

The Texas Commission on Environmental Quality (agency or commission) proposes amendments to §§290.38, 290.39, 290.41 – 290.47, 290.104, 290.106, 290.107, 290.111, 290.117, 290.121, and 290.122.

BACKGROUND AND SUMMARY OF THE FACTUAL BASIS FOR THE PROPOSED RULES

The commission proposes the amendments primarily to implement state rules that conform with the requirements of certain federal regulations. The regulations include the federal National Primary Drinking Water Regulations: Long Term 1 Enhanced Surface Water Treatment Rule published by the United States Environmental Protection Agency (EPA) in the January 14, 2002 issue of the *Federal Register* (67 FR 1812), codified in 40 Code of Federal Regulations (CFR) Parts 9, 141, and 142; and the federal National Primary Drinking Water Regulations: Filter Backwash Recycling Rule published by the EPA in the June 8, 2001 issue of the *Federal Register* (66 FR 31086), codified in 40 CFR Parts 9, 141, and 142. The commission also proposes to make technical corrections to the state rules that are analogous to minor revisions made by the EPA to the federal National Primary Drinking Water Regulations for Lead and Copper, also known as the federal Lead and Copper Rule Minor Revisions, published by the EPA in the January 12, 2000 issue of the *Federal Register* (65 FR 1950), codified in 40 CFR Parts 9, 141, and 142; and the federal National Primary Drinking Water Regulations: Public Notification Rule published by the EPA in the May 4, 2000 issue of the *Federal Register* (65 FR 25982), codified in 40 CFR Part 9, *et al.* In addition to these federally mandated revisions, the commission is proposing to adopt the following changes that are either “state-only” (i.e., no federal counterpart) or that are related to a federal counterpart but are different from the federal regulations: specify how the agency implements the minimum capacity requirements for public water systems; provide requirements for laboratories at surface water treatment plants; describe air relief device requirements; revise sanitary control easement, operator certification, security, maintenance, meter calibration, and electrical wiring requirements; revise reporting requirements; add items to “Appendix I, Assessment of Hazard and Selection of Assemblies;” and reorganize and modify source water, water treatment, and turbidity requirements. The commission particularly solicits comments on these aspects of the proposal, as noted throughout the remainder of this preamble. The commission has directed the executive director to take extraordinary steps to involve stakeholders early in the public comment period, so that they will be fully informed of these aspects of the proposal. Therefore, the commission expects there to be an accelerated outreach by the executive director. Although not detailed in each case under the SECTION BY SECTION DISCUSSION, the commission also proposes non-substantive revisions, including typographical error and formatting corrections throughout this proposal to conform with Texas Register requirements.

SECTION BY SECTION DISCUSSION

Subchapter D, Rules and Regulations for Public Water Systems

Section 290.38, Definitions

The commission proposes to amend the definition of “Drinking water standards” in §290.38(17) to correct the reference to Subchapter F by deleting the word “Supply” from its title. Minor typographical revisions are proposed for the definition of “Licensed professional engineer” in paragraph (27) to replace the upper-case letters in “Professional Engineer” with lower-case letters, and the definition of “Milligrams per liter (mg/L)” in paragraph (30) to delete the unnecessary acronym designation “(ppm).” Proposed §290.38(45), the definition of “Public drinking water program,” contains the correction of the agency’s name. Under proposed paragraph (46), within the definition of “Public health engineering practices,” and throughout the proposal, the ambiguous phrase “these sections” would be replaced by the phrase “this subchapter,” or “the requirements in this subchapter.”

Section 290.39, General Provisions

The commission proposes to amend §290.39(a) to correct minor grammatical errors and incorporate the acronym for the Texas Health and Safety Code.

Proposed §290.39(d)(3)(C) would update the name of the agency and replace the word “should” with “shall.” Similar corrections are made throughout the proposal. The commission proposes revised §290.39(e)(4) to conform to proposed §290.41(c)(1)(F). Proposed §290.39(e)(4) would require submission of a copy of each fully executed sanitary control easement and any other documentation demonstrating compliance with §290.41(c)(1)(F).

The proposal also contains streamlined language involving acronyms in §290.39(f)(10), (g)(2) and (4), and (n). Additional proposed revisions to §290.39(n) would group several existing requirements related to financial assurance in subsection (n)(2) and replace subsection (n)(3) with a new requirement regarding as-built planning materials. The last two sentences in existing subsection (n)(2) are proposed to be relocated to subsection (n)(2)(A) and (B), respectively, and the existing subsection (n)(3) requirement would be moved to subsection (n)(2)(C). Subsection (n)(3) is proposed to be replaced with a provision that requires systems that constructed facilities without prior approval to submit as-built engineering drawings and specifications so that the executive director can more effectively determine if the facilities meet minimum design requirements.

Section 290.41, Water Sources

The commission proposes to amend §290.41(a) to correct an error in the reference to Subchapter F. The commission proposes reformatted and amended §290.41(c)(1)(F), to allow public water systems to submit a substitute for the requirement to obtain a sanitary control easement or sanitary control easements. In this regard, the proposed amendment would require the public water system to submit a copy of the sanitary control easement(s) covering land within 150 feet of the well, or obtain executive director approval for either of three substitutes. The three substitutes are specified in proposed new clause (iv)(I) - (III), as follows: (I) a copy of the recorded deed and map demonstrating that the public water system owns all real property within 150 feet of the well; (II) a copy of the recorded deed and map demonstrating that the public water system owns a portion of real property within 150 feet of the well, and a copy of the recorded sanitary control easement(s) that the public water system has obtained, recorded, and submitted to the executive director applicable to the remaining portion of real property within 150 feet of the well not owned by the public water system; or (III) for a political subdivision, a copy of an ordinance or land use restriction adopted and enforced by the political subdivision which provides an equivalent or higher level of sanitary protection to the well as a sanitary control easement. Proposed new clause (v) would provide that if the executive director approves a sanitary control easement substitute identified in proposed clause (iv)(I) or (II) for a public water system and the system conveys the property it owns within 150 feet of the well to another person or persons, the public water system must at that time obtain, record, and submit to the executive director a copy of the recorded sanitary control easement(s) applicable to the portion of the conveyed property within 150 feet of the well, unless the executive director approves a substitute identified in proposed clause (iv)(III).

The commission proposes a typographical error correction in subsection (c)(2)(A), to change “mg/l” to “milligrams per liter (mg/L).” The commission proposes to amend subsection (c)(3)(A) to require, as part of the well completion data, a legible copy of the recorded deed or deeds for all real property within 150 feet of the well, a legible copy of the sanitary control easement(s) or other documentation demonstrating compliance with paragraph (1)(F), and a map demonstrating the well location in relation to surrounding property boundaries. Subsection (c)(3)(C) is proposed to be amended to add “and” to the third sentence, and subsection (c)(3)(D) is proposed to be amended to replace “mg/l” with “mg/L.”

The commission proposes to amend subsection (c)(3)(A) to require, as part of the well completion data, a legible copy of the recorded deed or deeds for all real property within 150 feet of the well, a legible copy of the sanitary control easement(s) or other documentation demonstrating compliance with paragraph (1)(F), and a map demonstrating the well location in relation to surrounding property

boundaries. Subsection (c)(3)(C) is proposed to be amended to add “and” to the third sentence, and subsection (c)(3)(D) is proposed to be amended to replace “mg/l” with “mg/L.”

The commission proposes to amend subsection (c)(4) regarding the construction standards for pitless units. The commission proposes to amend subsection (c)(4)(D) to require that, with the exception of the fact that the well is constructed with a pitless unit, the well must meet all of the other design requirements for public water system wells. With this proposed revision, the last sentences of subsection (c)(4)(A) and (E) would be redundant, and thus proposed to be deleted.

The commission proposes an amendment to §290.41(d)(4) to modify the design requirement for springs and other similar sources. The proposed amendment would apply several requirements currently applicable only to public water systems utilizing groundwater sources to public water systems utilizing springs and other similar water sources. These requirements include: 1) discharge from a well blow-off line, if provided, shall terminate in a downward direction and at a point which will not be submerged by flood waters; 2) an air release device, if provided on the discharge piping, shall be installed in such a manner as to preclude the possibility of submergence or possible entrance of contaminants; and 3) all openings to the atmosphere shall be covered with 16-mesh or finer corrosion-resistant screening material or an acceptable equivalent. This proposed amendment is intended to reduce the potential for contamination that might result from an improperly designed blow-off valve or air release valve in a public water system utilizing water from springs or other similar water sources. The proposed amendment would help assure the sanitary integrity of water as it is transported from the spring catchment basin to the treatment facilities. The proposed amendment would also create consistency between the commission’s §290.41(c) design requirements applicable to “Groundwater sources and development” and the commission’s §290.41(d) design criteria applicable to “Springs and other water sources.” This aspect of the proposal involves “state-only” requirements, so the commission seeks comment on this proposed amendment. The proposed revision changes the reference in §290.41(d)(4) from “subsection (c)(3)(M) - (P)” to “subsection (c)(3)(L) - (Q).”

The commission proposes to add §290.41(e)(2)(G) to require that the 500-foot separation distance between water treatment plants and wastewater treatment plants also applies to the water treatment plant intake structure. The proposed language states that intakes shall not be located within 500 feet of a sewage treatment plant or lands irrigated with sewage effluent. The proposed revisions to subsection (e)(3) would delete and relocate several provisions that apply to the water treatment plant rather than the intake location. The proposal would also revise the existing requirement that pumping units shall be located in well-drained areas not subject to flooding to a requirement that the raw water pump station

shall be located in a well-drained area and shall be designed to remain in operation during flood events. This aspect of the proposal involves “state-only” requirements, so the commission seeks comment on this proposed amendment. The commission proposes to relocate the requirements applicable to surface water treatment plants currently contained in subsection (e)(3)(A) and (B) to the section covering all water treatment plants under §290.42(a)(2)(A) and (B) and to relocate the requirements currently contained in subsection (e)(3)(C) to §290.42(m). The commission also proposes to amend subsection (e)(3)(C) and (D) so that it applies to the raw water pump station, and not to the water treatment plant, and to renumber the amended requirements as subsection (e)(4) and (5).

Section 290.42, Water Treatment

The commission proposes to amend §290.42 to make the provisions of the section consistent with federal regulatory requirements and to relocate requirements pertaining to plant location from the section on water sources to the section on water treatment.

The proposed amendment to §290.42(a) would relocate the siting requirements for surface water treatment plants from §290.41(e) to §290.42(a), as previously discussed. The commission proposes to rename subsection (a) as “Capacity and location” to meet Texas Register formatting requirements and to extend the requirements to all water treatment plants. The current technical requirement contained in subsection (a) is proposed to be renumbered as subsection (a)(1). Proposed subsection (a)(2) and (3) correspond to existing requirements under §290.41(e)(3), (e)(3)(A), (B), and (D), which are proposed to be relocated. The commission proposes to extend its siting requirements to all water treatment plants in order to improve the reliability and sanitary integrity of all plants where potable water is treated. The commission finds that the surface and subsurface contaminant sources that pose threats to the treated water produced by surface water treatment plants also pose threats to the treated water produced by other treatment plants. Such other treatment plants include those that treat groundwater or groundwater that is under the direct influence of surface water and those that retreat potable water purchased from other public water systems. Furthermore, the commission finds that the need to properly dispose of treatment plant wastes is not limited to surface water treatment plants and that all treatment plants need to be accessible during periods of inclement weather in order to assure its customers a continuous supply of potable water. Finally, the commission believes that the proposal to extend the siting requirements to all water treatment plants is consistent with historical and current industry design and construction practices as well as with the policies and procedures of the commission.

The commission proposes §290.42(b)(7) to reduce the risk of treated water contamination that could occur through an improperly designed air relief device. The proposed language would require air release devices to be installed in such a manner as to preclude submergence or entrance of contaminants. In this respect, the proposal would require that all openings to the atmosphere be covered with 16-mesh or finer, corrosion-resistant screening material or an equivalent acceptable to the executive director. The proposed changes are consistent with existing requirements for air release devices that are located on treated water lines in the distribution system. The proposed amendments will help assure that untreated water, insects, and debris do not contaminate treated water before it leaves the plant and is piped directly to consumers.

The commission proposes to amend §290.42(c)(1) to remove references to dates that have already passed which served to phase in certain treatment requirements and to eliminate redundant terminology. Subsection (c)(6), regarding the return of decant water and sludge to the treatment process at plants that are treating water from springs and similar sources, is proposed to assure that the design of recycling facilities at these systems meets the same requirements as those that apply to surface water treatment plants, which is a requirement that is needed to maintain consistency with the federal Filter Backwash Recycling Rule. Proposed subsection (c)(7) would reduce the risk of treated water contamination that could occur through an improperly designed air relief device. The proposed language would require air release devices on treated waterlines to be installed in such a manner as to preclude submergence or entrance of contaminants. In this respect, the proposal would require that all openings to the atmosphere be covered with 16-mesh or finer, corrosion-resistant screening material or an equivalent acceptable to the executive director. As previously mentioned, the proposed changes are consistent with existing requirements for air release devices that are located on treated water lines in the distribution system. The proposed amendments will also help assure that untreated water, insects, and debris do not contaminate treated water before it leaves the plant and is piped directly to consumers.

The proposed amendment to §290.42(d)(1) would remove references to dates that have already passed which served to phase in certain treatment requirements and to eliminate redundant terminology. Proposed subsection (d)(2)(F) would reduce the risk of contamination that could occur through an improperly designed air relief device, as previously described.

The commission proposes to amend subsection (d)(3) to incorporate design and operational mandates contained in the federal Filter Backwash Recycling Rule, and certain related requirements. The commission proposes to relocate the last sentence of existing subsection (d)(3) to proposed subsection (i) and to streamline the rule references.

Proposed subsection (d)(3)(A) regarding the recycling of decant water addresses a federal Filter Backwash Recycling Rule requirement. The proposal would require the liquids from sludge settling lagoons, spent backwash water tanks, dewatering facilities, and similar facilities to be returned to the raw waterline upstream of the raw water sample tap and coagulant feed point, unless the executive director has approved an alternate recycling location. The blended recycled liquids would then be required to pass through all of the major unit processes at the plant. Returning recycled liquids to a location upstream of the raw water sample tap eliminates the need for operators to collect and composite multiple water samples in order to run jar tests and other process control analyses and eliminates potential compositing errors. Furthermore, returning recycled liquids upstream of the coagulant feed point assures that the raw water and recycled water are mixed before the treatment process begins and facilitates proper plant operation. This proposal is different from the federal Filter Backwash Recycling Rule, so the commission seeks comment on this proposed requirement.

The commission proposes subsection (d)(3)(B) to require flow equalization basins, variable speed pumps, or other facilities to minimize the impact of the recycling process on treatment plant performance. One of the major goals of the federal Filter Backwash Recycling Rule is to minimize the potential for excessive hydraulic surges occurring when a treatment plant recycles the liquid. The federal rule is different from the requirement in subsection (d)(3)(B). Consequently, the commission seeks public comment on alternative methods to prevent hydraulic surges during a recycling event.

The commission proposes subsection (d)(3)(C) to prevent water systems from recycling the solids produced by dewatering facilities without the prior approval of the executive director because the commission asserts that these solids harbor elevated pathogen levels and such a prohibition should not adversely impact plant performance. The commission also solicits public comment on this “state-only” requirement, particularly from any public water system that is currently recycling or plans to recycle solids produced by dewatering facilities.

The amendment to subsection (d)(6) and (7) is proposed to facilitate the adoption of standardized design criteria for chemical storage and feed facilities. Currently, subsection (d)(6) contains the design criteria for chemical storage facilities and subsection (d)(7) contains the design criteria for chemical feed facilities. The commission proposes to relocate all of these design requirements to a new subsection (f). Therefore, proposed subsection (d)(6) states that chemical storage facilities shall comply with the applicable requirements in §290.42(f)(1), and proposed subsection (d)(7) states that chemical feed facilities shall comply with the applicable requirements in §290.42(f)(2).

The commission proposes to amend subsection (d)(11)(E) to facilitate compliance with the federal Long Term 1 Enhanced Surface Water Treatment Rule. The commission proposes to amend subsection (d)(11)(E)(ii) to require systems serving fewer than 10,000 people to install an on-line turbidimeter and recorder on each filter at their surface water treatment plants by January 1, 2005. Currently, subsection (d)(11)(E)(ii) requires all filters with a capacity of 1.0 million gallons per day or more to be equipped with an on-line turbidimeter. The proposed amendment differs from the federal Long Term 1 Enhanced Surface Water Treatment Rule, in that it does not allow the option for systems serving fewer than 10,000 people with only two filters to install the turbidimeter and recorder on the combined filter effluent line without installing an additional turbidimeter and recorder on each individual filter.

The commission is proposing a rule which would require the devices on each filter because they enable the water treatment plant to quickly identify a malfunctioning filter and take corrective action before the public health and welfare is compromised. The commission asserts that there is a correlation between filtered water turbidity levels and the rate that pathogenic organisms, such as *Cryptosporidium* oocysts, can pass through a filter. Since pathogenic organisms can cause disease after only short-term exposure to low concentrations, it is important to be able to detect filter malfunctions before elevated pathogen levels begin to enter the drinking water. Unless the performance of each filter is monitored at plants with more than two filters, a serious malfunction in a single filter might go undetected because of the dilution that occurs when water is blended with that produced by the other filters. At plants with only two filters, it is easier to detect a serious filter malfunction in the blended water because less dilution occurs than at plant with more than two filters. However, reduced dilution can allow less serious malfunctions at plants with only two filters to result in an increased health threat.

In addition to avoiding the increased health threats posed by minor to moderate filter malfunctions at plants with only two filters, another benefit to individual filter turbidity monitoring is the ability to identify which of the two filters is malfunctioning and reduce a plant's operating costs. The federal Long Term 1 Enhanced Surface Water Treatment Rule requires a surface water treatment plant to investigate elevated turbidity levels and, unless the plant can identify which of the individual filters is malfunctioning, to complete an extensive, time-consuming evaluation of each filter that is not individually monitored. Furthermore, since a single malfunctioning filter in a plant with only two filters can result in a treatment violation that requires public notice, the ability to identify and correct an individual malfunctioning filter before a treatment violation occurs can save a public water system the cost of issuing public notices and responding to the resulting customer complaints and inquiries.

Although there would be numerous public health and operational benefits and long-term cost reductions of the proposed amendment to subsection (d)(11)(E)(ii), the proposal would increase the initial compliance cost for a few plants that serve fewer than 10,000 people and have only two filters by approximately \$1,200 to \$3,600. Consequently, the commission is seeking public comment on the proposal and on alternative methods to achieve these public health and operational goals.

The commission proposes to amend subsection (d)(11)(E)(iii) to require that systems serving at least 10,000 people be equipped with an on-line turbidimeter and recorder that will allow the operator to measure and record the turbidity of the water from each filter at 15-minute intervals. Currently, the rule indicates that the operator must be able to determine the turbidity of the water and does not adequately indicate that the recorder must be used to create a record of the data. In addition, the federal Long Term 1 Enhanced Surface Water Treatment Rule requires results of the individual turbidity readings to be maintained for a period of at least three years (existing §290.46(f)(3)(B)(iv) implements this federal requirement).

The commission proposes revisions under subsection (d)(11)(E)(v) to recognize that filters which are equipped with on-line turbidimeters and recorders can establish a filter backwash criteria that is based on turbidity breakthrough rather than the accumulated loss of head. Because turbidity breakthrough usually occurs before terminal headloss is reached, the commission is proposing to allow filters with on-line turbidimeters and recorders to forego the installation of loss-of-head devices. This amendment would help offset the additional capital cost of the on-line turbidity instrumentation and help reduce operational and maintenance costs.

The commission proposes to amend subsection (d)(15)(A) and (B) to reflect that the statutory responsibility for the certifying laboratories that conduct microbiological analysis for public water systems has been transferred from the Texas Department of Health to the Texas Commission on Environmental Quality. The commission proposes to amend subsection (d)(15)(G) to provide minimum criteria for laboratories at surface water treatment plants and to relocate a requirement for surface water treatment plants currently contained in subsection (d)(15)(G) to proposed subsection (d)(16). This aspect of the proposal involves “state-only” requirements, so the commission seeks comment on this proposed amendment. The proposed subsection (d)(16) will also eliminate a reference to a past compliance date that currently exists in subsection (d)(15)(G).

As discussed previously in this preamble, the commission proposes to relocate the design requirements for chemical storage and chemical feed systems from subsection (d)(6) and (7) to proposed subsection

(f). Consequently, the commission proposes to reletter existing subsections (f) – (k) as subsections (g) – (l), respectively.

With the exception of proposed §290.42(f)(1)(A), the language contained in proposed subsection (f)(1) is identical to that currently contained in existing subsection (d)(6). In subsection (f)(1)(A), the commission proposes minor modifications to the language currently contained in subsection (d)(6)(A). One proposed revision is needed to provide that this requirement will apply only to bulk storage facilities that are needed to comply with a treatment technique requirement or maximum contaminant level (MCL). Also, the proposed amendment includes a requirement that the capacity of these bulk storage facilities shall be based on the design capacity of the treatment plant. As previously noted, the language in proposed subsection (f)(1)(B) - (G) is identical to the language currently contained in existing subsection (d)(6)(B) - (G).

With the exception of proposed subsection (f)(2)(A), the language contained in proposed subsection (f)(2) is identical to that currently contained in subsection (d)(7). In subsection (f)(2)(A), the commission proposes a minor modification to the language currently contained in subsection (d)(7)(A). The proposed modification is needed to provide that this requirement will apply only to feed facilities that are needed to comply with a treatment technique requirement or MCL. As previously noted, the language in proposed subsection (f)(2)(B) - (I) is identical to the language currently contained in subsection (d)(7)(B) - (I).

The commission proposes subsection (g) to correct an error in the references to §290.39(l) and Subchapter F. Proposed §290.42(i) would add the last sentence that is contained in existing subsection (d)(3), and streamline the rule references. The commission proposes to relocate the requirement for proper disposal of plant wastes to subsection (i) because, at its current location under subsection (d)(3), the requirement applies only to surface water treatment plants while the provision should apply to the waste disposal practices at all public water systems. Proposed §290.42(k) would correct an error in the reference to “Texas Hazard Communications Act” by correcting the name of the Act and revising “Title 5” to “Title 6.” The provision concerning the “plant operations manual” is renumbered as §290.42(l) to accommodate previously described proposed amendments, and to acknowledge that the manual can also serve as a mechanism to guide operators during natural or man-made events which could cause adverse impacts to a water system. The commission proposes new §290.42(m) in order to relocate the regulatory requirement currently contained in §290.41(e)(3)(C). The commission is proposing to include the minimum security requirement for water treatment plants in this new subsection because the existing requirement applies only to surface water treatment plants, while the

provision should apply to the security requirements at all water treatment plants. This aspect of the proposal involves “state-only” requirements, so the commission seeks comment on this proposed amendment.

Section 290.43, Water Storage

The commission proposes to amend §290.43 in numerous places to correct typographical errors, such as replacing “clear well” with “clearwell,” spelling out “pounds per square inch” and parenthetically including the acronym “psi,” adding hyphens where appropriate, and spelling out “American National Standards Institute/National Sanitation Foundation.” The commission proposes to amend §290.43(e) to provide that an intruder-resistant fence is not required when water system facilities are installed in a lockable building that is designed to prevent intruder access.

Section 290.44, Water Distribution

The commission proposes to amend §290.44 to correct the spelling of “waterline” in subsections (a)(4), (c), and (e)(4)(A) and (B). Other proposed revisions under §290.44 involve acronyms, grammatical changes, typographical error corrections, and minor administrative revisions to comply with Texas Register requirements. For instance, the proposed revisions to §290.44(e)(4)(A) and (B) are formatting changes and the proposed revisions to §290.44(e)(5) and (i)(2)(K) would eliminate typographical errors by correctly spelling “springline” and “mg/L.”

Section 290.45, Minimum Water System Capacity Requirements

The commission proposes to amend §290.45 in order to indicate the manner in which the rules are interpreted by the commission and the proposed amendments are not intended to increase or decrease the existing capacity requirements for any public water system.

The proposed amendment to §290.45(a)(1) indicates that the capacity requirements in this section apply to individual pump stations and pressure planes only if the individual facility serves an area of the system that cannot be served effectively by the public water system’s other facilities. The proposed amendment adds the phrase “which serve portions of the system that are hydraulically separated from, or incapable of being served by, other pump stations or pressure planes.” The commission proposes subsection (a)(5) and (6) to further indicate how it evaluates compliance with the requirements of this section. The commission proposes subsection (a)(5) to specify that the capacity of facilities that have been inoperative for at least 30 days prior to the evaluation shall not be included when determining compliance with the commission’s capacity requirements unless those facilities will be returned to an operative condition within the next 30 days. The commission does not require each facility to be

operated every 60 days, but does require public water systems to maintain their essential facilities in an operative condition. Subsection (a)(6) is proposed to ensure that the treatment facilities at all public water systems have sufficient capacity to meet the system's treated water production requirements, by requiring that the capacity of the treatment facilities shall not be less than the required raw water or groundwater production rate or the anticipated maximum daily demand of the system. This aspect of the proposal involves "state-only" requirements, so the commission seeks comment on this proposed amendment.

The proposed amendment to §290.45(d)(2)(A) provides a reference to subparagraph (B) by adding the phrase, "subject to subparagraph (B) of this paragraph," Proposed subparagraph (B) is intended to explain that the commission allows small noncommunity water systems without transient accommodation units to meet the capacity requirements of subsection (d)(2)(B) if they provide ground storage facilities.

Section 290.46, Minimum Acceptable Operating Practices for Public Drinking Water Systems

The commission proposes to amend and reorganize the operator certification requirements in §290.46(e) that apply to public water systems. The organization of the existing rule groups the requirements regarding the number of operators that are required at each system in a different paragraph than the requirements regarding the type of operators that are required at each system. The proposed revision consolidates both operator number and operator type requirements into one paragraph applicable to each type of system. In addition to reorganizing subsection (e), the commission proposes several modifications to certain requirements that apply to systems that treat surface water or serve more than 1,000 connections.

The proposed amendment to §290.46(e) reflects the new organizational structure of the subsection and incorporates the provisions currently contained in subsection (e)(3) to avoid redundancy. The commission also proposes to relocate the exclusion that currently exists in subsection (e)(7) to subsection (e)(1) so that it is located more prominently.

The proposed amendment to §290.46(e)(2) is to relocate the operator certification requirements that apply to most public water systems. The content of the current subsection (e)(2) would be incorporated into proposed subsection (e)(3)(C), (4)(C), (5)(B) and (D), and (6)(B).

The commission proposes new subsection (e)(2)(A) and (C), containing identical language to that currently contained in subsection (e)(5) and (6), respectively. The commission also proposes to amend

subsection (e)(4) and relocate it to the proposed subsection (e)(2)(C). The proposed amendment to existing subsection (e)(4) would eliminate redundant regulatory language and reflect a revision in the commission's approval process for installations that use chlorine dioxide. With the exception of the noted amendment to existing subsection (e)(4), the proposal is intended to facilitate understanding of the rules and is not intended to modify regulatory requirements.

The commission proposes to relocate the operator certification requirements for systems that buy all of their treated water from another public water system to subsection (e)(3). Proposed subsection (e)(3)(A) will contain only the portion of the existing rule that applies to purchased water systems; the portion of the existing subsection that applies to groundwater systems is proposed to be relocated to subsection (e)(4)(A).

The proposed amendment to subsection (e)(3)(B) is intended to merge the requirements that are currently contained in subsection (e)(1) and (3)(B) into a single paragraph, with no change in regulatory requirements.

The proposed amendment to subsection (e)(3)(C) is intended to merge the requirements that currently exist in subsection (e)(2). The commission also intends the amendment to provide regulatory relief to some smaller purchased water systems that are not able to hire two full-time operators while simultaneously assuring that there are two operators with sufficient experience at, and familiarity with, the facilities to assure adequate coverage. The requirement currently contained in subsection (e)(3)(C) is proposed to be relocated to subsection (e)(4)(B).

The commission proposes to delete existing subsection (e)(3)(D) and (E) and to incorporate these requirements into proposed subsection (e)(4) - (6).

The commission proposes to relocate the operator certification requirements for systems that treat groundwater sources that are not under the influence of surface water to subsection (e)(4). As noted previously, the language currently contained in subsection (e)(4) would be relocated to proposed subsection (e)(2)(C).

Proposed subsection (e)(4)(A) contains the portion of existing subsection (e)(3)(A) that applies to groundwater systems. Similarly, proposed subsection (e)(4)(B) is intended to merge the groundwater system requirements that are currently contained in subsection (e)(1) and (3)(C) into a single paragraph, with no change in regulatory requirements for these systems.

Proposed subsection (e)(4)(C) is intended to merge the requirements that currently exist in subsection (e)(2) and (3)(C). The commission also intends the amendment to provide regulatory relief to some smaller groundwater systems that are not able to hire two full-time operators while simultaneously assuring that there are two operators with sufficient experience at, and familiarity with, the facilities to assure adequate coverage.

The commission proposes to relocate the operator certification requirements for systems that treat groundwater sources that are under the influence of surface water to subsection (e)(5). As noted previously, the language currently contained in subsection (e)(5) would be relocated to proposed subsection (e)(2)(A).

Proposed subsection (e)(5)(A) addresses systems that serve no more than 1,000 connections and use cartridge or membrane filters to treat groundwater sources that are under the direct influence of surface water. The proposed subsection would merge the requirements that are currently contained in subsection (e)(1) and (3)(D)(i) into a single paragraph, extend the requirement to systems that use membrane technology, and incorporate additional training requirements for Surface Water Operators who operate a system with groundwater sources. The commission is aware that the operation of membrane technology requires a higher level of expertise than is necessary to operate cartridge filters. The commission is also aware that it requires systems using membranes to treat surface water to be operated by an individual who holds a Class "C" Surface Water license. However, both membranes and cartridge filters function as a physical barrier to the passage of pathogens and the concentration of pathogens in surface water is typically greater than that found in groundwater sources.

Proposed subsection (e)(5)(B) addresses systems that serve more than 1,000 connections and use cartridge or membrane filters to treat groundwater sources that are under the direct influence of surface water. The proposed subsection would merge the requirements that are currently contained in subsection (e)(2) and (3)(D)(i) into a single paragraph. As noted in the discussion of proposed subsection (e)(3)(C) and (4)(C), the commission is proposing to provide regulatory relief for some smaller systems that are not able to hire two full-time operators while simultaneously assuring that there are two operators with sufficient experience at, and familiarity with, the facilities to assure adequate coverage.

Proposed subsection (e)(5)(C) addresses systems that serve no more than 1,000 connections and use coagulation and direct filtration to treat groundwater sources that are under the direct influence of surface water. The proposed subsection would merge the requirements that are currently contained in

subsection (e)(1) with an amended version of the language currently contained in subsection (e)(3)(D)(ii) into a single paragraph and require systems to ensure that at least one of their operators has completed the new surface water training courses by January 1, 2007. The proposed revisions to the language currently in subsection (e)(3)(D)(ii) reflect that Surface Water Operators require additional training if they operate a system with wells, and the fact that the 40-hour Surface Water Production course has been divided into two smaller segments, the Surface Water Unit I course and the Surface Water Unit II course, which may cumulatively require more than 40 hours to complete. The commission seeks comment on the appropriateness of this “state-only” requirement for Surface Water Operators to complete an approved Groundwater Production course.

Proposed subsection (e)(5)(D) addresses systems that serve more than 1,000 connections and use coagulation and direct filtration to treat groundwater sources that are under the direct influence of surface water. The proposed subsection would merge the requirements that are currently contained in subsection (e)(2) and (3)(D)(ii) into a single paragraph and require systems to ensure that at least one of their operators has completed the new surface water training courses by January 1, 2007. As noted in the discussion of proposed subsection (e)(3)(C) and (4)(C), the commission is proposing to provide regulatory relief for some smaller systems that are not able to hire two full-time operators while simultaneously assuring that there are two operators with sufficient experience at, and familiarity with, the facilities to assure adequate coverage.

Proposed subsection (e)(5)(E) and (F) addresses systems that utilize a conventional surface water treatment to treat groundwater sources that are under the direct influence of surface water and contains the same regulatory language that is currently contained in subsection (e)(3)(D)(iii) and (iv), respectively, which the commission is proposing to delete. The proposal is intended only to relocate the existing requirements to new subsections and revise a reference to reflect the proposed organizational structure. No change in regulatory requirement is intended.

The commission proposes to relocate the operator certification requirements for systems that treat surface water sources to subsection (e)(6). As noted previously, the language currently contained in subsection (e)(6) would be relocated to proposed subsection (e)(2)(B).

The commission proposes new subsection (e)(6)(A) to address the operator certification requirements at surface water systems serving fewer than 1,000 connections. This proposed subsection would merge the requirements that are currently contained in subsection (e)(1) and (3)(E)(i) into a single paragraph and require systems to ensure that at least one of their operators has completed the new surface water

training courses by January 1, 2007. In addition, the commission proposes to provide regulatory relief for some smaller systems that are not able to hire an operator who holds a Class "B" Surface Water license on a full-time basis while simultaneously assuring that there is a sufficient number of adequately trained operators to provide appropriate coverage at the system. Specifically, the commission proposes to allow systems to contract with a Class "B" operator to provide technical support if the system has a Class "C" Surface Water Operator on staff. However, the commission proposes to require that the contractor must be on-site at the water treatment plant for four consecutive hours at least once every 14 days in order to assure that the contractor is sufficiently familiar with the facilities to provide technical support when it is needed. The commission seeks comment on whether it is appropriate to allow such an approach and whether the duration and frequency of the visits is adequate to detect operational problems and assure a current working knowledge of the facilities.

The commission proposes new subsection (e)(6)(B) to address the operator certification requirements at surface water systems serving more than 1,000 connections. This proposed subsection contains analogous requirements to those currently contained in subsection (e)(2) and (3)(E)(i) and a revision to assure that at least one of the operators has completed the new surface water training courses by January 1, 2007. As noted in the discussion of proposed subsection (e)(3)(C), (4)(C), and (5)(B) and (D), the commission is proposing to provide regulatory relief for some smaller systems that are not able to hire two full-time operators while simultaneously assuring that there are two operators with sufficient experience at, and familiarity with, the facilities to assure adequate coverage. As the discussion of subsection (e)(6)(A) indicates, the commission is also proposing to provide regulatory relief for surface water systems that serve no more than 1,000 connections by allowing those systems to use a part-time contract operator to meet the requirements for a Class "B" operator.

Proposed subsection (e)(6)(C) and (D) contains the same regulatory language that is currently contained in subsection (e)(3)(E)(ii) and (iii), respectively, which the commission is proposing to delete. The proposed modification is to relocate the existing requirements, with no change in regulatory requirements.

As noted previously, the commission proposes to delete existing subsection (e)(7) and relocate its provisions to proposed subsection (e)(1).

The commission proposes a minor amendment to §290.46(f). As noted in the discussion of §290.46(e), the commission proposes several provisions which will provide regulatory relief to some systems that are required to have at least two operators. Consequently, the commission proposes subsection

(f)(3)(A)(vii) to ensure that public water systems maintain the records needed to determine compliance with the proposed amendment to §290.46(e). In addition, the commission proposes subsection (f)(3)(C)(iii) to incorporate reporting and recordkeeping requirements contained in the federal Filter Backwash Recycling Rule. The commission proposes to amend subsection (f)(4) to allow the executive director to require the submission of all routine reports at any time, even if they are required less frequently than once per quarter, and any other documents that are needed to determine compliance with commission requirements.

The commission proposes to change the incorrect reference to the Texas Department of Health in §290.46(g) by replacing it with “executive director.”

The commission proposes to amend §290.46(l) to require that dead-end mains be flushed once per month and that these lines, as well as looped mains, must be flushed in the event of water quality complaints.

The proposed amendment to §290.46(m)(4) would require public water systems to repair leaks that occur in water treatment units such as clarifiers and filters in addition to the other water storage and distribution facilities currently identified in subsection (m). Similarly, proposed subsection (m)(6) would require public water systems to maintain their mechanical equipment in good working condition. The commission intended subsection (m) to cover all public water system facilities and proposes the amendment because some entities have concluded that they are not required to maintain all their public water system equipment in a fully operational condition unless they are specifically listed in subsection (m).

The commission proposes to amend §290.46(s)(1) so that it will apply to the meters installed at public water systems that use groundwater sources, and the commission notes that this is a “state-only” requirement. Although the commission proposes that well meters be calibrated once every three years, the agency solicits public comment on an appropriate calibration interval for well meters.

The commission proposes to amend §290.46(s)(2)(A)(iii) and add §290.46(s)(2)(A)(iv). Both of these proposals will reduce the calibration requirements for on-line pH meters at surface water treatment plants. Several plants have started using on-line instruments that were originally installed only for process control to generate their compliance data. Some of these facilities reported that the “data drift phenomena” that was prevalent in earlier generations of instruments is no longer present and that their daily checks are extremely time-consuming and are revealing no need to calibrate. Consequently, the

commission is proposing to relax the calibration requirements for on-line pH meters. The commission solicits public comment on the proposed amendments, especially from individuals who have identified appropriate verification and calibration intervals based on a scientific analysis of data from a full-scale treatment plant.

The commission proposes to amend §290.46(v) regarding the installation of electrical wiring so that systems may forgo the use of wiring conduit if local or national electrical codes permit.

The proposed amendment to §290.47(i), Appendix I, Assessment of Hazard and Section of Assemblies, would add veterinary clinics to the item on hospitals, morgues, and other medical facilities due to the similarity of their potential impact on public health. The commission also proposes to add Private/Individual/Unmonitored wells to the list of facilities requiring premises isolation due to their potential for introducing untreated water into the public drinking water supply. Finally, the commission proposes to correct a typographical error in the key included at the bottom of Appendix I.

*Subchapter F, Drinking Water Standards Governing Drinking Water Quality and Reporting
Requirements for Public Water Systems*

Section 290.104, Summary of Maximum Contaminant Levels, Maximum Residual Disinfectant Levels, Treatment Techniques, and Action Levels

The commission proposes to amend §290.104 to establish consistency between state and federal rules regarding MCLs and treatment technique requirements. The proposed amendment to subsection (b) would correct a typographical inconsistency between the state and federal MCLs for barium, and similarly, the proposed amendment to subsection (c) would eliminate a typographical inconsistency between the state and federal MCLs for toluene and total xylenes. The commission proposes to amend subsection (d) by deleting certain language which already exists in §290.108. Because new language will be proposed to be added under §290.108 in a follow-up rulemaking, deletion of this language under subsection (d) is necessary to avoid a conflict between the two sections. This action is necessary because of Texas Register rules which preclude a subdivision of a rule undergoing simultaneous proposed amendments. The commission proposes deleting currently existing subsection (g)(1) because the new turbidity treatment technique has been effective since January 2002. The commission also proposes to renumber subsection (g)(2) and (3) as subsection (g)(1) and (2), respectively. The commission proposes subsection (l) to incorporate treatment technique requirements that are consistent with the federal Filter Backwash Recycling Rule.

Section 290.106, Inorganic Compounds

The commission proposes to amend §290.106(b)(1) to correct a typographical inconsistency between the state and federal MCLs for barium.

Section 290.107, Organic Compounds

The commission proposes to amend §290.107(b)(2) to eliminate typographical inconsistencies between state and federal rules regarding MCLs for toluene and total xylenes. The commission also proposes to amend subsection (c)(1)(D)(vi) to define the acronym designation “PCBs” as “polychlorinated byphenyls.”

Section 290.111, Turbidity

The proposed amendment to §290.111 would remove language relating to past compliance dates, consolidate many of the requirements currently contained in subsection (b)(1) and (2), and incorporate several requirements of the federal Long Term 1 Enhanced Surface Water Treatment Rule into proposed subsections (b)(2)(C) and (c) - (g). Since some of the proposed modifications to §290.42 would establish requirements that differ somewhat from those contained in the federal regulations, the commission is soliciting public comment on specific components of this proposal. These requests for public input are discussed in more detail later in this preamble.

The proposed amendment to subsection (b) reflects that certain provisions of subsection (b) are performance criteria instead of treatment technique requirements, by adding the phrase “and performance criteria” to the title of the subsection and the word “performance” prior to “criteria” at the end of the sentence in subsection (b).

Subsection (b)(1) is proposed to be amended to add the title “Treatment technique requirements.” Additionally, proposed subsection (b)(1) contains revisions that would merge the requirements currently contained in subsection (b)(1) and (2) into a single paragraph. The language currently in subsection (b)(2) is proposed to be relocated to subsection (b)(1), and the requirements currently contained in subsection (b)(2)(A) and its subsequent subparagraphs are proposed to be relocated to subsection (b)(1)(A) and its subsequent subparagraphs. As noted, the commission proposes no change to subsection (b)(1)(B) as the language is identical to that currently contained in subsection (b)(2)(B).

The commission proposes subsection (b)(1)(C) to facilitate the reorganization of subsection (b). Proposed subsection (b)(1)(C) would contain the language similar to that currently contained in subsection (b)(2)(C) with the added condition that a public water system using groundwater under the

direct influence of surface water and serving fewer than 10,000 people must use conventional media filters in order to qualify for an extension to the compliance date for providing a 2-log removal of *Cryptosporidium*. A reformatted version of (b)(2)(C)(ii) is relocated to (b)(1)(C)(ii). The proposed amendment to subsection (b)(1)(C)(ii) is needed because the commission must relocate the provisions currently contained in subsection (b)(1)(A)(i) and (ii) to subsection (b)(1)(C)(ii)(I) and (II), respectively, in order to merge subsection (b)(1) and (2) and to prepare for future rule amendments that will be needed after January 1, 2005.

The commission proposes to revise the language under existing subsection (b)(3) and relocate it to subsection (b)(2). Consequently, subsection (b)(2) is proposed to be amended to add the title "Performance criteria for individual filters" to identify the paragraph's contents as performance criteria rather than as treatment technique requirements. In addition, subsection (b)(2) is proposed to be amended to reflect that the requirement will now apply to all systems instead of only to those that serve at least 10,000 people. The commission proposes to relocate the contents of existing subsection (b)(3)(A) to subsection (b)(2)(A) and amend the language to clearly state that this provision only applies to systems that serve at least 10,000 people. The commission also proposes to relocate existing subsection (b)(3)(B) to subsection (b)(2)(B) and amend it for the same reasons that it is proposing to amend subsection (b)(2)(A). The commission proposes to adopt subsection (b)(2)(C) to incorporate requirements contained in the federal Long Term 1 Enhanced Surface Water Treatment Rule. As a result of these proposed changes to subsection (b)(2), the commission proposes to delete existing subsection (b)(3).

Section 290.111(c)(3) is proposed to be amended to delete "Beginning January 1, 2002" to reflect that the effective date of this requirement has passed.

The commission proposes to amend subsection (c)(4) in order to facilitate compliance with the requirements of the analogous federal Long Term 1 Enhanced Surface Water Treatment Rule. First, the phrase "Beginning January 1, 2002" is proposed to be deleted because the referenced date has passed. Next, the commission proposes to relocate the current individual filter effluent monitoring requirement for systems serving fewer than 10,000 people from existing subsection (c)(4) to proposed subsection (c)(4)(A) and to adopt subsection (c)(4)(B) to incorporate new individual filter effluent monitoring requirements for these systems that become effective beginning January 1, 2005. The commission notes that proposed subsection (c)(4)(B) contains a monitoring requirement that differs from the federal Long Term 1 Enhanced Surface Water Treatment Rule in that it does not allow the option for systems serving fewer than 10,000 people with only two filters to install the turbidimeter and

recorder on the combined filter effluent line without installing an additional turbidimeter on each individual filter.

As noted in the preamble discussion of Subchapter D, §290.42(d)(11)(E)(ii), the proposal to install turbidimeters on each filter at plants serving fewer than 10,000 people with only two filters provides increased public health protection and affords the public water system certain operational advantages and cost savings. In addition, the proposal reduces the implementation cost for the state by creating uniform monitoring and reporting requirements for all surface water treatment plants, regardless of the population served or the date of construction. Currently, §290.42(d)(11)(E)(ii) - (iv) requires a filter to be equipped with an on-line turbidimeter if that filter: 1) has a capacity of at least 1.0 million gallons per day; 2) is located at a system that serves at least 10,000 people; or 3) was constructed after October 1, 2000. The federal Long Term 1 Enhanced Surface Water Treatment Rule requires an on-line turbidimeter to be installed on each filter that is located at a system which serves fewer than 10,000 people and has only one filter or has more than two filters. The federal rule also implies that a system with only two filters must continue to monitor the performance of individual filters if its two filters already have individual on-line turbidimeters.

Proposed subsection (c)(4)(B) offers numerous public health and operational benefits and reduces the complexity of the state implementation program. The commission finds that the proposal's benefits would outweigh the initial cost of approximately \$1,200 to \$3,600 for an additional turbidimeter at plants that have only two filters and currently engage in combined filter effluent monitoring without conducting individual filter effluent monitoring.

The commission proposes to amend §290.111(c)(5) to reflect that the effective date of the rule has passed, correct a typographical error in the Texas Administrative Code, and reference the appropriate provision of proposed subsection (b). Proposed subsection (c)(5)(A) would update the references to reflect the proposed restructuring of subsection (b) and to specify that the filter profile, not the Filter Profile Report, must be prepared within seven days of an elevated individual filter effluent turbidity event. The commission proposes to amend subsection (c)(5)(B) to reference the appropriate provisions of subsection (b) and provide that the filter assessment is not required until after the public water system has experienced the third of three events with elevated individual filter effluent turbidity levels. Similarly, the proposed amendment to subsection (c)(5)(C) would provide that the deadline for conducting a comprehensive performance evaluation is 90 days from the first individual filter effluent exceedance in the second of two consecutive months rather than from the first exceedance in the first of the two consecutive months.

The commission proposes subsection (c)(6) to require systems serving fewer than 10,000 people to conduct certain special filter studies if individual filter effluent turbidity levels exceed 1.0 Nephelometric Turbidity Unit (NTU). The proposed provision is analogous to requirements contained in the federal Long Term 1 Enhanced Surface Water Treatment Rule.

Proposed subsection (c)(6)(A) requires systems serving fewer than 10,000 people to identify the cause of each individual filter effluent turbidity exceedance or to prepare a filter profile. This proposal is analogous to the rule that the commission adopted in 2000 for systems serving at least 10,000 people and will ensure that the filter malfunctions at smaller plants will receive the same level of scrutiny as filter malfunctions at larger plants. Since filter malfunctions pose the same short-term health risk regardless of population served, the proposal assures that all of the citizens of Texas will receive the same level of protection against waterborne disease outbreaks. This regulatory approach is even more important at smaller plants because these plants typically have fewer filters and, under these conditions, a single malfunctioning filter has a greater impact on the quality of the water consumed by the public. Nevertheless, the commission is aware that the federal Long Term 1 Enhanced Surface Water Treatment Rule does not require systems serving fewer than 10,000 people to produce a filter profile even if they cannot identify the cause of the turbidity excursion. Because, in this respect, the commission is proposing a rule which differs from the federal rule, the commission seeks public comment on whether it is appropriate to require small systems to conduct the same special monitoring that larger systems must conduct.

Proposed subsection (c)(6)(B) also contains a requirement that differs from the federal Long Term 1 Enhanced Surface Water Treatment Rule. Specifically, the commission proposes to require systems that serve fewer than 10,000 people to conduct a filter assessment following the third of three separate individual filter effluent turbidity events that occur within a consecutive three-month period, even if all three events occur within a single month. The analogous federal provision requires the system to complete the assessment only after three consecutive months of exceedances regardless of how many times a filter exceeded performance criteria during the period. The commission finds that elevated individual filter effluent turbidity levels pose a potential health threat and the proposal would assure that the water system will identify the cause of repeated turbidity excursions in a timely manner. Furthermore, the proposal is consistent with the requirements that the commission adopted for systems serving 10,000 people or more.

Proposed subsection (c)(6)(C) contains a requirement that varies from the requirements of analogous provisions of the federal Long Term 1 Enhanced Surface Water Treatment Rule. The commission

proposes that each time the filtered water turbidity level for a specific filter or any combination of individual filters exceeds 2.0 NTU on two consecutive 15-minute readings during two consecutive months, the public water system must participate in a third-party comprehensive performance evaluation within 120 days of the first exceedance in the second month. The analogous federal provision requires the system to participate in the comprehensive performance evaluation only if the same filter has two consecutive months of exceedances. The commission finds that, because the comprehensive performance evaluation involves a comprehensive evaluation of the design, operation, maintenance, and administration of an entire treatment plant, the comprehensive performance evaluation requirement should be extended to address the performance of multiple filters in order to enhance the level of public health protection. Furthermore, the proposal is consistent with the requirements that the commission adopted for systems serving 10,000 people or more which, for the same reason, are not identical to the corresponding federal rules.

The commission proposes to amend §290.111(d)(3) to delete the phrase “Beginning January 1, 2002,” referring to a past compliance date. The commission also proposes to renumber subsection (d)(4) as subsection (d)(5) and adopt new subsection (d)(4) to incorporate the individual filter effluent monitoring requirements for systems serving fewer than 10,000 people that are scheduled to become effective on January 1, 2005.

The commission proposes to relocate the requirements currently contained in subsection (d)(4) to subsection (d)(5) and to amend the language so that it reflects that this monitoring requirement is scheduled to expire at the end of 2004.

The commission proposes to amend §290.111(e)(2) to reflect that the requirement to use the new Form 0102C has now been fully implemented. Proposed subsection (e)(3) - (5) would incorporate the additional reporting requirements imposed by the proposed revisions to the special individual filter effluent monitoring requirements for systems serving fewer than 10,000 people.

The commission proposes to amend §290.111(f) to eliminate unnecessary provisions and to incorporate an additional compliance determination for systems that serve fewer than 10,000 people. These proposed revisions are needed to maintain consistency with the requirements of the federal Long Term 1 Enhanced Surface Water Treatment Rule. Subsection (f)(3) is proposed to apply to all public water systems that are subject to the requirements of §290.111. The commission proposes to delete the existing requirement contained in subsection (f)(5) because the subsection (b)(1)(A)(ii) treatment technique it references has been replaced with a treatment technique currently contained in subsection

(b)(2)(A)(ii) and because existing subsection (f)(5) has been ineffective since December 31, 2001. Under the proposal, existing subsection (f)(5) and (6) would be amended and merged into a single paragraph numbered (f)(5). This proposed amendment is the result of proposed amendments to existing subsection (b)(1). As a result of this proposed amendment, subsection (f)(6) and (7) is proposed as renumbered subsection (f)(5) and (6), respectively. Also, the commission proposes to eliminate the references to a past compliance date in the amended paragraphs and to incorporate into proposed subsection (f)(6) the requirement for systems serving fewer than 10,000 people to correct the performance-limiting factors identified during a comprehensive performance evaluation.

The proposed amendment to §290.111(g)(2) would delete the reference to subsection (b)(2) because it would be inapplicable following the amendment to §290.111(b).

Section 290.117, Regulation of Lead and Cooper

The commission proposes to amend §290.117 to adhere to federal requirements, as noted by EPA Region 6 after reviewing the commission's Lead and Copper Program, and to make technical corrections.

Section 290.117(e)(1) and (5) is proposed to be amended to provide that a public water system is eligible to receive reduced monitoring if the results of 12 consecutive months of sampling show that the 90th percentile level of lead or copper does not exceed the appropriate action level, rather than simply any two six-month rounds, in compliance with federal requirements.

Section 290.117(g)(2) is proposed to be amended to incorporate the provision of the federal Lead and Copper Rule Minor Revisions that allows waivers for lead and copper tap sampling to be extended to all public water systems that serve 3,300 or fewer people.

Section 290.117(h)(1)(H) - (J) and (N) is proposed to be amended by deleting the word "large," thus ensuring that these provisions would be applied to all water systems regardless of size. The need for this change was noted by EPA Region 6 staff through review of the commission's draft federal Lead and Copper Program.

Section 290.117(h)(2)(A) is proposed to be amended to require source water monitoring every six-month period in which a public water system has a lead or copper exceedance, in conformance with federal rules. The commission proposes to delete the sentence "This requirement can be satisfied by normally scheduled inorganic chemical sampling in compliance with the monitoring under the SDWA."

The commission also proposes to delete the language stating that if acceptable entry point water data is not available for large systems, the water lead level at the entry point shall be considered zero mg/L for purposes of determining whether a corrosion control study is required because this option is not allowable under federal rule. Additionally, subsection (h)(2)(A) is proposed to be amended to correct the reference to §290.106.

Section 290.117(i)(2) is proposed to be amended to strike the size limitations for public education, because all water systems are subject to the requirements of paragraph (2). Section 290.117(i)(2)(G) is proposed to be amended to conform to the federal requirement that systems provide public education materials to their customers once every six months for as long as the system is in exceedance status.

Section 290.117(j)(1) is proposed to be amended to provide that a system required to perform water quality parameter monitoring is out of compliance with its approved water quality parameter ranges if its water quality parameter values fall outside its approved water quality parameter range for any nine days, as opposed to nine consecutive days, in conformance with federal requirements.

Section 290.117(j)(3) is proposed to be amended to apply the definition of systems deemed to have optimized corrosion control to all systems regardless of size, as noted by EPA Region 6 staff after review of the commission's Lead and Copper Program. Additionally, this section is proposed to be amended to incorporate the federal requirement that small and medium-sized systems perform corrosion control studies within 12 months of a confirmed lead or copper exceedance.

Section 290.117(j)(4)(H) is proposed to be amended to ensure that systems address the copper action level as well as the lead action level through approval of a corrosion control study. The proposed amendment deletes the phrases "installed corrosion control treatment" and "installing corrosion control treatment" and replacing them with "received approval for a corrosion control study" and "receiving approval for a corrosion control study."

The commission proposes to delete the language in existing §290.117(k)(1) - (5) and insert language which would adopt the federal requirements for lead service line replacement by reference, which in this case provides better clarity for the regulated community.

Section 290.121, Monitoring Plans

The commission proposes amended §290.121(b)(1)(A) to incorporate reporting and recordkeeping mandates contained in the federal Filter Backwash Recycling Rule. This proposed revision would

require the plant schematic to show the origins of recycled streams and information regarding pretreatment and reintroduction of the recycled streams.

Section 290.122, Public Notification

The commission proposes to amend §290.122 to incorporate changes needed to ensure consistency with federal rules, including needed revisions identified during review of the commission's Lead and Copper Program. Section 290.122(a) is proposed to be amended to reflect that there is also an acute violation notice required for any maximum residual disinfectant level violation. Section 290.122(a)(2)(A) is proposed to be amended to correct an erroneous reference to a provision in §290.46. Section 290.122(a)(2)(C) and (D) and (3)(C) is proposed to be amended by replacing the word "hand" with the word "direct" in order to incorporate the provision of the federal Public Notification Rule that allows mail delivery or hand delivery for acute violations. Proposed §290.122(a)(2)(E) would incorporate a new federal Public Notification Rule requirement. Proposed subparagraph (E) would require that, if public notice is provided by posting, the posting must remain in place for as long as the violation exists or seven days, whichever is longer. Section 290.122(a)(3)(C), in addition to the change to "hand" delivery, is proposed to be amended to conform to the federal requirement that posted notices must remain in place for at least seven days.

Proposed §290.122(b)(2)(A) would incorporate the provision of the federal Public Notification Rule that requires the initial notice for a non-acute violation to be performed by mail or hand delivery, and that requires systems to make a good faith effort to notify customers who might not be reached by mail or hand delivery. Proposed §290.122(b)(2)(C) would incorporate the federal requirement that public notices issued by posting must remain in place for at least seven days. Section 290.122(b)(3)(A) is proposed to be deleted because of redundancy. This provision inappropriately duplicated the provision for initial public notice contained in §290.122(b)(2). Section 290.122(b)(3)(B) and (C) is proposed to be relettered after deleting §290.122(b)(3)(A), with a change of the word "hand" to the word "direct." Section 290.122(b)(3)(C), in addition to being relettered as §290.122(b)(3)(B), is proposed to be amended by incorporating the federal seven-day public notice requirement, and to incorporate the provision of the federal Public Notification Rule that requires the initial notice for a non-acute violation to be performed by direct (i.e., mail or hand delivery) for noncommunity systems.

The commission proposes amended §290.122(c) to more accurately reflect the required monitoring requirements by replacing the phrase "these standards" with "this chapter." This amendment is needed because the monitoring requirements for the federal Filter Backwash Recycling Rule are in §290.46(f)(3)(C)(iii) of Subchapter D rather than in "these standards." Proposed §290.122(c)(1)(A)

would define the acronym designation “SCL” as “secondary constituent levels.” Proposed §290.122(c)(1)(E) would incorporate provisions of the federal Public Notification Rule and Filter Backwash Recycling Rule.

Section 290.122(c)(2)(A) and (B) is proposed to be amended by replacing the word “hand” with the word “direct” in order to incorporate the provision of the federal Public Notification Rule that allows mail delivery or hand delivery for monitoring and reporting violations. Proposed §290.122(c)(2)(C) would incorporate the federal seven-day public notice requirement. Section 290.122(c)(3)(B) is also proposed to be amended to incorporate provisions of the federal Public Notification Rule. The word “hand” is replaced with the word “direct” in order to allow mail delivery or hand delivery for monitoring and reporting violations, and to require that postings remain in place for a minimum of seven days.

Section 290.122(d)(3) is proposed to be modified to correct the reference for notifications that require mandatory public health language. Subsection (d)(3)(A) is proposed to be amended to correct the reference to the federal mandatory health effects language for MCLs and treatment technique requirements. The commission proposes to reletter subsection (d)(3)(B) as subsection (d)(3)(C) and to proposed new subsection (d)(3)(B), which would reference the federal mandatory health effects language for secondary fluoride violations.

Section 290.122(d)(9) is proposed to incorporate a reference to the federal notification requirements for systems that have received a variance or exemption to one or more of the MCLs or treatment technique requirements.

Section 290.122(g) is proposed to incorporate the provision of the federal Public Notification Rule that systems provide notification of violations to their customers.

Section 290.122(h) is proposed to include the provision in the federal Public Notification Rule allowing the executive director to notify the public directly of a violation as needed, without relaxing the requirement that the system is responsible for notification.

Finally, the proposal also contains typographical error corrections and administrative revisions to conform to Texas Register requirements.

FISCAL NOTE

Jan Washburn, Program Specialist in the Federal Grants Management and Strategic Planning Section, has determined that for the first five-year period the proposed amendments are in effect, there will be significant fiscal implications for public drinking water systems owned by units of local government and businesses, as well as for consumers, as a result of implementing the proposed amendments. Fiscal implications are also expected for units of state government, specifically the Texas Parks and Wildlife Department, as a result of implementing the proposed amendments. No significant fiscal implications are anticipated for the agency as a result of enforcement of or compliance with the proposed amendments.

The proposed amendments would adopt certain federal drinking water regulations which will ensure delivery of good quality drinking water by public water systems. In some respects, the state version of the federal regulations would differ slightly, in an effort to further protect public health. In addition to the federal requirements, the proposal would include other state-oriented amendments for protection of public health. Finally, the proposed amendments would help ensure consistent application of agency practices.

The federal rules that are the basis for this rule package are the Lead and Copper Rule Minor Revisions, the Public Notification Rule, Filter Backwash Recycling Rule, and the Long Term 1 Enhanced Surface Water Treatment Rule. The majority of costs associated with this group of rules will be borne by the systems that serve fewer than 10,000 people. Similar federal rules for the larger systems were adopted in 2000 and became effective in 2002, so the associated costs for those systems have been realized. These proposed amendments will affect virtually all public water systems. The changes to the Lead and Copper Rule Minor Revisions and the Public Notification Rule could affect as many as 5,380 of the 6,650 public water systems in Texas on an intermittent basis. Several of the rules related to lead and copper control, pH meter calibration, and supervision by certified operators will lower the operational and maintenance costs for systems. The changes to the Filter Backwash Recycling Rule will affect all 435 surface water treatment plants, although many of them will experience minimal impacts.

The costs outlined in this fiscal note are primarily attributable to the federal Long Term 1 Enhanced Surface Water Treatment Rule. The proposed amendments would affect most surface water treatment systems and some groundwater and purchased water systems that serve fewer than 10,000 people. It is estimated that approximately 750,000 customers served by these systems will be affected by these specific rules. Systems using cartridges or membranes in their treatment process or not using filters

(incomplete treatment) are not considered in the cost projections for the turbidimeter requirements of these rules. The term “surface water treatment plant” is intended to include groundwater under the direct influence of surface water. There are no costs anticipated due to the implementation of the Public Notification Rule.

The proposed amendments include various provisions that do not have an analogous federal counterpart. These ‘state’ amendments address issues specific to Texas, rather than the more general Long Term Enhanced Surface Water Treatment Rule. Proposed changes include those related to design of facilities, such as physical security or fencing, air relief devices, placement of intake points to ensure the highest quality of water and wiring requirements. Other amendments pertain to plant operations, such as proper maintenance of the facilities, operator certification, and recordkeeping. Many amendments are existing requirements and the language is only being relocated. The amendments and their pertinent changes to either design or operating practices were assessed. Any significant costs are detailed in this fiscal note and for all other changes to current practice or design, there is no significant fiscal impact to the state, local governments, individuals, or businesses.

COSTS SUMMARY

The financial implications of the proposed amendments will be presented in two formats. First, total costs for equipment and operating expenses will be arranged by corresponding rule: the federal Long Term 1 Enhanced Surface Water Treatment Rule and the corresponding amendments proposed by the state to implement this rule; the Filter Backwash Recycling Rule; and the Lead and Copper Rule Minor Revisions. Second, these costs will be presented by affected class -- local and state governments, small and micro-businesses, and individuals and water supply corporations.

Estimates for the cost of implementing the proposed amendments are based on information the commission has compiled pertinent to the operations of these water systems. Costs estimated for each affected class -- small and micro-businesses, water supply corporations, and state and local governments are average costs of that class. The estimated costs and cost savings are per system costs/savings. Actual costs per system are dependent upon the system’s individual design, which can vary greatly between systems. These estimates will be expressed in terms of capital or one-time and operational or ongoing costs. Capital or one-time costs occur at a specific point in time. The remaining costs are recurring or operational costs, such as the reporting requirements, which is the most costly part of the rules. These costs will also be allocated between costs resulting from the implementation of a federal proposed rule and those resulting from implementation of the state proposed version of the rule. These costs will be referred to as “state” costs, while the portions of the rule implementing the strictly federal

portions will be referred to as “federal.” All costs are estimated for the first five years the proposed amendments are in effect. Lastly, costs by affected class can be found in the attached tables with those costs rounded up in the discussion of each class.

The total statewide cost for the implementation of all three of these rules ranges from \$5 million to \$8.8 million for the first five years the proposed amendments are in effect. These costs can be broken down by rule. The cost to surface water treatment plants to implement the federal Long Term 1 Enhanced Surface Water Treatment Rule, if implemented strictly from the federal rules, is estimated to range from \$6.5 million to \$12.7 million, for the first five years the proposed amendments are in effect. The amendments proposed by the state should result in a cost savings to public drinking water systems ranging from \$1.3 million to \$5.2 million for the first five years the proposed amendments are in effect. Total net cost for implementation of the federal Long Term 1 Enhanced Surface Water Treatment Rule, considering the requirements of both the federal and state proposed rules, ranges from \$5.2 million to \$7.5 million. The most expensive portion of these rules is the operational or ongoing cost. These costs cost total from \$4.1 million to \$6.2 million, for the first five years the proposed amendments are in effect.

To implement the federal Filter Backwash Recycling Rule, surface water treatment plants will need to expend from \$175,000 to \$1.6 million the first five years the proposed amendments are in effect. The Lead and Copper Rule Minor Revisions should provide a cost savings of approximately \$330,000 for the first five years the proposed amendments are in effect for systems serving fewer than 3,300 persons.

Costs by affected class to implement all rules are as follows: costs to local governments range from \$3.9 million to \$6.9 million; cost for state government (Texas Parks and Wildlife Department) is a cost of from \$37,000 to a savings of \$136,000; the fiscal impact to water supply corporations will range from \$503,000 to \$569,000; investor-owned utilities will incur costs from \$950,000 to \$1.7 million.

LONG TERM 1 ENHANCED SURFACE WATER TREATMENT RULE

Capital and one-time costs

Turbidimeters and Recorders

The proposed amendments require the installation of an on-line turbidimeter and data recorder on each filter. This proposal differs from the analogous federal requirement, which allows public drinking water systems to install the equipment on the combined filter effluent line if they have only two filters without installing an additional turbidimeter and recorder on each individual filter effluent line.

Therefore, these costs are divided into state costs, those turbidimeters that are required as a result of the

state proposed rules, and federal costs, those turbidimeters that are required by the federal proposed rules. Turbidimeters provide continuous on-line measurement and determination of turbidity, by measuring solids in the water. Data recorders would also be required to ensure consistent recording of readings, as mandated by federal rule.

The cost to purchase and install one turbidimeter is estimated to range from \$1,700 to \$2,200 for the first filter and \$1,200 to \$1,400 for each additional filter. With proper operation and maintenance, these devices should last at least ten years. Annual calibration and maintenance cost for these devices is estimated at \$50 per year for each filter. The cost of a data recorder/supervisory control and data acquisition will range from \$500 to \$1,000 for the equipment and installation. The total combined capital cost is \$2,200 to \$3,200 for the first filter and \$1,700 to \$2,400 for each additional filter. The recorders are considered a federal requirement. A system's total capital outlay will depend upon the specific amount of equipment needed. The total cost across all systems for turbidimeters and data recorders ranges from \$1 million to \$1.3 million. Included in this amount, the state proposed rule accounts from \$194,000 to \$241,000 of additional equipment.

Operational Costs

Additional Data and Reporting

The proposed amendments require additional data reporting. To measure the effectiveness of a plant's filters, readings are taken at prescribed intervals during the day. Both the federal regulations and the proposed state rules alter those reporting requirements. Additionally, the rules make a distinction in the frequency of monitoring based on the design of the plants. The proposed federal rule requirement would establish a 15-minute monitoring interval, which is a change from the current four-hour interval sampling for combined filter effluent (two filters with one turbidimeter) and daily sampling for individual filter effluent (one filter with one turbidimeter) monitoring. This increase in the frequency of sampling means that most systems will report 96 readings per day per filter rather than the one reading per filter for most systems. The federal rules will also require the few systems with only two filters and no individual filter turbidimeters, to monitor the water produced by the two filters (blended water) every 15 minutes instead of once every four hours or, for very small systems, the current once per day. The proposed state rule would avoid the 15-minute monitoring requirement for blended water by requiring all filters to be equipped with individual turbidimeters. Therefore, the federal rule requires filters with individual turbidimeters and those with combined (two) filters monitored by one turbidimeter to have readings taken every 15 minutes. The additional monitoring required by both the existing federal rule and the proposed state rule result in increased operating costs. At 15-minute intervals, 2,976 (31 days) readings per filter per month are produced and then aggregated into a

monthly report. This is a change from the current rule requiring each filter to be sampled only once per day and the combined filter effluent (two filters with one turbidimeter) to be sampled every four hours, or for very small systems, once per day.

The benefit to the systems for requiring the additional turbidimeters is potentially reduced data manipulation in preparing the monthly reports. On combined filter effluent (two filters, one turbidimeter), data must be analyzed to determine compliance with the federal rule, requiring 95% of these 2,976 readings to be below 0.3 NTU. While the proposed state rule will require systems with one turbidimeter per filter, to investigate each individual filter exceedance above 1.0 NTU, they can calculate the plants' overall compliance with the maximum allowed turbidity limit for combined filter effluent by using the four-hour combined filter effluent readings, or six per day.

The federal Long Term 1 Enhanced Surface Water Treatment Rule requires systems serving fewer than 10,000 people to routinely report on the filters, as well as conduct special filter studies if individual filter effluent turbidity levels exceed prescribed levels. The routine reporting requirement is the monthly filter report mentioned above. Additionally, there are reports that are required when specific turbidity levels are exceeded. These reports are a filter profile report, filter assessment, and corrective action plan. If problems persist, a comprehensive performance evaluation must be undertaken. As a result of the proposed amendments, the number of exceedance reports will likely increase as the threshold for acceptable turbidity limits effectively decreases.

The costs for this increased work load pertinent to filter assessment reports and corrective actions due to filter assessment reports are apportioned to either the state or federal requirements. These costs are based on the assumption that all of the filter profiles and two-thirds of the assessment reports were attributable to the state provisions versus one-third of the filter assessments attributable to federal provisions. If systems identify the cause of each individual filter effluent turbidity exceedance, no filter profile is required. Federal rules do not require a filter profile when the plant does not know what caused the event. For filter assessments, the proposed amendments require systems to conduct a filter assessment following the third of three separate individual filter effluent turbidity events occurring within a consecutive three-month period, even if all three events occur within the same month. The analogous federal provision requires the system to complete the assessment only after three consecutive months of exceedances, regardless of how many times a filter exceeded performance criteria during the period (three months).

Water system staff hours involved in completing the routine reports, the largest portion of the reporting requirements, were estimated to range from 20 to 30 minutes per day, at a Class C operator salary range. For the series of exceedance reports, the filter profile reports are anticipated to take from one-half hour to four hours to prepare. The filter assessments are estimated to take from 16 to 20 hours to complete and the corrective actions are anticipated to take from 24 to 120 hours to complete. The comprehensive performance evaluation, the most complex of these actions, is assumed to take from 500 to 1,200 hours. The total reporting cost for all four groups of systems is estimated to range from \$5.7 million to \$11.7 million for the first five years the proposed amendments are in effect.

The proposed amendments also include minor operational requirements. First, groundwater systems will need to calibrate the well meters they have been required to have, once every three years. Additionally, for those systems that hire part-time operators, they must document the activities of those operators for 16 hours per month. If the operator works more than the 16 hours, those activities need not be documented. This documentation is estimated to take 15 minutes per week, and it is estimated 122 systems will choose to use part time operators. Previously, the rules did not allow systems to hire part time operators. The total cost of these two operational requirements ranges from \$200,000 to \$280,000 for all systems over the first five years the rules are in effect.

Savings to Offset Costs

Change in Operator Certification Requirements

The proposed amendments allow a system to staff plants with a Class C operator rather than a Class B operator, provided the Class C operator is under the supervision of a Class B operator, who may be a contractor. The contractor must be at the plant four hours within every 14-day period. This provision will provide regulatory relief to an estimated 87 systems. The salary differential between a Class B and a Class C operator is estimated to range from \$4.00 to \$8.00 per hour, potentially providing significant cost savings to any system that chooses to take advantage of this option. It is estimated that the cost savings could range from \$1.6 million to \$5.3 million over the first five years the proposed amendments are in effect. These offsets to cost are considered benefits from implementing the proposed amendments.

On-line pH Meter Calibration

The proposed amendments also provide regulatory relief by taking advantage of the technological efficiencies resulting from the use of on-line pH meters. Currently, bench top pH meters and on-line pH meters must be calibrated daily. Recent improvements in the design of most on-line pH meter electrodes have resulted in increased reliability and do not need to be calibrated as often. The proposed

amendments lessen the calibration requirements for those on-line meters to monthly, rather than daily, saving from one-half an hour to one and one-half hours per day of water utility staff time. A system may have up to seven meters; however, these cost savings are projected on a plant having an average of three. It was estimated that for the 20 systems currently using on-line pH meters, their total savings will range from \$328,000 to \$1,173,000 over the first five years the proposed amendments are in effect.

FILTER BACKWASH RECYCLING RULE

One - time Costs

Filter Backwash Recycling Rule and the Recycling Point

The proposed amendments incorporate design and operational mandates contained in the federal Filter Backwash Recycling Rule. Surface water plants can recycle the water backwashed while cleaning filters through the treatment plant or simply discharge the wastewater. This is not as efficient as recycling the water. Not recycling the water requires require the system to purchase more water to meet its customers' needs, and discharging the water would require the system to obtain a wastewater permit. This rule ensures that the contaminant removal requirement established in the federal Long Term 1 Enhanced Surface Water Treatment Rule is not jeopardized by recycling practices. The proposed amendments would require the liquids from sludge settling lagoons, spent backwash water tanks, dewatering facilities, and similar facilities to be returned to the raw waterline upstream of the raw water sample tap and coagulant feed point. These liquids contain a high level of contamination and need to be recycled through the treatment process. The federal Filter Backwash Recycling Rule does not require that liquids be recycled starting at a point prior to the raw water sampling tap and coagulant feed point, but requires the blended recycled liquids to pass through all of the major unit processes at the facility.

An increase in the quality of water treatment and in facility operation efficiency is expected by returning the untreated water to the raw waterline upstream of the sample tap and coagulant feed point. An alternative to the proposed practice would be to grab samples at the sampling tap to determine the appropriate chemical dose needed to treat the contaminated water. This alternative practice may be a burden to treatment facilities, as well as a potential health risk as chemical doses may be insufficient for treating the higher contamination levels found in liquids from sludge settling lagoons, spent backwash water tanks, dewatering facilities, and similar facilities. The proposed amendments may also require flow equalization basins, variable speed pumps, or other facilities to be provided to prevent hydraulic surges from occurring during the recycling process. These facilities are needed to minimize the impact of recycling streams on treatment facility performance and are required by federal rule.

The proposed amendments may cause a few surface water treatment facilities to change the location to which they route liquids from sludge settling lagoons, spent backwash water tanks, and dewatering facilities. Costs related to this portion of the proposed amendments could range from simply digging a trench and laying a six-inch pipeline to changing the location of some processes and laying a 36-inch line.

It is estimated that three of the 435 surface water treatment systems in the state, may have to relocate their recycling points, at a per incident cost ranging from \$1,000 to \$200,000. The proposed amendments allow the executive director to approve an alternate recycling point, should a system determine that physically changing the recycling point is cost-prohibitive. Potentially 35 systems may apply for this waiver. Systems may hire a consultant or prepare the request for the executive director to approve an alternate recycling point. These costs have been estimated to range from \$384 to \$2,304 per system. For these assumptions, costs are calculated using the salary for a Class B operator documenting the recycling process, taking from 24 hours to 96 hours to prepare the request.

Ongoing Costs

There are also additional federal reporting requirements pertinent to recycling, which entails preparation of an annual report. These costs are a per system cost and are shown as federal costs.

LEAD AND COPPER RULE MINOR REVISIONS

Reduced Monitoring for Lead and Copper cost savings

The implementation of this rule will only result in a cost savings to approximately 1,500 small systems; no additional costs are anticipated. The proposed amendments are expected to reduce the frequency of sampling for lead and copper to once every nine years for water systems in the Lead and Copper Monitoring Program serving less than 3,300 people, if the water system is shown to consistently not be in violation of the contaminant levels. The provisions require the results of two consecutive tap sampling rounds to show that the 90th percentile level of lead or copper does not exceed the appropriate action level.

It is estimated that 1,507 small public water systems (defined as serving less than 3,300 people) will be impacted by the proposed amendments, if they qualify for reduced monitoring. The proposed change in monitoring frequency is a change from the past ten years of rigorous sampling. Of these, it is further estimated that 512 systems are owned or operated by units of local government and 995 are operated by businesses.

Estimated costs include the cost of sampling and water system labor costs. System labor costs are approximately \$30 per sample and the laboratory cost is currently \$22 per sample. The savings resulting from increased eligibility for reduced monitoring under the Lead and Copper Monitoring Program will be \$111,020 over a five-year period for local governments and \$215,540 for systems owned by small businesses and water supply corporations. These are total estimated costs for all 1,507 eligible systems. Systems affected by the Long Term1 Enhanced Surface Water Treatment Rule and Filter Backwash Recycling Rule may or may not be included in the group affected by the Lead and Copper Rule Minor Revisions. The estimated savings to local governments, investor owned or water supply corporations is included on their respective tables.

PUBLIC BENEFITS AND COSTS

Ms. Washburn also determined that for each year of the first five years the proposed amendments are in effect, the public benefit anticipated from the enforcement of and compliance with the proposed amendments will be a reduced risk of outbreaks of waterborne disease. Significant fiscal implications are also anticipated for businesses and retail public water utilities as well as consumers as a result of implementing the proposed amendments. It is anticipated that any costs to investor-owned utilities, water supply corporations, and local governments to implement the proposed amendments could be passed on to consumers.

In 1990, EPA cited drinking water contaminants as one of the important environmental risks and indicated that disease-causing microbial contaminants are probably the greatest remaining health risk management challenge for drinking water suppliers. Implementation of the proposed amendments is expected to decrease the risk of waterborne disease caused by the parasite *Cryptosporidium parvum*. *Cryptosporidium* is a protozoan parasite widely found in surface water supplies as the result of contamination. The ingestion of this microorganism can cause gastrointestinal illness, such as diarrhea, vomiting, stomach cramps, loss of appetite, and a mild fever. *Cryptosporidium* is recognized as one of the most common causes of waterborne disease and is not easily killed by commonly-used disinfectants. The microorganism is relatively unaffected by chlorine and chloramines in the concentrations that are used for drinking water treatments. *Cryptosporidium* can only be removed from water via a filtration process. The proposed amendments would establish individual filter monitoring to minimize contaminant passthrough and to support improved filter performance.

The proposed amendments include provisions that are consistent with federal requirements found in the federal Long Term 1 Enhanced Surface Water Treatment Rule, which establishes an MCL of zero for *Cryptosporidium*. The proposed amendments also establish a minimum treatment technique

requirement. The proposed amendments require all public water systems, regardless of size, to meet strengthened filter effluent turbidity limits. Implementation of the proposed amendments will facilitate more reliable treatment of public drinking water as well as quicker detection of equipment failure due to individual filter effluent monitoring. This equipment will substantially increase the ability of water treatment systems to respond to increases in turbidity, and thus more quickly identify microorganisms that may cause disease.

Potential costs that a system could incur after a turbidity exceedance might be similar to the experience of the Brushy Creek Municipal Utility District in 1998, when a severe storm impacted its raw water supply. The result was a *Cryptosporidiosis* outbreak. While this example is not the same as water treatment under normal circumstances, it does illustrate the impact of turbidity exceedance. The wells that the municipal utility district was using are still out of service, causing the municipal utility district to purchase water from the city of Round Rock at a cost of \$.93/1,000 gallons versus the \$.09/1,000 gallons it would cost to produce water from its own wells. The cost of the exceedances equates to approximately \$320,000/year in additional costs for that municipal utility district.

It is estimated that the public benefit of improved removal of *Cryptosporidium*, thereby reducing the incidence of *Cryptosporidiosis*, could save the public up to \$1.3 million as a result of disease avoidance. According to the Texas Department of Health, over the last ten years, the number of reported *Cryptosporidiosis* cases where the individual sought medical attention has averaged 271 per year. This includes the Brushy Creek outbreak that significantly skewed the average. For example, the number of reported cases in the year 2000 was 95 and in the year 2002 was 35. In 1998, the Health Department recorded 702 cases in Williamson County (Brushy Creek), out of the total cases for the year of 907.

The Texas Department of Health does not record the source of the *Cryptosporidiosis* transmissions. Not all cases result from waterborne infection. For the purposed of this document, it is assumed that 50% of the yearly average cases were transmitted via water. Using the EPA's estimate for lost wages and medical bills due to illnesses, \$2,000 per incident, the population could avoid costs or loss of income of \$1.3 million over the first five years the proposed amendments are in effect.

Costs incurred by facilities to implement the proposed requirement may result in increased fees paid by consumers for drinking water. Any increase in fees would depend upon how the proposed amendments affect a particular water facility. Some systems could absorb minimal additional costs, or, if they chose

to take advantage of the operational efficiencies offered in the proposed amendments, could see a decline in their operational costs.

COST TO LOCAL GOVERNMENTS

Long Term 1 Surface Water Treatment

One-time costs

Some portions of the proposed amendments will impact all small water systems to some extent. It is estimated that approximately 167 small water systems owned by units of local government will be impacted by the proposed amendments that pertain to turbidimeters. The total capital expenditures required to implement the proposed amendments for local governments range from \$676,000 to \$878,000 before any offsets to costs are applied. The capital costs include state turbidimeters (\$121,800 - \$151,200), federal turbidimeters (\$482,000 - \$582,000) and data recorders (\$72,500 - \$145,000).

Ongoing Costs

The ongoing and maintenance costs to local governments consist of the various filter reporting requirements and actions and the cost of calibrating the turbidimeters, and range from \$4.2 million to \$8.7 million for the first five years the proposed amendments are in effect. The bulk of these costs pertains to the monthly filter reporting requirements. The cost to calibrate well meters in accordance with the requirements of the proposed rule is estimated to range from \$36 to \$48 per system, or a total ranging from \$46,000 to \$62,000 for the first five years the proposed amendments are in effect. The estimated cost to document part-time operator hours ranges from \$70,000 to \$93,000 for the first five years the amendments are in effect.

If the local governments take advantage of all the possible operational offsets and efficiencies the proposed amendments make available, the five-year cost of implementing the proposed amendments is reduced to a range of \$3.8 million to \$5.9 million. These offsets to costs (including Lead and Copper Rule Minor Revisions) pertain to the state rules allowing systems to hire Class C operators. The offset to costs for local governments from the changes to pH meter calibration requirements ranges from \$131,000 to \$470,000.

FILTER BACKWASH RECYCLING RULE

One-time costs

It is estimated that the proposed amendments would result in two local government systems relocating their recycling points, at a cost of \$2,000 to \$400,000. It is estimated that 25 systems will hire a

consultant or prepare a request for the executive director to approve an alternate recycling point at a total cost of \$11,600 to \$458,000. Both of these costs are allocated one-half to the state and the other half to the federal rules as there was equal likelihood that either rule would be the impetus for the change.

Operational Costs

Operational costs consist of the monthly recycling report ranging from \$100,000 to \$598,000.

Lead and Copper Rule Minor Revisions

The cost savings to local governments due to the proposed amendments are expected to be \$36,000 for the first five years that the proposed amendments are in effect.

Figure: 30 TAC Preamble-1

Costs for Local Governments, All Rules

Costs	Systems Affected	State Low	State High	Federal Low	Federal High	Total Low Range	Total High Range
Capital/One-time							
Turbidimeters	42/ 364	\$121,800	\$151,200	\$481,800	\$581,600	\$603,600	\$732,800
Data Recorder	145			\$72,500	\$145,000	\$72,500	\$145,000
LT1 One-time Subtotal		\$121,800	\$151,200	\$554,300	\$726,600	\$676,100	\$877,800
<i>Operating Costs</i>							
Filter reporting/ assessments/ corrective actions	167-5 years	\$188,735	\$483,288	\$3,743,716	\$7,602,256	\$3,932,451	\$8,085,544
Op & Maintenance Turbidimeters		\$15,900	\$42,400	\$169,003	\$424,358	\$184,903	\$466,758
Calibrate Well Meters		\$46,160	\$61,547			\$46,160	\$61,547
Operator Documentation		\$69,966	\$93,288			\$69,966	\$93,288
LT 1 Operating Subtotal		\$320,761	\$680,523	\$3,912,719	\$8,026,614	\$4,233,480	\$8,707,137

Costs	Systems Affected	State Low	State High	Federal Low	Federal High	Total Low Range	Total High Range
Operator Cert. Offsets		(\$998,400)	(\$3,213,600)			(\$998,400)	(\$3,213,600)
pH meter Offset		(\$131,460)	(\$469,500)			(\$131,460)	(\$469,500)
LT1 subtotal		(\$687,299)	(\$2,851,377)	\$4,467,019	\$8,753,214	\$3,779,720	\$5,901,837
Recycling Point/ Alternative approval	2/25	\$5,800	\$228,800	\$5,800	\$228,800	\$11,600	\$457,600
Recycling- ongoing				\$99,648	\$597,888	\$99,648	\$597,888
Recycling Subtotal		\$5,800	\$228,800	\$105,448	\$826,688	\$111,248	\$1,055,488
Lead & Copper Offset		(\$36,072)	(\$36,072)			(\$36,072)	(\$36,072)
Costs to Local Governments		(\$717,571)	(\$2,658,649)	\$4,572,467	\$9,579,902	\$3,854,896	\$6,921,253

Note: shaded rows are the sum of state and federal costs. Note: Systems affected column indicates the number of components, i.e., 42/364 is 42 state/364 federal turbidimeters.

COSTS TO STATE GOVERNMENT

Long Term 1 Enhanced Surface Water Treatment Rule

No significant fiscal implications are anticipated for the commission as a result of administration or enforcement of the proposed amendments as there are likely to be no new activities within the agency as a result of the proposal. However, one area of state government that will be affected by the proposed amendments is the Texas Parks and Wildlife Department, having 11 surface water treatment facilities.

One-time costs

Eight of these facilities will have to install additional turbidimeters and data recorders. It is estimated that ten turbidimeters will be required by state rules while 11 will result from the federal rules. The capital cost for these systems consist of turbidimeters and data recorders, with these costs ranging from \$33,000 to \$43,000.

Ongoing costs

The ongoing and maintenance costs to state government consist of the various filter reporting requirements and actions and the cost of calibrating the turbidimeters, and range from \$189,000 to \$395,000 for the first five years the proposed amendments are in effect. The bulk of these costs pertains to the monthly filter reporting requirements. The cost to calibrate well meters is estimated to range from \$3,000 to \$4,000. The estimated cost to document part-time operator hours ranges from \$900 to \$1,200 for the first five years the proposed amendments are in effect.

If the Texas Parks and Wildlife Department takes advantage of the operational offsets and efficiencies the proposed amendments make available, the cost to implement the federal Long Term 1 Enhanced Surface Water Treatment Rule ranges from a savings of \$180,000 to a cost of \$30,000. This calculation is unique in that the cost savings occurs at the higher end of the estimated costs. The savings at the high end of the range is attributable to the greater salary differential between the Class B and Class C operator used to estimate the cost savings for the upper range. The high range yielded a large enough cost savings to offset the capital costs for state government. The offsets to costs are attributable only to the state rules allowing systems to hire Class C operators.

Figure: 30 TAC Preamble-2

Costs for State Government, All Rules

	Systems Affected	State Low	State High	Federal Low	Federal High	Total Low Range	Total High Range
<i>Capital/One-time Costs</i>							
Turbidimeters	10/11 (filters)	\$11,600	\$14,400	\$16,400	\$20,000	\$28,000	\$34,400
Data Recorder	11			\$4,500	\$9,000	\$4,500	\$9,000
One-time Subtotal		\$11,600	\$14,400	\$20,900	\$29,000	\$32,500	\$43,400
<i>Ongoing Costs</i>							
Filter reporting/assessments/ corrective actions		\$17,837	\$45,976	\$158,950	\$321,200	\$176,787	\$367,176
Op & Maintenance on Turbidimeters		\$1,500	\$4,000	\$7,233	\$18,163	\$8,733	\$22,163
Calibrate Well Meters		\$3,030	\$4,040			\$3,030	\$4,040
Operator Documentation		\$936	\$1,248			\$936	\$1,248
Operating Subtotal		\$23,303	\$55,264	\$166,183	\$339,363	\$189,486	\$394,627
Operator Cert. Offsets		(\$192,000)	(\$618,000)			(\$192,000)	(\$618,000)

	Systems Affected	State Low	State High	Federal Low	Federal High	Total Low Range	Total High Range
LT 1 Subtotal		(\$157,097)	(\$548,336)	\$187,083	\$368,363	\$29,986	(\$179,973)
Recycling Point	1	\$174	\$1,152	\$174	\$1,152	\$348	\$2,304
Recycling Report		\$0	\$0	\$6,912	\$41,472	\$6,912	\$41,472
Recycling Subtotal		\$174	\$1,152	\$7,086	\$42,624	\$7,260	\$43,776
Costs to state government		(\$156,923)	(\$547,184)	\$194,169	\$410,987	\$37,246	(\$136,197)

Note: Systems affected column indicates the number of components, i.e., 10/11 is 10 state/11 federal turbidimeters.

FILTER BACKWASH RECYCLING RULE

One-time costs

One-time estimated costs to state government for implementing the federal Filter Backwash Recycling Rule range from \$384 to \$2,304. It is estimated that the proposed amendments would result in no systems relocating their recycling points. However, it is estimated that one system will request the commission to approve an alternate recycling point at a cost from \$400 to \$2,000. These costs are allocated one-half to the state and the other half to the federal rules as there is equal likelihood that either rule would be the impetus for the change.

Ongoing Costs

Operational costs for state government consist of the monthly recycling report ranging from \$7,000 to \$41,000.

Lead and Copper Rule Minor Revisions

There is no allowance for reduction of lead and copper monitoring attributed to the Texas Parks and Wildlife Department. These systems are currently exempt from these monitoring requirements as they are non-transient, non-community systems.

COSTS TO WATER SUPPLY CORPORATIONS

Long Term 1 Surface Water Treatment Rule

One-time costs

Water supply corporations are included in this class, and not businesses as they are non-profit organizations. The capital costs for these systems include state turbidimeters (\$29,000 to \$36,000) and

federal turbidimeters (\$88,200 - \$107,000) and data recorders (\$13,500 - \$27,000), which are considered federal.

Ongoing costs

The ongoing and maintenance costs of water supply corporations consist of the various filter reporting requirements and actions and the cost of calibrating the turbidimeters. They range from \$715,000 to \$1.5 million for the first five years the proposed amendments are in effect. The bulk of these costs pertains to the monthly filter reporting requirements. The cost to calibrate well meters is estimated to range from \$19,000 to \$25,000. The estimated cost to document part-time operator hours ranges from \$21,000 to \$28,000 for the first five years the proposed amendments are in effect.

If the water supply corporations take advantage of all the possible operational offsets and efficiencies the proposed amendments make available, the five-year cost to these systems to implement the federal Long Term 1 Enhanced Surface Water Treatment Rule will range from a cost of \$487,000 to \$436,000. The lower cost at the high end of the range is attributable to the higher salary differential between the Class B and Class C operators used to estimate the cost savings for the upper range. The high range yielded a large enough cost savings to reduce the total costs to the water supply corporations. These offsets to costs pertain to the state rules allowing systems to hire Class C operators, the pH meter offsets, and the Lead and Copper Monitoring Program offset.

Filter Backwash Recycling Rule

One-time costs

It is anticipated that no system will relocate its recycling point and five systems will seek approval for an alternate recycling point. These costs range from \$1,900 to \$12,000 and are considered both state and federal costs.

Figure: 30 TAC Preamble-3

Water Supply Corporations, All Rules

	Systems Affected	State Low	State High	Federal Low	Federal High	Total Low Range	Total High Range
<i>Capital/One-time</i>							
Turbidimeters	86 filters	\$29,000	\$36,000	\$88,200	\$106,800	\$117,200	\$142,800
Data Recorder	80 filters			\$13,500	\$27,000	\$13,500	\$27,000

	Systems Affected	State Low	State High	Federal Low	Federal High	Total Low Range	Total High Range
LT 1 One-time Subtotal		\$29,000	\$36,000	\$101,700	\$133,800	\$130,700	\$169,800
<i>Operating Costs</i>							
Filter reporting/ corrective actions		\$38,964	\$99,624	\$605,657	\$1,230,808	\$644,621	\$1,330,432
Op & Maintenance Turbidimeters		\$3,300	\$8,800	\$27,290	\$68,524	\$30,590	\$77,324
Calibrate Well Meters		\$19,060	\$25,413			\$19,060	\$25,413
Operator Documentation		\$21,060	\$28,080			\$21,060	\$28,080
LT 1 Operating Subtotal		\$82,384	\$161,917	\$632,947	\$1,299,332	\$715,331	\$1,461,249
Operator Cert. Offsets		(\$249,600)	(\$803,400)			(\$249,600)	(\$803,400)
pH meter Offset		(\$109,550)	(\$391,250)			(\$109,550)	(\$391,250)
LT1 Subtotal		(\$247,766)	(\$996,733)	\$734,647	\$1,433,132	\$486,881	\$436,399
Recycling Point/ alternative approval	0/5	\$960	\$5,760	\$960	\$5,760	\$1,920	\$11,520
Recycling report				\$21,312	\$127,872	\$21,312	\$127,872
Recycling Subtotal		\$960	\$5,760	\$22,272	\$133,632	\$23,232	\$139,392
Lead & Copper Offset		(\$6,912)	(\$6,912)			(\$6,912)	(\$6,912)
Costs to Water Supply Corps.		(\$253,718)	(\$997,885)	\$756,919	\$1,566,764	\$503,201	\$568,879

Note: shaded rows are the sum of state and federal costs. Systems affected column indicates the number of components, i.e., 86 is 86 turbidimeters.

Ongoing costs

Operational costs consist of the monthly recycling report ranging from \$21,000 to \$139,000.

Lead and Copper Rule Minor Revisions

The cost savings due to the proposed amendments is expected to be \$7,000 for the first five years the proposed amendments are in effect.

SMALL BUSINESS AND MICRO-BUSINESS ASSESSMENT

Adverse fiscal implications are anticipated for small or micro-businesses as a result of implementation of the proposed amendments. Small and micro-businesses affected by the proposed amendments would be those public drinking water systems privately formed for the purpose of making a profit and owned by investors. The commission does not keep data on the number of employees that water utilities employ. Therefore, it was assumed that all 32 investor-owned/private utilities were either small or micro-businesses.

Long Term 1 Surface Water Treatment Rule

One-time costs

The capital and one-time costs for these systems consist of turbidimeters and data recorders. These costs range from \$188,000 to \$242,000.

Ongoing costs

The ongoing and maintenance costs of private/investor-owned systems consist of the various filter reporting requirements, filter actions, and the cost of calibrating the turbidimeters. They range from \$1 million to \$2.1 million for the first five years the proposed amendments are in effect. The bulk of these costs pertain to the monthly filter reporting requirements. The cost to calibrate well meters is estimated to range from \$46,900 to \$63,000. The estimated cost to document part-time operator hours ranges from \$2,000 to \$2,500 for the first five years the proposed amendments are in effect.

If the investor-owned utilities take advantage of all the possible operational offsets and efficiencies the proposed amendments make available, the five-year cost to these systems ranges from \$923,000 to \$1.3 million. These offsets to costs pertain to the state rules allowing systems to hire Class C operators, the pH meter offset, and the Lead and Copper Monitoring Program offset.

Filter Backwash Recycling Rule

One-time costs

It is anticipated that one system will relocate its recycling point at a per system cost of \$1,000 to \$200,000 and four systems will seek approval for an alternate recycling point, at a per system cost of

\$384 to \$2,304. These total costs range from \$3,000 to \$209,000 and are considered both state and federal costs.

Ongoing costs

Operational costs for investor owned systems consist of the monthly recycling report ranging from \$30,000 to \$180,000.

Lead and Copper Rule Minor Revisions

The cost savings due to these amendments are expected to be \$9,000 for the first five years the proposed amendments are in effect.

Figure: 30 TAC Preamble-4

Costs for Investor-Owned Systems, All Rules

	Systems Affected	State Low	State High	Federal Low	Federal High	Total Low Range	Total High Range
<i>Capital/One-time Costs</i>							
Turbidimeters	22/105 (filters)	\$31,900	\$39,600	\$138,500	\$167,000	\$170,400	\$206,600
Data Recorder	117			\$17,500	\$35,000	\$17,500	\$35,000
LT 1 One-time Subtotal		\$31,900	\$39,600	\$156,000	\$202,000	\$187,900	\$241,600
<i>Ongoing Costs</i>							
Filter reporting/ assessments/corrective actions		\$42,924	\$109,728	\$916,410	\$1,860,016	\$959,334	\$1,969,744
Op & Maintenance on Turbidimeters		\$3,600	\$9,600	\$41,428	\$104,025	\$45,028	\$113,625
Calibrate Well Meters		\$46,900	\$62,533			\$46,900	\$62,533
Operator Documentation		\$1,794	\$2,392			\$1,794	\$2,392
LT 1 Ongoing Subtotal		\$95,218	\$184,253	\$957,838	\$1,964,041	\$1,053,056	\$2,148,294
Operator Cert. Offset		(\$230,400)	(\$741,600)			(\$230,400)	(\$741,600)
pH Meter Offset		(\$87,640)	(\$313,000)			(\$87,640)	(\$313,000)
LT 1 subtotal		(\$190,922)	(\$830,747)	\$1,113,838	\$2,166,041	\$922,916	\$1,335,294

Recycling Point/ alternative approval	1/4	\$1,268	\$104,608	\$1,268	\$104,608	\$2,536	\$209,216
Recycling Report		\$0	\$0	\$29,952	\$179,712	\$29,952	\$179,712
Recycling Subtotal		\$1,268	\$104,608	\$31,220	\$284,320	\$32,488	\$388,928
Lead & Copper Offset		(\$8,856)	(\$8,856)			(\$8,856)	(\$8,856)
Costs to Investor Owned		(\$198,510)	(\$734,995)	\$1,145,058	\$2,450,361	\$946,548	\$1,715,366

Note: shaded rows are the sum of state and federal costs. Systems affected column indicates the number of components, i.e., 22/105 is 22 state/105 federal turbidimeters.

LOCAL EMPLOYMENT IMPACT STATEMENT

The commission has reviewed this proposed rulemaking and determined that a local employment impact statement is not required because the proposed amendments do not adversely affect a local economy in a material way for the first five years the proposed amendments are in effect. The proposed amendments would: include provisions that are consistent with federal requirements; make technical corrections to the state rules that are analogous to the federal rules; include requirements for the laboratory areas at surface water treatment facilities; and make minor revisions to specify several existing regulatory requirements regarding the design and operation of public water systems. The proposed amendments are expected to affect most surface water treatment facilities and a few groundwater systems that need to install advanced treatment in order to comply with an MCL or minimum treatment technique requirement.

DRAFT REGULATORY IMPACT ANALYSIS DETERMINATION

The commission reviewed the proposed rulemaking in light of the regulatory analysis requirements of Texas Government Code, §2001.0225, and determined that the rulemaking does not meet the definition of a “major environmental rule” as defined in that statute. A “major environmental rule” means a rule, the specific intent of which, is to protect the environment or reduce risks to human health from exposure and that may adversely affect in a material way, the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. Although the proposed amendments to Chapter 290 are intended in part to reduce risks to human health from unsafe drinking water in public water systems, the proposed amendments would not adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or public health and safety of the state. The proposed amendments would protect public health by improving the standards for public drinking water. The proposed amendments would also, while providing an alternative approach to compliance from the federal rules, require public

drinking water systems to meet the same regulatory standards set forth in the federal rules. Further, it is not anticipated that the cost of complying with the proposed amendments will be significant with respect to the economy as a whole; therefore, they will not materially affect the economy, a sector of the economy, productivity, competition, or jobs.

Furthermore, the proposed rulemaking does not meet any of the four applicability requirements listed in Texas Government Code, §2001.0225(a). This section only applies to a major environmental rule, the result of which is to: 1) exceed a standard set by federal law, unless the rule is specifically required by state law; 2) exceed an express requirement of state law, unless the rule is specifically required by federal law; 3) exceed a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and federal program; or 4) adopt a rule solely under the general powers of the agency instead of under a specific state law. This rulemaking does not meet any of these four applicability requirements because this rulemaking: 1) does not exceed any standard set by federal law for treatment of water utilized in public water systems and is proposed to be consistent with federal rules; 2) does not exceed the requirements of state law under Texas Health and Safety Code, Chapter 341, Subchapter C; 3) does not exceed a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement any state and federal program on treatment of water utilized in public water systems, but rather is proposed to be consistent with federal rules in order to allow the state to maintain its authority to implement the federal Safe Drinking Water Act; and 4) is not proposed solely under the general powers of the agency, but rather specifically under Texas Health and Safety Code, §341.031, which allows the commission to adopt and enforce rules to implement the federal Safe Drinking Water Act, as well as the other general powers of the agency.

TAKINGS IMPACT ASSESSMENT

The commission evaluated the proposed amendments to Chapter 290 and performed a preliminary assessment of whether it constitutes takings under Texas Government Code, Chapter 2007. The primary purpose of the proposed amendments is to: 1) require public water systems, where needed, to institute changes to the return of recycle flows to a plant's treatment process that may otherwise compromise microbial control in response to the National Primary Drinking Water Regulations: Filter Backwash Recycling Rule published by the EPA in the June 8, 2001 issue of the *Federal Register* (66 FR 31086), codified in 40 CFR Parts 9, 141, and 142; 2) improve control of microbial pathogens, specifically the protozoan *Cryptosporidium*, in drinking water and address risk trade-offs with disinfection byproducts in response to the National Primary Drinking Water Regulations: Long Term 1 Enhanced Surface Water Treatment Rule published by the EPA in the January 14, 2002 issue of the

Federal Register (67 FR 1812), codified in 40 CFR Parts 9, 141, and 142; and 3) technically revise state rules to enhance their consistency with minor revisions made by the EPA to the federal National Primary Drinking Water Regulations for Lead and Copper, also known as the federal Lead and Copper Rule Minor Revisions, published by the EPA in the January 12, 2000 issue of the *Federal Register* (65 FR 1950), codified in 40 CFR Parts 9, 141, and 142; and federal National Primary Drinking Water Regulations: Public Notification Rule published by the EPA in the May 4, 2000 issue of the *Federal Register* (65 FR 25982), codified in 40 CFR Part 9, *et al.* The purposes of the other proposed changes are to: 1) specify how the agency implements the minimum capacity requirements for public water systems; 2) provide requirements for laboratories at surface water treatment plants; 3) describe air relief device requirements; 4) revise sanitary control easement, operator certification, security, maintenance, meter calibration, and electrical wiring requirements; 5) revise reporting requirements; 6) add items to "Appendix I, Assessment of Hazard and Selection of Assemblies;" 7) reorganize and modify source water, water treatment, and turbidity requirements; and 8) provide non-substantive revisions, including typographical error and formatting corrections, to conform with Texas Register requirements.

Promulgation and enforcement of the proposed amendments would constitute neither a statutory nor a constitutional taking of private real property. There are no burdens imposed on private real property under this rulemaking because the proposed amendments neither relate to, nor have any impact on the use or enjoyment of private real property, and there would be no reduction in value of property as a result of this rulemaking. The rulemaking requires community water systems to comply with drinking water standards protective of human health and the environment. Furthermore, the proposed rulemaking would make state standards for radionuclides consistent with existing federal standards. The proposed amendments, while providing an alternative approach to compliance from the federal rules, require public drinking water systems to meet the same regulatory standards in federal rules.

CONSISTENCY WITH THE COASTAL MANAGEMENT PROGRAM

The commission has reviewed this rulemaking and found that the proposal is not a rulemaking subject to the Texas Coastal Management Program (CMP) because the rulemaking is neither identified in 31 TAC §505.11, nor will it affect any action or authorization identified in §505.11. Therefore, the proposal is not subject to the CMP.

ANNOUNCEMENT OF HEARING

The commission will hold a public hearing on this proposal in Austin on September 3, 2003 at 2:00 p.m., in Building F, Room 2210, at the commission's central office located at 12100 Park 35 Circle. The hearing is structured for the receipt of oral or written comments by interested persons. Individuals

may present oral statements when called upon in order of registration. Open discussion will not be permitted during the hearing; however, commission staff members will be available to discuss the proposal 30 minutes before the hearing and will answer questions before and after the hearing.

Persons with disabilities who have special communication or other accommodation needs who are planning to attend the hearing should contact the Office of Environmental Policy, Analysis, and Assessment at (512) 239-4900. Requests should be made as far in advance as possible.

SUBMITTAL OF COMMENTS

Comments may be submitted to Patricia Durón, Office of Environmental Policy, Analysis, and Assessment, MC 205, P.O. Box 13087, Austin, Texas 78711-3087 or faxed to (512) 239-4808. Comments must be received by 5:00 p.m., September 8, 2003, and should reference Rule Log Number 2003-013-290-WT. For further information, please contact Ray Austin, Policy and Regulations Division, at (512) 239-6814.

SUBCHAPTER D: RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS §§290.38, 290.39, 290.41 - 290.47

STATUTORY AUTHORITY

These amendments are proposed under Texas Water Code, §5.102, which establishes the commission's general authority necessary to carry out its jurisdiction; §5.103, which establishes the commission's general authority to adopt rules; §5.105, which establishes the commission's authority to set policy by

rule; and Texas Health and Safety Code, §341.031, which allows the commission to adopt rules to implement the federal Safe Drinking Water Act, 42 United States Code, §§300f to 300j-26.

The proposed amendments implement Texas Health and Safety Code, §341.031 and §341.0315, which require public water systems to comply with commission rules adopted to ensure the supply of safe drinking water.

§290.38. Definitions.

The following words and terms, when used in this chapter shall have the following meanings, unless the context clearly indicates otherwise. If a word or term used in this chapter is not contained in the following list, its definition shall be as shown in Title 40 Code of Federal Regulations (CFR) §141.2 [141.2]. Other technical terms used shall have the meanings or definitions listed in the latest edition of *The Drinking Water Dictionary*, prepared by the American Water Works Association.

(1) - (16) (No change.)

(17) **Drinking water standards** -- The commission rules covering drinking water standards in Subchapter F of this chapter (relating to Drinking Water Standards Governing Drinking Water Quality and Reporting Requirements for Public Water [Supply] Systems).

(18) - (20) (No change.)

(21) **Groundwater under the direct influence of surface water** -- Any water beneath the surface of the ground with:

(A) significant occurrence of insects or other macroorganisms, algae, or large-diameter pathogens such as *Giardia lamblia* or *Cryptosporidium*; [.]

(B) (No change.)

(22) - (26) (No change.)

(27) **Licensed professional engineer [Professional Engineer]** -- An engineer who maintains a current license through the Texas Board of Professional Engineers in accordance with its requirements for professional practice.

(28) - (29) (No change.)

(30) **Milligrams per liter (mg/L)** -- A [a] measure of concentration, equivalent to and replacing parts per million [(ppm)] in the case of dilute solutions.

(31) - (39) (No change.)

(40) **Plumbing ordinance** -- A set of rules governing plumbing practices which is at least as stringent and comprehensive as one of the following nationally recognized codes:

(A) the International Plumbing Code; [,] or

(B) (No change.)

(41) - (44) (No change.)

(45) **Public drinking water program** -- Agency staff designated by the executive director to administer the Safe Drinking Water Act and state statutes related to the regulation of public drinking water. Any report required to be submitted in this chapter to the executive director must be submitted to the Texas Commission on Environmental Quality [Texas Natural Resource Conservation Commission], Water Supply Division, MC 155, P.O. Box 13087, Austin, Texas 78711-3087.

(46) **Public health engineering practices** -- Requirements in this subchapter [these sections] or guidelines promulgated by the executive director.

(47) - (56) (No change.)

§290.39. General Provisions.

(a) Authority for requirements. [The] Texas Health and Safety Code (THSC), Chapter 341, Subchapter C prescribes the duties of the commission relating to the regulation and control of public

drinking water systems in the state [State]. The statute requires [These statutes require] that the commission ensure that public water systems: supply safe drinking water in adequate quantities, are financially stable and technically sound, promote use of regional and area-wide drinking water systems, and review completed plans and specifications and business plans for all contemplated public water systems not exempted by THSC, [Health and Safety Code] §341.035(d). The statute [statutes] also requires [require] the commission be notified of any subsequent material changes, improvements, additions, or alterations in existing systems and, consider compliance history in approving new or modified public water systems.

(b) Reason for this subchapter [these sections] and minimum criteria. This subchapter has [These sections have] been adopted to ensure regionalization and area-wide options are fully considered, the inclusion of all data essential for comprehensive consideration of the contemplated project, or improvements, additions, alterations, or changes thereto and to establish minimum standardized public health design criteria in compliance with existing state statutes and in accordance with good public health engineering practices. In addition, minimum acceptable financial, managerial, technical, and operating practices must be specified to ensure that facilities are properly operated to produce and distribute a safe, potable water.

(c) Required actions and approvals prior to construction. A person may not begin construction of a public drinking water supply system unless the executive director determines the following requirements have been satisfied and approves construction of the proposed system.

(1) A person proposing to install a public drinking water system within the extraterritorial jurisdiction of a municipality; or within 1/2-mile [one-half mile] of the corporate boundaries of a district, or other political subdivision providing the same service; or within 1/2-mile [one-half mile] of a certificated service area boundary of any other water service provider shall provide to the executive director evidence that:

(A) - (B) (No change.)

(2) - (3) (No change.)

(d) Submission of plans.

(1) - (2) (No change.)

(3) The limits of approval are as follows.

(A) (No change.)

(B) The commission's public drinking water program does not examine plans and specifications in regard to the structural features of design, such as strength of concrete or adequacy of reinforcing. Only the features covered by this subchapter [these sections] will be reviewed.

(C) The consulting engineer and/or owner must provide surveillance adequate to assure that facilities will be constructed according to approved plans and must notify the executive director in writing upon completion of all work. Planning materials shall[should] be submitted to the Texas Commission on Environmental Quality [Texas Natural Resource Conservation Commission], Water Supply Division, MC 153, P.O. Box 13087, Austin, Texas 78711-3087.

(e) Submission of planning material. In general, the planning material submitted shall conform to the following requirements.

(1) (No change.)

(2) All plans and drawings submitted may be printed on any of the various papers which give distinct lines. All prints must be clear, legible, and assembled to facilitate review.

(A) (No change.)

(B) The location of all abandoned or inactive wells within 1/4-mile [1/4 mile] of a proposed well site [wellsite] shall be shown or reported.

(C) - (D) (No change.)

(3) (No change.)

(4) A copy [Copies] of each fully executed sanitary control easement and any other documentation demonstrating compliance with §290.41(c)(1)(F) of this title (relating to Water Sources) shall be provided to the executive director prior to placing the well into service. Each original

easement document, if obtained, must be recorded in the deed records at the county courthouse.
Section 290.47(c) [See §290.47(c)] of this title (relating to Appendices) includes [for] a suggested form.

(5) (No change.)

(f) Submission of business plans. The prospective owner of the system or the person responsible for managing and operating the system must submit a business plan to the executive director that demonstrates that the owner or operator of the system has available the financial, managerial, and technical capability to ensure future operation of the system in accordance with applicable laws and rules. The executive director may order the prospective owner or operator to demonstrate financial assurance to operate the system in accordance with applicable laws and rules as specified in Chapter 37, Subchapter O of this title (relating to Financial Assurance for Public Drinking Water Systems and Utilities), or as specified by commission rule, unless the executive director finds that the business plan demonstrates adequate financial capability. A business plan shall include the information and be presented in a format prescribed by the executive director. For community water systems, the business plan shall contain, at a minimum, the following elements:

(1) (No change.)

(2) description of drinking water supply systems within a two-mile [two mile] radius of the proposed system, copies of written requests seeking to obtain service from each of those drinking water supply systems, and copies of the responses to the written requests;

(3) - (9) (No change.)

(10) for retail public utilities as defined by Texas Water Code (TWC), §13.002:

(A) - (B) (No change.)

(11) - (13) (No change.)

(g) Business plans not required. A person is not required to file a business plan if the person:

(1) (No change.)

(2) is a retail public utility as defined by TWC [Texas Water Code], §13.002, unless that person is a utility as defined by that section;

(3) (No change.)

(4) is a noncommunity nontransient water system and the person has demonstrated financial assurance under THSC [Texas Health and Safety Code], Chapter 361 or 382 or TWC [Texas Water Code], Chapter 26.

(h) - (i) (No change.)

(j) Changes in existing systems or supplies. Public water systems shall notify the executive director prior to making any significant change or addition to the system's production, treatment, storage, pressure maintenance, or distribution facilities. Public water systems shall submit plans and specifications for the proposed changes upon request. Changes to an existing disinfection process at a treatment plant that treats surface water or groundwater that is under the direct influence of surface water shall not be instituted without the prior approval of the executive director.

(1) (No change.)

(2) The executive director shall determine whether engineering plans and specifications will be required after reviewing the initial notification regarding the nature and extent of the modifications.

(A) (No change.)

(B) Unless plans and specifications are required by Chapter 293 of this title (relating to Water Districts), the executive director will not require another state agency or a political subdivision to submit planning material on distribution line improvements if the entity has its own internal review staff and complies with all of the following criteria:

(i) the [The] internal review staff includes [must include] one or more licensed professional engineers that are employed by the political subdivision and must be separate from, and not subject to the review or supervision of, the engineering staff or firm charged with the design of the distribution extension under review; [.]

(ii) a [A] licensed professional engineer on the internal review staff determines and certifies in writing that the proposed distribution system changes comply with the requirements of §290.44 of this title (relating to Water Distribution) and will not result in a violation of any provision of §290.45 of this title; [.]

(iii) the [The] state agency or political subdivision includes a copy of the written certification described in this subparagraph with the initial notice that is submitted to the executive director.

(C) (No change.)

(3) (No change.)

(k) Planning material acceptance. Planning material for improvements to an existing system which does not meet the requirements of all sections of this subchapter [these regulations] will not be considered unless the necessary modifications for correcting the deficiencies are included in the proposed improvements, or unless the executive director determines that reasonable progress is being made toward correcting the deficiencies and no immediate health hazard will be caused by the delay.

(l) Exceptions. Requests for exceptions to one or more of the requirements in this subchapter [these sections] shall be considered on an individual basis. Any water system which requests an exception must demonstrate to the satisfaction of the executive director that the exception will not compromise the public health or result in a degradation of service or water quality.

(1) - (3) (No change.)

(m) (No change.)

(n) The commission may require the owner or operator of a public drinking water supply system that was constructed without the approval required by (THSC) [Texas Health and Safety Code], §341.035, that has a history of noncompliance with (THSC) [Texas Health and Safety Code], Chapter 341, Subchapter C or commission rules, or that is subject to a commission enforcement action to take the following action:

(1) provide [Provide] the executive director with a business plan that demonstrates that the system has available the financial, managerial, and technical resources adequate to ensure future operation of the system in accordance with applicable laws and rules. The business plan must fulfill all the requirements for a business plan as set forth in subsection (f) of this section; [.]

(2) provide [Provide] adequate financial assurance of the ability to operate the system in accordance with applicable laws and rules. The executive director will set the amount of the financial assurance, after the business plan has been reviewed and approved by the executive director; [. The amount of the financial assurance will equal the difference between the amount of projected system revenues and the projected cash needs for the period of time prescribed by the executive director. The form of the financial assurance will be as specified in Chapter 37, Subchapter O of this title (relating to Financial Assurance for Public Drinking Water Systems and Utilities), and will be as specified by the executive director.]

(A) The amount of the financial assurance will equal the difference between the amount of projected system revenues and the projected cash needs for the period of time prescribed by the executive director.

(B) The form of the financial assurance will be as specified in Chapter 37, Subchapter O of this title and will be as specified by the executive director.

(C) If the executive director relies on rate increases or customer surcharges as the form of financial assurance, such funds shall be deposited in an escrow account as specified in Chapter 37, Subchapter O of this title and released only with the approval of the executive director; and

(3) provide copies of as-built engineering drawings and specifications for any public water system production, storage, and pressure maintenance facility that was constructed without the prior approval of the executive director. The as-built materials shall conform to the requirements of subsection (e) of this section and shall identify any modifications needed to bring the facilities into compliance with applicable commission rules. [If the executive director relies on rate increases or customer surcharges as the form of financial assurance, such funds shall be deposited in an escrow account as specified in Chapter 37, Subchapter O of this title (relating to Financial Assurance for Public Drinking Water Systems and Utilities), and released only with the approval of the executive director.]

§290.41. Water Sources.

(a) Water quality. The quality of water to be supplied must meet the quality criteria prescribed by the commission's drinking water standards contained in Subchapter F of this chapter (relating to [the] Drinking Water Standards Governing Drinking Water Quality and Reporting Requirements for Public Water [Supply] Systems).

(b) Water quantity. Sources of supply, both ground and surface, shall have a safe yield capable of supplying the maximum daily demands of the distribution system during extended periods of peak usage and critical hydrologic conditions. The pipelines [pipe lines] and pumping capacities to treatment plants or distribution systems shall be adequate for such water delivery. Minimum capacities required are specified in §290.45 of this title (relating to Minimum Water System Capacity Requirements).

(c) Groundwater sources and development.

(1) Groundwater sources shall be located so that there will be no danger of pollution from flooding or from insanitary surroundings, such as privies, sewage, sewage treatment plants, livestock and animal pens, solid waste disposal sites or underground petroleum and chemical storage tanks and liquid transmission pipelines, or abandoned and improperly sealed wells.

(A) No well site which is within 50 feet of a tile or concrete sanitary sewer, sewerage appurtenance, septic tank, storm sewer, or cemetery; or which is within 150 feet of a septic tank perforated drainfield, areas irrigated by low dosage, low angle spray on-site sewage facilities, absorption bed, evapotranspiration bed, improperly constructed water well, or underground petroleum and chemical storage tank or liquid transmission pipeline will be acceptable for use as a public drinking water supply. Sanitary or storm sewers constructed of ductile iron or polyvinyl chloride (PVC) [PVC] pipe meeting American Water Works Association (AWWA) [AWWA] standards, having a minimum working pressure of 150 pounds per square inch (psi) [psi] or greater, and equipped with pressure type joints may be located at distances of less than 50 feet from a proposed well site, but in no case shall the distance be less than ten feet.

(B) No well site shall be located within 500 feet of a sewage treatment plant or within 300 feet of a sewage wet well, sewage pumping station, or a drainage ditch which contains industrial waste discharges or the wastes from sewage treatment systems.

(C) - (D) (No change.)

(E) All known abandoned or inoperative wells (unused wells that have not been plugged) within 1/4-mile [one quarter mile] of a proposed well site [wellsite] shall be reported to the commission [Commission] along with existing or potential pollution hazards. These reports are required for community and nontransient, noncommunity groundwater [ground water] sources. Examples of existing or potential pollution hazards which may affect groundwater [ground water] quality include, but are not limited to: landfill and dump sites, animal feedlots, military facilities, industrial facilities, wood-treatment facilities, liquid petroleum and petrochemical production, storage, and transmission facilities, Class 1, 2, 3, and 4 injection wells, and pesticide storage and mixing facilities. This information must be submitted prior to construction or as required by the executive director.

(F) A sanitary control easement or sanitary control easements covering land within 150 feet of the well, or executive director approval for a substitute authorized by this subsection, shall be obtained. [A sanitary control easement covering that portion of the land within 150-feet of the well location shall be secured from all property owners and recorded in the deed records at the county courthouse.]

(i) The sanitary control easement(s) secured [easement] shall provide that none of the pollution hazards covered in subparagraphs (A) - (E) of this paragraph, or any facilities that might create a danger of pollution to the water to be produced from the well, will be located thereon.

(ii) For the purpose of a sanitary control [this] easement, an improperly constructed water well is one which fails to meet the surface and subsurface construction standards for public water supply wells. Residential type wells within a sanitary control [the] easement must be constructed to public water well standards.

(iii) A copy Copies of the recorded sanitary control easement(s) [easements] shall be included with plans and specifications submitted to the executive director for review.

(iv) With the approval of the executive director, the public water system may submit any of the following as a substitute for obtaining, recording, and submitting a copy of the recorded sanitary control easement(s) covering land within 150 feet of the well: [political

subdivisions which have adopted and enforce equivalent ordinances or land use restrictions may substitute these documents for sanitary control easements.]

(I) a copy of the recorded deed and map demonstrating that the public water system owns all real property within 150 feet of the well;

(II) a copy of the recorded deed and map demonstrating that the public water system owns a portion of real property within 150 feet of the well, and a copy of the sanitary control easement(s) that the public water system has obtained, recorded, and submitted to the executive director applicable to the remaining portion of real property within 150 feet of the well not owned by the public water system; or

(III) for a political subdivision, a copy of an ordinance or land use restriction adopted and enforced by the political subdivision which provides an equivalent or higher level of sanitary protection to the well as a sanitary control easement.

(v) If the executive director approves a sanitary control easement substitute identified in clause (iv)(I) or (iv)(II) of this subparagraph for a public water system and the public water system conveys the property it owns within 150 feet of the well to another person or persons, the public water system must at that time obtain, record, and submit to the executive director a copy of the recorded sanitary control easement(s) applicable to the conveyed portion of the property within 150 feet of the well, unless the executive director approves a substitute identified in clause (iv) of this subparagraph.

(2) The premises, materials, tools, and drilling equipment shall be maintained so as to minimize contamination of the groundwater [under ground water] during drilling operation.

(A) Water used in any drilling operation shall be of safe sanitary quality. Water used in the mixing of drilling fluids or mud shall contain a chlorine residual of at least 0.5 milligrams per liter (mg/L) [mg/l].

(B) - (C) (No change.)

(3) The construction, disinfection, protection, and testing of a well to be used as a public water supply source must meet the following conditions.

(A) Before placing the well into service, a public water system shall furnish a copy of the well completion data, which includes the following items: the Driller's Log (geological log and material setting report); a cementing certificate; the results of a 36-hour pump test; the results of the microbiological and chemical analyses required by subparagraphs (F) and (G) of this paragraph; a legible copy of the recorded deed or deeds for all real property within 150 feet of the well; a legible copy of the sanitary control easement(s) [Sanitary Control Easement] or other documentation demonstrating compliance with paragraph (1)(F) of this subsection; [and] an original or legible copy of a United States Geological Survey 7.5-minute topographic quadrangle showing the accurate well location to the executive director; and a map demonstrating the well location in relation to surrounding property boundaries. All the documents listed in this paragraph must be approved by the executive director before final approval is granted for the use of the well.

(B) (No change.)

(C) The space between the casing and drill hole shall be sealed by using enough cement under pressure to completely fill and seal the annular space between the casing and the drill hole. The well casing shall be cemented in this manner from the top of the shallowest formation to be developed to the earth's surface. The driller shall utilize a pressure cementation method in accordance with the AWWA Standard for Water Wells (A100-97), Appendix C: Section C.3 (Positive Displacement Exterior Method); Section C.4 (Interior Method Without Plug); Section C.5 (Positive Placement, Interior Method, Drillable Plug); and Section C.6 (Placement Through Float Shoe Attached to Bottom of Casing). Cementation methods other than those listed in this subparagraph may be used on a site-specific basis with the prior written approval of the executive director. A cement bonding log, as well as any other documentation deemed necessary, may be required by the executive director to assure complete sealing of the annular space.

(D) When a gravel packed well is constructed, all gravel shall be of selected and graded quality and shall be thoroughly disinfected with a 50 mg/L [mg/l] chlorine solution as it is added to the well cavity.

(E) - (F) (No change.)

(G) A complete physical and chemical analysis of the water produced from a new well shall be made after 36 hours of continuous pumping at the design withdrawal rate. Shorter pump test periods can be accepted for large capacity wells producing from areas of known groundwater

production and quality so as to prevent wasting of water. Samples must be submitted to a certified laboratory for chemical analyses. Tentative approval may be given on the basis of tests performed by in-plant or private laboratories, but final acceptance by the commission shall be on the basis of results from the certified laboratory. Appropriate treatment shall be provided if the analyses reveal that the water from the well fails to meet the water quality criteria as prescribed by the drinking water standards. These criteria include turbidity, color and threshold odor limitations, and excessive hydrogen sulfide, carbon dioxide, or other constituents or minerals which make the water undesirable or unsuited for domestic use. Additional chemical and microbiological tests may be required after the executive director conducts a vulnerability assessment of the well.

(H) (No change.)

(I) The well site shall be fine graded so that the site is free from depressions, reverse grades, or areas too rough for proper ground maintenance so as to ensure that surface water will drain away from the well. In all cases, arrangements shall be made to convey well pump drainage, packing gland leakage, and floor drainage away from the wellhead. Suitable drain pipes located at the outer edge of the concrete floor shall be provided to collect this water and prevent its ponding or collecting around the wellhead. This wastewater [waste water] shall be disposed of in a manner that will not cause any nuisance from mosquito breeding or stagnation. Drains shall not be directly connected to storm or sanitary sewers.

(J) - (Q) (No change.)

(4) Pitless [well] units may be desirable in areas subject to vandalism or extended periods of subfreezing weather.

(A) Pitless units shall be shop fabricated from the point of connection with the well casing to the unit cap or cover, be threaded or welded to the well casing, be of watertight construction throughout, and be of materials and weight at least equivalent and compatible to the casing. The units must have a field connection to the lateral discharge from the pitless unit of threaded, flanged, or mechanical joint connection. [Each unit must terminate at least 18 inches above the concrete sealing block and at least two feet above the highest known water mark or 100-year flood elevation, whichever is higher.]

(B) - (C) (No change.)

(D) With the exception of the fact that the well was constructed using a pitless unit, the well must otherwise meet all of the requirements of paragraph (3) of this subsection.

[Completed pitless well unit installations must be provided with above ground level raw water sampling cocks, concrete sealing blocks and flow measuring devices.]

[(E) The well casing and pitless unit must be properly sealed and cemented in accordance with paragraph (3)(C) of this subsection.]

(d) Springs and other water sources.

(1) (No change.)

(2) Before placing the spring or similar source into service, completion data similar to that required by subsection (c)(3)(A) of this section must be submitted to the executive director for review and approval to the Texas Commission on Environmental Quality [Texas Natural Resource Conservation Commission], Water Supply Division, MC 153, P.O. Box 13087, Austin, Texas 78711-3987.

(3) Springs and similar sources shall be constructed in a manner which will preclude the entrance of surface water and debris.

(A) The site shall be fine graded so that it is free from depressions, reverse grades, or areas too rough for proper ground maintenance in order to ensure that surface water will drain away from the source.

(B) - (E) (No change.)

(F) The encasement shall be provided with a gooseneck vent or roof ventilator which is equipped with approved screens to prevent entry of animals, birds, insects, and heavy air contaminants. Screens shall be fabricated of corrosion-resistant material and shall be 16-mesh or finer. Screens shall be securely clamped in place with stainless or galvanized bands or wires.

(G) (No change.)

(4) Springs and similar sources must be provided with the appurtenances required by subsection (c)(3)(L) - (Q) [(c)(3)(M) - (P)] of this section.

(e) Surface water sources and development.

(1) (No change.)

(2) Intakes shall be located and constructed in a manner which will secure raw water of the best quality available from the source.

(A) (No change.)

(B) Raw water intakes shall not be located within 1,000 feet of boat launching ramps, marinas, docks, or floating fishing piers which are accessible by the public.

(C) - (F) (No change.)

(G) Intakes shall not be located within 500 feet of a sewage treatment plant or lands irrigated with sewage effluent.

(3) The raw water pump station shall be located in a well-drained area and shall be designed to remain in operation during flood events. [The water treatment plant and all pumping units shall be located in well-drained areas not subject to flooding and away from seepage areas or where the underground water table is near the surface.]

[(A) Water treatment plants shall not be located within 500 feet of a sewage treatment plant or lands irrigated with sewage effluent. A minimum distance of 150 feet must be maintained between any septic tank drainfield line and any underground treatment or storage unit. Any sanitary sewers located within 50 feet of any underground treatment or storage units shall be constructed of ductile iron or PVC pipe with a minimum pressure rating of 150 psi and have watertight joints.]

[(B) Plant site selection shall also take into consideration the need for disposition of all plant wastes in accordance with all applicable regulations and state statutes including both liquid and solid waste or by-product material from operation and/or maintenance.]

[(C) The water treatment plant and all appurtenances thereof shall be enclosed by an intruder-resistant fence. The gates shall be locked during periods of darkness and when the plant is unattended. A locked building in the fence line may satisfy this requirement or serve as a gate.]

[(D) An all weather road shall be provided to the treatment plant and to the raw water pump station.]

(4) An all weather road shall be provided to the raw water pump station.

(5) The raw water pump station and all appurtenances must be installed in a lockable building that is designed to prevent intruder access or enclosed by an intruder-resistant fence with lockable gates.

§290.42. Water Treatment.

(a) Capacity and location. [Based on current acceptable design standards, the total capacity of the public water system's production and treatment facilities must always be greater than its anticipated maximum daily demand.]

(1) Based on current acceptable design standards, the total capacity of the public water system's treatment facilities must always be greater than its anticipated maximum daily demand.

(2) The water treatment plant and all pumping units shall be located in well-drained areas not subject to flooding and away from seepage areas or where the underground water table is near the surface.

(A) Water treatment plants shall not be located within 500 feet of a sewage treatment plant or lands irrigated with sewage effluent. A minimum distance of 150 feet must be maintained between any septic tank drainfield line and any underground treatment or storage unit. Any sanitary sewers located within 50 feet of any underground treatment or storage unit shall be constructed of ductile iron or polyvinyl chloride (PVC) pipe with a minimum pressure rating of 150 pounds per square inch (psi) and have watertight joints.

(B) Plant site selection shall also take into consideration the need for disposition of all plant wastes in accordance with all applicable regulations and state statutes, including both liquid and solid waste or by-product material from operation and/or maintenance.

(3) Each water treatment plant shall be located at a site that is accessible by an all-weather road.

(b) Groundwater.

(1) (No change.)

(2) Treatment facilities shall be provided for groundwater [ground water] if the water does not meet the drinking water standards. The facilities provided shall be in conformance with established and proven methods.

(A) - (C) (No change.)

(3) - (6) (No change.)

(7) Air release devices shall be installed in such a manner as to preclude the possibility of submergence or possible entrance of contaminants. In this respect, all openings to the atmosphere shall be covered with 16-mesh or finer corrosion-resistant screening material or an equivalent acceptable to the executive director.

(c) Springs and other water sources.

(1) Water obtained from springs, infiltration galleries, wells in fissured areas, wells in carbonate rock formations, or wells that do not penetrate an impermeable strata or any other source subject to surface or near surface contamination of recent origin shall be evaluated for the provision of treatment facilities. Minimum treatment shall consist of coagulation with direct filtration and adequate disinfection. In all cases, the treatment process shall be designed to achieve at least a 2-log removal of *Cryptosporidium* oocysts, a 3-log removal or inactivation of *Giardia* cysts, and a 4-log removal or inactivation of viruses before the water is supplied to any consumer. [Effective January 1, 2002, the treatment process shall also be designed to provide a 2-log removal of *Cryptosporidium* oocysts. Treatment facilities constructed after October 1, 2000 shall be designed to achieve at least a 2-log

removal of *Cryptosporidium* oocysts.] The executive director may require additional levels of treatment in cases of poor source water quality.

(A) - (B) (No change.)

(2) - (5) (No change.)

(6) Return of the decanted water or sludge to the treatment process shall be adequately controlled so that there will be a minimum of interference with the treatment process and shall conform to the applicable requirements of subsection (d)(3) of this section. Beginning July 1, 2004, systems that do not comply with the provisions of subsection (d)(3) of this section commit a treatment technique violation and must notify their customers in accordance with the requirements of §290.122(b) of this title (relating to Public Notice).

(7) Air release devices on treated waterlines shall be installed in such a manner as to preclude the possibility of submergence or possible entrance of contaminants. In this respect, all openings to the atmosphere shall be covered with 16-mesh or finer corrosion-resistant screening material or an equivalent acceptable to the executive director.

(d) Surface water.

(1) All water secured from surface sources shall be given complete treatment at a plant which provides facilities for pretreatment disinfection, taste and odor control, continuous coagulation, sedimentation, filtration, covered clearwell storage, and terminal disinfection of the water with chlorine or suitable chlorine compounds. In all cases, the treatment process shall be designed to achieve at least a 2-log removal of *Cryptosporidium* oocysts, a 3-log removal or inactivation of *Giardia* cysts, and a 4-log removal or inactivation of viruses before the water is supplied to any consumer. [Effective January 1, 2002, the treatment process shall also be designed to achieve at least a 2-log removal of *Cryptosporidium* oocysts. Treatment facilities constructed after October 1, 2000 shall be designed to achieve at least a 2-log removal of *Cryptosporidium* oocysts.] The executive director may require additional levels of treatment in cases of poor source water quality.

(2) All plant piping shall be constructed so as to be thoroughly tight against leakage. No cross-connection or interconnection shall be permitted to exist in a filtration plant between a conduit

carrying filtered or post-chlorinated water and another conduit carrying raw water or water in any prior stage of treatment.

(A) - (C) (No change.)

(D) Filters shall be located so that common walls will not exist between them and aerators, mixing and sedimentation basins or clearwells [clear wells]. This rule is not strictly applicable, however, to partitions open to view and readily accessible for inspection and repair.

(E) (No change.)

(F) Air release devices on treated waterlines shall be installed in such a manner as to preclude the possibility of submergence or possible entrance of contaminants. In this respect, all openings to the atmosphere shall be covered with 16-mesh or finer corrosion-resistant screening material or an equivalent acceptable to the executive director.

(3) Return of the decanted water or solids to the treatment process [sludge to the raw water] shall be adequately controlled so that there will be a minimum of interference with the treatment process. Beginning July 1, 2004, systems that do not comply with the provisions of this paragraph commit a treatment technique violation and must notify their customers in accordance with the requirements of §290.122(b) of this title. [Any discharge of wastewater shall be in accordance with all applicable state and federal statutes and regulations including Chapter 305 of this title (relating to Consolidated Permits), Chapter 309 of this title (relating to Domestic Wastewater Effluent Limitation and Plant Siting), and Chapter 319 of this title (relating to General Regulations Incorporated into Permits).]

(A) Unless the executive director has approved an alternate recycling location, spent backwash water and the liquids from sludge settling lagoons, spent backwash water tanks, sludge thickeners, and similar dewatering facilities shall be returned to the raw waterline upstream of the raw water sample tap and coagulant feed point. The blended recycled liquids shall pass through all of the major unit processes at the plant.

(B) Flow equalization basins, variable speed pumps, or other facilities shall be provided to minimize the magnitude and impact of hydraulic surges that occur during the recycling process.

(C) Solids produced by dewatering facilities such as sludge lagoons, sludge thickeners, centrifuges, mechanical presses, and similar devices shall not be returned to the treatment plant without the prior approval of the executive director.

(4) - (5) (No change.)

(6) Chemical storage facilities shall comply with applicable requirements in subsection (f)(1) of this section. [be designed to ensure a reliable supply of chemicals to the feeders, minimize the possibility and impact of accidental spills, and facilitate good housekeeping.]

[(A) Bulk storage facilities at the plant shall be adequate to store at least 15 days supply of chemicals at design capacity. However, the executive director may require a larger stock of chemicals based on local resupply ability.]

[(B) Day tanks shall be provided to minimize the possibility of severely overfeeding liquid chemicals. Day tanks will not be required if adequate process control instrumentation and procedures are employed to prevent chemical overfeed incidents.]

[(C) Every chemical bulk storage facility and day tank shall have a label that identifies the facility's or tank's contents and a device that indicates the amount of chemical remaining in the facility or tank.]

[(D) Dry chemicals shall be stored off the floor in a dry room that is located above ground and protected against flooding or wetting from floors, walls, and ceilings.]

[(E) Bulk storage facilities and day tanks must be designed to minimize the possibility of leaks and spills.]

[(i) The materials used to construct bulk storage and day tanks must be compatible with the chemicals being stored and resistant to corrosion.]

[(ii) Except as provided in this clause, adequate containment facilities shall be provided for all liquid chemical storage tanks.]

[(I) Containment facilities for a single container or for multiple, interconnected containers must be large enough to hold the maximum amount of chemical that can be stored with a minimum freeboard of six vertical inches or to hold 110% of the total volume of the container(s), whichever is less.]

[(II) Common containment for multiple containers that are not interconnected must be large enough to hold the volume of the largest container with a minimum freeboard of six vertical inches or to hold 110% of the total volume of the container(s), whichever is less.]

[(III) The materials used to construct containment structures must be compatible with the chemicals stored in the tanks.]

[(IV) Incompatible chemicals shall not be stored within the same containment structure.]

[(V) No containment facilities are required for hypochlorite solution containers that have a capacity of 35 gallons or less.]

[(VI) On a site-specific basis, the executive director may approve the use of double-walled tanks in lieu of separate containment facilities.]

[(F) Chemical transfer pumps and control systems must be designed to minimize the possibility of leaks and spills.]

[(G) Piping, pumps, and valves used for chemical storage and transfer must be compatible with the chemical being fed.]

(7) Chemical feed facilities shall comply with the applicable requirements in subsection (f)(2) of this section. [and metering facilities shall be designed so that chemicals shall be applied in a manner which will maximize reliability, facilitate maintenance, and ensure optimal finished water quality.]

[(A) Each chemical feeder shall have a standby or reserve unit. Common standby feeders are permissible, but, generally, more than one standby feeder must be provided due to the incompatibility of chemicals or the state in which they are being fed (solid, liquid or gas).]

[(B) Chemical feed equipment shall be sized to provide proper dosage under all operating conditions.]

[(i) Devices designed for determining the chemical feed rate shall be provided for all chemical feeders.]

[(ii) The capacity of the chemical feeders shall be such that accurate control of the dosage can be achieved at the full range of feed rates expected to occur at the facility.]

[(iii) Chemical feeders shall be provided with tanks for chemical dissolution when applicable.]

[(C) Chemical feeders, valves, and piping must be compatible with the chemical being fed.]

[(D) Chemical feed systems shall be designed to minimize the possibility of leaks and spills and provide protection against backpressure and siphoning.]

[(E) If enclosed feed lines are used, they shall be designed and installed so as to prevent clogging and be easily maintained.]

[(F) Dry chemical feeders shall be located in a separate room that is provided with facilities for dust control.]

[(G) Coagulant feed systems shall be designed so that coagulants are applied to the water prior to or within the mixing basins or chambers so as to permit their complete mixing with the water.]

[(i) Coagulant feed points shall be located downstream of the raw water sampling tap.]

[(ii) Coagulants shall be applied continuously during treatment plant operation.]

[(H) Chlorine feed units, ammonia feed units, and storage facilities shall be separated by solid, sealed walls.]

[(I) Chemical application points shall be provided to achieve acceptable finished water quality, adequate taste and odor control, corrosion control and disinfection.]

(8) (No change.)

(9) Flocculation equipment shall be provided.

(A) (No change.)

(B) Flocculation facilities shall be designed to provide adequate time and mixing intensity to produce a settleable floc under varying raw water characteristics and raw water flow rates.

(i) Flocculation facilities for straight-flow and up-flow sedimentation basins shall provide a minimum theoretical detention time of at least 20 minutes when operated at their design capacity. Flocculation facilities constructed prior to October 1, 2000 are exempt from this requirement if the settled water turbidity of each sedimentation basin remains below 10.0 Nephelometric Turbidity Unit (NTU) [NTU] and the treatment plant meets with turbidity requirements of §290.111 of this title (relating to Turbidity).

(ii) (No change.)

(C) Coagulated water or water from flocculators shall flow to sedimentation basins in such a manner as to prevent destruction of floc. Piping, flumes, and troughs shall be designed to provide a flow velocity of 0.5 to 1.5 feet per second. Gates, ports, and valves shall be designed at a maximum flow velocity of 4.0 feet per second in the transfer of water between units.

(10) Clarification facilities shall be provided.

(A) - (B) (No change.)

(C) Clarification facilities shall be designed to remove flocculated particles effectively.

(i) (No change.)

(ii) When operated at their design capacity, basins for straight-flow or up-flow sedimentation of softened waters shall provide either a theoretical detention time of at least 4.5 hours in the flocculation and sedimentation chambers or a maximum surface overflow rate of 1.0 gallons [gallon] per minute per square foot of surface area in the sedimentation chamber.

(iii) - (v) (No change.)

(D) Clarification facilities shall be designed to prevent the accumulation of settled solids.

(i) At treatment plants with a single clarification basin, facilities shall be provided to drain the basin within six hours. In the event that the plant site topography is such that gravity draining cannot be realized, a permanently installed electric-powered [electric powered] pump station shall be provided to dewater the basin. Public water systems with other potable water sources that can meet the system's average daily demand are exempt from this requirement.

(ii) (No change.)

(11) Gravity or pressure type filters shall be provided.

(A) - (B) (No change.)

(C) The depth and condition of the media and support material shall be sufficient to provide effective filtration.

(i) The filtering material shall conform to American Water Works Association (AWWA) [AWWA] standards and be free from clay, dirt, organic matter, and other impurities.

(ii) (No change.)

(iii) The depth of filter sand, anthracite, granular activated carbon, or other filtering materials shall be 24 inches or greater and provide an L/d ratio of at least 1,000.

(I) Rapid sand filters typically contain a minimum of eight inches of fine sand with an effective size of 0.35 to 0.45 millimeter (mm) [mm], eight inches of medium sand with an effective size of 0.45 to 0.55 mm, and eight inches of coarse sand with an effective size of 0.55 to 0.65 mm. The uniformity coefficient of each size range should not exceed 1.6.

(II) High-rate dual media filters typically contain a minimum of 12 [twelve] inches of sand with an effective size of 0.45 to 0.55 mm and 24 [twenty-four] inches of anthracite with an effective size of 0.9 to 1.1 mm. The uniformity coefficient of each material should not exceed 1.6.

(III) High-rate multi-media filters typically contain a minimum of three inches of garnet media with an effective size of 0.2 to 0.3 mm, nine inches of sand with an effective size of 0.5 to 0.6 mm, and 24 [twenty-four] inches of anthracite with an effective size of 0.9 to 1.1 mm. The uniformity coefficient of each size range should not exceed 1.6.

(IV) (No change.)

(iv) (No change.)

(D) (No change.)

(E) The filters shall be provided with facilities to monitor the performance of the filter. Monitoring devices shall be designed to provide the ability to measure and record turbidity as required by §290.111 of this title [(relating to Turbidity)].

(i) (No change.)

(ii) Beginning January 1, 2005, each filter operated by a public water system that serves fewer than 10,000 people shall be equipped with an on-line turbidimeter and recorder

which will allow the operator to measure and record the turbidity at 15-minute intervals. [Each filter with a capacity of 1.0 million gallons per day or more shall be equipped with an on-line turbidimeter.]

(iii) Each filter operated by a public water system that serves at least 10,000 people shall be equipped with an on-line turbidimeter and recorder which will allow the operator to measure and record [determine] the turbidity at 15-minute intervals.

(iv) (No change.)

(v) Each filter unit that is not equipped with an on-line turbidimeter and recorder shall be equipped with a device to indicate loss of head through the filter. In lieu of loss-of-head indicators, declining rate filter units may be equipped with rate-of-flow indicators.

(F) Filters shall be designed to ensure adequate cleaning during the backwash cycle.

(i) - (ii) (No change.)

(iii) The rate of flow of backwash water shall not be less than 20 inches vertical rise per minute (12.5 gallons per minute per square foot [gpm/sq. ft.]) and usually not more than 35 inches vertical rise per minute (21.8 gallons per minute per square foot [gpm/sq. ft.]).

(iv) - (vii) (No change.)

(G) (No change.)

(12) Pipe galleries shall provide ample working room, good lighting, and good drainage provided by sloping floors, gutters, and [ad] sumps. Adequate ventilation to prevent condensation and to provide humidity control is also required.

(13) The identification of influent, effluent, waste backwash, and chemical feed lines shall be accomplished by the use of labels or various colors of paint. Where labels are used, they shall be placed along the pipe at no greater than five-foot [five foot] intervals. Color coding must be by solid color or banding. If bands are used, they shall be placed along the pipe at no greater than five-foot [five foot] intervals.

(A) - (C) (No change.)

(14) (No change.)

(15) An adequately equipped laboratory shall be available locally so that daily microbiological and chemical tests can be conducted.

(A) For plants serving 25,000 persons or more, the local laboratory used to conduct the required daily microbiological analyses must be certified by the executive director [Texas Department of Health] to conduct coliform analyses.

(B) For plants serving populations of less than 25,000, the facilities for making microbiological tests may be omitted if the required microbiological samples can be submitted to a laboratory certified by the executive director [one of the Texas Department of Health's certified laboratories] on a timely basis.

(C) - (F) (No change.)

(G) Plant laboratories must be designed, constructed, equipped, operated, and maintained in a manner that will ensure laboratory personnel can properly conduct various process control tests and produce accurate data and reports on a timely basis. [Effective January 1, 2002, each surface water treatment plant shall be provided with a computer and software for recording performance data, maintaining records and submitting reports to the executive director.]

(16) Each surface water treatment plant shall be provided with a computer and software for recording performance data, maintaining records, and submitting reports to the executive director.

(e) Disinfection.

(1) - (2) (No change.)

(3) Disinfection equipment shall be selected and installed so that continuous and effective disinfection can be secured under all conditions.

(A) - (B) (No change.)

(C) All disinfecting equipment in surface water treatment plants shall include at least one functional standby unit of each capacity for ensuring uninterrupted operation. Common standby units are permissible[,] but, generally, more than one standby unit must be provided because of the differences in feed rates or the physical state in which the disinfectants are being fed (solid, liquid, or gas).

(D) - (G) (No change.)

(4) Systems that use chlorine gas must ensure that the risks associated with its use are limited as follows_ [:]

(A) - (C) (No change.)

(5) (No change.)

(6) Where anhydrous ammonia feed equipment is utilized, it must be housed in a separate enclosure equipped with both high and low level ventilation to the outside atmosphere. The enclosure must be provided with forced air ventilation which includes: screened and louvered floor level and high level vents; a fan which is located at and draws air in through the floor vent and discharges through the top vent; and a fan switch located outside the enclosure. Alternately, systems may install negative pressure ventilation as long as the facilities also have gas containment and treatment as prescribed by the current UFC [Uniform Fire Code (UFC)].

(f) Surface water treatment plant chemical storage and feed facilities.

(1) Chemical storage facilities shall be designed to ensure a reliable supply of chemicals to the feeders, minimize the possibility and impact of accidental spills, and facilitate good housekeeping.

(A) Bulk storage facilities at the plant shall be adequate to store at least a 15-day supply of all chemicals needed to comply with minimum treatment technique and maximum contaminant level (MCL) requirements. The capacity of these bulk storage facilities shall be based on

the design capacity of the treatment plant. However, the executive director may require a larger stock of chemicals based on local resupply ability.

(B) Day tanks shall be provided to minimize the possibility of severely overfeeding liquid chemicals. Day tanks will not be required if adequate process control instrumentation and procedures are employed to prevent chemical overfeed incidents.

(C) Every chemical bulk storage facility and day tank shall have a label that identifies the facility's or tank's contents and a device that indicates the amount of chemical remaining in the facility or tank.

(D) Dry chemicals shall be stored off the floor in a dry room that is located above ground and protected against flooding or wetting from floors, walls, and ceilings.

(E) Bulk storage facilities and day tanks must be designed to minimize the possibility of leaks and spills.

(i) The materials used to construct bulk storage and day tanks must be compatible with the chemicals being stored and resistant to corrosion.

(ii) Except as provided in this clause, adequate containment facilities shall be provided for all liquid chemical storage tanks.

(I) Containment facilities for a single container or for multiple interconnected containers must be large enough to hold the maximum amount of chemical that can be stored with a minimum freeboard of six vertical inches or to hold 110% of the total volume of the container(s), whichever is less.

(II) Common containment for multiple containers that are not interconnected must be large enough to hold the volume of the largest container with a minimum freeboard of six vertical inches or to hold 110% of the total volume of the container(s), whichever is less.

(III) The materials used to construct containment structures must be compatible with the chemicals stored in the tanks.

(IV) Incompatible chemicals shall not be stored within the same containment structure.

(V) No containment facilities are required for hypochlorite solution containers that have a capacity of 35 gallons or less.

(VI) On a site-specific basis, the executive director may approve the use of double-walled tanks in lieu of separate containment facilities.

(F) Chemical transfer pumps and control systems must be designed to minimize the possibility of leaks and spills.

(G) Piping, pumps, and valves used for chemical storage and transfer must be compatible with the chemical being fed.

(2) Chemical feed and metering facilities shall be designed so that chemicals shall be applied in a manner which will maximize reliability, facilitate maintenance, and ensure optimal finished water quality.

(A) Each chemical feeder that is needed to comply with a treatment technique or MCL requirement shall have a standby or reserve unit. Common standby feeders are permissible, but generally, more than one standby feeder must be provided due to the incompatibility of chemicals or the state in which they are being fed (solid, liquid, or gas).

(B) Chemical feed equipment shall be sized to provide proper dosage under all operating conditions.

(i) Devices designed for determining the chemical feed rate shall be provided for all chemical feeders.

(ii) The capacity of the chemical feeders shall be such that accurate control of the dosage can be achieved at the full range of feed rates expected to occur at the facility.

(iii) Chemical feeders shall be provided with tanks for chemical dissolution when applicable.

(C) Chemical feeders, valves, and piping must be compatible with the chemical being fed.

(D) Chemical feed systems shall be designed to minimize the possibility of leaks and spills and provide protection against backpressure and siphoning.

(E) If enclosed feed lines are used, they shall be designed and installed so as to prevent clogging and be easily maintained.

(F) Dry chemical feeders shall be located in a separate room that is provided with facilities for dust control.

(G) Coagulant feed systems shall be designed so that coagulants are applied to the water prior to or within the mixing basins or chambers so as to permit their complete mixing with the water.

(i) Coagulant feed points shall be located downstream of the raw water sampling tap.

(ii) Coagulants shall be applied continuously during treatment plant operation.

(H) Chlorine feed units, ammonia feed units, and storage facilities shall be separated by solid, sealed walls.

(I) Chemical application points shall be provided to achieve acceptable finished water quality, adequate taste and odor control, corrosion control, and disinfection.

(g) [(f)] Other treatment processes. The adjustment of fluoride ion content, special treatment for iron and manganese reduction, special methods for taste and odor control, demineralization, corrosion control processes, and other proposals covering other treatment processes will be considered on an individual basis, in accordance with [pursuant to] §290.39(l) of this title [(relating to General Provisions)]. Package-type treatment systems and their components shall be subject to all applicable design criteria in this section. Where innovative/alternate treatment systems are proposed, the licensed professional engineer must provide pilot test data or data collected at similar full-scale operations

demonstrating that the system will produce water that meets the requirements of Subchapter F of this chapter [title] (relating to Drinking Water Standards Governing Drinking Water Quality and Reporting Requirements for Public [Drinking] Water [Supply] Systems). Pilot test data must be representative of the actual operating conditions which can be expected over the course of the year. The executive director may require proof of a one-year manufacturer's [manufacturers] performance warrantee or guarantee assuring that the plant will produce treated water which meets minimum state and federal standards for drinking water quality.

(h) [(g)] Sanitary facilities for water works installations. Toilet and hand washing facilities provided in accordance with established standards of good public health engineering practices shall be available at all installations requiring frequent visits by operating personnel.

(i) [(h)] Permits for waste discharges. Any discharge of wastewater and other plant wastes shall be in accordance with all applicable state and federal statutes and regulations. Permits for discharging wastes from water treatment processes shall be obtained from the commission [agency], if necessary.

(j) [(i)] Treatment chemicals and media. All chemicals and any additional or replacement process media used in treatment of water supplied by public water systems must conform to American National Standards Institute/National Sanitation Foundation (ANSI/NSF) Standard 60 for direct additives and ANSI/NSF Standard 61 for indirect additives. Conformance with these standards must be obtained by certification of the product by an organization accredited by ANSI.

(k) [(j)] Safety.

(1) Safety equipment for all chemicals used in water treatment shall meet applicable standards established by the OSHA [Occupational Safety and Health Administration (OSHA)] or Texas Hazard Communication Act [the Texas Hazard Communications Act], Texas Health and Safety Code [Health and Safety Code], Title 6 [5], Chapter 502.

(2) Systems must comply with United States Environmental Protection Agency (EPA) requirements for Risk Management Plans.

(l) [(k)] Plant operations manual. A thorough plant operations manual must be compiled and kept up-to-date [up to date] for operator review and reference. This manual should be of sufficient

detail to provide the operator with routine maintenance and repair procedures, with protocols to be utilized in the event of a natural or man-made catastrophe, as well as provide telephone numbers of water system personnel, system officials, and local/state/federal agencies to be contacted in the event of an emergency.

(m) Security. Each water treatment plant and all appurtenances thereof shall be enclosed by an intruder-resistant fence. The gates shall be locked during periods of darkness and when the plant is unattended. A locked building in the fence line may satisfy this requirement or serve as a gate.

§290.43. Water Storage.

(a) Capacity. The minimum clearwell [clear well], storage tank, and pressure maintenance capacity shall be governed by the requirements in §290.45 of this title (relating to Minimum Water System Capacity Requirements).

(b) Location of clearwells, standpipes, and ground storage and elevated tanks.

(1) (No change.)

(2) Insofar as possible, clearwells [clear wells] or treated water tanks shall not be located under any part of any buildings and, when possible, shall be constructed partially or wholly above ground.

(3) No storage tank or clearwell [clear well] located below ground level is allowed within 50 feet of a sanitary sewer or septic tank. However, if the sanitary sewers are constructed of 150 pounds per square inch (psi) pressure-rated [psi pressure rated] pipe with pressure-tested, watertight joints as used in water main construction, the minimum separation distance is ten [10] feet.

(4) No storage tank or clearwell [clear well] located below ground level is allowed within 150 feet of a septic tank soil absorption system.

(c) Design and construction of clearwells [clear wells], standpipes, ground storage tanks, and elevated tanks. All facilities for potable water storage shall be covered and designed, fabricated, erected, tested, and disinfected in strict accordance with current American Water Works Association (AWWA) standards and shall be provided with the minimum number, size and type of roof vents, man

ways, drains, sample connections, access ladders, overflows, liquid level indicators, and other appurtenances as specified in these rules. Bolted tanks shall be designed, fabricated, erected, and tested in strict accordance with current AWWA Standard D103. The roof of all tanks shall be designed and erected so that no water ponds at any point on the roof and, in addition, no area of the roof shall have a slope of less than 0.75 inch per foot.

(1) - (2) (No change.)

(3) Overflows shall be designed in strict accordance with current AWWA standards and shall terminate with a gravity-hinged [gravity hinged] and weighted cover. The cover shall fit tightly with no gap over 1/16 inch. If the overflow terminates at any point other than the ground level, it shall be located near enough and at a position accessible from a ladder or the balcony for inspection purposes. The overflow(s) shall be sized to handle the maximum possible fill rate without exceeding the capacity of the overflow(s). The discharge opening of the overflow(s) shall be above the surface of the ground and shall not be subject to submergence.

(4) All clearwells [clear wells] and water storage tanks shall have a liquid level indicator located at the tank site. The indicator can be a float with a moving target, an ultrasonic level indicator, or a pressure gauge calibrated in feet of water. If an elevated tank or standpipe has a float with moving target indicator, it must also have a pressure indicator located at ground level. Pressure gauges must not be less than three inches in diameter and calibrated at not more than two-foot intervals. Remote reading gauges at the owner's treatment plant or pumping station will not eliminate the requirement for a gauge at the tank site unless the tank is located at the plant or station.

(5) Inlet and outlet connections shall be located so as to prevent short-circuiting [short circuiting] or stagnation of water. Clearwells used for disinfectant contact time shall be appropriately baffled.

(6) Clearwells [Clear wells] and potable water storage tanks shall be thoroughly tight against leakage, shall be located above the groundwater table, and shall have no walls in common with any other plant units containing water in the process of treatment. All associated appurtenances including valves, pipes, and fittings shall be tight against leakage.

(7) Each clearwell [clear well] or potable water storage tank shall be provided with a means of removing accumulated silt and deposits at all low points in the bottom of the tank. Drains

shall not be connected to any waste or sewage disposal system and shall be constructed so that they are not a potential agent in the contamination of the stored water.

(8) All clearwells [clear wells], ground storage tanks, standpipes, and elevated tanks shall be painted, disinfected, and maintained in strict accordance with current AWWA standards. However, no temporary coatings, wax grease coatings, or coating materials containing lead will be allowed. No other coatings will be allowed which are not approved for use (as a contact surface with potable water) by the EPA [United States Environmental Protection Agency (EPA)], National Sanitation Foundation (NSF), or [the] United States Food and Drug Administration (FDA). All newly installed coatings must conform to American National Standards Institute/National Sanitation Foundation (ANSI/NSF) [ANSI/NSF] Standard 61 and must be certified by an organization accredited by ANSI.

(9) - (10) (No change.)

(d) (No change.)

(e) Facility security [fencing]. All potable water storage tanks and pressure maintenance facilities must be installed in a lockable building that is designed to prevent intruder access or enclosed by an intruder-resistant [intruder resistant] fence with lockable gates. Pedestal-type elevated storage tanks with lockable doors and without external ladders are exempt from this requirement. The gates and doors must be kept locked whenever the facility is unattended.

(f) (No change.)

§290.44. Water Distribution.

(a) Design and standards. All potable water distribution systems including pump stations, mains, and both ground and elevated storage tanks, shall be designed, installed, and constructed in accordance with current American Water Works Association (AWWA) standards with reference to materials to be used and construction procedures to be followed. In the absence of AWWA standards, commission review may be based upon the standards of the American Society for Testing and Materials (ASTM), commercial, and other recognized standards utilized by licensed professional engineers.

(1) - (3) (No change.)

(4) Water transmission and distribution lines must be installed in accordance with the manufacturer's instructions. However, the top of the waterline [water line] must be located below the frost line and in no case shall the top of the waterline [water line] be less than 24 inches below ground surface.

(5) (No change.)

(b) Lead ban. The following provisions apply to the use of lead in plumbing.

(1) The use of pipes and pipe fittings that contain more than 8.0% lead or solders and flux that contains more than 0.2% lead is prohibited in the following circumstances:

(A) for [For] installation or repair of any public water supply; [,] and

(B) for [For] installation or repair of any plumbing in a residential or nonresidential facility providing water for human consumption and connected to a public drinking water supply system.

(2) (No change.)

(c) Minimum waterline [water line] sizes. The minimum waterline [water line] sizes are for domestic flows only and do not consider fire flows. Larger pipe sizes shall be used when the licensed professional engineer deems it necessary. It should be noted that the required sizes are based strictly on the number of customers to be served and not on the distances between connections or differences in elevation or the type of pipe. No new waterline [water line] under two inches in diameter will be allowed to be installed in a public water system distribution system. These minimum line sizes do not apply to individual customer service lines.

Figure: 30 TAC §290.44(c) (No change.)

(d) Minimum pressure requirement. The system must be designed to maintain a minimum pressure of 35 psi at all points within the distribution network at flow rates of at least 1.5 gallons per minute per connection. When the system is intended to provide fire fighting capability, it must also be designed to maintain a minimum pressure of 20 psi under combined fire and drinking water flow conditions.

(1) (No change.)

(2) When service is to be provided to more than one pressure plane or when distribution system conditions and demands are such that low pressures develop, the method of providing increased pressure shall be by means of booster pumps taking suction from storage tanks. If an exception to this requirement is desired, the designing engineer must furnish for the executive director's review all planning material for booster pumps taking suction from other than a storage tank. The planning material must contain a full description of the supply to the point of suction, maximum demands on this part of the system, location of pressure recorders, safety controls, and other pertinent information. Where booster pumps are installed to take suction directly from the distribution system, a minimum residual pressure of 20 psi [pounds per square inch (psi)] must be maintained on the suction line at all times. Such installations must be equipped with automatic pressure cut-off devices so that the pumping units become inoperative at a suction pressure of less than 20 psi. In addition, a continuous pressure recording device may be required at a predetermined suspected critical pressure point on the suction line in order to record the hydraulic conditions in the line at all times. If such a record indicates critical minimum pressures (less than 20 psi), adequate storage facilities must be installed with the booster pumps taking suction from the storage facility. Fire pumps used to maintain pressure on automatic sprinkler systems only for fire protection purposes are not considered as in-line booster pumps.

(3) - (6) (No change.)

(e) Location of waterlines. The following rules apply to installations of waterlines, wastewater mains or laterals, and other conveyances/appurtenances identified as potential sources of contamination. Furthermore, all ratings specified shall be defined by ASTM or AWWA standards unless stated otherwise. New mains, service lines, or laterals are those that are installed where no main, service line, or lateral previously existed, or where existing mains, service lines, or laterals are replaced with pipes of different size or material.

(1) - (3) (No change.)

(4) Where the nine-foot [nine foot] separation distance cannot be achieved, the following criteria shall apply.[:]

(A) New waterline installation - parallel lines [Waterline Installation - Parallel Lines].

(i) - (iii) (No change.)

(B) New waterline installation - crossing lines [Waterline Installation - Crossing Lines].

(i) - (ii) (No change.)

(iii) Where a new potable waterline crosses a new, non-pressure rated wastewater main or lateral and the standard pipe segment length of the wastewater main or lateral is at least 18 feet, one segment of the waterline pipe shall be centered over the wastewater main or lateral such that the joints of the waterline pipe are equidistant and at least nine feet horizontally from the centerline of the wastewater main or lateral. The potable waterline shall be at least two feet above the wastewater main or lateral. Whenever possible, the crossing shall be centered between the joints of the wastewater main or lateral. The wastewater pipe shall have a minimum pipe stiffness of 115 psi at 5.0% deflection. The wastewater main or lateral shall be embedded in cement stabilized sand (see clause (vi) of this subparagraph) [§290.44(e)(4)(B)(vi) of this title] for the total length of one pipe segment plus 12 inches beyond the joint on each end.

(iv) Where a new potable waterline crosses a new, non-pressure rated wastewater main or lateral and a standard length of the wastewater pipe is less than 18 feet in length, the potable water pipe segment shall be centered over the wastewater line. The materials and method of installation shall conform with one of the following options_ [:]

(I) (No change.)

(II) All sections of wastewater main or lateral within nine feet horizontally of the waterline shall be encased in an 18-foot [18 foot] (or longer) section of pipe. Flexible encasing pipe shall have a minimum pipe stiffness of 115 psi at 5.0% deflection. The encasing pipe shall be centered on the waterline and shall be at least two nominal pipe diameters larger than the wastewater main or lateral. The space around the carrier pipe shall be supported at five-foot (or less) intervals with spacers or be filled to the springline with washed sand. Each end of the casing shall be sealed with watertight [water tight] non-shrink cement grout or a manufactured watertight [water tight]

seal. An absolute minimum separation distance of six inches between the encasement pipe and the waterline shall be provided. The wastewater line shall be located below the waterline.

(III) When a new waterline crosses under a wastewater main or lateral, the waterline shall be encased as described for wastewater mains or laterals in subclause (II) of this clause or constructed of ductile iron or steel pipe with mechanical or welded joints as appropriate. An absolute minimum separation distance of one foot between the waterline [water line] and the wastewater main or lateral shall be provided. Both the waterline and wastewater main or lateral must pass a pressure and leakage test as specified in AWWA C600 standards.

(v) Where a new potable waterline crosses a new, pressure rated wastewater main or lateral, one segment of the waterline pipe shall be centered over the wastewater line such that the joints of the waterline pipe are equidistant and at least nine feet horizontally from the center line [centerline] of the wastewater main or lateral. The potable waterline shall be at least six inches above the wastewater main or lateral. Whenever possible, the crossing shall be centered between the joints of the wastewater main or lateral. The wastewater pipe shall have a minimum pressure rating of at least 150 psi. The wastewater main or lateral shall be embedded in cement stabilized sand (see clause (vi) of this subparagraph) for the total length of one pipe segment plus 12 inches beyond the joint on each end.

(vi) (No change.)

(5) Waterline and wastewater main or lateral manhole or cleanout separation [Wastewater Main or Lateral Manhole or Cleanout Separation]. The separation distance from a potable waterline to a wastewater main or lateral manhole or cleanout shall be a minimum of nine feet. Where the nine-foot separation distance cannot be achieved, the potable waterline shall be encased in a joint of at least 150 psi pressure class pipe at least 18 feet long and two nominal sizes larger than the new conveyance. The space around the carrier pipe shall be supported at five-foot [five feet] intervals with spacers or be filled to the springline [spring line] with washed sand. The encasement pipe shall be centered on the crossing and both ends sealed with cement grout or manufactured sealant.

(6) Location of fire hydrants [Fire Hydrants]. Fire hydrants shall not be installed within nine feet vertically or horizontally of any wastewater main, wastewater lateral, or wastewater service line regardless of construction.

(7) Location of potable or raw water supply or suction lines [Potable or Raw Water Supply or Suction Lines]. Suction mains to pumping equipment shall not cross wastewater mains, wastewater laterals, or wastewater service lines. Raw water supply lines shall not be installed within five feet of any tile or concrete wastewater main, wastewater lateral, or wastewater service line.

(8) Proximity of septic tank drainfields [Septic Tank Drainfields]. Waterlines shall not be installed closer than ten feet to septic tank drainfields.

(f) Sanitary precautions and disinfection. Sanitary precautions, flushing, disinfection procedures, and microbiological sampling as prescribed in AWWA standards for disinfecting water mains shall be followed in laying waterlines.

(1) (No change.)

(2) Special precautions must be taken when waterlines [water lines] are laid under any flowing or intermittent stream or semipermanent body of water such as marsh, bay, or estuary. In these cases, the water main shall be installed in a separate watertight pipe encasement and valves must be provided on each side of the crossing with facilities to allow the underwater portion of the system to be isolated and tested to determine that there are no leaks in the underwater line. Alternately, and with the permission of the executive director, the watertight pipe encasement may be omitted.

(3) New mains shall be thoroughly disinfected in accordance with AWWA Standard C651 and then flushed and sampled before being placed in service. Samples shall be collected for microbiological analysis to check the effectiveness of the disinfection procedure. Sampling shall be repeated if contamination persists. A minimum of one sample for each 1,000 feet of completed waterline [water line] will be required or at the next available sampling point beyond 1,000 feet as designated by the design engineer.

(g) (No change.)

(h) Backflow, siphonage.

(1) (No change.)

(2) No water connection from any public drinking water supply system shall be connected [allowed] to any condensing, cooling, or industrial process or any other system of nonpotable usage over which the public water supply system officials do not have sanitary control, unless the said connection is made in accordance with the requirements of paragraph (1) of this subsection. Water from such systems cannot be returned to the potable water supply.

(3) (No change.)

(4) All backflow prevention assemblies that are required according to this section and associated table located in §290.47(i) of this title shall be tested upon installation by a recognized backflow prevention assembly tester and certified to be operating within specifications. Backflow prevention assemblies which are installed to provide protection against health hazards must also be tested and certified to be operating within specifications at least annually by a recognized backflow prevention assembly tester.

(A) Recognized backflow prevention assembly testers shall have completed an [a] executive director approved course on cross-connection control and backflow prevention assembly testing, pass an examination administered by the executive director, [TNRCC or its designated agent] and hold current professional certification as a backflow prevention assembly tester.

(i) - (ii) (No change.)

(B) (No change.)

(C) A test report [Test Report] must be completed by the recognized backflow prevention assembly tester for each assembly tested. The signed and dated original must be submitted to the public water supplier for recordkeeping [record keeping] purposes. Any form which varies from the format specified in Appendix F located in §290.47(f) of this title [(relating to Backflow Prevention Assembly Test and Maintenance Report)] must be approved by the executive director prior to being placed in use.

(5) - (6) (No change.)

(i) Water hauling. When drinking water is distributed by tank truck or trailer, it must be accomplished in the following manner. [:]

(1) (No change.)

(2) The equipment used to haul the water must be approved by the executive director and must be constructed as follows. [:]

(A) (No change.)

(B) The tank shall be watertight and of an approved material which is impervious and easily cleaned and disinfected. Any paint or coating and any plastic or fiberglass materials used as contact surfaces must be approved by the United States Environmental Protection Agency, the United States Food and Drug Administration, or the NSF [National Sanitation Foundation]. Effective January 1, 1993, any newly installed surfaces shall conform to ANSI/NSF Standard 61 and must be certified by an organization accredited by ANSI.

(C) - (J) (No change.)

(K) A minimum free chlorine residual of 0.5 mg/L [mg/l] or, if chloramines are used as the primary disinfectant, a chloramine residual of 1.0 mg/L [mg/l] (measured as total chlorine) shall be maintained in the water being hauled. Chlorine or chlorine containing compounds may be added on a "batch" basis to maintain the required residual.

(L) Operational records detailing the amount of water hauled, purchases, microbiological sampling results, chlorine residual readings, dates of disinfection, and source of water shall be maintained.

§290.45. Minimum Water System Capacity Requirements.

(a) General provisions.

(1) The requirements contained in this section are to be used in evaluating both the total capacities for public water systems and the capacities at individual pump stations and pressure planes which serve portions of the system that are hydraulically separated from, or incapable of being served by, other pump stations or pressure planes. The capacities specified [listed] in this section are minimum requirements only.

(2) - (4) (No change.)

(5) The capacity of facilities that have been inoperative for the past 30 days and will not be returned to an operative condition within the next 30 days shall not be included when determining compliance with the requirements of this section.

(6) The capacity of the treatment facilities shall not be less than the required raw water or groundwater production rate or the anticipated maximum daily demand of the system.

(b) Community water systems.

(1) Groundwater supplies must meet the following requirements.

(A) If fewer than 50 connections without ground storage, the system must meet the following requirements:

(i) (No change.)

(ii) a pressure tank capacity of 50 gallons per connection. [;]

(B) - (F) (No change.)

(2) (No change.)

(c) (No change.)

(d) Noncommunity water systems serving other than transient accommodation units.

(1) (No change.)

(2) Groundwater supplies must meet the following requirements.

(A) Subject to the requirements of subparagraph (B) of this paragraph, if [If] fewer than 300 persons per day are served, the system must meet the following requirements:

(i) - (ii) (No change.)

(B) Systems which serve 300 or more persons per day or serve fewer than 300 persons per day and provide ground storage [If 300 or more persons per day are served, the system] must meet the following requirements:

(i) - (v) (No change.)

(3) (No change.)

(e) - (f) (No change.)

(g) Alternative capacity requirements. Public water systems may request approval to meet alternative capacity requirements in lieu of the minimum capacity requirements specified in this section. Any water system requesting to use an alternative capacity requirement must demonstrate to the satisfaction of the executive director that approving the request will not compromise the public health or result in a degradation of service or water quality. Alternative capacity requirements are unavailable for groundwater systems serving fewer than 50 connections without total storage as specified in subsection (b)(1) of this section or for noncommunity water systems as specified in subsections (c) and (d) of this section.

(1) - (4) (No change.)

(5) Although elevated storage is the preferred method of pressure maintenance for systems of over 2,500 [2500] connections, it is recognized that local conditions may dictate the use of alternate methods utilizing hydropneumatic tanks and on-site emergency power equipment. Alternative capacity requirements to the elevated storage requirements may be obtained based on request to and approval by the executive director. Special conditions apply to systems qualifying for an elevated storage alternative capacity requirement.

(A) - (B) (No change.)

(C) Battery-powered [Battery powered] or uninterrupted power supply pressure monitors and chart recorders which are configured to activate immediately upon loss of normal power must be provided for pressure maintenance facilities. These records must be kept for a minimum of

three years and made available for review by the executive director. Records must include chart recordings of all power interruptions including interruptions due to periodic emergency power under-load testing and maintenance.

(D) (No change.)

(6) (No change.)

§290.46. Minimum Acceptable Operating Practices for Public Drinking Water Systems.

(a) General. When a public drinking water supply system is to be established, plans shall be submitted to the executive director for review and approval prior to the construction of the system. All public water systems are to be constructed in conformance with the requirements of this subchapter [these sections] and maintained and operated in accordance with the following minimum acceptable operating practices. Owners and operators shall allow entry to members of the commission and employees and agents of the commission onto any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to public water systems in the state. Members, employees, or agents acting under this authority shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then in charge of his presence and shall exhibit proper credentials.

(b) Microbiological. Submission of samples for microbiological analysis shall be as required by Subchapter F of this chapter (relating to Drinking Water Standards Governing Drinking Water Quality and Reporting Requirements for Public Water [Supply] Systems). Microbiological samples may be required by the executive director for monitoring purposes in addition to the routine samples required by the drinking water standards. These samples shall be submitted to a certified laboratory. (A list of the certified laboratories can be obtained by contacting the executive director).

(c) (No change.)

(d) Disinfectant residuals and monitoring. A disinfectant residual must be continuously maintained during the treatment process and throughout the distribution system.

(1) (No change.)

(2) The disinfection equipment shall be operated to maintain the following minimum disinfectant residuals in each finished water storage tank and throughout the distribution system at all times:

(A) a free chlorine residual of 0.2 mg/L [mg/l]; or

(B) a chloramine residual of 0.5 mg/L [mg/l] (measured as total chlorine) for those systems that feed ammonia.

(e) Operation by trained and licensed personnel. Except as provided in paragraph (1) of this subsection, the production, treatment, and distribution facilities at the public water system must be operated at all times under the direct supervision of a water works operator who holds an applicable, valid license issued by the executive director. [(7) of this subsection, all public water systems must be operated continuously under the direct supervision of an adequately trained and appropriately licensed water works operator.]

(1) Transient noncommunity public water systems are exempt from the requirements of this subsection if they use only groundwater or purchase treated water from another public water system. [Systems serving no more than 1,000 connections must employ at least one operator meeting the applicable requirements of paragraph (3) of this subsection.]

(2) All public water systems that are subject to the provisions of this subsection shall meet the following requirements. [Systems that serve more than 1,000 connections must employ at least two operators who meet the applicable requirements of paragraph (3) of this subsection.]

(A) Public water systems shall not allow new or repaired production, treatment, storage, pressure maintenance, or distribution facilities to be placed into service without the prior guidance and approval of a licensed water works operator.

(B) Public water systems shall ensure that their operators are trained regarding the use of all chemicals used in the water treatment plant. Training programs shall meet applicable standards established by the Occupational Safety and Health Administration (OSHA) or the Texas Hazard Communications Act, Texas Health and Safety Code, Title 6, Chapter 502.

(C) Beginning January 1, 2004, public water systems using chlorine dioxide shall place the operation of the chlorine dioxide facilities under the direct supervision of a licensed operator who has a Class "C" or higher license.

(3) Systems that only purchase treated water shall meet the following requirements in addition to the requirements contained in paragraph (2) of this subsection. [The production, treatment, and distribution facilities of all public water systems must be operated at all times under the direct supervision of a water works operator who holds an applicable, valid license issued by the executive director.]

(A) Purchased water systems serving no more than 250 connections must employ an operator who holds a Class "D" or higher license. [Systems serving fewer than 250 connections must employ an operator with a Class "D" or higher license if they only use groundwater or purchased treated water.]

(B) Purchased water systems serving more than 250 connections, but no more than 1,000 connections, must employ an operator who holds a Class "C" or higher license. [Systems that serve 250 or more connections must employ an operator with a Class "C" or higher license if they only use purchased treated water.]

(C) Purchased water systems serving more than 1,000 connections must employ at least two operators who hold a Class "C" or higher license and who each work at least 16 hours per month at the public water system's treatment or distribution facilities. [Systems that serve 250 or more connections must employ an operator with a Class "C" or higher Groundwater license if they use groundwater and do not treat groundwater that is under the direct influence of surface water or surface water.]

[(D) Systems that treat groundwater that is under the direct influence of surface water and do not treat surface water must meet the following requirements related to the direct supervision of their facilities:]

[(i) Systems which utilize cartridge filters must employ an operator who has a Class "C" or higher Surface water license or has a Class "C" or higher Groundwater license and has completed a four-hour training course on monitoring and reporting requirements.]

[(ii) Systems which utilize coagulant addition and direct filtration must employ an operator who has a Class “C” or higher Surface Water license or has a Class “C” or higher Groundwater license and has completed a 40-hour Surface Water Production course.]

[(iii) Systems which utilize complete surface water treatment must comply with the requirements of subparagraph (E) of this paragraph.]

[(iv) Each plant must have at least one Class “C” or higher operator on duty at the plant when it is in operation or the plant must be provided with continuous turbidity and disinfectant residual monitors with automatic plant shutdown and alarms to summon operators so as to ensure that the water produced continues to meet the commission's drinking water standards during periods when the plant is not staffed.]

[(E) Systems that treat surface water must meet the following requirements related to the supervision of their facilities.]

[(i) Beginning January 1, 2003, systems that treat surface water must employ at least one operator who holds a Class “B” or higher surface water license. Until January 1, 2003, these systems must employ at least one operator who holds a Class “B” or higher surface water license or who holds a Class “C” or higher Surface water license and has completed an approved 20-hour water laboratory course.]

[(ii) Each surface water treatment plant must have at least one Class “C” or higher surface water operator on duty at the plant when it is in operation or the plant must be provided with continuous turbidity and disinfectant residual monitors with automatic plant shutdown and alarms to summon operators so as to ensure that the water produced continues to meet the commission's drinking water standards during periods when the plant is not staffed.]

[(iii) Public water systems shall not allow Class “D” operators to adjust or modify the treatment processes at surface water treatment plant unless an operator who holds a Class “C” or higher surface license is present at the plant and has issued specific instructions regarding the proposed adjustment.]

(4) Systems that treat groundwater and do not treat surface water or groundwater that is under the direct influence of surface water shall meet the following requirements in addition to the

requirements contained in paragraph (2) of this subsection. [Beginning January 1, 2004, the treatment facilities at all systems using chlorine dioxide must be under the direct supervision of a licensed operator who has completed additional training. Unless a higher level of certification is required by paragraph (3) of this subsection, public water systems using chlorine dioxide must place those facilities under the direct supervision of a licensed operator who has a Class "C" or higher license and has completed an approved water laboratory course.]

(A) Groundwater systems serving no more than 250 connections must employ an operator with a Class "D" or higher license.

(B) Groundwater systems serving more than 250 connections, but no more than 1,000 connections, must employ an operator with a Class "C" or higher groundwater license.

(C) Groundwater systems serving more than 1,000 connections must employ at least two operators who hold a Class "C" or higher groundwater license and who each work at least 16 hours per month at the public water system's production, treatment, or distribution facilities.

(5) Systems that treat groundwater that is under the direct influence of surface water must meet the following requirements in addition to the requirements contained in paragraph (2) of this subsection. [Public water systems shall not allow new or repaired production, treatment, storage, pressure maintenance or distribution facilities to be placed into service without the prior guidance and approval of a licensed water works operator.]

(A) Systems which serve no more than 1,000 connections and utilize cartridge or membrane filters must employ an operator who holds a Class "C" or higher groundwater license and has completed a four-hour training course on monitoring and reporting requirements or who holds a Class "C" or higher surface water license and has completed the Groundwater Production course.

(B) Systems which serve more than 1,000 connections and utilize cartridge or membrane filters must employ at least two operators who meet the requirements of subparagraph (A) of this paragraph and who each work at least 24 hours per month at the public water system's production, treatment, or distribution facilities.

(C) Systems which serve no more than 1,000 connections and utilize coagulant addition and direct filtration must employ an operator who holds a Class "C" or higher surface water

license and has completed the Groundwater Production course or who holds a Class “C” or higher groundwater license and has completed a Surface Water Production course. Effective January 1, 2007, the public water system must employ at least one operator who has completed the Surface Water Unit I course and the Surface Water Unit II course.

(D) Systems which serve more than 1,000 connections and utilize coagulant addition and direct filtration must employ at least two operators who meet the requirements of subparagraph (C) of this paragraph and who each work at least 24 hours per month at the public water system’s production, treatment, or distribution facilities. Effective January 1, 2007, the public water system must employ at least two operators who have completed the Surface Water Unit I course and the Surface Water Unit II course.

(E) Systems which utilize complete surface water treatment must comply with the requirements of paragraph (6) of this subsection.

(F) Each plant must have at least one Class “C” or higher operator on duty at the plant when it is in operation or the plant must be provided with continuous turbidity and disinfectant residual monitors with automatic plant shutdown and alarms to summon operators so as to ensure that the water produced continues to meet the commission's drinking water standards during periods when the plant is not staffed.

(6) Systems that treat surface water must meet the following requirements in addition to the requirements contained in paragraph (2) of this subsection. [Public water systems shall ensure that their operators are trained regarding the use of all chemicals used in the water treatment plant. Training programs shall meet applicable standards established by the Occupational Safety and Health Administration (OSHA) or the Texas Hazard Communications Act, Texas Health and Safety Code, Title 6, Chapter 502.]

(A) Surface water systems that serve no more than 1,000 connections must employ at least one operator who holds a Class “B” or higher surface water license. Contract operators may be used to meet the requirements of this subparagraph if the contractor is completely familiar with the design and operation of the plant and spends at least four consecutive hours at the plant at least once every 14 days and the system also employs an operator who holds a Class “C” or higher surface water license. Effective January 1, 2007, the public water system must employ at least one operator who has completed the Surface Water Unit I course and the Surface Water Unit II course.

(B) Surface water systems that serve more than 1,000 connections must employ at least two operators; one of the required operators must hold a Class “B” or higher surface water license and the other required operator must hold a Class “C” or higher surface water license. Each of the required operators must work at least 32 hours per month at the public water system’s production, treatment, or distribution facilities. Effective January 1, 2007, the public water system must employ at least two operators who have completed the Surface Water Unit I course and the Surface Water Unit II course.

(C) Each surface water treatment plant must have at least one Class “C” or higher surface water operator on duty at the plant when it is in operation or the plant must be provided with continuous turbidity and disinfectant residual monitors with automatic plant shutdown and alarms to summon operators so as to ensure that the water produced continues to meet the commission's drinking water standards during periods when the plant is not staffed.

(D) Public water systems shall not allow Class “D” operators to adjust or modify the treatment processes at surface water treatment plant unless an operator who holds a Class “C” or higher surface license is present at the plant and has issued specific instructions regarding the proposed adjustment.

[(7) Transient noncommunity public water systems are exempt from the requirements of this subsection if they use only groundwater or purchase treated water from another public water system.]

(f) Operating records and reports. Water systems must maintain a record of water works operation and maintenance activities and submit periodic operating reports.

(1) - (2) (No change.)

(3) All public water systems shall maintain a record of operations.

(A) The following records shall be retained for at least two years:

(i) - (iv) (No change.)

(v) the dates that storage tanks and other facilities were cleaned; [and]

(vi) the maintenance records for water system equipment and facilities;
and [.]

(vii) for systems that do not employ full-time operators to meet the requirements of subsection (e) of this section, a monthly summary of the work performed and the number of hours worked by each of the part-time operators used to meet the requirements of subsection (e) of this section.

(B) (No change.)

(C) The following records shall be retained for a period of five years after they are no longer in effect:

(i) the records concerning a variance or exemption granted to the system; [and]

(ii) Concentration Time (CT) studies for surface water treatment plants; and [.]

(iii) the Recycling Practices Report form and other records pertaining to site-specific recycle practices for treatment plants that recycle.

(D) (No change.)

(E) The following records shall be retained for at least ten [10] years:

(i) - (ii) (No change.)

(iii) any written reports, summaries, or communications relating to sanitary surveys of the system conducted by the system itself, by a private consultant, or by the executive director shall be kept for a period not less than ten [10] years after completion of the survey involved; and

(iv) (No change.)

(F) (No change.)

(4) Water systems shall submit routine reports and any additional documentation that the executive director may require to determine compliance with the requirements of this chapter [any monthly or quarterly reports required by the executive director].

(A) The reports must be submitted to the Texas Commission on Environmental Quality [Texas Natural Resource Conservation Commission], Water Supply Division, MC 155, P.O. Box 13087, Austin, Texas 78711-3087 by the tenth day of the month following the end of the reporting period.

(B) - (C) (No change.)

(g) Disinfection of new or repaired facilities. Disinfection by or under the direction of water system personnel must be performed when repairs are made to existing facilities and before new facilities are placed into service. Disinfection must be performed in accordance with AWWA requirements and water samples must be submitted to a laboratory approved by the executive director [Texas Department of Health]. The sample results must indicate that the facility is free of microbiological contamination before it is placed into service. When it is necessary to return repaired mains to service as rapidly as possible, doses may be increased to 500 mg/L [mg/l] and the contact time reduced to 1/2 [one-half] hour.

(h) - (i) (No change.)

(j) Customer service inspections. A customer service inspection certificate shall be completed prior to providing continuous water service to new construction, on any existing service either when the water purveyor has reason to believe that cross-connections or other potential contaminant hazards exist, or after any material improvement, correction, or addition to the private water distribution facilities. Any customer service inspection certificate form which varies from the format found in §290.47(d) of this title (relating to Customer Service Inspection Certificate) must be approved by the executive director prior to being placed in use.

(1) Individuals with the following credentials shall be recognized as capable of conducting a customer service inspection certification.

(A) (No change.)

(B) Customer service inspectors who have completed a commission-approved [commission approved] course, passed an examination administered by the executive director, [TNRCC or its designated agent] and hold current professional certification or endorsement as a customer service inspector.

(2) - (3) (No change.)

(4) A customer service inspection is an examination of the private water distribution facilities for the purpose of providing or denying water service. This inspection is limited to the identification and prevention of cross-connections [cross connections], potential contaminant hazards, and illegal lead materials. The customer service inspector has no authority or obligation beyond the scope of the commission's regulations. A customer service inspection is not a plumbing inspection as defined and regulated by the Texas State Board of Plumbing Examiners (TSBPE). A customer service inspector is not permitted to perform plumbing inspections. State statutes and TSBPE adopted rules require that TSBPE licensed plumbing inspectors perform plumbing inspections of all new plumbing and alterations or additions to existing plumbing within the municipal limits of all cities, towns, and villages which have passed an ordinance adopting one of the plumbing codes recognized by TSBPE. Such entities may stipulate that the customer service inspection be performed by the plumbing inspector as a part of the more comprehensive plumbing inspection. Where such entities permit customer service inspectors to perform customer service inspections, the customer service inspector shall report any violations immediately to the local entity's plumbing inspection department.

(k) (No change.)

(l) Flushing of mains. All dead-end mains must be flushed at monthly intervals [or more frequently] . Dead-end lines and other mains shall be flushed as needed if water quality complaints are received from water customers or if disinfectant residuals fall below acceptable levels as specified in §290.110 of this title (relating to Disinfectant Residuals).

(m) Maintenance and housekeeping. The maintenance and housekeeping practices used by a public water system shall ensure the good working condition and general appearance of the system's facilities and equipment. The grounds and facilities shall be maintained in a manner so as to minimize

the possibility of the harboring of rodents, insects, and other disease vectors, and in such a way as to prevent other conditions that might cause the contamination of the water.

(1) Each of the system's ground, elevated, and pressure tanks shall be inspected annually by water system personnel or a contracted inspection service.

(A) Ground and elevated storage tank inspections must determine that the vents are in place and properly screened, the roof hatches closed and locked, flap valves and gasketing provide adequate protection against insects, rodents, and other vermin, the interior and exterior coating systems are continuing to provide adequate protection to all metal surfaces, and the tank remains in a watertight condition.

(B) - (C) (No change.)

(2) - (3) (No change.)

(4) All water treatment units, storage and pressure maintenance facilities, distribution system lines, and related appurtenances shall be maintained in a watertight condition and be free of excessive solids.

(5) (No change.)

(6) Pumps, motors, valves, and other mechanical devices shall be maintained in good working condition.

(n) Engineering plans and maps. Plans, specifications, maps, and other pertinent information shall be maintained to facilitate the operation and maintenance of the system's facilities and equipment. The following records shall be maintained on file at the public water system and be available to the executive director upon request. [:]

(1) - (2) (No change.)

(3) Copies of well completion data such as well material setting data, geological log, sealing information (pressure cementing and surface protection), disinfection information,

microbiological sample results, and a chemical analysis report of a representative sample of water from the well shall be kept on file for as long as the well remains in service.

(o) (No change.)

(p) Data on water system ownership and management. The agency shall be provided with information regarding water system ownership and management.

(1) When a water system changes ownership, a written notice of the transaction must be provided to the executive director. When applicable, notification shall be in accordance with Chapter 291 of this title (relating to Utility Regulations [Water Rates]). Those systems not subject to Chapter 291 of this title shall notify the executive director of changes in ownership by providing the name of the current and prospective owner or responsible official, the proposed date of the transaction, and the address and phone number of the new owner or responsible official. The information listed in this paragraph and the system's public drinking water supply identification number, and any other information necessary to identify the transaction shall be provided to the executive director 120 days before the date of the transaction.

(2) (No change.)

(q) Special precautions. Special precautions must be instituted by the water system owner or responsible official in the event of low distribution pressures (below 20 psi), water outages, microbiological samples found to contain *E. coli* or fecal coliform organisms, failure to maintain adequate chlorine residuals, elevated finished water turbidity levels, or other conditions which indicate that the potability of the drinking water supply has been compromised.

(1) (No change.)

(2) The flowchart found in §290.47(h) of this title shall be used to determine if a boil water notification must be issued in the event of a loss of distribution system pressure. If a boil water notice is issued under [pursuant to] this section, it shall remain in effect until water distribution pressures in excess of 20 psi can consistently be maintained, a minimum of 0.2 mg/L [mg/l] free chlorine residual or 0.5 mg/L [mg/l] chloramine residual (measured as total chlorine) is present throughout the system, and water samples collected for microbiological analysis are found negative for coliform organisms.

(3) A boil water notification shall be issued if the turbidity of the finished water produced by a surface water treatment plant exceeds 5.0 NTU. The boil water notice shall remain in effect until the water entering the distribution system has a turbidity level below 1.0 NTU, the distribution system has been thoroughly flushed, a minimum of 0.2 mg/L [mg/l] free chlorine residual or 0.5 mg/L [mg/l] chloramine residual (measured as total chlorine) is present throughout the system, and water samples collected for microbiological analysis are found negative for coliform organisms.

(4) (No change.)

(r) (No change.)

(s) Testing equipment. Accurate testing equipment or some other means of monitoring the effectiveness of any chemical treatment processes must be used by the system.

(1) Flow measuring devices and rate-of-flow controllers that are required by §290.42(d) of this title shall be calibrated at least once every 12 months. Well meters required by §290.41(c)(3)(N) of this title shall be calibrated at least once every three years.

(2) Laboratory equipment used for compliance testing shall be properly calibrated.

(A) pH meters shall be properly calibrated.

(i) - (ii) (No change.)

(iii) On-line pH meters shall be calibrated according to manufacturer [manufacturers] specifications at least once every 30 days [each day].

(iv) The calibration of on-line pH meters shall be checked at least once each week with a primary standard or by comparing the results from the on-line unit with the results from a properly calibrated benchtop unit. If necessary, the on-line unit shall be recalibrated with primary standards.

(B) Turbidimeters shall be properly calibrated.

(i) - (iii) (No change.)

(iv) The calibration of on-line [online] turbidimeters shall be checked at least once each week with a primary standard, a secondary standard, or the manufacturer's proprietary calibration confirmation device or by comparing the results from the on-line unit with the results from a properly calibrated benchtop unit. If necessary, the on-line unit shall be recalibrated with primary standards.

(C) (No change.)

(t) - (u) (No change.)

(v) Electrical wiring. All water system electrical wiring must be securely installed [in a securely mounted conduit] in compliance with a local or national electrical code.

§290.47. Appendices.

(a) - (d) (No change.)

(e) Appendix E. Boil Water Notification.

Figure: 30 TAC §290.47(e)

[Figure: 30 TAC §290.47(e)]

**BOIL WATER NOTIFICATION
[INSERT NAME OF SYSTEM]**

Due to conditions which have occurred recently in the water system, the Texas Commission on Environmental Quality [Texas Natural Resource Conservation Commission] has required the system to notify all customers to boil their water prior to consumption.

To ensure destruction of all harmful bacteria and other microbes, water for drinking, cooking, and ice making should be boiled and cooled prior to consumption. The water should be brought to a vigorous rolling boil and then boiled for two minutes. In lieu of boiling, you may purchase bottled water or obtain water from some other suitable source. When it is no longer necessary to boil the water, water system officials will notify you.

If you have questions regarding this matter you may contact (a) _____ at (b) _____.

(a) Utility Official(s) (b) Phone Number(s)

INSTRUCTIONS:

List more than one utility official and phone number. Do not list the commission as the primary contact. If a customer wishes to call the commission, please have them call (512) 239-6020.

(f) Appendix F. Sample Backflow Prevention Assembly Test and Maintenance Report.

Figure: 30 TAC §290.47(f)

[Figure: 30 TAC §290.47(f)]

The following form must be completed for each assembly tested. A signed and dated original must be submitted to the public water supplier for recordkeeping [record keeping] purposes:

BACKFLOW PREVENTION ASSEMBLY TEST AND MAINTENANCE REPORT

NAME OF PWS: _____
PWS I.D.: # _____
MAILING ADDRESS: _____
CONTACT PERSON: _____
LOCATION OF SERVICE: _____

The backflow prevention assembly detailed below has been tested and maintained as required by commission [TNRCC] regulations and is certified to be operating within acceptable parameters.

TYPE OF ASSEMBLY

- | | |
|---|--|
| <input type="checkbox"/> Reduced Pressure Principle | <input type="checkbox"/> Reduced Pressure Principle-Detector |
| <input type="checkbox"/> Double Check Valve | <input type="checkbox"/> Double Check-Detector |
| <input type="checkbox"/> Pressure Vacuum Breaker | <input type="checkbox"/> Spill-Resistant Pressure Vacuum Breaker |

Manufacturer _____ Size _____
Model Number _____ Located At _____
Serial Number _____

Is the assembly installed in accordance with manufacturer recommendations and/or local codes? _____

	Reduced Pressure Principle Assembly			Pressure Vacuum Breaker	
	Double Check Valve Assembly		Relief Valve	Air Inlet	Check Valve
	1st Check	2nd Check			
Initial Test	Held at _____ psid Closed Tight <input type="checkbox"/> Leaked <input type="checkbox"/>	Held at _____ psid Closed Tight <input type="checkbox"/> Leaked <input type="checkbox"/>	Opened at _____ psid Did not open <input type="checkbox"/>	Opened at _____ psid Did not Open <input type="checkbox"/>	Held at _____ psid Leaked <input type="checkbox"/>
Repairs and Materials Used					
Test After Repair	Held at _____ psid Closed Tight <input type="checkbox"/>	Held at _____ psid Closed Tight <input type="checkbox"/>	Opened at _____ psid	Opened at _____ psid	Held at _____ psid

Test gauge used: Make/Model _____ SN: _____ Calibration Date: _____

Remarks: _____

The above is certified to be true at the time of testing.

Firm Name _____ Certified Tester _____

Firm Address _____ Cert. Tester No. _____ Date _____

Firm Phone # _____

* TEST RECORDS MUST BE KEPT FOR AT LEAST THREE YEARS

** USE ONLY MANUFACTURER'S REPLACEMENT PARTS

(g) Appendix G. Operator and/or Employment Notice.

Figure: 30 TAC §290.47(g)

[Figure: 30 TAC §290.47(g)]

Section 290.46(p)(2), Data on water system ownership and management, requires the owner of a public water system to annually provide the executive director with a list of all the water works operators and operating companies that the public water system employs. The following form may be used to facilitate compliance with this requirement. This notice should be submitted to the Texas Commission on Environmental Quality [Texas Natural Resource Conservation Commission], Water Supply Division, MC-155, P.O. Box 13087, Austin, Texas 78711-3087 or provided to the executive director during on-site inspections.

Operator and/or Employment Notice Form

Name of Operator or Operating Company	For Operators		For Companies
	License No.	Class of License	Registration No.
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

 Signature of Water System Owner or Responsible Official

 Date

 Name of Water System Owner or Responsible Official

 Title of Owner or Responsible Official

(h) (No change.)

(i) Appendix I. Assessment of Hazard and Selection of Assemblies.

Figure: 30 TAC §290.47(i)

[Figure: 30 TAC §290.47(i)]

Appendix I: Assessment of Hazards and Selection of Assemblies

The following table lists many common hazards. It is not an all-inclusive list of the hazards which may be found connected to public water systems.

Premises Isolation - Description of Premises	Assessment of Hazard	Required Assembly
Aircraft and missile plants	Health	RPBA or AG

Animal feedlots	Health	RPBA or AG
Automotive plants	Health	RPBA or AG
Breweries	Health	RPBA or AG
Canneries, packing houses and rendering plants	Health	RPBA or AG
Commercial car wash facilities	Health	RPBA or AG
Commercial laundries	Health	RPBA or AG
Cold storage facilities	Health	RPBA or AG
Connection to sewer pipe	Health	AG
Dairies	Health	RPBA or AG
Docks and dockside facilities	Health	RPBA or AG
Dye works	Health	RPBA or AG
Food and beverage processing plants	Health	RPBA or AG
Hospitals, morgues, mortuaries, medical clinics, dental clinics, <u>veterinary clinics</u> , autopsy facilities, sanitariums, and medical labs	Health	RPBA or AG
Metal manufacturing, cleaning, processing, and fabrication plants	Health	RPBA or AG
Microchip fabrication facilities	Health	RPBA or AG
Paper and paper products plants	Health	RPBA or AG
Petroleum processing or storage facilities	Health	RPBA or AG
Photo and film processing labs	Health	RPBA or AG
Plants using radioactive material	Health	RPBA or AG
Plating or chemical plants	Health	RPBA or AG
Pleasure-boat marinas	Health	RPBA or AG
<u>Private/Individual/Unmonitored Wells</u>	<u>Health</u>	<u>RPBA or AG</u>
Reclaimed water systems	Health	RPBA or AG
Restricted, classified or other closed facilities	Health	RPBA or AG
Rubber plants	Health	RPBA or AG
Sewage lift stations	Health	RPBA or AG
Sewage treatment plants	Health	RPBA or AG
Slaughter houses	Health	RPBA or AG
Steam plants	Health	RPBA or AG
Tall buildings or elevation differences where the highest outlet is 80 feet or more above the meter	Nonhealth	DCVA

Internal Protection - Description of Cross Connection Assembly	Assessment of Hazard	Recommended
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Aspirators	Nonhealth†	AVB
Aspirator (medical)	Health	AVB or PVB
Autoclaves	Health	RPBA
Autopsy and mortuary equipment	Health	AVB or PVB
Bedpan washers	Health	AVB or PVB
Connection to industrial fluid systems	Health	RPBA
Connection to plating tanks	Health	RPBA

Connection to salt-water cooling systems	Health	RPBA
Connection to sewer pipe	Health	AG
Cooling towers with chemical additives	Health	AG
Cuspidors	Health	AVB or PVB
Degreasing equipment	Nonhealth†	DCVA
Domestic space-heating boiler	Nonhealth†	RPBA
Dye vats or machines	Health	RPBA
Fire-fighting system (toxic liquid foam concentrates)	Health	RPBA
Flexible shower heads	Nonhealth†	AVB or PVB
Heating equipment		
Commercial	Nonhealth†	RPBA
Domestic	Nonhealth†	DCVA
Hose bibbs	Nonhealth†	AVB
Irrigation systems		
with chemical additives	Health	RPBA
without chemical additives	Nonhealth†	DCVA, AVB, or PVB
Kitchen equipment - Commercial	Nonhealth†	AVB
Lab bench equipment	Health or Nonhealth†	AVB or PVB
Ornamental fountains	Health	AVB or PVB
Swimming pools		
Private	Nonhealth†	PVB or AG
Public	Nonhealth†	RPBA or AG
Sewage pump	Health	AG
Sewage ejectors	Health	AG
Shampoo basins	Nonhealth†	AVB
Specimen tanks	Health	AVB or PVB
Steam generators	Nonhealth†	RPBA
Steam tables	Nonhealth†	AVB
Sterilizers	Health	RPBA
Tank vats or other vessels containing toxic substances	Health	RPBA
Trap primers	Health	AG
Vending machines	Nonhealth†	RPBA or PVB
Watering troughs	Health	AG or PVB

NOTE: AG = air gap; AVB = atmospheric vacuum breaker; DCVA = double check valve backflow prevention assembly; PVB = pressure vacuum breaker; RPBA = reduced-pressure principle backflow prevention assembly.

*AVBs and PVBs may be used to isolate health hazards under certain conditions, that is, backsiphonage situations. Additional area of premises isolation may be required.

†Where a greater hazard [hazards] exists (due to toxicity or other potential health impact) additional area protection with RPBA is required.

**SUBCHAPTER F: DRINKING WATER STANDARDS GOVERNING
DRINKING WATER QUALITY AND REPORTING REQUIREMENTS
FOR PUBLIC WATER SYSTEMS**

§§290.104, 290.106, 290.107, 290.111, 290.117, 290.121, 290.122

STATUTORY AUTHORITY

These amendments are proposed under Texas Water Code, §5.102, which establishes the commission's general authority necessary to carry out its jurisdiction; §5.103, which establishes the commission's general authority to adopt rules; §5.105, which establishes the commission's authority to set policy by rule; and Texas Health and Safety Code, §341.031, which allows the commission to adopt rules to implement the federal Safe Drinking Water Act, 42 United States Code, §§300f to 300j-26.

The proposed amendments implement Texas Health and Safety Code, §§341.031 and 341.0315, which require public water systems to comply with commission rules adopted to ensure the supply of safe drinking water.

§290.104. Summary of Maximum Contaminant Levels, Maximum Residual Disinfectant Levels, Treatment Techniques, and Action Levels.

(a) (No change.)

(b) MCLs [Maximum contaminant levels] for inorganic compounds. The MCLs for inorganic contaminants listed in this subsection apply to public water systems as provided in §290.106 of this title (relating to Inorganic Contaminants).

Figure: 30 TAC §290.104(b)

[Figure: 30 TAC §290.104(b)]

Contaminant	MCL (mg/L)
Antimony	0.006
Arsenic	0.05
Asbestos	7 million fibers/liter (longer than 10 μ m)
Barium	<u>2</u> [2.0]

Beryllium	0.004
Cadmium	0.005
Chromium	0.1
Cyanide	0.2 (as free Cyanide)
Fluoride	4.0
Mercury	0.002
Nitrate	10 (as Nitrogen)
Nitrite	1 (as Nitrogen)
Nitrate & Nitrite (Total)	10 (as Nitrogen)
Selenium	0.05
Thallium	0.002

(c) MCLs [Maximum contaminant levels] for organic compounds. The following MCLs [maximum contaminant levels] for synthetic organic contaminants and volatile organic contaminants apply to public water systems as provided in §290.107 of this title (relating to Organic Contaminants).

(1) The following are the MCLs [maximum contaminant levels] for synthetic organic contaminants.

Figure: 30 TAC §290.104(c)(1) (No change.)

(2) The following are the MCLs [maximum contaminant levels] for volatile organic contaminants.

Figure: 30 TAC §290.104(c)(2)

[Figure: 30 TAC §290.104(c)(2)]

Contaminant	MCL (mg/L [mg/l])
1,1-Dichloroethylene	0.007
1,1,1-Trichloroethane	0.2
1,1,2-Trichloroethane	0.005
1,2-Dichloroethane	0.005
1,2-Dichloropropane	0.005
1,2,4-Trichlorobenzene	0.07
Benzene	0.005
Carbon tetrachloride	0.005
cis-1,2-Dichloroethylene	0.07
Dichloromethane	0.005
Ethylbenzene	0.7
Monochlorobenzene	0.1
o-Dichlorobenzene	0.6
para-Dichlorobenzene	0.075
Styrene	0.1
Tetrachloroethylene	0.005
Toluene	<u>1</u> [1.0]
trans-1,2-Dichloroethylene	0.1
Trichloroethylene	0.005
Vinyl chloride	0.002
Xylenes (total)	<u>10</u> [10.0]

(d) MCLs [Maximum contaminant levels] for radiological contaminants. MCLs [Maximum contaminant levels] for radiological contaminants apply to public water systems as provided in §290.108 of this title (relating to Radiological Sampling and Analytical Requirements). [The maximum contaminant levels for beta particle and photon radioactivity from man-made radionuclides in drinking water are as follows.]

[(1) The maximum contaminant level for combined radium-226 and radium-228 is 5 pCi/l.]

[(2) The maximum contaminant level for gross alpha particle activity (including radium-226 but excluding radon and uranium) is 15 pCi/l.]

[(3) The average annual concentration of beta particle and photon radioactivity from man-made radionuclides in drinking water shall not produce an annual dose equivalent to the total body or any internal organ greater than four millirem (mrem)/year.]

[(4) If two or more radionuclides other than tritium or strontium-90 are present, the sum of their annual dose equivalent to the total body or to any organ shall not exceed four mrem/year. Average annual concentrations of tritium or strontium-90 assumed to produce a total body or organ dose of four mrem/year are as follows:]

[Figure: 30 TAC §290.104(d)(4)]

(e) (No change.)

(f) Minimum and MRDLs. Minimum and MRDLs apply to public water systems as provided in §290.110 of this title (relating to Disinfectant Residuals).

(1) The minimum residual disinfectant concentration in the water entering the distribution system is 0.2 milligrams per liter (mg/L) [mg/L] free chlorine or 0.5 mg/L chloramine.

(2) (No change.)

(3) The MRDL [maximum residual disinfectant level] of chlorine dioxide in the water entering the distribution system is 0.8 mg/L.

(4) The MRDL [maximum residual disinfectant level] of free chlorine or chloramine in the water within the distribution system is 4.0 mg/L based on a running annual average.

(g) Turbidity. Systems must meet the turbidity treatment technique requirements as provided in §290.111 of this title (relating to Turbidity).

[(1) Until January 1, 2002, the turbidity level of the combined filter effluent must never exceed 5.0 NTU and the turbidity level of the combined filter effluent must be 0.5 NTU or less in at least 95% of the samples tested each month.]

(1) [(2)] The [Effective January 1, 2002 the] turbidity level of the combined filter effluent must never exceed 1.0 Nephelometric Turbidity Unit (NTU) [NTU] and the turbidity level of the combined filter effluent must be 0.3 NTU or less in at least 95% of the samples tested each month.

(2) [(3)] Systems are subject to individual filter turbidity provisions of §290.111 of this title.

(h) (No change.)

(i) Disinfection by-products (TTHM and HAA5). The MCLs for TTHM and HAA5 apply to water systems as provided in §290.113 of this title (relating to Disinfection By-products (TTHM and HAA5)). The MCLs for TTHM and HAA5 are:

(1) the MCL for TTHM is 0.080 mg/L [milligrams/liter]; and

(2) the MCL for HAA5 is 0.060 mg/L [milligrams/liter].

(j) Disinfection by-products other than TTHM and HAA5. The MCLs [maximum contaminant levels] for chlorite and bromate apply to water systems as provided in §290.114 of this title (relating to Disinfection By-products Other than TTHM and HAA5). The MCLs for chlorite and bromate are as follows:

(1) - (2) (No change.)

(k) Lead and copper action levels. The action levels for lead and copper apply to water systems as provided in §290.117 of this title (relating to Regulation of Lead and Copper). Action levels for lead and copper are as follows:

(1) the action level for lead is 0.015 mg/L [mg/l]; and

(2) the action level for copper is 1.3 mg/L [mg/l].

(l) Recycle streams. The treatment technique requirements for recycle streams are specified in §290.42(c)(6) and (d)(3) of this title (relating to Water Treatment).

§290.106. Inorganic Contaminants.

(a) (No change.)

(b) Maximum contaminant levels for IOCS. The MCLs for IOCs listed in the following table apply to community and nontransient, non-community water systems. The MCLs for nitrate, nitrite, and total nitrate and nitrite also apply to transient non-community water systems.

Figure: 30 TAC §290.106(b)

[Figure: 30 TAC §290.106(b)]

Contaminant	MCL (mg/L)
Antimony	0.006
Arsenic	0.05
Asbestos	7 million fibers/liter (longer than 10 μ m)
Barium	2
Beryllium	0.004
Cadmium	0.005
Chromium	0.1
Cyanide	0.2 (as free Cyanide)
Fluoride	4.0

Mercury	0.002
Nitrate	10 (as Nitrogen)
Nitrite	1 (as Nitrogen)
Nitrate & Nitrite (Total)	10 (as Nitrogen)
Selenium	0.05
Thallium	0.002

(c) Monitoring requirements for IOCs. Public water systems shall monitor for IOCs at the locations specified by the executive director. All monitoring conducted under [pursuant to] the requirements of this section must be conducted at sites designated in the public water system's monitoring plan. Each public water system shall monitor at the time designated during each compliance period.

(1) Monitoring locations for IOCs except asbestos, antimony, arsenic, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nitrate, nitrite, selenium, and thallium shall be monitored at each entry point to the distribution system.

(A) - (B) (No change.)

(C) The executive director may approve the use of composite samples.

(i) - (iv) (No change.)

(v) The maximum number of individual samples allowed in a composite sample shall not exceed the number obtained by dividing the MCL for the contaminant by the detection limit of the analytical method and rounding the quotient to the next lowest integer. Detection limits for each analytical method are as listed in 40 Code of Federal Regulations (CFR) [CFR] §141.23(a)(4)(i).

(vi) (No change.)

(2) - (4) (No change.)

(5) Nitrate monitoring frequency. All public water systems shall monitor for nitrate at the following frequency.

(A) All public water systems shall routinely monitor for nitrate.

(i) All public water systems shall annually sample each groundwater [ground water] source at the entry point to the distribution system.

(ii) - (iii) (No change.)

(B) - (C) (No change.)

(6) - (8) (No change.)

(d) (No change.)

(e) Reporting requirements for IOCs. Upon the request of the executive director, the owner or operator of a public water system must provide the executive director with a copy of the results of any test, measurement, or analysis required by this subsection. The copies must be submitted within ten days of the request or within ten days of their receipt by the public water system, whichever is later. The copies must be mailed to the Texas Commission on Environmental Quality [Texas Natural Resource Conservation Commission], Water Supply Division, MC 155, P.O. Box 13087, Austin, Texas 78711-3087.

(f) - (h) (No change.)

§290.107. Organic Contaminants.

(a) (No change.)

(b) Maximum contaminant levels (MCLs) for organic contaminants. The concentration of synthetic and volatile organic chemicals shall not exceed the MCLs specified in this section.

(1) (No change.)

(2) The following are MCLs for volatile organic contaminants (VOCs).

Figure: 30 TAC §290.107(b)(2)

[Figure: 30 TAC §290.107(b)(2)]

Contaminant	MCL (mg/L)
1,1-Dichloroethylene	0.007
1,1,1-Trichloroethane	0.2
1,1,2-Trichloroethane	0.005
1,2-Dichloroethane	0.005
1,2-Dichloropropane	0.005
1,2,4-Trichlorobenzene	0.07
Benzene	0.005
Carbon tetrachloride	0.005
cis-1,2-Dichloroethylene	0.07
Dichloromethane	0.005
Ethylbenzene	0.7
Monochlorobenzene	0.1
o-Dichlorobenzene	0.6
para-Dichlorobenzene	0.075
Styrene	0.1
Tetrachloroethylene	0.005
Toluene	1
trans-1,2-Dichloroethylene	0.1
Trichloroethylene	0.005
Vinyl chloride	0.002
Xylenes (total)	10

(3) (No change.)

(c) Monitoring requirements for organic contaminants. Public water systems shall monitor for organic contaminants at the locations and frequency in paragraphs (1) and (2) of this subsection. All monitoring conducted under the requirements of this section must be conducted at sites designated in the public water system's monitoring plan. All samples must be taken during periods of normal operation when water representative of all sources used by the system is being used.

(1) SOC monitoring requirements. Monitoring of the SOC contaminants shall be conducted at the frequency and locations given in this paragraph.

(A) - (C) (No change.)

(D) Waivers for SOC monitoring. The executive director may grant a waiver to reduce the SOC monitoring frequency from the monitoring frequency requirements of subparagraph (B) of this paragraph [subsection (c)(1)(B) of this section], based on previous use of the contaminant within the watershed or zone of influence of the water source. Examples of use of a contaminant include transport, storage, or disposal. If a determination by the executive director reveals no previous use of the contaminant within the watershed or zone of influence, a waiver may be granted. If the executive director cannot determine whether the contaminant has been used in the watershed or if the contaminant has been used previously, then the following factors shall be used to determine whether a waiver is granted:

(i) - (iii) (No change.)

(iv) how well the water source is protected against contamination due to such factors as depth of the well, type of soil, and the integrity of well construction. Surface water systems must consider watershed vulnerability and protection;

(v) (No change.)

(vi) use of polychlorinated byphenyls (s) [PCBs] in equipment used in the production, storage, or distribution of water (i.e., PCBs used in pumps, transformers, etc.).

(E) (No change.)

(F) Initial SOC monitoring. If monitoring data are generally consistent with the requirements of this subsection [(c)(1) of this section], then the executive director may allow systems to use that data to satisfy the monitoring requirement for the initial compliance period.

(2) VOC monitoring requirements. Monitoring of the VOC contaminants shall be conducted at the frequency and locations given in this paragraph.

(A) - (B) (No change.)

(C) Increased VOC monitoring. The executive director may change the monitoring frequency for VOCs.

(i) - (ii) (No change.)

(iii) If a VOC contaminant listed in subsection (b)(2) of this section is detected at a level exceeding 0.0005 mg/L in any sample, then:

(I) - (II) (No change.)

(III) if [If] the executive director determines that the system is reliably and consistently below the MCL, the executive director may allow the system to monitor annually. Systems which monitor annually must monitor during the quarter which previously yielded the highest analytical result;

(IV) systems [Systems] which have three consecutive annual samples with no detection of a contaminant may be granted a waiver as specified in subparagraph (D) of this paragraph [subsection (c)(2)(D) of this section]; and

(V) groundwater [Groundwater] systems which have detected one or more of the following two-carbon organic compounds: trichloroethylene, tetrachloroethylene, 1,2-dichloroethane, 1,1,1-trichloroethane, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, or 1,1-dichloroethylene shall monitor quarterly for vinyl chloride. A vinyl chloride sample shall be taken at each entry point to the distribution system at which one or more of the two-carbon organic compounds was detected. If the result of the first analysis does not detect vinyl chloride, the executive director may reduce the quarterly monitoring frequency for vinyl chloride to one sample during each compliance

period. Surface water systems are required to monitor for vinyl chloride as specified by the executive director.

(iv) (No change.)

(D) Waivers for VOC monitoring. The executive director may grant a waiver after evaluating the previous use (including transport, storage, or disposal) of the contaminant within the watershed or zone of influence of the water sources. If a determination by the executive director reveals no previous use of the contaminant within the watershed or zone of influence, a waiver may be granted. If previous use of the contaminant is unknown or it has been used previously, then the following factors shall be used to determine whether a waiver is granted:

(i) - (v) (No change.)

(vi) as [As] a condition of the waiver a groundwater system must take one sample at each entry point to the distribution system during the time the waiver is effective (i.e., one sample during two compliance periods or six years) and update its vulnerability assessment considering the factors listed in this paragraph. Based on this updated vulnerability assessment the executive director must reconfirm that the system is not vulnerable. If the executive director does not make this reconfirmation within three years of the initial determination, then the waiver is invalid and the system is required to sample annually; and

(vii) community [Community] and nontransient surface water systems which do not detect a VOC contaminant listed in subsection (b)(2) of this section may be considered by the executive director for a waiver from the annual sampling requirements of subparagraph (B)(ii) of this paragraph [subsection (c)(2)(B)(ii) of this section] after completing the initial monitoring. Systems meeting this criteria must be determined by the executive director to be non-vulnerable based on a vulnerability assessment during each compliance period. Each system receiving a waiver shall sample at the frequency specified by the executive director (if any).

(E) Compositing for VOC monitoring. The executive director may reduce the total number of samples a system must analyze by allowing the use of compositing. Composite samples from a maximum of entry points to the distribution system are allowed. Compositing of samples must be done in the laboratory and analyzed within 14 days of sample collection.

(i) - (iii) (No change.)

(iv) Procedures for compositing VOC samples are as stated in 40 Code of Federal Regulations (CFR) [CFR] §141.24 (f)(14)(iv).

(d) (No change.)

(e) Reporting requirements for organic contaminants. Upon the request of the executive director, the owner or operator of a public water system must provide the executive director with a copy of the results of any test, measurement, or analysis required by this subsection. The copies must be submitted within ten days of the request or within ten days of their receipt by the public water system, whichever is later. The copies must be mailed to the Texas Commission on Environmental Quality [Texas Natural Resource Conservation Commission], Water Supply Division, MC 155, P.O. Box 13087, Austin, Texas 78711-3087.

(f) - (g) (No change.)

(h) Best available technology [(BAT)] for organic contaminants. Best available technology [BAT] for treatment of violations of MCLs in subsection (b) of this section are listed in 40 CFR §141.61. Copies are available for review in the Water Supply Division, Texas Commission on Environmental Quality [Texas Natural Resource Conservation Commission], P. O. Box 13087, Austin, Texas 78711-3087.

§290.111. Turbidity.

(a) (No change.)

(b) Treatment technique requirements and performance criteria for turbidity. The filtration techniques used by public water systems treating surface water or groundwater under the direct influence of surface water must ensure the system meets the following treatment technique requirements and performance criteria.

(1) Treatment technique requirements. The treatment process must achieve at least a 2-log removal of *Cryptosporidium* oocysts, a 3-log removal or inactivation of *Giardia lamblia* cysts, and a 4-log removal or inactivation of viruses before the water is supplied to any consumer. The

executive director may require additional levels of treatment in cases of poor source water quality.

[Through December 31, 2001, the treatment process used by public water systems treating surface water or groundwater under the direct influence of surface water must achieve at least a 3-log removal or inactivation of *Giardia lamblia* cysts and a 4-log removal or inactivation of viruses before the water is supplied to any consumer. The executive director may require additional levels of treatment in cases of poor source water quality.]

(A) Treatment plants using conventional media filtration must achieve the following turbidity levels.

(i) The turbidity level of the combined filter effluent must never exceed 1.0 Nephelometric Turbidity Unit (NTU). [The turbidity level of the combined filter effluent must never exceed 5.0 NTU.]

(ii) The turbidity level of the combined filter effluent must be 0.3 NTU or less in at least 95% of the samples tested each month. [The turbidity level of the combined filter effluent must be 0.5 NTU or less in at least 95% of the samples tested each month. The executive director may allow a turbidity level of up to 1.0 NTU in at least 95% of the samples if the system can achieve the required 3-log removal or inactivation of *Giardia lamblia* cysts and 4-log removal or inactivation of viruses at that higher turbidity level.]

(B) (No change.)

(C) The executive director may extend the compliance date for this paragraph and subparagraph (A) of this paragraph if the system serves fewer than 10,000 people and uses conventional media filters.

(i) The compliance date may not be extended beyond January 1, 2004.

(ii) During any extension that is granted, the system must achieve at least a 3-log removal or inactivation of *Giardia lamblia* cysts and a 4-log removal or inactivation of viruses before the water is supplied to any consumer and must meet the following turbidity requirements.

(I) The turbidity level of the combined filter effluent must never exceed 5.0 NTU.

(II) The turbidity level of the combined filter effluent must be 0.5 NTU or less in at least 95% of the samples tested each month. The executive director may allow a turbidity level of up to 1.0 NTU in at least 95% of the samples if the system can achieve the required 3-log removal or inactivation of *Giardia lamblia* cysts and 4-log removal or inactivation of viruses at that higher turbidity level.

(2) Performance criteria for individual filters. The filtration techniques must ensure the public water system meets the following performance criteria. [Beginning January 1, 2002, the treatment process must achieve at least a 2-log removal of *Cryptosporidium* oocysts, a 3-log removal or inactivation of *Giardia lamblia* cysts, and a 4-log removal or inactivation of viruses before the water is supplied to any consumer. The executive director may require additional levels of treatment in cases of poor source water quality.]

(A) At a public water system that serves 10,000 people or more, the turbidity from each individual filter should not exceed 0.5 NTU at four hours after the individual filter is returned to service after backwash or shut down. [Treatment plants using conventional media filtration must achieve the following turbidity levels.]

[i] The turbidity level of the combined filter effluent must never exceed 1.0 NTU.]

[ii] The turbidity level of the combined filter effluent must be 0.3 NTU or less in at least 95% of the samples tested each month.]

(B) The turbidity from each individual filter should never exceed 1.0 NTU at a public water system that serves 10,000 people or more. [Membrane facilities must meet site-specific performance standards approved by the executive director.]

(C) Beginning January 1, 2005, the turbidity from each individual filter should never exceed 1.0 NTU at a public water system that serves fewer than 10,000 people. [The executive director may extend the compliance date for systems serving fewer than 10,000 people.]

[i] The compliance date may not be extended beyond January 1, 2004.]

[(ii) During any extension that is granted, the turbidity level of the combined filter effluent must meet the requirements of subsection (b)(1) of this section.]

[(3) The filtration techniques used by public water systems that serve 10,000 people or more and treat surface water or groundwater under the direct influence of surface water must ensure the system meets the following criteria.]

[(A) Beginning January 1, 2002, the turbidity from each individual filter should not exceed 0.5 NTU at four hours after the individual filter is returned to service after backwash or shut down.]

[(B) Beginning January 1, 2002, the turbidity from each individual filter should never exceed 1.0 NTU.]

(c) Monitoring requirements for turbidity. Public water systems with surface water sources or groundwater sources that are under the direct influence of surface water shall monitor the performance of their filtration facilities.

(1) - (2) (No change.)

(3) Public [Beginning January 1, 2002, public] water systems that serve 10,000 people or more must continuously monitor the filtered water turbidity at the effluent of each individual filter and record the turbidity value every 15 minutes.

(4) Public [Beginning January 1, 2002, public] water systems that serve fewer than 10,000 people [and use surface water or groundwater under the direct influence of surface water] must measure and record the filtered water turbidity level at the effluent of each individual filter [at least once each day that the plant is in operation].

(A) Through December 31, 2004, public water systems that serve fewer than 10,000 people must measure and record the filtered water turbidity level at the effluent of each individual filter at least once each day that the plant is in operation.

(B) Beginning January 1, 2005, public water systems that serve fewer than 10,000 people must continuously monitor the filtered water turbidity at the effluent of each individual filter and record the turbidity value every 15 minutes.

(5) Special monitoring requirements for systems that serve 10,000 people or more. Public [Beginning January 1, 2002, public] water systems which serve 10,000 [0,000] people or more and fail to meet the turbidity criteria specified in subsection (b)(2) [(b)(3)] of this section must conduct additional monitoring. The executive director can waive these special monitoring requirements for systems that have a corrective action schedule approved by the executive director.

(A) Each time a filter exceeds either of the filtered water turbidity levels specified in subsection (b)(2)(A) or (B) [(b)(3)] of this section for two consecutive 15-minute readings, the public water system must either identify the cause of the exceedance or produce a filter profile [complete a Filter Profile Report] on the filter within seven days of the exceedance.

(B) Each time a filter exceeds the filtered turbidity level specified in subsection (b)(2)(B) [(b)(3)(B)] of this section for two consecutive 15-minute readings on three separate occasions during any consecutive three month period, the public water system must conduct a filter assessment on the filter within 14 days of the third exceedance.

(C) Each time the filtered water turbidity level for a specific filter or any combination of individual filters exceeds 2.0 NTU on two consecutive 15-minute readings during two consecutive months, the public water system must participate in a third-party comprehensive performance evaluation within 90 days of the first exceedance in the second month.

(6) Special monitoring requirements for systems that serve fewer than 10,000 people. Beginning January 1, 2005, public water systems which serve fewer than 10,000 people and fail to meet the turbidity criteria specified in subsection (b)(2) of this section must conduct additional monitoring. The executive director can waive these special monitoring requirements for systems that have a corrective action schedule approved by the executive director.

(A) Each time a filter exceeds 1.0 NTU for two consecutive 15-minute readings, the public water system must either identify the cause of the exceedance or complete a filter profile on the filter within seven days of the exceedance.

(B) Each time a filter exceeds 1.0 NTU for two consecutive 15-minute readings on three separate occasions during any consecutive three-month period, the public water system must conduct a filter assessment on the filter within 14 days of the third exceedance.

(C) Each time the filtered water turbidity level for a specific filter or any combination of individual filters exceeds 2.0 NTU on two consecutive 15-minute readings during two consecutive months, the public water system must participate in a third-party comprehensive performance evaluation within 120 days of the first exceedance in the second month.

(d) Analytical requirements for turbidity. All monitoring required by this section must be conducted by a facility approved by the executive director and using methods that conform to the requirements of §290.119 of this title. Equipment used for compliance measurements must be maintained and calibrated in accordance with §290.46(s) of this title (relating to Minimum Acceptable Operating Practices for Public Drinking Water Systems).

(1) - (2) (No change.)

(3) Systems [Beginning January 1, 2002, systems] serving 10,000 or more people must monitor the turbidity of the water produced by individual filters with a continuous, on-line turbidimeter and a continuous recorder.

(A) Continuous individual filter turbidity may be recorded electronically by a supervisory control and data acquisition (SCADA) [SCADA] system or on a strip chart. Circular strip charts, if used, must be set to record no more than one day's readings per chart.

(B) If there is a failure in the continuous turbidity monitoring equipment, the system must conduct grab sampling every four hours in lieu of continuous monitoring, but for no more than five working days following the failure of the equipment.

(4) Beginning January 1, 2005, systems serving fewer than 10,000 people must monitor the turbidity of the water produced by individual filters with a continuous, on-line turbidimeter and a continuous recorder.

(A) Continuous individual filter turbidity may be recorded electronically by a SCADA system or on a strip chart. Circular strip charts, if used, must be set to record no more than one day's readings per chart.

(B) If there is a failure in the continuous turbidity monitoring equipment, the system must conduct grab sampling every four hours in lieu of continuous monitoring, but for no more than 14 working days following the failure of the equipment.

(5) [(4)] Through December 31, 2004, systems [Beginning January 1, 2002, systems] serving fewer than 10,000 people must monitor the turbidity of the water produced by individual filters by continuously monitoring turbidity levels with an on-line turbidimeter or measuring the turbidity level in grab samples with a benchtop turbidimeter.

(e) Reporting requirements for turbidity. Public water systems shall properly complete and submit periodic reports to demonstrate compliance with this section.

(1) (No change.)

(2) Public water systems which use surface water sources or groundwater sources under the direct influence of surface water, must submit a Monthly Operating Report for Surface Water Treatment Plants (commission Form 0102C) each month. [Until January 1, 2001, systems must submit commission Form 0102A. After January 1, 2001, systems must submit commission Form 0102C.]

(3) Public water systems that must complete the additional monitoring required by subsection (c)(5)(A) and (6)(A) of this section must submit a Filter Profile Report for Individual Filters (commission Form 10276) with their Monthly Operating Report for Surface Water Treatment Plants.

(4) Public water systems that must complete the additional monitoring required by subsection (c)(5)(B) and (6)(B) of this section must submit a Filter Assessment Report for Individual Filters (commission Form 10277) with their Monthly Operating Report for Surface Water Treatment Plants.

(5) Public water systems that must complete the additional monitoring required by subsection (c)(5)(C) and (6)(C) of this section must submit a Comprehensive Performance Evaluation

Request Form [Request for Compliance CPE] (commission Form 10278) with their Monthly Operating Report for Surface Water Treatment Plants.

(6) Periodic reports required by this section must be submitted to the Texas Commission on Environmental Quality [Texas Natural Resource Conservation Commission], Water Supply Division, MC 155, P.O. Box 13087, Austin, Texas 78711-3087 by the tenth day of the month following the end of the reporting period.

(f) Compliance determination. Compliance with the requirements of this section shall be determined using the following criteria.

(1) - (2) (No change.)

(3) A [Beginning on January 1, 2002, a] public water system that [serves 10,000 or more people and] fails to submit the reports required by subsection (e)(3) - (5) of this section commits a reporting violation.

(4) (No change.)

[5) Until December 31, 2001, a public water system that violates the requirements of subsection (b)(1)(A)(ii) of this section commits a treatment technique violation.]

(5) [(6)] A [Beginning January 1, 2002, a] public water system that violates the requirements of subsection (b)(1) [(b)(2)(A)] of this section commits a treatment technique violation.

(6) [(7)] A [Beginning January 1, 2002, a] system that fails to correct the performance-limiting factors identified in a CPE conducted under [pursuant to] the requirements of subsection (c)(5)(C) and (6)(C) of this section commits a violation.

(g) Public notification for turbidity. The owner or operator of a public water system that violates the requirements of this section must notify the executive director and the people served by the system.

(1) (No change.)

(2) A public water system that fails to meet the treatment technique requirements of subsection (b)(1) [or (2)] of this section shall notify the executive director by the end of the next business day and the water system customers in accordance with the requirements of §290.122(b) of this title.

(3) (No change.)

§290.117. Regulation of Lead and Copper.

(a) General requirements.

(1) - (2) (No change.)

(3) Action levels for lead and copper are 0.015 mg/L and 1.3 mg/L, respectively. The action levels are exceeded if the concentration of lead and/or copper in more than 10% of the first draw tap water samples collected during any monitoring period is greater than 0.015 mg/L for lead or 1.3 mg/L for copper. If collecting only five samples, the average of the two highest samples shall be used to determine compliance with the action level.

(b) - (c) (No change.)

(d) Computing 90th Percentile Lead and Copper Levels. [-] Determination of 90th percentile levels shall be obtained by ranking the results of lead and copper samples collected during a monitoring period in ascending order (lowest concentration equal sample Number 1; highest concentration equal sample Numbers 10, 20, 30, 40, 50, etc), up to the total number of samples collected. The number of samples collected during the monitoring period shall be multiplied by 0.9 and the concentration of lead and copper in the numbered sample yielded by this calculation is the 90th percentile sample contaminant level. The system is in compliance with the lead and/or copper action levels if the 90th percentile sample contaminant level is equal to or less than the action levels specified in subsection (a)(3) of this section. For water systems serving fewer than 101 people, the 90th percentile level is computed by taking the average of the highest two sample results.

(e) Reduced tap monitoring.

(1) The executive director shall notify each water system that it is eligible for reduced monitoring of first draw tap samples if it is in compliance with the 90th percentile lead and copper action levels after completion of 12 consecutive months [two six-month periods] of initial tap sampling.

(2) - (4) (No change.)

(5) Any system that demonstrates during the [two] initial 12-month [six-month] monitoring periods that the 90th percentile lead level is less than or equal to 0.005 mg/L and the 90th percentile copper level is less than or equal to 0.65 mg/L shall have the required frequency of sampling reduced to once every three years and at the reduced number of sampling sites shown in subsection (c)(6) of this title, Table Number 1.

(f) Invalidation of lead or copper tap samples.

(1) (No change.)

(2) The executive director may invalidate a lead or copper tap sample if one of the following conditions is met: [.]

(A) the [The] laboratory establishes that an analytical error has occurred or that an analytical method requirement has been violated; [.]

(B) the [The] executive director determines that the sample was taken from an inappropriate site; [.]

(C) the [The] sample was damaged in transit; or [.]

(D) the [The] executive director determines that the sample was subject to tampering.

(3) - (4) (No change.)

(g) Monitoring waivers for small water systems.

(1) (No change.)

(2) Any water system serving a population of less than 3,301 [501] people that meets the criteria of subparagraphs (A) and (B) of this paragraph may apply to the executive director to reduce the frequency of monitoring for lead and copper to once every nine years.

(A) - (E) (No change.)

(h) Monitoring requirements for water quality parameters (WQPs) [(WQP's)] and source water.

(1) Water quality parameters.

(A) All large water systems (serving populations greater than 50,000) are required to conduct [water quality parameters (WQP)] monitoring beginning with the initial period of first draw tap samples and continuing until corrosion control is optimized.

(B) - (G) (No change.)

(H) Any [large] water system that maintains the range of values for WQP's reflecting optimum corrosion control as approved by the executive director for one-year may collect quarterly distribution samples at the reduced number of distribution sites indicated in subsection (c)(8) of this section, Table Number 2. WQP samples shall continue to be measured at entry points on a biweekly basis and results submitted to the executive director.

(I) Any [large] water system that reflects optimal corrosion control treatment during three consecutive years may reduce the frequency at which it collects distribution samples for applicable WQPs [WQP's] to annually.

(J) Any [large] water system that reflects optimal corrosion control treatment during three consecutive years of annual WQP distribution monitoring may reduce the frequency at which it collects the number of WQP distribution samples for applicable WQPs [WQP's] to once every three years. Additionally, the last two consecutive tap sample monitoring periods must have a 90th percentile lead value of less than or equal to 0.005 mg/L and a 90th percentile copper value of less than or equal to 0.65 mg/L. The water system must also have maintained the range of values for WQPs [WQP's] reflecting optimal corrosion control as specified in that system's state approved corrosion control study.

(K) Water quality parameter testing must be conducted at a laboratory that uses the methods described in 40 CFR §141.89, and it is the responsibility of the water system to collect, submit, and report these values. If a water system fails to meet the WQP values or ranges specified by the executive director, it is out of compliance with this section. WQP values may be confirmed by the system in accordance with 40 CFR §141.82(g). The state requires that the values be reported, but is not responsible for supplying sample bottles and testing services to the water system.

(L) (No change.)

(M) A water system conducting WQP monitoring may limit entry point sampling to each official entry point as designated in the database for SDWA compliance sampling. The water system must monitor WQPs [WQP's] at all entry points regardless of whether corrosion control treatment is required at all entry points or not. The water system must inform the executive director of the identity of treated and non-treated entry points and their seasonal use, if any, and demonstrate that the WQPs [WQP's] represent water quality and treatment conditions throughout the system.

(N) Any [large] water system subject to reduced monitoring frequency (which has completed installation of approved corrosion control treatment as proposed in the system's corrosion control study) that fails to operate at or above the minimum range of values the system proposed for more than nine days in a six-month period shall resume distribution WQP sampling in accordance with the number and frequency requirements in this subsection [(h) of this section]. The system may resume distribution WQP sampling at the reduced number of sites as specified in this subsection [(h) of this section] after completing two consecutive six-month periods of distribution WQP sampling at the original frequency and then may follow [the] subparagraphs (H) and (J) of this paragraph.

(O) Large water systems shall monitor applicable WQPs [WQP's] every calendar quarter beginning after installation of corrosion control treatment approved by the executive director. Small and medium water systems shall monitor WQPs [WQP's] every calendar quarter while the system is in exceedance status. The executive director will issue a reporting waiver to small and medium systems for WQPs [WQP's] after the system completes two follow up rounds of tap sampling without exceeding either the lead or copper action level. The water system will continue to collect and record certain crucial parameters that will be available for inspection. If a small or medium water

system exceeds the lead or copper action level during a reduced tap monitoring round (summer monitoring), the system shall conduct WQP monitoring until the exceedance status is resolved.

(P) (No change.)

(Q) Using WQPs [WQP's] proposed by the water system or its representatives, the commission will issue an approval letter if the corrosion control study and treatment proposed meet the requirements of this rule. Water systems will operate within the approved WQP ranges at all times and will conduct lead and copper tap sampling under the requirements in subsection (c) of this section and WQP reporting in this paragraph.

(2) Entry point water sampling.

(A) Entry point water sampling for lead and copper shall be conducted by systems that exceed the lead or copper action levels to determine the lead or copper content of source water. [This requirement can be satisfied by normally scheduled inorganic chemical sampling in compliance with the monitoring under the SDWA.] Entry point water samples shall be collected using sample location, number of samples, and collection methods as specified in §290.106 of this title (relating to Inorganic Contaminants). A large water system is deemed to have optimized corrosion control if it submits results of tap water monitoring conducted according to the requirements in subsection (c) of this section and results of source water monitoring conducted according to requirements in §290.106 [§290.108] of this title (relating to Inorganic Contaminants [Chemical Monitoring and Analytical Requirements]). The results must demonstrate for a 12-month monitoring period [two consecutive six-month monitoring periods] that lead at the 90th percentile is less than or equal to 0.005 mg/L. [If acceptable entry point water data is not available for large systems, the water lead level at the entry point shall be considered zero mg/L for purposes of determining whether a corrosion control study is required.]

(B) - (F) (No change.)

(i) Public education requirements.

(1) (No change.)

(2) A community water system [serving 3,301 or more people] shall, within 60 days of notification by the commission:

(A) - (F) (No change.)

(G) all community water systems must repeat the public education requirements every six months [at least once during each calendar year] for as long as the system exceeds the lead action level; and

(H) (No change.)

(3) - (5) (No change.)

(j) Corrosion control.

(1) All applicable water systems shall install and operate optimal corrosion control treatment, which means the corrosion control treatment that minimizes lead and copper concentrations at users' taps while insuring that the treatment does not cause the system to violate any other drinking water standard. All large water systems that exceeded 0.005 mg/L lead at the 90th percentile during initial monitoring or any system that exceeded the lead or copper action level at the 90th percentile during any tap monitoring sampling round and that has installed corrosion control treatment with approved WQP ranges, must operate and maintain optimal corrosion control within those ranges. Compliance periods for this paragraph are two six-month periods, January 1 to June 30, and July 1 to December 31. A water system is out of compliance with this subsection for a six-month period if the water system has WQP excursions for any approved range for more than nine [consecutive] days. An excursion occurs whenever the daily value for one or more WQPs's measured at a sampling location is below the minimum value or outside the range approved by the executive director. The executive director has the discretion to delete results of obvious sampling errors from this calculation. Daily values are calculated as follows_ [:]

(A) Water [water] systems that collect more than one WQP measurement in one day must record the daily value as an average of all WQP values collected during the day regardless of whether the measurements are collected through continuous monitoring, grab sampling, or a combination of both_ [:]

(B) On [on] days when only one measurement for the WQP is collected at the sampling location, the daily value shall be the result of that measurement_ [; and]

(C) On [on] days when no measurement is collected for the WQP at the sampling location, the daily value last calculated on the most recent day shall serve as the daily value.

(2) (No change.)

(3) Water systems [Small and medium water systems (serving fewer than 3,301 or serving between 3,301 and 50,000 people, respectively)] are deemed to have optimized corrosion control if the water system meets the lead and copper action levels during each of two consecutive six-month monitoring periods. These systems will be required to conduct a desk-top corrosion control study to optimize corrosion control if at anytime the 90th percentile action level for lead and/or copper is exceeded. The study must be conducted and submitted within 12 months of a verified lead or copper exceedance. [18 months after exceedance notification by the executive director for medium-sized water systems and within 24 months after exceedance notification for small water systems.] If a small or medium water system exceeds either the lead or copper action level during a reduced tap sampling monitoring round, it will adhere to the schedule specified in the paragraph for small and medium systems[, with time periods for completing each step being triggered by the date the executive director notifies the system that it has exceeded an action level].

(4) Performance for corrosion control studies.

(A) - (C) (No change.)

(D) On the basis of the evaluation stated in subparagraphs (A) and (B) of this paragraph [paragraph (4)(A) and (B) of this subsection], the water system shall recommend to the executive director, in writing, the treatment option that constitutes optimum corrosion control or treatment along with sufficient documentation as required by the executive director to establish the validity of the evaluation procedure. Operational WQP ranges shall be proposed to the executive director where applicable.

(E) - (G) (No change.)

(H) Any system that has received approval for a corrosion control study [installed corrosion control treatment] and demonstrates optimal corrosion control and operates in compliance with the executive director-designated optimal water quality parameters, may conduct reduced tap sampling as described in subsection (e) of this section, when written permission is granted by the executive director after the executive director has evaluated all pertinent data. Systems that do not meet the action levels for lead and copper after receiving approval for a corrosion control study [installing corrosion control treatment] must continue to operate in accordance with WQP requirements established by the executive director and follow procedures specified in subsection (e)(4) of this section.

(I) (No change.)

(5) (No change.)

(k) Lead service line replacement. The provisions of 40 CFR §141.84 relating to lead service line replacement are adopted by reference. [For the purposes of this subsection, the term “service line” refers to both the potable water service line and the potable water customer service line.]

[(1) Systems that fail to meet the lead action level during follow-up tap sampling after installing corrosion control and/or source water treatment shall meet the requirements in 40 CFR §141.84 and begin to replace annually at least 7% of the lead service lines known to be present in its distribution systems.]

[(2) The water system shall replace the entire service line (up to the building inlet) unless it demonstrates to the satisfaction of the executive director in writing that it controls less than the entire service line. The written statement must indicate that the water system has none of the following forms of control over the service line: municipal ordinances; public service contracts or applicable legal authority; authority to set standards for construction; repair or maintenance; or ownership. In such a case, the water system shall replace that portion of the lead service line that it controls and notify the owner that it will also replace the building owner's portion of the line. The system is not required to bear the cost of replacing the building owner's portion of the line.]

[(3) At least 45 days prior to commencing replacement of a lead service line, the water system shall notify all the residents of the building served by that service line that they may experience a temporary increase of lead levels in their drinking water. The water system will also provide information on measures the residents can take to minimize their exposure to lead.]

[(4) Lead service line means a service line which is made all or in part of lead and connects the water main to the building inlet including any lead pigtail, gooseneck, or other fitting which is connected to such line.]

[(5) The system may cease replacing lead service lines whenever subsequent 90th percentile first-draw-tap sampling in two consecutive monitoring periods is less than the lead action level. Lead service line replacement shall immediately resume if first-draw-tap samples exceed the 90th percentile lead action/level.]

(l) (No change.)

(m) Reporting and recordkeeping requirements.

(1) Reporting requirements.

(A) - (F) (No change.)

(G) A water system must collect tap samples from the same sampling sites selected during the initial monitoring period for all subsequent sampling periods. If a water system changes a sampling site for any reason allowed in this section [rule], the water system must provide the executive director with a written explanation showing which sampling site will be abandoned and the sampling site that replaces the abandoned sampling site. The water system's report shall include an explanation as to why a sampling site was changed from the previous round of sampling, if applicable. If a water system discovers that a sample has been collected at an inappropriate sampling site, the water system may request in writing that the sample be invalidated. The executive director may invalidate the sample and allow for recollection. If a water system has no sampling sites available that meet the first draw criteria specified in subsection (c) of this section, they shall proceed in accordance with 40 CFR §141.90(a)(2).

(H) (No change.)

(2) (No change.)

§290.121. Monitoring Plans.

(a) (No change.)

(b) Monitoring plan requirements. The monitoring plan shall identify all sampling locations, describe the sampling frequency, and specify the analytical procedures and laboratories that the public water system will use to comply with the monitoring requirements of this subchapter.

(1) Monitoring locations. The monitoring plan shall include information on the location of all required sampling points in the system. Required sampling locations for regulated chemicals are provided in §290.106 of this title (relating to Inorganic Contaminants), §290.107 of this title (relating to Organic Contaminants), §290.108 of this title (relating to Radiological Sampling and Analytical Requirements), §290.109 of this title (relating to Microbial Contaminants), §290.110 of this title (relating to Disinfectant Residuals), §290.111 of this title (relating to Turbidity), §290.112 of this title (relating to Total Organic Carbon (TOC)), §290.113 of this title (relating to Disinfection By-products (TTHM and HAA5)), §290.114 of this title (relating to Disinfection By-products other than TTHM and HAA5), §290.115 of this title (relating to Transition Rule for Disinfection By-products), §290.117 of this title (relating to Regulation of Lead and Copper), and §290.118 of this title (relating to Secondary Constituent Levels).

(A) The location of each sampling site at a treatment plant or pump station must be designated on a plant schematic. The plant schematic must show all water pumps, flow meters, unit processes, chemical feed points, and chemical monitoring points. The plant schematic must also show the origin of any flow stream that is recycled at the treatment plant, any pretreatment that occurs before the recycle stream is returned to the primary treatment process, and the location where the recycle stream is reintroduced to the primary treatment process.

(B) - (D) (No change.)

(2) - (4) (No change.)

(5) The monitoring plan shall include a written description of the methods used to calculate compliance with all maximum contaminant levels, maximum residual disinfectant levels, [MCLs, MRDLs], and treatment techniques that apply to the system.

(c) - (e) (No change.)

§290.122. Public Notification.

(a) Public notification requirements for acute violations. The owner or operator of a public water system must notify persons served by their system of any maximum contaminant limit (MCL), maximum residual disinfectant level (MRDL), [MCL] or treatment technique violation that poses an acute threat to public health. Each notice required by this section must meet the requirements of subsection (d) of this section.

(1) Violations that pose an acute threat to public health include:

(A) a [A] violation of the acute MCL for microbial contaminants as defined in §290.109(f)(1) of this title (relating to Microbial Contaminants);

(B) a [A] treated water turbidity level above 5.0 Nephelometric Turbidity Unit [NTU] in the combined filter effluent of a treatment plant that is treating surface water or groundwater under the direct influence of surface water;

(C) a [A] violation of the MCL for nitrate or nitrite as defined in §290.106(f)(2) of this title (relating to Inorganic Contaminants);

(D) a [A] violation of the acute MRDL for chlorine dioxide as defined in §290.110(f)(5)(A) or (B) of this title (relating to Disinfectant Residuals);

(E) occurrence [Occurrence] of a waterborne disease outbreak; and

(F) other [Other] violations deemed by the executive director to pose an acute risk to human health.

(2) The initial acute public notice and boil water notice required by this subsection shall be issued as soon as possible, but in no case later than 24 hours after the violation is identified. The initial public notice for an acute violation shall be issued in the following manner.

(A) The owner or operator of a water system with an acute microbiological or turbidity violation as described in paragraph (1)(A) or (B) of this subsection shall include a boil water

notice issued in accordance with the requirements of §290.46(q) [§290.46(s)] of this title (relating to Minimum Acceptable Operating Practices for Public Drinking Water Systems).

(B) (No change.)

(C) The owner or operator of a community water system shall publish the notice in a daily newspaper of general circulation in the area served by the system. If the area is not served by a daily newspaper of general circulation, notice shall instead be issued by direct [hand] delivery or by continuous posting in conspicuous places within the area served by the system.

(D) The owner or operator of a noncommunity water system shall issue the notice violation by direct [hand] delivery or by continuously posting the notice in conspicuous places within the area served by the water system.

(E) If notice is provided by posting, the posting must remain in place for as long as the violation exists or seven days, whichever is longer.

(3) The owner or operator of a water system required to issue an initial notice for an acute MCL or treatment technique violation shall issue additional notices. The additional public notices for acute violations shall be issued in the following manner.

(A) - (B) (No change.)

(C) If the owner or operator of a noncommunity water system issued the initial notice by continuous posting, posting must continue for as long as the violation exists and in no case less than seven days. If the owner or operator of a noncommunity water system issued the initial notice by direct [hand] delivery, notice by direct [hand] delivery must be repeated at least every three months for as long as the violation exists.

(4) - (5) (No change.)

(b) Public notification requirements for other MCL, MRDL, or treatment technique violations and for variance and exemption violations. The owner or operator of a public water system must notify persons served by their system of any MCL, MRDL, or treatment technique violation other than those described in subsection (a)(1) of this section and of any violation involving a variance or exemption

requirement. Each notice required by this section must meet the requirements of subsection (d) of this section.

(1) (No change.)

(2) The initial public notice for any violation identified in this subsection must be issued as soon as possible, but in no case later than 30 days after the violation is identified. The initial public notice shall be issued in the following manner.

(A) The owner or operator of a community water system shall issue the notice by: [publish the notice in a daily newspaper of general circulation in the area served by the system. If the area served by the public water system is not served by a daily newspaper of general circulation, the notice shall be published in a weekly newspaper of general circulation serving the area. If the area is not served by either a daily or weekly newspaper of general circulation, notice shall instead be issued by hand delivery or by continuous posting in conspicuous places within the area served by the system.]

(i) mail or other direct delivery to each customer receiving a bill and to other service connections to which water is delivered by the public water system; and

(ii) any other method reasonably calculated to reach other persons regularly served by the system, if they would not normally be reached by the notice required in clause (i) of this subparagraph. Such persons may include those who do not pay water bills or do not have service connection addresses (e.g., house renters, apartment dwellers, university students, nursing home patients, prison inmates, etc.) Other methods may include: publication in a local newspaper; delivery of multiple copies for distribution by customers that provide drinking water to others (e.g., apartment building owners or large private employers); continuous posting in conspicuous public places within the area served by the system or on the Internet; or delivery to community organizations.

(B) The owner or operator of a noncommunity water system shall issue the notice by direct [hand] delivery or by continuously posting the notice in conspicuous places within the area served by the system.

(C) If notice is provided by posting, the posting must remain in place for as long as the violation exists or seven days, whichever is longer.

(3) The owner or operator of a system required to issue an initial violation notice shall issue additional notices. The additional notices shall be issued in the following manner.

[~~(A)~~ Not later than 45 days after the violation, the owner or operator of a community water system shall notify persons served by the system using mail (by direct mail or with the water bill) or hand delivery. The executive director may waive mail or hand delivery if it is determined the violation was corrected within the 45-day period. The executive director must make the waiver in writing and within the 45-day period.]

~~(A)~~ [(B)] The owner or operator of a community water system must issue a notice at least once every three months by mail delivery (by direct mail or with the water bill) or by direct [hand] delivery, for as long as the violation exists.

~~(B)~~ [(C)] If the owner or operator of a noncommunity water system issued the initial notice by continuously posting the notice, the posting must continue for as long as the violation exists, and in no case less than seven days. If the owner or operator of a noncommunity water system issued the initial notice by direct [hand] delivery, notice by direct [hand] delivery must be repeated at least every three months for as long as the violation exists.

(4) (No change.)

(c) Public notification requirements for other violations, variances, exemptions. The owner or operator of a public water system who fails to perform monitoring required by this chapter [these standards], fails to comply with a testing procedure established by this chapter, or is subject to a variance or exemption granted under §290.102(b) of this title shall notify persons served by the system. Each notice required by this section must meet the requirements of subsection (d) of this section.

(1) Violations that require notification as described in this section include:

(A) exceedance of the secondary constituent levels (SCL) [SCL] for flouride;

(B) (No change.)

(C) failure to comply with the analytical requirements or testing procedures required by this subchapter; [and]

(D) operating under a variance or exemption granted under §290.102(b) of this title; and

(E) failure to maintain records on recycle practices as required by §290.46(f)(3)(C)(iii) of this title.

(2) The initial public notice issued pursuant to this section shall be issued within three months of the violation or the granting of a variance or exemption. The initial public notice shall be issued in the following manner.

(A) The owner or operator of a community water system shall publish the notice in a daily newspaper of general circulation in the area served by the system. If the area served by the public water system is not served by a daily newspaper of general circulation, the notice shall instead be published in a weekly newspaper of general circulation serving the area. If the area is not served by either a daily or weekly newspaper of general circulation, notice shall instead be given by direct [hand] delivery or by continuous posting in conspicuous places within the area served by the system.

(B) The owner or operator of a noncommunity water system shall issue the notice by direct [hand] delivery or by continuously posting the notice in conspicuous places within the area served by the system.

(C) If notice is provided by posting, the posting must remain in place for as long as the violation exists or seven days, whichever is longer.

(3) The owner or operator of a system required to issue an initial violation notice shall issue additional notices. The additional notices shall be issued in the following manner.

(A) (No change.)

(B) If the owner or operator of a noncommunity water system issued the initial notice by continuously posting the notice, the posting must continue for as long as the violation exists, and in no case less than seven days. If the owner or operator of a noncommunity water system issued the initial notice by direct [hand] delivery, notice by direct [hand] delivery must be repeated at least every three months for as long as the violation exists.

(4) (No change.)

(d) Each public notice must conform to the following general requirements.

(1) - (2) (No change.)

(3) For notices required under subsections (a), (b), or (c)(1)(A) of this section [subsection (a) or (b) of this subsection], the notice must describe potential adverse health effects.

(A) For MCL, MRDL, or treatment technique violations [requirements], the notice must contain the mandatory federal contaminant-specific language contained in 40 Code of Federal Regulations (CFR) Subpart Q, Appendix B [CFR §141.32], in addition to any language required by the executive director.

(B) For fluoride SCL violations, the notice must contain the mandatory federal contaminant-specific language contained in 40 CFR §141.208, in addition to any language required by the executive director.

(C) [B] The notice must describe the population at risk, especially subpopulations particularly vulnerable if exposed to the given contaminant.

(4) - (8) (No change.)

(9) Systems with variances or exemptions must notify in accordance with 40 CFR §141.205(b).

(e) (No change.)

(f) Proof of public notification. A copy of any public notice required under this section must be submitted to the executive director within ten days of its distribution as proof of public notification. The copies must be mailed to the Texas Commission on Environmental Quality [Texas Natural Resource Conservation Commission], Water Supply Division, MC 155, P.O. Box 13087, Austin, Texas 78711-3087.

(g) Notice to consecutive systems. A public water system that is required to notify its customers must also provide a copy of the notification to any public water systems that purchase or otherwise receive water from it in the same manner in which they inform their customers. Each public water system that is affected by the subject of the notification is responsible for notification to its own customers.

(h) Notices given by the executive director. The executive director may give the notice required by this section on behalf of the owner and operator of the public water system following the requirements of this section. The owner or operator of the public water system remains responsible for ensuring that the requirements of this section are met.