for correction, including interim measures, progress to date, and any interim measures completed.

You must continue to inform your customers annually until the state determines the significant deficiency is corrected.

Note: The state may also require you to include in your CCR significant deficiencies that were corrected by the end of the calendar year. If you are directed by your state to do this, you must inform your customers of the significant deficiency, how it was corrected, and the date it was corrected in that year's CCR.

Special Notice for a Fecal Indicator-Positive Ground Water Source Sample

If you are a ground water system that receives notice from a laboratory of a fecal indicator-positive ground water source sample and the sample is not invalidated by the state, you must inform your customers in the next CCR. The CCR must include the following information for a fecal indicator-positive ground water source sample:

- The source of the fecal contamination (if it is known) and the date(s) of the fecal indicator-positive source sample.
- If the fecal contamination has been addressed as prescribed by the requirements of the GWR and the date the contamination was addressed.
- For fecal contamination that has not been addressed, the state-approved plan and schedule for correction, including interim measures, progress to date, and any interim measures completed.

[1] Significant Deficiency: A deficiency that may cause, or have the potential to cause the introduction of contamination into finished water. An example of a significant deficiency is an unscreened vent on a storage tank that uncorrected may allow water, dirt, waste or other contaminants to enter the tank.

- The health effects language for fecal indicators. Refer to Appendix A to Subpart O of the Rule for health effects language (available on the EPA Web site at www.epa.gov/safewater/ccr/regulations.html or in Appendix F of this document).

Since fecal indicator-positive ground water source samples must be included in the detected contaminant table, this special notice language can be included below the table or elsewhere in the report. Appendix B of this guidance contains an example on how to present fecal indicator-positive ground water source samples and the special notice text in a CCR.

You must continue to inform customers annually until the fecal contamination in the ground water source is addressed as prescribed by the requirements of the GWR.

Item 7: Variances and Exemptions

If your system operated under a variance or exemption at any time during the year covered by the CCR, include an explanation of the justification for the variance or exemption, the date that it was issued, when it is up for renewal, and a status report on what the system is doing to remedy the problem. Also, tell your customers how they may participate in the review or renewal of the variance or exemption.

Item 8: Required Educational Information

Every CCR must contain certain educational information, prominently displayed somewhere in the report.

The following statement is a brief explanation regarding contaminants that may reasonably be expected to be found in drinking water, including bottled water.

> *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 EPA's Safe Drinking Water Hotline (1-800-426-4791).*

The next statement informs customers that some people may be more vulnerable to contaminants in drinking water than the general population and encourages those who may be particularly at risk from infection to seek advice from their health care provider.

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 infections. 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).*

Your CCR must contain basic information about drinking water contaminants. Use the following language, or you may write your own comparable language that better fits your specific local situation:

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 surface of the land 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:

- *Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.*
- *Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.*
- *Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.*
- *Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.*
- *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. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Special Requirements for Nitrate, Arsenic, and Lead

You must include in your CCR the relevant special educational statement for nitrate, arsenic, and lead in the specified situations. If you would like to write your own educational statement or alter the statement provided in the regulations, you must consult with your state.

- **Nitrate:** Systems with nitrate above 5 ppm (50 percent of the MCL), but below 10 ppm (the MCL) must include the following statement:

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of 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 for advice from your health care provider.

- **Arsenic:** Systems with arsenic above 5 ppb (50 percent of the MCL), but at or below 10 ppb (the MCL) must include the following statement:

While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs 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.

- **Lead:** All systems must include the following informational statement:

> *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 UTILITY] 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 or at www.epa.gov/safewater/lead.*

Other Educational Information

You are not limited to providing only the required information in your CCR. You may want to include:

- An explanation (or include a diagram of) your system's treatment processes.
- Source water protection tips (refer to Appendix D, Table D-3 for example language regarding source water protection tips).
- Water and energy conservation tips (refer to Appendix D, Table D-3 for example language regarding water conservation tips).
- The cost of making the water safe to drink including the cost of sustaining the infrastructure.
- Efforts your system has made to promote "green infrastructure" (e.g., stormwater pollution prevention measures).
- A statement from the mayor or general manager.
- Information to educate customers about: taste and odor issues, affiliations with programs such as the Partnership for Safe Water, opportunities for public participation, etc.

You may want to provide the address for EPA's drinking water Web site (www.epa.gov/safewater). The only limitation on this information is that it must not interfere with the educational purpose of the CCR.

V. What should the CCR look like?

You do not need a fancy computer or a graphic designer to produce a CCR that is easy to read and inviting to your customers. The best way to design your CCR is to spend some time looking at other CCRs. See what catches your eye, and copy it. A few things to consider:

- Limit wordiness – write short sentences and keep your paragraphs short as well.
- Do not make your text size too small. You might want to squeeze a few extra sentences in your CCR, but if you add too much, people might ignore the entire report.
- Give a draft of your CCR to relatives or friends who are not drinking water experts and ask them if it makes sense. Ask customers for their comments when you publish the CCR.
- Do not distract from your main message with graphics and/or pictures that do not complement your message.
- Be as simple, truthful, and straight forward as possible. Avoid acronyms, initials, and jargon.
- Consider printing the CCR on recycled paper and taking other steps to make the CCR "environmentally friendly." If you hope to get your customers involved in protecting source water, set a good example for them.
- Use the CCR as an opportunity to tell your customers about all of the things that you are doing well.

VI. How must the CCR be distributed?

You must mail or deliver a copy of your CCR to each of your customers, and make a good faith effort to get CCRs to non-bill-paying consumers. Deliver your CCR by July 1 of each year. You may include your CCR with water bills, if feasible, or you may send it as a separate mailer. Sending your CCR as a separate mailer will likely be more effective, and you will reach renters who may not receive water bills directly.

Send a copy to the director of the state drinking water program and any other state agency that the state drinking water program director identifies when you mail it to customers. Within three months of the CCR's due date, submit to the state a certification (see Appendix C) that you distributed the CCR, and that its information is correct and consistent with the compliance monitoring data previously submitted to the state. EPA also encourages you to send copies to state and local health departments, as well as local TV and radio stations and newspapers. Systems that serve 100,000 or more people must post their CCRs on the Internet. EPA encourages other systems to use this option as well. Many local governments have sites where

you can post your CCR, even if your system itself does not have a Web site. EPA provides a mechanism that allows systems to link their CCR to the EPA Web site (www.epa.gov/safewater/ccr/compliancehelp.html). You must also make your CCR available to the public upon request.

Reach All Consumers Not Receiving Water Bills

It is in your system's interest to spread the word about the quality of its drinking water. Since many consumers of your water may not receive bills (people such as apartment renters) you must make serious and "good faith" efforts to reach non-bill paying consumers. A "good faith" effort means selecting the most appropriate method(s) to reach those consumers from a menu of options that your state recommends. Those options include but are not limited to:

- Posting the CCR on the Internet using Web sites, email notifications, Podcasts, blogs, or Tweets.
- Mailing the CCR to all postal patrons.
- Advertising the availability of the CCR in newspapers, TV, and radio.
- Publishing the complete CCR in a local newspaper.
- Posting the CCR in public places such as cafeterias and lobbies of public buildings, libraries, churches, and schools.
- Delivering multiple CCRs for distribution by single-biller customers such as apartment buildings or large private employers.
- Delivering the CCR to community organizations.

Waiving the Mailing Requirement

Your Governor (or Tribal leader or EPA Regional Administrator, if applicable) can waive the mailing requirement for water systems that serve fewer that 10,000 people. You may choose to mail the CCR even if the Governor has issued a waiver. If you decide to use the waiver, take the following steps:

- Publish the CCR in one or more local newspapers.
- Inform customers, by notification in newspapers or by other means approved by the state, that CCRs will not be mailed.
- Make the CCRs available upon request.

- For specific subpopulations in your community, you may wish to distribute CCRs to organizations specific to those groups.

If your system serves 500 or fewer people and the Governor waives the mailing requirement for small systems, you do not have to publish the CCR in the newspaper, though you may want to do so. At least once a year, you must notify customers through a mailed, delivered, or posted notice that the CCR is available from your water system upon request.

VII. Keeping CCR Copies on File

You must keep copies of your CCRs on file for a minimum of three years.

VIII. References

1. Means, Edward, Zaid Chowdhury, Garret Westerhoff, Laurel Passantino, and John Ruetten. 2008. Communicating the Value of Water: An Introductory Guide for Water Utilities. AwwaRF, Denver, CO.

2. Lazo, J. K., J. L. Pratt, C. N. Herrick, M. L. Hagenstad, R. S. Raucher, R. E. Hurd, and E. H. Rambo. 2004. Understanding and Enhancing the Impact of Consumer Confidence Reports. AwwaRF, Denver, CO.

Appendix A – Translations for English Instructions

Translations are provided courtesy of the State of Washington Department of Health. None of these translations has been independently verified.

<table>
<tr><th colspan="2">Translations for the English Text:
“This report contains important information about your drinking water.
Have someone translate it for you, or speak with someone who understands it.”</th></tr>
<tr><td>Amheric:
ይህ ዘገባ ስለሚጠጡት ውሃ ጠቃሚ መረጃዎችን ይዟል ። ሌላ ጉዳዩን የማረዳለውአንዳተረጉሙልዎት ወይም እንዲያስረዳዎት ያደርጉ ።</td><td>Arabic:
هذا التقرير يحتوي على معولمات مهمة عن ماء الشرب الذي تستخدمه. لطلب من شخص ما ان يترجمه لك او يستطيع فهمه.</td></tr>
<tr><td>Cambodian (Khmer):
របាយការណ៍នេះ មានសារៈសំខាន់ណាស់ អំពីអំពីទឹកដែលបងប្អូន អ្នកផ្តល់មាន ។ ចូររកជនណាម្នាក់ឲ្យអានប្រែជូនបងប្អូន-អ្នក ឬនិយាយជាមួយជនណាម្នាក់ ដែលយល់នូវនេះច្បាស់ណាស់ ។</td><td>Chinese (simplified):
此报告包含有关您的饮用水的重要信息。请人帮您翻译出来，或请看懂此报告的人将内容说给您听。</td></tr>
<tr><td>Chinese (traditional):
此報告包含有關您的飲用水的重要資訊。請人幫您翻譯出來，或請能看懂此報告的人將內容說給您聽。</td><td>Farsi:
اين گزارش شامل اطلاعات مهمي درمورد اب اشاميدني شما ميباشد. از شخصي بخواهيد كه به شما ترجمه كنند و يا با شخصي كه اين موضوع را ميفهمند صحبت بكنيد.</td></tr>
<tr><td>French:
Ce rapport contient des informations importantes à propos de votre eau potable. Demander à quelqu’un de traduire ces informations pour vous ou discuter avec une personne qui comprend ces informations.</td><td>Greek:
Αυτή η αναφορά περιλαμβάνει σημαντικές πληροόορίες σχετικά με το πόσιμο νερό σας. Ζητήστε από κάποιον να σας τη μεταφράσει, ή μιλείστε με κάποιον που την καταλαβαίνει.</td></tr>
<tr><td>Hebrew:
דוח זה כולל מידע חשוב בנוגע למי השתייה שלכם. בקשו ממישהו שיתרגם אותו עבורכם, או שוחחו עם מישהו שמבין את תוכנו.</td><td>Hindi:
यह रीपोरट में आपके पीने वाले पानी के बारे में जरुरी जानकारी है। किसी से जिसे इसका अनुवाद करना आता हो उस से बात करें।</td></tr>
</table>

Hmong: Dlaim ntawv tshaabxu nuav muaj lug tseemceeb heev nyob rua huv kws has txug cov dlej mej haus. Kuas ib tug paab txhais rua koj, los nrug ib tug kws paub lug thaam.	Japanese: このレポートには飲料水に関する重要な情報が記載されています。この英文を訳してもらうか、またはどなたか英語が分かる方にたずねてください。
Korean: 이 보고서에는 귀하의 식수에 대한 중요한 내용이 실려있습니다. 그러므로 이 보고서를 이해할 수 있는 사람한테 번역해 달라고 부탁하시기 바랍니다.	Laotian: ในລາຍງານນີ້ມີຣາຍລະອຽດຄົນສຳຄັນກຽວກັບນ້ຳດື່ມຂອງທ່ານ ໃຫ້ຄົນໃດຄົນນຶ່ງແປພາສາໃຫ້ທ່ານຟັງ, ຮຶ ເວົ້າກັບ ໃຄຄົນນຶ່ງຜູ້ທີ່ເຂົ້າໃຈມັນ.
Oromo: Gabaasii kun odeeffanno barbachisa wa'ee bisaan dhugaatii qaba. Akkaa isinii turjumaa'uu gaafadhaa yokaan nama afaan keessan dubbatuu dubbisaa.	Polish: Następujący raport zawiera ważną informację na temat wody pitnej. Proszę poprosić kogoś o przetłumaczenie lub porozmawiać z kimś kto rozumie.
Punjabi: ਇਸ ਰੀਪੋਰਟ ਵਿਚ ਤੁਹਾਡੇ ਪੀਣ ਵਾਲੇ ਪਾਣੀ ਬਾਰੇ ਜਰੂਰੀ ਜਾਣਕਾਰੀ ਹੈ। ਕਿਸੇ ਕੋਲੋਂ, ਜਿਸ ਨੂੰ ਸਮਝ ਆਉਂਦੀ ਹੋਵੇ ਇਸ ਦਾ ਅਨੁਵਾਦ ਕਰਵਾ ਲਵੋ ਜਾਂ ਉਸ ਨਾਲ ਗਲ ਕਰੋ।	Russian: В этом сообщении содержится важная информация о воде, которую вы пьёте. Попросите кого-шибудь перевести для ва это сообщение или поговорите с человеком, который понимает его содержание.
Samoan: O le lipoti lenei o lo'o iai ni mea e sili ona taua e uiga i le vai o lo'o e taumafaina nei. Su'e se tagata e fa'aliliuina mo oe, po'o lou talatalanoa i seisi e iai sona malamalamaga i lenei mataupu.	Serbo-Croatian: Ovaj izvještaj sadrži važnu informaciju u vašoj vodi za piće. Neka vam neko prevede, ili popričajte sa nekim ko se u ovo razumije.
Somali: Warbixintan waxay wadataa macluumaad muhiim ah ee la xiriira biyaha aad cabtid. Cid ha kuu tarjunto ama la hadl cid fahmaysa.	Spanish: Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda.

Tagalog: Naglalaman ang report na ito ng importantcng impormasyon tungkol sa iyong iniinom na tubig. Magkaroon ng isang tao na isasalin ito sa iyong wika para sa iyo, o makipag-usap sa isang tao na nakakaintindi dito.	Thai: รายงานนี้มีข้อมูลสำคัญเกี่ยวกับน้ำดื่มของท่านโปรดขอให้บุคคลใดบุคคลหนึ่งแปลข้อความให้ท่าน หรือปรึกษาผู้ที่เข้าใจข้อความนี้
Tigrigna: እዚ ጽሑፍ ብዛዕባ ትሰትይዎ ማይ ኣገዳሲ ሓበሬታ ኣለዎ። ዘተርጉመልኩም ወይ ዘረዳእኩም ሰብ ድለዩ።	Ukranian: Це повідомлення містить важливу інформацію про воду, яку ви п'єте. Попросіть кого-небудь перекласти вам це повідомлення або поговоріть з людиною, яка розуміє його зміст.
Vietnamese: Tài liệu này có tin tức quan trọng về nước uống của quý vị. Hãy nhờ người dịch cho quý vị, hoặc hỏi người nào hiểu tài liệu này.	

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Appendix B – Reporting Monitoring Data

This Appendix provides examples of monitoring data and instructions on how to report certain detects in the CCR. Note all results must be reported in CCR units.

❋ **Example that demonstrates reporting for 1 sample site and monitoring less than annually:**

- Barium monitoring
- Barium MCL: 2 ppm
- MCL in CCR units: 2 ppm
- March 2006 Result: 0.003 ppm
- Example CCR Table Excerpt for 2008 Report:

	MCL	MCLG	Your Water	Range	Year Sampled	Violation	Typical source
Barium (ppm)	2	2	0.003	N/A	2006	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits

Note: System will report this same result each CCR year until the next sample is taken.

❋ **Example that demonstrates reporting for one sampling site and multiple sampling dates**

- Atrazine monitoring
- Atrazine MCL: 0.003 ppm
- MCL in CCR units: 3 ppb
- 2008 Results:

Atrazine Monitoring	1st quarter 2008	2nd quarter 2008	3rd quarter 2008	4th quarter 2008
2008 Analysis Results	0.8 ppb	3.8 ppb	2.1 ppb	0.9 ppb
Running Annual Average*	1.2 ppb	2.1 ppb	1.4 ppb	1.9 ppb

*Reported RAA for quarters 1-3 are based on results from previous quarters not reported on this table.

Note: Highlighted numbers represent the range and the highest RAA.

- Example CCR Table Excerpt:

	MCL	MCLG	Your Water	Range	Year Sampled	Violation	Typical source
Atrazine (ppb)	3	3	2.1	0.8 - 3.8	2008	No	Runoff from herbicide used on row crops

❋ **Example that demonstrates reporting for disinfectant residuals**

- Monitoring for chloramines
- System size: 1,001-2,500 people
- Samples: 2 times per month
- Chloramines MRDL: 4 ppm
- MRDL in CCR units: 4 ppm
- 2008 Results:

Samples (ppm)	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept	Oct.	Nov.	Dec.
Sample 1	1.0	2.1	1.4	2.2	1.4	1.4	2.5	2.6	1.4	2.9	3.7	1.8
Sample 2	1.4	1.9	0.8	2.2	2.3	1.6	2.1	2.8	1.4	2.7	2.9	1.8
Monthly Average	1.2	2.0	1.1	2.2	1.9	1.5	2.3	2.7	1.4	2.8	3.3	1.8
Quarterly RAA*	1.7			2.3			1.9			2.0		

*Reported RAA for quarters 1-3 are based on results from previous quarters not reported on this table.

Note: Highlighted numbers represent the range and the highest RAA.

- Example CCR Table Excerpt:

	MRDL	MRDLG	Your Water	Range	Year Sampled	Violation	Typical source
Chloramines (ppm)	4	4	2.3	0.8 - 3.7	2008	No	Water additive used to control microbes

❋ **Example that demonstrates reporting for multiple sampling sites and multiple sampling dates:**

- Total Trihalomethane monitoring under Stage 1 DBPR and Stage 2 DBPR IDSE.
- TTHM MCL: 0.080 ppm
- MCL in CCR units: 80 ppb
- 2008 Results:

Total Trihalomethane Monitoring Results* (in ppb)	1st quarter 2008	2nd quarter 2008	3rd quarter 2008	4th quarter 2008
Site 1	53	62	125	70
Site 2	55	62	119	60
Site 3	50	63	117	70
Site 4	54	69	135	84
System-wide Quarterly Average	53	64	124	71
System-wide Running Annual Average*	75	77	82	78

*Reported RAA for quarters 1-3 are based on results from previous quarters not reported on this table.

Note: Highlighted numbers represent the range and the average of the results obtained during the calendar year. The highest sample result occurred in the third quarter during IDSE sampling (see following table).

IDSE Results	1st quarter 2008	2nd quarter 2008	3rd quarter 2008	4th quarter 2008
Site 1	45	55	70	50
Site 2	60	85	100	115
Site 3	100	90	140	105
Site 4	45	60	65	50

* The IDSE results must be included in the range in the CCR Table.

- Example CCR Table Excerpt:

	MCL	MCLG	Your Water	Range	Sample Year	Violation	Typical source
TTHM (ppb)	80	NA	78	50 - 140	2008	Yes*	Byproduct of drinking water disinfection

* While the average for the year did not exceed the MCL there was an MCL violation that was determined during the year that included results that were collected outside of this calendar year.

Include discussion of the TTHM MCL violation, including health effects language, below the table.

- Notes:
  - Under Stage 1 DBPR for TTHM and HAA5, systems must report the average and the range of sample results.
  - Since the system collected samples under IDSE during the calendar year, the results of the IDSE are included in the reported "range" of results but not the average.

❋ **Example that demonstrates reporting for multiple sampling sites and multiple sampling dates for TTHM with an MCL exceedance at one location:**

- Total Trihalomethane monitoring under Stage 2 DBPR
- TTHM MCL: 0.080 ppm
- MCL in CCR units: 80 ppb
- 2012 Results:

Total Trihalomethane Monitoring Results (in ppb)	1st quarter 2012	2nd quarter 2012	3rd quarter 2012	4th quarter 2012
Site 1 Quarterly Results	45	60	125	70
Site 1- LRAA*	*47*	*51*	*74*	*75*
Site 2 Quarterly Results	40	55	115	60
Site 2- LRAA*	*42*	*49*	*71*	*68*
Site 3 Quarterly Results	45	60	105	70
Site 3- LRAA*	*40*	*48*	*69*	*70*
Site 4 Quarterly Results	50	65	135	75
Site 4- LRAA*	*49*	*55*	*78*	*81*

*Reported LRAA for quarters 1-3 are based on results from previous quarters not reported on this table.

- Example CCR Table Excerpt:

Monitoring	MCL	MCLG	Your Water	Range	Sample Year	Violation	Typical source
TTHM System (ppb)	80	NA	81 (highest LRAA at Site 4)	40 – 135	2012	Yes	Byproduct of drinking water disinfection

Include discussion of the TTHM MCL violation at Site 4, including health effects language, below the table.

- Notes:
  - Under Stage 2 DBPR, for TTHM and HAA5, systems with no LRAA MCL exceedances or only one location with an exceedance, must report the highest LRAA and the range of quarterly results (for all locations) in their main detected contaminant table.

❋ **Example that demonstrates reporting for multiple sampling sites and multiple sampling dates for TTHM with more than one MCL exceedance:**

- Total Trihalomethane monitoring under Stage 2 DBPR
- TTHM MCL: 0.080 ppm
- MCL in CCR units: 80 ppb
- 2012 Results:

Total Trihalomethane Monitoring Results (in ppb)	1st quarter 2012	2nd quarter 2012	3rd quarter 2012	4th quarter 2012
Site 1 Quarterly Results	62	65	125	100
Site 1- LRAA*	*52*	*87*	*74*	*88*
Site 2 Quarterly Results	40	55	115	60
Site 2- LRAA*	*42*	*49*	*71*	*68*
Site 3 Quarterly Results	45	60	105	70
Site 3- LRAA*	*40*	*48*	*69*	*70*
Site 4 Quarterly Results	50	65	135	62
Site 4- LRAA*	*60*	*55*	*82*	*78*

*Reported LRAA for quarters 1-3 are based on results from previous quarters not reported on this table.

- Example CCR Table Excerpt:

Monitoring	MCL	MCLG	Your Water	Range	Sample Year	Violation	Typical source
TTHM System (ppb)	80	NA	88 (highest LRAA)	40- 135	2012	See Sites 1 and 4	Byproduct of drinking water disinfection
TTHM Site 1 (ppb)	80	NA	88	62 - 125	2012	Yes	Byproduct of drinking water disinfection
TTHM Site 4 (ppb)	80	NA	82	50 - 135	2012	Yes	Byproduct of drinking water disinfection

Include discussion of the TTHM MCL violation at Sites 1 and 4, including health effects language, below the table.

- Notes:
  - Under Stage 2 DBPR, for TTHM and HAA5, systems must report the highest LRAA and the range of quarterly results (for all locations) in their main detected

contaminant table. In addition, systems with an LRAA MCL exceedance at more than one location, must report the LRAA for each location that exceeded the MCL.

❋ **Example that demonstrates reporting of lead results:**

	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10
July 2008	ND	ND	8	12	19	3	ND	ND	4	22

- Notes:
  - To calculate the 90th percentile: The results of all samples taken during a monitoring period shall be placed in ascending order from the sample with the lowest concentration to the sample with the highest concentration. Each sample result shall be assigned a number starting with the number 1 for the lowest value. The number of samples taken during the monitoring period shall be multiplied by 0.9. The contaminant concentration in the numbered sample yielded by this calculation is the 90th percentile value.

	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10
July 2008	ND	ND	ND	ND	3	4	8	12	19	22

- 10 samples x 0.9 = 9 therefore, the ninth value is the 90th percentile value.
  - Report in Table: 90th percentile=19 ppb AND the number of sites above action level (15 ppb) = 2
- Notes:
  - Regardless of whether lead is detected in your system, you must include an informational statement about lead in your report, which is provided in Section IV, Item 8.
  - Water quality parameter monitoring data that you collect in association with this rule should not be included in the report.
- Example CCR Table Excerpt:

	MCL	MCLG	Your Water	Range	Sample Year	Violation	Typical source
Lead (ppb)	AL =15	0	19	2 sites over action level	2008	No	Corrosion of household plumbing systems; erosion of natural deposits

❋ **Example that demonstrates reporting turbidity results:**

- When reporting turbidity, systems that provide filtration must report the highest single measurement and the lowest monthly percentage of samples meeting the requirements specified for that technology. In this situation, direct and conventional filtration systems may want to report the data in 2 rows of their table.

- Example CCR Table Excerpt:

	MCL	MCLG	Your Water	Range	Sample Date	Violation	Typical Source
Turbidity	TT=1 NTU	0	0.7 NTU	N/A		No	Soil runoff
	TT= percentage of samples<0.3 NTU		97 %	N/A		No	

- Notes:
  - Alternative filtration systems would want to report the above information using turbidity limits established by the state.

❋ **Example that demonstrates reporting TCR detects with no MCL violation:**

- Detects of coliform, fecal coliform or *E. coli* bacteria during routine monitoring must be reported, even if no MCL violation occurred.
- For a system that collects at least 40 samples per month (i.e., a system that serves > 33,000 people), if no more than 5.0 percent of the samples collected during a month are positive, the system is in compliance with the MCL for total coliforms.
- For a system that collects fewer than 40 samples/month (i.e., a system serving ≤ 33,000 people), if no more than one sample collected during a month is positive, the system is in compliance with the MCL for total coliforms.
- In these situations, you may wish to report detects as shown below. Check with your state to make sure this meets state-specific requirements.

Systems collecting fewer than 40 total coliform samples per month (Example CCR Table Excerpt):

	MCL	MCLG	Your Water	Range	Sample Date	Violation	Typical source
Total Coliform	1 positive sample/month*	0	1 positive sample		xx/xx/xx	No	Naturally present in the environment
Fecal coliform or *E. coli* bacteria		0	0			No	Human or animal fecal waste

* If a system collecting fewer than 40 samples per month has two or more positive samples in one month, the system has a MCL violation.

Systems collecting 40 or more total coliform samples per month (assume for the example that the system collects 50 samples per month) month (Example CCR Table Excerpt):

	MCL	MCLG	Your Water	Range	Sample Date	Violation	Typical Source
Total Coliform	5% of monthly samples are positive	0	1.5%		xx/xx/xx	No	Naturally present in the environment
Fecal coliform or *E. coli* bacteria		0	0			No	Human or animal fecal waste

❋ **Example that demonstrates TOC reporting (surface water treatment plants with conventional treatment or precipitative softening)**

- If any of the following apply, you must report a treatment technique violation for enhanced coagulation or enhanced softening (if applicable):
  - Alternate compliance criteria for enhanced coagulation or enhanced softening cannot be met.
  - Quarterly TOC monitoring does not demonstrate the percentage removal of TOC (demonstrated in the table below).
  - A system does not obtain state approval for alternate minimum TOC removal (Step 2) requirements.

- The example CCR Table excerpt below is for a conventional surface water treatment system with source water TOC between 2-4 mg/L and with a source water alkalinity between 0-50 mg/L. It demonstrates how to report this TOC TT violation:

TT Violation	Explanation of the TT Violation	Length of the Violation	Steps Taken to Correct the Violation	Health Effect Language
Failure to remove required amount of total organic carbon (TOC) (DBPP)	On March 3rd, we collected samples for TOC before and after our treatment process to determine the percentage of TOC we were removing. Results showed that we were removing 25 percent of the TOC. We are required to remove 35 percent of the TOC.	1 month	We examined our treatment processes to see if we could improve our removal of TOC. We made some adjustments to our process on March 29th. Samples collected after that time show that we are able to achieve 35 percent removal.	Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts 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.

❋ **Example that demonstrates reporting substitution of gross alpha particle results for radium testing**

- A gross alpha particle activity measurement may be substituted for the required radium measurement provided that the measured gross alpha particle activity does not exceed 5 pCi/L.
- In this situation, you may wish to report detects of gross alpha particle activity. Verify with the state that this approach meets their requirements.
- Example CCR Table Excerpt:

	MCL	MCLG	Your Water	Range	Sample Date	Violation	Typical Source
Alpha emitters pCi/L	15	0	3*		xx/xx/xx	No	Erosion of natural deposits

* If the results of this sample had been above 5 pCi/L, our system would have been required to do additional testing for radium. Because the results were below 5 pCi/L, no testing for radium was required.

❋ **Example that demonstrates reporting substitution of gross alpha particle results for uranium testing**

- A gross alpha particle activity measurement may be substituted for the required uranium measurement provided that the measured gross alpha particle activity does not exceed 15 pCi/L.
- In this situation, you may wish to report detects of gross alpha particle activity. Verify with the state that this approach meets their requirements.
- Example CCR Table Excerpt:

	MCL	MCLG	Your Water	Range	Sample Date	Violation	Typical Source
Alpha emitters pCi/L	15	0	12*		xx/xx/xx	No	Erosion of natural deposits

* If the results of this sample had been above 15 pCi/L, our system would have been required to do additional testing for uranium. Because the results were below 15pCi/L, no testing for uranium was required.

❋ Example that demonstrates reporting beta particles results

- The MCL for beta particles is 4 mrem/year. EPA recognizes that laboratories often report these results in pCi/L, and that there is no simple conversion between the two units. Therefore, it is acceptable for systems to report the detected level for beta particles in pCi/L. So that consumers may have a standard against which to compare the detected level, systems should place 50 in the MCL column and include a footnote explaining that EPA considers 50 pCi/L to be a level of concern for beta particles.

- Example CCR Table Excerpt:

	MCL	MCLG	Your Water	Range	Sample Date	Violation	Typical Source
Beta particles (pCi/L)	50*	0	10**	ND-10	xx/xx/xx	No	Erosion of natural deposits

* The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles.

** Because the beta particle results were below 50 pCi/L, no testing for individual beta particle constituents was required.

❋ Examples that demonstrates treatment technique violation reporting under LT2ESWTR

- For violations of treatment techniques under LT2ESWTR, the system must provide an explanation of the violation, an indication of the length of the violation, information on steps taken to correct the violation, and health effects language. Because there are no standard health effects language provided for these treatment techniques, the system would have to write language specific to the violation. You can use the health effect language for contaminants as an example or template.

- Example CCR Table Excerpt (**note that not all of these violations would have occurred in the same year**):

TT Violation	Explanation	Length	Steps Taken to Correct the Violation	Health Effect Language
Uncovered and untreated finished water reservoir	The South Street finished water reservoir is uncovered and the discharge is not treated. We were required to address this situation by April 1, 2009.	17 months	We have hired an engineering firm to design a cover for the tank. We intend to have the tank covered by September 2010.	Inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.
Determine and Report Bin Classification	After conducting our source water monitoring for *Cryptosporidium*, we were required to determine and report our Bin Classification by [date].	1 month	We have since determined our bin classification and reported this to the DEQ.	Inadequately treated water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.
Provide or Install an Additional Level of Treatment	Based on our bin classification, we were required to provide or install an additional level of treatment by [date].	6 months	We hired an engineering firm to prepare a preliminary engineering report. The report listed treatment alternatives. We selected one of the alternatives and are in the process of constructing it. We anticipate that it will be completed by [date].	Inadequately treated water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.

❋ Example that demonstrates special notice for fecal indicator-positive groundwater source sample reporting

- This system was triggered to conduct source water monitoring after a TCR positive sample in December of 2009. In this example, both the distribution and the source samples were positive for *E. coli*. The system took five additional source samples and one was positive. Below is an example of reporting for both the TCR violation and the GWR special notice.
- The required special notice language for fecal indicator-positive samples must be provided in the CCR. For this example, we have included it as a footnote to the table.
- Example CCR Table Excerpt:

Contaminant	MCL	MCLG	Your Water	Range	Sample Year	Violation	Source
***E. coli* (in the distribution system)**	0	0	1 positive sample	ND-1	2009	Yes*	Human or animal fecal waste
E. coli* (at the ground water source) *	0	0	2 positive samples	ND-1	2009	No	Human or animal fecal waste

* We were notified on December 9, 2009, of an *E. coli* positive sample in the distribution system. You may remember receiving public notification of this violation on December 10. For reasons discussed in the next paragraph, we took Well 1 off-line on December 11. The duration of the violation was two days. We are addressing this contaminated well as discussed below.

** On December 10, 2009, we sampled the sources (Well 1 and Well 2) for the fecal-indicator, *E. coli*. We were notified on December 11 that Well 1 tested positive for *E. coli*. On December 12, we took five additional samples and were notified on December 13 that two of the five samples were positive for *E. coli*. We immediately took Well 1 off-line at that time. Our system is in contact with the state DEQ, and we have a state-approved plan to abandon this well and replace it with a new well. We will have the new well completed by July 5, 2010, and the old well will be abandoned by July 15, 2010. As an interim measure, we have moved to only utilizing this well as an emergency source and have not had to utilize it since the sampling revealed the contamination.

Health Effects: 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, some of the elderly, and people with severely compromised immune systems.

- If the system had sampled for (and found) enterococci or coliphage as their fecal indicator, the table would read as shown in the example below.

Contaminant	MCL	MCLG	Your Water	Range	Sample Year	Violation	Source
Enterococci (at the ground water source)*	TT	N/A	2 positive samples	ND-1	2009	No	Human or animal fecal waste
Coliphage (at the ground water source) *	TT	N/A	2 positive samples	ND-1	2009	No	Human or animal fecal waste

* Special notice required text and health effects language would be provided in the CCR – possibly in a footnote to the table as shown in the example above.

Health Effects: Fecal indicators are microbes 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, some of the elderly, and people with severely compromised immune systems.

❋ **Example that demonstrates reporting of TT violation for failure to take corrective action for fecal indicator-positive groundwater source sample**

- If in the example above, the system did not take corrective action or set a corrective action plan with the state within 120 days of the fecal indicator-positive additional sample, they will be in violation of a treatment technique.

TT Violation	Explanation	Length	Steps Taken to Correct the Violation	Health Effect Language
Corrective Action for GW Fecal Indicator Source Sample(s)	We were required to take corrective action to address the fecal contamination in our well.	3 months	We have contacted the DEQ and are now on a corrective action plan. We will abandon the contaminated well and drill a new one. We will have the new well completed by July 5, 2010, and the old well will be abandoned by July 15, 2010.	Inadequately protected or treated water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.

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Appendix C – Certification Form

(suggested format)

CWS name:_____

PWS I.D. no:_____

The community water system named above hereby confirms that its consumer confidence report has been distributed to customers (and appropriate notices of availability have been given). Further, the system certifies that the information contained in the report is correct and consistent with the compliance monitoring data previously submitted to the state.

Certified by:

Name_____

Title_____

Phone #_____ Date_____

***You are not required by EPA rules to report the following information, but you may want to provide it to your state. Check all items that apply. ***

____CCR was distributed by mail or other direct delivery. Specify other direct delivery methods:

_____

_____

____"Good faith" efforts were used to reach non-bill paying consumers. Those efforts included the following methods as recommended by the state:

____posting the CCR on the Internet at www._____

____mailing the CCR to postal patrons within the service area. (attach zip codes used)

____advertising availability of the CCR in news media (attach copy of announcement)

____publication of CCR in local newspaper (attach copy)

____posting the CCR in public places (attach a list of locations)

____delivery of multiple copies to single bill addresses serving several persons such as: apartments, businesses, and large private employers

____delivery to community organizations (attach a list)

____(for systems serving at least 100,000 persons) Posted CCR on a publicly-accessible Internet site at the address: www._____

____Delivered CCR to other agencies as required by the state (attach a list)

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Appendix D – Information on Source Water Assessment Programs and Conservation Efforts

Appendix D provides more detailed information on state Source Water Assessment Programs (SWAPs), Wellhead Protection Programs (WHPs), and incorporating source water assessment results and source water protection and conservation tips into your CCR.

Source Water Assessment Program

Background

The 1996 amendments to the Safe Drinking Water Act (SDWA) included a focus on pollution prevention, which complements the traditional treatment approach to ensuring safe drinking water. In Section 1453, the amendments required states to develop Source Water Assessment Programs (SWAPs) and submit them for EPA approval by February of 1999. EPA reviewed and approved these programs and states subsequently completed source water assessments for all public water systems (PWS). These assessments included a delineation of a source water protection area, an inventory of potentially significant sources of contamination, and a determination of the susceptibility of the PWS to these potential contamination sources.

As part of an approved program, states must make the results of these assessments available to the public - either directly or through a delegated entity. This last requirement can, in part, be met through the requirements of the CCR Rule that water systems provide susceptibility determinations to the public once an assessment has been completed. Although information about source water protection efforts is not specifically required in CCRs, the reports offer an excellent opportunity for water systems to explain how a community's drinking water supply is being protected.

In addition to SWAPs, many systems conducted developed and implemented Wellhead Protection Programs (WHPs) to satisfy or go beyond the SWAP assessment requirements. Wellhead programs are either voluntary or mandatory for water systems depending on the states' program, but do include development of wellhead management plans. Most states have integrated SWAP and WHP activities. One of the key distinctions between the SWAPs and existing wellhead programs and watershed protection programs is that SWAPs explicitly include a determination about the susceptibility of the drinking water system to sources of contamination. These determinations are useful for the purposes of CCR reporting since the CCR Rule requires that reports contain a brief summary of the results of these susceptibility determinations.

More information about state SWAP programs, including a list of state source water contacts and links to state source water Web sites can be found through www.epa.gov/safewater.

Incorporating Source Water Assessment Results in CCRs

Information about source water is an important part of the CCR. Table D-1 is a list of the report requirements related to source water.

Table D-1. CCR Requirements Referencing Source Water Assessment Results

Rule/ Guidance Citation	Requirement
40 CFR 141.153 (b)(1)	Each report must identify the source(s) of water delivered by the COMMUNITY WATER SYSTEM by providing information on: the type of water used (i.e., surface water or ground water), the commonly used name (if any) and the location of the body (or bodies) of water.
40 CFR 141.153 (b)(2)	For completed source water assessments, the CCR must: 1) Notify consumers that this information is available. 2) Tell the consumers how to obtain the information. Where a system has received a source water assessment from the state, the report must include a brief summary of the system's susceptibility to potential sources of contamination, using language provided by the state or written by the operator. Systems are also encouraged to report significant sources of contamination in the source area if they have readily available information.
40 CFR 141.153 (d)(4)(ix)	Each report must include the likely source(s) of detected contaminants to the best of the operator's knowledge. Specific information regarding the likely source (s) of the contaminants may be available in sanitary surveys and source water assessments and should be used when available to the operator. If the operator lacks specific information on the likely source(s), the report must include one or more typical sources given in the Appendix A to Subpart O. (See Appendix F of this guidance for the list of typical sources).
40 CFR 141.153 (e)(1)	If a system has performed any monitoring which indicate that *Cryptosporidium* may be present in the raw or finished water, the report must include a summary of the results of the monitoring and an explanation of the significance of the results.
40 CFR 141.153 (h)(1)	Every CCR must contain a brief explanation about the sources of drinking water and contaminants that may be present in the source water. Systems can either use the language provided in 40 CFR 141.153(h)(1)(i), (ii), and (iii) or develop comparable language.

CCR Examples - Summarizing Source Water Assessment Results and Source Water Protection and Water Conservation Tips

An example of how source water assessment results and source water protection and water conservation tips could appear in a CCR are shown in Tables D-2 and D-3.

Table D-2. CCR Examples - Source Water Information

Source Water Assessment Status	Example Language
Ground water source • Source water assessment available	Our water comes from three wells drilled about 500 feet into an underground source of water called the Low Plains Aquifer. These wells are located west of town on the north side of City Park. The wellhead protection area for these wells extends approximately 2000 feet north, 4000 ft south and 1500 ft east and west of the well field. (Please see the map). We have a town ordinance that prohibits dumping and many other activities that could pollute our drinking water in this wellhead area. The Department of Environmental Resources (DER) completed an assessment of our source water in January of 2001 and has reported that our raw water is most susceptible to contamination from abandoned irrigation wells and farm runoff. The town has done a follow-up investigation and has identified two abandoned wells. They have been properly plugged. Farm runoff continues to be a concern. Please contact the County Extension Service at [phone number] to get a list of area farmers participating in a three county source water protection program. You can get a summary of our assessment by calling the DER Region 1 office at [phone number]. A full copy of the assessment is available in the town clerk's office or on the Internet [Internet address].
Surface Water • Source water assessment available • *Cryptosporidium* detected	Our utility serves you treated surface water which is taken from the Grubstake river near Spitfire Junction. We collect it in the McErtel Reservoir and then pipe it to the treatment plant just northwest of town. The state drinking water program through a source water assessment report has found that our drinking water is potentially most susceptible to farm runoff as well as three underground storage tanks in Spitfire county. However, we have not detected any contaminants from these sources in our drinking water. You can get a copy of the source water assessment by calling the state drinking water program at [phone number]. In 2010, we monitored for *Cryptosporidium*, a microbial parasite commonly found in surface water, and found some evidence of these microbes in the raw, but not the finished water. Current test methods do not enable us to determine if these organisms are capable of causing disease. We are not aware of a specific source of *Cryptosporidium*. *Cryptosporidium* may come from wildlife or cattle grazing near the reservoir. *Cryptosporidium* must be ingested for it to cause disease, and may be passed through other means than drinking water. Symptoms of infection include nausea, diarrhea, and

Source Water Assessment Status	Example Language
	abdominal cramps. These symptoms can also be the result of food related organisms or flu or ingesting untreated water. Most healthy individuals are able to overcome the disease within a few weeks. However, some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people living with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk. These people should seek advice 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).

Table D-3. CCR Examples – Source Water Protection and Water Conservation Tips for Consumers

Example Type	Example Language
Source Water Protection Tips for Consumers	Protection of drinking water is everyone's responsibility. You can help protect your community's drinking water source in several ways: ▪ Eliminate excess use of lawn and garden fertilizers and pesticides – they contain hazardous chemicals that can reach your drinking water source. ▪ Pick up after your pets. ▪ If you have your own septic system, properly maintain your system to reduce leaching to water sources or consider connecting to a public water system. ▪ Dispose of chemicals properly; take used motor oil to a recycling center. ▪ Volunteer in your community. Find a watershed or wellhead protection organization in your community and volunteer to help. If there are no active groups, consider starting one. Use EPA's Adopt Your Watershed to locate groups in your community, or visit the Watershed Information Network's How to Start a Watershed Team. ▪ Organize a storm drain stenciling project with your local government or water supplier. Stencil a message next to the street drain reminding people "Dump No Waste - Drains to River" or "Protect Your Water". Produce and distribute a flyer for households to remind residents that storm drains dump directly into your local water body.

Example Type	Example Language
Water Conservation Tips for Consumers	Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference – try one today and soon it will become second nature. ▪ Take short showers - a 5 minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath. ▪ Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month. ▪ Use a water-efficient showerhead. They are inexpensive, easy to install, and can save you up to 750 gallons a month. ▪ Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month. ▪ Water plants only when necessary. ▪ Fix leaky toilets and faucets. Faucet washers are inexpensive and take only a few minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait. If it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons a month. ▪ Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation. ▪ Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill! ▪ Visit www.epa.gov/watersense for more information.

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Appendix E – Examples of Consumer Confidence Reports

EPA is providing the following CCRs as examples of report format. In providing these reports, EPA is not endorsing the views nor judging the accuracy of the information contained in the reports. These examples do not necessarily meet all current federal and state CCR requirements. Be sure to check with your state drinking water program since your state may have different requirements from those under which these reports were created. For assistance creating a CCR, systems can access the EPA CCR*i*Writer tool (www.ccriwriter.com).

- The first report, *Sampletown Annual Water Quality Report*, is fictitious and was created as a general example.
- The second report, *Miami-Dade Water & Sewer Department, 2008 Water Quality Report* is another example of a large surface water system, but is a good example of a bilingual report.
- The third report, *Water Quality – Treatment, Sampling, Monitoring – Department of Public Works, Helena Water Treatment Division, 2009 Consumer Confidence Water Quality Report*, is an example of a smaller surface water system. The system provides water to the City of Helena, Montana and does not sell water to any other public water system.

SAMPLETOWN ANNUAL WATER QUALITY REPORT

May 2009

Spanish (Espanol)

Este informe contiene informacion importante acerca de su aqua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda.

French (Francais)

Ce rapport contient des informations importantes à propos de votre eau potable. Demander à quelqu'un de traduire ces informations pour vous ou discuter avec une personne qui comprend ces informations.

Is my water safe?

Last year, we conducted tests for over 80 contaminants. We only detected 10 of those contaminants, and found only 1 at a level higher than the Environmental Protection Agency (EPA) allows. As we told you at the time, our water temporarily exceeded drinking water standards. (For more information see the section labeled **Violations and Exceedances** at the end of the report.) This report is a snapshot of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. We are committed to providing you with information because informed customers are our best allies.

Do I need 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 infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

Where does my water come from?

Your water comes from three municipal wells sunk about 500 feet into an underground source of water called the Low Plain Aquifer. These wells are located west of town. The town owns the land around these wells and restricts any activity that may contaminate them. After the water comes out of the wells, we treat it to remove several contaminants and we also add disinfectant to protect you against microbial contaminants.

Source water assessment and its availability

The state performed an assessment of our source water in January of 2005. A source water assessment identifies potential sources of contamination to the water we use for your drinking water. The assessment concluded that our water source is most susceptible to contamination from abandoned irrigation wells and farm runoff. Two abandoned wells have been located and have since been properly plugged. Farm runoff continues to be a concern although many local farmers are participating in a 3 county source water protection program. Please call us at 111-2233 if you would like more information about the assessment.

Why are there contaminants in my drinking water?

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 EPA's Safe Drinking Water Hotline (800-426-4791). 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 surface of the land 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 include: Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; 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 stormwater runoff, and septic systems; and 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 that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

How can I get involved?

Our Water Board meets on the first Tuesday of each month at 7:30 pm at Edison High School on Maple Lane. Please feel free to participate in these meetings. Your input is important to us!

Monitoring and reporting of compliance data violations

Our water system failed to conduct monitoring for Arsenic on time. We are required to sample annually. Due to an oversight, we took the sample 3 months late. Although the late sample was below the MCL we are uncertain whether or not there may be any adverse health risks associated

with this violation. We have recently implemented a new monitoring scheduling system which should prevent this type of monitoring oversight in the future.

Additional information for Lead

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. Sampletown 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 or at www.epa.gov/safewater/lead.

Additional information for Nitrate

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of 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 for advice from your health care provider.

Water Quality Data Table

The table below lists all of the drinking water contaminants we detected that are applicable for the calendar year of this report. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the state requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change.

Contaminants	MCLG or MRDLG	MCL, TT or MRDL	Your Water	Range		Sample Date	Violation	Typical Sources
				Low	High			
Disinfectant Residual								
Chloramine (as Cl2) (mg/L)	4	4	1	1	3	2008	No	Water additive to control microbes.
Inorganic Contaminants								
Fluoride (ppm)	4	4	2	1	2	2008	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.

Contaminants	MCLG or MRDLG	MCL, TT or MRDL	Your Water	Range		Sample Date	Violation	Typical Sources
				Low	High			
Nitrate (measured as Nitrogen) (ppm)	10	10	6	ND	6	2008	No	Runoff from fertilizer use; leaching from septic tank sewage; erosion of natural deposits.
Radioactive Contaminants								
Alpha emitters (pCi/L)	0	15	4*	1	4	2006	No	Erosion of natural deposits
Beta/photon emitters (pCi/L)	0	50**	10	ND	10	2008	No	Decay of natural and man-made deposits.
Synthetic Organic Contaminants including pesticides and herbicides								
Dibromochloro-propane (DBPC) (parts per trillion [ppt])	0	200	15	10	15	2008	No	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples and orchards.
Atrazine (ppb)	3	3	3.75	0.1	10	2008	Yes	Runoff from herbicide used on row crops.
Volatile Organic Contaminants								
Benzene (ppb)	0	5	1	ND	1	2007	No	Discharge from factories; leaching from gas storage tanks and landfills.
TTHMs [Total Trihalomethanes] (ppb)	NA	80	73	40	110	2008	No	Byproduct of drinking water disinfection.

* If the results of this sample had been above 5 pCi/L, our system would have been required to do additional testing for radium. Because the results were below 5 pCi/L, no testing for radium was required.
** The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles.

Name	Reported Level	Range	
		Low	High
Unregulated Contaminant Monitoring*			
Dimethoate (ppb)	0.07	ND	0.07

* Unregulated contaminants monitoring helps EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.

Contaminants	MCLG	AL	Your Water (90th%)	Sample Date	# of Samples Exceeding the AL	Violation	Typical Sources
Inorganic Contaminant							
Lead – lead at consumers tap (ppb)	0	15	9	2008	1 of 20	No	Corrosion of household plumbing systems; erosion of natural deposits.

Data Table Key: Unit Descriptions

mg/L	mg/L: number of milligrams of substance in one liter of water
ppm	ppm: parts per million, or milligrams per liter
ppb	ppb: parts per billion, or micrograms per liter
ppt	ppt: parts per trillion, or nanograms per liter
pCi/L	pCi/L: picocuries per liter (a measure of radioactivity)
NA	NA: not applicable
ND	ND: not detected
NR	NR: monitoring not required, but recommended

Important Drinking Water Definitions

MCLG	Maximum Contaminant Level Goal: 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.
MCL	Maximum Contaminant Level: This highest level of a contaminant that is allowed in drinking water. MCLs are set as close as feasible using the best available treatment technology.
TT	Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
AL	Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water systems must follow.
MRDLG	Maximum Residual Disinfectant Level Goal: The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
MRDL	Maximum Residual Disinfectant Level: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Violations and Exceedances: 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. During March, April and May a surge in use of atrazine-based herbicides by area farmers caused our water to exceed the MCL for atrazine. We sent a notice warning you of the problem when it

occurred and offered to provide alternative water to customers at that time. We are working with the state and local farmers to ensure that this never happens again, and we are monitoring atrazine levels monthly. We regret exposing you to any potential risk. If you would like more information about atrazine or the violation call us at 111-2233 or Sample County's health department at 111-3377.

For More Information Please Contact:

Dan Jones, 111 Main Street, Sampletown, AK 55555
Phone (999) 111-2233, Fax (999) 111-225

WHAT'S ON TAP?

Water Quality Table, p3

Tabla Sobre la Calidad del Agua, p3

WASD Proudly Introduces the

2008 Water Quality Report

This report is designed to inform you about the excellent water WASD delivers to you every day. Our number one goal is to provide you and your family a safe and dependable supply of drinking water. Our nearly 2,700 employees strive to deliver a quality product and protect the County's precious water resources.

To ensure the safety of your water, WASD routinely monitors for contaminants in your drinking water according to Federal and State laws, rules and regulations. Except where indicated otherwise, this water quality report is based on the results of WASD monitoring for the period of January 1, 2008 to December 31, 2008. Data obtained before January 1, 2008, and presented in this publication are from the most recent testing done in accordance with the laws, rules, and regulations.

El Departamento de Agua y Alcantarillado se Enorgullece en Presentar el Informe del 2008 Sobre la Calidad del Agua

Este reporte está diseñado para presentarle información sobre la excelente calidad de agua que WASD le proporciona día tras día. Nuestros casi 2,700 empleados se esfuerzan en hacerle llegar un producto de calidad y en proteger los preciados recursos hídricos del Condado.

De acuerdo con las leyes, reglas y regulaciones establecidas por los gobiernos estatales y federal, WASD periódicamente lleva a cabo pruebas para detectar la presencia de contaminantes en su agua potable y así garantizar la seguridad de su agua. Excepto donde esté indicado de otra forma, este informe sobre la calidad del agua está basado en el análisis llevado a cabo en el período comprendido entre el 1ro de enero y el 31 de diciembre del 2008. La información obtenida antes del 1ro de enero del 2008 presentada en este informe proviene del examen más reciente de acuerdo con las leyes, reglas y normas.

Rapò sa a gen enfòmasyon enpòtan sou dlo wap bwè an.
Oswa si w ta pito resevwa rapò sa a an kreyòl, tanpri rele (786) 552-8300.

MIAMI-DADE COUNTY

About Our Water, Where It Comes From and How It's Treated

Miami-Dade's source of water is groundwater from wells. The wells draw solely from the Biscayne Aquifer for a large part of WASD's system. For customers served by the Alexander Orr, Jr. Water Treatment Plant, the wells supplying this plant draw water mostly from the Biscayne Aquifer and some water from the Floridan Aquifer.
In 2008 the Department of Environmental Protection performed a Source Water Assessment on our system. The assessment was conducted to provide information about any potential sources of contamination in the vicinity of our wells. There are 92 potential sources of contamination identified for this system with low to moderate susceptibility levels. The assessment results are available on the FDEP Source Water Assessment and Protection Program website at www.dep.state.fl.us/swapp.

How Our Water Is Treated

The Alexander Orr, Jr. Plant

Water from the Alexander Orr, Jr. plant receives lime treatment to reduce hardness, and is then disinfected and filtered. This plant supplies mostly water from the Biscayne Aquifer blended with some water from the Floridan Aquifer. The Alexander Orr, Jr. Plant serves customers who live south of SW 8 Street to about SW 264 Street.

The Hialeah & John E. Preston Plants

Water from WASD's other two regional water treatment plants—Hialeah and John E. Preston—comes solely from the Biscayne Aquifer. Together with the Alexander Orr, Jr. plant, all three plants supply treated water to a common distribution system, running throughout most of Miami-Dade County.

In general, the Hialeah and John E. Preston Plants treat water that is supplied to residents who live north of SW 8 Street up to the Miami-Dade/Broward Line.

Water from the Hialeah plant is treated similarly to that from the Alexander Orr, Jr. plant, plus fluoridation and the addition of air stripping in order to remove volatile organic compounds.

Because source water supplied to the John E. Preston plant has a higher level of naturally occurring organic materials than the water at the other plants, it goes through a slightly different process called enhanced softening. It is disinfected, fluoridated and filtered, then it goes through air stripping towers that remove volatile organic compounds. This process has the added benefit of reducing the yellow tint once present in water supplied by the Preston plant.

The South Dade Water Supply System

The South Dade Water Supply System is comprised of five smaller water treatment plants that serve residents south of SW 264 Street in the unincorporated areas of the county. These five plants pump treated water from the Biscayne Aquifer into a common distribution system, which is separate from the main system mentioned above. Water from these plants is disinfected and stabilized for corrosion control.

Highly trained microbiologists, chemists, and water treatment specialists conduct or supervise more than 100,000 analyses of water samples each year. Water quality samples are collected throughout the county and tested regularly. Samples include untreated and treated water taken at our facilities, sample sites throughout the service areas and at customers' homes. These tests are overseen by various federal, state and local regulatory agencies.

Nuestro equipo de microbiólogos, químicos y especialistas altamente entrenados en el procesamiento del agua, personalmente analizan o supervisan el análisis de más de 100,000 muestras de agua anualmente. Estas muestras del agua de todas las áreas del condado son recogidos y examinadas regularmente. Las muestras incluyen agua proveniente de nuestras plantas, antes y después del tratamiento, de sitios de muestra a lo largo y ancho del condado y de hogares de consumidores. Estos exámenes son supervisados por diversas agencias reguladoras federales, estatales y locales.

Todo Sobre Nuestra Agua Potable – De Dónde Proviene y Como Se Procesa

La única fuente de agua potable para Miami-Dade sigue siendo los pozos subterráneos del manto freático. Estos pozos derivan su fuente exclusivamente del Manto Freático Biscayne para la mayor parte del sistema del Departamento. Para los clientes que reciben su agua de la Planta de Procesamiento Alexander Orr, Jr., los pozos que suministran agua a esta planta derivan su fuente mayormente del Manto Freático Biscayne, y en menor cuantía, del Manto Freático Floridan.

En el 2008 el Departamento de Protección Ambiental efectuó una evaluación de nuestro sistema. La evaluación fue realizada para proporcionar información sobre la probabilidad de existir alguna fuente de contaminación en la vecindad de nuestros pozos. Se identificaron 92 fuentes de contaminación potenciales en este sistema con niveles entre bajos y moderados de susceptibilidad. Los resultados de la evaluación están disponibles en el sitio web del Departamento de Protección Ambiental de la Florida: www.dep.state.fl.us/swapp.

A Cuales Tratamientos Se Somete Nuestra Agua Potable

La Planta de Procesamiento Alexander Orr, Jr.

El agua de la planta Alexander Orr, Jr. recibe tratamiento de óxido de calcio para reducir su dureza y luego es desinfectada y filtrada. Esta planta suministra mayormente agua del Manto Freático Biscayne, la cual se mezcla con menos cantidad de agua del Manto Freático Floridan. La planta Alexander Orr, Jr. presta servicios a los residentes al sur de la calle 8 del Southwest hasta la calle 264 del Southwest.

Las Plantas Hialeah y John E. Preston

El agua de las otras dos plantas regionales de procesamiento – Hialeah y John E. Preston – procede exclusivamente del Manto Freático Biscayne. Ellas, junto con la Planta Alexander Orr, Jr., suministran agua procesada a un sistema de distribución común el cual corre a lo largo y ancho de la mayor parte del Condado Miami-Dade.

En general, las plantas Hialeah y John E. Preston procesan el agua que se suministra a los residentes que viven al norte de la calle 8 del Southwest hasta la línea divisoria entre los condados Miami-Dade y Broward.

El agua de la planta Hialeah recibe el mismo tratamiento y se le añade fluoruro; además se limpia con aire para remover compuestos orgánicos volátiles.

Debido a que la fuente del agua suministrada a la planta Preston tiene un nivel más alto de materiales orgánicos que ocurren naturalmente si se le compara con el agua de las otras plantas, se le hace un proceso ligeramente diferente conocido como "suavizante realzado". Luego se desinfecta, fluoriza y filtra. Después pasa a través de la limpieza con aire para removerle compuestos orgánicos volátiles. Este nuevo proceso tiene el beneficio adicional de reducir el tinte amarillo antes presente en el agua suministrada por la planta Preston.

El Sistema de Suministro de Agua del sur de Miami-Dade

El sistema de suministro de agua del sur de Miami-Dade está compuesto por cinco pequeñas plantas de procesamiento de agua que prestan servicios a los residentes al sur de la Calle 264 del suroeste en el área no incorporada del condado. Estas cinco plantas bombean el agua procesada a un sistema común de distribución, separado del sistema principal. El agua de esas plantas es desinfectada y filtrada para controlar la corrosión.

Miami-Dade Water & Sewer Department

2008 Water Quality Data

Listed below are 19 parameters detected in Miami-Dade's water during the reporting period. All are below maximum contaminant levels allowed. Not listed are many others we test for, but that were not detected. Unless otherwise noted, all parameters were tested in 2008.

En la tabla siguiente se hallan 19 parámetros detectados en el agua del Condado Miami-Dade durante el período del informe. Todos están por debajo de los niveles máximos permitidos de contaminantes. La lista no refleja muchos otros que examinamos, y que no fueron detectados. De no indicarse lo contrario, todos los parámetros fueron examinados en el 2008.

PARAMETER Parámetros	FEDERAL MCL (a) *MCL Federal (a)*	FEDERAL GOAL (b) *Meta Federal (b)*	STATE MCL *MCL Estatal*	YEAR TESTED *Año Examinado*	MAIN SYSTEM *Sistema Principal*	SOUTH DADE WATER SUPPLY SYSTEM *Sistema de Suministro del Sur de Miami-Dade*	AVENTURA (NORWOOD)	
MICROBIOLOGICAL CONTAMINANTS Contaminantes Microbiológicos								
Total Coliform Bacteria (c) *Totales de Bacterias Coliformes (c)*	5%	0	5%	08	0.5%	0%	0%	Naturally present *Se encuentra natu*
DISINFECTION BYPRODUCTS Productos Secundarios al Proceso de Desinfectar								
Total Trihalomethanes (ppb) (d) *Total Trialometanos (ppb) (d)*	80	N/A	80	08	30 (3 - 85)	17 (4 - 55)	8 (3 - 9)	Byproduct of dri *Producto secunda*
Haloacetic Acids (ppb) (d) *Acidos Haloacéticos (ppb) (d)*	60	N/A	60	08	29 (5 - 68)	11 (4 - 30)	21 (6 - 26)	Byproduct of dri *Producto secunda*
DISINFECTANTS Desinfectantes								
Chloramines (ppm) (e) *Cloraminos (ppm) (e)*	MRDL=4.0	MRDLG=4	MRDL=4.0	08	2.5 (ND - 5.1)	N/A	2.4 (0.1 - 4.0)	Water additive u *Aditivo utilizado p*
Chlorine (ppm) (e) *Cloro (ppm) (e)*	MRDL=4.0	MRDLG=4	MRDL=4.0	08	N/A	1.6 (0.2-3.5)	N/A	Water additive u *Aditivo utilizado p*
VOLATILE ORGANIC CONTAMINANTS Contaminantes Orgánicos Volátiles								
cis-1, 2-Dichloroethylene (ppb) *cis-1, 2-Dicloroetileno (ppb)*	70	70	70	08	ND	ND	0.59 (0.28 - 0.59)	Discharge from i *Desecho de fábric*
INORGANIC CONTAMINANTS Contaminantes Inorgánicos								
Antimony (ppb) *Antimonio (ppb)*	6	6	6	08	ND	0.8 (ND - 0.8)	ND	Discharge from f *Desecho de resiste*
Arsenic (ppb) *Arsénico (ppb)*	10	N/A	10	08	1.8 (ND - 1.8)	ND	ND	Erosion of natura *La erosión de dep*
Barium (ppm) *Bario (ppm)*	2	2	2	08	0.009 (0.006 - 0.009)	0.02 (0.01 - 0.02)	ND	Erosion of natura *La erosión de dep*
Copper (ppm) (f) (at tap) *Cobre (ppm) (f) (en la llave)*	AL = 1.3	1.3	AL = 1.3	08/06 (g)	0.07, 0 homes out of 73 (0%) exceeded AL *0.07, 0 hogares de 73 (0%) excedieron AL*	0.92, 1 home out of 33 (3.0%) exceeded AL *0.92, 1 hogar de 33 (3.0%) excedio AL*	0.73, 0 homes out of 100 (0%) exceeded AL *0.73, 0 hogares de 100 (0%) excedieron AL*	Corrosion of hou *Corrosión del siste*
Fluoride (ppm) *Fluoruro (ppm)*	4.0	4	4.0	08 (h)	0.7 (0.2 - 0.7)	0.1	1.4 (0.3 - 1.4)	Erosion of natura *Erosion de depósi*
Lead (ppb) (f) (at tap) *Plomo (ppb) (f) (en la llave)*	AL = 15	0	AL = 15	08/06 (g)	2.8, 1 home out of 73 (1.4%) exceeded AL *2.8, 1 hogar de 73 (1.4%) excedieron AL*	1.2, 0 homes out of 33 (0%) exceeded AL *1.2, 0 hogares de 33 (0%) excedieron AL*	4.0, 3 homes out of 100 (3%) exceeded AL *4.0, 3 hogares de 100 (3%) excedieron AL*	Corrosion of hou *Corrosión del siste*
Nickel (ppb) *Níquel (ppb)*	NE	N/A	100	08	ND	1.3 (ND - 1.3)	ND	Corrosion of bron *Corrosión del bron*
Nitrate (as N) (ppm) *Nitrato (como N) (ppm)*	10	10	10	08	0.8 (ND-0.8)	7 (2 - 7)	ND	Erosion of natura *Erosión de depósi*
Sodium (ppm) *Sodio (ppm)*	NE	N/A	160	08	43 (25 - 43)	22 (13 - 22)	38	Erosion of natura *Erosión de depós*
RADIOLOGICAL CONTAMINANTS Contaminantes Radiológicos								
Alpha Emitters (pCi/L) *Emisores de Alfa (pCi/L)*	15	0	15	08	3.4 (ND - 3.4)	8.4 (ND - 8.4)	ND	Erosion of natura *La erosión de dep*
Combined Radium (pCi/L) *Radio Combinado (pCi/L)*	5	0	5	08	0.7 (0.2 - 0.7)	0.9 (0.4 - 0.9)	ND	Erosion of natura *La erosión de dep*
Uranium (µg/L) *Uranio (µg/L)*	30	0	30	08	ND	1.2 (ND - 1.2)	ND	Erosion of natura *La erosión de dep*

2008 Radon Data Summary

PARAMETER Parámetros	FEDERAL MCL (a) *MCL Federal (a)*	FEDERAL GOAL (b) *Meta Federal (b)*	STATE MCL *MCL Estatal*	YEAR TESTED *Año Examinado*	MAIN SYSTEM *Sistema Principal*	SOUTH DADE WATER SUPPLY SYSTEM *Sistema de Suministro del Sur de Miami-Dade*	AVENTURA (NORWOOD)	
Radon (pCi/L) *Radón (pCi/L)*	NE	NE	NE	08	174 (22 - 174)	234 (68 - 234)	ND	Naturally oc *Ocurre natur*

MAJOR SOURCES
Fuentes Principales

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MAJOR SOURCES
Fuentes Principales

Definitions / Definiciones

In the tables to the left, you may find unfamiliar terms and abbreviations. To help you better understand these terms we've provided the following definitions. *En las tablas a mano izquierda puede encontrar términos y abreviaturas desconocidos. Para ayudarle a comprender mejor estos términos le presentamos las siguientes definiciones.*

Maximum Contaminant Level or MCL: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology. *Máximo nivel de contaminación: (MCL, sus siglas en inglés) – El nivel máximo de un contaminante que es permitido en el agua potable. Los MCL se fijan lo más cerca posible de los MCLG, utilizando la mejor tecnología de tratamiento disponible.*

Maximum Contaminant Level Goal or 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. *Objetivo del nivel máximo de un contaminante (MCLG, sus siglas en inglés) – El nivel de concentración de un contaminante en el agua potable por debajo del cual no se conoce o anticipa que produzca un riesgo a la salud. Los MCLGs tienen en cuenta un margen de seguridad.*

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow. *Nivel de acción (AL, sus siglas en inglés) – La concentración de un contaminante que, de ser excedido, provoca el procesamiento u otro requisito a seguir por un sistema de agua.*

Maximum residual disinfectant level or MRDL: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants. *Nivel máximo de un desinfectante secundario (MRDL, sus siglas en inglés) – El nivel máximo de un desinfectante permitido en el agua potable. Existe evidencia convincente de que la adición de un desinfectante es necesario para el control de contaminantes microbianos.*

Maximum residual disinfectant level goal or MRDLG: The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants. *Objetivo del nivel máximo de un desinfectante residual (MRDLG, sus siglas en inglés) – El nivel de un desinfectante de agua potable por debajo del cual no se conoce o espera riesgo a la salud. Los MRDLGs no reflejan los beneficios del uso de los desinfectantes para controlar contaminantes microbianos.*

"ND" means not detected and indicates that the substance was not found by laboratory analysis. *ND – No detectado; indica que la sustancia no fue hallada por un análisis de laboratorio.*

Parts per million (ppm) or Milligrams per liter (mg/l) – one part by weight of analyte to 1 million parts by weight of the water sample. *Partes por millón (ppm) o miligramos por litro (mg/l) – una parte por peso de lo analizado a un millón de partes por peso de la muestra de agua.*

Parts per billion (ppb) or Micrograms per liter (µg/l) – one part by weight of analyte to 1 billion parts by weight of the water sample. *Partes por mil millones (ppb) o microgramos por litro (µg/l) – una parte por peso de lo analizado a mil millones de partes por peso de la muestra de agua.*

picoCurie per liter (pCi/L) - measure of the radioactivity in water. *picoCuríe por litro (pCi/L) – medida de la radioactividad del agua.*

Abbreviations / Abreviaturas

AL = Action Level *Nivel de acción*
MCL = Maximum Contaminant Level *Nivel Máximo de Contaminante*
MRDL = Maximum residual disinfectant level *Nivel máximo del residuo desinfectante*
MRDLG = Maximum residual disinfectant level goal *Meta para el nivel máximo del residuo desinfectante*
N/A = Not Applicable *No Aplica*
ND = Not Detected *Nada fue detectado*
NE = None Established *No está establecido*
pCi/L = picoCuries per Liter *picoCuríes por Litro*
ppb = Parts per billion or micrograms per liter (µg/L) *Partículas por millar de millones o microgramos por litro (µg/L)*
ppm = Parts per million or milligrams per liter (mg/L) *Partes por millón o miligramos por litro (mg/L)*
( ) = Ranges (low - high) are given in parentheses where applicable *Niveles de extensión (bajo - alto) son presentados en paréntesis cuando aplica*
The value preceding the parentheses is the highest detected level reported for the monitoring period except for disinfection byproducts and disinfectants, where the running annual average is reported. *El valor precediendo al paréntesis es el nivel más alto detectado que fue reportado durante el periodo del examen, excepto por los desinfectantes y sus productos secundarios, en cuyo caso se reporta el promedio anual.*

Notes / Anotaciones

(a) MCL = Maximum Contaminant Level *Nivel Máximo de Contaminante*

(b) Federal Goal (Metas Federales) = MCLG = Maximum Contaminant Level Goal *Meta máxima de nivel de contaminante*

(c) The MCL for total coliform bacteria states that drinking water must not show the presence of coliform bacteria in ≥ 5% of monthly samples. A minimum of 390 samples for total coliform bacteria testing are collected each month from the Main distribution system (55 samples from the South Dade Water Supply distribution system) in order to demonstrate compliance with regulations. *El nivel máximo de la bacteria coliforme indica que el agua potable no puede mostrar la presencia de dicha bacteria en ≥ 5% de las muestras mensuales. De acuerdo con las regulaciones establecidas, un mínimo de 390 muestras para un total de la bacteria coliforme son recogidas mensualmente del sistema principal de distribución (55 muestras del sistema de suministro de agua del sur de Miami-Dade).*

(d) A total of 48 samples for Total Trihalomethane and Haloacetic Acid testing are collected per year from the Main distribution system (20 samples from the South Dade Water Supply distribution system, and 8 from the Aventura distribution system) in order to demonstrate compliance with State regulations. Compliance is based on a running annual average. This is the value which precedes the parentheses. *De acuerdo con las regulaciones establecidas, un total de 48 muestras por sistema principal de distribución (20 muestras del sistema de distribución del sur del condado Miami-Dade, y 8 del sistema de distribución de Aventura) son revisadas anualmente para medir el total de Trialometáno y Acido Haloacético. Las exigencias para estar de acuerdo con las regulaciones establecidas se basan en el promedio anual. Esto se refleja en las cifras colocadas antes del paréntesis.*

(e) Compliance is based on a running annual average, computed quarterly from monthly samples collected during total coliform bacteria testing. *El cumplimiento se basa en un promedio anual corriente, computado trimestralmente de muestras recogidas mensualmente durante las pruebas totales de bacteria coliforme.*

(f) 90th percentile value reported. If the 90th percentile value does not exceed the AL (i.e., less than 10% of the homes have levels above the AL), the system is in compliance and is utilizing the prescribed corrosion control measures. *El 90 por ciento del valor fue reportado. Si el 90 por ciento no excede el AL, {por consiguiente, menos del 10% de los hogares tienen niveles por encima del AL}, el sistema está de acuerdo con las regulaciones y está utilizando las medidas prescritas de controlar la corrosión.*

(g) The 08/06 data presented for the Main System, Aventura, and South Dade System respectively is from the most recent testing conducted in accordance with regulations. These systems are under reduced monitoring which only requires testing every 3 years. *Los datos de los años 2008 y 2006 {08/06} presentados por el sistema principal, el sistema de Aventura, y por el sistema de distribución del sur de Miami-Dade respectivamente, son de los exámenes más recientes llevados a cabo en acuerdo con las regulaciones. Estos sistemas requieren ser inspeccionados solamente cada 3 años.*

(h) Fluoride testing to demonstrate compliance with State regulations is required every 3 years in accordance with the State's monitoring framework. However, fluoride levels are monitored daily for the Main System treatment plants where fluoride is added to promote strong teeth. *Pruebas de fluoruro para demostrar concordancia con las regulaciones estatales son requeridas cada 3 años. Sin embargo, en el sistema principal, donde se añade fluoruro para promover dentaduras fuertes, los niveles de fluoruro son examinados diariamente.*

As you can see by the tables, our system had no violations. We're proud that your drinking water meets or exceeds all Federal and State requirements.
Como puedo observar en las tablas en este informe, WASD no ha incurrido ninguna violación. WASD se enorgullece en reportar que su agua potable reúne o supera todos los requisitos Federales y Estatales.

Additional Information About Your 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 surface of the land 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:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- 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 stormwater runoff, and septic systems.
- 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, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (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 the 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 at 1-800-426-4791.

Más Información Sobre Su Agua

Las fuentes de agua potable (tanto agua corriente como embotellada) incluyen ríos, lagos, riachuelos, lagunas, represas, manantiales y pozos. A medida que el agua se desplaza sobre la superficie de la tierra o a través de los terrenos, disuelve minerales naturales y en algunos casos materiales radiactivos y puede recoger sustancias que resultan de la presencia humana y de animales.

Los contaminantes que pudieran encontrarse en las fuentes de agua incluyen:

- Contaminantes microbianos, tales como virus y bacterias que pueden provenir de plantas de tratamiento de aguas negras, sistemas sépticos, empresas agrícolas y de ganado, y también de la fauna.
- Contaminantes inorgánicos, tales como sales y metales, que pueden ocurrir naturalmente o como resultado de aguas pluviales en zonas urbanas, de descargas industriales o domésticas de aguas albañales, de la producción de petróleo o gas, de la minería y de la agricultura.
- Pesticidas y herbicidas, que pueden venir de una variedad de fuentes como, la agricultura, las aguas pluviales en zonas urbanas y usos residenciales.
- Contaminantes químicos orgánicos, incluyendo productos químicos orgánicos sintéticos y volátiles que también pueden venir de estaciones de gasolina, escurrimiento de aguas pluviales de zonas urbanas y sistemas sépticos.
- Contaminantes radiactivos, los cuales pueden ocurrir naturalmente o ser el resultado de la producción de gas o petróleo o de actividades mineras.

Para poder cerciorarse de que el agua de la llave se pueda beber, la EPA hace recomendaciones que limitan la cantidad de ciertos contaminantes que puede hallarse en el agua suministrada por los sistemas públicos de agua. Las normas de la Administración de Alimentos y Fármacos o FDA (sus siglas en inglés) establecen límites máximos de la cantidad de contaminantes que pueden hallarse en el agua embotellada, la cual debe suministrar la misma protección para la salud pública.

Razonablemente, el agua potable, incluyendo el agua embotellada, puede de contener pequeñas cantidades de ciertos materiales contaminantes. La presencia de contaminantes no indica necesariamente que el agua presente un riesgo para la salud. Más información sobre los contaminantes y sus posibles efectos contra la salud está disponible llamando a la Agencia de Protección Ambiental al 1-800-426-4791.

For Customers with Special Health Concerns

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 infections. 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 microbiological contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

Para los Consumidores con Preocupaciones Especiales de Salud

Puede ser que algunas personas sean más vulnerables a los contaminantes hallados en el agua potable que la población en general. Las personas con sistemas inmunológicos afectados por diversas razones como los pacientes de cáncer recibiendo tratamiento de quimioterapia, personas que han recibido un transplante de órgano, personas con VIH(Virus de la inmunodeficiencia humana)/SIDA u otra enfermedad del sistema inmunológico, algunas personas mayores y niños pueden tener mayor riesgo de infección. Estas personas deben consultar el uso de agua potable con su medico. Las pautas del EPA/CDC sobre las maneras apropiadas de reducir el riesgo de infección de Cryptoesporidios y otros contaminantes microbiológicos están disponibles a través de la línea de información sobre la seguridad del agua potable al 1-800-426-4791.

Miami-Dade WASD tests its water more than 100,000 times a year to ensure it consistently meets state and federal standards for both appearance and safety.

El Departamento de Agua y Alcantarillado de Miami-Dade examina el agua más de 100,000 veces al año para asegurar que continuamente alcanza las metas estatales y federales de seguridad y aspecto.

WHAT'S ON TAP?

Thirsty for more information about your water?

Call us at any of the numbers listed below

Public Affairs.....786-552-8088

Alexander Orr Laboratory..... 305-275-3170
(Residents south of SW 8 Street)

John E. Preston Laboratory.....305-520-4738
(Residents north of SW 8 Street)

www.miamidade.gov/wasd

For additional information regarding water quality or health effects information in the local area, residents are encouraged to call the Department of Environmental Resources Management at (305) 372-6524 or the Florida Department of Health's Miami-Dade County Environmental Health Office at (305) 623-3500. Also, the Miami-Dade County Board of County Commissioners, charged with making decisions relating to the Department, meets regularly on Tuesdays and Thursdays at the Stephen P. Clark Center located in downtown Miami.

¿Sediento por mas información acerca de su agua?

Llámenos a cualquiera de los siguientes números:

Relaciones Públicas.....786-552-8088

Laboratorio de la Planta Alexander Orr, Jr.....305-275-3170
(Residentes al sur de la Calle 8 del SW)

Laboratorio de la Planta John E. Preston...305-520-4738
(Residentes al norte de la Calle 8 del SW)

www.miamidade.gov/wasd

Otras fuentes de información sobre la calidad del agua y sobre los riesgos para la salud en la zona local son: El Departamento de Administración de Recursos Ambientales: 305-372-6524 y la Oficina de Salud Ambiental del Condado Miami-Dade del Departamento de Salud de la Florida: 305-623-3500. Además, la Junta de Comisionados del Condado Miami-Dade, la cual es responsable de tomar decisiones relativas al departamento, se reúne regularmente los martes y jueves en el Centro Stephen P. Clark ubicado en el downtown de Miami.

What Should You Know About Certain Contaminants?

Radon

Radon 222, or radon for short, is a colorless, odorless gas that occurs naturally in soil, air and water. Radon is formed from the radioactive decay products of natural uranium that is found in many soils. Most radon in indoor air comes from the soils below the foundation of the home, and in some locations can accumulate to dangerous levels in the absence of proper ventilation. In most homes, the health risk from radon in drinking water is very small compared to the health risk from radon in indoor air. For more information, call the EPA's Radon Hotline at 1-800-SOS-RADON.

We have detected radon in the finished water supply, as noted in the Radon Data Summary table on page 3. There is currently no federal regulation for radon levels in drinking water. Exposure to air-transmitted radon over a long period of time may cause adverse health effects.

Cryptosporidium

WASD first tested for Cryptosporidium in 1993 and has continued testing monthly since 1994. To date, neither Cryptosporidium nor Giardia – another protozoan – have been found in the source water supplying WASD's water treatment plants.

Nitrate

Although the level of nitrate (refer to the table on water quality data, p. 3) is consistently below the health effect level, the EPA requires the following information be included in this report: "Nitrate in drinking water at levels above 10 ppm is a health risk for infants of 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 from your health care provider."

Lead

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. WASD 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 1-800-426-4791 or at http://www.epa.gov/safewater/lead.

¿Qué debería saber sobre ciertos contaminantes?

Radón

Radón 222, mejor conocido simplemente como Radón, es un gas inodoro e incoloro que ocurre naturalmente en la tierra, el aire y el agua. El radón proviene del desperdicio radiactivo de productos de uranio natural que se encuentran en muchas tierras. La mayoría del radón en el aire interior viene de las tierras debajo de los cimientos del hogar y, en algunas zonas puede llegar a acumularse en niveles peligrosos si no hay ventilación apropiada. En la mayoría de los hogares, el riesgo a la salud presentado por el radón en el agua potable es muy pequeño, comparable al riesgo para la salud presentado por el Radón del aire interior. Para obtener más información, llame a la línea sobre el radón de la EPA por el 1-800-SOS-RADON.

Como aparece en la tabla de información acerca del Radón en la pagina 3, esta sustancia ha sido hallada en el punto final del suministro de agua. En la actualidad, las reglas federales no han dictado un nivel del radón en el agua potable. Estar expuesto durante un largo periodo de tiempo a gases de radón emitidos a través del aire puede causar efectos adversos de salud..

Criptoesporidio

En 1993 el Departamento comenzó a hacer pruebas para detectar criptoesporidio. A partir del año 1994, estos exámenes se llevan a cabo mensualmente. Hasta la fecha, no se ha encontrado ni criptoesporidio ni giardia, otro protozoo, en la fuente de agua que suministra a las plantas de tratamiento del Departamento.

Nitrato

Aunque el nivel de nitrato, (por favor, refiérase a la tabla sobre la calidad del agua en la página 3), está reiteradamente por debajo de la concentración en que puede tener algún efecto dañino para la salud, la EPA requiere que proveamos la siguiente información: "El nitrato, en concentraciones de 10 ppm o más, en el agua potable, constituye un riesgo a la salud de bebés de menos de seis meses de edad. Altos niveles de Nitrato puedan causar el síndrome de "Bebé Azul" o "Blue Baby". Los niveles de Nitrato pueden subir rápidamente por cortos períodos de tiempo debido a un aumento de lluvia o de actividad agrícola. Si usted cuida de un bebé, le recomendamos que consulte con su médico".

Plomo

De estar presente, niveles elevados de plomo pueden causar problemas graves de salud, especialmente para mujeres embarazadas y niños pequeños. El plomo en el agua potable deriva principalmente de materias y componentes asociados con líneas de servicio y tuberías en el hogar. WASD es responsable de proporcionar agua potable de alta calidad pero no puede controlar la variedad de materiales utilizados en los componentes de cada sistema de plomería. Si sus llaves han estado cerradas por varias horas, usted puede disminuir el potencial de haber estado expuesta al plomo dejando correr la llave entre 30 segundos a 2 minutos antes de utilizar el agua para beber o cocinar. Si tiene alguna preocupación acerca del posible contenido de plomo en su agua potable puede examinarla. Información sobre la existencia de plomo en el agua potable, métodos para examinarla y pasos que puede tomar para reducir las probabilidades que esto ocurra están disponible a través de la Línea Directa del Agua al 1-800-426-4791 o en el sitio: http://www.epa.gov/safewater/lead.

2008 Water Quality Report
2008 Informe Sobre La Calidad del Agua

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Quality On Tap!
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Water Quality

Treatment
Sampling
Monitoring

Department of Public Works
Helena Water Treatment Division

Dedicated to Safe Drinking Water
American Water Works

2009 Consumer Confidence Water Quality Report

The City of Helena Public Water System Identification, (PWSID) Number MT0000241 currently serves 8100 residential and 2152 commercial water accounts with a yearly average of 5.2 million gallons of water each day. Water is supplied to fire hydrants to ensure the safety of homes and businesses. Last year, the Water Treatment Division produced a total of 1.9 billion gallons of water with a maximum production of 12.7 million gallons on a single day. The City of Helena's Source Water Protection Plan for Public Water System can be viewed on the DEQ Web Site http://nris.state.mt.us/wis/swap/SwapQuery.asp

This year the City will complete the 1.5 million gallon clear well for disinfection and a new energy efficient High Zone Pumping Station at MRTP to improve reliability, maintain regulatory compliance, and meet future growth needs. The City's Utility Maintenance Division will replace sections of deteriorated water mains to improve system dependability, and reduce water loss due to leakage.

Water System -- To meet Helena's water needs, the City's Water Treatment Division operates two surface water treatment plants; the Missouri River Treatment Plant (MRTP) east of Helena and the Tenmile Water Treatment Facility west of Helena. Additional water is produced from the Eureka Well located at Cruise and Park Avenues. This pure groundwater source does not require further treatment.

Water Treatment – This process consists of a series of steps to refine the quality of the source or raw water. Chemicals are added to the raw water causing small particles to adhere to each other making them heavy enough to settle into a basin or collect on special media. The particles are then flushed to waste lagoons. Next the water is filtered through layers of fine anthracite coal filters and silicate sand removing suspended particles. During filtration, turbidity is removed and clear water emerges. Prior to the water being sent to the distribution system, a small amount of chlorine is added to ensure the water remains free of any virus or bacteria. These treatment processes are manned and operated by a team of highly trained, state certified water treatment professionals, and assisted by computerized supervisor control and data acquisition systems. (SCADA)

Sampling – Regular sampling and testing is an important assurance of the quality of water and includes the following:

Daily:	Chlorine Residuals, Turbidity, pH, Temperature and Color (NTU)
Weekly:	Bacteria (total coliform)
Quarterly:	Trihalomethanes, Haloaecetic Acids
Yearly:	Inorganics, Volatile Organic Contaminants, Nitrates
3 years	Lead & Copper
4 years	Radioactivity

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 Helena is responsible for providing high quality drinking water, but can not 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 1-800-426-4791** or http://www.epa.gov/safewater/lead

Radon is a naturally occurring radioactive gas in the earth's crust. It is soluble in water and is tasteless, colorless and odorless. Helena's surface and ground water sources detection ranged from 220 pCi\ l to 1770 pCi/L . The U.S. EPA is proposing a MCL of 300 pCi\L in drinking water with an alternative MCL of 4000 pCi\L for systems that implement a Multi-Media Mitigation Program. There is no federal regulation for radon levels in drinking water as of this printing**.** Exposure to air transmitted radon over a long period of time may cause adverse health effects. For additional information call the state radon program at 444-5318 or EPA's Radon Hotline (1-800-SOS-RADON).

Monitoring – Both, Energy Laboratories, Inc. & Alpine Analytical Inc. in Helena are at the heart of our quality assurance program. Their independent testing by certified chemists and technicians follows precise procedures established by the U.S. Environmental Protection Agency (EPA).

Turbidity is a measure of the clarity of water. We monitor this as an indicator of the effectiveness of our filtration system.

pH is an expression of the basic or acidic condition of a liquid. The pH scale ranges from 0 to 14. Neutral being 7, the most acidic is 0 the most caustic is 14. Natural waters typically have a pH between 6.8 and 8.5. The pH in our system has a pH of 7.2 to 8.5

Hardness is a natural characteristic of water caused by dissolved calcium and magnesium. The Maximum Contaminant Level (MCL) is 300 mg/L.

Tenmile	24.67 mg/L	1.7 grains/gal
MRTP	135.71 mg/L	9.5 grains/gal
Eureka	232.00 mg/L	16.8 grains/gal

Listed below are the substances that **were detected** and analyzed by Energy Lab Inc. for the Helena Water Treatment Division. The maximum contaminated levels (MCL) apply to the water within our distribution system, after treatment, including groundwater sources. The U.S. EPA and the State of Montana have established MCL's at levels that assure public health and safety with a very low risk of health impacts.

This table shows the results of our monitoring for the period of January 1 to December 31, 2008.

Tenmile Water Treatment Plant, MRTP, Hale/Eureka Water Sources

TEST RESULTS								
Contaminant	**Violation Y/N**	**Sample Date**	**Highest Level Detected**	**Range Detected/ RAA**	**Unit Measure**	**MCLG**	**MCL**	**Likely Source of Contamination**
Microbiological Contaminants								
1.Turbidity **Tenmile** **MRTP**	N N	May 28,08 Jun 06 08	**0.35** **0.28**		NTU	NA	TT = <0.3 NTU 95% of the time TT = 1 NTU max	Soil run off.
2. Total Organic Carbon **Tenmile** **MRTP**	N N	Jun 08 Jun 08	**7.3** **3.9**	.93-7.3 (RAA 3.54) 2.1-3.9 (RAA 3.1)	ppm	NA	TT	Naturally present in the environment.
3. Chlorine Residual **Tenmile**	N	May 08	**2.0**	0.2 - 2.0 (RAA 0.75)	ppm	MRDLG=4	MRDL=4	Water additive to control microbes.
Inorganic Contaminates								
4. Arsenic **Tenmile** **MRTP** **Hale / Eureka**	N N N	Jul 17, 08 Jul 17, 08 Jul 17, 08	**1.0** **2.0** **2.0**		ppb	NA	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
5. Copper 90th percentile of 30 samples taken	N	Apr 21, 06	**0.29**		ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
6. Lead 90th percentile of 30 samples taken	N	Apr 21, 06	**4**		ppb	0	AL= 15	Corrosion of household plumbing systems; erosion of natural deposits.
7. Nitrate + Nitrite as N **Tenmile** **MRTP** **Hale / Eureka**	N N N	Jul 17, 08 Jul 17, 08 May 16 08	**ND** **ND** **1.38**		ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage;
8. Fluoride **Tenmile** **MRTP** **Hale / Eureka**	N N N	Jul 26, 07 Jul 26, 07 Jul 17, 08	**0.20** **0.8** **0.30**		ppm	4	4	erosion of natural deposits.
Volatile Organic Contaminants (voc's)								
9. Total Trihalomethanes **Tenmile** **MRTP** **Hale/Eureka**	N N N	May 08 Jun 08 Nov 08	**84** **100** **5**	48-84 (RAA 61) 36-100 (RAA 65) 4-7 (RAA 5)	ppb	NA	80.0 RAA	By-product of drinking water chlorination.
10. Total Haloacetic Acid **Tenmile** **MRTP** **Hale/Eureka**	N N N	Feb 08 Jun 08 Oct 08	**50** **40** **1**	31-50 (RAA 38) 29-40 (RAA 34) 0-1 (RAA 1)	ppb	NA	60.0 RAA	By-product of drinking water chlorination

*__Abbreviated Definitions:__

AL	Action level. The concentration of a contaminant, which if exceeded, triggers treatment or other requirements.
NA	Not Available.
ND	No Detection.
TT	Treatment Technique. Required process intended to reduce the level of a contaminant in drinking water.
ppm or mg/L	Parts Per Million. One part per million corresponds to one minute in two years.
ppb or ug/L	Parts Per Billion. One part per billion corresponds to one minute in 2,000 years.
NTU	Nephelometric Turbidity Unit. A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
pCi/L	Picocuries per liter--measure of radioactivity in water.
MCL	Maximum Contaminant Level. Highest allowable amount of a contaminant that is allowed in drinking water.
MCLG	Maximum Contaminant Level Goal. Level of a contaminant in drinking water below which no known or expected risk to health exists. MCLG's allow for a margin of safety
MRDL	Maximum Residual Disinfectant Level. The highest level of a disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for control of microbial contaminants.
MRDLG	Maximum Residual Disinfectant Level Goal. The level of a drinking water disinfectant below which there is no known or expected risk to health.
RAA	Running Annual Average.

All sources of drinking water are subject to potential contamination by constituents that are naturally occurring or man made. Those constituents can be microbes, organic or inorganic chemicals, or radioactive materials. All 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline.

Some people may be more vulnerable to contaminants in drinking water than others. Immuno-compromised persons such as persons undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, the elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The EPA and Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline

In September 2008, The Department of Environmental Quality issued a noncompliance for monitoring due to a sampling procedural error. On September 3rd, 2008 The City of Helena pulled a bacteriological sample and received a false positive. On average, the City collects 33 samples a month. In September we had over 50 samples analyzed by 2 independent labs to verify that the City's water was indeed safe and not contaminated with bacteria. A Public notice was advertised as required by the regulatory agency.

If you have any questions about this report or concerning your water utility, please contact Donald Clark, Water/Wastewater Treatment Superintendent at 457-8556, or e-mail dclark@ci.helena.mt.us. To learn more about the City of Helena and the City's Water Utility, visit our web site at http://www.ci.helena.mt.us/.

Prepared March 30th
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Appendix F – Regulated Contaminants

(From Appendix A of Part 141, Subpart O dated June 2009)

The most recent version of Appendix A to Subpart O can be found on EPA's Web site at www.epa.gov/safewater/ccr/regulations.html.

Appendix A to Subpart O – Regulated Contaminants

Key

AL=Action Level
MCL=Maximum Contaminant Level
MCLG=Maximum Contaminant Level Goal
MFL=million fibers per liter
MRDL=Maximum Residual Disinfectant Level
MRDLG=Maximum Residual Disinfectant Level Goal
mrem/year=millirems per year (a measure of radiation absorbed by the body)
n/a=Not Applicable
NTU=Nephelometric Turbidity Units (a measure of water clarity)
pCi/L=picocuries per liter (a measure of radioactivity)
ppm=parts per million, or milligrams per liter (mg/L)
ppb=parts per billion, or micrograms per liter (µg/L)
ppt=parts per trillion, or nanograms per liter
ppq=parts per quadrillion, or picograms per liter
TT=Treatment Technique

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
Microbiological Contaminants						
Total Coliform Bacteria	MCL: (systems that collect ≥ 40 samples/ month) 5% of monthly samples are positive; (systems that collect < 40 samples/ month) 1 positive monthly sample			0	Naturally present in the environment	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 coliform and *E. coli*	0		0	0	Human and animal fecal waste	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.
Fecal Indicators (enterococci or coliphage)	TT		TT	n/a	Human and animal fecal waste	Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effect, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
Total Organic Carbon (ppm)	TT	-	TT	n/a	Naturally present in the environment	Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts 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.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
Turbidity (NTU)	TT	-	TT	n/a	Soil runoff	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.
Radioactive Contaminants						
Beta/photon emitters (mrem/yr)	4 mrem/yr	-	4	0	Decay of natural and man-made deposits	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 (pCi/L)	15 pCi/L	-	15	0	Erosion of natural deposits	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 (pCi/L)	5 pCi/L	-	5	0	Erosion of natural deposits	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 (PCi/L)	30 µg/L	-	30	0	Erosion of natural deposits	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.
Inorganic Contaminants						
Antimony (ppb)	.006	1000	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder	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 (ppb)	[1]0.010	1000	[1]10	[1]0	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes	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 (MFL)	7 MFL	-	7	7	Decay of asbestos cement water mains; Erosion of natural deposits	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.

[1] These arsenic values are effective January 23, 2006. Until then, the MCL is 0.05 mg/L and there is no MCLG.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
Barium (ppm)	2	-	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
Beryllium (ppb)	.004	1000	4	4	Discharge from metal refineries and coal-burning factories; Discharge from electrical, aerospace, and defense industries	Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.
Bromate (ppb)	.010	1000	10	0	By-product of drinking water disinfection	Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.
Cadmium (ppb)	.005	1000	5	5	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; Runoff from waste batteries and paints	Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.
Chloramines (ppm)	MRDL=4	-	MRDL=4	MRDLG =4	Water additive used to control microbes	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.
Chlorine (ppm)	MRDL=4	-	MRDL=4	MRDLG =4	Water additive used to control microbes	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 excess of the MRDL could experience stomach discomfort.
Chlorine Dioxide (ppb)	MRDL=.8	1000	MRDL =800	MRDLG =800	Water additive used to control microbes	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.
Chlorite (ppm)	1	-	1	0.8	By-product of drinking water disinfection	Some infants and young children who drink water containing chlorite in excess of the MRDL 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.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
Chromium (ppb)	.1	1000	100	100	Discharge from steel and pulp mills; Erosion of natural deposits	Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.
Copper (ppm)	AL=1.3	-	AL=1.3	1.3	Corrosion of household plumbing systems; Erosion of natural deposits	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 (ppb)	.2	1000	200	200	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories	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 (ppm)	4	-	4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling also known as dental fluorosis, may include brown staining and/or pitting of the teeth., and occurs only in developing teeth before they erupt from the gums.
Lead (ppb)	AL=.015	1000	AL=15	0	Corrosion of household plumbing systems; Erosion of natural deposits	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 [inorganic] (ppb)	.002	1000	2	2	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland	Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.
Nitrate (ppm)	10	-	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits	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.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
Nitrite (ppm)	1	-	1	1	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits	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 (ppb)	.05	1000	50	50	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines	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 (ppb)	.002	1000	2	0.5	Leaching from ore-processing sites; Discharge from electronics, glass, and drug factories	Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.
Synthetic Organic Contaminants including Pesticides and Herbicides						
2,4-D (ppb)	.07	1000	70	70	Runoff from herbicide used on row crops	Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.
2,4,5-TP [Silvex](ppb)	.05	1000	50	50	Residue of banned herbicide	Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.
Acrylamide	TT	-	TT	0	Added to water during sewage/ wastewater treatment	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 (ppb)	.002	1000	2	0	Runoff from herbicide used on row crops	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 (ppb)	.003	1000	3	3	Runoff from herbicide used on row crops	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] (nanograms/L)	.0002	1,000,000	200	0	Leaching from linings of water storage tanks and distribution lines	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.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
Carbofuran (ppb)	.04	1000	40	40	Leaching of soil fumigant used on rice and alfalfa	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 (ppb)	.002	1000	2	0	Residue of banned termiticide	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 (ppb)	.2	1000	200	200	Runoff from herbicide used on rights of way	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 (ppb)	.4	1000	400	400	Discharge from chemical factories	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 (ppb)	.006	1000	6	0	Discharge from rubber and chemical factories	Some people who drink water containing di (2-ethylhexyl) phthalate 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.
Dibromochloro-propane (ppt)	.0002	1,000,000	200	0	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards	Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive problems and may have an increased risk of getting cancer.
Dinoseb (ppb)	.007	1000	7	7	Runoff from herbicide used on soybeans and vegetables	Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.
Diquat (ppb)	.02	1000	20	20	Runoff from herbicide use	Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.
Dioxin [2,3,7,8-TCDD] (ppq)	.00000003	1,000,000,000	30	0	Emissions from waste incineration and other combustion; Discharge from chemical factories	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.
Endothall (ppb)	.1	1000	100	100	Runoff from herbicide use	Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
Endrin (ppb)	.002	1000	2	2	Residue of banned insecticide	Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.
Epichlorohydrin	TT	-	TT	0	Discharge from industrial chemical factories; An impurity of some water treatment chemicals	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 (ppt)	.00005	1,000,000	50	0	Discharge from petroleum refineries	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 (ppb)	.7	1000	700	700	Runoff from herbicide use	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 (ppt)	.0004	1,000,000	400	0	Residue of banned pesticide	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 (ppt)	.0002	1,000,000	200	0	Breakdown of heptachlor	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 (ppb)	.001	1000	1	0	Discharge from metal refineries and agricultural chemical factories	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 (ppb)	.05	1000	50	50	Discharge from chemical factories	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 (ppt)	.0002	1,000,000	200	200	Runoff/leaching from insecticide used on cattle, lumber, gardens	Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.
Methoxychlor (ppb)	.04	1000	40	40	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock	Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
Oxamyl [Vydate] (ppb)	.2	1000	200	200	Runoff/leaching from insecticide used on apples, potatoes and tomatoes	Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.
PCBs [Polychlorinated biphenyls] (ppt)	.0005	1,000,000	500	0	Runoff from landfills; Discharge of waste chemicals	Some people who drink water containing PCBs 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 (ppb)	.001	1000	1	0	Discharge from wood preserving factories	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 (ppb)	.5	1000	500	500	Herbicide runoff	Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.
Simazine (ppb)	.004	1000	4	4	Herbicide runoff	Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.
Toxaphene (ppb)	.003	1000	3	0	Runoff/leaching from insecticide used on cotton and cattle	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 (ppb)	.005	1000	5	0	Discharge from factories; Leaching from gas storage tanks and landfills	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 (ppb)	.005	1000	5	0	Discharge from chemical plants and other industrial activities	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 (ppb)	.1	1000	100	100	Discharge from chemical and agricultural chemical factories	Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
o-Dichlorobenzene (ppb)	.6	1000	600	600	Discharge from industrial chemical factories	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 (ppb)	.075	1000	75	75	Discharge from industrial chemical factories	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 (ppb)	.005	1000	5	0	Discharge from industrial chemical factories	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 (ppb)	.007	1000	7	7	Discharge from industrial chemical factories	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 (ppb)	.07	1000	70	70	Discharge from industrial chemical factories	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-Dichloroethylene (ppb)	.1	1000	100	100	Discharge from industrial chemical factories	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 (ppb)	.005	1000	5	0	Discharge from pharmaceutical and chemical factories	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 (ppb)	.005	1000	5	0	Discharge from industrial chemical factories	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 (ppb)	.7	1000	700	700	Discharge from petroleum refineries	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) (ppb)	.060	1000	60	n/a	By-product of drinking water disinfection	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 (ppb)	.1	1000	100	100	Discharge from rubber and plastic factories; Leaching from landfills	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.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
Tetrachloroethylene (ppb)	.005	1000	5	0	Discharge from factories and dry cleaners	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 (ppb)	.07	1000	70	70	Discharge from textile-finishing factories	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 (ppb)	.2	1000	200	200	Discharge from metal degreasing sites and other factories	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 (ppb)	.005	1000	5	3	Discharge from industrial chemical factories	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 (ppb)	.005	1000	5	0	Discharge from metal degreasing sites and other factories	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.
TTHMs [Total trihalomethanes] (ppb)	.10/.080	1000	100/80	n/a	By-product of drinking water disinfection	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 (ppm)	1	-	1	1	Discharge from petroleum factories	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 (ppb)	.002	1000	2	0	Leaching from PVC piping; Discharge from plastics factories	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 (ppm)	10	-	10	10	Discharge from petroleum factories; Discharge from chemical factories	Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.

Revision History

DATE	ACTION	FEDERAL REGISTER CITATION
24 August 2000	Created table	63 FR 44530 (19 August 1998) as amended by 65 FR 26024 (4 May 2000)
29 January 2001	1) Revised entries for beta/photon, alpha emitters, and combined radium, and added entry for uranium 2) Revised entry for arsenic	65 FR 76749 (7 December 2000) 66 FR 7064 (22 January 2001)
27 November 2002	3) Revised health effects language for di(2-ethylhexyl) adipate (DEHA) and di(2-ethylhexyl) phthalate (DEHP) 4) Revised the placement of regulatory and health effects information for disinfection by-products (*i.e.*, bromate, chloramines, chlorite, chlorine, and chlorine dioxide), and corrected the reference "chloride dioxide" to "chlorine dioxide."	67 FR 70855
9 December 2002	5) In the table, in the first column, in the second entry, in the second line, "andipate" was changed to read, "adipate."	67 FR 73011
25 March 2003	6) Revise the arsenic rule to express the standard as 0.010 mg/L, in order to clarify the implementation of the original rule.	68 FR 14506
8 November 2006	7) Added "Fecal Indicators (enterococci or coliphage)"	71 FR 65652