

Dear CASTNET Site Operator:

This message is your **CASTNET: Eye on Air Quality** newsbrief for Summer 2012
(best viewed in HTML format in your e-mail reader)



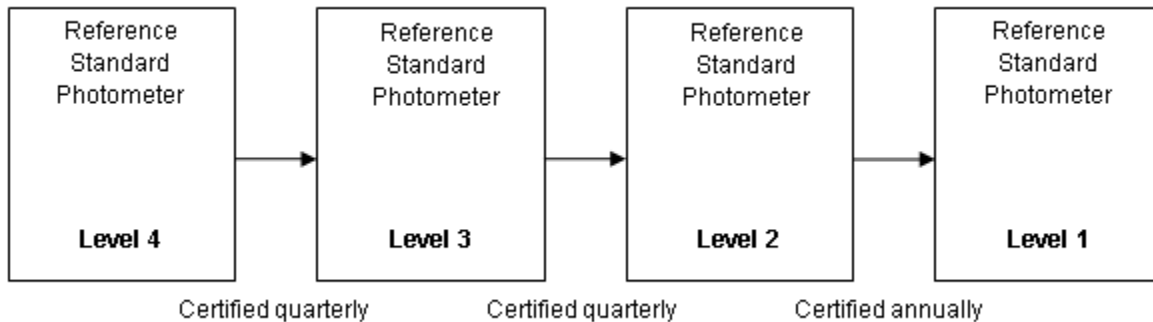
NETWORK NEWS

NPS installs Level 3 air quality station reference standards

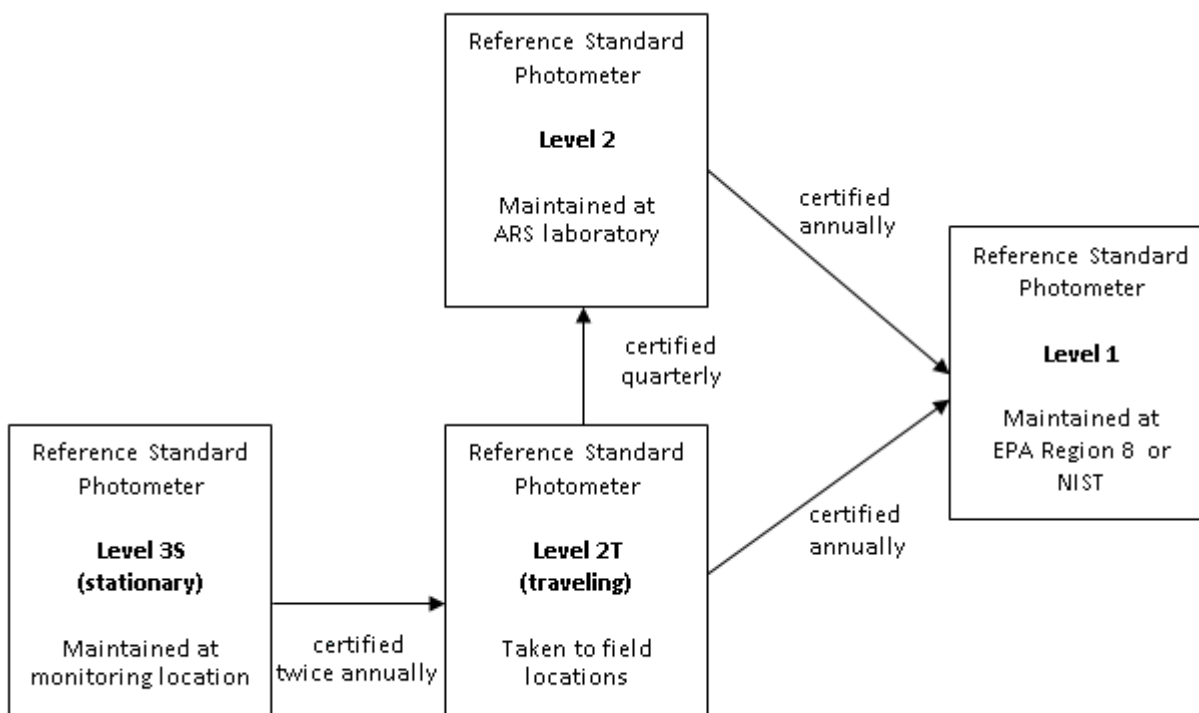
The NPS is currently upgrading its quality assurance program to include similar equipment and procedures to those used by EPA-CASTNET monitoring sites. The new procedures involve replacing each station's Level 4 ozone reference standard with a Level 3 reference sites. Several NPS-CASTNET stations have already seen this change, and the remaining stations will be completed this year.

Ozone reference standards are maintained at each CASTNET monitoring station to provide calibration gas (ozone) to verify proper operation of the ozone analyzer. The standards must have a traceable link to the Level 1 reference standard maintained at either the National Institute of Standards and Technology (NIST) or at an EPA regional facility. It is impractical to directly compare station standards to one of these authoritative standards, so intermediate standards (transfer standards) are used to transfer the authority from the Level 1 authoritative standard to the station standard.

As can be seen in the diagram below, two transfer standards have been required to transfer this authority to the station standard resulting in the station standard to be classified as a Level 4 ozone standard. Although this is acceptable to EPA requirements, it is perceived that the degree of uncertainty is greater with each additional transfer standard.



NPS' new protocol removes one level from the above scenario, thereby shortening the chain of certification. A traveling Level 2 standard will accompany field specialists during twice-annual maintenance visits. A Level 2 standard at the ARS Standards Lab will be used to cross-check the traveling Level 2 standard. All Level 2 standards will be referenced to the Level 1 authoritative standard at either EPA Region 8 or at NIST. This new configuration is portrayed in the diagram below.



2010 Annual Report now available

The CASTNET 2010 Annual Report has been posted to the EPA Web site and can be accessed at http://epa.gov/castnet/javaweb/docs/annual_report_2010.pdf. The report contains the end result of your site activities. Thank you for your continued effort and work at your site.

This year's report is a bit different from previous reports because a supplement to the report will be issued. As of October 2010, EPA decided to discontinue meteorological measurements at all but four EPA-sponsored CASTNET sites (NPS sites are continuing meteorological data collection). Meteorological measurements at EPA-sponsored sites were phased out over the fourth quarter as sites were calibrated. For the 2010 report, missing meteorological data were replaced using the standard procedure used in previous years of "near site" data replacement. Data were replaced only for those EPA sites with designated "near sites." However, the discontinuance of the meteorological measurements requires a long-term method to obtain missing deposition velocity/flux data in order to estimate quarterly and annual dry deposition rates. EPA and AMEC selected a method based on substitution of hour-specific historical averages of deposition velocity for missing values at specific sites. The substitution procedure was shown to result in long-term, unbiased estimates of the annual mean deposition velocity. A variation of the method will be applied to all sites with discontinued/missing meteorological data for the period October through December 2010 and also for sites missing historical deposition velocities. The results of the updated estimates of dry deposition will be presented in a report that supplements the 2010 Annual Report. The current Multi-Layer Model modeling approach that was used to estimate dry deposition fluxes in this report will continue to be used for the four EPA sites with continued meteorological measurements and all NPS-sponsored sites.

OPERATOR TIPS

Pick up the phone and give us a call

Inform your contractor (AMEC or ARS) when an auditor has shown up at your monitoring location and has performed a station audit. You don't have to call us during the audit, just let us know soon after an audit was performed and send along the audit results. A large, yellow sign hangs in each NPS station as a reminder, instructing auditors and operators to send the results to ARS. If the audit found something awry we can quickly investigate and/or correct the problem before too much data are affected.

While we're on the topic.... so what's the difference between a calibration and an audit?

Calibrations and performance audits of air quality analyzers and sensors are similar in procedure but different in purpose. A calibration infers a maintenance procedure, carried out by a routine operator or maintenance personnel for the purpose of checking and, if needed, adjusting the response of the instrument under test. Calibration of an ozone analyzer involves a series of checks that subject the analyzer to known concentrations of ozone that span the instrument's measurement range. Calibrations at CASTNET stations are performed twice annually, and a calibration (an instrument adjustment) may be made at those times.

An audit is performed by someone independent of the routine operations of the station, and with standards (instruments) independent of those used for calibrations. As in a calibration, an audit subjects the analyzer to a series of known concentrations and the results are summarized and reported, however, no instrument adjustments are made during an audit. The audit is to determine the analyzer response to known inputs at the time of the audit.

The CASTNET program contracts for performance audits to be performed at each station once per year. Some stations may receive audits from state or local air quality agencies in place of, or in addition to, these contracted audits. System audits look at the overall procedures and methods employed to measure, record, validate, and report data. These audits determine if a measurement program has appropriate documented procedures adequate to make quality measurements, and whether those procedures are being followed. These can be comprehensive and are performed either internally (by the measurement or data staff) or externally by a state, local, or contracted agency. Audits are important elements of a properly operated air quality measurement program and the results of which strengthen the program's status.

OUTSTANDING SITES

National Park Service (NPS) sites that achieved 95% - 100% validated ozone data for March through May 2012 and U.S. Environmental Protection Agency (EPA) sites that achieved 95 - 100% validated ozone data for August 2011 through March 2012:

ACA416, ME ASH135, ME BBE401, TX BVL130, IL BWR139, MD	CVL151, MS DEN417, AK ESP127, TN GRC474, AZ GRS420, TN	MAC426, KY MCK131, KY MKG113, PA MOR409, WA PAL190, TX	ROM206, CO ROM406, CO SEK430, CA SHN418, VA SPD111, TN
CAN407, UT CHA467, AZ CDR119, WV CHE185, OK CTH110, NY	HOW132, ME HWF187, NY JOT403, CA KEF112, PA LAV410, CA	PET427, AZ PIN414, CA PND165, WY PNF126, NC PSU106, PA	VOY413, MN VPI120, VA WST109, NH YOS404, CA

Please contact us with topics and tips of what you want us to explore next time in your **CASTNET: Eye on Air Quality** newsbrief.

For monitoring site assistance, please contact:

NPS CASTNET sites: contact Air Resource Specialists Telephone: 1-800-344-5423 (Mountain Time) EPA
CASTNET sites: contact AMEC Telephone: 1-888-224-5663 ext. 2602 or ext. 6620 (Eastern Time)

-