



September 22, 2025

Wastewater/Groundwater Lab Certification Branch Updates and Reminders Beth Swanson



The Lab Certification Team

- Branch Manager – [Beth Swanson](#) [Todd Crawford retired March 1]
- Technical Assistance & Compliance Specialist – [Anna Ostendorff](#)
- Technical Assistance & Compliance Specialist – [Jason Smith](#)
- Auditor – [Michael Cumbus](#) – Winston Salem and Mooresville Regions
- Auditor – [Tom Halvosa](#) – Washington and Raleigh Regions
- Auditor – [Jill Puff](#) – Wilmington and Raleigh Regions
- Auditor – [Jason Smith](#) (until position filled)– Asheville and Mooresville Regions
- Auditor – [Tonja Springer](#) – Fayetteville and Raleigh Regions

All auditors also manage a number of out of state labs



Updates: PFAS added as a Certifiable Parameter

- Lab Certification Rule 15A NCAC 02H .0804 was revised in late 2024 to include PFAS as a certifiable Parameter
- We have several commercial labs inquiring about becoming certified for EPA 1633 A, but it is not published in 40 CFR Part 136 yet.
- We can certify for SW-846 8327, but that is not appropriate for NPDES reporting; only one lab has requested this certification to date

Next EPA MUR

- An EPA Method Update Rule (MUR 22) was *proposed* in January 2025 that included the approval of EPA 1633A as well as an ASTM method that includes the same 40 PFAS compounds
 - Comment period ended in late February 2025 and we haven't heard anything more about a possible timeline for publishing
 - Once it is published, that will start timelines for those that have it in their permit (and the rush of commercial labs to get certified)

Upcoming Items

Currently in the Rulemaking process for another revision to .0804 to add two more Parameters:

Total Nitrogen

Pharmaceutical Pollutants (Table IF in 40 CFR Part 136.3)

Public Hearing September 25, 2025; 6pm; Archdale building Raleigh

- Public Comment can be submitted through September 30, 2025
[DEQ.WR.CertificationRuleComments@deq.nc.gov]

If all other steps are completed in the standard timeline, Rule should become effective December 1

QC for Most Common Field Parameters

pH

- Calibrate daily prior to sample analysis
 - Must use at least 2 buffers (some meters may require 3) that span your sample range
 - After calibration, read a buffer as a check in analysis mode
 - Read within ± 0.1 SU for the calibration to be valid
- If the meter is transported by vehicle after calibration, must analyze the check buffer again

TRC

- Verify internal calibration initially and every 12 months;
 - 5 standards with concentrations below permit limit to above PT Standard concentration
 - Reagent blank ($\leq 50\%$ of low standard concentration)
- Daily check standard
 - Most labs use a gel standard and the gel standard must have a concentration assigned every 12 months
 - Check within $\pm 10\%$
 - If the meter is transported by vehicle after daily check, must analyze check standard again after samples

QC for Most Common Field Parameters

DO

- Daily calibration before sample analysis
- If transported by vehicle after calibration, re-calibrate before next sample analysis or perform calibration verification (see Approved Procedure)

Temperature

- If using a meter, the temperature sensor must be checked prior to use
- If using a dedicated thermometer with a valid NIST certificate, initial check not required
- Regardless of device used, must check every 12 months thereafter
- Check against Reference thermometer
 - Two temperatures that bracket sample temps throughout year
 - Must read within ± 0.5 C of each other

DOCUMENTATION- the most common issue found during inspections

Documentation requirements can be found in several places

Rules,

Approved Procedure documents (for Field Parameters),

Policies

*Checklists (they don't establish the requirements, but can use them to make sure requirements are met)



15A NCAC 02H .0805 (g) (2)

this portion of the rules apply to field parameters

- (2) All laboratories shall use printable laboratory benchsheets. Certified Data shall be traceable to the associated sample analyses and shall consist of:
- (A) the method or Standard Operating Procedure;
 - (B) the laboratory identification;
 - (C) the instrument identification;
 - (D) the sample collector;
 - (E) the signature or initials of the analyst;
 - (F) the date and time of sample collection;
 - (G) the date of sample analyses;
 - (H) the time of sample analyses (when required to document a required holding time or when time-critical steps are imposed by the method, a federal regulation, or this Rule);
 - (I) sample identification;
 - (J) sample preparation, where applicable;
 - (K) the volume of sample analyzed, where applicable;
 - (L) the proper units of measure;
 - (M) the dilution factor, where applicable;
 - (N) all manual calculations;
 - (O) the quality control assessments;
 - (P) the value from the measurement system;
 - (Q) the final value to be reported; and
 - (R) any other data needed to reconstruct the final calculated result.
- Each item shall be recorded each time samples are analyzed. Analyses shall conform to methodologies found in Subparagraph (a)(1) of this Rule.

A similar section for non-field labs can be found at 15A NCAC 02H .0805 (a) (7) (F) and various documentation requirements throughout

Approved Procedure for the Analysis of pH

DOCUMENTATION:

The following must be documented in indelible ink whenever sample analysis is performed:

1. Date and time of sample collection
2. Date and time of sample analysis to verify the 15-minute holding time is met. Alternatively, one t documented for collection and analysis with the notation that samples are measured *in situ* or immer sample site
3. Permitted facility name or permit number, and sample site (ID or location)
4. Collector's/analyst's name or initials
5. Meter calibration and meter calibration time(s)
6. True values of buffers used for calibration
7. True value for the check standard buffer
8. Value obtained for the check standard buffer
9. Quality control assessments
10. True value and value obtained for the post-analysis calibration verification(s), where applicable
11. Indication of when the post-analysis calibration verification was performed (e.g., time of analysis, end analysis, etc.)
12. Final value to be reported
13. Units of measure
14. Report all data values to the nearest 0.1 S.U.
15. Traceability for chemicals, reagents, standards and consumables
16. Unique instrument identification (serial number preferred)
17. Parameter analyzed
18. Method reference or Standard Operating Procedure
19. Data qualifier(s), when applicable

Documentation- Example Benchsheets

Examples with and without 'data' can be found on our [website](#)

Reference Method: SM 4500 Cl G-2.011 Total Residual Chlorine (TRC) Instrument ID: HD2900N1

Time Daily Check Standard Analyzed	Daily Check Standard Reading $\mu\text{g/L}$	Comments/Data Qualifiers
8:15	201	

TRC Daily Check Standard True Value 198 $\mu\text{g/L}$ Acceptance range 178-218 $\mu\text{g/L}$
 Check standards must recover within $\pm 10\%$ of the check standard's true value. Is the daily check std acceptable (circle)? Yes/ No
 Annual Calibration Curve Verification Date: 5/21/2023 Program used: 810

Sample Location	Sample Collection Time	Sample Analysis Time	TRC Meter Reading $\mu\text{g/L}$	TRC Result Reported $\mu\text{g/L}$	Comments/Data Qualifiers
Effluent	8:20	8:25	15	220	

Further Example

Lab Certification #: 5999 Date: 1/1/2024

Facility Name: New Town WWTP

Sample Collector/Analyst: JD, JD

Permit #: NC 0001234

Reference Method: SM 4500 H+ B-2011

pH

Instrument ID: Hach #5678

Calibration Time	Calibration Buffer 4 S.U.	Calibration Buffer 7 S.U.	Calibration Buffer 10 S.U.	*Check Buffer 7 S.U.	Comments
<u>7:06</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>7.03</u>	

*pH check buffer must read within ± 0.1 S.U. of the buffer's true value. Check buffer acceptable (circle)? Yes / No

4 S.U. buffer Lot#: pH 41001

7 S.U. buffer Lot#: pH 71001

10 S.U. buffer Lot#: pH 101001

Sample location	Sample Collection Time**	Sample Analysis Time**	pH Reading	Reported pH Result	► Post-analysis Buffer Check True Value: 7.0		Comments/Data Qualifiers
<u>Downstream</u>		<u>7:30</u>	<u>6.98</u>	<u>7.0</u>	Time	Result	<u>In situ</u>
<u>Upstream</u>		<u>7:45</u>	<u>6.95</u>	<u>7.0</u>			<u>In situ</u>
<u>Effluent</u>		<u>8:05</u>	<u>6.91</u>	<u>6.9</u>	<u>8:07</u>	<u>7.03</u>	<u>In situ</u>

**If sample is measured directly in the stream or immediately on site, one time may be recorded for collection and analysis with the notation in the comments box that they are measured *in situ* or immediately at the sample site.

► A post-analysis calibration verification must be analyzed at the end of the run any time the meter is transported by vehicle to another location after calibration. The Post analysis buffer check must be within ± 0.1 S.U. of the buffer's true value.

Post-analysis check buffer acceptable (circle)? Yes / No

All pH values are in pH units (i.e., S.U.). Record all data to the nearest 0.01 S.U. and report to the nearest 0.1 S.U. on DMRs.

Follow PT vendor's instructions for reporting PT Sample results.

Quality control assessments
This is an example, could also
include the required range
instead— i.e., write 'pH buffer must
read within 6.9 to 7.1 su'

Documentation (Policies)

A couple of the most relevant Policies that include documentation

- ‘Traceability Documentation Requirements for Chemicals, Reagents, Standards and Consumables’ – must be able to trace lot of reagent/consumable to its use on any analysis day
- ‘Sample Collection, Preservation, Storage and Transport Requirements’ (one for Field labs and one for non-Field labs)
 - The most recent update states facilities that hold samples onsite before contract lab pick up must document sample storage refrigerator temperature each day samples are placed into/ removed from it. Must use a verified temperature measuring device

Reminder: Documented Training Program

- Not new, it was added to the LCB Rules in 2019 for all lab types, but it is a Finding in most inspection reports
 - This is important for the ongoing success and adherence to certification requirements when there is staff turnover/new employees
 - Even when no new employees are on the horizon, you will not be around forever so it must be instituted
 - Use the minimum guidelines listed in our Rules and customize it to your situation, write it in an SOP or separate training manual, document when any steps are completed

Rule reference for training program

Non-Field .0805 (a) (7) (P) and Field .0805 (g) (5) sections say the same thing:

- (5) Each laboratory shall develop and implement a **documented** training program that includes the following:
- (A) that staff have the education, training, experience, or demonstrated skills needed to generate quality control results within method-specified limits and that meet the requirements of these Rules;
 - (B) that staff have read the laboratory quality assurance manual or applicable Standard Operating Procedures;
 - (C) that staff have obtained acceptable results on Proficiency Testing samples pursuant to Rule .0803(1) of this Section or other demonstrations of proficiency (e.g., side-by-side comparison with a trained analyst, acceptable results on a single-blind performance evaluation sample, an initial demonstration of capability study prescribed by the reference method).

Documented Training Program

Example template:

The blue text would be customized by your lab. Everything required for this training must be determined for each certified parameter and specified in an SOP or other manual

Employee Training: **Reference Method Here**
Include the name of the trainer and the trainee, see below).

1. Skill Demonstration: (e.g., Employee must have at least 7 days or more of shadow training.)

Employees initials: _____ Date: _____

2. Proficiency Demonstration: Employee has successfully performed side-by-side comparison with established analyst or analyzed a blind Proficiency Testing sample with a grade of Acceptable. (List how many side-by-side comparisons are to be performed and the acceptance criteria. Attach documentation to show side-by-side comparison results and acceptance criteria assessments).

Employees initials: _____ Date: _____

3. Employee has read and understands all the SOPs as indicated below:

Employees initials: _____ Date: _____

Documented Training Program

{Template continued}

4. Employee has read and understands all the Approved Procedures as indicated below:

Employees initials: _____ Date: _____

Employee must have completed all training. (Must be kept on file for a minimum of 5 years).

(Trainer) Print Name: _____ Date: _____

(Trainer) Signature : _____ Date: _____

(Trainee) Print Name : _____ Date: _____

(Trainee) Signature : _____ Date: _____

Checklists

- These are used to help auditors perform on-site audits as well as review SOPs and benchsheets prior to initial certification
- They are available on our website as a useful tool to perform internal/self audits
- They include a reference for every requirement so you can look it up yourself for further education
- pH checklist as example: <https://www.deq.nc.gov/ph-2021-checklist-pdf-0/open>
- Other requirements not related to specific sample analysis can be found in walk-through checklists; <https://www.deq.nc.gov/field-lab-walkthrough-pdf/open>

Please ask us if you have any questions about a requirement in a checklist

Reminder: Keep in Touch

- Must notify of changes within 30 days: laboratory supervisor, location, ownership, address, name, and telephone number
(changes submitted to the regional office are not communicated to us, must notify both)
- Change in major equipment, including a change in Dissolved Oxygen meter from membrane sensor meter to LDO/ODO sensor meter (or vice versa)
- Please routinely check email and make sure email addresses are up to date in our system (remember, notify us and regional office),
 - starting 2024, invoices are emailed every year, and we have separate billing contacts in our database if needed
- Visit our Website regularly

Ask us questions, we're here to help!

Keep in Touch

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Website: <https://www.deq.nc.gov/about/divisions/water-resources/water-sciences/chemistry-laboratory/laboratory-certification-branch>

Listserv: go to <https://lists.deq.nc.gov/>, include your name, email address and choose “DWR.Lab_Cert (Laboratory Certification Updates)” to subscribe to the list.

Thank You,
Any Questions??

Department of Environmental Quality

