

North American Proficiency Testing Performance Assessment Program (NAPT-PAP)

2025 program [for laboratories to be listed for 2026]

Overview

The Proficiency Assessment Program (PAP; <https://www.soils.org/napt-program/pap>) is a voluntary program offered through the North American Proficiency Testing program (NAPT; <https://www.soils.org/napt-program>). This program is administered by the NAPT Oversight Committee as a part of the Soil Science Society of America (SSSA; <https://www.soils.org>).

The NAPT program is an internal tool for Quality Assurance/Quality Control (QA/QC), whereas PAP is a QA/QC verification tool for laboratories to meet the needs of their clients and/or governing organizations (e.g., USDA-NRCS, state/province programs, etc.).

Laboratories participating in the NAPT program receive soil (5 samples per quarter), plant (3 samples per quarter), and/or water (3 samples per quarter) samples, and can choose to participate in 1, 2, 3, or 4 quarters. Results are submitted to the NAPT Director by the end of each quarter. The Director analyzes the results and sends reports to laboratories to aid their QA/QC. The PAP program requires participation in all 4 quarters for soil and/or plant analysis; water is not included in PAP.

In the optional PAP, laboratories undergo further evaluation of their data to demonstrate that they use NAPT-approved testing methods and can produce accurate analytical results for soil and/or plant tissue samples that meet a minimum standard. Successful participation in the PAP is one way to meet a potential USDA-NRCS requirement for laboratories analyzing soils for federal government programs, such as those involving the development of nutrient management plans as part of cost-share programs (e.g., [Nutrient Management Conservation Practice Standard 590](#)). Some state or provincial entities and carbon market programs similarly require verification of soil carbon and related analyses. Laboratories passing the prior year's PAP are posted online as approved for the following year (to be posted no later than January 31).

Procedures

1. To be enrolled as a PAP participant, the laboratory must:
 - a) Enroll and fully participate in the full year (all 4 quarters) of an NAPT program;
 - b) Enroll and pay the additional annual PAP fee;
 - c) Sign and adhere to the PAP code of ethics; and
 - d) Agree to be listed on the “PAP Approved” roster, which includes all methods the lab qualified for.
2. Participating laboratories must use and disclose the proper analytical methods and associated reporting units. Approved methods are determined by official regional working groups and are listed at <https://www.soils.org/napt-program/methods>.
3. Correlated test values from other test methods, instead of the direct measurement, are not accepted by PAP.
4. Analyses must be performed within the laboratory under evaluation and not be from a subcontracted laboratory.
5. Sample results must be submitted on time each quarter; the NAPT Director may approve late submission under extenuating circumstances, with advance notice and request to the NAPT Director.
6. Criteria for passing
 - a) General methods: Individual analyses pass if greater than 60% of results fall within ± 2.5 MAD (median absolute deviation) of the median.
 - b) pH exception: The pH analysis must fall within 0.25 units of the median to pass; since pH is a logarithmic scale, a fixed-unit deviation (0.25) is used rather than a deviation based on variability (MAD).
 - c) Average score: The average laboratory score across all methods must be at least 80% passing.
7. For most USDA-NRCS requirements (e.g., [Nutrient Management Conservation Practice Standard 590](#)), soil test analyses must be performed by laboratories that successfully participate in recognized proficiency testing programs, such as NAPT-PAP. Laboratories must generally demonstrate proficiency for at least one method for each of the following analytes:
 - a) pH
 - b) Phosphorus (P)
 - c) Potassium (K)
 - d) Nitrate-Nitrogen (NO₃-N), required unless otherwise deemed unnecessary for a particular region by USDA-NRCS.

PAP Reporting Process

Participating laboratories shall receive quarterly PAP performance statements. Following the fourth quarter, each PAP laboratory shall receive a final pass/fail report. Laboratories that achieve PAP approval will receive an electronic NAPT-PAP seal, which may be used to advertise their PAP-approved status. (Note: the PAP evaluation is based on data from the previous calendar year but allows for PAP approval for the current year.)

Laboratories that do not achieve acceptable proficiency testing performance may be reconsidered upon submitting a corrective action report that includes the following:

- Investigation and Root Cause Analysis: Conduct an investigation to determine why the "Not Acceptable" result occurred.
- Identify the specific documented steps taken to correct the issue and prevent future occurrences.
- Retesting/Supplementary Samples: Achieve acceptable results for an additional cycle of proficiency samples, defined as 5 soil samples or 3 plant samples, depending on the specific program.

Additional Conditions

The NAPT Oversight Committee manages the PAP program and provides a list of approved laboratories on the NAPT website. The NAPT Oversight Committee involvement ends with the posting of the PAP-approved laboratory on the NAPT website. Stakeholders may raise concerns about an approved laboratory, and the NAPT program may remove laboratories from the approved list based on the following guidelines:

- Failure to provide required information on soil test reports;
- Violating the ethics statement signed by the laboratory.

Sample Exchange

The USDA-NRCS or any other program may purchase additional NAPT reference materials for use at their discretion to randomly check laboratory performance. An inventory of available materials, along with ordering instructions, is posted at <https://www.soils.org/napt-program/samples>.

Complaints, Grievances, and Appeals

Laboratories with complaints, grievances, and/or appeals may contact the NAPT Program Director, the PAP Subcommittee Chair, and/or the NAPT Oversight Committee Chair as needed. These individuals will bring the issue to the PAP Subcommittee to seek a resolution.

Final decisions regarding these issues will be made within 30 days of contact whenever possible.

Current for 2025

NAPT Program Director – Bryan Hopkins

PAP Subcommittee Chair – Rich Ferguson

NAPT Oversight Committee Chair – John Breker