



TCEQ REGULATORY GUIDANCE

Water Supply Division

RG-407 • Revised April 2021

Monitoring, Analyzing, and Reporting of Free Chlorine and Chloramines

Water Supply Division
Texas Commission on Environmental Quality

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY • PO BOX 13087 • AUSTIN, TX 78711-3087

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Contents

- Acronyms and Definitions.....3
- Introduction4
 - What can TCEQ’s website show me about my public water system?4
 - When am I required to update data about my system’s ownership?5
- Section 1. Monitoring and Reporting Applicability.....5
 - Why must public water systems measure disinfectant levels?.....5
- Section 2. Minimum and Maximum Disinfectant Levels.....6
 - What are the disinfectant residual levels?.....6
 - How do I determine compliance with minimum disinfectant residual levels?6
 - How do I determine compliance with maximum disinfectant residual levels?6
- Section 3. Monitoring Plans and Sampling.....7
 - How often do I collect samples?7
 - Where do I sample? 11
 - How do I analyze my disinfectant residual samples? 13
 - Who may collect samples?..... 14
- Section 4. Reporting Requirements 16
 - When is the monitoring report due?..... 16
 - Where can I get the DLQOR form?..... 16
 - How do I make important calculations for a DLQOR?..... 18
- Section 5. State of Texas Environmental Electronic Reporting System..... 22
 - What is the Electronic Environmental Reporting System? 22
 - What are the benefits of E2 electronic reporting? 22
 - Who can I contact for more information about E2? 23
 - What can the E2 system do? 23
 - What are the minimum system requirements for E2? 24
 - How do I submit a drinking water report using the E2-DWR System?..... 25
 - How do I get started in STEERS? 26
 - How do I use the E2-DWR online data entry form? 36
- Section 6. Compliance..... 49
 - How do I determine if my PWS is in compliance with the minimum levels of disinfectant residuals? 49
 - How do I comply with the MRDL?..... 49

What are the monitoring and reporting requirements? 50

What violations are associated with disinfectant residuals?..... 50

Section 7. Public Notification 51

 What public notifications are required?..... 51

 What is the public notice language?..... 52

Appendix A. Worksheets for Recording Disinfectant Residuals 54

Appendix B. The DLQOR Instructions, Form, and Sample 58

Tables

Table 1. Minimum and Maximum Disinfectant Residual Levels6

Table 2. Required Distribution System Disinfectant Residual Samples.....8

Table 3. Required Number of Coliform Samples and Sample Sites 12

Table 4. Schedule for Disinfectant Level Quarterly Operating Report 16

Table 5. Common Chlorine Disinfectant Residual Violations 50

Table 6. Tiers of Public Notification..... 51

Table 7. Chlorine Disinfectant Residual Compliance Violations 53

Acronyms and Definitions

CWS	community water system that has a potential to serve at least 15 residential service connections on a year-round basis or serves at least 25 residents on a year-round basis
CCI	Comprehensive Compliance Investigation (sanitary survey)
DLQOR	Disinfectant Level Quarterly Operating Report
DPD	N,N-diethyl-p-phenylenediamine
DBP1	Disinfectants and Disinfection Byproducts Rule
E2	Electronic Environmental Reporting System
E2-DWR	Electronic Environmental Drinking Water Report
EPA	United States Environmental Protection Agency
GUI	groundwater under the direct influence of surface water
mg/L	milligrams per liter
MHP	mobile home park
MIN	minimum
MRDL	maximum residual disinfectant level
PWS	public water system
PWS ID	public water system identification consisting of seven digits
RAA	running annual average
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
TNC	transient noncommunity 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
NTNC	nontransient noncommunity 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
STEERS	State of Texas Environmental Electronic Reporting System
SPA	STEERS Participation Agreement

Introduction

This guide is for public water systems (PWSs) that use only purchased water or groundwater disinfected with chlorine or chloramine treatment. It explains how to comply with the Texas requirements for monitoring, maintaining, and reporting disinfection (free chlorine and chloramine) levels.

In this guide, the word “you” refers to operators of PWSs. The word “we” refers to us, the Texas Commission on Environmental Quality (TCEQ), and to our public drinking water program.

You can find these requirements in Title 30 of the Texas Administrative Code (30 TAC), Chapter 290, Subchapter F: Drinking Water Standards Governing Drinking Water Quality and Reporting Requirements for PWSs, Section 290.110: Disinfectants. You can view the official, online version of the [rules](#)¹ on the Secretary of State website.

While this guide covers basic requirements for disinfectants, **it is not a substitute for the rules**. If there appears to be a discrepancy between this guidance and the rules, follow the rules.

TCEQ maintains regulatory guidance, forms and additional documents according to our records retention schedule and you can access them on our [Search for Publications](#)² webpage. These resources may help you understand the federal and state rules, regulations, and requirements that apply to your PWS. Find more information on how to order or download TCEQ publications at our [Forms and Publications](#)³ webpage.

What can TCEQ’s website show me about my public water system?

With [Drinking Water Watch](#)⁴ (DWW) you can check the data we have about your PWS.

Drinking Water Watch can help you find your unique identification number. Every PWS has a seven-digit identification number, or PWS ID. The first three digits tell which county your PWS is in. The last four digits are unique to your PWS in that county. To find your PWS ID from the main DWW page:

- You can search by “PWS Name”.
- Once you have entered your PWS name in the box and click “Search for water systems”.
- Find your PWS in the list that appears. The PWS ID will be in the first column of this list.

¹ [texreg.sos.state.tx.us/public/readtac\\$ext.ViewTAC?tac_view=3&ti=30&pt=1](http://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=3&ti=30&pt=1)

² www.tceq.texas.gov/publications/search-pubs

³ www.tceq.texas.gov/publications

⁴ dww2.tceq.texas.gov/DWW/

Drinking Water Watch can show you available data for your PWS. If DWW's data for your PWS is incorrect, please contact our PWS inventory team at PWSINVEN@tceq.texas.gov.

When am I required to update data about my system's ownership?

Report changes in PWS ownership to us within 30 days [30 TAC 290.46(p)]. If any of the data about your system's ownership changes, you should contact our PWS inventory team at PWSINVEN@tceq.texas.gov.

Section 1. Monitoring and Reporting Applicability

All PWSs must maintain acceptable disinfectant residuals within their distribution system [30 TAC 290.110(a)]. This guide explains how PWSs that use only purchased water or groundwater must monitor and document disinfectant residual information. This guidance also explains how community and nontransient noncommunity PWSs must report disinfectant residuals to us. Transient noncommunity systems must keep disinfectant residual monitoring information but are not required to submit the report to us.

Note: PWSs that treat surface water or groundwater under the direct influence of surface water (GUI) already submit information about disinfectant residuals on their Surface Water Monthly Operating Report, so this guidance does not apply to them. PWSs that treat surface water or groundwater under the direct influence of surface water should obtain and follow Surface Water Treatment Plant Requirements for Monthly Reporting and Public Notification (TCEQ publication RG-211).

Note: PWSs that use only purchased water or groundwater treated with chlorine dioxide should obtain and follow the PWS Guidance for Monitoring, Analyzing, and Reporting Chlorine Dioxide and Chlorite (TCEQ publication RG-503). PWSs that use only purchased water or groundwater treated with ozone should obtain and follow Guidance for Monitoring, Analyzing, and Reporting Bromate for PWSs Using Ozone (TCEQ publication RG-544).

Why must public water systems measure disinfectant levels?

In 2000 TCEQ adopted provisions of the Stage 1 Disinfectants and Disinfection Byproducts Rule (DBP1) that EPA promulgated in 1998. This rule required each state to track disinfectant levels and specifically maximum residual disinfectant levels (MRDLs). To track these levels TCEQ developed the Disinfectant Level Quarterly Operating Report (DLQOR). PWSs must also keep that information on hand to show to the regional investigator who performs the Comprehensive Compliance Investigation (CCI, or "sanitary survey").

Section 2. Minimum and Maximum Disinfectant Levels

What are the disinfectant residual levels?

Maintenance of acceptable disinfection residual levels in the distribution system of the public water system is required, to protect consumer health. Minimum disinfectant residual levels were established to guard against the potential of subsequent microbial contamination after treatment. [30 TAC 290.110(b)]

In the 2000 DBP1 rules, EPA noted that there may be increased risks of cancer to people who drink water with very high levels of free or total chlorine. Therefore, EPA adopted an upper limit to the concentration of disinfectant a distribution system should have, based on all of the sample results. These upper limits are referred to as the MRDLs. [30 TAC 290.110(b)(5)].

Table 1 provides the minimum and maximum disinfectant residual level concentrations for free or total chlorine as measured in milligrams per liter (mg/L).

Table 1. Minimum and Maximum Disinfectant Residual Levels

<i>Type of Disinfectant</i>	<i>Minimum Level</i>	<i>Maximum Level</i>
Free chlorine	0.2 mg/L	4.0 mg/L
Total chlorine (also called chloramines)	0.5 mg/L	4.0 mg/L

How do I determine compliance with minimum disinfectant residual levels?

On a monthly basis, you will review the data for the distribution system's samples taken that month and the previous month. If more than 5.0% of the samples in both months are below the minimum, your system has committed a nonacute treatment technique violation, and you must notify your customers as described in the following section, "Public Notification."

How do I determine compliance with maximum disinfectant residual levels?

Review that the running annual average (RAA) (average of last 12 months) for all the distribution system's samples is at or below 4.0 mg/L. If it is, your PWS is compliant with this rule. If the RAA is over the MRDL of 4.0 mg/L the PWS has committed a nonacute treatment technique violation, and you must notify your customers as described in the following section, "Public Notification."

Section 3. Monitoring Plans and Sampling

As specified in 30 TAC 290.121[Monitoring Plans]; every PWS is required to develop, maintain, and update a monitoring plan. Monitoring plans are subject to TCEQ review, in specific situations approval, and must include items such as:

- All sampling locations defined and designated on a plant schematic or map. [30 TAC 290.121(b)(1)].
- Sampling frequency and schedule described [30 TAC 290.121(b)(2)].
- Laboratory and test methods used to analyze samples [30 TAC 290.121(b)(4) and (5)].

Systems that use groundwater or purchased water are not required to send a copy of the monitoring plan to TCEQ, but must keep the plan on file for review by a TCEQ investigator during routine a comprehensive compliance investigation (CCI), or provide a copy of the plan to TCEQ upon request. A copy of the plan should be kept at a central location.

PWSs must submit a Drinking Water Laboratory Approval Form to TCEQ since all PWSs measure disinfectant residuals for compliance. You must submit the form to TCEQ when your PWS requests initial approval, renewal, or changes to instruments or methods used. [Drinking Water Laboratory Approval Form](#)⁵ and Instructions (TCEQ Form 10450) is an electronic fillable PDF form that may be completed online and printed to submit to TCEQ. The form provides a list of acceptable methods for analyzing free and total chlorine. You may also request the form by email at PDWS@tceq.texas.gov.

To learn more about the requirements for monitoring plans, see *How to Develop a Monitoring Plan for a Public Water System* (TCEQ publication RG-384). Additional information on monitoring plans is located at the [Monitoring Plan](#)⁶ webpage. This web page includes a Monitoring Plan Template, the Drinking Water Laboratory Approval Form and Instructions, TCEQ submittal address, and revision information.

How often do I collect samples?

The number of samples that your PWS must collect depends on the number of customers and connections it serves [30 TAC 290.110(c)]. The two kinds of required samples are:

- Disinfectant residual samples collected at the same time as coliform samples.
- Disinfectant residual samples collected throughout the distribution system.

⁵ www.tceq.texas.gov/goto/10450

⁶ www.tceq.texas.gov/drinkingwater/monitoring_plans

Table 2 shows the minimum required number of disinfectant residual samples your PWS must take (you may collect more if you want).

Table 2. Required Distribution System Disinfectant Residual Samples

<i>Population Served</i>	<i>Number of Disinfectant Residual Samples Collected with Coliform Samples</i>	<i>Required Disinfectant Residual Sample Collection Frequency</i>
1-750	1	Every 7 days
751-1,000	1	daily
1,001-2,500	2	daily
2,501-3,300	3	daily
3,301-4,100	4	daily
4,101-4,900	5	daily
4,901-5,800	6	daily
5,801-6,700	7	daily
6,701-7,600	8	daily
7,601-8,500	9	daily
8,501-12,900	10	daily
12,901-17,200	15	daily
17,201-21,500	20	daily
21,501-25,000	25	daily
25,001-33,000	30	daily
33,001-41,000	40	daily
41,001-50,000	50	daily
50,001-59,000	60	daily
59,001-70,000	70	daily
70,001-83,000	80	daily
83,001-96,000	90	daily
96,001-130,000	100	daily
130,001-220,000	120	daily
220,001-320,000	150	daily
320,001-450,000	180	daily
450,001-600,000	210	daily
600,001-780,000	240	daily
780,001-970,000	270	daily
970,001-1,230,000	300	daily
1,230,001-1,520,000	330	daily
1,520,001-1,850,000	360	daily
1,850,001-2,270,000	390	daily
2,270,001-3,020,000	420	daily
3,020,001-3,960,000	450	daily
3,960,001 or more	480	daily

A PWS that serves less than 750 customers and has less than 250 connections:

- Must measure disinfectant residual at least once every seven days.
- May use the disinfectant residual measurement from a scheduled coliform sample as the measurement for that week (seven-day duration).

A PWS that serves 751 people or more or has 251 connections or more:

- Must measure disinfectant residual at least once every day.
- May use the disinfectant residual measurement from a scheduled coliform sample as the measurement for that day.
- If you collect several coliform samples on one day, the residuals count for that day only. For example, if you take seven coliform samples on Monday, you still must measure disinfectant residuals each day the rest of the week.

Example 1 shows a sample collection situation for a PWS that serves up to 750 people.

To make sure you make the best use of the samples you take, you need a list that tells what to sample for, when to take each sample, and where to take each sample. This list is a required part of your PWS's monitoring plan. To learn more about this, see Section "Where to Sample."

PWSs that haul water, as defined in 30 TAC 290.44(i), are required to take a disinfectant residual sample from each load of water hauled and should base their report calculations on that data.

Tip: Know the Population Your PWS Serves

If you don't know exactly how many customers your PWS serves, you can look up the data for it on the Texas Drinking Water Watch website. If you are concerned that the population of your system is represented incorrectly in the data, you can arrange to talk to your TCEQ regional investigator. You can find contact information for your [Regional Office](#)⁷ on our website.

⁷ www.tceq.texas.gov/agency/directory/region

Example 1. Determining How Many Samples to Collect each Month

The Sunshine Mobile Home Park (MHP) PWS serves 14 mobile homes with a total population of 47 people. The PWSs monitoring plan states that all weekly samples will be collected on Monday and that coliform samples will be collected the first Monday of the month.

How many samples must Sunshine MHP collect in January 2020?

Answer: According to Table 2, Sunshine MHP must collect:

1. at least one coliform sample every month (because it serves fewer than 1,001 people)
2. weekly samples for distribution system disinfectant residuals (because it serves fewer than 751 people)

The first Monday of January 2020 is the 6th of the month. So Sunshine MHP’s sampling schedule for January 2020 would look like this:

Table Example 1. Sunshine MHP Sampling Schedule, January 2020

<i>On Monday</i>	<i>Collect:</i>	<i>On this sample, determine:</i>
January 6	1 sample	coliform and disinfectant residual
January 13	1 sample	disinfectant residual only
January 20	1 sample	disinfectant residual only
January 27	1 sample	disinfectant residual only

So Sunshine MHP should collect **four** samples in January 2020.

Where do I sample?

Distribution System Monitoring

Every PWS must designate sample sites that are representative of the entire distribution system for both coliform (bacteriological) and disinfectant residual samples. Coliform monitoring is based on based on the size of the population it serves [30 TAC 290.109(d)(2)(A)(iii)]. Disinfectant residual monitoring should occur at the same time and sampling site as the coliform monitoring [30 TAC 290.110(c)(4)(d)].

Table 3 shows how many distribution coliform samples a PWS must collect, and the minimum disinfectant residual sample sites for the distribution system to be adequately sampled. These are the minimum required number of coliform samples to collect and the number of sample site locations required for both disinfectant residual and coliform sampling; however, you may designate more if you want. The sample sites must represent the whole distribution system.

The sample sites for your PWS should be representative of the whole distribution system that you serve. You may use a single list of sites for both coliform and disinfectant monitoring. The list of sample sites (called the sample siting plan) also must outline when each site is sampled. Example 2 includes a hypothetical sample siting plan and when and how often they are sampled. The sample siting plan is part of the system's monitoring plan. *How to Develop a Monitoring Plan for a Public Water System* (TCEQ publication RG-384) provides additional examples related to monitoring schedules and site selection.

A PWS that provides water only to wholesale customers should have at least one sample site for each customer, at or near each customer's meter. This may result in fewer than five sites if a wholesale provider has fewer than five customers.

Example 2. Distribution System Sample Site List (Sample Siting Plan)

The City of XYZ has a population of 3,700.

What would XYZ’s Sample Siting Plan look like?

Answer: According to Tables 2 and 3, XYZ must:

- Have at least five sample sites (because they serve between 3,301 and 4,100 people, Table 3).
- Collect four coliform samples a month (because they serve between 3,301 and 4,100 people, Table 3).
- Collect *daily* disinfectant residual samples (because they serve more than 751 people, Table 2).

To develop a set of five sampling sites that produce results that are representative of the entire distribution system, XYZ’s operator picked locations in all parts of town and developed a sampling schedule.

Example 2 Table. XYZ PWS Sample Siting Plan

<i>Sample Site</i>	<i>Coliform Sample Schedule</i>	<i>Disinfectant Residual Sample Schedule</i>
City Hall (middle of town)	Rotate through all five sites, taking one on the first four Wednesdays of the month.	Every Wednesday
4321 Garza North St.		Every Monday and Saturday
5432 Garza South St.		Every Tuesday and Sunday
7654 Far West Way		Every Thursday
6543 Far East Way		Every Friday
157 Golf Club Dr. (middle of town)	Alternate Sample Site	When routine site unavailable

Table 3. Required Number of Coliform Samples and Sample Sites

<i>Population Served</i>	<i>Minimum Required Number of Coliform Samples per Month</i>	<i>Recommended Minimum Number of Disinfectant Residual and Coliform Sample Sites</i>
1-1,000	1	5
1,001-2,500	2	5
2,501-3,300	3	5
3,301-4,100	4	5
4,101-4,900	5	5
4,901-5,800	6	6
5,801-6,700	7	7
6,701-7,600	8	8
7,601-8,500	9	9
8,501-12,900	10	10
12,901-17,200	15	15
17,201-21,500	20	20
21,501-25,000	25	25

<i>Population Served</i>	<i>Minimum Required Number of Coliform Samples per Month</i>	<i>Recommended Minimum Number of Disinfectant Residual and Coliform Sample Sites</i>
25,001-33,000	30	30
33,001-41,000	40	30
41,001-50,000	50	30
50,001-59,000	60	30
59,001-70,000	70	35
70,001-83,000	80	40
83,001-96,000	90	45
96,001-130,000	100	50
130,001-220,000	120	110
220,001-320,000	150	125
320,001-450,000	180	140
450,001-600,000	210	105
600,001-780,000	240	120
780,001-970,000	270	135
970,001-1,230,000	300	150
1,230,001-1,520,000	330	165
1,520,001-1,850,000	360	180
1,850,001-2,270,000	390	195
2,270,001-3,020,000	420	210
3,020,001-3,960,000	450	225
3,960,001 or more	480	240

Entry Point Monitoring

The “entry point” to your distribution system is not a part of the distribution system itself. The definition of an entry point is “any point where a source of treated water first enters the distribution system.” You can find more information about entry points in *How to Develop a Monitoring Plan for a Public Water System* (TCEQ publication RG-384).

We highly recommend that you monitor the disinfectant level at your PWS’s entry point. This is your primary process control point. By monitoring at the entry point, you can make sure that the disinfection process is working properly and that you have enough disinfectant in the water. It should be noted that entry point disinfectant sampling does not count towards your distribution disinfectant residual sampling.

We may request you verify that you meet disinfection requirements. PWSs that treat surface water or groundwater under the direct influence of surface water (GUI) must monitor disinfectant levels at the entry point [30 TAC 290.110(c)(2)].

How do I analyze my disinfectant residual samples?

For each of the methods listed below—all of which are EPA-approved—you can purchase test kits that allow you to analyze samples in the field. Kits designed for testing swimming pools might not be suitable for these analyses. Be sure the test kit is labeled as EPA-approved for drinking water analysis. The kit must be able to measure

to at least 0.1 mg/L chlorine or chloramine residual. Your testing equipment is required to be checked against chlorine solutions of known concentration once every 90 days.

All PWSs must submit a Drinking Water Laboratory Approval Form to TCEQ since all PWSs measure disinfectant residuals for compliance. A Drinking Water Laboratory Approval Form must be submitted to TCEQ when a PWS requests initial approval, renewal, or changes to instruments or methods used. TCEQ [Drinking Water Laboratory Approval Form](#)⁸ and Instructions (TCEQ Form 10450) is an electronic fillable PDF form that you may complete online and print for submission to TCEQ. The form provides a list of acceptable methods for analyzing free and total chlorine. You may also request the form by email at PDWS@tceq.texas.gov.

Free Chlorine

Use one of these approved methods to measure the free chlorine residual:

- syringaldazine (FACTS)
- amperometric titration
- DPD (N,N-diethyl-p-phenylenediamine) ferrous titration
- DPD colorimetric with a colorimeter, spectrophotometer, or color comparator for a distribution system, but with only a colorimeter or spectrophotometer for an entry point

Chloramines (also called “Total” or “Combined” Chlorine)

Use one of these approved methods to measure the chloramine residual:

- amperometric titration
- DPD ferrous titration
- DPD colorimetric with a colorimeter, spectrophotometer, or color comparator for distribution system, but with only a colorimeter or spectrophotometer for entry point
- low level amperometric titration
- iodometric electrode

Who may collect samples?

Training

All personnel who perform monitoring/sample collection as described in this section must have the qualifications, education, and training to perform the work correctly. Monitoring personnel should be trained on this guidance as well as other materials

⁸ www.tceq.texas.gov/goto/10450

deemed relevant by the PWS, including safety. The PWS should maintain training records to document that sample collection personnel have been properly trained and formally evaluated.

Operator Licensing

Community (CWS) and nontransient noncommunity (NTNC) water systems must be operated by trained and licensed water operator personnel registered with TCEQ. Transient noncommunity (TNC) water systems are exempt from these requirements if they use only groundwater or purchased treated water. However, if a TNC water system is operated by personnel on a contractual basis then must be done so by trained and licensed personnel registered with TCEQ.

To become a licensed PWS operator, an applicant must complete the required course training, meet the required education and experience requirements, complete the TCEQ application and pay the fee, and pass the applicable exam (minimum score of 70 percent). Specific information for each license level is available on the [TCEQ Water Operator Licensing Requirements](#)⁹ webpage.

TCEQ Occupational Licensing and Registration Division of the Office of Waste implements the agency program for licensing PWS operators. The Water Supply Division assists with aspects of operator licensing in coordination with the Office of Compliance and Enforcement by identifying, whenever possible, operators misusing their licenses.

If you don't remember your water operator license number, or if you are searching for a licensed water operator in your area, The [How to Find a Licensed Water Operator](#)¹⁰ webpage provides guidance on searching the licensing database. [Occupational Licensing](#)¹¹ has information on licensing and training courses. For general information on operator license requirements, contact TCEQ Occupational Licensing and Registration Division at (512) 239-6133.

⁹ www.tceq.texas.gov/licensing/licenses/waterlic

¹⁰ www.tceq.texas.gov/drinkingwater/technical_guidance/search_pages/find_license.html

¹¹ www.tceq.texas.gov/licensing

Section 4. Reporting Requirements

When is the monitoring report due?

Every PWS that uses groundwater or purchased water must keep track of the levels of disinfectant residuals in its distribution system and report these levels on the DLQOR (Disinfectant Level Quarterly Operating Report) each quarter [30 TAC 290.110(e)]. Table 4 shows when each quarter's report is due.

Table 4. Schedule for Disinfectant Level Quarterly Operating Report

<i>Quarter Number</i>	<i>Quarter Months</i>	<i>Report Due Date</i>
1	January, February, March	April 10
2	April, May, June	July 10
3	July, August, September	October 10
4	October, November, December	January 10

The first step in complying with the reporting requirements for disinfectant residuals is to record your data carefully each time you sample. You may already have a good method for doing this; if not, you may find the worksheets in Appendix A helpful.

You can submit the DLQOR to us by either:

1. Mailing a completed and signed hard copy by mail:

a. Certified mail to:

TCEQ/PDW MC-155
 Attn: DLQOR
 12100 Park 35 Circle, Bldg. F
 Austin, TX 78753-1808
 Certified mail to:

b. First Class mail to:

TCEQ/PDW MC-155
 Attn: DLQOR
 PO Box 13087
 Austin, TX 78711-3087

2. Submitting an electronic copy through State of Texas Environmental Electronic Reporting System (STEERS) - E2 portal. See section 5 of this document for more information.

Where can I get the DLQOR form?

After you have gathered the monthly data for a quarter, you must report it to TCEQ on the DLQOR form.

If you will be completing the paper form see the end of this guide (Appendix B) for a blank DLQOR form that you can photocopy and use, along with DLQOR completion instructions. You can complete the electronic fillable PDF of the DLQOR form (TCEQ-20067)¹² online. The online form will complete many of the calculations required on the form. Once completed you may print the form, sign and mail to TCEQ.

If you are completing the electronic form, Section 5 provides detailed information for completing and submitting the DLQOR through State of Texas Environmental Electronic Reporting System (STEERS) – E2 portal. See section 5 of this document for more information.

The DLQOR should be completed in its entirety including appropriate contact information, valid water operator license number, and signature of the PWS licensed water operator if you are a CWS or NTNC PWS or signed by an appropriate PWS representative if you are a TNC PWS. If the form is not complete when submitted, you may not receive proper credit and could receive a violation [30 TAC 290.46(f)(4)(C)].

Appendix B also includes a sample DLQOR completed by a PWS licensed water operator as mentioned in Example 1.

Are transient noncommunity (TNC) PWSs exempt from reporting disinfectant residuals?

Not exactly. Transient noncommunity PWSs, such as parks, are still required to complete a DLQOR but do not have to submit it to TCEQ quarterly. They must retain and provide a copy of the DLQOR if it is requested. TNCs must take samples for disinfectant residual and coliforms (bacteriological) as per 30 TAC, Subchapter F, sections 290.109 and 290.110.

Other Monitoring Reports

Every PWS that uses groundwater or purchased water must maintain records and reports as per 30 TAC 290.46(f). The Groundwater/Purchased Water Monthly Operating Report, Form TCEQ-00811 is an optional tool developed for water systems to meet rule requirements. You do not have to send this form to TCEQ—instead, just keep it on file and show it to your TCEQ regional investigator during the comprehensive compliance investigation. The form and instructions are available at the [Monitoring and Reporting for Groundwater Systems](#)¹³ webpage.

¹² www.tceq.texas.gov/goto/20067

¹³ www.tceq.texas.gov/drinkingwater/gw_pw_mor/index_gwmonitoring.html

How do I make important calculations for a DLQOR?

Example 3. Calculating “Average of All Disinfectant Residuals for This Month”

As described in Example 1, the Sunshine Mobile Home Park PWS should take four samples in January 2020. Assume that their samples show these levels of disinfectant residual:

Table Example 3. Sunshine MHP Sample Levels, January 2020

<i>Sample Collection Date</i>	<i>January 6</i>	<i>January 13</i>	<i>January 20</i>	<i>January 27</i>
Residual Disinfectant Level:	5.0 mg/L	1.9 mg/L	0.1 mg/L	1.0 mg/L

What is the average of all disinfectant residuals for January?

Answer: Calculating the average value takes these three steps:

1. Add up the disinfectant residuals: $(5.0 + 1.9 + 0.1 + 1.0)$ mg/L = **8.0** mg/L.
2. Count the total number of samples collected in the month—in this case, **4**.
3. Divide the sum of the measured residuals (from Step 1) by the number of samples collected (from Step 2): 8.0 mg/L (total) / 4 samples = **2.0**mg/L (average).

So, the operator should write “2.0 mg/L” under *Average of all disinfectant residuals for this month* and “4” under *Number of readings collected this month* in the *First Month of Quarter: Monthly Summary* since January is the first month of Quarter 1 (Table 4) of 2020.

You should be able to complete the DLQOR using a calculator. Here, we present examples of each calculation you must make for the report. The PDF version of the DLQOR form and the electronic E2 STEERS system will perform many (but not all) of the required calculations automatically.

Example 4. Calculating “% below MIN for This Month” (Weekly Sampling)

If you are using the online fillable PDF or STEERS, this calculation is completed automatically.

Sunshine MHP uses free chlorine in their distribution system. Their disinfection residual levels for January were 5.0 mg/L, 1.9 mg/L, 0.1 mg/L, and 1.0 mg/L. Because Sunshine MHP uses free chlorine, the minimum residual for them is 0.2 mg/L (Table 2).

What is the percentage of samples below the minimum residual?

Answer: As in Example 3, we can perform this calculation in three steps:

1. Count the samples that were below the minimum residual this month. Only one sample—the one with a reading of 0.1 mg/L—was below this value, so for Sunshine MHP in January the count is **one**.
2. Count the total number of samples taken this month—in this case, **four**.
3. Now, divide the number of samples below the minimum by the total number of samples taken, and multiply by 100 percent.

1 (sample below minimum this month) / **4** (samples collected this month) X 100% = **25%**

On the DLQOR, the Sunshine MHP operator should enter “25%” under *Number below MIN for this month %* for January, or the automated DLQOR will perform this calculation.

Example 5. Calculating “% below MIN for This Month” (Daily Sampling)

If you are using the online fillable PDF or STEERS, this calculation is completed automatically.

Chinquapin Oaks PWS serves a population of 21,501, uses only groundwater sources, and disinfects with chloramines. According to Table 3, they must take 25 coliform samples a month and daily disinfectant residual samples. To meet these requirements, their operator set up the following sampling schedule:

Table Example 5. January Sampling Dates

				1 Thu 2x(C+DR)	2 Fri DR	3 Sat DR
4 Sun DR	5 Mon 2x(C+DR)	6 Tue C+DR	7 Wed C+DR	8 Thu 2x(C+DR)	9 Fri DR	10 Sat DR
11 Sun DR	12 Mon 2x(C+DR)	13 Tue C+DR	14 Wed C+DR	15 Thu 2x(C+DR)	16 Fri DR	17 Sat DR
18 Sun DR	19 Mon 2x(C+DR)	20 Tue C+DR	21 Wed C+DR	22 Thu 2x(C+DR)	23 Fri DR	24 Sat DR
25 Sun DR	26 Mon 2x(C+DR)	27 Tue C+DR	28 Wed C+DR	29 Thu C+DR	30 Fri DR	31 Sat DR

Key: C = coliform, DR = disinfectant residual, 2x = sample two locations

Assume that four of these sample’s results were less than the minimum disinfectant residual required under the rule.

What should be entered under “% below MIN for This Month” on the DLQOR?

Answer: Under this sampling schedule, Chinquapin Oaks PWS would collect 39 disinfectant residual samples in January; 25 that were taken with coliform samples and 14 that were tested for chloramine residual only. If only 4 of these samples were below the minimum residual, then, following the steps from Example 4, the percentage below the minimum residual is:

$$4 \text{ (samples below minimum this month)} / 39 \text{ (samples collected this month)} \times 100\% = \mathbf{10.3\%}$$

On the DLQOR, the Chinquapin Oaks PWS operator should enter “10.3%” under *Number below MIN for this month %* for January, or the automated DLQOR will perform this calculation.

Example 6. Calculating “Average of All Disinfectant Residuals for This Quarter”

If you are using the online fillable PDF or STEERS, this calculation is completed automatically.

In the first quarter of 2020, Sunshine MHP will report these average disinfectant residual levels:

For the month of:	January	February	March
The average residual was:	2.0 mg/L	6.0 mg/L	4.0 mg/L

What is the quarterly average?

Answer. This is another three-step calculation:

1. Add up the monthly averages: $(2.0 + 6.0 + 4.0) \text{ mg/L} = 12.0 \text{ mg/L}$.
2. Count the months in each quarter, there are **three**.
3. Now, divide the total of the monthly averages by the number of months in the quarter.

12.0 mg/L (sum of monthly averages) / 3 (months in the quarter) = **4.0 mg/L**

So Sunshine MHP’s PWS operator would write “4.0 mg/L” under “Average of all disinfectant residuals for this quarter” on the DLQOR for under the “Quarterly Summary and Certification” section of the form.

Section 5. State of Texas Environmental Electronic Reporting System

The State of Texas Environmental Electronic Reporting System (STEERS) provides a platform for on-line access to the Electronic Environmental (E2) Reporting System. You obtain a free STEERS account with which you have on-line access to add, update, renew and modify your accounts for a number of regulatory programs. STEERS enables secure submission of electronic data which satisfies requirements of EPA's Cross-Media Electronic Reporting Rule.

You may get telephone or e-mail assistance from the STEERS team for help with the STEERS program. Any issues you might have with a regulatory program are referred to the program area for assistance. STEERS staff also has access to the Internal Data Application (IDA) to re-set passwords for users whose accounts are locked.

Here are ways you can contact TCEQ about the STEERS program:

- Email STEERS@tceq.texas.gov
- Call the STEERS help line at 512-239-6925
- Go to TCEQ [STEERS](#)¹⁴ webpage
- Write to STEERS, MC 226; PO Box 13087; Austin, TX 78711-3087

What is the Electronic Environmental Reporting System?

The E2 Reporting System is a web-based application that allows the regulated community to electronically submit reports to TCEQ. The E2 system provides an alternative to submitting hand-written or paper-based reports that is faster, more efficient, and requires less processing for water systems and TCEQ. As a fully operational electronic reporting system, all of the necessary legal, security, and electronic signature functionalities have been included to serve as a completely paperless reporting system.

The E2 system allows water systems to submit the DLQOR electronically.

What are the benefits of E2 electronic reporting?

Electronic reporting provides the following benefits:

- Gives the user greater control over the quality of data flow.
- Provides greater assurance of receipt of required regulatory reporting documents.

¹⁴ www3.tceq.texas.gov/steers/

- Reduces reporting costs by offering a streamlined reporting method using readily available computer tools.
- Offers on-line availability of reports and their processing status.
- Improves reported data integrity and security; performs calculations accurately.
- Saves TCEQ costs by reducing, and better utilizing resources required for managing reports.
- Adds to the overall effectiveness of TCEQ program areas with faster response for data analyses, compliance assessment, and decision-making.

Who can I contact for more information about E2?

If you need help entering data, checking on your status/receipt of your data, or other assistance, please contact the TCEQ DLQOR coordinator.

Here are ways you can contact TCEQ about the STEERS program:

- Email ESubdata@tceq.texas.gov
- Call the DLQOR Program Coordinator at 512-239-4691
- Go to [TCEQ E2 webpage](#)¹⁵
- Write to the Program Coordinator, Public Drinking Water Section, MC 155; PO Box 13087; Austin, TX 78711-3087

All questions about login issues, technical problems, forgotten passwords, or setting up your STEERS account should be directed to the STEERS help line, 512-239-6925.

What can the E2 system do?

As a web-enabled system, the E2 system offers the following capabilities with respect to water system reports:

- **Ability to submit original or revised water system reports.** E2 allows water systems to either fill out the reports online or copy-and-paste reports from a water system's local data system.
- **Ability to view validation messages online.** All submissions can be validated to verify that they meet minimum criteria.
- **Ability to save partially completed reports.** If you do not finish filling out a report in one session, you can save the report and resume filling it out later. TCEQ will not review partially completed reports. You must submit the report for the data to be processed by TCEQ.
- **Ability to view and print previously submitted reports.** All submissions made through the E2 reporting system are saved for later retrieval.

¹⁵ www.tceq.texas.gov/drinkingwater/e2-reporting-system

- **Ability to monitor the status of all submissions.** You can log in to see the current processing status of all submissions (Pending, Processed, and Rejected). You also receive an email notification of the submission status.

The E2 system serves as an electronic filing cabinet, allowing your PWS to manage your own reporting to TCEQ and monitor the status of submitted reports.

To provide required security for all submitted information, access to the E2 system is restricted in the following ways:

- To have access to the E2 system you must have an authorized STEERS User Account.
- If you want to submit reports for a particular PWS you must be granted an association with that PWS.
- To submit the reports online in E2, the STEERS user account must have the "PDW System Sign and Submit" role.
- To certify water system reports you must fill out a STEERS Participation Agreement (SPA) and submit it to TCEQ online or via mail.

What are the minimum system requirements for E2?

Water Systems must be able to access TCEQ's E2 website through the internet. Typically, such access is available either through a dedicated connection (i.e. local area network) or a modem connection to an internet service provider.

To ensure that all the features of the E2 system are available, it is recommended that water systems use Microsoft Internet Explorer web browser (version 7.0 or higher) or Mozilla Firefox (version 10.0 or higher). The performance of the E2 system will vary based on the computer's internet connection speed, processor, operating system, and available memory. The minimum system configuration recommendation is as follows:

- Broadband internet connection or higher
- Pentium II processor or higher
- VGA or higher resolution monitor (at least 800 x 600 resolution)
- Microsoft Windows XP or higher
- 256 MB of RAM or higher
- Web Browser:
 - Designed for Microsoft Internet Explorer 9.0
 - Also works on other browsers
 - Microsoft Internet Explorer 7.0 or higher
 - Google Chrome
 - Mozilla Firefox

- Safari web browser was not tested and will most likely not work with the E2 interface
- PDF Reader for viewing of PDF files
- Printer for printing submission in report format and/or Copy of Record
- Email account

How do I submit a drinking water report using the E2-DWR System?

This section provides a brief overview of the E2 Drinking Water Report (E2-DWR) submission process. TCEQ also has [guidance about creating a STEERS account](#)¹⁶ that may help.

Abbreviated E2-DWR Submission Process for PWSs:

Step 1: Log in

Via STEERS, Water System User logs into the E2 Reporting System via the Internet with user ID, password, and an answer to a security question.

Step 2: Select water system and report type

Using the Water System tab Create New Reports screen, the user selects a water system from the drop-down menu to complete the following report:

Disinfectant Level Quarterly Operating Report (DLQOR)

Step 3: Enter data

The user prepares Water System report in accordance with reporting requirements, as specified using any of the submission methods below:

Online Data Entry for DLQOR

Step 4: Submit data in STEERS

Enter the STEERS password and certify the data entered.

Step 5: Submission receipt

E2 receives the file and issues a receipt of confirmation to the user on the screen. A separate receipt confirmation email will be automatically sent to the user. E2 verifies that the submitted file conforms to the specific data validation rules and business requirements defined for each of the reporting forms.

Step 6: Report records

Valid submissions can be viewed and printed at any time.

¹⁶ www.tceq.texas.gov/goto/setupsteers

How do I get started in STEERS?

1. Go to “Welcome to STEERS” webpage.

To gain access to the E2 Reporting System, a State of Texas Environmental Electronic Reporting System (STEERS) user account at the [STEERS](#)¹⁷ webpage must first be created.

From the STEERS webpage, click the “to create a new account” button to create a new STEERS user account.

The screenshot shows the STEERS website interface. At the top, there is a header for the Texas Commission on Environmental Quality (TCEQ) and a 'TCEQ Home' button. The main content area is titled 'Welcome to STEERS' and includes a 'Login' section with fields for 'ER Account Number' and 'Password'. A red box highlights the 'I need:' section, which contains three bullet points: 'my password', 'to create a new account', and 'to authorize another user's account'. Below this, there is a 'Find Out When STEERS Will Be Offline' section and a list of services under 'e-Permits/Registration' and 'e-Reporting'.

2. Initiate a STEERS user account.

To create a new STEERS user account, follow the instructions and click the “Create New Account” button to begin. Clicking the “Create New Account” button will open the Applicant Information screen. [A Guide to Creating an Account in STEERS E-Permitting](#)¹⁸ (RG-531a) has detailed guidance.

The screenshot shows the 'Create New Account' page on the STEERS website. The page is titled 'Welcome to the Online STEERS Participation Agreement (SPA)' and includes a 'Create New Account' button. The main content area is titled 'To create a new STEERS account:' and includes three numbered steps: 1. You need the list of program areas and/or Ids to add to the account. For instructions, please click on the Help button at the top of the page. 2. Press the Create New Account button below. 3. A STEERS account verification email will be sent to the address you provide when the account is created. You must use the verification link contained in this email to set your account password. Below this, there is a 'New STEERS Account Information:' section with several bullet points: 'New accounts are probationary and have limited access until STEERS receives a signed hard-copy SPA or the SPA is signed electronically using the account holder's Texas Drivers License. The signed SPA must be received to meet the EPA and legal requirements for electronic signatures.', 'If a signed SPA is not received by the STEERS team within: 15 days of the creation date, the account will be locked. 30 days of the creation date, the account will be archived.', 'Only one account may be created in a 5-minute interval and only 20 accounts may be created in a 24-hour period', 'Each STEERS account must have a unique e-mail address.', and 'A STEERS account is owned by an individual and not a company.' Below this, there is a 'Note:' section: 'To update an existing STEERS account, you must press Exit Application and log into STEERS.' At the bottom, there are two buttons: 'Create New Account' and 'Exit Application'.

¹⁷ www.tceq.texas.gov/goto/steers

¹⁸ www.tceq.texas.gov/assets/public/comm_exec/pubs/rg/rg-531a.pdf

3. Provide user profile information.

Enter the required user information as indicated by a red asterisk. After entering the user information, scroll to the bottom of the screen and click the “Next” button.

Please note the timer in the corner; you have 15 minutes to fill out each page before the system will automatically log you out. Make sure you have all the information required to fill out each form.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY Help >> Contact Us >> Logout >>

Applicant Information 14:45

STEEERS

Please enter the applicant's information below and press Next button to continue.
All fields marked with * are required.

Applicant Name

First Name: *

Middle Initial:

Last Name: *

Suffix: (Name suffix if applicable.)

Company Information

Company Name: * (Applicant's company.)

Title: * (Applicant's title.)

Contact Information

Email Address: * (Email must be unique.)

Phone Number: * (555 123 4567 Format.)

Extension: (Applicant's extension number.)

Country Code: (Only non-US phone numbers.)

Mailing Address

Address: * (Street address or PO Box.)

Extra Line: (Mail code or other information.)

City: *

State: Texas(TX) (Required for US Address)

ZIP Code: - (Required for US Address)

Country: * USA

Territory: (Required for non-US Address)

Foreign Postal: (Required for non-US Address)

4. Review user profile information.

The “Review Applicant Data” page will be displayed. Click “Next” to continue.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Help >> Contact Us >> Logout >>

Review Applicant Data 14:37

STEERS

Please review the applicant's information below. The data you entered has been validated and formatted to remove special characters. You may choose to change the data, continue account creation, or exit the application.

Click Next button to create your account. This process may take a couple of minutes, so please do not click the button more than once on this page.

Name: Joe Smith
Company Name: TCEQ
Title: OPERATOR
Email Address: USER@email.com
Phone Number: 512-239-4691
Mailing Address: 12100 PARK 35 CIRCLE
 AUSTIN TX TX 78753

Previous Next Exit Application

5. Provide user security questions.

On the “STEERS Account Security Question Update” page, select 5 security questions and provide the desired answers accordingly. Click “Save.”

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Help >> Contact Us >> Logout >>

STEERS Account Security Question Update User: ER001263 14:47

STEERS

An email with the new account number and a verification key was sent to you. You do not need the email until you have finished setting up your account. It will be used to set your account password and log into STEERS for the first time. To finish setting up your account, please select your security questions below and then add the program access that you need on the next page.

Set STEERS ER001263 Account Security Questions

In order to increase STEERS security, we are implementing a multi-factor verification system which requires 5 security questions. Please select and answer the following security questions. Answers must be between 3 and 20 characters. A * indicates an answered question on your account. If you wish to keep the current answer, leave the answer box blank.

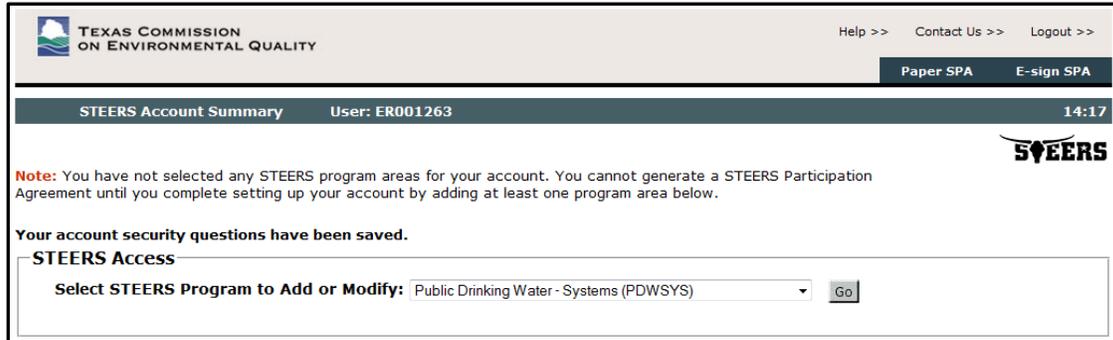
Question 1: - Select a Question -	Answer 1: <input type="text"/>
Question 2: - Select a Question -	Answer 2: <input type="text"/>
Question 3: - Select a Question -	Answer 3: <input type="text"/>
Question 4: - Select a Question -	Answer 4: <input type="text"/>
Question 5: - Select a Question -	Answer 5: <input type="text"/>

Save

6. Select STEERS Program.

Next, “Select STEERS Program to Add or Modify” for the selected user account from the drop-down box as follows:

Public Drinking Water - Systems (PDWSYS)



The screenshot shows the 'STEERS Account Summary' page for user 'ER001263'. The page header includes the Texas Commission on Environmental Quality logo and navigation links for 'Help >>', 'Contact Us >>', and 'Logout >>'. There are buttons for 'Paper SPA' and 'E-sign SPA'. The page title is 'STEERS Account Summary' and the user ID is 'ER001263'. A note states: 'Note: You have not selected any STEERS program areas for your account. You cannot generate a STEERS Participation Agreement until you complete setting up your account by adding at least one program area below.' Below the note, it says 'Your account security questions have been saved.' The 'STEERS Access' section contains a dropdown menu labeled 'Select STEERS Program to Add or Modify:' with 'Public Drinking Water - Systems (PDWSYS)' selected, and a 'Go' button.

7. Select Access Type and Authorization.

In the Program Status area, select the applicable “Access Type” from the drop-down box

The “Pick Role” options (and associated user rights) include

- **PDW System Read** (view only)
- **PDW System Edit** (view, create, delete, and modify)
- **PDW System Sign and Submit** (view, create, delete, modify, sign, and submit)

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Help >> Contact Us >> Logout >>

Modify IDs Account Summary

Add New PDWSYS IDs User: ER001295 13:59

STEERS

To add IDs to the account: select a role, relationship, an authorization and either the IDs to add or an account to copy. Press Add IDs or Copy IDs to continue. Press Cancel when done.

Program Status

Access Type: ** Pick Role **

Authorization
Select the appropriate relationship and authorization statement below.

What is the best description of your employer's relationship to the facility or facilities?

The Facility
 Parent Company
 Other

Who is authorizing the access?(Select one of the following)

I, Joe Smith, am applying for a read, edit, or preparer role and no specific company authorization is required.

-OR-

I, Joe Smith, am applying for a sign and submit role and have the authority to enter into this Agreement for the Company under the applicable standards referred to in 30 TAC 290.46(f)(4)(C).

I, Joe Smith, am applying for a sign and submit role and am authorized by the person below who does have the authority to enter into this Agreement for the Company under the applicable standards referred to in 30 TAC 290.46(f)(4)(C).

Authority: (Name of authorizing authority)

Title: (Title of authorizing authority)

Company: (Authorizing company)

Phone: (999-999-9999)

After selecting the Access Type, you must choose a type of Authorization. According to 30 TAC 290.46(f)(4)(C) reports must be signed by a licensed water works operator. The applicable standards that applied to signing the paper DLQOR also apply to electronic submittals (30 TAC 19.12(c)).

There are three options for Authorization in the “Who is authorizing the access?” area of STEERS:

1. I am applying and no specific company authorization is required.
 - a) If you chose Access Types “PDW System Read” or “PDW System Edit”, you can select this option. For a read, edit, or preparer role
2. I am applying for the “PDW Sign and Submit” role and have the authority.
 - a) If you chose Access Type Sign and Submit, you can choose Option 2 or Option 3
3. I am applying for the “PDW Sign and Submit” role and am authorized by the person with authority.
 - a) If you chose Access Type “PDW Sign and Submit, you can choose this option or option 2
 - b) Please enter in the information for the Authorizing Company

8. Add Public Drinking Water System IDs to your account.

Once you have determined your Access and Authorization levels, you can enter your PDW System ID. Enter the PDW System ID(s) as follows:

ID must be entered in the format **TX1234567**. If you receive an error stating the ID number is not recognized or is associated with another account, make sure you have added the **TX** to your PWS ID number.

You can also copy IDs from another account using the STEERS account ER number of another STEERS user.

PDWSYS IDs to Add:
You may enter each ID or copy IDs from another STEERS account.

Enter the PDW System ID(s) the account needs to access.

TX0010001					

Copy IDs from another account.
 The other account holder must be employed by the same company. An account number starts with ER and is followed by 6 numbers.

Account Number:

9. Confirm PWS selection.

On the confirmation/review page, click the “Confirm Add” button to save your selection.

The screenshot shows the 'Confirm Add New Public Drinking Water - Systems IDs' page. At the top, there is a navigation bar with 'Help >>', 'Contact Us >>', and 'Logout >>'. Below this is a secondary navigation bar with 'Modify IDs', 'Add IDs', and 'Account Summary'. The main header area displays 'Confirm Add New Public Drinking Water - Systems IDs' and 'User: ER001295' on the left, and '14:31' on the right. The STEERS logo is in the top right corner. A message states: 'You have requested to add the IDs listed below with the following access type and authorization information. If this is correct, please press [Confirm Add](#) at the bottom of the page to confirm the addition. Otherwise, press Cancel to return to the previous page.' Below this is a section titled 'Access and Authorization for IDs' with a yellow background. It lists: 'Access Type: PDW Systems Sign and Submit - view, create, delete, modify, sign, and submit', 'Relationship: The Facility', and an 'Authorization Statement' for Joe Smith. Another yellow section titled 'IDs found to be added:' contains a table with one entry: ID 'TX0010001' and Name/Loc 'CITY OF PALESTINE'. At the bottom are 'Confirm Add' and 'Cancel' buttons.

10. Note your user ID.

Please note that new STEERS user accounts will receive a “probation” status until the STEERS Participation Agreement (SPA) is received by TCEQ (either by mail or electronically).

Please write down or take note of your user ID (ex ER001263). This ID will be required to log into your STEERS/E2 account from now on. An email with this ID has also been sent to you.

The screenshot shows the 'Account Summary' page for user ER001263. The top navigation bar includes 'Help >>', 'Contact Us >>', and 'Logout >>'. The secondary navigation bar has 'Who Else Has Access?', 'Modify IDs', 'Add IDs', and 'Account Summary' (highlighted with a red box). The main header area shows 'Public Drinking Water - Systems ID List' and 'User: ER001263' on the left, and '14:50' on the right. The STEERS logo is in the top right corner. A red message states: 'Your PDWSYS access has been updated.' Below this, it says 'You have 1 IDs for PDWSYS' and '1-1 of 1 Records'. A table lists the ID 'TX0010007' for 'DOGWOOD SPRINGS WSC PLANT 1' with the role 'PDW Systems Sign and Submit Self', authorization status 'probation', and modified date '12/05/2014'. At the bottom are 'Add IDs', 'Modify IDs', and 'Cancel' buttons.

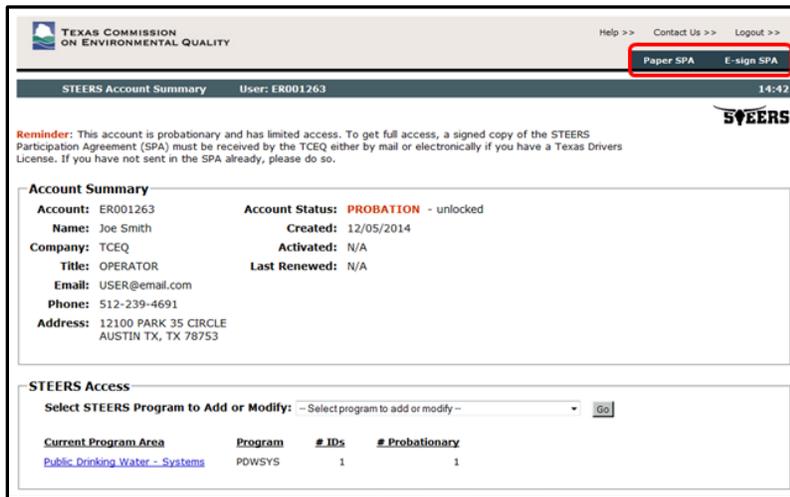
11. Access your STEERS Participation Agreement (SPA).

To access the STEERS Participation Agreement (SPA), click the “Account Summary” button on the top of the page. Once the STEERS Account Summary page is opened, the options for SPA are made available as follows:

Paper SPA – For mailing the SPA, click the “Paper SPA” button to access the STEERS Participation Agreement.

E-Sign SPA – For an online, electronically signed SPA, click the “E-sign SPA” button to access the STEERS Participation and sign via your Texas driver’s license.

Click on either “Paper SPA” or “E-sign SPA”.



12. Generate your SPA.

To submit via mail, click the “Paper SPA” button. Then click the “Generate Your SPA” to create the SPA printout to mail it to TCEQ.

Print (using your browser’s print button), sign, and mail the form to the STEERS address on the top of the form.

13. Print and mail your SPA (Option 1).

The printed STEERS Participation Agreement with original ink signatures may be:

Mailed to TCEQ, STEERS MC226, PO Box 13087, Austin TX 78711-3087

Delivered to TCEQ STEERS MC226, 12100 Park 35 Cir, Austin TX 78753

Account Information

Account:	ER001263
Name:	Joe Smith
Company:	TCEQ
Title:	OPERATOR
Email:	USER@email.com
Phone:	512-239-4691
Address:	12100 PARK 35 CIRCLE AUSTIN TX, TX 78753

I am applying to read, edit, prepare, and/or sign and submit information electronically for the sites below:

Public Drinking Water - Systems - Probation Ids					
ID	Name/Loc	Access	Relationship	Authorized By	Last Modified
TX0010007	DOGWOOD SPRINGS WSC PLANT 1	PDW Systems Sign and Submit	The Facility	Self	12/05/2014
Hash Code: (for STEERS use only)		3D1DA78FC09755C1B90C0D01CFD2447			

14. Submit your SPA electronically (Option 2).

For an online electronically signed SPA, click the “e-Sign SPA” button to access the STEERS Participation Agreement - E-sign page. Read through the information and then scroll to the bottom of the page. Use your Texas driver’s license information to electronically sign online. Be sure to check both boxes just above the e-sign button.

Sign Electronically with Your Texas Drivers License (TDL)

All fields are required. TCEQ will not save confidential data such as TDL, audit number, birthday, and partial social security number.

First Name: Your first name as it appears on your TDL.

Last Name: Your last name as it appears on your TDL.

Company Name:

Title:

TDL Number: 8 to 10-digit number

TDL Audit Number: The 11-, 16- or 20- digit number on your license.

SSN: Last 4 digits only

Date of Birth: mm/dd/yyyy

I, Joe Smith, have the authority to enter into this Agreement for TCEQ under the applicable standards listed below.

I, Joe Smith, certify that I am signing this document with my personal Texas Driver’s License information.

**Signature verification can take several minutes.
Please do not press the E-sign button more than once.**

Signature Authority Standards:

Public Drinking Water - Systems (PDWSYS)
see 30 TAC 290.46(f)(4)(C)

15. Get your STEERS account number and password.

Once you have either electronically submitted or printed out your SPA, you may exit out of the application. You have now created your STEERS account. You will now be able to sign into E2 without going through this process again.

You will receive an email stating that you have created a STEERS account and prompting you to create a password for E2. Follow the steps outlined in the email to create your password. Make sure to write down your ER account number (ex. ER001263) and password and keep them in a secure location. You will need your login ID and password to access E2 and submit electronic forms.

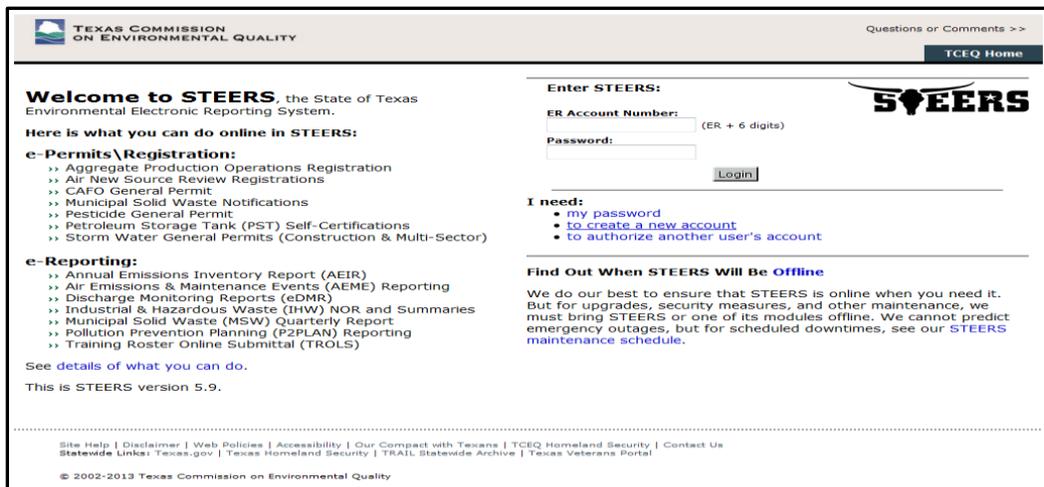
How do I use the E2-DWR online data entry form?

The online data entry forms currently available in TCEQ’s E2 Reporting System for the Disinfectant Level Quarterly Operating Report (DLQOR) are described in the section below.

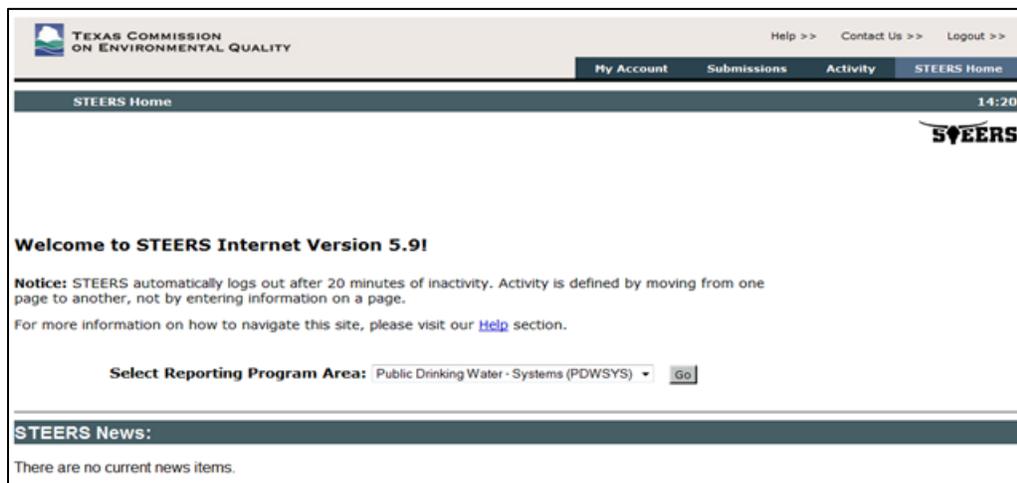
Please note that after 15 minutes of inactivity, you will be signed out of E2. Make sure to regularly save your progress.

The data entry process flow for the Disinfectant Level Quarterly Operating Report (DLQOR) online data entry form is as follows. Please read through each step carefully.

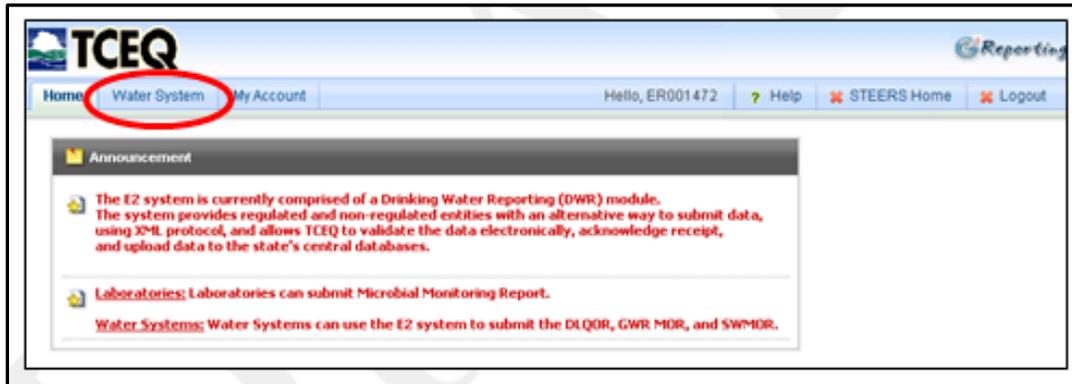
1A. Login to STEERS with a valid ER account number and password.



1B. Once logged into STEERS, select the Public Drinking Water Systems (PDWSYS) Program module menu option to access the E2 Reporting System.



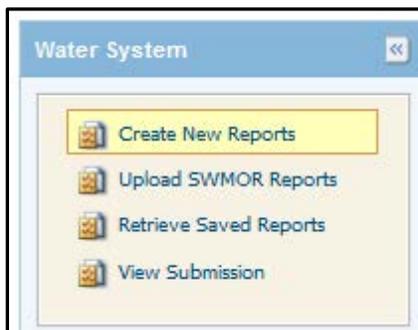
2. After E2 validates the user account via STEERS web services, you will see the E2 Home page. Click on the Water System tab.



3. For the PWS User, the Water System Reporting Module menu option is available as follows:

- Create New Reports
- Upload SWMOR Reports (This option is not yet functional. SWMORs cannot be submitted electronically at this time)
- Retrieved Saved Reports
- View Submissions

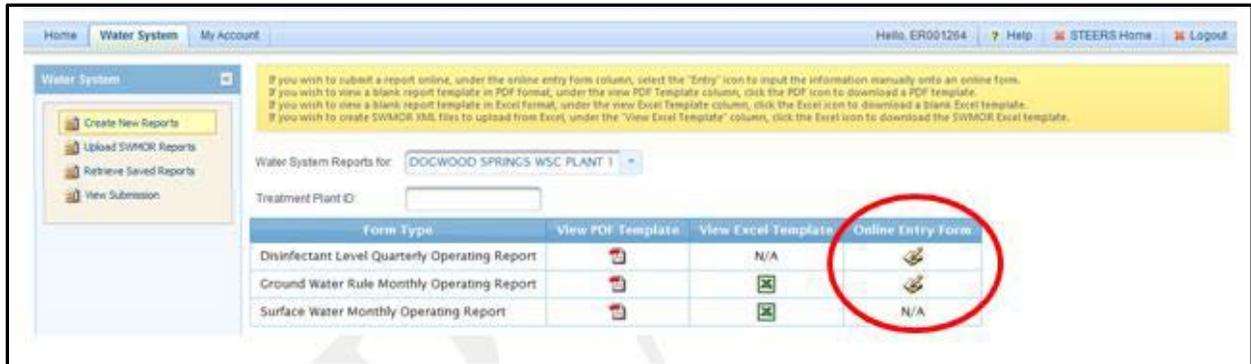
4. From the Water System Reporting Module, click the “Create New Reports” menu option.



5. Select a water system from the dropdown “associated” PWS list and click the “Online Data Entry” icon to begin online data entry form for the DLQOR.

Please note that on the “Create New Report” page for the Water System Reporting Module, the following options are also available:

View PDF Template, this presents a “blank” PDF form of DLQOR. Choosing this option will not electronically submit the DLQOR. This is merely a blank PDF that can be printed out or viewed for reference.



6. Once the “Online Data Entry” link is clicked, a pop-up window will be displayed as shown below. To proceed, click the “OK” button. This will open the DLQOR where you can add information.



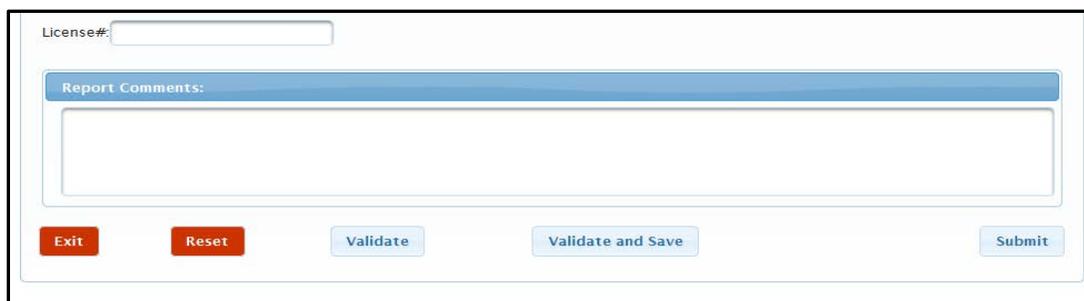
7. On the DLQOR Online Data Entry Form for the selected PWS (in step #5), the following info will be displayed on screen:

- PWS ID
- PWS Name

These fields are read-only and locked from editing.

Just like on the paper form, select the Quarter, Year, and Residual Type, then fill in the DLQOR form with the required disinfectant residual information. An example online data entry form for DLQOR is shown below:

Every data field on the data entry form (except “report comments”) is required for online submission.

The image shows a screenshot of a web-based data entry form. At the top left, there is a text input field labeled "License#:". Below this is a blue header bar with the text "Report Comments:". Underneath the header is a large, empty text area for entering comments. At the bottom of the form, there are five buttons: "Exit" (red), "Reset" (red), "Validate" (light blue), "Validate and Save" (light blue), and "Submit" (light blue).

Note: At any point during the data entry the user can click the “Validate” button to check that the information entered against the QA/QC data validations defined for DLQOR. At any time, the user may save the values that have been entered on the DLQOR online entry form and return later by clicking the “Exit” button.

Once the user has completed adding the data and the form is complete, the “Validate and Save” button must be clicked. This checks that the data is valid and saves the record to the report.

8. When the “Validate” or “Validate and Save” buttons are clicked, the following QA/QC data validations will run.

On the online data entry form, the validation logic in First/Second/Third Month Summary Result is as follows:

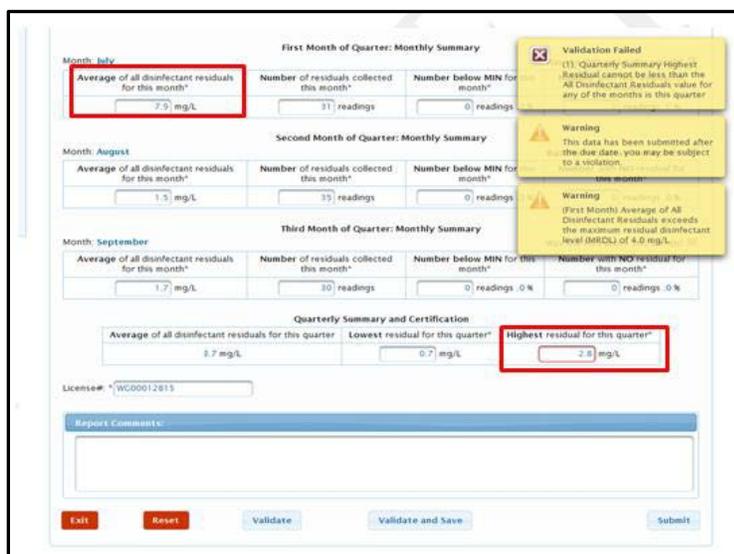
- Year starts from 2008.
- The four quarters are defined in a calendar year and DLQOR due dates) are as follows:
 - First Quarter: January/February/March (due on April 10).
 - Second Quarter: April/May/June (due on July 10).
 - Third Quarter: July/August/September (due on October 10).
 - Fourth Quarter: October/November/December (due on January 10).
- “Inactive” for the selected month will disable data entry of summary result.
- If disinfectant residuals is > 4.0 mg/L, system will display a warning message (but allow user to submit.)
- Use one decimal place (tenth place) for average disinfectant residual values.
- Use only whole numbers for number of disinfectant residual samples.
- For “Active” Month, the number of residual samples should be greater than zero.
- If zero is entered, the system will issue a warning “Number of residuals collected is less than required by rule.”
- Number of residuals below the minimum must be between the total number of residuals collected and the number of samples with no residuals.
- Auto-calculate percent at “number below MIN” and “number with NO residual”. The calculated percent will be rounded to 1 decimal place (e.g. 25.7%).

On the online data entry form, the validation logic in Quarterly Summary and Certification Result are as follows:

- If all quarters are “Inactive”, data entry of Quarterly Summary result will be disabled.
- Auto-calculate “weighted” Average Disinfectant and round to 2 decimal places (e.g. 2.75%). If the reading for "the Number with NO residual" is greater than 0 for any month in the quarter, the “Lowest” disinfectant residual for this quarter must be 0.
- If the reading for "the Number with NO residual" is 0 for any month in the quarter, the “Lowest” disinfectant residual for this quarter must be 0.
- If the reading for “the Number with NO residual” is 0 for ALL of the months in the quarter, the “Lowest” disinfectant residuals for this quarter must be greater than 0.
- The “Highest” disinfectant residual for this quarter cannot be less than any of the Average disinfectant residual values in the First / Second / Third Month.
- Type of “disinfectant used” determines the warning for the minimum allowable value for “Lowest” disinfectant residuals as follows:
 - Chlorine Free: 0.2 mg/L
 - Chloramines and Free Chlorine: 0.5 mg/L
- The warning for maximum allowable value for the “Highest” disinfectant residual is 4.0 mg/l.

Note: You may receive an error or warning message after you click the Validate button. Please make sure all your data is correct before you click the submit button. Examples of the error/warning messages are shown below.

Validation failed messages point out an inconsistency in the data that must be fixed before the DLQOR can be submitted.



This error message occurred because the highest residual for the quarter cannot be less than the average of any single month. The data would need to be corrected before submittal.

Warning messages do not prevent you from submitting the DLQOR, they merely point out potential issues/violations.

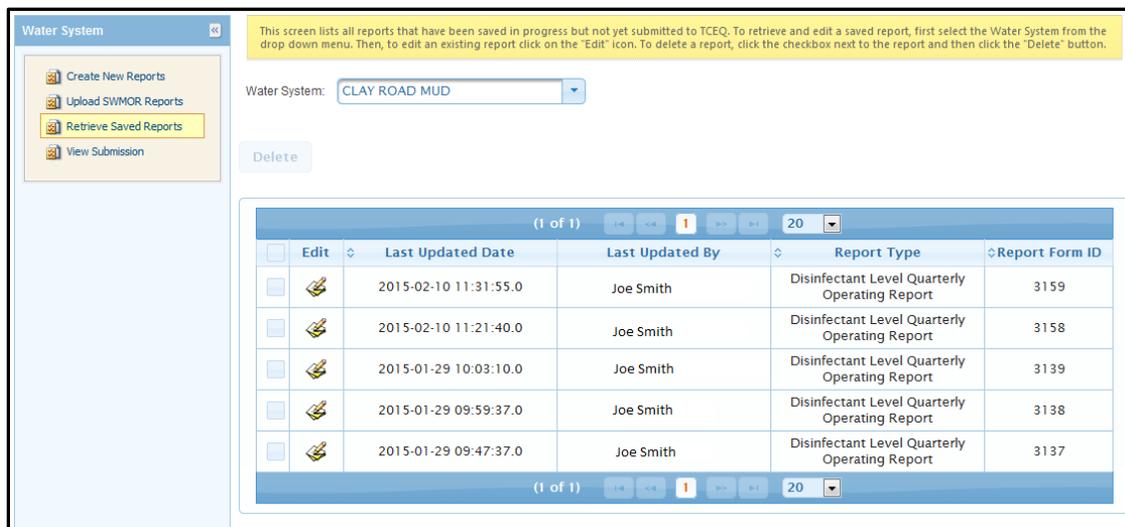
These warning messages do not indicate an error in data entry, only that the data entered may lead to a violation. No changes to the data would need to be made, and the form can be submitted as is.

The screenshot shows a report form for Report Form ID: 3083. It includes sections for 'First Month of Quarter: Monthly Summary' (July), 'Second Month of Quarter: Monthly Summary' (August), and 'Third Month of Quarter: Monthly Summary' (September). Each section contains input fields for 'Average of all disinfectant residuals for this month*', 'Number of residuals collected this month*', and 'Number below MIN for this month*'. A 'Quarterly Summary and Certification' section at the bottom provides a summary of the quarter's data. On the right side, there are four warning messages: 'Warning: This data has been submitted after the due date, you may be subject to a violation.', 'Warning: (First Month) Average of All Disinfectant Residuals exceeds the maximum residual disinfectant level (MRDL) of 4.0 mg/L.', 'Warning: The Highest residual for the quarter exceeds the MRDL of 4.0 mg/L.', and 'Validation Passed.'.

If you have “Sign and Submit” access, move on to **Step 9**.

If you chose the “System Edit” access type, click the Validate and Save Button when you have finished filling out the form. You can review the forms you have saved under the “Retrieve Saved Reports” menu option.

The screenshot shows a 'Water System' menu with four options: 'Create New Reports', 'Upload SWMOR Reports', 'Retrieve Saved Reports', and 'View Submission'. The 'Retrieve Saved Reports' option is highlighted with a red box.



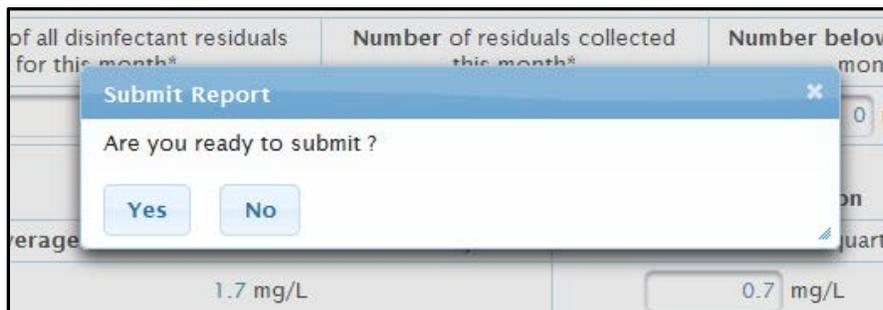
Choose the Water System from the drop-down menu to review the reports.

The authorized Sign and Submit user can access these reports and submit them through this same menu option.

If you are entering multiple DLQORs, once you have entered the information for one report, click Validate and Save and then click the Exit button. This will return you to the main Water System Reporting Module, choose another PWS from the drop-down menu and follow the same steps (Steps 3-8) for entering the DLQOR information.

Note: Saving reports is not the same as submitting them. You must follow the steps outlined below for your DLQOR to be submitted and received by TCEQ.

9. When you are ready to submit the data entered on the DLQOR form, click the “Submit” button. A pop-up window will be displayed as shown below. To proceed, click the “Yes” button. This will open the submit page.



Please take steps to ensure that you do not submit multiple DLQORs for the same system. Duplicate entries can lead to errors in submittal. If you believe you have accidentally submitted the wrong information for a system, submit a corrected copy, but add a note in the Report Comments field stating, “Revised Data” or “Correct Info.” The system will automatically accept the first submitted report as the correct data, adding a note will allow us to manually find the correct duplicate.

10. On the E2 submission page, enter your password and place a check mark on the “I Certify” checkbox to submit the DLQOR online. Click “Submit” to submit the report.

The screenshot shows a web form with the following elements:

- A yellow header bar with the text: "To preview the data being submitted, please click on the Back button to access the Preview button on the online data entry form."
- Step 1: "Enter Password:" with a password input field containing eight dots. A red box highlights this field.
- Step 2: "Certify Your Submission" with a certifier ID of "ER001264".
- A large text area containing a certification statement: "I certify that I am authorized under 20 Texas Administrative Code Subchapter 905.14 to sign this document and can provide documentation in proof of such authorization upon request. I certify under penalty of law that the documents and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."
 - I am the owner of the facility, account ID: ER001264.
 - I have the authority to sign this data on behalf of the facility, account ID: ER001264.
 - I have personally examined the foregoing information in its content and the content of any attachments, and based upon my personal knowledge and/or inquiry of any individual responsible for information contained herein, that this information is true, accurate, and complete.
 - I further certify that I have not violated any terms of my TCEQ, STEERS participation agreement and that I have no reason to believe that the confidentiality or use of my password has been compromised at any time.
 - I understand that use of my password constitutes an electronic signature legally equivalent to my written signature.
 - I also understand that the information I am submitting herein pertains to the implementation, operation and enforcement of a state and/or federal environmental program and must be true and complete to the best of my knowledge.
 - I am aware that criminal penalties may be imposed for statements or omissions that I know or have reason to believe are untrue or misleading.
 - I am knowingly and intentionally signing Public Drinking Water (PDW) Electronic Submittal.
 - My signature indicates that I am in agreement with the information on this form and authorize its submission to the TCEQ.
- A red box highlights a checkbox with the text: "I certify that the information above is true and accurate."
- Step 3: "Submit File" with "Submit" and "back" buttons.

The screenshot shows a blue dialog box titled "Submit Report" with the text: "Are you sure you are ready to submit?". Below the text are two buttons: "OK" and "Cancel".

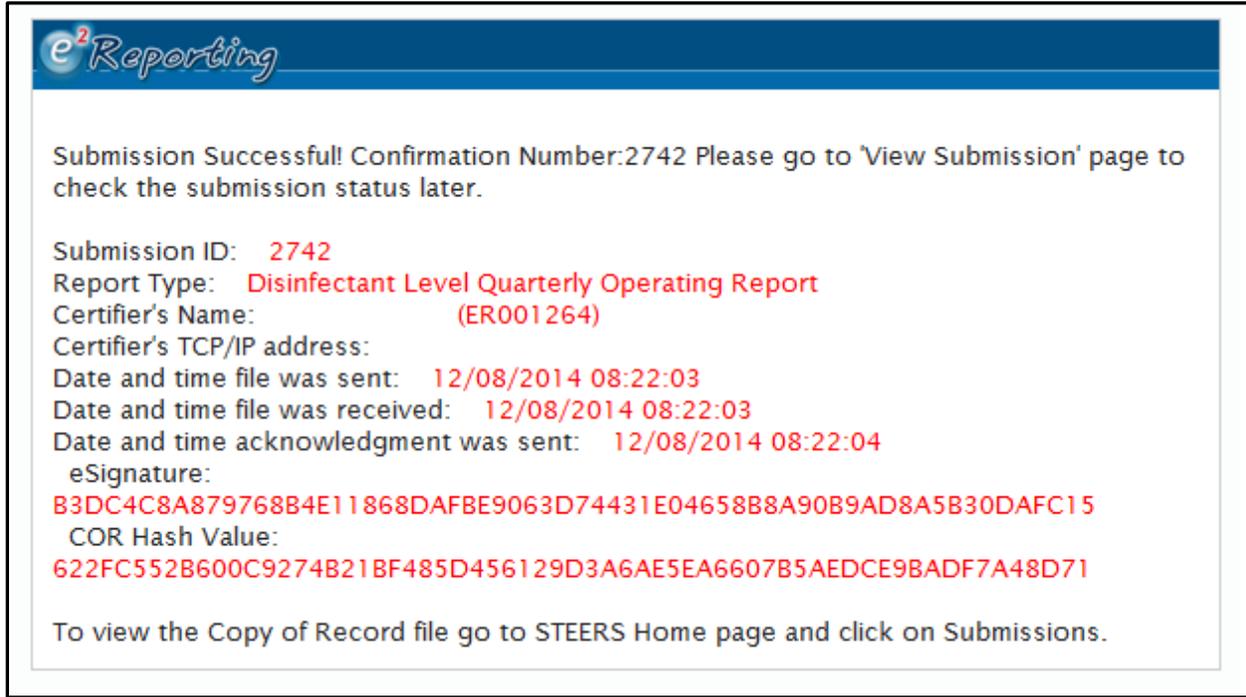
Once the “OK” button is clicked, E2 will call STEERS to validate the following:

- PWS user has provided the correct password
- PWS user has the correct role to “Sign and Submit” the report online

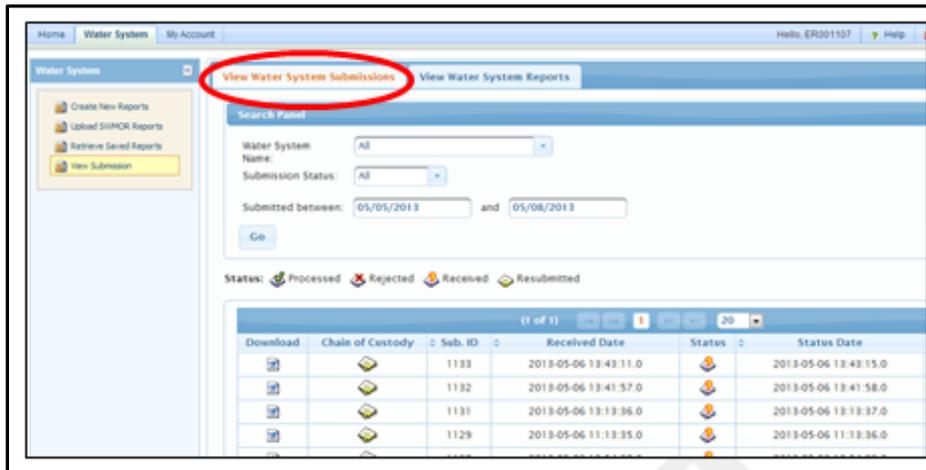
11. Upon successful submission, the receipt page is displayed online as shown below.

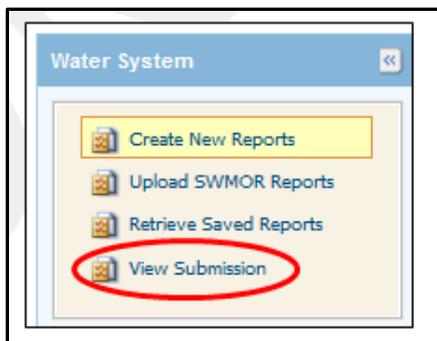
A “submission received” confirmation email will be sent to the submitter’s email address. Your report has not been successfully submitted until you receive this receipt.

You may want to print the receipt page or confirmation email, as proof of submittal of the DLQOR.



12. After the DLQOR is submitted in E2, it is available for review at any time under the “View Submission” menu option.





An example “View Submissions” page for the Water System Reports is shown below.

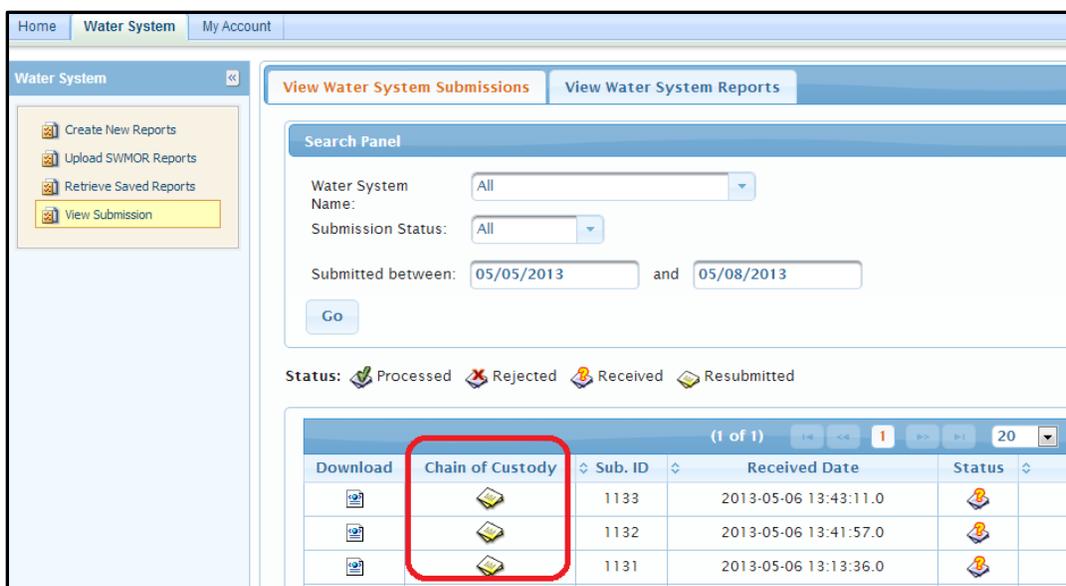
To find a submission, select/enter the desired search criteria as follows:

- Water System Name
- Submission Status
- Submission date (from / to)

If you notice that the data you have submitted is wrong, or you need to revise the data, you will need to resubmit a corrected copy. Follow the steps to submit a new DLQOR, but this time you will need to add a note to the **Report Comments** section of the DLQOR form.

Add information such as “Correct Info” or “Revised data” to the Report Comments Section. If you do not add this information, we will not know which of the two reports you submitted is the correct one. This could lead to a delay in the processing of your information.

13. View Chain of Custody.



The Chain of Custody can be obtained for the selected submission by clicking on the “Chain of Custody” icon.

The Chain of Custody includes date and time information along with a CRC Check.

Chain Of Custody	
Certifier's name:	null null
Certifier's TCP/IP address:	
Date and time the file was selected:	2012-08-03 11:11:00.0
Date and time the file was sent:	2012-08-03 11:10:59.0
Date and time the file was received:	2012-08-03 11:10:59.0
Date and time acknowledgement was sent:	2012-08-03 11:11:00.0
Submission ID:	30
CRC Check:	A checksum validation performed now verified that the current file on record with the E2 system is identical to the original submission.

14. View and print the submitted DLQOR report.

To view/print the submission in DLQOR Report Format (TCEQ FORM 20067), please follow the steps below:

1. Click the "View Water System Reports" tab
2. On the search panel, enter the desired PWS and reporting period criteria and click the "Go" button
3. On the search result section, click the "View" icon for the desired record. This will open a window containing the DLQOR report displaying the submitted sample results.



You can now print a copy of the submitted DLQOR for your records.

View Form

Print

Submission ID: 1132 PWS / TX1050039 / MOR

DISINFECTANT LEVEL QUARTERLY OPERATING REPORT (DLQOR)
FOR GROUNDWATER OR PURCHASED-WATER PUBLIC WATER SYSTEMS-ANY SIZE

Select Quarter: 2nd - Apr/May/Jun Select Year: 2012

PWS Name: WOODCREEK UTILITY CO 2 PWS ID: TX1050039

Type of Disinfectant Used in Distribution System*: Chloramines (Total)

* If you used chloramines and free chlorine at any time during this quarter, select both.

First Month of Quarter: Monthly Summary

Month: April Was the PWS active this month? YES NO

Average of all disinfectant residuals for this month	Number of residuals collected this month	Number below MIN for this month	Number with NO residual for this month
mg/L	readings	readings %	readings %

Second Month of Quarter: Monthly Summary

*Please note this page may not display properly in Firefox. If you have issues with the DLQOR form displaying properly, try to open and print the form using Google Chrome or Internet Explorer.

Section 6. Compliance

How do I determine if my PWS is in compliance with the minimum levels of disinfectant residuals?

If a PWS has more than 5 percent of samples collected that measure less than the minimum disinfectant residual concentration each month (“% below MIN” on the DLQOR) for any two consecutive months, it commits a “nonacute treatment technique violation” [30 TAC 290.110(f)]. Nonacute violations require public notice to customers (see “Public Notification”).

Example 7. Compliance with Minimum Levels of Disinfectant Residuals

Assume that February 2020 disinfectant residuals are much higher than the January levels for the Chinquapin Oaks PWS—out of 37 samples taken, only 2 are below the minimum residual level.

Do they need to notify their customers?

Answer: First, note that January’s entry for “% below MIN for This Month” was 10.3 percent (see Example 5). Then, calculate the value for February (see Example 4, to review this calculation).

So, for the second month in a row, Chinquapin Oaks PWS will have had less than the minimum residual disinfectant concentration in more than 5 percent of their samples. This is a “nonacute treatment technique violation.” The PWS must notify its customers as described in the following section. “Public Notification.”

How do I comply with the MRDL?

For a PWS to comply with the maximum residual disinfectant level (MRDL) for free chlorine or total chlorine, the running annual average of all distribution system samples must be less than 4.0 mg/L. (A “running” annual average is calculated at the end of each quarter, going back a year from that point. For example, at the end of 1st quarter 2020, the running annual average would include the data for the twelve-month period from April 2019 through March 2020.) Failure to comply will result in a nonacute violation, requiring public notification of customers as described in the following section, “Public Notification.”

If your PWS purchases water treated with chlorine dioxide additional monitoring requirements may apply. Learn more at the [Public Water Systems using Chlorine Dioxide or Ozone](#)¹⁹ webpage.

¹⁹ www.tceq.texas.gov/drinkingwater/chemicals/dbp/dbp_risk.html

What are the monitoring and reporting requirements?

Failure to monitor or failure to send in reports in accordance with 30 TAC 290.110(f) may result in a monitoring and reporting violation, requiring public notification of customers.

What violations are associated with disinfectant residuals?

In the event compliance issues arise, a PWS may violate rules in place to protect drinking water consumers. Table 5 provides some of the most common violations associated with disinfectant residuals. Please note, this list is limited to potential disinfectant residual level compliance associated with this guidance. The PWS is responsible for maintaining overall compliance with water system rules.

Table 5. Common Chlorine Disinfectant Residual Violations

<i>Violation</i>	<i>Violation Type</i>
If a PWS has more than 5% of samples collected that measure less than the minimum residual disinfectant concentration each month (“% below MIN” on the DLQOR) for any two consecutive months	Nonacute treatment technique
Failure to maintain the running annual average, at the end of any quarter, of monthly averages, less than 4.0 mg/L	Nonacute MRDL
Failure to conduct the disinfection residual monitoring tests is a monitoring violation	Monitoring and Reporting
Failure to report the disinfection residual monitoring tests (DLQOR) is a reporting violation	Monitoring and Reporting

Section 7. Public Notification

What public notifications are required?

Public notification is designed to protect public health. As a PWS, you are required by law to prepare and distribute public notification to consumers. The public notification process is tiered (Table 6) based on threat to public health and includes notification timelines and notification methods [30 TAC 290.122. Public Notification].

Table 6. Tiers of Public Notification

<i>Public Notice</i>	<i>Required Distribution Time</i>	<i>Notification Delivery Method</i>
Tier 1 - acute (Immediate Notice)	When a situation that poses an acute threat to public health, water systems are required to issue public notice as soon as possible, but no later than 24 hours after the violation or situation is identified.	Water systems must use media outlets such as television, radio, and newspapers, post their notice in public places, direct deliver a notice to their customers, or electronic delivery.
Tier 2 - nonacute (Notice as soon as possible)	When a situation with potential to have serious adverse effects on public health, water systems are required to issue public notice as soon as possible, but no later than 30 days after the violation or situation is identified.	Notice may be provided via the media, posting, direct delivery, water bills, mail, email, or electronic delivery.
Tier 3 - monitoring and reporting (Annual Notice)	When water systems violate a drinking water standard that does not have a direct impact on public health (for example, failing to take a required sample on time) the water system has up to one year to provide a notice of this situation to its customers.	Tier 3 public notice must be delivered the same way as Tier 2 public notice. The extra time gives water systems the opportunity to consolidate these notices and send them with Annual Consumer Confidence Reports.

What is the public notice language?

The specific method a water system uses to deliver a public notice of violation depends on how the customers it serves get their information. These methods are summarized in Table 6 and apply to community and noncommunity water systems. The required public notice language varies, depending on the severity of the potential health threat.

The [Public Notice Language for Drinking Water Compliance](#)²⁰ webpage contains current editable templates of language that PWSs must use to notify customers of violations and certificates of notification. *NOTE:* 30 TAC 290.122(f) requires the PWS to provide a copy of the public notice issued and a signed certificate of delivery to TCEQ within 10 days of issuance.

Each PN must include the following items as specified in 30 TAC 290.122(d).

- A clear and readily understandable explanation of the violation.
- The monitoring period the violation occurred.
- Description of potential adverse health effect (especially to vulnerable populations) and mandatory language, as applicable.
- Actions the PWS is taking to correct the violation and when it expects to return to compliance.
- Whether alternative drinking water sources should be used, and what other actions consumers should take, including when they should seek medical help, if known.
- Name, business address, and telephone number for consumers to contact the PWS owner, operator, or designee for additional information concerning the notice.
- Multilingual language, as appropriate. A multilingual PN must explain its importance or provide a telephone number or address where consumers can contact the PWS for a translated copy or assistance in the appropriate language.
- A statement encouraging the notice recipient to share the PN with other persons served. This statement is in italics on each template and should not be deleted or modified.

Specific violations related to chlorine disinfectant residual monitoring, analysis, and reporting are summarized in Table 7. Violation type code and violation name is provided in Table 7 to help the water system identify the appropriate public notice template on the [Public Notice Language for Drinking Water Compliance](#)²¹ webpage. **Note:** This table only summarizes chlorine disinfectant residual violations specified in 30 TAC 290.110. Other rule violations may apply.

²⁰ www.tceq.texas.gov/drinkingwater/public_notice.html

²¹ www.tceq.texas.gov/drinkingwater/public_notice.html

Table 7. Chlorine Disinfectant Residual Compliance Violations

<i>Public Notice Tier</i>	<i>Violation Type Code</i>	<i>Violation Name</i>	<i>Violation Description</i>
Tier 2	T5	BELOW MIN DISINFECT RES (CHLORINE/CHLORAMINE)	If a PWS has more than 5% of samples collected that measure less than the minimum residual disinfectant concentration each month (“% below MIN” on the DLQOR) for any two consecutive months
Tier 2	11	MRDL (CHLORINE/CHLORAMINE)	Failure to maintain the running annual average, at the end of any quarter, of monthly averages, less than 4.0 mg/L
Tier 3	27	MONITORING, ROUTINE (DBP), MAJOR (FAILURE TO SUBMIT DLQOR)	Failure to report the disinfection residual monitoring tests (DLQOR) is a reporting violation
Tier 3	27	MONITORING, ROUTINE (DBP), MINOR	Failure to conduct and/or report the disinfection residual monitoring tests is a monitoring violation

Appendix A.

Worksheets for Recording Disinfectant Residuals

There is a broad range in the number of sample results that different PWSs will need to track. In this appendix, we are providing several optional worksheets to help you keep track of disinfectant residual results for your PWS. These worksheets are designed to assist you; you **do not** need to send them in to us. The TCEQ [Disinfectant Residual Reporting](#)²² webpage has the worksheets available for print and download in PDF and Microsoft Word formats.

Worksheet 1. Disinfectant Residual Worksheet: Groundwater or Purchased-Water PWSs with Fewer Than 750 Customers

If your PWS serves fewer than 750 customers, this worksheet will help you keep track of all the disinfectant data you need to collect each month. There is space to write the disinfectant residual from your single coliform sample, plus repeats (if necessary). There is also space to write the disinfectant residual from each of your weekly distribution system disinfectant residual samples.

Worksheet 2. Disinfectant Residual Worksheet: Groundwater or Purchased Water PWSs with 750 to 4,900 Customers

If your PWS serves from 750 up to 4,900 customers, this worksheet will help you keep track of all the disinfectant data you need to collect each month. There is space to write the disinfectant residual from your single coliform sample, plus repeats (if necessary). There is also space to write the disinfectant residual from each of your daily distribution system disinfectant residual samples.

Worksheet 3. Daily Disinfectant Residuals: Any System Collecting Daily Disinfectant Residuals.

If your PWS collects daily disinfectant residuals, you can use this worksheet to keep track of the disinfectant data from your daily distribution system disinfectant residual samples. You will need to use another piece of paper to keep track of the results for disinfectant residuals that are collected at the same time as your coliform samples.

²² www.tceq.texas.gov/drinkingwater/disinfection/dl_qor

Disinfectant Residual Worksheet

Groundwater or Purchased Water Systems with Fewer than 750 Customers

This is an optional worksheet to keep track of the disinfectant residual samples collected with your coliform samples. Do NOT send this worksheet to us. Send your results to us on the DLQOR form.

Public Water System Information

PWS Name	PWS ID
Month	Year

Type of Disinfectant Used in Distribution System:

- Free chlorine (minimum = 0.2 mg/L)
 Chloramine (minimum = 0.5 mg/L)

Disinfectant Residual Collected with Coliform Sample(s)

Number	Sample Date	Sample Site	Disinfectant Residual (mg/L)	Less than MIN? (Y/N)	NO residual? (Y/N)
1					
2					
3					
4					
5					

Systems that serve up to 1,000 people must collect one coliform sample per month. The disinfectant should always be measured and recorded when a coliform sample is collected. If you receive a coliform positive (coliform found) sample, within 24 hours you must collect three repeat samples. This worksheet provides room to keep track of more than one sample. If you have multiple positive results, you will need another piece of paper.

Disinfectant Residual Collected in Distribution System

Number	Sample Date	Sample Site	Disinfectant Residual (mg/L)	Less than MIN? (Y/N)	NO residual? (Y/N)
1					
2					
3					
4					
5					

Groundwater and purchased water systems that serve up to 750 people must collect weekly distribution system disinfectant residual samples. This worksheet provides room to keep track of one sample a week for five weeks. If you collect more samples than that, you will need another piece of paper.

Monthly Summary

These are the numbers that you will need to report on the DLQOR form.

Average (mg/L)	Number (count)	Number below MIN (count)	Number with NO residual (count)	Lowest residual (mg/L)	Highest residual (mg/L)

Average of all disinfectant residuals for this month: Add up the disinfectant residual results from all samples and divide by the number of residual samples collected to determine the average for the month.

Number of residuals collected this month: Count all disinfectant residual samples collected with coliform samples, plus weekly distribution system residual samples.

Number below MIN for this month: Write in how many, if any, disinfectant residual samples that had less than 0.2 mg/L (if you use free chlorine) or less than 0.5 mg/L (if you use chloramines). The DLQOR form will automatically calculate the percentage (%).

Number with NO residual for this month: Write in how many, if any, disinfectant residual samples that had no disinfectant residual at all. The DLQOR form will automatically calculate the percentage (%).

Lowest residual for this quarter: Write in the lowest disinfectant residual from all your samples.

Highest residual for this quarter: Write in the highest disinfectant residual from all your samples.

Disinfectant Residual Worksheet

Groundwater or Purchased Water Systems with 750 to 4,900 Customers

This is an optional worksheet to keep track of the disinfectant residual samples collected with your coliform samples. Do NOT send this worksheet to us. Send your results to us on the DLQOR form.

Public Water System Information

PWS Name	PWS ID
Month	Year

Type of Disinfectant Used in Distribution System:

- Free chlorine (minimum = 0.2 mg/L) Chloramine (minimum = 0.5 mg/L)

Disinfectant Residual Collected with Coliform Sample(s)

Number	Sample Date	Sample Site	Disinfectant Residual (mg/L)	Less than MIN? (Y/N)	NO residual? (Y/N)
1					
2					
3					
4					
5					

Systems that serve up to 1,000 people must collect one coliform sample per month. The disinfectant should always be measured and recorded when a coliform sample is collected. If you receive a coliform positive (coliform found) sample, within 24 hours you must collect three repeat samples. This worksheet provides room to keep track of more than one sample. If you have multiple positive results, you will need another piece of paper.

Disinfectant Residual Collected in Distribution System

Number	Sample Date	Sample Site	Disinfectant Residual (mg/L)	Less than MIN? (Y/N)	NO residual? (Y/N)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					

Groundwater and purchased water systems that serve 751 or more people must collect one disinfectant residual sample daily. The worksheet provides room to keep track of 31 days. If you collect more than 31 in a month, you will need another piece of paper.

Monthly Summary

These are the numbers that you will need to report on the DLQOR form.

Number (count)	Average (mg/L)	Number below MIN (count)	Number with NO residual (count)	Lowest residual (mg/L)	Highest residual (mg/L)

Number of residuals collected this month: Count all disinfectant samples collected with coliform samples, plus daily distribution system samples.

Average of all disinfectant residuals for this month: Add up the disinfectant residual results from all samples and divide by the number of samples collected to determine the average for the month.

Number below MIN for this month: Write in the number of samples that had less than 0.2 mg/L (if you use free chlorine) or less than 0.5 mg/L (if you use chloramines). The DLQOR form will automatically calculate the percentage (%).

Number with NO residual for this month: Write in the number of samples that had no disinfectant residual at all. The DLQOR form will automatically calculate the percentage (%).

Lowest residual for this quarter: Write in the lowest disinfectant residual from all your samples.

Highest residual for this quarter: Write in the highest disinfectant residual from all your samples.

Disinfectant Residual Worksheet

Any Public Water System Collecting Daily Disinfectant Residuals

This is an optional worksheet to keep track of the disinfectant residual samples collected with your coliform samples. Do NOT send this worksheet to us. Send your results to us on the DLOOR form.

Public Water System Information

PWS Name	PWS ID
Month	Year

Type of Disinfectant Used in Distribution System:

- Free chlorine (minimum = 0.2 mg/L)
 Chloramine (minimum = 0.5 mg/L)

Disinfectant Residual Collected Daily

Sample Number	Sample Date	Sample Site	Disinfectant Residual (mg/L)	Less than MIN? (Y/N)	NO residual? (Y/N)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					

Monthly Summary

These are the numbers that you will need to report on the DLOOR form.

Average (mg/L)	Number (count)	Number below MIN (count)	Number with NO residual (count)	Lowest residual (mg/L)	Highest residual (mg/L)

Average of all disinfectant residuals for this month: Add up the disinfectant residual results from all samples and divide by the number of residual samples collected to determine the average for the month.

Number of residuals collected this month: Count all disinfectant residual samples collected.

Number below MIN for this month: Write in how many, if any, residual samples that had less than 0.2 mg/L (if you use free chlorine) or less than 0.5 mg/L (if you use chloramines). The DLOOR form will automatically calculate the percentage (%).

Number with NO residual for this month: Write in how many, if any, disinfectant residual samples that had no disinfectant residual at all. The DLOOR form will automatically calculate the percentage (%).

Lowest residual for this quarter: Write in the lowest disinfectant residual from all your samples.

Highest residual for this quarter: Write in the highest disinfectant residual from all your samples.

Appendix B.

The DLQOR Instructions, Form, and Sample

All PWSs that use groundwater or purchased water must keep track of the levels of disinfectant residuals in the distribution system and report them on the Disinfectant Level Quarterly Operating Report (DLQOR Form 20067). There is one exception: transient noncommunity PWSs must monitor and record the sample results but are not required to submit the DLQOR form to TCEQ.

The TCEQ [Disinfectant Residual Reporting](#)²³ webpage has a fillable PDF file of the DLQOR that can be completed online and printed for mail in submission. Instructions for completing the DLQOR are also available on the webpage.

This appendix contains:

1. Instructions for completing the DLQOR.
2. A blank copy of the form.

²³ www.tceq.texas.gov/drinkingwater/disinfection/dl_qor

Instructions for Completing the DLQOR (TCEQ-20067)

These instructions are provided for the use of the automated fillable PDF of the Disinfectant Level Quarterly Operating Report (DLQOR). The form and disinfectant residual reporting guidance (RG-407) are available on the [Disinfectant Residual Reporting](#) webpage. PLEASE NOTE THERE IS NO LONGER A SUBMIT BY E-MAIL OPTION ON THE AUTOMATED FORM.

After completing the report, simply print and sign two copies. Keep one for your system records and mail the other to TCEQ. You must submit a hard copy of the report with an original signature by mail for your system to receive credit. TCEQ does not accept fax or e-mail copies of the DLQOR.

1. Use the drop-down lists to select the Quarter and enter the Year of the monitoring period you are reporting.
2. Enter the PWS Name — not the name of your utility, but the name of the public water system.
3. Enter your PWS ID. This is a 7-digit code that begins with the 3-digit code (001 through 254) for your county. If you do not enter the correct code, you will not receive proper credit for your reported data.
4. Use the drop-down menu to select the Type of Disinfectant Used in the Distribution System: Chlorine (Free), Chloramines (Total), or Both (Free and Total Chlorine). Select Both if you normally use chloramines and shocked with free chlorine any time during the quarter.
5. For each month of the quarter for the Monthly Summary: Use the drop-down menu to select the correct Month. Select the Was the PWS active this month? button to indicate if your system was active during the month. The default is set to YES.
6. Enter the Average of all disinfectant residuals for the month in milligrams per liter (mg/L).
7. Enter the total Number of residuals collected for the month as a sample count.
8. Enter the Number of residual readings that were below the minimum for the month. The minimum residual required is 0.2 mg/L for a system using free chlorine or 0.5 mg/L for chloramines (total chlorine). The % percentage will be calculated for you automatically.
9. Enter the Number of NO residuals, the readings for the month that had no residual. The % percentage will be calculated for you automatically.
10. For the Quarterly Summary the Average of all disinfectant residuals for this quarter will be calculated automatically in mg/L. You don't need to enter it.
11. For the Quarterly Summary enter the LOWEST disinfectant residual for this quarter in mg/L. If you had one or more samples with NO residual enter 0.0 mg/L.
12. For the Quarterly Summary enter the HIGHEST disinfectant residual for this quarter in mg/L.
13. For the Certification, use the check box to agree with the certification statement. Enter your Name, Title, and Phone Number and Email (optional).
14. Enter your full Water Operator License Number (begins with W + alphabetical letter (e.g. D, G, O, S) + 7 numerals)—not your Social Security Number. If you don't remember your license number, look it up online at [Search Licensing Information](#).
15. For the Signature, there are two options: you may create a digital signature in the form or sign the printed DLQOR. For the Date select the date or write in the date the DLQOR is signed.
16. Print and sign two copies of the report. Keep one for your records and mail the other to TCEQ.

Mail the signed DLQOR to TCEQ. Do not FAX or EMAIL the DLQOR to TCEQ.

Certified Mail Address	First-Class Mail Address
TCEQ / PDW MC-155, Attn: DLQOR 12100 Park 35 Circle, Bldg. F Austin TX 78753-1808	TCEQ / PDW MC-155, Attn: DLQOR P.O. Box 13087 Austin TX 78711-3087

DLQOR Reporting Schedule

Quarter	Months in Quarter	Due Date
1	January, February, March	April 10
2	April, May, June	July 10
3	July, August, September	October 10
4	October, November, December	January 10

¹ www.tceq.texas.gov/assets/public/permitting/watersupply/pdw/dlqor/form-20067.pdf
² www.tceq.texas.gov/drinkingwater/disinfection/dl_qor
³ www2.tceq.texas.gov/lic_dpa/index.cfm

CLEAR FORM

PWS_ _MR_ _DLOOR

Disinfectant Level Quarterly Operating Report (DLQOR)

For All Groundwater or Purchased-Water Public Water Systems

Select Quarter:	Choose Quarter ▾	Year:	
PWS Name:		PWS ID:	
Type of Disinfectant Used in Distribution System:	Choose Disinfection Type ▾		

First Month of Quarter: Monthly Summary

Month: Choose Month ▾ Was the PWS active this month? Yes No

Average of all disinfectant residuals:	Number of residuals collected:	Number of residuals below minimum:	Number of NO residuals:
mg/L	Count	Readings %	Readings %

Second Month of Quarter: Monthly Summary

Month: Choose Month ▾ Was the PWS active this month? Yes No

Average of all disinfectant residuals:	Number of residuals collected:	Number of residuals below minimum:	Number of NO residuals:
mg/L	Count	Readings %	Readings %

Third Month of Quarter: Monthly Summary

Month: Choose Month ▾ Was the PWS active this month? Yes No

Average of all disinfectant residuals:	Number of residuals collected:	Number of residuals below minimum:	Number of NO residuals:
mg/L	Count	Readings %	Readings %

Quarterly Summary and Certification

Average of all disinfectant residuals for this quarter	LOWEST disinfectant residual for this quarter	HIGHEST disinfectant residual for this quarter
0.0 mg/L	mg/L	mg/L

I certify that I am familiar with the information contained in this report and that, to the best of my knowledge, the information is true, complete, and accurate.

Name: Title:

Water Operator License Number: Phone Number and Email:

Signature: Date:

Complete this form for the previous quarter at the beginning of April, July, October, and January; and submit in time for it to be received by the TCEQ by the 10th of the month. Always print and sign form and keep a copy with your records for TCEQ review during onsite investigations.

Sign the DLQOR and mail to:
 Certified Mail: TCEQ/DWSS MC-155, Attn: DLQOR, 12100 Park 35 Circle, Bldg F, Austin, TX 78753-1808
 Regular Mail: TCEQ/DWSS MC-155, Attn: DLQOR, P.O. Box 13087, Austin, TX 78711-3087

TCEQ-20067 (Revised 03/2021)

Print Form