

**SUBCHAPTER H: CONSUMER CONFIDENCE REPORTS**  
**§§290.271 - 290.275**  
**Effective March 30, 2017**

**§290.271. Purpose and Applicability.**

(a) The purpose of the sections in this subchapter is to establish the minimum requirements for the content of annual reports that community water systems must deliver to their customers. These reports must contain information on the quality of the water delivered by the systems and characterize any risk from exposure to contaminants detected in the drinking water in an accurate and understandable manner. This subchapter applies only to community water systems.

(b) Each community water system must provide to its customers an annual report that contains the information specified in this subchapter.

(c) For the purposes of this section, the term "detected" shall mean the detection of a chemical at any level equal to or greater than the minimum detection level.

Adopted April 20, 2011

Effective May 15, 2011

**§290.272. Content of the Report.**

(a) Information on the source of the water delivered must be included in the report.

(1) Each report must identify the source(s) of the water delivered by the community water system by providing information on the type of the water (such as surface water or groundwater) and any commonly used name and location of the body(ies) of water.

(2) If a source water assessment has been completed, the report must notify consumers of the availability of this information and the means to obtain it. In the reports, systems should highlight significant sources of contamination in the source water area if they have readily available information.

(3) If a system has received a source water assessment from the executive director, the report must include a brief summary of the system's susceptibility to potential sources of contamination using language provided by the executive director or written by a water system official and approved by the executive director.

(b) The following explanations must be included in the annual report.

(1) Each report must contain the following definitions.

(A) Level 1 assessment--A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria were found.

(B) Level 2 assessment--A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an *Escherichia coli* (*E. coli*) maximum contaminant level (MCL) violation has occurred and/or why total coliform bacteria were found on multiple occasions.

(C) 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.

(D) Maximum contaminant level (MCL)--The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to maximum contaminant level goals as feasible using the best available treatment technology.

(E) 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 contaminants.

(F) 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.

(2) The following terms and their descriptions must be included when they appear in the report:

(A) MFL--million fibers per liter (a measure of asbestos);

(B) mrem/year--millirems per year (a measure of radiation absorbed by the body);

(C) NTU--nephelometric turbidity units (a measure of turbidity);

(D) pCi/L--picocuries per liter (a measure of radioactivity);

(E) ppb--parts per billion, or micrograms per liter ( $\mu\text{g/L}$ );

(F) ppm--parts per million, or milligrams per liter (mg/L);

(G) ppq--parts per quadrillion, or picograms per liter (pg/L);

and

(H) ppt--parts per trillion, or nanograms per liter (ng/L).

(3) A report for a community water system operating under a variance or an exemption of the Safe Drinking Water Act must include a description of the variance or the exemption granted under §290.102(b) of this title (relating to General Applicability).

(4) A report that contains data on a contaminant for which the United States Environmental Protection Agency (EPA) has set a treatment technique (TT) or an action level (AL) must include, depending on the contents of the report, the following definitions.

(A) AL--The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

(B) TT--A required process intended to reduce the level of a contaminant in drinking water.

(c) Information on detected contaminants.

(1) This subsection specifies the requirements for information to be included in each report for detected contaminants subject to mandatory monitoring, excluding *Cryptosporidium*. Mandatory monitoring is required for:

(A) regulated contaminants subject to an MCL, MRDL, AL, or TT;

and

(B) unregulated contaminants for which monitoring is required by 40 Code of Federal Regulations (CFR) §141.40, and found in §290.275(4) of this title (relating to Appendices A - D).

(2) The data relating to these detected contaminants must be displayed in one table or in several adjacent tables. Any additional monitoring results that a community water system chooses to include in its reports must be displayed separately.

(3) The data must be derived from data collected to comply with EPA and the commission monitoring and analytical requirements during the previous calendar year, except when a system is allowed to monitor for regulated

contaminants less often than once per year. In that case, the table(s) must include the date and results of the most recent sampling, and the report must include a brief statement indicating that the data presented in the report is from the most recent testing done in accordance with the regulations. The report does not need to include data that is older than five years.

(4) For detected regulated contaminants listed under §290.275 of this title, the table(s) must contain:

(A) the MCLs for those contaminants expressed as a number equal to or greater than 1.0 (as provided under §290.275 of this title);

(B) the MCLGs for those contaminants expressed in the same units as the MCLs (as provided for under §290.275 of this title);

(C) if there is no MCL for a detected contaminant, the TT or specific AL applicable to that contaminant; and

(D) for contaminants subject to an MCL, except turbidity, total coliform, fecal coliform, and *E. coli* the highest contaminant level used to determine compliance with *National Primary Drinking Water Regulations* (NPDWR) and the range of detected levels.

(i) For contaminants subject to MCLs, except turbidity, total coliform, fecal coliform, and *E. coli*, when sampling takes place once per year or less often, the table(s) must contain the highest detected level at any sampling point and the range of detected levels expressed in the same units as the MCL.

(ii) When sampling takes place more than once per year at each sampling point, the table(s) must contain the highest average of any of the sampling points and the range of all sampling points expressed in the same units as the MCL.

(iii) In accordance with date requirements included in the table under §290.115(a) of this title (relating to Stage 2 Disinfection Byproducts (TTHM and HAA5)), entitled "Date to Start Stage 2 Compliance," for the MCLs for total trihalomethanes (TTHM) and haloacetic acids (HAA5), systems must include the highest locational running annual average for TTHM and HAA5 and the range of individual sample results for all monitoring locations expressed in the same units as the MCL. If more than one location exceeds the TTHM or HAA5 MCL, the system must include the locational running annual averages for all sampling points that exceed the MCL.

(iv) When compliance with any MCL is determined on a system-wide basis by calculating a running annual average of all samples at all sampling points, the table(s) must include the average and range of detections expressed in the same units as the MCL.

(v) When the executive director allows the rounding of results to determine compliance with the MCL, rounding should be done after multiplying the results by the factor listed under §290.275 of this title.

(E) When turbidity is reported under §290.111 of this title (relating to Surface Water Treatment), the table(s) must contain the highest single measurement and the lowest monthly percentage of samples meeting the turbidity limits specified in that section for the filtration technology being used. The report should include an explanation of the reasons for measuring turbidity.

(F) When lead and copper are reported, the table(s) must contain the 90th percentile value of the most recent round of sampling and the number of sampling sites exceeding the AL.

(G) When *E. coli* is reported, the table(s) shall contain the total number of *E. coli*-positive samples.

(H) The table(s) must contain information on the likely source(s) of detected contaminants based on the operator's knowledge. Specific information regarding contaminants may be available in sanitary surveys or source water assessments and should be used when available. If the operator lacks specific information on the likely source, the report must include one or more typical sources most applicable to the system for any particular contaminant listed under §290.275 of this title.

(i) If a community water system distributes water to its customers from multiple hydraulically independent distribution systems that are fed by different raw water sources, the table(s) must contain a separate column for each service area, and the report must identify each separate distribution system. Systems may produce separate reports tailored to include data for each service area.

(ii) The table(s) must clearly identify any data indicating violations of MCLs, MRDLs, or TTs. The report must contain a clear and readily understandable explanation of the violation. The explanation must include the length of the violation, the potential adverse health effects, and the actions taken by the system to address the violation. To describe the potential health effects, the system must use the relevant language contained under §290.275 of this title.

(5) For detected unregulated contaminants found under §290.275 of this title, for which monitoring is required (except *Cryptosporidium*), the table(s) must contain the average and range of concentrations at which the contaminant was detected. The report must include the following explanation: "Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted."

(d) Information on *Cryptosporidium*, radon, and other contaminants.

(1) If the system has performed any monitoring for *Cryptosporidium*, the report must include a summary of the results of any detections and an explanation of the significance of the results.

(2) If the system has performed any monitoring for radon, which indicates that radon may be present in the finished water, the report must include the results of the monitoring and an explanation of the significance of the results.

(3) If the system has performed additional monitoring, which indicates the presence of other contaminants in the finished water, the executive director strongly encourages systems to report any results which may indicate a health concern. To determine if the results may indicate a health concern, the executive director recommends that systems find out if the EPA has proposed a standard in the NPDWR or issued a health advisory for any particular contaminant. This information may be obtained by calling the Safe Drinking Water Hotline at (800) 426-4791. The executive director considers detections that are above a proposed MCL or health advisory level to indicate possible health concerns. For such contaminants, the executive director recommends that the report include the results of the monitoring and an explanation of the significance of the results. The explanation should note the existence of a health advisory or a proposed regulation.

(4) Community water systems that exceed the secondary constituent level for fluoride as described in §290.118 of this title (relating to Secondary Constituent Levels) but are below the maximum contaminant level listed in §290.106 of this title (relating to Inorganic Contaminants) shall notify the public using the mandatory language as described in 40 CFR §141.208(c).

(e) Compliance with NPDWR. In addition to the requirements in subsection (c)(4)(H)(ii) of this section, the report must note any violation that occurred during the year covered by the report of a requirement listed in paragraphs (1) - (8) of this subsection.

(1) The report must include a clear and readily understandable explanation of each violation of monitoring and reporting of compliance data and explain any adverse health effects and steps the system has taken to correct the violation.

(2) The report must include a clear and readily understandable explanation of each violation of filtration and disinfection prescribed by Subchapter F of this chapter (relating to Drinking Water Standards Governing Drinking Water Quality and Reporting Requirements for Public Water Systems) and explain any adverse health effects and steps the system has taken to correct the violation. This applies both to systems that have failed to install adequate filtration, disinfection equipment, or processes, and to systems that have had a failure of such equipment or processes, each of which constitutes a violation. In either case, the report must include the following language as part of the explanation of potential adverse health effects: "Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches."

(3) The report must include a clear and readily understandable explanation of each violation of the lead and copper control requirements prescribed by §290.117 of this title (relating to Regulation of Lead and Copper). For systems that fail to take one or more actions prescribed by §290.117(g), (h), and (i) of this title, the report must include the applicable health effects language of §290.275(3) of this title for lead, copper, or both and the steps the system has taken to correct the violation.

(4) The report must include a clear and readily understandable explanation of each violation of TTs for Acrylamide and Epichlorohydrin prescribed by §290.107 of this title (relating to Organic Contaminants). If a system violates these requirements, the report must include the relevant health effects language from §290.275 of this title and the steps the system has taken to correct the violation.

(5) The report must include a clear and readily understandable explanation of each violation of recordkeeping of compliance data and explain any adverse health effects and steps the system has taken to correct the violation.

(6) The report must include a clear and readily understandable explanation of each violation of special monitoring requirements for unregulated contaminants and special monitoring for sodium as prescribed by 40 CFR §141.40 and §141.41 and explain any adverse health effects and steps the system has taken to correct the violation.

(7) For systems required to conduct initial distribution sampling evaluation (IDSE) sampling in accordance with §290.115(c)(5) of this title, the system is required to include individual sample results for the IDSE when determining the range of TTHM and HAA5 results to be reported in the annual Consumer Confidence Report for the calendar year that the IDSE samples were taken.

(8) The report must include a clear and readily understandable explanation of each violation of the terms of a variance, exemption, administrative order, or judicial order and explain any adverse health effects and steps the system has taken to correct the violation.

(f) Variances and exemptions. If a system is operating under the terms of a variance or exemption issued under §290.102(b) of this title, the report must contain:

(1) an explanation of the variance or exemption;

(2) the date on which the variance or exemption was issued and on which it expires;

(3) a brief status report on the steps the system is taking, such as installing treatment processes or finding alternative sources of water, to comply with the terms and schedules of the variance or exemption; and

(4) a notice of any opportunity for public input as the review or renewal of the variance or exemption.

(g) Additional information.

(1) The report must contain a brief explanation regarding contaminants that may reasonably be expected to be found in drinking water (including bottled water). This explanation may include the language contained within subparagraphs (A) - (C) of this paragraph, or systems may include their own comparable language. The report must include the language of subparagraphs (D) and (E) of this paragraph.

(A) 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.

(B) Contaminants that may be present in source water include:

(i) microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;

(ii) inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

(iii) pesticides and herbicides, which might have a variety of sources such as agriculture, urban storm water runoff, and residential uses;

(iv) 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 storm water runoff, and septic systems; and

(v) radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities.

(C) In order to ensure that tap water is safe to drink, the EPA prescribes regulations that 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 that must provide the same protection for public health.

(D) Contaminants may be found in drinking water that may cause taste, color, or odor problems. These types of problems are not necessarily causes for health concerns. For more information on taste, odor, or color of drinking water, please contact the system's business office.

(E) 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 at (800) 426-4791.

(2) The report must include the telephone number of the owner, operator, or designee of the community water system as an additional source of information concerning the report.

(3) Each English language report must include the following statement in a prominent place on the first page: "Este reporte incluye informacion importante sobre el agua para tomar. Para asistencia en español, favor de llamar al telefono

(XXX) XXX-XXXX." In addition to this statement in Spanish, for communities with a large proportion of limited English proficiency residents, as determined by the executive director, the report must contain information in the appropriate language(s) regarding the importance of the report or contain a telephone number or address where such residents may contact the system to obtain a translated copy of the report or assistance in the appropriate language.

(4) The report must include information about opportunities for public participation in decisions that may affect the quality of the water (e.g., time and place of regularly scheduled board meetings). Investor-owned utilities are encouraged to conduct public meetings, but must include a phone number for public input.

(5) The systems may include such additional information for public education consistent with, and not detracting from, the purposes of the report.

(6) Systems that use an interconnect or emergency source to augment the drinking water supply during the calendar year of the report must provide the source of the water, the length of time used, an explanation of why it was used, and whom to call for the water quality information.

(7) Beginning December 1, 2009, any groundwater system that receives notice from a laboratory of a fecal indicator positive groundwater source sample that is not invalidated by the executive director under §290.109(e) of this title (relating to Microbial Contaminants) must inform its customers of any fecal indicator positive groundwater source sample in the next report. The system must continue to inform the public annually until the executive director determines that the fecal contamination in the groundwater source is addressed under §290.116(a) of this title (relating to Groundwater Corrective Actions and Treatment Techniques). Each report must include the following elements:

(A) the source of the fecal contamination (if the source is known) and the dates of the fecal indicator positive groundwater source samples;

(B) actions taken to address the fecal contamination in the groundwater source as directed by §290.116 of this title and the date of such action;

(C) for each fecal contamination in the groundwater source that has not been addressed under §290.116 of this title, the plan approved by the executive director and schedule for correction, including interim measures, progress to date, and any interim measures completed; and

(D) for a fecal indicator positive groundwater source sample that is not invalidated by the executive director under §290.109(e) of this title, the potential health effects using the health effects language of §290.275(3) of this title.

(8) Beginning December 1, 2009, any groundwater system that receives notice from the executive director of a significant deficiency must inform its customers of any significant deficiency that is uncorrected at the time of the next report. The system must continue to inform the public annually until the executive director determines that particular significant deficiency is corrected under §290.116 of this title. Each report must include the following elements:

(A) the nature of the particular significant deficiency and the date the significant deficiency was identified by the executive director;

(B) for each significant deficiency, the plan approved by the executive director and schedule for correction, including interim measures, progress to date, and any interim measures completed; and

(C) if corrected before the next report, the nature of the significant deficiency, how the deficiency was corrected, and the date of the corrections.

(9) Any public water system required to comply with the Level 1 or Level 2 assessment requirements under §290.109 and §290.116 of this title that is not due to an *E. coli* MCL violation shall include in the report the information in subparagraph (A) of this paragraph. In addition to the elements in subparagraph (A) of this paragraph, the public water system shall include the elements in subparagraph (B) of this paragraph when it has a Level 1 treatment technique trigger as specified under §290.109(c)(1) of this title and shall include the elements in subparagraph (C) of this paragraph in the report when it has a Level 2 treatment technique trigger as specified under §290.109(c)(2)(B) of this title. Furthermore, any public water system that failed to complete all the required assessments shall also include the statement in subparagraph (D)(i) of this paragraph. Any public water system that failed to correct all identified sanitary defects shall also include the statement in subparagraph (D)(ii) of this paragraph.

(A) Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

(B) During the past year we were required to conduct {INSERT NUMBER OF LEVEL 1 ASSESSMENTS} Level 1 assessment(s). {INSERT NUMBER OF LEVEL 1 ASSESSMENTS} Level 1 assessment(s) were completed. In addition, we were required to take {INSERT NUMBER OF CORRECTIVE ACTIONS} corrective actions and we completed {INSERT NUMBER OF CORRECTIVE ACTIONS} of these actions.

(C) During the past year {INSERT NUMBER OF LEVEL 2 ASSESSMENTS} Level 2 assessments were required to be completed for our water system. {INSERT NUMBER OF LEVEL 2 ASSESSMENTS} Level 2 assessments were completed. In addition, we were required to take {INSERT NUMBER OF CORRECTIVE ACTIONS} corrective actions and we completed {INSERT NUMBER OF CORRECTIVE ACTIONS} of these actions.

(D) Any public water system that failed to complete all the required assessments or correct all identified sanitary defects, is in violation of the treatment technique requirement and shall also include one or both of the following statements as appropriate:

(i) During the past year we failed to conduct all of the required assessment(s).

(ii) During the past year we failed to correct all identified defects that were found during the assessment.

(10) Any public water system required to comply with the Level 2 assessment requirements under §290.109 and §290.116 of this title that is due to an *E. coli* MCL violation shall include in the report the information in subparagraph (A) of this paragraph. In addition to the elements in subparagraph (A) of this paragraph, the public water system shall include the elements in subparagraph (B) of this paragraph when it has a Level 2 treatment technique trigger as specified under §290.109(c)(2) of this title and shall include the following elements in subparagraph (C) in the report when it has a Level 2 treatment technique trigger as specified under §290.109(c)(2)(A). Furthermore, any public water system that failed to complete all the required assessments shall also include the statement in subparagraph (C)(i) of this paragraph. Any public water system that failed to correct all identified sanitary defects shall also include the statement in subparagraph (C)(ii) of this paragraph.

(A) *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young

children, the elderly, and people with severely compromised immune systems. We found *E. coli* bacteria, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

(B) We were required to complete a Level 2 assessment because we found *E. coli* in our water system. In addition, we were required to take {INSERT NUMBER OF CORRECTIVE ACTIONS} corrective actions and we completed {INSERT NUMBER OF CORRECTIVE ACTIONS} of these actions.

(C) Any public water system that has failed to complete the required assessment or correct all identified sanitary defects, is in violation of the treatment technique requirement and shall also include one or both of the following statements, as appropriate:

(i) We failed to conduct the required assessment.

(ii) We failed to correct all sanitary defects that were identified during the assessment that we conducted.

(11) If a public water system detects *E. coli* and has violated the *E. coli* MCL, in addition to completing the table as required in subsection (c)(4) of this section, the system shall include one or more of the following statements to describe any noncompliance, as applicable:

(A) We had an *E. coli*-positive repeat sample following a total coliform-positive routine sample.

(B) We had a total coliform-positive repeat sample following an *E. coli*-positive routine sample.

(C) We failed to take all required repeat samples following an *E. coli*-positive routine sample.

(D) We failed to test for *E. coli* when any repeat sample tests positive for total coliform.

(12) Every report must include the following lead-specific information - a short informational statement about lead in drinking water and its effect on children.

(A) The statement must include the information set forth in this example 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 two 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 <http://www.epa.gov/safewater/lead>."

(B) A public water system may write its own educational statement, but only in consultation with the executive director.

(h) If a public water system detects *E. coli* and has not violated the *E. coli* MCL, in addition to completing the table as required in subsection (c)(4) of this section, the system may include a statement that explains that although they have detected *E. coli*, they are not in violation of the *E. coli* MCL.

(i) Customer notification of water loss by a retail public utility. A retail public utility required to file a water loss audit with the Texas Water Development Board under the provisions of Texas Water Code, §16.0121, shall notify its customers of its water loss reported in the water loss audit by including the water loss information on or with the next report following the filing of the water loss audit, unless the retail public utility elects to notify its customers of its water loss reported in the water loss audit by including the water loss information on or with the next bill sent to its customers following the filing of the water loss audit in accordance with §291.87 of this title (relating to Billing).

Adopted March 8, 2017

Effective March 30, 2017

### **§290.273. Required Additional Health Information.**

(a) All reports must prominently display the following language on the first page of the consumer confidence report or in bold print on the second page of the report: "You may be more vulnerable than the general population to certain microbial contaminants, such as *Cryptosporidium*, in drinking water. Infants, some elderly, or immunocompromised persons such as those undergoing chemotherapy for cancer; those who have undergone organ transplants; those who are undergoing treatment with steroids; and people with HIV/AIDS or other immune system disorders can be particularly at risk from infections. You should seek advice about drinking water from your physician or health care provider. Additional guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the Safe Drinking Water Hotline at (800) 426-4791."

(b) A system that detects arsenic levels above 5 micrograms per liter but below the maximum contaminant level (MCL) shall include in its report a short informational statement about arsenic using the following language: "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."

(c) A system that detects nitrate at levels above 5 mg/L, but below the MCL shall include a short informational statement about the impacts of nitrate on children using the following language: "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."

(d) Systems collecting 20 or more samples that detect lead above the action level in greater than 5.0% of homes sampled shall include a short informational statement about the special impact of lead on children using the following language: "Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at the homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to two minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline at (800) 426-4791."

(e) Any water system subject to any or all of subsections (b) - (d) of this section may seek approval from the executive director to write its own alternative educational informational statement.

(f) Public water systems that detect total trihalomethanes above 0.080 mg/L as a running annual average shall include health effects language provided in §290.275(3) of this title (relating to Appendices A - D), Appendix C, paragraph (81).

Adopted December 19, 2007

Effective January 9, 2008

**§290.274. Report Delivery and Recordkeeping.**

(a) Except as provided in subsection (i) of this section, each community water system shall mail or otherwise directly deliver one copy of the report to each bill paying customer by July 1 of each year. Each new community water system shall deliver its first report by July 1 of the year after its first full calendar year in operation and annually thereafter. In addition, each community water system shall provide a copy of the report to each new customer upon request.

(b) In addition to delivering a report to each customer, the system shall make a good-faith effort to reach consumers who do not get water bills, using means recommended by the executive director. An adequate good-faith effort should be tailored to the consumers who are served by the system but are not bill-paying customers, such as renters or workers. A good-faith effort to reach such consumers should include a mix of methods appropriate to the particular system such as: posting the reports on the Internet; mailing to postal patrons in metropolitan areas; advertising the availability of the report in the news media; publication in a local newspaper; posting in public places such as cafeterias or lunchrooms of public buildings; delivery of multiple copies for distribution for single-billed customers such as apartment buildings or large private employers; and delivery to community organizations.

(c) Each community water system shall certify to the executive director that the report has been distributed and that the information in the report is correct and consistent with the compliance monitoring data previously submitted to the executive director. This certification and a copy of the report must be mailed to the executive director by July 1 of each year.

(d) Each community water system shall deliver the report to any other agency or clearinghouse identified by the executive director no later than the date the system is required to distribute the report to its customers.

(e) Each community water system shall make its report available to the public upon request.

(f) Each community water system serving 100,000 or more people shall post its current year's report to a publicly accessible site on the Internet.

(g) Any system providing water to a community water system shall deliver the applicable information required by §290.272 of this title (relating to the Content of the Report) to the receiving systems by April 1 and shall certify to the executive director that the required information has been delivered. This certification must be delivered to the executive director by May 1 of each year.

(h) Any system subject to this subchapter shall retain copies of its consumer confidence reports for no less than five years.

(i) The executive director may waive the mailing requirement of subsection (a) of this section for a community water system serving 500 or fewer persons provided that the system provides notice at least once per year by July 1 to its customers by mail, door-to-door delivery, or by posting in an appropriate location that the report is available upon request.

Adopted December 15, 2004

Effective January 6, 2005

**§290.275. Appendices A - D.**

The following appendices are integral components of the subchapter.

(1) Appendix A--Converting Maximum Contaminant Level Compliance Values for Consumer Confidence Reports (CCR).

Figure: 30 TAC §290.275(1)

| <b>Appendix A - Converting Maximum Contaminant Level Compliance Values for Consumer Confidence Reports (CCR)</b> |  |                       |                         |                          |
|--|--|-----------------------|-------------------------|--------------------------|
| <b>Key</b>   |  |                       |                         |                          |
| AL   | Action Level   |                       |                         |                          |
| MCL  | Maximum Contaminant Level  |                       |                         |                          |
| MCLG   | Maximum Contaminant Level Goal                                   |                       |                         |                          |
| MFL  | million fibers per liter   |                       |                         |                          |
| mrem/year  | millirems per year (a measure of radiation absorbed by the body) |                       |                         |                          |
| n/a  | Not Applicable   |                       |                         |                          |
| NTU  | Nephelometric Turbidity Units                                    |                       |                         |                          |
| 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  |                       |                         |                          |
| <b>Contaminant</b>   | <b>MCL in compliance</b>   | <b>multiply by...</b> | <b>MCL in CCR units</b> | <b>MCLG in CCR units</b> |

|  | <b>units<br/>(mg/L)</b>  |  |  |     |
|--|--|--|--|-----|
| <b>Microbiological Contaminants</b>            |  |  |  |     |
| 1. Total Coliform Bacteria                     |  |  | TT   | 0   |
| 2. <i>E. coli</i>                              | Routine and repeat samples are total coliform-positive and either is <i>E. coli</i> -positive or system fails to take repeat samples following <i>E. coli</i> -positive routine sample or system fails to analyze total coliform-positive repeat sample for <i>E. coli</i> . |  | Routine and repeat samples are total coliform-positive and either is <i>E. coli</i> -positive or system fails to take repeat samples following <i>E. coli</i> -positive routine sample or system fails to analyze total coliform-positive repeat sample for <i>E. coli</i> . | 0   |
| 3. Fecal indicators (enterococci or coliphage) |  |  | TT. An uncorrected fecal indicator positive sample at the raw groundwater source is a TT for the   | n/a |

|                                 |           |      |                          |     |
|---------------------------------|-----------|------|--------------------------|-----|
|                                 |           |      | Ground Water Rule (GWR). |     |
| 4. Total organic carbon         |           |      | TT (ppm)                 | n/a |
| 5. Turbidity                    |           |      | TT (NTU)                 | n/a |
| <b>Radioactive Contaminants</b> |           |      |                          |     |
| 6. Beta/photon emitters         | 4 mrem/yr |      | 4 mrem/yr                | 0   |
| 7. Alpha emitters               | 15 pCi/L  |      | 15 pCi/L                 | 0   |
| 8. Combined radium              | 5 pCi/L   |      | 5 pCi/L                  | 0   |
| 9. Uranium                      | 30 µg/L   |      | 30 µg/L                  | 0   |
| <b>Inorganic Contaminants</b>   |           |      |                          |     |
| 10. Antimony                    | .006      | 1000 | 6 ppb                    | 6   |
| 11. Arsenic                     | .010      | 1000 | 10 ppb                   | n/a |
| 12. Asbestos                    | 7 MFL     |      | 7 MFL                    | 7   |
| 13. Barium                      | 2         |      | 2 ppm                    | 2   |
| 14. Beryllium                   | .004      | 1000 | 4 ppb                    | 4   |
| 15. Bromate                     | .010      | 1000 | 10 ppb                   | 0   |
| 16. Cadmium                     | .005      | 1000 | 5 ppb                    | 5   |
| 17. Chloramines                 | MRDL=4    |      | MRDL=4 ppm               | 4   |
| 18. Chlorine                    | MRDL=4    |      | MRDL=4 ppm               | 4   |
| 19. Chlorine Dioxide            | MRDL=.8   | 1000 | MRDL=800 ppb             | 800 |
| 20. Chlorite                    | 1.0       |      | 1 ppm                    | 0.8 |
| 21. Chromium                    | .1        | 1000 | 100 ppb                  | 100 |
| 22. Copper                      | AL=1.3    |      | AL=1.3 ppm               | 1.3 |
| 23. Cyanide                     | .2        | 1000 | 200 ppb                  | 200 |
| 24. Fluoride                    | 4         |      | 4 ppm                    | 4   |
| 25. Lead                        | AL=.015   | 1000 | AL=15 ppb                | 0   |
| 26. Mercury (inorganic)         | .002      | 1000 | 2 ppb                    | 2   |

|   |           |               |         |     |
|---|-----------|---------------|---------|-----|
| 27. Nitrate (as Nitrogen)   | 10        |               | 10 ppm  | 10  |
| 28. Nitrite (as Nitrogen)   | 1         |               | 1 ppm   | 1   |
| 29. Selenium  | .05       | 1000          | 50 ppb  | 50  |
| 30. Thallium  | .002      | 1000          | 2 ppb   | 0.5 |
| <b>Synthetic Organic Contaminants including Pesticides and Herbicides</b> |           |               |         |     |
| 31. 2,4-D   | .07       | 1000          | 70 ppb  | 70  |
| 32. 2,4,5-TP (Silvex)   | .05       | 1000          | 50 ppb  | 50  |
| 33. Acrylamide  |           |               | TT      | 0   |
| 34. Alachlor  | .002      | 1000          | 2 ppb   | 0   |
| 35. Atrazine  | .003      | 1000          | 3 ppb   | 3   |
| 36. Benzo(a)pyrene (PAH)  | .0002     | 1,000,000     | 200 ppt | 0   |
| 37. Carbofuran  | .04       | 1000          | 40 ppb  | 40  |
| 38. Chlordane   | .002      | 1000          | 2 ppb   | 0   |
| 39. Dalapon   | .2        | 1000          | 200 ppb | 200 |
| 40. Di(2-ethylhexyl) adipate  | .4        | 1000          | 400 ppb | 400 |
| 41. Di(2-ethylhexyl) phthalate  | .006      | 1000          | 6 ppb   | 0   |
| 42. Dibromochloropropane  | .0002     | 1,000,000     | 200 ppt | 0   |
| 43. Dinoseb   | .007      | 1000          | 7 ppb   | 7   |
| 44. Diquat  | .02       | 1000          | 20 ppb  | 20  |
| 45. Dioxin (2,3,7,8-TCDD)   | .00000003 | 1,000,000,000 | 30 ppq  | 0   |
| 46. Endothall   | .1        | 1000          | 100 ppb | 100 |
| 47. Endrin  | .002      | 1000          | 2 ppb   | 2   |
| 48. Epichlorohydrin   |           |               | TT      | 0   |
| 49. Ethylene dibromide  | .00005    | 1,000,000     | 50 ppt  | 0   |
| 50. Glyphosate  | .7        | 1000          | 700 ppb | 700 |
| 51. Heptachlor  | .0004     | 1,000,000     | 400 ppt | 0   |

|                                      |       |           |         |     |
|--------------------------------------|-------|-----------|---------|-----|
| 52. Heptachlor epoxide               | .0002 | 1,000,000 | 200 ppt | 0   |
| 53. Hexachlorobenzene                | .001  | 1000      | 1 ppb   | 0   |
| 54. Hexachloro-cyclopentadiene       | .05   | 1000      | 50 ppb  | 50  |
| 55. Lindane                          | .0002 | 1,000,000 | 200 ppt | 200 |
| 56. Methoxychlor                     | .04   | 1000      | 40 ppb  | 40  |
| 57. Oxamyl (Vydate)                  | .2    | 1000      | 200 ppb | 200 |
| 58. PCBs (Polychlorinated biphenyls) | .0005 | 1,000,000 | 500 ppt | 0   |
| 59. Pentachlorophenol                | .001  | 1000      | 1 ppb   | 0   |
| 60. Picloram                         | .5    | 1000      | 500 ppb | 500 |
| 61. Simazine                         | .004  | 1000      | 4 ppb   | 4   |
| 62. Toxaphene                        | .003  | 1000      | 3 ppb   | 0   |
| <b>Volatile Organic Contaminants</b> |       |           |         |     |
| 63. Benzene                          | .005  | 1000      | 5 ppb   | 0   |
| 64. Carbon tetrachloride             | .005  | 1000      | 5 ppb   | 0   |
| 65. Chlorobenzene                    | .1    | 1000      | 100 ppb | 100 |
| 66. o-Dichlorobenzene                | .6    | 1000      | 600 ppb | 600 |
| 67. p-Dichlorobenzene                | .075  | 1000      | 75 ppb  | 75  |
| 68. 1,2-Dichloroethane               | .005  | 1000      | 5 ppb   | 0   |
| 69. 1,1-Dichloroethylene             | .007  | 1000      | 7 ppb   | 7   |
| 70. cis-1,2-Dichloroethylene         | .07   | 1000      | 70 ppb  | 70  |
| 71. trans-1,2-Dichloroethylene       | .1    | 1000      | 100 ppb | 100 |
| 72. Dichloromethane                  | .005  | 1000      | 5 ppb   | 0   |
| 73. 1,2-Dichloropropane              | .005  | 1000      | 5 ppb   | 0   |

|                                   |       |      |         |     |
|-----------------------------------|-------|------|---------|-----|
| 74. Ethylbenzene                  | .7    | 1000 | 700 ppb | 700 |
| 75. Haloacetic acids              | 0.060 | 1000 | 60 ppb  | n/a |
| 76. Styrene                       | .1    | 1000 | 100 ppb | 100 |
| 77. Tetrachloroethylene           | .005  | 1000 | 5 ppb   | 0   |
| 78. 1,2,4-Trichlorobenzene        | .07   | 1000 | 70 ppb  | 70  |
| 79. 1,1,1-Trichloroethane         | .2    | 1000 | 200 ppb | 200 |
| 80. 1,1,2-Trichloroethane         | .005  | 1000 | 5 ppb   | 3   |
| 81. Trichloroethylene             | .005  | 1000 | 5 ppb   | 0   |
| 82. TTHMs (Total trihalomethanes) | .080  | 1000 | 80 ppb  | n/a |
| 83. Toluene                       | 1     |      | 1 ppm   | 1   |
| 84. Vinyl Chloride                | .002  | 1000 | 2 ppb   | 0   |
| 85. Xylenes                       | 10    |      | 10 ppm  | 10  |

(2) Appendix B--Sources of Regulated Contaminants.

Figure: 30 TAC §290.275(2)

| <b>Appendix B - Sources of Regulated Contaminants</b> |  |
|---|--|
| Key   |  |
| AL  | Action Level   |
| MCL   | Maximum Contaminant Level  |
| MCLG  | Maximum Contaminant Level Goal                                   |
| MFL   | million fibers per liter   |
| mrem/year   | millirems per year (a measure of radiation absorbed by the body) |
| n/a   | Not Applicable   |
| NTU   | Nephelometric Turbidity Units                                    |
| 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)                              | MCLG                | MCL  | Major sources in drinking water                            |
| <b>Microbiological Contaminants</b>              |                     |  |  |
| 1. Total Coliform Bacteria                       | 0                   | TT   | Naturally present in the environment.                      |
| 2. <i>E. coli</i>                                | 0                   | Routine and repeat samples are total coliform-positive and either is <i>E. coli</i> -positive or system fails to take repeat samples following <i>E. coli</i> -positive routine sample or system fails to analyze total coliform-positive repeat sample for <i>E. coli</i> . | Human and animal fecal waste.                              |
| 3. Fecal indicators (enterococci or coliphage)   | n/a                 | TT. An uncorrected fecal indicator positive sample at the raw groundwater source is a TT for the Ground Water Rule (GWR).  | Human and animal fecal waste.                              |
| 4. Total organic carbon (ppm)                    | n/a                 | TT   | Naturally present in the environment.                      |
| 5. Turbidity                                     | n/a                 | TT   | Soil runoff.   |
| ( <i>Cryptosporidium</i> )*                      | (0)                 | (TT)   | (Human and animal fecal waste.)                            |
| ( <i>Legionella</i> )*                           | (0)                 | (TT)   | (Found naturally in water; multiplies in heating systems.) |
| *Federal and state surface water treatment rules |                     |  |  |

|   |     |    |   |
|---|-----|----|---|
| require systems using surface water or ground water under the direct influence of surface water to (1) disinfect their water, and (2) filter their water so that these contaminants are controlled. |     |    |   |
| <b>Radioactive Contaminants</b>   |     |    |   |
| 6. Beta/photon emitters (mrem/yr)   | 0   | 4  | Decay of natural and man-made deposits.   |
| 7. Alpha emitters (pCi/L)   | 0   | 15 | Erosion of natural deposits.  |
| 8. Combined radium (µg/L)   | 0   | 5  | Erosion of natural deposits.  |
| <b>Inorganic Contaminants</b>   |     |    |   |
| 9. Uranium (µg/L)   | 0   | 30 | Erosion of natural deposits.  |
| 10. Antimony (ppb)  | 6   | 6  | Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder.                    |
| 11. Arsenic (ppb)   | n/a | 10 | Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes. |
| 12. Asbestos (MFL)  | 7   | 7  | Decay of asbestos cement water mains; Erosion of natural deposits.                                      |
| 13. Barium (ppm)  | 2   | 2  | Discharge of drilling wastes; Discharge from metal refineries;  |

|                            |         |        |  |
|----------------------------|---------|--------|--|
|                            |         |        | Erosion of natural deposits.   |
| 14. Beryllium (ppb)        | 4       | 4      | Discharge from metal refineries and coal-burning factories; Discharge from electrical, aerospace, and defense industries.            |
| 15. Bromate (ppb)          | 0       | 10     | By-product of drinking water disinfection.   |
| 16. Cadmium (ppb)          | 5       | 5      | Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; runoff from waste batteries and paints. |
| 17. Chloramines (ppm)      | MRDLG=4 | MRDL=4 | Water additive used to control microbes.   |
| 18. Chlorine (ppm)         | MRDLG=4 | MRDL=4 | Water additive used to control microbes.   |
| 19. Chlorine Dioxide (ppb) | 800     | 800    | Water additive used to control microbes.   |
| 20. Chlorite (ppm)         | 1.0     | 1.0    | By-product of drinking water disinfection.   |
| 21. Chromium (ppb)         | 100     | 100    | Discharge from steel and pulp mills; Erosion of natural deposits.  |

|                                 |     |        |  |
|---------------------------------|-----|--------|--|
| 22. Copper (ppm)                | 1.3 | AL=1.3 | Corrosion of household plumbing systems; Erosion of natural deposits.  |
| 23. Cyanide (ppb)               | 200 | 200    | Discharge from steel/metal factories; Discharge from plastic and fertilizer factories.                                     |
| 24. Fluoride (ppm)              | 4   | 4      | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories. |
| 25. Lead (ppb)                  | 0   | AL=15  | Corrosion of household plumbing systems; Erosion of natural deposits.  |
| 26. Mercury (inorganic) (ppb)   | 2   | 2      | Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland.         |
| 27. Nitrate (as Nitrogen) (ppm) | 10  | 10     | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.                               |

|   |     |     |   |
|---|-----|-----|---|
| 28. Nitrite (as Nitrogen) (ppm)   | 1   | 1   | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.      |
| 29. Selenium (ppb)  | 50  | 50  | Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines. |
| 30. Thallium (ppb)  | 0.5 | 2   | Leaching from ore-processing sites; Discharge from electronics, glass, and drug factories.        |
| <b>Synthetic Organic Contaminants including Pesticides and Herbicides</b> |     |     |   |
| 31. 2,4-D (ppb)   | 70  | 70  | Runoff from herbicide used on row crops.  |
| 32. 2,4,5-TP (Silvex) (ppb)   | 50  | 50  | Residue of banned herbicide.  |
| 33. Acrylamide  | 0   | TT  | Added to water during sewage/wastewater treatment.  |
| 34. Alachlor (ppb)  | 0   | 2   | Runoff from herbicide used on row crops.  |
| 35. Atrazine (ppb)  | 3   | 3   | Runoff from herbicide used on row crops.  |
| 36. Benzo(a)pyrene (PAH) (nanograms/L)                                    | 0   | 200 | Leaching from linings of water storage tanks and distribution lines.                              |

|                                     |     |     |  |
|-------------------------------------|-----|-----|--|
| 37. Carbofuran (ppb)                | 40  | 40  | Leaching of soil fumigant used on rice and alfalfa.  |
| 38. Chlordane (ppb)                 | 0   | 2   | Residue of banned termiticide.   |
| 39. Dalapon (ppb)                   | 200 | 200 | Runoff from herbicide used on rights of way.   |
| 40. Di(2-ethylhexyl) adipate (ppb)  | 400 | 400 | Discharge from chemical factories.   |
| 41. Di(2-ethylhexyl)phthalate (ppb) | 0   | 6   | Discharge from rubber and chemical factories.  |
| 42. Dibromochloropropane (ppt)      | 0   | 200 | Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards.     |
| 43. Dinoseb (ppb)                   | 7   | 7   | Runoff from herbicide used on soybeans and vegetables.                                     |
| 44. Diquat (ppb)                    | 20  | 20  | Runoff from herbicide use.   |
| 45. Dioxin (2,3,7,8-TCDD) (ppq)     | 0   | 30  | Emissions from waste incineration and other combustion; Discharge from chemical factories. |
| 46. Endothall (ppb)                 | 100 | 100 | Runoff from herbicide use.   |
| 47. Endrin (ppb)                    | 2   | 2   | Residue of banned insecticide.   |
| 48. Epichlorohydrin                 | 0   | TT  | Discharge from industrial chemical factories; An impurity of some                          |

|  |     |     |  |
|--|-----|-----|--|
|  |     |     | water treatment chemicals.   |
| 49. Ethylene dibromide (ppt)               | 0   | 50  | Discharge from petroleum refineries.   |
| 50. Glyphosate (ppb)                       | 700 | 700 | Runoff from herbicide use.   |
| 51. Heptachlor (ppt)                       | 0   | 400 | Residue of banned termiticide.   |
| 52. Heptachlor epoxide (ppt)               | 0   | 200 | Breakdown of heptachlor.   |
| 53. Hexachlorobenzene (ppb)                | 0   | 1   | Discharge from metal refineries and agricultural chemical factories.             |
| 54. Hexachlorocyclopentadiene (ppb)        | 50  | 50  | Discharge from chemical factories.   |
| 55. Lindane (ppt)                          | 200 | 200 | Runoff/leaching from insecticide used on cattle, lumber, gardens.                |
| 56. Methoxychlor (ppb)                     | 40  | 40  | Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock. |
| 57. Oxamyl (Vydate) (ppb)                  | 200 | 200 | Runoff/leaching from insecticide used on apples, potatoes, and tomatoes.         |
| 58. PCBs (Polychlorinated biphenyls) (ppt) | 0   | 500 | Runoff from landfills; Discharge of waste chemicals.                             |
| 59. Pentachlorophenol (ppb)                | 0   | 1   | Discharge from wood preserving factories.  |

|                                      |     |     |  |
|--------------------------------------|-----|-----|--|
| 60. Picloram (ppb)                   | 500 | 500 | Herbicide runoff.  |
| 61. Simazine (ppb)                   | 4   | 4   | Herbicide runoff.  |
| 62. Toxaphene (ppb)                  | 0   | 3   | Runoff/leaching from insecticide used on cotton and cattle.              |
| <b>Volatile Organic Compounds</b>    |     |     |  |
| 63. Benzene (ppb)                    | 0   | 5   | Discharge from factories; Leaching from gas storage tanks and landfills. |
| 64. Carbon tetrachloride (ppb)       | 0   | 5   | Discharge from chemical plants and other industrial activities.          |
| 65. Chlorobenzene (ppb)              | 100 | 100 | Discharge from chemical and agricultural chemical factories.             |
| 66. o-Dichlorobenzene (ppb)          | 600 | 600 | Discharge from industrial chemical factories.                            |
| 67. p-Dichlorobenzene (ppb)          | 75  | 75  | Discharge from industrial chemical factories.                            |
| 68. 1,2-Dichloroethane (ppb)         | 0   | 5   | Discharge from industrial chemical factories.                            |
| 69. 1,1-Dichloroethylene (ppb)       | 7   | 7   | Discharge from industrial chemical factories.                            |
| 70. cis-1,2-Dichloroethylene (ppb)   | 70  | 70  | Discharge from industrial chemical factories.                            |
| 71. trans-1,2-Dichloroethylene (ppb) | 100 | 100 | Discharge from industrial chemical factories.                            |

|   |     |     |   |
|---|-----|-----|---|
| 72. Dichloromethane (ppb)               | 0   | 5   | Discharge from pharmaceutical and chemical factories.                 |
| 73. 1,2-Dichloropropane (ppb)           | 0   | 5   | Discharge from industrial chemical factories.                         |
| 74. Ethylbenzene (ppb)                  | 700 | 700 | Discharge from petroleum refineries.                                  |
| 75. Haloacetic acids (HAA) (ppb)        | n/a | 60  | By-product of drinking water disinfection.                            |
| 76. Styrene (ppb)                       | 100 | 100 | Discharge from rubber and plastic factories; Leaching from landfills. |
| 77. Tetrachloroethylene (ppb)           | 0   | 5   | Leaching from PVC pipes; Discharge from factories and dry cleaners.   |
| 78. 1,2,4-Trichlorobenzene (ppb)        | 70  | 70  | Discharge from textile-finishing factories.                           |
| 79. 1,1,1-Trichloroethane (ppb)         | 200 | 200 | Discharge from metal degreasing sites and other factories.            |
| 80. 1,1,2-Trichloroethane (ppb)         | 3   | 5   | Discharge from industrial chemical factories.                         |
| 81. Trichloroethylene (ppb)             | 0   | 5   | Discharge from metal degreasing sites and other factories.            |
| 82. TTHMs (Total trihalomethanes) (ppb) | n/a | 80  | By-product of drinking water disinfection.                            |
| 83. Toluene (ppm)                       | 1   | 1   | Discharge from petroleum factories.                                   |

|                          |    |    |   |
|--------------------------|----|----|---|
| 84. Vinyl Chloride (ppb) | 0  | 2  | Leaching from PVC piping;<br>Discharge from plastics factories.           |
| 85. Xylenes (ppm)        | 10 | 10 | Discharge from petroleum factories;<br>Discharge from chemical factories. |

(3) Appendix C--Health Effects Language.

Figure: 30 TAC §290.275(3)

### Appendix C--Health Effects Language

#### Microbiological Contaminants

(1) Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

(2) *Escherichia (E. coli)* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely-compromised immune systems.

(3) Fecal indicators (enterococci or coliphage). 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 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.

(4) Total organic carbon. Total organic carbon (TOC) has no health effects. However, TOC provides a medium for the formation of disinfection by-products. These by-products include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these by-products in excess of the maximum contaminant level (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.

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

### **Radioactive Contaminants**

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

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

(8) Combined Radium 226/228. Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.

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

### **Inorganic Contaminants**

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

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

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

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

(14) Beryllium. Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.

(15) Bromate. Some people who drink water containing bromate in excess of the MCL over many years could experience an increased risk of getting cancer.

(16) Cadmium. Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.

(17) Chloramines. Some people who use water containing chloramines well in excess of the maximum residual disinfectant level (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.

(18) Chlorine. Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.

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

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

(21) Chromium. Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.

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

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

(24) Fluoride. 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. Children may get mottled teeth.

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

(26) Mercury (inorganic). Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.

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

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

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

(30) Thallium. 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**

(31) 2,4-D. 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.

(32) 2,4,5-TP (Silvex). Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.

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

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

(35) 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.

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

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

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

(39) Dalapon. Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.

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

(41) Di (2-ethylhexyl) phthalate. 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.

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

(43) Dinoseb. Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.

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

(45) Diquat. Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.

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

(47) Endrin. Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.

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

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

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

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

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

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

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

(55) Lindane. Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.

(56) Methoxychlor. Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.

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

(58) PCBs (polychlorinated byphenols). 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.

(59) Pentachlorophenol. Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience

problems with their liver or kidneys, and may have an increased risk of getting cancer.

(60) Picloram. Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.

(61) Simazine. Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.

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

### **Volatile Organic Contaminants**

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

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

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

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

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

(68) 1,2-Dichloroethane. Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.

(69) 1,1-Dichloroethylene. Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

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

(71) trans-1,2-Dichloroethylene. 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.

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

(73) 1,2-Dichloropropane. Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.

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

(75) Haloacetic acids (HAAs). Some people who drink water containing HAAs in excess of the MCL over many years may have an increased risk of getting cancer.

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

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

(78) 1,2,4-Trichlorobenzene. Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.

(79) 1,1,1,-Trichloroethane. Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.

(80) 1,1,2-Trichloroethane. Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.

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

(82) TTHMs (Total Trihalomethanes). 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.

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

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

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

(4) Appendix D--Unregulated Contaminants.

Figure: 30 TAC §290.275(4)

***Appendix D-Unregulated Contaminants***

- (1) Chloroform
- (2) Bromodichloromethane
- (3) Chlorodibromomethane
- (4) Bromoform
- (5) Dibromomethane
- (6) m-Dichlorobenzene
- (7) [Reserved]
- (8) 1,1-Dichloropropene
- (9) 1,1-Dichloroethane
- (10) 1,1,2,2-Tetrachloroethane
- (11) 1,3-Dichloropropane
- (12) Chloromethane
- (13) Bromomethane
- (14) 1,2,3-Trichloropropane
- (15) 1,1,1,2-Tetrachloroethane
- (16) Chloroethane
- (17) 2,2-Dichloropropane
- (18) o-Chlorotoluene
- (19) p-Chlorotoluene
- (20) Bromobenzene
- (21) 1,3-Dichloropropene

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