

Air Measurement Audits



AECOM has decades of experience auditing air measurement systems.

Areas of Expertise

- Regulatory Analysis
- Measurements
- Modeling
- Permitting
- Compliance
- Risk Assessment
- Risk Communication
- Litigation Support

Overview

AECOM has been performing air quality measurement studies for 40+ years, for air toxics, criteria pollutants, and meteorological parameters. This work includes numerous long-term, continuous monitoring networks to address community exposures and air quality at the fence line of industrial facilities. Other networks may be operated for the duration of a remediation or construction project. We also perform short-term, intensive studies to research a specific topic.

For decades, AECOM has maintained an active, independent auditing function within our organization to support internal and external clients. We have a dedicated staff of quality assurance (QA) professionals who provide independent evaluations of air measurement programs. For long-term monitoring networks, this QA work generally entails quarterly systems and performance audits for any analyzer, monitor, or meteorological system. For shorter-term monitoring projects, this QA work may involve systems and performance audits soon after start-up to identify any quality issues and an audit near the completion of the work, as needed. The audits serve to document data accuracy and defensibility. Two positive audits that “bookend” a given time period generally ensure that the data collected during that time period meet all project objectives and regulatory expectations.

Our QA auditors are responsible for auditing over 100 air monitoring sites per quarter and are capable of auditing criteria pollutant analyzers, manual samplers, continuous field gas chromatographs (GCs), optical systems, and meteorological sensors.

Sites audited include those classified as national core network (NCORE), state and local monitoring stations (SLAMS), special purpose monitoring stations (SPMS), photochemical assessment monitoring stations (PAMS), chemical speciation network (CSN) and others that fall under national ambient air quality standards (NAAQS) compliance. We have an extensive collection of audit spreadsheets for performing audit calculations and recording results. The QA staff are also proficient with the US Environmental Protection Agency (USEPA) Air Quality Standard (AQS) formatting that agencies require for reporting.

Our Approach

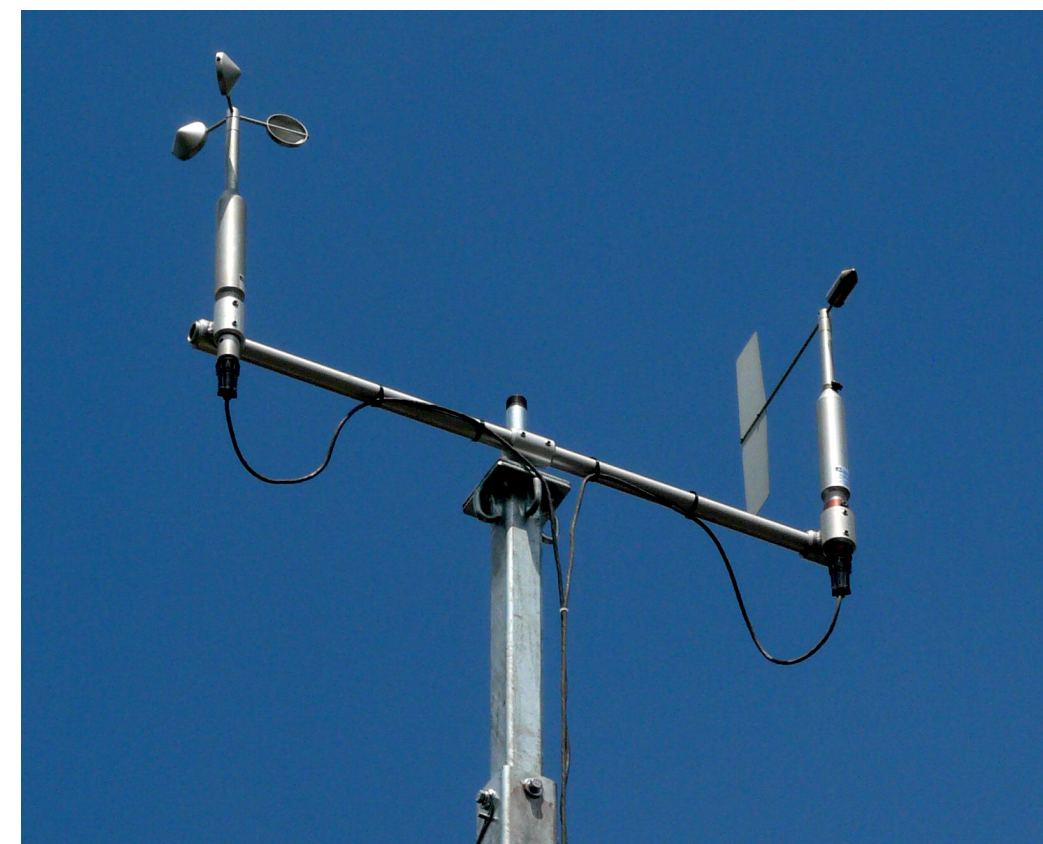
AECOM audits follow the prescribed guidelines established by projects, which are based on the USEPA QA Handbook series, 40 CFR Part 58 Appendix A and Appendix B, and applicable guidance from state agencies that have jurisdiction in a project’s location.

The field audits consist of both a technical systems and performance evaluation audit to provide information regarding the status of the project team, operation and how well the measurement data adhere to the quality specifications of the project plan. Audits of off-site analytical laboratories are outside the scope of the ongoing QA function, but can be performed upon request.

PERFORMANCE AUDITS. A performance audit is an independent check to evaluate the data produced by a measurement system. Audit standards and test equipment that are traceable to acceptable reference standards, typically NIST, are used to assess the performance of

each analytical method and/or measurement device (performance audit). The performance audits are designed to provide a quantitative, point-in-time evaluation of the data quality of the sampling and analytical systems being tested. This is accomplished by addressing specific components of the overall system. Audit activities consist of challenging the various measurement systems with known standards and test equipment traceable to accepted reference standards.

SYSTEM AUDITS. A systems audit is an on-site qualitative review of the various aspects of the total sampling and/or monitoring systems to assess their overall effectiveness. The audit includes a review of monitor siting, sample collection records (i.e., chain-of-custody forms and field logs), and site maintenance activities. From this assessment, the auditor is able to report on the level of adherence to the specifications and quality requirements for the monitoring effort. Where the specification appears incomplete or inadequate, the auditor will apply EPA guidance document information and personal expertise in assessing whether the quality of the monitoring activity will produce defensible data. We use checklists that delineate the critical aspects of each method to document all observations.



Air Measurement Audits *(continued)*



Areas of Expertise

AECOM provides quarterly audits for a dozen large community and fence-line air monitoring networks including the Houston Regional Monitoring Corporation network in Houston. Our client list for current or past audits includes:

COMMERCIAL CLIENTS

- Nevada Energy
- Union Electric Company
- Waste Control Specialists Inc.
- Virginia Fibre Corporation

GOVERNMENTAL AGENCIES

- Minnesota Pollution Control Agency
- Los Alamos National Laboratories
- Louisiana Dept. of Environmental Quality
- Sandia National Laboratories
- National Park Service

AECOM participated in the EPA National Performance Audit Program for many years and consistently demonstrated the effectiveness of our quality assurance program.

FACILITIES

AECOM's audit team maintains a quality assurance standards laboratory at our Austin, Texas office from which independent equipment and standards are used to evaluate air monitoring networks across the United States. This laboratory houses our primary standard ozone photometer which undergoes an annual EPA certification, a large inventory of certified gas standards, flow rate measurement standards, and sufficient traceable certified testing hardware to deploy up to four audit teams to field sites simultaneously. They also prepare gas standards for evaluating the performance of off-site analytical laboratories and field GCs.

