TCEQ Drinking Water Laboratory Approval Form

Introduction

General Requirements

Public Water System (PWS) Laboratories, Commercial Laboratories, Water Treatment Facilities, Operators, or Operating Companies that intend to analyze water samples for their own or others PWSs must complete this form and meet these requirements. If a PWS sends approved-lab analytes to a commercial lab, that commercial lab must be TCEQ-approved in the appropriate analysis. Evidence of the commercial lab's approval will be attached to the water system's monitoring plan.

Frequency of Submission

A Drinking Water Lab Approval Form should be completed upon an initial request for approval, renewal of existing approval prior to "valid to" date on current approval or if changes occur to the analytes, instruments or methods used within the laboratory.

Procedure

For a laboratory and/or a PWS lab to be approved, the laboratory must complete the Drinking Water Laboratory Approval Form, indicating the methods and quality control procedures used at the laboratory. All Drinking Water Lab Approval Requirements must be met. The form must be signed by the individual with responsibility for laboratory operations. The TCEQ will review these forms upon receipt and contact the laboratory if the form is incomplete or if the methods noted are not acceptable. The laboratory will be sent a printout indicating whether approval has been granted. There is no fee associated with commercial laboratory approval.

Analytes Run by Other Labs

Utilities may have approved lab analytes run by commercial labs or other water system labs if that outside lab is approved by the TCEQ. The outside lab should give the water utility a copy of their Lab Approval Form, any NELAP certifications or Proficiency Testing Studies so the utility can attach it to their Monitoring Plan.

Approved-Lab Analytes

PWSs must run a variety of samples at a laboratory approved by the TCEQ. Most utilities will get their lab approved and analyze these samples at their own lab. The approved lab analytes are as follows:

- Alkalinity
- Calcium
- Chlorine Dioxide
- Chlorite (point-of-entry)
- Conductivity
- Silica
- Disinfectant Residual (Free or Total)
- Hardness (as CaCO3)
- Orthophosphate
- pH
- Turbidity
- Temperature
- Total Organic Carbon (TOC)
- Ultraviolet Light Absorbance at 254 nm (UV254)

Accredited-Lab Analytes

PWSs must have the following analyses performed by a lab accredited by the TCEQ:

- Bacteriological (total coliform & fecal coliform)
- Bromate
- Chlorite (distribution system - monthly)
- Copper
- Haloacetic acids (HAA5)
- Inorganic Chemicals (IOC)
- Lead
- Magnesium
- Radiochemicals
- Synthetic Organic Chemicals (SOC)
- Trihalomethanes (TTHM)
- Volatile Organic Chemicals (VOC)

Except for the bacteriological samples, lead and copper samples, bromate and monthly chlorite samples, all the accredited-lab analyte samples used for compliance under the Safe Drinking Water Act are collected by the TCEQ's Drinking Water Compliance Sampling contractor. The contractor delivers the samples to the Texas Department of State Health Services (DSHS) or the Lower Colorado River Authority (LCRA) laboratories for analysis. Only these two laboratories are permitted to analyze samples for compliance purposes. Any accredited laboratory may run accredited lab analytes, but not for compliance purposes (ie. For process control, research, etc.).

Form Instructions

Multiple drop-down menus are utilized for this form. If you need assistance with filling in this form, please contact the Laboratory Approval Coordinator by calling the TCEQ Water Supply Division at 512-239-4691 and requesting to speak with Lab Approval.

Per Column on Analytes and Methods Table:

Analyte

Analyte is the chemical or value that you are analyzing. The heading of this column does not read "chemicals" because temperature, UV254, and turbidity are not chemicals. **Please Note:** The analytes that are listed on the form include all of those that can be analyzed at an approved lab. Your laboratory may not wish to analyze for all the analytes on the list.

Analytical Method

Use the dropdown boxes under "Analytical Method" to fill in the method that you use to measure for each analyte (for example: Standard Method Cl-4500D). If you are not required to run one or more of the tests, select "Not Required" next to the tests that you do not run. You must use EPA Approved Reference Methods, see Table 1 at the end of this document for reference.[1]

Instrument Name

Enter the make and model number of the instrument or test kit that you use to un the test in this blank (for example: Hach 1720D).

Accuracy

Report the number of decimal places to which you can accurately report the value for each analyte. Some analytes have required accuracy levels, see Table 1 at the end of this document.

Calibration Frequency

This field is for you to report the frequency with which you calibrate or verify the accuracy of your equipment. Some analytes have a minimum calibration requirement, see Table 1 at the end of this document.[2]

Calibration Method

This is for you to report the method with which you calibrate or verify the accuracy of your equipment. For some methods, the TCEQ has rules about calibration or verification of accuracy. These include pH meters, turbidimeters, chemical disinfectant residual analyzers, and UV light disinfection analyzers.[2]

PT Study

If your lab or system test for point-of-entry chlorite, the lab or system must send a copy of an acceptable Proficiency Testing Studies result within 6 months of laboratory approval form submission. Results will need to be submitted along with the laboratory approval form.

Submitting the Form and related Documentation

Use any of the following methods to submit the Lab Approval Form to TCEQ.

Mail	**Email**	**Fax**
TCEQ Drinking Water Standards Section MC-155 Attn: Laboratory Approval Coordinator PO Box 13087 Austin TX 78711-3087	pwschem@tceq.texas.gov	Attn: Laboratory Approval Coordinator 512-239-6050

[1] These rules can be found in the Texas Administrative Code, specifically in 290.117(h)(2), 290.119(a), 290.119(b), 290.121(b)(4), 290.121(b)(3).

[2] These rules can be found in the Texas Administrative Code, specifically in 30 TAC §290.46(s)(2).

Drinking Water Lab Approval Form

Analytes and Methods:

Use the instructions on the previous page to fill in this table.

Analyte	Analytical Method	Instrument Name	Accuracy	Calibration Frequency	Calibration Method	PT Study
Point-of-Entry Chlorite[1]			± mg/L			
Turbidity			± NTU			[redacted]
pH			± pH unit			
Temperature			± °C			
TOC			± mg/L			
UV_{254}			± cm^{-1}			
Alkalinity			± mg/L			
Free Chlorine[2]			± mg/L			
Total Chlorine[2]			± mg/L			
Chlorine Dioxide[3]			± mg/L			
Calcium[4]			± mg/L			
Orthophosphate[4]			± mg/L			
Conductivity[4]			± µmho/cm			
Silica[4]			± mg/L			
Hardness (as $CaCO_3$)[5]			± mg/L			

For Analytes Sent to an Outside Lab:

If there are samples that are sent to an outside lab, enter the analyte and lab or entity name where the samples are sent into the table below. Include as an attachment either an Approval Form, NELAP Certification or Proficiency Study from that lab for that analyte.

Analyte	Lab/Entity Name

[1] Proficiency Testing result required for Point-of-entry Chlorite approval dated within 6 months of approval submission.

[2] If your system has chloraminated water (the water has a total chlorine residual) at any point, a Nitrification Action Plan (NAP) is required. The analytical requirements for chloramine effectiveness (monochloramine, free ammonia, nitrate, and nitrite), required by §290.110(d), can be documented in your NAP. You can download the TCEQ's NAP template and document the analytical methods used for monitoring chloramine effectiveness on the List of Analytical Methods Sheet. The NAP template is available for download at https://www.tceq.texas.gov/drinkingwater/disinfection/nitrification.html

[3] According to §290.119(a)(2), if your system uses chlorine dioxide you must list the method used to measure these analytes.

[4] Required only if your system is reporting water quality parameters for Lead and Copper Rule.

[5] SM 2340 B for hardness can be approved if the lab is approved for calcium and accredited for magnesium in the drinking water matrix.

Contact Information:

Fill in the Contact information for the entity seeking lab approval. A signature is required for approval.

Laboratory, PWS, or Plant name:	
PWSID (TCEQ Issued):	
Lab ID Number (if applicable)[1]:	
Lab Address:	
City:	
Zip:	
Lab Phone:	
Lab E-mail:	

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

Signature:	
Your Title:	
Date Form Completed:	

[1] If this is the first time for the lab or entity to apply for approval, then it will not have a Lab ID Number. Enter "None" if this is the first time to seek approval for this lab or entity.

Table 1: Approved Methods, Calibration Frequency and Minimum Accuracy

Analyte	Minimum Calibration Frequency	Approved Calibration Methods	Minimum Accuracy	EPA Methods	ASTM Methods	SM Methods	Other
Point-of-entry Chlorite			±0.05 mg/L	300.0 Rev 2.1, 300.1 Rev 1.0, 317.0 Rev 2.0, 326.0 Rev 1.0, 327.0 Rev 1.1	D6581-08A, D6581-08B	4500-ClO2 E, 4500-ClO2 E-00	Palintest ChlordioX Plus
Turbidity	**Bench top:** calibrate at least once every 90 days **On-line:** calibrate at least once every 90 days; check at least once every week	**Bench top:** Primary Standards **On-line:** Primary Standards, Secondary Standards, calibration confirmation device or compare results with a properly calibrated bench top unit	±0.05 NTU	180.1 Rev 2.0		2130 B, 2130 B-01	Hach Co: 10133 Rev 2.0, Hach 10258, GLI: Method 2, Mitchell M5271, Mitchell M5331, AMI Turbiwell, Orion AQ4500
pH	**Bench top:** calibrate at least once daily **On-line:** calibrate at least once every 30 days; check at least once every week	**Bench top:** check with at least one buffer each time a series of samples is run or with manufacturers specifications **On-line:** check with a primary standard or compare results with a properly calibrated bench top unit	±0.1 pH unit	150.1, 150.2, 150.3	D1293-12, D1293-95, D1293-99, D1293-18	4500-H+ B, 4500-H+ B-00	
Temperature			±0.5°C			2550; 2550-00	
TOC				415.3 Rev 1.2		5310 B, 5310 B-00, 5310 C, 5310 C-00, 5310 D, 5310 D-00	Hach 10267
UV254				415.3 Rev 1.2		5910 B, 5910 B-00	

Analyte	Minimum Calibration Frequency	Approved Calibration Methods	Minimum Accuracy	EPA Methods	ASTM Methods	SM Methods	Other
Alkalinity					D1067-02B, D1067-06B, D1067-11B, D1067-92B	2320 B, 2320 B-97	USGS: I-1030-85
Free Chlorine	**Manual:** check at least once every 90 days **Continuous:** check at least once every 7 days; calibrate if not within 15% of expected result	Check with chlorine solution of known concentration (Primary Standards) or by comparing results from the on-line analyzer with the result of approved bench top method	±0.1 mg/L	334.0[1]	D99-003, D1253-03, D1253-08, D1253-14, D1253-86	4500-Cl D, 4500-Cl D-00, 4500-Cl F, 4500-Cl F-00, 4500-Cl G, 4500-Cl G-00, 4500-Cl H, 4500-Cl H-00	Hach Co.: 10241 Rev 1.2, Hach Co.: 10260 Rev 1.0, Palintest ChloroSense
Total Chlorine	**Manual:** check at least once every 90 days **Continuous:** check at least once every 7 days; calibrate if not within 15% of expected result	Check with chlorine solution of known concentration (Primary Standards) or by comparing results from the on-line analyzer with the result of approved bench top method	±0.1 mg/L	EPA method 127, 334.0[1]	D1253-03, D1253-08, D1253-14, D1253-86	4500-Cl D, 4500-Cl D-00, 4500-Cl E, 4500-Cl E-00, 4500-Cl F, 4500-Cl F-00, 4500-Cl G, 4500-Cl G-00, 4500-Cl I, 4500-Cl I-00	Hach Co.: 10260 Rev 1.0, Palintest ChloroSense
Chlorine Dioxide			±0.05 mg/L	327.0 Rev 1.1		4500-ClO2 C, 4500-ClO2 D, 4500-ClO2 E, 4500-ClO2 E-00	Palintest ChlordioX Plus

[1]If your system uses an online Chlorine analyzer that does not utilize an EPA approved method, you must submit a Method 334.0 Initial Demonstration of Capability form.

Analyte	Minimum Calibration Frequency	Approved Calibration Methods	Minimum Accuracy	EPA Methods	ASTM Methods	SM Methods	Other
Calcium				200.5 Rev 4.2, 200.7 Rev 4.4	D511-03A, D511-03B, D511-09A, D511-09B, D511-14A, D511-14B, D511-93A, D511-93B, D6919-03, D6919-09, D6919-17	3111 B, 3111 B-99, 3120 B, 3120 B-99, 3500-Ca B, 3500-Ca B-97, 3500-Ca D	
Ortho-phosphate			±0.1 mg/L	300.0 Rev 2.1, 300.1 Rev 1.0, 365.1 Rev 2.0	D511-88A, D4327-03, D4327-11, D4327-97, D6508-15, D4327-17	4110 B, 4110 B-00, 4500-P E, 4500-P E-99, 4500-P F, 4500-P F-99	USGS: I-1601-85, I-2598-85, I-2601-90, Thermo Fisher Discrete Analyzer
Conductivity					D1125-14A, D1125-95A	2510 B, 2510 B-97	
Silica				200.5 Rev 4.2, 200.7 Rev 4.4	D859-00, D859-05, D859-10, D859-94	3120 B, 3120 B-99, 4500-Si D, 4500 Si E, 4500 Si F, 4500 SiO2 C, 4500 SiO2 C-97, 4500 SiO2 D, 4500 SiO2 D-97, 4500 SiO2 E, 4500 SiO2 E-97	USGS: I-1700-85, I-2700-85
Hardness - as CaCO3						2340 B	