

# Drinking Water Laboratory Approval and Accreditation Requirements



Drinking Water Advisory Work  
Group

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# Overview



- Drinking Water Lab Approval
- Analytical Methods
- Laboratory Accreditation
- When and How to Request Approval
- Lab Approval Form
- FAQs

# Drinking Water Lab Approval



- Water Supply Division (WSD) requirement for drinking water compliance sample analysis
- Encompass various 30 TAC rules:
  - 290.119(a) – Analytical Procedures
  - 290.117(h)(2) – Water Quality Parameters (WQP)
  - 290.121(b) – PWS Monitoring Plans

# Drinking Water Lab Approval



- Applies to:
  - a) **Public water systems (PWSs)**
    - Field analyses, residual samples, treatment plants
  - b) **Treatment Plant Labs**
  - c) **Commercial labs**
  - d) **Other entities**
    - Operating companies

# Drinking Water Lab Approval



- Field measurements
  - Chlorine residuals (Free/Total)
  - pH, Temperature
- WQPs
  - Alkalinity, Calcium, Orthophosphate, Silica, Conductivity
- Others
  - Chlorine Dioxide, Chlorite (entry point)
  - Turbidity, Total organic carbon (TOC)
  - Ultraviolet light absorbance (UV254)

# Analytical Methods



- What is an analytical method?
  - Procedures used to measure particular drinking water contaminants
    - Collect, preserve, and store the sample
    - Measure for potential contaminants
    - Meet quality control criteria
    - Demonstrate compliance
  - Developed by
    - EPA or other government organizations
    - Consensus method organizations
    - Universities, Water Labs, Vendors
- TCEQ adopts 40 CFR 141 methods
- Listed in Table 1 of Lab Approval Form



# Analytical Methods

- Common examples:
  - pH – EPA 150.1
  - Temperature – SM 2550
  - Chlorite – SM 4500 ClO<sub>2</sub>-E
  - Chlorine Dioxide – ChlordioXPlus
  - Total Chlorine – SM 4500 Cl G

# Laboratory Accreditation



- WSD requires certain analyses to be run by accredited lab
  - Bacteriological
  - Bromate and Chlorite (in distribution system)
  - Lead and Copper
  - Certain WQPs - Chloride, Iron, Manganese, Sodium, Sulfate, TDS, Hardness
- PWSs are not required to be Accredited



# Laboratory Accreditation



- Accredited Lab List on TCEQ website
  - Coordinate DW samples with lab of choice
- TCEQ Lab Accreditation
  - Section of TCEQ
  - Rules found in 30 TAC Chapter 25
    - Inspections, Assessments, Proficiency Test
    - National Environmental Laboratory Accreditation Program (NELAP) Standards
  - Specific questions: (512) 239-3754

# When to Request Lab Approval



- If PWS samples or reports:
  - Chlorine Residuals (all PWSs in Texas)
  - Water Quality Parameters
- New or Added treatment
  - i.e. Chlorine dioxide, Chlorite
- Instrument or method updates

# How to Request Lab Approval



- Complete and submit Lab Approval Form (TCEQ-10450)
  - Fillable PDF
  - Includes Table of Approved Methods
- Where to find Lab Approval Form
  - Download from TCEQ website
    - [https://www.tceq.texas.gov/drinkingwater/monitoring\\_plans/monitoring\\_plans.html](https://www.tceq.texas.gov/drinkingwater/monitoring_plans/monitoring_plans.html)
  - Email: [PDWS@tceq.texas.gov](mailto:PDWS@tceq.texas.gov)
  - Call: (512) 239-4691

# Lab Approval Form



- Example:

Drinking Water Lab Approval Form								
Laboratory or Plant Name		Water System Plant		Contact Name		John Doe		
PWS ID (TCEQ issued)		TX0000123		E-mail				
Lab ID No		NA		Phone		(555) 212-5544		
Address		123 Main St		Date form completed		November 6, 2017		
City/State		Anywhere, TX		Does this lab perform analyses for other Public Water Systems?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Zip								
Analytes and Methods								
Analyte	Analytical Method <sup>2</sup>	Instrument Name <sup>3</sup>	Accuracy <sup>4</sup>		Calibration Frequency <sup>5</sup>	Calibration Method <sup>6</sup>	NELAP Accredited <sup>7</sup>	PT Study <sup>8</sup>
Turbidity	EPA 180.1	Hach 2100N	± 0.05	NTU				
pH	SM 4500-H+B	Hach	± 0.01	pH unit	Daily	Primary Standards		
Temperature	SM 2550	Thermometer	± 0.5	° C	Annually	NIST thermometer		
TOC			±	mg/L				
UV <sub>254</sub>	Contract Lab	ABC Lab	±	cm <sup>-1</sup>			Yes	Yes
Alkalinity	Contract Lab	ABC Lab	±	mg/L			Yes	Yes
Free Chlorine <sup>9</sup>			±	mg/L				
Total Chlorine <sup>9</sup>	SM 4500-Cl G	Hach Pocket Colorimeter	± 0.1	mg/L	Every 90 days	Solution of known conc.		
Chlorine Dioxide <sup>10</sup>			±	mg/L				
POE Chlorite <sup>10</sup>			±	mg/L				
Calcium <sup>1</sup>			±	mg/L				
Phosphate <sup>1</sup>			±	mg/L				
Conductivity <sup>1</sup>			±	µmho/cm				
Silica <sup>1</sup>			±	mg/L				
Lab Analyst or Operator Validation								
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.								
Lab Analyst or Operator's Name and Title				John Doe				
Lab Analyst or Operator's Signature								
TCEQ Official Use Only								
Date Received:			Reviewed by:			Lab ID No:		

# Lab Approval Form



- Fill out all applicable information
- TCEQ will contact you if updates are needed
- Once approved, we will provide a printout for PWS or lab records
  - PWS lab approval lasts 3 years
  - Commercial lab approval lasts 6 months
    - Based on Proficiency Testing results received by Lab Approval Coordinator

# FAQs



- I am not a lab, do I submit a Lab approval form?
  - If you are affiliated with a PWS that submits compliance data (chlorine residuals) a form must be maintained
- Do I need approval for all WQPs?
  - Approval is not offered for chloride, iron, manganese, sodium, sulfate, and TDS

# FAQs



- Does my instrument follow an approved method?
  - Check the manual or contact manufacturer
- If my lab is accredited, do I need to be approved?
  - Yes, the TCEQ Fields of Accreditation (FOA) does not include all fields of approval (i.e. temp, chlorine dioxide, TOC, orthophosphate)

# QUESTIONS



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