2.0 Program Organization

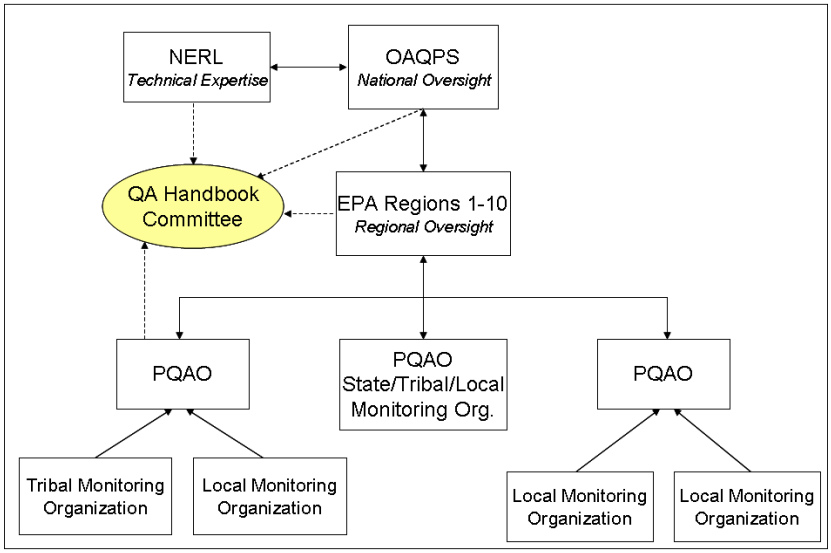

Figure 2.1 Program organization and lines of communication

Federal, state, tribal, and local agencies all have important roles in developing and implementing air monitoring programs. Figure 2.1 identifies the major entities involved in the Ambient Air Quality Monitoring Program, the organizational structure, and the lines of communication. The responsibilities of each organization follow.

2.1 Organization Responsibilities

2.1.1 EPA Office of Air Quality Planning and Standards (OAQPS)

EPA's responsibility, under the Clean Air Act (CAA) as amended in 1990, includes: setting National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to the public health and environment; ensuring that these air quality standards are met or attained through national standards and strategies to control air emissions from sources; and ensuring that sources of toxic air pollutants are well controlled.

OAQPS[1] is the organization charged under the authority of the CAA to protect and enhance the quality of the nation's air resources. OAQPS evaluates the need to regulate potential air pollutants and develops national standards; works with state, tribes and local agencies to develop plans for meeting these standards; monitors national air quality trends and maintains a database of information on air pollution and controls; provides technical guidance and training on air pollution control strategies; and monitors compliance with air pollution standards.

Within the OAQPS Air Quality Assessment Division, the Ambient Air Monitoring Group (AAMG)[2] is responsible for the oversight of the Ambient Air Quality Monitoring Network and its quality assurance program. AAMG, relative to quality assurance, has the responsibility to:

- develop a satisfactory quality system for the Ambient Air Quality Monitoring Network;
- ensure that the methods and procedures used in making air pollution measurements are adequate to meet the programs objectives and that the resulting data are of appropriate quality;
- manage the National Performance Evaluation Program (NPEP);

[1] http://www.epa.gov/air/oarofcs.html
[2] http://www.epa.gov/air/oaqps/organization/aqad/aamg.html

- perform data quality assessments of organizations making air pollution measurements of importance to the regulatory process;
- ensure that guidance pertaining to the quality assurance aspects of the Ambient Air Program are written and revised as necessary; and
- render technical assistance to the EPA Regional Offices and the air pollution monitoring community.

In particular to this Handbook, OAQPS will be responsible for:

- coordinating the Handbook Revision Workgroup responsible for continued improvement of the Handbook;
- seeking resolution on Handbook issues;
- incorporating agreed upon revisions into the Handbook; and
- reviewing and revising the Handbook (Vol II) as necessary.

Specific AAMG leads for the various QA activities (e.g., precision and bias, training, etc.) can be found within the QA Section[3] of the Ambient Monitoring Technical Information Center (AMTIC).

2.1.2 EPA Regional Offices

EPA Regional Offices[4] play a critical role in addressing environmental issues related to the monitoring organizations within their jurisdiction and to administering and overseeing regulatory and congressionally mandated programs.

The major quality assurance responsibilities of EPA's Regional Offices in regards to the Ambient Air Quality Program are the coordination of quality assurance matters between the various EPA offices and the monitoring organizations. This role requires that the Regional Offices:

- distribute and explain technical and quality assurance information to the monitoring organizations;
- identify quality assurance needs of the monitoring organization to EPA Headquarters that are "national" in scope;
- provide personnel and the infrastructure to implement NPEP programs;
- provide the personnel with knowledge of QA regulations and with adequate technical expertise to address ambient air monitoring and QA issues;
- ensure monitoring organization have approved quality management plans (QMPs) and quality assurance project plans (QAPPs) prior to routine monitoring;
- evaluate the capabilities of monitoring organizations to measure the criteria air pollutants by implementing network reviews and technical systems audits;
- assess data quality of monitoring organizations within its Regions; and
- assist SLT agencies in defining primary quality assurance organizations within their jurisdiction and in assigning sites to a primary quality assurance organization.

Specific responsibilities as they relates to the Handbook include:

- serving as a liaison to the monitoring organizations for their particular Region;

[3] http://www.epa.gov/ttn/amtic/qacon.html
[4] http://www.epa.gov/epahome/locate2.htm

- serving on the Handbook Revision Workgroup;
- fielding questions related to the Handbook and ambient air monitoring programs;
- reporting issues that would require Handbook Revision Workgroup attention; and
- serving as a reviewer of the Handbook and participating in its revision.

2.1.3 Monitoring Organizations

40 CFR Part 58[5] defines a monitoring organization as a "state, local or other monitoring organization (such as tribes) responsible for operating a monitoring site for which quality assurance regulations apply."

Federally recognized Indian Tribes are Sovereign Nations. However, Section 301(d) of the CAA gives the Administrator the authority to treat an Indian Tribe as a State Agency with some exceptions. Additionally, Section 302 of the CAA states an air pollution control agency can be an agency of an Indian Tribe.

The major responsibility of the monitoring organization[6] is the implementation of a satisfactory monitoring program, which would naturally include the implementation of an appropriate quality assurance program. Implementation of an appropriate quality assurance program includes the development and implementation of a QMP and QAPPs for the Ambient Air Quality Monitoring Program. It is the responsibility of monitoring organizations to implement quality assurance programs in all phases of the data collection process, including the field, its own laboratories, and in any consulting and contractor laboratories which it may use to obtain data.

Monitoring organizations may be identified for reasons such as:

- distinguishing geographic regions (e.g. CA Districts)
- distinguishing different entities or sources of funds (e.g., tribal funds versus state/local funds)
- identifying organizations receiving funds directly from EPA
- identifying organizations that have different methods or objectives for monitoring

Therefore, if the monitoring organization accepts federal funds for monitoring, it will be identified as a monitoring organization that will be required to submit a requisite QMP and QAPPs to cover its monitoring activities. This does not eliminate it from consolidating to a PQAO with other organizations that it shares common factors, as described in the next section.

Specific responsibilities of monitoring organizations as they relates to the Handbook include:

- serving as a representative for the monitoring organization on the Handbook Revision Workgroup;
- assisting in the development of QA guidance for various sections; and
- reporting issues and comments to Regional Contacts or on the AMTIC Bulletin Board.

2.1.4 Primary Quality Assurance Organizations (PQAOs)

A PQAO is a monitoring organization or a group of monitoring organizations that share a number of common "QA Factors". Below is an excerpt on PQAOs from 40 CFR Part 58, Appendix A:

[5] http://www.access.gpo.gov/nara/cfr/cfr-table-search.html
[6] http://www.4cleanair.org/contactUsaLevel.asp

3.1.1 Each primary quality assurance organization shall be defined such that measurement uncertainty among all stations in the organization can be expected to be reasonably homogeneous, as a result of common factors. Common factors that should be considered by monitoring organizations in defining primary quality assurance organizations include:

(a) Operation by a common team of field operators according to a common set of procedures;
(b) Use of a common QAPP or standard operating procedures;
(c) Common calibration facilities and standards;
(d) Oversight by a common quality assurance organization; and
(e) Support by a common management, laboratory or headquarters.

PQAO has very important implications to quality assurance activities. For each pollutant, the number of monitoring sites in a PQAO is used to determine the number and frequency of quality control checks, including the number of collocated monitors and the NPAP/PEP audit frequencies. PQAO is also used to aggregate data for assessments of completeness, precision and bias. EPA will base many of its data quality assessments at the PQAO level. The 5 common factors listed are the key criteria to be used when an agency decides the sites to be considered for aggregation to a PQAO. There are cases where state, local and tribal monitoring organizations have consolidated to one PQAO. The requirement does not intend that all 5 factors have to be fulfilled but that these factors are considered. However, common procedures and a common QAPP should be strongly considered as key to making decisions to consolidate sites into a PQAO. However, the QAPP(s) of the monitoring organizations must refer to the PQAO that the monitoring organization is affiliated with. EPA Regions will need to be aware of monitoring organizations consolidating to a PQAO and have documentation on file to this effect. Figure 2.2 shows the relationship of pollutants monitored at unique sites and how these unique sites are then related to monitoring organizations and primary quality assurance organizations. In the case of PQAO #1, a tribal monitoring organization and local monitoring organization have common factors that allow for consolidation.

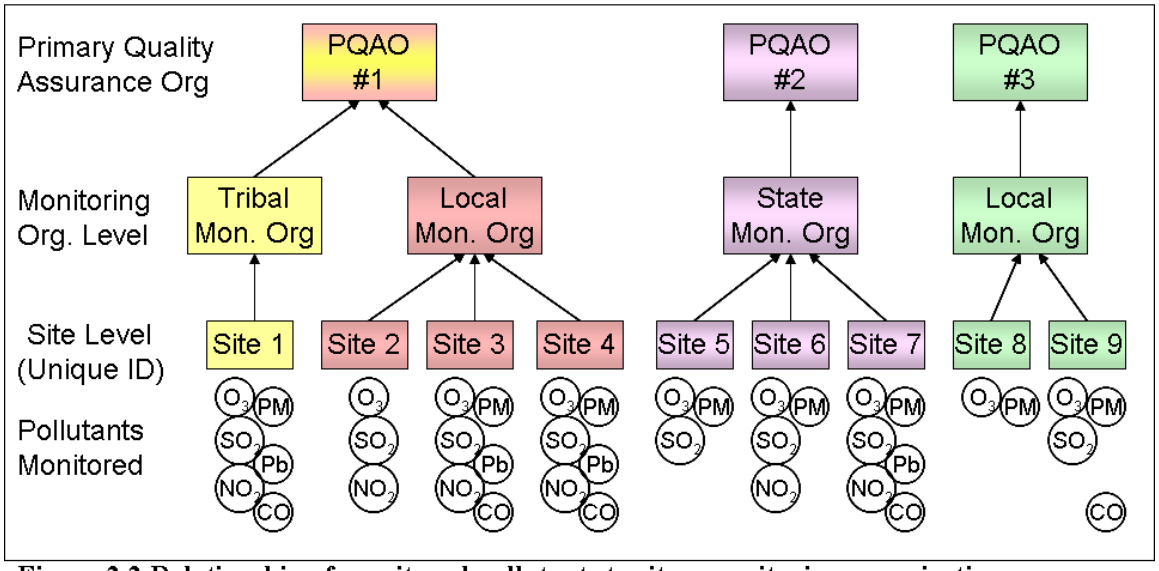

Figure 2.2 Relationship of monitored pollutants to sites, monitoring organizations and primary quality assurance organizations

PQAO is identified at the pollutant (monitor) level so two monitoring organizations may consolidate to a single PQAO for one pollutant due to similar methods and QA procedure, but not consolidate for another pollutant where they may have different quality requirements.

2.1.5 EPA Office of Research and Development (ORD) National Exposure Research Laboratory (NERL)[7]

NERL conducts research and development that leads to improved methods, measurements and models to assess and predict exposures of humans and ecosystems to harmful pollutants and other conditions in air, water, soil, and food. The NERL provides the following activities relative to the Ambient Air Quality Monitoring networks:

- develops, improves, and validates methods and instruments for measuring gaseous, semi-volatile, and non-volatile pollutants in source emissions and in ambient air;
- supports multi-media approaches to assessing human exposure to toxic contaminated media through development and evaluation of analytical methods and reference materials, and provides analytical and method support for special monitoring projects for trace elements and other inorganic and organic constituents and pollutants;
- develops standards and systems needed for assuring and controlling data quality;
- assesses whether candidate sampling methods conform to accepted reference method specifications and are capable of providing data of acceptable quality and completeness for determining compliance with applicable National Ambient Air Quality Standards;
- assesses whether emerging methods for monitoring criteria pollutants are “equivalent” to accepted Federal Reference Methods and are capable of addressing the Agency’s research and regulatory objectives; and
- provides an independent audit and review function on data collected by NERL or other appropriate clients.

NERL will continue to assist in the Handbook by:

- providing overall guidance;
- participating in the Handbook review process;
- developing new methods including the appropriate QA/QC; and
- conducting laboratory and field evaluations of sampling and analysis methods to resolve ad hoc technical issues.

2.2 Lines of Communication

In order to maintain a successful Ambient Air Quality Monitoring Program, effective communication is essential. Lines of communication will ensure that decisions can be made at the most appropriate levels in a more time-efficient manner. It also means that each organization in this structure must be aware of the regulations governing the Ambient Air Quality Monitoring Program. In most circumstances, the monitoring organizations first line of contact is the EPA Region. Any issues that require a decision, especially in relation to the quality of data, or the quality system, should be addressed to the EPA Region. A monitoring organization should, in only rare circumstances, contact OAQPS with an issue if it has not initially contacted the EPA Region. If this does occur, OAQPS normally tries to include the pertinent EPA Region in the conversation, or at a minimum, briefs the EPA Region about the issue(s) discussed.

[7] http://www.epa.gov/nerl/

This is appropriate as long as decisions are not made during these information-seeking communications. If important decisions are made at various locations along the line, it is important that the information is disseminated in all directions in order that improvements to the quality system can reach all organizations in the Program. Nationwide communication will be accomplished through AMTIC and the subsequent revisions to this Handbook.

There are many other routes of communication available in the monitoring community. Three that occur with some frequency and should be used to identify important monitoring and QA issues are:

National Association of Clean Air Agencies (NACAA)[8]- represents air pollution control agencies in 53 states and territories and over 165 major metropolitan areas across the United States. It formed in the 1970's to improve their effectiveness as managers of air quality programs. The association serves to encourage the exchange of information among air pollution control officials, to enhance communication and cooperation among federal, state, and local regulatory agencies, and to promote good management of our air resources. Specifically for the Ambient Air Monitoring Program, it facilitates a monthly conference call and has organized a Steering Committee, made up of monitoring organization representatives and EPA, that meet twice a year to discuss issues related to ambient air monitoring.

National Tribal Air Association (NTAA)[9]- is an autonomous organization affiliated with the National Tribal Environmental Council (NTEC). The NTAA's mission is to advance air quality management policies and programs, consistent with the needs, interests, and unique legal status of American Indian Tribes, Alaska Natives, and Native Hawaiians. This organization has many similarities to NACCA. It also facilitates a monthly conference call with EPA and holds a national annual meeting.

EPA Headquarters and Regional Monitoring and QA Calls- These calls occur monthly and are devoted to relevant monitoring and QA topics where EPA tries to develop consistent approaches to relevant monitoring issues.

Besides the three communication mechanisms described above, there are many others, such as the Regional Planning Organization (RPOs)[10] conference calls/meetings, EPA Regional conference calls/meetings that also serve to communicate the needs and issues of the ambient air monitoring community.

[8] http://www.4cleanair.org/about.asp
[9] http://www.ntaatribalair.org/
[10] http://epa.gov/visibility/regional.html

2.3 Quality Assurance (QA) Workgroups

Two workgroups have been formed to provide information for improving the Ambient Air Monitoring Program Quality System

- QA Strategy Workgroup
- Handbook Revision Workgroup

2.3.1 QA Strategy Workgroup

Organized and chaired by the QA Team Lead of OAQPS/AQAD, the Workgroup consists of Ambient Air Quality Assurance personnel from OAQPS, EPA Regions, and monitoring organizations. The Workgroup members were solicited through NACAA in 2001 in conjunction with OAQPS vision of a new monitoring strategy for the ambient air monitoring community. The goal, established by the Workgroup, was to define the elements of a Quality System. To achieve this goal, the Workgroup scheduled conference calls and meetings. Additionally, the work group meets on an annual basis at the National QA Meeting to discuss issues relevant to quality assurance work in the ambient air monitoring field. For information on the workgroup's activities please refer to*:* www.epa.gov/ttn/amtic/qaqcrein.html.

2.3.2 The Handbook Revision Workgroup

The Handbook Revision Workgroup is made up of representatives from the following four entities in order to provide representation at the Federal, State and local level:

- **OAQPS** - OAQPS is represented by the coordinator for the Handbook and other representatives of the Ambient Air Quality Monitoring QA Team.
- **Regions -** A minimum of 1 representative from each EPA Regional Office.
- **NERL** -A minimum of one representative. NERL represents historical knowledge of the Handbook series as well as the expertise in the reference and equivalent methods program and QA activities.
- **Monitoring Organizations**- A minimum of 10 representatives of the monitoring organizations.

The mission of the workgroup is the continued clarification and addition of quality assurance procedures as related to ambient air monitoring and the networks. The workgroup provides experiences and insights in the ambient air monitoring field that will assist OAQPS with the task of the continuous improvement of the quality system. This ensures data integrity and provides valid quality indicators for decision makers faced with attainment/nonattainment issues as well as providing quality data to health professionals, academia and environmental professionals using the data.

The Handbook Revision Workgroup will be formed every five years for the purpose of reviewing and revising the Handbook or sections as needed. Issues may surface from comments made by monitoring organizations liaisons, AMTIC bulletin board comments, or the development/revision of regulations.