Sample Collection, Preservation, Storage and Transport Requirements for Non-Field Laboratories Policy

(NC WW/GW LCB 09/18/2024)

Although Chain-of-Custody (COC) forms are not specifically required by the North Carolina Laboratory Certification Branch administrative code, there is a requirement to document much of the information COC forms normally include. Please refer to the most recently promulgated Code of Federal Regulations for preservation and holding time requirements. The administrative code requirements relating to preservation and holding time documentation are as follows:

A record of sample collection date, sample collection time, sample collector, and the use of proper preservatives and preservation techniques shall be maintained. Ref: 15A NCAC 02H .0805 (a) (7) (L).

Sample preservation shall be verified and documented. If a laboratory receives a sample subject to G.S. 143-215.1 and 143-215.63 that does not meet sample collection, holding time, or preservation requirements, the laboratory shall document the incident, notify the sample collector or client, and secure another sample that meets the regulatory requirements, if possible. If another viable sample cannot be secured, the original sample may be analyzed but the results reported shall be qualified with the nature of the sample collection, holding time, or preservation infractions and the laboratory shall notify the State Laboratory of the infractions. The notification shall include a statement indicating corrective action taken to prevent future infractions. Ref: 15A NCAC 02H .0805 (a) (7) (M).

Any system which effectively maintains the required information below in a readily available format is acceptable. To improve legal defensibility of data, it is recommended that transfers of sample custody be documented, and preservation verification be included on this documentation.

Unless otherwise specified by the method or 40 CFR Part 136 Table II, reagents used for chemical preservation must be of sufficient concentration so as not to dilute samples by more than 1%. If this occurs, it must be documented and accounted for by the application of a dilution factor when calculating final sample results.

Each chemically preserved sample must be checked for effectiveness and the results documented. Dechlorinating agents used at the time of sampling must be documented to have been effective (either by the sample collector or the receiving laboratory) by verifying a chlorine residual <0.5 mg/L at a neutral pH. When measuring chlorine concentration in an acidified sample, pour off a small portion of the sample and neutralize the pH prior to testing. Use sufficiently strong base to not dilute the sample. Discard that portion after testing.

If samples are not analyzed within 15 minutes of collection, they must be transported in ice (i.e., surrounded by, not on top of). Sealed ice packs may not be used. Samples must be received at or below the required temperature or exhibit a downward trend from the temperature at the time of collection. The temperature of a temperature blank or representative sample from each cooler must be recorded upon receipt in the laboratory.

Basic documentation requirements for the sample collector include:

1. Facility identification (name or permit number);
2. Sample collector (printed name or signature required);
3. Date and time of each sample collection;
4. The parameter and/or analytical method to be performed (as stated in the permit where applicable);
5. Sample type (e.g., composite, grab, water, soil or sludge);
6. Sample identification (effluent, influent, upstream, downstream, monitoring well, pretreatment, etc.);
7.
8. Sample (or temperature blank) temperature at time of collection when required (i.e., to show a downward trend in temperature if transport time is too short to reach required preservation temperature);
9. Chemical and/or physical preservation/treatment(s) used where required (e.g., name of preservative, pH<2 S.U., pH>9 S.U., field filtration, TRC neutralization, etc.).
10. Sample storage refrigerator temperature for each day samples are placed into or removed from the refrigerator. Required documentation includes the date, temperature and name or initials of the responsible party.

Basic documentation requirements for the receiving laboratory include:

1. Sample receiver (printed name and signature where required);
2. Date and time of receipt;
3. Preservation/treatment status where required (e.g., temperature, pH, absence of residual chlorine, etc.);
4. Sample storage refrigerator temperature for each day samples are placed into or removed from the refrigerator. Required documentation includes the date, temperature and name or initials of the responsible party.