



You're a Public Water System... Now What?

Contents

Get started.....	2
Confirm you operate a PWS.....	2
Serving bottled water.....	2
Serving purchased treated water.....	3
Running food establishments.....	3
Determine what type of PWS you have.....	3
<i>Figure 1. Public Water System Classification Flowchart.....</i>	4
Hire a licensed operator, if needed.....	5
<i>Table 1. Licensed-operator requirements for small systems.....</i>	5
Sample your water.....	5
<i>Table 2. Water sample types and frequencies.....</i>	7
Disinfecting water and monitoring the residual.....	9
Get your PWS approved.....	9
Finding your water source.....	10
Converting existing wells for PWS.....	10
Working with unidentified wells.....	10
Meeting PWS well requirements.....	10
<i>Table 3. Well setback distances from contaminant sources.....</i>	11
Meeting storage, capacity, and distribution requirements.....	11
Requesting an exception to the rules.....	12
Maintaining and operating your PWS.....	12
Maintain and organize records.....	12
<i>Table 4. Recordkeeping and reporting requirements.....</i>	14

Get started

Whether you have just realized you own or operate a public water system (PWS) or that your system is regulated by the Texas Commission on Environmental Quality (TCEQ), this guide will help you bring your system into compliance with TCEQ's rules and regulations. If you still have questions after reading it, contact our Small Business and Local Government Assistance hotline at 800-447-2827 or email us at TexasEnviroHelp@tceq.texas.gov. You can [order printed copies](#)¹ of this and other publications on our website.

This guide aims to help you understand the basic regulations we require your PWS to follow. It is not a substitute for the public drinking water rules in [Title 30, Texas Administrative Code \(30 TAC\) Chapter 290](#).²

Getting and staying in compliance can be complicated. You may need to hire a consultant, professional engineer, or licensed water operator to help.

Confirm you operate a PWS

Public water systems serve water for human consumption to at least 15 connections or 25 people at least 60 days out of the year. If you have your own water source (such as a well) and supply water to other people or connections, your system may be a PWS. Human consumption is defined as uses by humans in which water can be ingested into or absorbed by the human body.³ Examples include:

- Drinking
- Bathing
- Brushing teeth
- Washing hands or dishes
- Cooking or preparing foods

So, if you have a restroom that is available to the public or employ 25 people or more at least 60 days a year, you are considered a public water system—even if you do not serve food or drinks to the public.

Serving bottled water

Your water source and system must still be approved by TCEQ and meet requirements, even if you supply bottled water for drinking. You cannot use bottled water to achieve compliance with a maximum contaminant level (MCL).⁴

¹ www.tceq.texas.gov/publications/order.html

² [https://texreg.sos.state.tx.us/public/readtac\\$ext.ViewTAC?tac_view=4&ti=30&pt=1&ch=290](https://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=4&ti=30&pt=1&ch=290)

³ See 30 TAC 290.38 for this and other definitions.

⁴ See 40 CFR 141.101.

Serving purchased treated water

Some people buy treated water and redistribute it. Sometimes, the water seller takes sanitary control of the buyer's system and is then responsible for ensuring that both systems meet requirements. Sanitary control means the buyer has plumbing restrictions and inspections set by the seller. If you buy and redistribute treated water, **you are responsible for following TCEQ regulations if either:**

- Your water seller does not take sanitary control of your distribution system.
- You change the chemical nature of the water—for example, by adding more disinfectant.

Running food establishments

All food establishments in Texas are regulated by the Department of State Health Services (DSHS). Water used for food processes must also be approved by TCEQ and meet drinking water quality standards in [30 TAC 290 Subchapter F](#).⁵ For instance, if you own or operate a restaurant that uses well water, you must follow both TCEQ and DSHS rules.

Determine what type of PWS you have

There are three main types of public water systems:

1. **Community water system (CWS)**—A public water system which has the potential to serve at least 15 residential service connections year-round or serves at least 25 residents year-round. Subdivisions are a type of CWS.
2. **Nontransient, noncommunity water system (NTNCWS)**—A public water system that is not a community water system and regularly serves at least 25 of the same persons at least six months out of the year. School or day-care centers are examples of NTNCWSs.
3. **Transient noncommunity water system (TNCWS)**—A public water system that is not a community water system and serves at least 25 persons at least 60 days out of the year, yet by its characteristics, does not meet the definition of a nontransient, noncommunity water system. Restaurants or truck stops are examples of TNCWSs.

Use the flowchart in Figure 1 (page 4) to help decide what type of PWS you have.

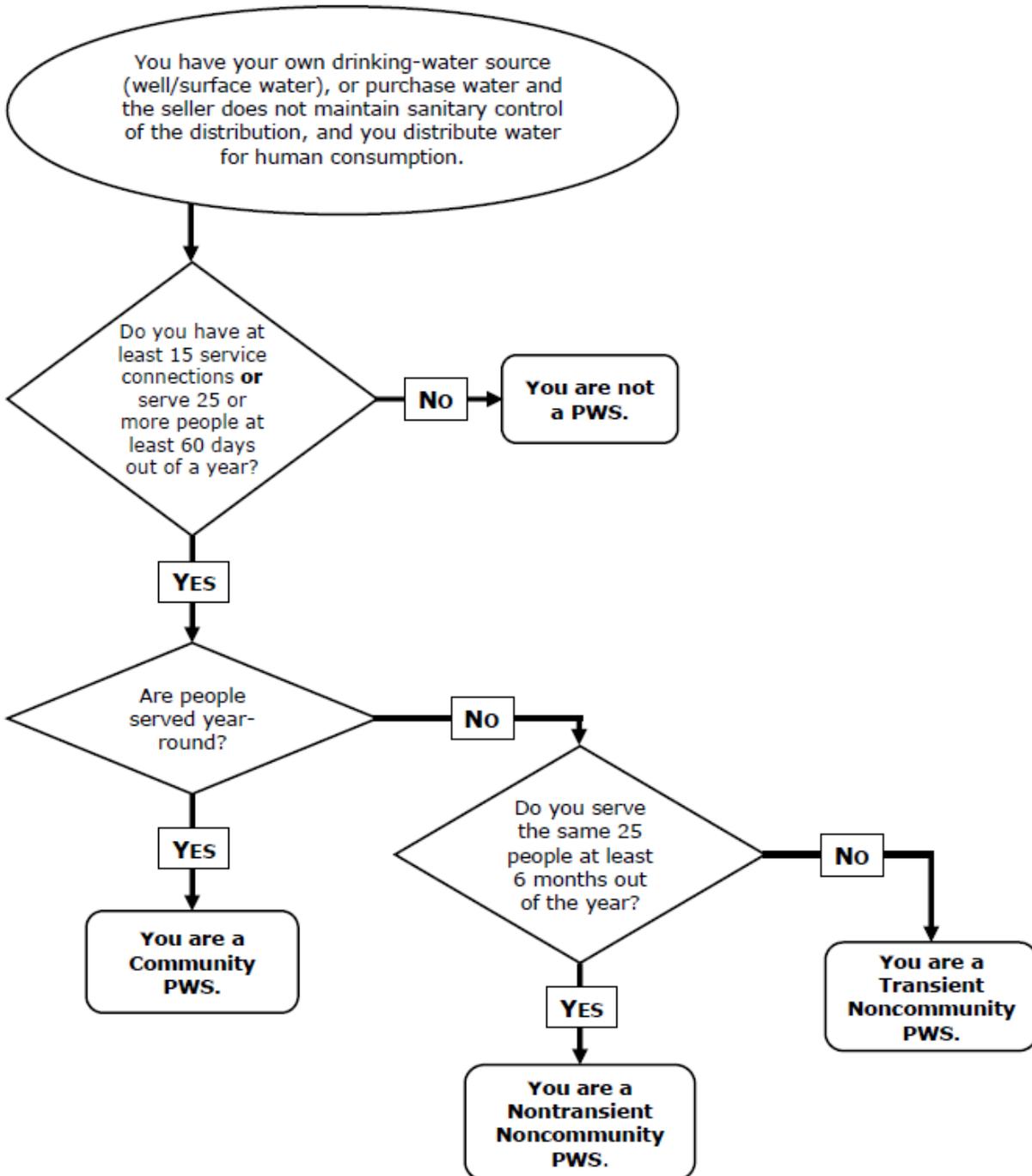
You can also view information we have for your system on the [Drinking Water Watch](#)⁶ website. To update us of changes to your contact information, facilities, and activity, email PWSINVEN@tceq.texas.gov, or call 512-239-4691 and ask for the PWS Inventory Group.

⁵

[https://texreg.sos.state.tx.us/public/readtac\\$ext.ViewTAC?tac_view=5&ti=30&pt=1&ch=290&sch=F&rl=Y](https://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=5&ti=30&pt=1&ch=290&sch=F&rl=Y)

⁶ <https://dww2.tceq.texas.gov/DWW/>

Figure 1. Public Water System Classification Flowchart



Hire a licensed operator, if needed

Most water systems must be supervised by at least one licensed water operator. The number and class of operators you need depends on your system. Table 1 shows the requirements for systems serving up to 250 connections.⁷

Table 1. Licensed-operator requirements for small systems

Type of System (250 connections or fewer)	Minimum Number and Level of Operators Required
CWS	One Class D licensed operator
NTNCWS	One Class D licensed operator
TNCWS (groundwater or purchased treated water)	None
TNCWS (surface water or under the influence of surface water)	One Class D licensed operator

TNCWSs are not required to have a licensed operator if they use only groundwater or buy treated water from another PWS. If your system's water source is surface water or under the influence of surface water, you must have a licensed operator.

Sample your water

Sampling and analyzing the water you serve is critical to protecting public health. [How to Develop a Monitoring Plan for a Public Water System](#)⁸ (publication RG-384) explains what samples to take and how often. Some samples must be tested by a lab certified by the National Environmental Laboratory Accreditation Program (NELAP).

Table 2 shows basic information about some of the samples your PWS may need to take. Specific requirements, including frequency and number of samples, may vary with the type and size of your system, your water source, and chemical analysis results. For example:

- Systems serving surface water (SW) or groundwater under the influence of surface water (GUI) have different requirements than groundwater (GW) and purchased water (PW) systems.
- Radionuclide samples are only required for community systems. Contact the Public Drinking Water section at 512-239-4691 or PDWS@tceq.texas.gov for more information.
- Collect lead and copper samples from separate sites every six months. Contact the Lead and Copper Program at 512-239-4691 or PWSLCR@tceq.texas.gov for more information.

⁷ See 30 TAC 290.46(e) for a complete list of system operator requirements.

⁸ www.tceq.texas.gov/assets/public/comm_exec/pubs/rg/rg-384.pdf

Table 2 (pages 7 and 8) is organized by where your water samples should be taken.

- Take raw-water samples from your source, before treatment.
- Take entry-point samples at a location where treated water flows from the plant or well site into the distribution system.
- Take distribution samples at multiple locations, so they represent water quality throughout your system.

Refer to 30 TAC 290 Subchapter F for the complete water sampling regulations.

Table 2. Water sample types and frequencies

Sample Type	Population	Number of Samples	Frequency	PWS Type	Use NELAP Lab?	Who Collects?	30 TAC Rule
Raw-Water Sampling							
Coliform bacteria ^a	Coliform sampling requirements ^b	See population	Monthly	All	Yes	Operator	290.109
Entry-Point Sampling							
Bromate (if using ozone)	N/A	1	Monthly	C, NTNC	No	Operator	290.114
Chlorine dioxide (if used)	N/A	1	Daily	All	Yes	Operator	290.114
Chlorite (if using chlorine dioxide)	N/A	1	Daily	All	No	Operator	290.114
Disinfectant level (SW and GUI only)	Entry-point disinfectant sampling requirements ^c	See population	Daily	All	Yes	Operator	290.110
Inorganic chemicals ^d	N/A	Varies	Every 3 years	All	Yes	TCEQ contractor	290.106
Nitrate, nitrite	N/A	Varies	C, NTNC: Quarterly TNC: Annually	All	Yes	TCEQ contractor	290.106
Secondary constituents ^e	N/A	Varies	Every 3 years	All	Yes	TCEQ contractor	290.118
Radionuclides (radium, uranium, etc.)	N/A	1	Within 90 days of source's first use and if detected, quarterly	C	Yes	TCEQ contractor	290.108
Synthetic organic chemicals ^f	N/A	Varies	Quarterly for 4 quarters then once every 3 years	C, NTNC	Yes	TCEQ contractor	290.107
Volatile organic chemicals ^g	N/A	Varies	Quarterly for 4 quarters, then annually for at least 3 years ^h	C, NTNC	Yes	TCEQ contractor	290.107
Distribution-System Sampling							
Asbestos (if asbestos cement pipe is present)	N/A	1	Once during first 3 years of each 9-year cycle ⁱ	All	Yes	TCEQ contractor	290.106 (c)(2)

Sample Type	Population	Number of Samples	Frequency	PWS Type	Use NELAP Lab?	Who Collects?	30 TAC Rule
Coliform	Less than 1001	1	Monthly	All	Yes	Operator	290.109
Coliform	1001 or more	2	Monthly	All	Yes	Operator	290.109
Disinfectant residual (free or total chlorine)	Up to 249 connections or 749 people	1	Every 7 days	All	No	Operator	290.110
Disinfectant residual (free or total chlorine)	At least 250 connections or 750 people	1	Daily	All	No	Operator	290.110
Chlorite (if using chlorine dioxide)	N/A	3	Monthly	All	Yes	Operator	290.114
Chlorine dioxide (if used)	N/A	3	Monthly (after exceeding MCL)	All	Yes	Operator	290.114
TTHM, HAA5	Less than 500	1	Annually	All	Yes	TCEQ contractor	290.113
TTHM, HAA5	500 or more	1	Quarterly	All	Yes	TCEQ contractor	290.113
Lead, copper	Less than 101	5	Every two 6-month periods	C, NTNC	Yes	Operator	290.117
Lead, copper	101 to 500	10	Every two 6-month periods	C, NTNC	Yes	Operator	290.117
Lead, copper	501 to 3000	20	Every two 6-month periods	C, NTNC	Yes	Operator	290.117

^a Coliform bacteria are commonly used to show whether water is sanitary.

^b <https://texreg.sos.state.tx.us/fids/201700993-1.pdf>

^c <https://texreg.sos.state.tx.us/fids/200706552-3.html>

^d <https://texreg.sos.state.tx.us/fids/200706552-2.html>

^e https://texreg.sos.state.tx.us/fids/30_0290_0118-1.pdf

^f https://texreg.sos.state.tx.us/fids/30_0290_0107-4.html

^g https://texreg.sos.state.tx.us/fids/30_0290_0107-3.html

^h Can be reduced to once every 3 years with approval from TCEQ.

ⁱ Unless you get a waiver from TCEQ.

Disinfecting water and monitoring the residual

As the owner or operator of a PWS, one of your most important responsibilities is to disinfect drinking water to prevent waterborne diseases. All PWSs in Texas must disinfect with chlorine or chloramines.⁹ Our [Disinfectant Residual Reporting for Public Water Systems](#)¹⁰ guide (publication RG-407) covers disinfectant residual requirements, including reporting and record keeping. Your treatment process and facilities must be approved before installation and use.

Get your PWS approved

You must get your water source, distribution, storage, and treatment facilities approved by TCEQ **before you install or use them**. Engineered facilities like wells, pipes, pumps, and treatment units must meet our requirements for design and maintenance, including:

- Plant design.
- Interconnections.
- Wellhead protection.
- Disinfection equipment.
- Well casing and location.
- Storage and pressure maintenance capacity.

A Texas-licensed professional engineer (PE) must prepare a report and submit your plans and specifications.¹¹ Use the [Texas Board of Professional Engineers' website](#)¹² to find licensed PEs in your area. **If you are operating an unapproved PWS**, a PE must submit as-built plans and specifications for your system.

Include in your engineering report¹³:

- **Who owns and operates the system?** Include emergency contact information.
- **Who do you serve water to?** Include present and future areas to be served, with population data.
- **What is your water source?** Include quantity and quality of water available; and the location of all abandoned or inactive wells near any PWS wells.
- **Where is the system located?** Describe the facility's actual or proposed site and surroundings. Include a general map or plan of the area to be served.
- **What are the system's facilities?** Include type(s) of treatment, equipment, and capacities.
- **How much water does the system use?** Include basic design data, pumping capacities, and water storage.

⁹ See 30 TAC 290.110.

¹⁰ www.tceq.texas.gov/assets/public/comm_exec/pubs/rg/rg-407.pdf

¹¹ See 30 TAC 290.39(d).

¹² www.tbpe.state.tx.us/roster/pesearch.html

¹³ See 30 TAC 290.39(e).

- **How will the system operate?** Describe how it will operate under normal and emergency conditions.

See our website for more information about [establishing a new water system](#)¹⁴ and [how to submit PWS plans for review](#).¹⁵ If you have questions, call our Technical Review and Oversight Team at 512-239-4691 early in the process.

Finding your water source

Is your water supplied through a well or pumped from a lake? If you serve water sourced from a lake, spring, river, or rainwater from a catchment system, the risk of waterborne disease is much greater. These *surface water sources* are more easily contaminated than an aquifer that supplies groundwater to a well.

Water from rivers, streams, natural springs, creeks, tides, lakes, or bay areas is considered *state water*. If you use state water, you might be subject to [TCEQ water-rights permitting](#).¹⁶

Converting existing wells for PWS

We have high standards for wells that supply water to the public.¹⁷ Domestic-use and irrigation wells are not drilled to those standards. If you want to use one of these wells for your public water supply, you need a PE to apply for our approval. You also need a well assessment to determine what parts of your system (gravel pack, casing, wellhead, etc.) need to be upgraded to meet standards.

Working with unidentified wells

If you do not know what type of well you have, use the online [Water Well Report Viewer](#)¹⁸ to find it. If you cannot find it, you may need to request the well logs and driller information from your local [groundwater conservation district](#).¹⁹ Well logs help you find out if your well was drilled as a domestic-use or irrigation supply, or if it meets the criteria for a PWS well.

Meeting PWS well requirements

Drill PWS wells to meet the [Texas Department of Licensing and Regulation's standards](#).²⁰ You can contact them by e-mail at water.well@tdlr.texas.gov.

Wells must also meet our design standards and siting conditions. Rules in 30 TAC 290.41(c)(3) describe requirements for drilling wells that supply public drinking water.

Enclose wells (in a ventilated well house) or protect them with an intruder-resistant fence with locked doors or gates to prevent trespassers or intentional contamination.

¹⁴ www.tceq.texas.gov/assistance/water/pdws/community-systems/drinkingwater/newsystems.html

¹⁵ www.tceq.texas.gov/assistance/water/pdws/community-systems/drinkingwater/planrev.html

¹⁶ www.tceq.texas.gov/permitting/water_rights/wr-permitting/wr_amiregulated.html

¹⁷ See 30 TAC 290.41(c).

¹⁸ www.tceq.texas.gov/goto/waterwellview

¹⁹ www.tceq.texas.gov/groundwater/groundwater-planning-assessment/districts.html

²⁰ www.tdlr.texas.gov/wwd/wwd.htm

Keep wells away from certain activities or hazards, such as livestock grazing, septic tanks, abandoned wells, and other pollution sources. Table 3 describes well setback distances from some of these. See 30 TAC 290.41(c) for a complete list.

Table 3. Well setback distances from contaminant sources

Well Setback Distances (in feet)	Sources of Potential Contamination
50	Septic tanks, storm sewers, cemeteries, livestock pastures
150	Septic tank drain fields, absorption or evapotranspiration beds, improperly constructed water wells, underground petroleum or chemical storage tanks, liquid transmission pipelines
300	Sewage wet wells, sewage pumping stations, certain drainage ditches
500	Sewage treatment plants, animal feed lots, solid waste disposal sites, lands that apply sewage plant or septic tank sludge or irrigate with sewage plant effluent

Meeting storage, capacity, and distribution requirements

We have rules about the sizing, capacity, and flow rate of your tanks, pipes, and pumps. These rules make sure customers have enough drinking water.

Tanks and Pumps: Rules for sizing your system's tanks and pumps are in 30 TAC 290.45. Requirements are stricter for CWSs than for NTNCWSs or TNCWSs because there is a greater risk to human health.

Treatment Plants: Make treatment plants big enough to treat all water your system produces.²¹ For a well system, the chlorinator is considered a “treatment plant.” Disinfection equipment must be able to hold at least 50 percent more disinfectant than the highest expected dosage. The dosage is the amount of chemicals needed to treat the water effectively.²²

Distribution Systems: Your system must meet requirements for minimum pressure, pipe size, pipe material, interconnections, and backflow.²³ For example, you must maintain a minimum pressure of 35 psi throughout the distribution system.

Changes to the System: You must submit plans to us for wells, interconnections, or other significant changes that alter production, treatment, storage, or pressure maintenance capacity. All plans must be submitted by a Texas-licensed PE.²⁴

²¹ See 30 TAC 290.45.

²² See 30 TAC 290.42(e)(3)(A).

²³ See 30 TAC 290.44.

²⁴ See 30 TAC 290.39(j).

Requesting an exception to the rules

If any part of your system cannot meet requirements, you may request an exception to the rules. For example, some wells cannot meet the setback distance requirements and can request a sanitary control easement exception. Not all exceptions will be granted. If your exception request is approved, you may have different monitoring and sampling requirements. Find more information about [requesting an exception to rules and regulations for PWSs](#)²⁵ on our website.

Maintaining and operating your PWS

Keep an updated plant operation manual. It should describe procedures for routine maintenance and repair, emergency plans, and contact details.²⁶ It also helps you prepare a replacement schedule for equipment. The minimum requirements for operating a PWS are in 30 TAC 290.46.

In a well maintained PWS:

- Pumps and sampling equipment are in good working condition.
- Meters are accurate and calibrated periodically.
- Sampling reagents are fresh.
- Tanks are routinely inspected and cleaned out.
- Distribution mains are routinely flushed.
- Grass around wells is regularly mowed.
- Sample sites are clean with no risk of contamination.
- Operations records are maintained.

Maintain and organize records

You must keep records of all operations and maintenance activities for your PWS. You send certain documents to us, while others are for your records. **Keep copies of all documents sent to or from TCEQ.** Organize them so they can be reviewed during inspections. There are compliance tools on our [PWS: Compliance Resources](#)²⁷ webpages to help you with this, including compliance notebooks and logs for many records listed in Table 4 (pages 14 and 15).

Keep a list of important system information with your records, such as:

- System capacities.
- Connections and population served.
- Contact information for your emergency staff, responsible parties, and NELAP lab.
- Names and license numbers of water operators and backflow prevention assembly testers.

²⁵ www.tceq.texas.gov/drinkingwater/trot/exception

²⁶ See 30 TAC 290.42(I).

²⁷ www.tceq.texas.gov/assistance/water/pdws

Specific recordkeeping requirements may vary with the type and size of your system, your water source, and chemical analysis results. For example:

- Well-related records only apply to systems serving groundwater.
- Sanitary control easements are only needed if you do not own all land within a 150-foot radius of your well.
- Emergency preparedness plans are only needed in Harris and Fort Bend counties.
- Drought contingency plans are only required for retail suppliers and utilities with 3,300 connections or more.

See 30 TAC 290 for full recordkeeping requirements.

Table 4. Recordkeeping and reporting requirements

Records	Update Frequency	Reporting Frequency	Send Copy to TCEQ?	Guidance
Monthly operating reports	Daily or weekly ^j	None	No	Include water and chemical usage and disinfectant residual readings
Surface water monthly operating reports (SWMOR) ^k	Monthly	Monthly	Yes	Forms, Instructions, and Guidance for SWMORs^l
Bacteriological monitoring	Monthly	Monthly	Lab sends results	Bacteriological Sample Collection Standard Operating Procedures^m
Dead-end main flushing events	Monthly	None	No	Dead-end mains must be flushed monthly and if disinfectant residuals fall below minimum
Disinfectant residual analyzer verification logs	See guidance	None	No	Verify manual tools every 90 days Use EPA method 334b for continuous tools
Disinfectant level quarterly operating report (DLQOR)	Quarterly	Quarterly	C, NTNC: Yes TNC: No	Disinfectant Residual Reporting for Public Water Systemsⁿ (RG-407)
Storage tank inspections	Yearly	None	No	See PWS: Compliance Resources^o for a log
Operators notice form	Yearly	Yearly	Yes	See PWS: Compliance Resources for form
Well meter accuracy checks and calibrations	Every 3 years	None	No	See PWS: Compliance Resources for a log
Consumer confidence reports (C only)	Yearly	Yearly	Yes	Consumer Confidence Report^p
Lead, copper records (C, NTNC only)	See guidance	See guidance	Yes	Lead and copper program^q
Chemical analysis results	Sample schedules^r	Varies	Yes	
Public and boil water notices	As needed	See guidance	Yes	Public notice language for drinking water^s
Maintenance records	As needed	None	No	
Distribution map	As needed	None	No	
Plant operation manual	As needed	None	No	Plant operations manual template^t
Monitoring plan	As needed	None	SW, GUI: Yes GW, PW: No	How to Develop a Monitoring Plan for a PWS^u

Records	Update Frequency	Reporting Frequency	Send Copy to TCEQ?	Guidance
Sample siting plan	As needed	None		Sample siting plan template ^v
Nitrification action plan	As needed	None		Controlling Nitrification in PWSs ^w
Plans and specifications	As needed	Once	Yes (originals)	Update when changes are made to the system
Exception requests and approvals	As needed	Once per exception	Yes (originals)	
Well completion data	None	Once	Yes	
Sanitary control easements	None	Once	Yes (originals)	
ANSI-NSF 60 approval of chemicals	None	None	No	
Backflow prevention assembly tests	Annually	None	No	Cross-Connection Control and Backflow Prevention ^x
Purchase water contracts	None	None	No	
Service agreements or plumbing ordinance (C, NTNC)	As needed	None	No	Sample Retail Service Agreement ^y
Customer service inspections	None	None	No	
Notices of violation	As needed	None	No	Include corrective actions you take
Sanitary surveys	As needed	None	No	Also called comprehensive compliance investigations or "CCIs"
Groundwater rule compliance records	As needed	As needed	Yes	Groundwater Rule ^z
Revised total coliform rule assessment	As needed	As needed	Yes	See PWS: Compliance Resources for guidance
Drought contingency plans	Every 5 years	Every 5 years	Yes	Send initial plan within 90 days of adopting it Drought Contingency Plans ^{aa}
Emergency preparedness plan (Harris and Fort Bend counties)	See guidance	Once	Yes	Emergency Preparedness Plan Frequently Asked Questions ^{bb}
Customer complaints	As needed	None	No	

^j If you serve fewer than 250 connections or 750 people and serve only groundwater or purchased treated water, monitor weekly. Otherwise, monitor daily.

^k For systems serving surface water or groundwater under the influence of surface water.

^l www.tceq.texas.gov/drinkingwater/swmor/swmor/swmor-forms-and-instructions

^m www.tceq.texas.gov/assets/public/permitting/watersupply/pdw/tcr/MicrobialSamplingSOP.pdf

ⁿ www.tceq.texas.gov/assets/public/comm_exec/pubs/rg/rg-407.pdf

^o www.tceq.texas.gov/assistance/water/pdws

^p www.tceq.texas.gov/drinkingwater/ccr

^q www.tceq.texas.gov/drinkingwater/chemicals/lead_copper

^r www.tceq.texas.gov/drinkingwater/instructions-for-texas-drinking-water-watch

^s www.tceq.texas.gov/drinkingwater/public_notice.html

^t www.tceq.texas.gov/assets/public/assistance/sblga/tnc/plant-o-and-m-template.docx

^u www.tceq.texas.gov/assets/public/comm_exec/pubs/rg/rg-384.pdf

^v www.tceq.texas.gov/assets/public/permitting/watersupply/pdw/tcr/RTCR-Sample-Siting-Plan.pdf

^w www.tceq.texas.gov/drinkingwater/disinfection/nitrification.html

^x www.tceq.texas.gov/drinkingwater/cross-connection

^y <https://texreg.sos.state.tx.us/fids/201502634-2.html>

^z www.tceq.texas.gov/drinkingwater/gwr_main.html

^{aa} www.tceq.texas.gov/permitting/water_rights/wr_technical-resources/contingency.html

^{bb} www.tceq.texas.gov/assets/public/permitting/watersupply/pdw/EPP_FAQ.pdf

