Quality Management Plan for the National Air Toxics Trends Station Monitoring Program

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Quality Management Plan for the National Air Toxics Trends Station Monitoring Program

By

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Forward

This QMP was generated using the EPA Quality Assurance (QA) regulations and guidance as described in *EPA QA/R-2*, *EPA Requirements for Quality Management Plans* and the accompanying document, *EPA QA/G-2*, *Guidance for Developing, Reviewing and Implementing Quality Management Plans.* All pertinent elements of the QMP regulations and guidance are addressed in this plan.

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Acronyms and Abbreviations

AMTIC	Ambient Monitoring Technology Information Center
APTI	Air Pollution Training Institute
AQS	air quality system
ASQ	American Society for Quality
ASTM	American Society for Testing and Materials
AT	air toxics
ATSC	air toxics steering committee
AWMA	Air and Waste Management Association
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	contracting officer
DQA	data quality assessment
DQOs	data quality objectives
EDO	environmental data operation
EMAD	Emissions, Monitoring, and Analysis Division
EPA	Environmental Protection Agency
EPM	environmental program management
FTP	file transfer protocol
GLP	good laboratory practice
GPRA	Government Performance Reporting Act
HAPs	hazardous air pollutants
LAN	local area network
LIMS	laboratory information management system
MQAG	Monitoring and Quality Assurance Group
MSR	management system review
NAAQS	National Ambient Air Quality Standards
NAMS	national air monitoring station
NAREL	National Air and Radiation Environmental Laboratory
NATA	National Air Toxics Assessment
NATTS	National Air Toxics Trends Stations
NATTSMP	National Air Toxics Trends Station Monitoring Program
OAQPS	Office of Air Quality Planning and Standards
ORD	Office of Research and Development
ORIA	Office of Radiation and Indoor Air
PC	personal computer
PE	performance evaluation
PO	project officer
QA/QC	quality assurance/quality control
QA	quality assurance
QAC	quality assurance coordinator
QAAR	quality assurance annual report
QAPP	quality assurance project plan
QMP	quality management plan
SLAMS	state and local air monitoring stations
S/L/T	state/local/tribal
SOP	standard operating procedure
SOW	statement of work
STAG	state and tribal air grant
STAPPA/ALAPCO	State and Territorial Air Pollution Program Administrators -Association of Local Air Pollution Control Officials
TSA	technical system audit
UATS	urban air toxics strategy
UATMP	urban air toxics monitoring program
WAM	work assignment manager

Tables

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Quality Management Plan Identification and Approval

The attached QMP for the National Air Toxics Trends Assessment Monitoring Program is hereby recommended for approval and commits the resources and personnel to follow the elements described within.

Office of Air Quality Planning and Standards

1) Signature_____Date_____

Dr. Richard Scheffe, Group Leader, Monitoring and Quality Assurance Group

2) Signature_____Date_____

Ms. Sharon Nizich, NATTS Program Manager

3) Signature_____Date_____

Mr. Dennis Mikel, NATTS Quality Assurance Coordinator

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1.0 Project/Task Organization

1.1 Introduction and Background

There are currently 188 hazardous air pollutants (HAPs), or Air Toxics (AT), regulated under the Clean Air Act (CAA) that have been associated with a wide variety of adverse health effects, including cancer, neurological effects, reproductive effects and developmental effects, as well as eco-system effects. These air toxics are emitted from multiple sources, including major stationary, area, and mobile sources, resulting in population exposure to these air toxics as they occur in the environment. While in some cases the public may be exposed to an individual HAP, more typically people experience exposures to multiple HAPs and from many sources. Exposures of concern result not only from the inhalation of these HAPs, but also, for some HAPs, from multi-pathway exposures to air emissions. For example, air emissions of mercury are deposited in water and people are exposed to mercury through their consumption of contaminated fish.

Our current Government Performance Results Act (GPRA) commitments specify a goal of reducing air toxics emissions by 75% from 1993 levels to significantly reduce the risk to Americans of cancer and other serious adverse health effects caused by airborne toxics. Because of our limited tools to assess the impacts of these emissions on public health and the environment, we are focusing on reducing emissions to the extent possible. However, as we develop new assessment tools and begin to address the risk associated with these emissions as required by the CAA, we will be modifying that goal to one that focuses on risk reductions associated with exposure to air toxics. In working toward this risk-based goal, we will focus on the cumulative effects of air toxics in urban areas, the multi-media effects of air toxics on water bodies and on populations whose water and food are affected by the deposition of persistent and bio-accumulating air toxics, and the effects on sensitive populations and on economically disadvantaged communities. Eventually, we have a long-term goal of eliminating unacceptable risks of cancer and other significant health problems from exposures to air toxics emissions and to substantially reduce or eliminate adverse effects on our natural environment.

1.1.1 National Air Toxics Assessments and the Role of Ambient Monitoring

EPA finalized the Urban Air Toxics Strategy (UATS) in the Federal Register on July 19, 1999[1]. The UATS states that emissions data are needed to quantify the sources of air toxics impacts and aid in the development of control strategies, while ambient data are then needed to understand the behavior of air toxics in the atmosphere after they are emitted. Since ambient measurements cannot practically be made everywhere, modeled estimates are needed to extrapolate our knowledge of air toxics impacts into locations without monitors. Exposure assessments, together with health effects information, are then needed to integrate all of these data into an understanding of the implications of air toxics impacts and to characterize air toxics risks. The EPA proposed the National Air Toxics Assessment (NATA). There are four activities which are key to the success of the NATA.

- Source-specific standards and sector-based standards, including section 112 standards, i.e. Maximum Achievable Control Technology (MACT), Generally Achievable Control Technology (GACT), residual risk standards, and section 129 standards. - National, regional, and community-based initiatives to focus on multi-media and;
- Cumulative risks, such as the Integrated UATS, Great Waters, Mercury initiatives, Persistent Bio-accumulative Toxics (PBT) and Total Maximum Daily Load (TMDL) initiatives, and Clean Air Partnerships.
- NATA activities that will help EPA identify areas of concern, characterize risks and track progress. These activities include expanded air toxics monitoring, improving and periodically updating emissions inventories, national- and local scale air quality and exposure modeling, and continued research on effects and assessment tools, leading to improved characterizations of air toxics risk and reductions in risk resulting from ongoing and future implementation of air toxics emissions control standards and initiatives.
- Education and outreach.

The success of the NATA critically depends on our ability to quantify the impacts of air toxics emissions on public health and the environment. All of these activities are aimed at providing the best technical information regarding air toxics emissions, ambient concentrations, and health impacts to support the development of sound policies for NATA. Specifically, these activities include:

- The measurement of air toxics emission rates from pollution sources;
- the compilation of comprehensive air toxics emission inventories for local, State, and national domains;
- the analysis of patterns and trends in ambient air toxics measurements;
- the estimation of ambient air toxics concentrations from emission inventories using dispersion modeling;
- the estimation of human and environmental exposures to air toxics, and;
- the assessment of risks due to air toxics;
- **and the measurement of technically consistent ambient concentrations of air toxics at trends monitoring sites throughout the nation.**

This QMP focuses on the role of ambient measurement data as one key element of the full air toxics assessment process, i.e., NATA. The rest of this section describes the specific uses of ambient monitoring data and outlines some key considerations for focusing the spatial, temporal, and measurement aspects of a national air toxics monitoring effort.

The anticipated analytical uses of ambient monitoring data should be kept in mind when designing the measurement network. Specifically, we anticipate that ambient air toxics data will be useful to:

1. **Track trends at ambient levels, which will facilitate tracking progress toward emission and risk reduction goals. This will help assess the effectiveness of emission reduction activities and this goal relates back to the GPRA goal identified above;**
2. Evaluate and subsequently improve air toxics emission inventories; and
3. Evaluate and subsequently improve model performance and help to establish an ambient baseline for toxics risk characterization.

Please note that the primary objective for this program is tracking the trends of ambient levels. The Data Quality Objectives[2] (DQOs) for this program were developed with this as the primary goal. The appropriateness of a candidate monitoring site with respect to the data uses described above will be the key consideration in identifying sites for the national network. EPA acknowledges that State/Local/Tribal (S/L/T) air pollution control agencies have been performing air toxics monitoring for many years, with the focus on local issues. As time and funding permits, EPA will attempt to address non-trends monitoring. EPA will expand its objectives when the funding becomes available.

1.1.2 The Air Toxic Monitoring Program

OAQPS, in conjunction with the EPA Regional Offices and S/L/T agencies, have developed the National Air Toxics Trends Stations (NATTS). The NATTS are designed to characterize air toxics trend on a national basis as described in Section 1.1.1. The NATTS seeks to address air toxics problems through a strategic combination of many different agencies' activities and authorities, including regulatory approaches and voluntary partnerships.

1.1.3 Urban Air Toxics

There are 33 HAPS identified in the draft UATS . They are a subset of the 188 toxics identified in Section 112 of the CAA which are thought to have the greatest impact on the public and the environment in urban areas. These chemicals can be grouped into several general categories which include volatile organic compounds (VOCs), metals, aldehydes and semi-volatile organic compounds (SVOCs). The list of compounds is detailed in Section 2.4.

Figure 1-1 and 1-2 illustrate the core NATTS in the initial roll out in FY 2003. It is possible that this network will expand and detract as it ages. There are additional sites that have been identified as being possible candidates for future expansion. These are identified in Appendix A. It is the expected that the core stations will be operated over a long enough period of time to produce data that can statistically illustrate national trends. OAQPS has developed the DQOs for this network that will define the extent, quality assurance objectives and amount of data needed to track trends and understand the nature of toxics in the nation. The following sites are the proposed core NATTS for FY 2003: E. Providence, RI, Boston, MA, New York City, NY, Washington, DC, Decatur, GA, Perry County, KY, Detroit, MI, Houston, TX, St. Louis, MO, Grand Junction, CO. Bountiful, UT, San Jose, CA, and Seattle, WA. Two additional sites, Bend OR and Chittendon, VT, are scheduled to be operated if funds are available.

Figure 1-1 Overview of the Eastern NATTS - 2003

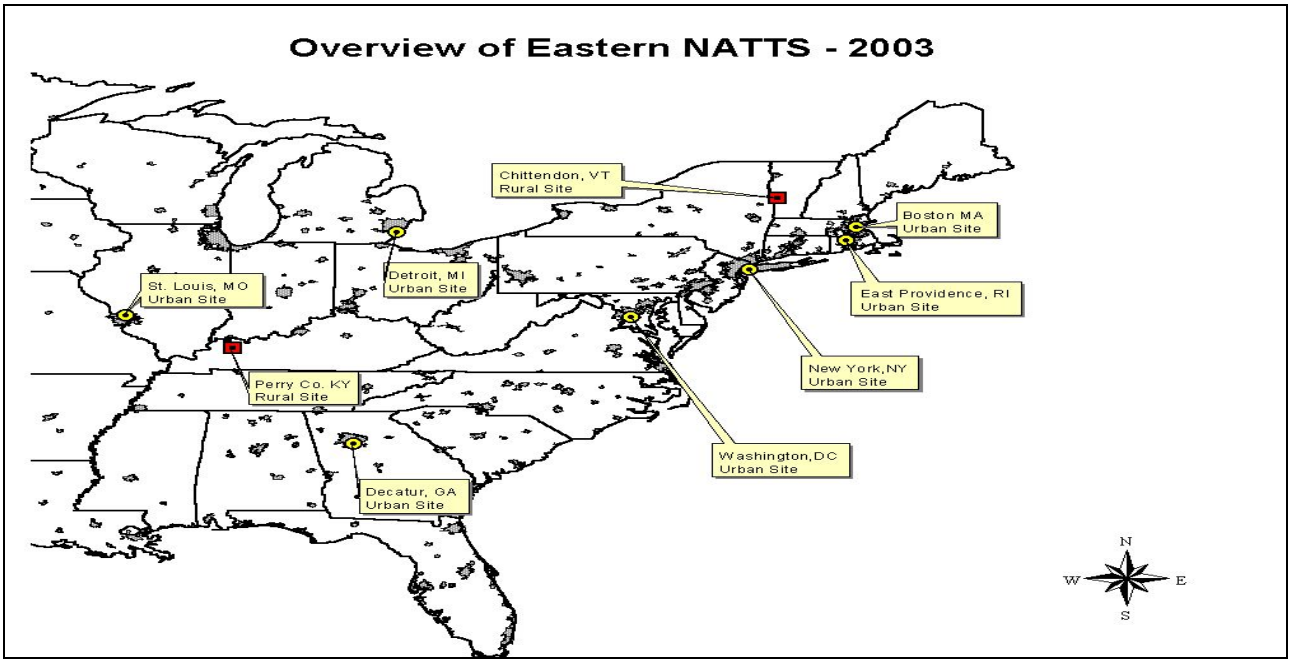
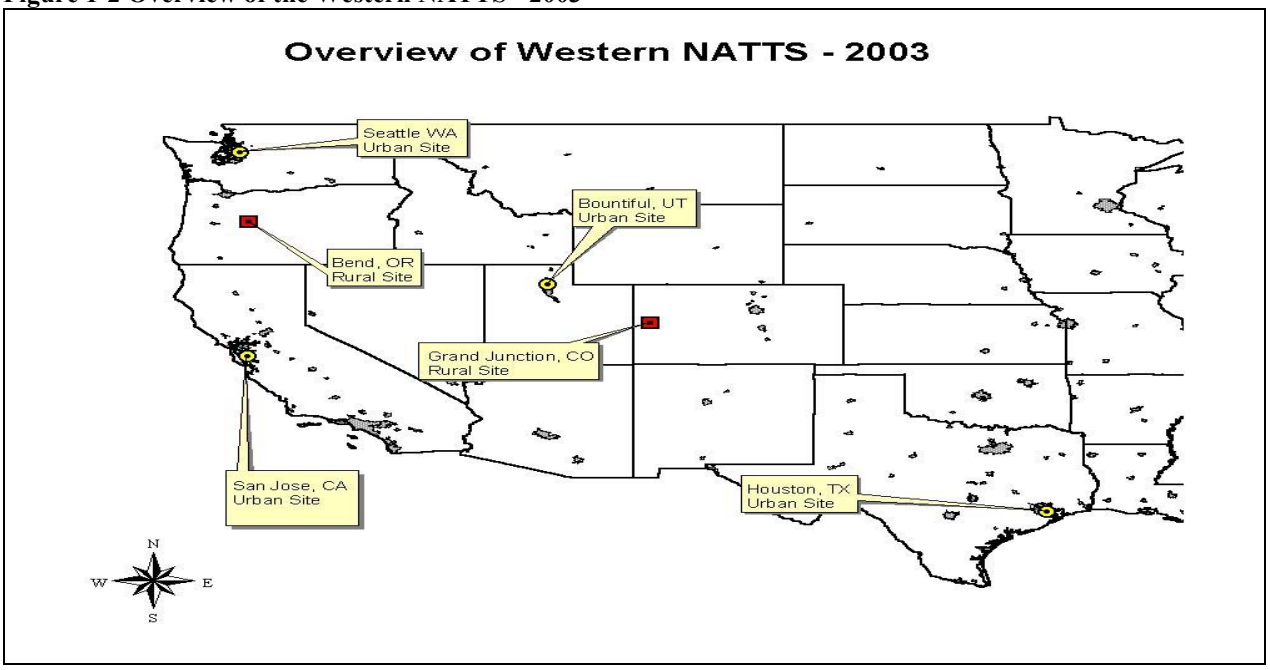


Figure 1-2 Overview of the Western NATTS - 2003



1.2 Roles and Responsibilities

The following organizations and committees are an integral part of the NATTS Monitoring Program. The management structure is illustrated in Figure 2-1.

1.2.1 The National Air Toxics Monitoring Steering Committee (ATSC): The ATSC is a combination of State and Local Air Pollution Control Agencies, EPA-OAQPS and EPA Regional representatives that meet regularly to oversee the development of the air toxics program. The ATSC will provide oversight on how the program will be operated. The ATSC decides how annual AT funds are distributed to the EPA Regional Offices.

1.2.2. STAPPA/ALAPCO: The State and Territorial Air Pollution Program Administrators - Association of Local Air Pollution Control Officials (STAPPA/ALAPCO) is a major contributor to the air toxics field. STAPPA/ALAPCO advises EPA on technical and managerial issues. EPA and STAPPA/ALAPCO maintain a common Internet Web page (http://www.epa.gov/ttn/atw/indxtext.html), where information on air toxics rules and regulations can be reviewed. STAPPA/ALAPCO also has two member on the ATSC. They provide State/Regional/Local perspective to the NATA and specifically, the NATTS.

1.2.3 Office of Air Quality Planning and Standards: OAQPS is the organization charged under the authority of the Clean Air Act (CAA) to protect and enhance the quality of the nation's air resources. OAQPS sets standards for pollutants considered harmful to public health or welfare and, in cooperation with EPA Regional Offices and the States, enforces compliance with the standards through regulations controlling emissions from stationary sources. OAQPS evaluates the need to regulate potential air pollutants and develops national standards.

Within OAQPS, the Emissions Monitoring and Analysis Division (EMAD), the Monitoring and Quality Assurance Group (MQAG) will be responsible for the oversight of the NATTS. MQAG has the following responsibilities for the NATTS:

- ensuring 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 satisfactory quality;
- develop QMP and field and laboratory model Quality Assurance Project Plan (QAPP);
- Overall coordination of the monitoring and QA aspects;
- evaluating the performance, through mechanisms such as, performance evaluations and management systems reviews, of organizations making air toxics measurements;
- implementing satisfactory quality assurance programs over federally funded ambient air quality monitoring networks;
- assess the adequacy of funding available to implement and support this plan and quality objectives
- ensuring that guidance pertaining to the quality assurance aspects of the air toxics monitoring program are written and revised as necessary;

< rendering technical assistance to the EPA Regional Offices and air pollution monitoring community concerning sampling and analysis.

1.2.4 Office of Research and Development: The office of Research and Development (ORD) is charged with the research and development of the air toxics methods, samplers and technical oversight. ORD's role in the NATTS will be:

< oversee development and testing of new air toxics instrument designs;
< work closely with OAQPS to determine that the NATTS instruments are being operated in accordance to their design;
< evaluate ambient data as it is collected and work with the research community to ascertain the meaning of the results.

1.2.5 EPA Regional Office: EPA Regional Offices address environmental issues related to the states within their jurisdiction and to administer and oversee regulatory and congressionally mandated programs. The major quality assurance responsibilities of EPA Regional Offices, in regards to the NATTS, are the coordination of quality assurance matters at the Regional levels with the S/L/T Agencies, and to provide assessments both technical and performance. This is accomplished by the designation of EPA Regional Project Officers, who are responsible for the fiscal and some technical aspects of the program including:

< Regional QA officer will be responsible for reviewing QAPPs from the S/L/T agencies;
< acting as a liaison by making available the technical and quality assurance information developed by EPA Headquarters and the Region to the S/L/T agencies;
< ensure expeditous awarding of grant funds;
< making EPA Headquarters aware of the unmet quality assurance needs of the S/L/T agencies;
< performing a thorough review of the NATTS within their region every five years;
< performing Technical Systems Audits (TSAs) and Instrument Performance Audits (IPAs) on an annual basis.

1.2.6 Office of Radiation and Indoor Air: At this time, the Office of Radiation and Indoor Air (ORIA) laboratory is being considered as having a Quality Assurance role in the NATTS. ORIA will fill this position if funds are made available. If not, OAQPS will select another quality laboratory to fill this specific role, which is outlined below:

< Urban Air Toxics Monitoring Program Laboratory SOP and QAPP review;
< Post Award PE Round Robin;
< Post Award on-site audit;
< Audit and Performance Evaluation (PE) Round Robin report to PO and OAQPS;
< Ongoing QA oversight program to evaluate continuing performance through an annual PE Round Robin study;

1.2.7 Urban Air Toxics Monitoring Program Contractor: OAQPS contracts air toxics monitoring support through its Urban Air Toxic Monitoring Program (UATMP). The UATMP is a program that allows States and Local Agencies to "purchase" air toxics support by allowing EPA to withhold Section 105 funds. Many State and Local agencies use this support. In support of the NATTS, the EPA will expand UATMP Contractor's role to provide QA guidance and Performance Evaluation (PE) samples to all NATTS laboratories and all laboratories that receive Section 105 air toxics funding. Below is a description of their duties:

< Analysis of all samples for the UATMP;
< Providing PE laboratory samples to the NATTS laboratories and all laboratories that receive Section 105 funds annually;
< analyze QA PEs when received from the ORIA laboratory
< coordinate with sub-contractors and assure that the good laboratory practices and QA are performed;
< maintain adequate internal documentation and quality control;
< development of a laboratory QAPP;
< perform Level 0 and 1 validation on the data.

1.2.8 State, Local and Tribal Air Monitoring Agencies: The S/L/T agencies are tasked in operating the samplers in the field and in some cases, analyze the samples at their own or contract laboratory facilities. The S/L/T agencies may decide to use the UATMP. The agencies will work closely with UATMP Contractor on shipping and receiving the AT samples. Other activities include:

< Write or adhere to an AT field/laboratory QAPP which must be approved by the EPA Regional QA Manager;
< store un-exposed samples in the manner described by the QAPP;
< maintain records of sampler operation;
< participate in any TSAs or Management Systems Reviews (MSRs);
< perform validation on the data;
< submit data to the Air Quality System (AQS);
< participate in meetings and tele-conference calls given by or for OAQPS or the EPA Regional offices.

1.3 Key Personnel

Monitoring and Quality Assurance Group Leader – Dr. Richard Scheffe

Dr. Scheffe has overall responsibility for managing the NATTS. The direct responsibility for assuring data quality rests with management. Ultimately, the group leader is responsible for establishing QA policy and for resolving QA issues identified through the QA program. Major QA related responsibilities of the group leader include:

< approving the budget and planning processes;
< assuring that the program develops and maintains an adequate quality system.

The group leader delegates the responsibility of QA development and implementation in accordance with the OAQPS policy to the program manager and QA coordinator.

Program Manager -- Ms. Sharon Nizich

Ms. Nizich is the designated as the OAQPS program manager of the NATTS. She is responsible for the OAQPS activities that are implemented as part of normal data collection activities. Responsibilities include:

< ensuring the implementation of the NATTS;
< communication with EPA Regional Project Officers and EPA QA personnel on issues related to routine sampling and QA activities;
< evaluate region to region consistency in the implementation of the program and distribution of funds;
< reviewing acquisition packages (contracts, grants, cooperative agreements, inter-agency agreements) to determine the necessary QA requirements;
< developing budgets and providing program costs necessary for EPA allocation activities;
< interacting with and convening the ATSC;
< recommending required management-level corrective actions.

Quality Assurance Coordinator - Mr. Dennis Mikel

Mr. Mikel will oversee the quality assurance aspects of the NATTS, as such will be designated the Quality Assurance Coordinator (QAC). His responsibilities include:

< coordinating the input to the QA Annual Report (QAAR);
< assisting in solving QA-related problems at any level of the program;
< ensuring that an updated QAPP is in place for all environmental data operations associated with the program;
< ensuring that technical systems audits, audits of data quality, and data quality assessments occur within the appropriate schedule and conducting or participating in these audits;
< coordinate with the ORIA activities.

The QAC has the authority to carry out these responsibilities and to bring to the attention of the program manager or group leader any issues related to these responsibilities.

Office of Radiation and Indoor Air - Mr. Michael Clark

The ORIA team is responsible for overseeing laboratory QA activities of the NATTS. His responsibilities include:

< implementing and overseeing the laboratory NATTS QA policy within the team;
< oversee analysis of the QA samples;
< reporting QA data to OAQPS staff ;
< oversee the preparing of QA samples for the UATMP Contractor laboratory;
< lead the MSRs and TSAs on the UATMP Contractor laboratory.

UATMP Contractor Laboratory Program Director

Laboratory personnel are responsible for carrying out a required task(s) and ensuring the data quality results of the task(s) by adhering to guidance and protocol specified by the QAPP and SOPs for the lab activities. His/her responsibilities include:

< oversee participating in training and certification activities;
< participating in the development of data quality requirements (laboratory) with the appropriate QA staff;
< overseeing the writing and modifying of standard operating procedures (SOPs) and good laboratory practices (GLPs);
< oversee the preparing and shipping of all samples to the State and Local agencies;
< supervise the analysis of all samples;
< oversee the performing and documenting of preventative maintenance on laboratory equipment;
< overseeing the submission of final valid data to the AQS database;
< preparing and delivering reports to the OAQPS program manager and QA officer.

Technical Lead - Ms. Joann Rice

Ms. Rice will provide technical oversight for the implementation of the NATTS. Her responsibilities include:

< providing technical guidance to all agencies on the operation of the NATTS;
< assisting all agencies that operate NATTS laboratory technical guidance;
< interact with OAQPS staff during tele-conference discussion.

1.4 References

1. Federal Register Notice, Chapter 64, Section 38705, National Air Toxics Program, The Integrated Urban Strategy, July 19, 1999, http://www.epa.gov/ttn/atw/urban/fr19jy99.pdf

2. Quality Assurance Guidance Document - Model Quality Assurance Project Plan For the National Air Toxics Trends Stations, EPA Document, 454/R-02-007, December 2002, http://www.epa.gov/ttn/amtic/airtxfil.html

2.0 Quality System Description

This chapter will describe the principle components comprising the quality system and how they are used to implement the quality system. In addition, the latter part of this chapter will briefly discuss the monitoring system and how samples and data flow through the system.

2.1 Description of the NATTS Monitoring Program

Figure 2.1 illustrates the systems in place that have oversight of the NATTS Monitoring Program.

Figure 2.1 Description of the NATTS Structure

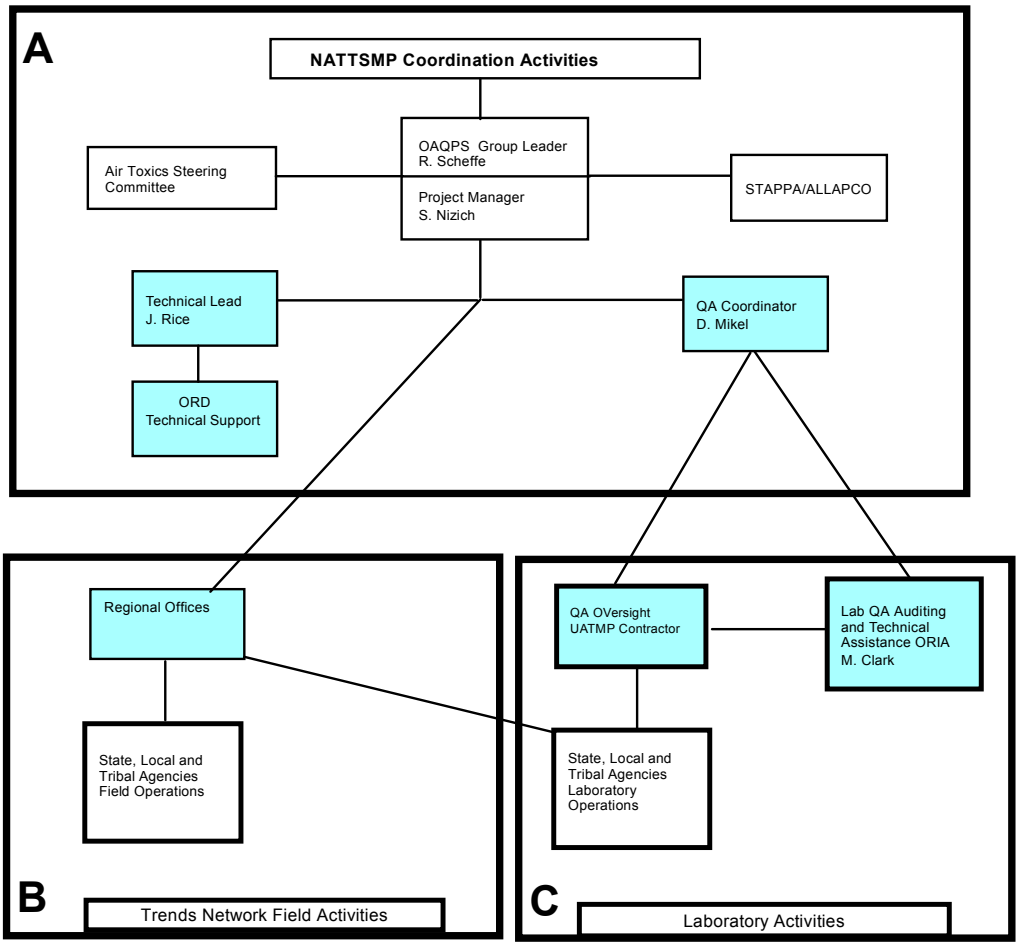


Figure 2.1 illustrates that there are two distinct systems in place for the NATTS: the QA System and Monitoring System. The following sections will highlight these.

2.2 Quality Assurance System

2.2.1 OAQPS-EMAD: At the top of the QA structure is the OAQPS-QAC. It is the QAC's responsibility to oversee that QA is implemented into the program. The QAC will interact with a monitoring workgroup that has formed. The monitoring workgroup consists of EPA, State and local agency, Regional Office, and ORIA QA staff. They will meet periodically to discuss monitoring and QA issues as they arise throughout the program. The QAC will also work directly with the ORIA and UATMP Contractor offices. Assessment Reports will be given to the QAC on an annual basis. These will include the results of the assessments listed in Table 2.1 performed during the previous year. The ORIA offices; ORIA will have important roles in the QA system.. In addition, the MQAG may also perform MSR or TSAs on any of the agencies in the QA or monitoring system.

2.2.2 ORIA: ORIA will have QA oversight of the UATMP Contractor laboratory operations. As such, the laboratory will perform TSAs or MSRs on the UATMP Contractor laboratory operation on an annual basis. In addition, the ORIA will create laboratory PE samples that will be forward to the UATMP Contractor lab.

2.2.3 UATMP Contractor: The UATMP Contractor will have an important role in the QA system. The UATMP Contractor will create blind PE samples, distributed annually, for the S/L/T agencies that participate in the NATTS. These will be sampled containing VOCs, SVOCs, metal, and aldehydes. The blind PE samples will consist of laboratory generated and ambient PE samples. The results of the PE samples will be forwarded to OAQPS and included in the annual Quality Assurance Annual Report (QAAR).

2.2.4 Regional Offices: The EPA Regional Offices will provide Network Reviews of the NATTS on each agency within their region once every three years and perform TSAs and Instrument Performance Audits (IPAs) on an annual basis.

2.3 Quality Documents

The following are the documents, plans and guidelines by which the NATTS will be implemented.

2.3.1 Quality Management Plan: This QMP (described herein) outlines the management structure and how the QA system will be implemented. All entities listed in this QMP will adhere to these guidelines.

2.3.2 Quality Assurance Plans: All entities will develop QAPPs for their programs. This includes the State, Local and Tribal Agencies, UATMP Contractor and ORIA. All state and local agencies will develop field QAPPs that will outline how their QA system will be implemented. OAQPS has written a model field QAPP that can be used by the state and local agencies in drafting their individual QAPPs.

2.3.3 Assessments: There are several assessments tools that will be implemented by the QA system. The following table illustrates the implementation of assessments. Each of these assessments will be discussed in detail in Chapter 8.

Table 2.1 Assessment Schedule

Agency	Type of Assessment	Agency Assessed	Frequency
ORIA	TSA and PEs, round robin inter-laboratory samples	UATMP Contractor	Annually
UATMP Contractor	PEs	S/L/T agencies	Annually
OAQPS-EMAD	MSRs, TSAs	UATMP Contractor, ORIA, EPA Regional and S/L/T agencies	As needed by EMAD determination
Regional Offices	Network Reviews	S/L/T agencies	Once every 5 years
Regional Offices	TSAs and IPAs	S/L/T agencies	Annually *

* Not all instruments in the program will be audited every year. It is estimated that 25% of the instruments will be audited annually.

Assessments will be performed as the program begins and on a periodic basis after June 2003.

2.3.4 Quality Assurance Annual Report: QAAR will be a culmination of information from the assessments provided by the Regional Offices, ORIA and UATMP Contractor. In addition, OAQPS will download the collocation data from the AQS database and estimate precision and bias. The QAARs will include the results from the assessments described in Table 2.1 and will include all QA data collected by these entities and summarized for a calendar year. The report will also outline any additional assessments and actions needed to correct any deficiencies in S/L/T agency operations.

2.4 Description of the Monitoring System

This section will outline the monitoring system as illustrated in Figure 2.1. Data will be collected on the list of analytes in Table 2.2 .

Table 2.2 List of Analytes

Required[1]	Core2	Max3
Benzene, chromium, acrolein, and formaldehyde	Acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, chloroform, 1,2-dichloropropane, dichloromethane, tetrachloroethylene, trichloroethylene, vinyl chloride, arsenic, beryillium, cadmium, chromium, lead, manganese, nickel, formaldehyde and acrolein	Acrylonitrile, benzene, 1,3-butadiene, carbon tetrachloride, chloroform, 1,2 dibromomethane, 1,3-dichloropropene, 1,2-dichloropropane, ethylene dichloride, ethylene oxide, dichloromethane, tetrachloro ethane, tetrachloroethylene, trichloroethylene, vinyl chloride, arsenic, beryillium, cadmium, chromium, lead, mercury, manganese, nickel, acetaldehyde, formaldehyde and acrolein, 2,2,7,8 tetrachlorobenzo-p-dioxin, coke oven emissions, hexachlorobenzene, hydrazine, polycyclic organic matter, polychloronated biphenyls, quinoline

As can be seen from Table 2-2, there are a number of analytes on the list. Sampling for these compounds can be performed by a variety of ways. A Technical Assistance Document[4] has been developed which details the proven analytical methods for many of these compounds. However, there are no National Ambient Air Quality Standards (NAAQS) for air toxics, therefore, if an agency pursues a method that is not detailed in the TAD, the acceptance of the data will be Performance Based. S/L/T agencies will have to provide the technical information to EPA when selecting the instruments and laboratory analytical techniques.

2.4.1 State, Local and Tribal Agencies: The S/L/T agencies will provide all of the field work for the NATTS. Laboratory analyses will be performed according to the S/L/T agency QAPP. For the S/L/T that participate in the UATMP, the UATMP Contractor will perform these duties. Below is a list of duties:

Pre-Sampling

- Receiving materials from the vendors;
- Checking sample integrity;
- Conditioning filters, preparing cartridges and canisters;
- Weighing filters;
- Storing prior to field use;
- Packaging filters for field use;
- Associated QA/QC activities;

< Maintaining microbalance and analytical equipment at specified environmental conditions;
< Equipment maintenance and calibrations.

Shipping/Receiving

< Receiving samples from the field and logging into database;
< Storing samples;
< Associated QA/QC activities.

Post-Sampling

< Checking samples integrity;
< Stabilizing/weighing filters;
< extraction and analysis of samples ;
< Data downloads from field samplers;
< Validation and verfication;
< Data entry/upload to AQS;
< Storing samples/archiving;
< Associated QA/QC activities.

2.4.2 Contract Laboratories: Some of the S/L/T agencies will decide to use contract laboratories or UATMP Contract. If this is the case, the pre-sampling, shipping and receiving and post-sampling procedures will be performed by the contract laboratory or UATMP Contractor. It is the S/L/T agency responsibility to oversee their laboratories operations.

2.4.3 OAQPS – AQS: The EPA-OAQPS office will have the authority and responsibility for oversight of this program. The agency has two separate roles: storage of the data into the AQS database and oversight of the operation of the program. OAQPS will receive and review the QA reports that will be generated by the ORIA laboratory. In addition, it will provide technical assistance to UATMP Contractor, the State and Local Agencies and the ORIA laboratory.

2.5 References

1. Air Toxics Monitoring Newsletter, April 2002, 04-19-02, http://www.epa.gov/ttn/amtic /files/ambient/airtox/atmn7.pdf
2. Air Toxics Reporting Guide - Ambient Air Toxics Monitoring Pilot Study, October 2001, http://www.epa.gov/ttn/amtic/airtxfil.html
3. Federal Register Notice, Chapter 64, Section 38705, National Air Toxics Program, The Integrated Urban Strategy, July 19, 1999, http://www.epa.gov/ttn/atw/urban/fr19jy99.pdf
4. Air Toxics Methods Technical Assistance Document is currently being developed. It should be available in Fall 2002.

3.0 Personal Qualifications and Training

This section will discuss the system and process put in place to provide training for the NATTS. And will outline the process involved and training available for air monitoring professionals.

The process of training personnel will be a three pronged approach. First, the agencies must select persons who have the minimum qualifications to perform the duties. Second, the agencies must train the individuals for the basics of air monitoring theory and technique. OAQPS provides numerous satellite classes and on-your-own courses that are free to air monitoring individuals. All persons working on this program are encouraged to take these courses.

3.1 Personnel Qualifications

OAQPS, in conjunction with UATMP Contractor, will make every effort to provide training to all who participate in this program. Personnel assigned to the NATTS should meet the educational, work experience, responsibility, personal attributes, and training requirements for their positions. Although OAQPS will provide training to all agencies, it cannot require the state and local agencies or any contractors to send their staff to EPA training courses. During MSRs, EPA and its contracts will review records on personnel qualifications and training. All agencies should maintain these records in personnel files and have them accessible for review during audit activities.

3.2 Training

Appropriate training will be made available to employees supporting the NATTS, commensurate with their duties. For the S/L/T agencies that are using the UATMP, UATMP Contractor provides field Standard Operating Procedures (SOPs) and direct training when they assist the S/L/T agencies in setting up the UATMP samplers.

Over the last 3 years, a number of courses have been developed in cooperation with EPA for personnel involved with ambient air monitoring and quality assurance aspects. Formal QA/QC training is offered through the following organizations:

< Air Pollution Training Institute (APTI) *http://www.epa.gov/oar/oaq.apti.html*
< Air & Waste Management Association (AWMA) *http://awma.org/epr.htm*
< American Society for Quality (ASQ) *http://www.asq.org/products/educat.html*
< Institute for Tribal Environmental Professionals and the Tribal Air Monitoring Support Center *http://www4.nau.edu/tams/*
< EPA Quality staff *http://www.epa.gov/quality1*

The above mentioned courses are open to all air monitoring personnel. EPA strongly encourages all S/ L/T agencies and contractors to take these courses. Table 3.1 presents a sequence of core ambient air monitoring and QA courses for ambient air monitoring staff, and QA managers. The suggested course sequences assume little or no experience in QA/QC or air monitoring. Persons having experience in the subject matter described in the courses would select courses according to their appropriate experience level. Courses not included in the core sequence would be selected according to individual responsibilities, preferences, and available resources.

Table 3.1 Core Ambient Air Training Courses

Sequence	Course Title (SI = self instructional)	Source
1*	Air Pollution Control Orientation Course (Revised), SI:422	APTI
2*	Principles and Practices of Air Pollution Control, 452	APTI
3*	Orientation to Quality Assurance Management	QAD
4*	Introduction to Ambient Air Monitoring (Under Revision), SI:434	APTI
5*	General Quality Assurance Considerations for Ambient Air Monitoring (Under Revision), SI:471	APTI
6*	Quality Assurance for Air Pollution Measurement Systems (Under Revision), 470	APTI
7*	Data Quality Objectives Workshop	QAD
8*	Quality Assurance Project Plan	QAD
9	Atmospheric Sampling (Under Revision), 435	APTI
10	Analytical Methods for Air Quality Standards, 464	APTI
11	Chain-of-Custody Procedures for Samples and Data, SI:443	APTI
*	Data Quality Assessment	QS
*	Management Systems Review	QS
*	Beginning Environmental Statistical Techniques (Revised), SI:473A	APTI
*	Introduction to Environmental Statistics, SI:473B	APTI
*	Statistics for Effective Decision Making	ASQ
	AQS Training	OAQPS

* Courses recommended for QA Managers

3.3 Certification

It will be the responsibility of the S/L/T agencies to certify their staff for this program.

4.0 Extramural Agreements and Procurement of Items and Services

OAQPS must ensure that the items and services it acquires are procured within EPA regulations are delivered in a timely fashion, and are within the required specifications. The following sections will provide general information on OAQPS procurement procedures and provide personnel involved in the Speciation Program with the a description of the requirements

4.1 Source of Funds

4.1.1 State and Tribal Air Grants: Since implementation of the NATTS is a State and Local responsibility, the source of funds for the program are awarded as Section 103 and eventually 105 State and Tribal Air Grants (STAG). Every year funds will be allocated to the State and local air monitoring organizations to operate the NATTS. The funds are allocated to the EPA Regions who then allocate them to the State, Local or Tribal agencies. These agencies then follow their own procurement policies to get the NATTS monitoring accomplished.

A portion of the STAG funds are allocated back to OAQPS for two activities

1. National NATTS monitor contract- OAQPS set up a national contract to facilitate the purchase of NATTS monitors

2. UATMP laboratory contract- OAQPS set up a national contract to perform all the filter preparation and analyses and reporting activities.

Each year OAQPS will submit a request for the appropriate allocation of funds for these activities based on the number of monitors being implemented (or planned) for that fiscal year. These allocations or “taps” on the STAG funds are approved by the States.

4.1.2 OAQPS Internal funds: Each year OAQPS plans the activities it will pursue in the upcoming fiscal year. NATTS monitoring and QA leads will work with various work groups and cooperators to prioritize the use of the environmental program management (EPM) funds. These funds may be used to purchase capital equipment or for contracting.

OAQPS, through the Memorandum of Agreement with the ORIA labs (ORIA), will provide contract funds to this labs. The use/ allocation of the funds will be negotiated during fiscal year planning.

4.2 Procurement of Items

Within EPA, only contracting officers (COs) are authorized to procure items and services, unless it is a fund transaction approved by the CO prior to the originators purchase of the item. The Federal Government is not bound by any commitments made by other than authorized personnel.

Requests for purchases begin at the yearly planning stages of the NATTS for the EPA or STAG funds. Purchases by contractors must be identified in the project scope of work for such purchases. All items should be identified and specifications that meet the NATTS minimum needs should be detailed. These specifications will be referred to during the procurement process and will assure that the OAQPS requestor receives the proper item and reduces the chances of purchase delays or incorrect purchases because of inadequate product specifications. State and local funds are allocated through procurement and should follow state and local procurement policies.

4.3 Procurement of Services

Two types of mechanisms are primarily used to procure services, contracts and assistance agreements (grants, cooperative agreements, etc.). As mentioned in section 4.2, COs are the only individuals who can obligate funds.

When procuring services, one should follow the same basic procedure used for the procurement of items. There are certain activities that are of a policy- and decision-making nature that should remain the sole authority of EPA. The CO should be contacted during the initial planning of the PR to discuss specific requirements for the procurement.

The Project Officer (PO) states the service that will be delivered, measures the quality of the service, and accepts the service. When a level-of-effort contract is the vehicle used in procuring services, the work assignment manager (WAM) provides the technical expertise for the work assignment and assumes responsibility for the QA requirements assigned to the PO. Two major tools to ensure that adequate service is provided are a well-defined statement of work (SOW) and a QA Project Plan (QAPP) that includes reviews (audits).

The QAC assists in this activity by providing knowledge and guidance on the QA requirements and aspects of any potential project. The QAC will also approve the QA review form that is discussed in the next section.

4.3.1 Contracts: Contracts are used when the government derives sole benefit from a particular product or service. Contracts can be specific and can require a degree of lead time for development. Depending upon the scope of the service, QA attributes can be developed that must be adhered to under the terms and agreements of the contract. Any EPA initiated contracts are required to use some type of QA form to determine if the contract will require EDO and

therefore requires a QMP and a QAPP. After the form is completed it must be reviewed by the WAM/PO and a QAC. The form must be kept in the official contract file.

The Federal Acquisition Regulations(FAR), Title 48 of the Code of Federal Regulations, was recently amended to address contract quality systems requirements on a government-wide basis. The new FAR clause at 52.246-11, Higher-Level Quality Requirement, allows a Federal agency to select a voluntary consensus standard as the basis for its quality requirements for contracts and allows tailoring of the standard to more effectively address specific needs or purposes. Based on this FAR clause, EPA has selected ANSI/ASQ E4, *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs*, as the basis for its environmental quality requirements and has tailored this standard to ensure that contractors demonstrate conformance to this national standard. The background and application of the new procurement policy as it relates to QA is included in Appendix A.

Due to these changes, 48 CFR 1546, a quality regulation that applies only to EPA, will be removed from the Code of Federal Regulations. The tailoring language allowed by 52 CFR 246-11 and pertinent requirements in 48 CFR 1546 will be included in the EPA Directive 1900, *Contracts Management Manual*. This procurement policy notice is being issued to ensure an orderly transition from 48 CFR 1546 to EPA Directive 1900 and contains tailoring language allowed by 52 CFR 246-11. It is in effect until the revisions to Directive 1900 are completed

Whenever the government enters into a contract, it is entitled to receive quality service. In order to define and measure this quality, the WAM/PO must develop a SOW that will accurately define the minimum acceptable requirements for the service. Methods used to determine quality (audits, quarterly interviews, random inspections, etc.) should be explained prior to project implementation so that the supplier will understand how quality will be assessed.

Part of the procurement process of certain types of large contracts include the use of a technical evaluation panel (TEP). When this form of contracting mechanism is used to solicit contracts for the NATTS, which a significant percent of the cost (> 25%) includes EDO, the TEP must include the QAC. Part of the TEP responsibilities will include rating each potential contractor against a standard set of criteria. A portion of this criteria can include various assessments such as on-site audits and the analysis of performance evaluation materials. Prior to the solicitation for bid, it must be determined what proportion of the TEP rating will be allocated to QA assessments. It is suggested that a minimum of 5% of the overall TEP rating be allocated to QA.

4.4 Assistance Agreements

Assistance agreements are used when both parties (EPA and the group providing the service) derive benefit out of the service. This usually occurs with grants or cooperative agreements where universities or states derive benefits from participating in Environmental Data Organizations (EDOs). QA requirements are developed for all assistance agreements that include EDOs. OAQPS follows guidelines developed in the *EPA Assistance Administration Manual* (EPA-5700). Assistance agreement SOWs are usually developed jointly. However, once the SOW is completed, the parties must also agree on the quality standards for assuring the product or service. It is the responsibility of the WAM/PO to be knowledgeable of the EPA QA policy and to represent these standards during the development of the projects SOW. Special conditions are usually included in assistance agreements. The PO will list the conditions to which project participants must adhere. One of these conditions relates to QAPPs. Any assistance agreement that includes EDOs must include the following statement:

A quality assurance project plan must be submitted within 90 days of this agreement and/or 30 days prior to commencement of any EDOs. Implementation dates will be adjusted based upon the above conditions. Costs associated with data collection are not allowable costs until the quality assurance project plan is submitted, nor will costs be reimbursed until the quality assurance program plan is approved.

4.5 EPA Exclusive Versus Discretionary Functions

The following information comes directly from *EPA Quality Manual for Environmental Programs 5360*[1].

Many quality system activities involving EDOs are inherently governmental functions and must be performed only by EPA personnel or by personnel explicitly authorized by EPA based on statute, regulation, or by the terms of an extramural agreement. Such representatives may include other governmental personnel and with specific authorization, contractor personnel. When such quality management tasks are performed by a contractor, the contract must be appropriately managed and must remain under the control of the authorized EPA contracting representatives. EPA cannot use cooperative agreements or grants to provide quality management activities such as QA and QC services for EPA because it is an inappropriate use of financial assistance (Office of General Counsel memorandum, August 2, 1994).

This section describes the quality management tasks necessary to comply with the Order and identifies those tasks that may be performed by non-government personnel under appropriate management controls.

Two types of quality management functions are described:

- Exclusively EPA Functions - inherently governmental work which must be performed only by responsible EPA officials, including the QA Managers (QAMs), or authorized EPA representatives.

- Discretionary Functions - activities that may be performed either by EPA personnel or by non-EPA personnel under the specific technical direction of and performance monitoring by the QA Manager or other responsible EPA or Government official under an approved contract, work assignment, delivery order, task order, etc.

In the situations involving the other associated functions, there may be instances involving sensitive contracting services, advisory and assistance services, and vulnerable contracting practices as defined by the Federal Acquisition Regulations, Office of Federal Procurement Policy (OFPP), and the EPA Contracts Management Manual (EPA Order 1900). Such situations are identified by *italicized text* in the following sections. In addition, management approval of services contracts as defined by OFPP Letter 93-1 must be obtained for many of the associated tasks.

Technical direction or other instructions to an extramural organization, relating to performance of an extramural agreement, shall be provided only by authorized EPA or other Government representatives in accordance with the terms of the applicable extramural agreement. Only authorized EPA or other Government representatives are to provide direction or instructions to an extramural organization providing quality systems support for environmental programs. This is to avoid such actions as:

- the providing of directions or instructions that are inconsistent with the terms of an extramural agreement,
- unauthorized access to confidential business information (CBI), or
- unauthorized access to information that may allow an extramural organization to gain an unfair competitive advantage.

4.5.1 Mandatory Quality Management Tasks and Descriptions: This section describes the activities and tasks integral to an effective quality system. These tasks are required to implement EPA Order 5360.1 CHG 1.

Manage and Coordinate the Quality System

Exclusively EPA functions that must be performed by EPA QA personnel include:

- managing the day-to-day implementation of the mandatory quality system;
- acting as liaison between the organization and the QS on matters of QA policy;
- provide assessments of the adequacy of resources to support the system.

- coordinating with senior management changes to the Quality System as needed to assure its continued effectiveness and assisting in reporting the results annually to management and to QS in the QA Annual Report and Work Plan;
- maintaining records of pertinent quality system activities performed by the organization.

Review and Approve Procurement and Financial Assistance Documents for QA Requirements

Exclusively EPA functions that must be performed by EPA QA personnel include:

- reviewing procurement and financial assistance documents (e.g., statements of work, scopes of work, applications for assistance, funding requests, and purchase requests) to confirm any need for QA requirements, providing any necessary special language or conditions for such QA requirements, and approving by signature the appropriate Quality Assurance Review Form.
- participating directly or indirectly in the solicitation or agreement review process to advise the Project Officer on the suitability of the officer's quality system or quality assurance/quality control (QA/QC) approach for the particular project.
- reviewing work assignments, delivery orders, and task orders to certify that appropriate QA/QC requirements have been established and that the necessary instructions are being communicated to the contractor to carry out the required QA/QC tasks. Approving by signature appropriate Quality Assurance Review Form (EPA Order 1900, Chapter 2).

Review and Approve QA Planning Documents

Exclusively EPA functions that must be performed by EPA QA personnel or their authorized EPA representative include:

- reviewing Quality Assurance Project Plans (QAPPs) for all projects, work assignments, delivery orders, task orders, grants, cooperative agreements, and interagency agreements involving data acquisition, data generation, and/or measurement activities that are performed on behalf of EPA.
- approving all QAPPs for implementation in all applicable projects, work assignments, delivery orders, task orders, grants, cooperative agreements, and interagency agreements performed on behalf of EPA.
- coordinating the correction of deficient QAPPs with the Project Officer and his/her management.

Discretionary functions that may be performed by either EPA personnel or non-EPA personnel include:

- *reviewing, at the specific technical direction of the QAM, QA Project Plans and other QA-related planning documents, such as sampling and analysis plans, Data Quality Objectives (DQO) specifications, etc., and providing specific substantiated*

recommendations to the QAM on the adequacy of the QA approach in meeting the criteria provided by the QAM. (The reviews should identify specific technical deficiencies in the planning documents.)

Track and Report Quality System Deliverables

Exclusively EPA functions that must be performed by EPA QA personnel or their authorized EPA representative include:

- tracking critical quality system deliverables for the organization and make periodic reports to senior management on the status of reporting actions and deliverables.

Discretionary functions that may be performed by either EPA personnel or non-EPA personnel include:

- compiling/logging administrative and management information including turnaround times to correct deficient QAPPs, responses to audits (e.g., responses and corrective actions), and quality reviews of final reports.

Manage Contractor Support Work Assignments, Delivery Orders, and Task Orders

Exclusively EPA functions that must be performed by EPA QA personnel include:

- serving as the Contracting Officer Representative (for example, Project Officer, Work Assignment Manager, or Delivery Order Project Officer) for specific QA support contracts, work assignments, delivery orders, and task orders.

Plan and Conduct Management Assessments

Exclusively EPA functions that must be performed by EPA QA personnel include:

- planning, directing, and conducting assessments of the effectiveness of the quality system being applied to environmental data operations and reporting results to senior management. Such assessments may be conducted using the Management Systems Review (MSR) process.
- coordinating with senior management any revision of the quality system as necessary based on the findings of the assessment.

Discretionary functions that may be performed by either EPA personnel or non-EPA personnel include:

- *providing technical support to the EPA QAM in the planning phase of management assessments. (Such activities are limited to the assembly and compilation of background*

information and data, guidance documents, technical reports, etc., available in the public domain, for use by EPA in designing the assessment goals and specifications.)

Plan and Conduct Technical Assessments

Exclusively EPA functions that must be performed by EPA QA personnel or their authorized EPA representative include:

- planning and directing with the responsible EPA project officials the implementation of periodic technical assessments of ongoing environmental data operations to provide information to management to assure that technical and quality objectives are being met and that the needs of the customer are being satisfied. Such assessments may include technical systems audits, surveillance, performance evaluations, and data quality assessments.
- determining conclusions and necessary corrective actions (if any) based on the findings of the assessments.

Discretionary functions that may be performed by either EPA personnel or non-EPA personnel include:

- *performing technical assessments of environmental data producing activities, both intramural and extramural (on-site and off-site) according to a specific plan approved by the QAM. Preparations for such assessments may include the acquisition or development of audit materials and standards. Results (findings) are summarized, substantiated, and presented to the QAM or authorized EPA representative.*

  A determination of whether an authorized Agency representative should accompany a contractor's personnel should be made on a case-by-case basis only after coordination between the responsible organization and contracting officer. Such coordination should include consideration of the purpose of the accompaniment and clear definition of the Agency representative's role and responsibility during the contractor's performance of the audit or technical assessment to avoid the appearance of a personal services relationship.

Prepare and Present QA Training Materials and Courses

Exclusively EPA functions that must be performed by EPA QA personnel or their authorized EPA representative include:

- developing and presenting detailed guidance and training for QA/QC activities based on interpretation of Agency-wide requirements and guidance.

Discretionary functions that may be performed by either EPA personnel or non-EPA personnel include:

- *providing or coordinating quality-related training for the organization in special skill areas identified by the Agency and not generally available to the organization.*
- *providing allowable technical and/or logistical assistance in preparing and presenting quality-related technical training (within the Agency's implementation of special management and control measures and the constraints of potential for conflict of interest, of revealing confidential business information, or of appearing to be interpreting or representing Agency policy).*

Review and Approve Final Reports for Quality Documentation

Exclusively EPA functions that must be performed by EPA QA personnel or their authorized EPA representative include:

- establishing criteria for the acceptability of quality documentation in the organization's published papers and reports; that is, defining what is required for an adequate discussion of the quality of the project results and the usability of the information reported.
- approving for publication those papers and reports that meet the defined criteria.

Discretionary functions that may be performed by either EPA personnel or non-EPA personnel include:

- *conducting a substantiated technical review of all reports produced by the organization using the qualitative and quantitative specifications obtained from the DQO process or other criteria provided by EPA. This quality review complements the peer review process.*

4.6 References

1. Policy and Program Specifications for the Mandatory Agency-wide Quality System, EPA Order 5360.1 A2, May 2000, http://www.epa.gov/quality1/qa_docs.html

5. 0 Records and Documentation

The responsibility of record keeping will fall upon OAQPS, ORIA, S/LT agencies and UATMP Contractor. For the NATTS, there are number of documents and records that need to be retained. A document, from a records management perspective, is a volume that contains information which describes, defines, specifies, reports, certifies, or provides data or results pertaining to environmental programs. As defined in the *Federal Records Act of 1950 and the Paperwork Reduction Act of 1995* (now 44 U.S.C. 3101-3107), records are: "...books, papers, maps, photographs, machine readable materials, or other documentary materials, regardless of physical form or characteristics, made or received by an agency of the United States Government under Federal Law or in connection with the transaction of public business and preserved or appropriate for preservation by that agency or its legitimate successor as evidence of the organization, functions, policies, decisions, procedures, operations, or other activities of the Government or because of the informational value of data in them..." OAQPS, ORIA, will adhere to this guideline. The S/L/T agencies and UATMP Contractor will be strongly encouraged to adhere to this guideline as well. Section 5.1 illustrates the process that will be implemented for storing documents and records. Since many agencies are involved, their documentation storage capabilities and processes will differ; however, there is one thing to which must to adhered, all documents and records for this program will be securely stored. For more information on document control and storage, please see the individual agency QAPPs.

5.1 Document Hierarchy and Process

This section will outline the hierarchy of the documentation and illustrate the review process for the major documents created for this program. Please See Figure 5.1 for an illustration of the documents that govern the NATTS program.

5.1.1 Hierarchy: The Clean Air Act (CAA) and EPA Order 5360.1 A2, May 2000 are the overarching documents for this program. As such, all authority to create programs and allocate funds is given in these documents. EPA Order 5360.1 gives the EPA authority to require all agencies that accept federal funds to create QMPs, QAPPs and Network Plans. For the NATTS, OAQPS has the authority to require, review, comment and withhold funds if these requirements are not met. The order of hierarchy follows:

1. The CAA and Order 5360.1 are the overarching authority.
2. The QMP encompasses the entire program. All agencies, ORIA, OAQPS, UATMP Contractor and the S/L/T will adhere to the requirements and guidelines in the QMP. The QMP discusses the roles of each agency.
3. The QAPPs for individual agencies will govern that agency. The agency must adhere to the statements made in their QAPP.
4. The Network Plan will outline how the network will be implemented and document the location of each sampler with all ancillary data.

5.1.2 Document Creation and Review Process: Please see Figure 5.1 for structure of the documentation in this NATTS program.

QMP - The QMP for this program was generated by OAQPS-EMAD-MQAG. It has the overarching authority over all QAPPs, Network Plan and all other ancillary documents. This document will undergo thorough review by OAQPS, ORD, ORIA, and UATMP Contractor. It will be made available for comments to the S/L/T agencies as well. Since changes may be made in this program, any revisions must be reviewed by all OAQPS and ORIA.

QAPPs - The QAPPs written by the individual agencies to describe their process of assuring the quality of the data. OAQPS delegates the authority to review these individual QAPPs to the Regional QA officers.

Network Plan - OAQPS requests that all agencies that will operate a NATTS sampler will take electronic photographs of each site in the cardinal directions. An additional photograph of the site will also be taken. These will be forwarded to OAQPS with all other siting data. OAQPS will create an database which will include the following:

< Electronic photo of the sampler in place;
< Electronic photos of the area in all cardinal directions;
< Maps of the area showing local sources (if known);
< Coordinates of the location generated by Geographic Positioning Systems.

This data will be compiled and placed in a database. Since this data will also be entered in to the AQS, the OAQPS database will be updated periodically. All of this data will be placed on Compact Disk (CD) and distributed and stored by OAQPS. Any parties that wish to review the network will be able to obtain this data expeditiously.

Other Documents - The responsibility of all other documents is detailed in the next section.

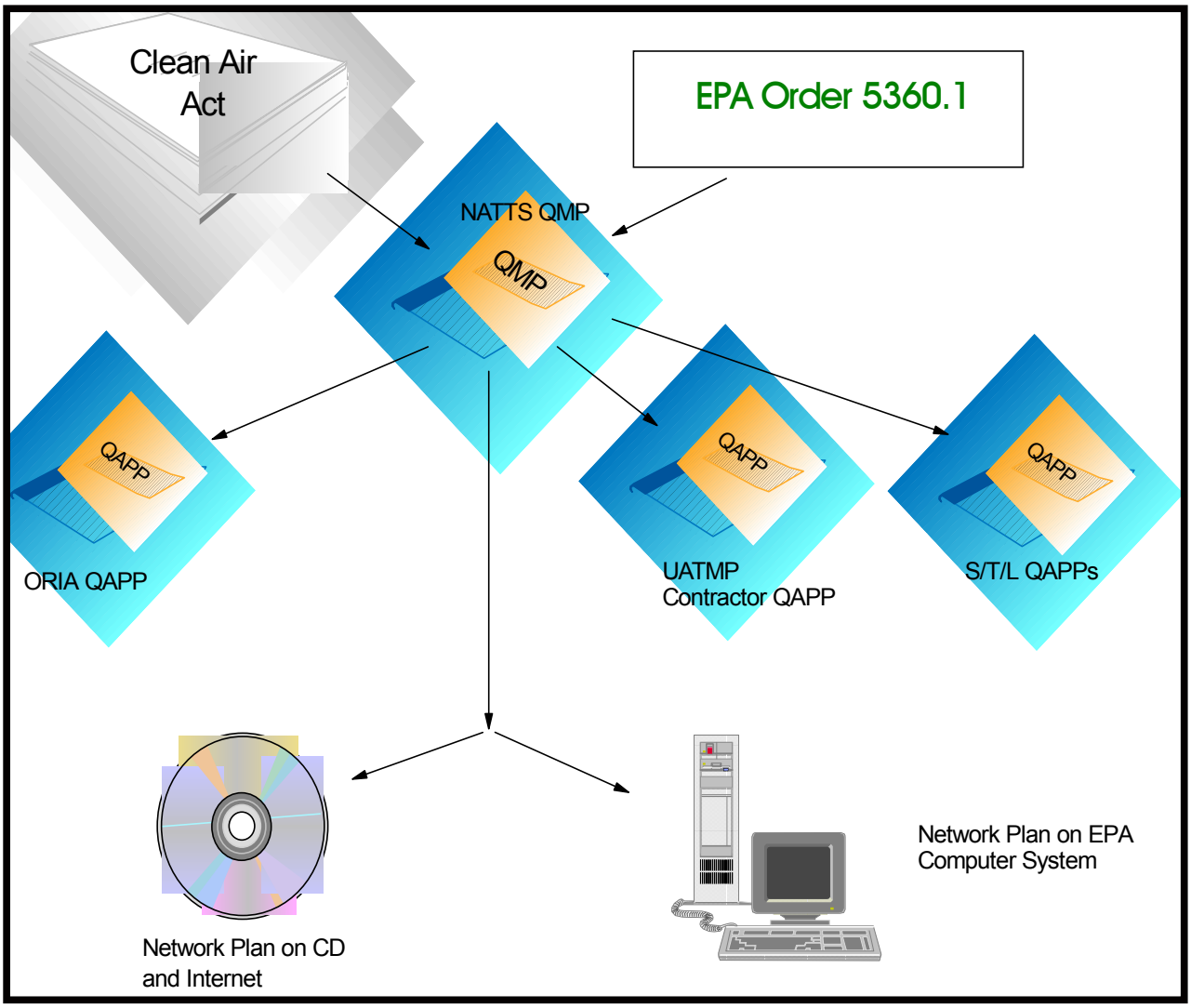


Figure 5.1 Hierarchy of Documents

5.2 Documentation Responsibilities

5.2.1 EPA OAQPS: This division has oversight of the NATTS. As such, the documents that must be control and stored are under the jurisdiction. The Program Manager and the QA coordinators are defined below.

Program Manager - The program manager is responsible for the overall operation and technical guidance for the program. The documents and records under his/her jurisdiction, are reports to management, summaries of discussion and conference calls, technical guidance documents and any other data shared with all agencies involved.

QA coordinator - The QAC is responsible for the QA aspects of this program. As such, he is responsible for the QA documents related to QA conference calls The QAC is also responsible for the oversight and review of the NATTS QMP and all QAPPs created by the UATMP Contractor, ORIA and S/L/T agencies

5.2.2 ORIA

Project Manager - The project manager is responsible for the oversight of the laboratory QA at ORIA. As such, he/she is responsible for the storage of all records and documents generated by this lab. The ORIA approach uses bound notebooks to enter data on any stock solutions, working calibration or dilutions that are generated. It is the project manager's responsibility to assure that all personnel under his jurisdiction keep these secured when not in use or overnight.

Quality Assurance Chemists - The QA chemist is responsible for the QA oversight of this laboratory. Any records created that pertains to duplicates, spikes or other QA samples will be under the QA chemist's jurisdiction.

5.2.3 EPA Regional Offices: The Regional Office approach uses bound notebooks to enter data on any flow rate or field performance evaluations. Standard TSA forms will be filled out in the field situation. The data will then be entered into spreadsheets/word processing programs on laptop.

Project Manager - The project manager, in cooperation with the QAC, is responsible for the oversight of the field QA. As such, he/she is responsible for the storage of all records and documents generated by field TSA or performance audits. The project managers responsibility to assure that all personnel under his jurisdiction keep the handwritten and electronic field reports locked when not in use or overnight.

Regional QA Officers- The EPA Regional QA officers are responsible for the QA documentation related their individual QAPPs. In addition, these officers are responsible for the storage of the maintenance and operation documentation required to run a local program.

Field Auditors - The field auditors are responsible for the collection of QA data at the monitoring locations during TSAs or field performance evaluations. Any records created on paper or in on laptop computer must be in the auditors presence when traveling or be in his/her locked room.

5.2.4 UATMP Contractor: The UATMP Contractor will handle the bulk of the documentation and records for those agencies that utilize the UATMP contract. The UATMP Contractor has fully documented their system in their QAPP. The UATMP Contractor has a two tiered level of

management. The first tier has the program services manager, who is overall responsible lab operations and the QA Manager. The second tier is the Technical Area Supervisors. Each is responsible for maintaining, quality handling, storage and retrieval of their area records.

5.2.5 State, Local and Tribal Agencies: Each agency will retain copies of their documents and records pertaining to the operation, storage or handling of samples. These records must be made available for inspection and review by EPA or its designee.

5.3 Deposition and Storage of Documents and Records

This section will address the deposition, storage accessibility, protection, of documents and records. It is noted that the persons filling the roles mentioned above are responsible for the documents and record that they generate. These agencies will take full responsibility for the deposition of these records. Please note that all records and documents will be made available for review and scrutiny upon request for up to 5 years after the data were generated.

Field notes- Field forms, notebooks or laptop computers will be utilized for recording results of field audits, quality control procedures, repairs or calibrations. Dates, times, field conditions, temperature, pressure and flow rates will be recorded. These will be archived along with the data generated by the field laptops by EPA, S/LT agencies personnel or their designee.

Lab Notebooks- Notebooks will also be issued for the laboratory. These notebooks will be uniquely numbered and associated with the NATTS program. One notebook will be available for general comments/notes; others will be associated with, the temperature and humidity recording instruments, the refrigerator, calibration equipment/standards, and the analytical balances and instruments used for this program. UATMP Contractor and ORIA will both be generating laboratory data. Therefore, they must maintain all records for at least 5 years after the data are generated.

Chain of Custody Forms- Original Chain of Custody forms must be retained by the S/L/T agencies or UATMP Contractor.

Other Documents- All other documents must be stored according to their QAPP.

Electronic data collection- In order to reduce the potential for data entry errors, automated systems will be utilized where appropriate and will record the same information that is found on data entry forms. In order to provide a back-up, a hardcopy of automated data collection information will be stored for the appropriate time frame in project files.

5.3.1 Annual Summary Reports: The annual reports will ensure that work performed by the agencies is accurately performed and that the statutory and contractual requirements are met.

UATMP Contractor- UATMP Contractor shall submit to EPA-OAQPS an annual summary report of all the NATTS QA and UATMP data collected within that calendar year. The report will be submitted by April 1 of each year for the data collected from January 1 to December 31 of the previous year. The report will contain the following information:

- Agency Name,
- Laboratory name (if different from the agency name) ;
- PE samples submitted;
- Results of the PE analysis;

ORIA- ORIA shall submit to EPA-OAQPS an annual summary report of all the QA NATTS data collected within that calendar year. The report will be submitted by April 1 of each year for the data collected from January 1 to December 31 of the previous year. This report will include analysis of all PE samples and results of any MSRs or TSAs performed.

OAQPS- OAQPS will summarize all of the QA data and submit the QA Annual Report for review and posting to the AMTIC website.

5.3.2 Data Reporting Package/Archiving and Retrieval: All the information, electronic and written, will be retained for 5 years from the date that the data is generated unless otherwise noted in the funding agreement. However, if any litigation, claim, negotiation, audit or other action involving the records has been started before the expiration of the 5-year period, the records will be retained until completion of the action and resolution of all issues which arise from it, or until the end of the regular 5-year period, whichever is later. For example, any data collected in calendar year 2003 (1/1/03 - 12/31/03) will be retained until, at a minimum, January 1, 2008, unless the information is used for litigation purposes.

6.0 Computer Software and Hardware

There is an increasing dependence upon computers and computer related hardware in the collection of environmental data. Indeed, most environmental programs within and outside of the EPA use computers extensively to collect, store, validate and analyze environmental data. This section will outline briefly what computer systems will be employed throughout the NATTS. This chapter will also describe the roles and responsibilities for system hardware and software.

6.1 Computer System Descriptions

6.1.1 UATMP Contractor: The pre-sampling, post sampling data and sample run information will be housed in the UATMP Contractor database for the UATMP and PE data. For a description of the UATMP Contractor computer system, please see the UATMP Contractor QAPP.

6.1.2 EPA-OAQPS: Once the data has been validated by S/L/T agency or UATMP Contractor and reviewed by the S/L/T agencies, the data will be delivered to the AQS database. The AQS database is now housed in a long term data storage facility located at the EPA Computer Center in Research Triangle Park, North Carolina.

6.1.3 ORIA: ORIA will have a database system that will house the QA sample information analyzed by ORIA. The QA database will be on Local Access Network (LAN) that is maintained by the ORIA computer group.

6.1.4 Regional EPA Offices: The Regional EPA data will mostly consist of audit reports and TSA reports. As audit reports are written, they will be downloaded to a PC hardrive of the auditors.

6.2 Roles and Responsibilities

6.2.1 EPA Systems: All EPA databases are governed by EPA directive 2100 including the Year 2000 compliance, security and privacy requirements. Each of the EPA agencies have their own LAN (ORIA and OAQPS). These are password protected and maintained by the System Administrators (SA) for each agency. The EPA SA have the responsibility of ensuring that the computer hardware used for this program meets the technical requirements. These include:

< quality expectations (i.e., configuration testing);
< control to changes to hardware;
< the SA follow their QMP for developing, validating, verifying software so that it meets EPA Directive 2182;
< evaluate purchased software before it is utilized by EPA scientists;

< ensure that data and information produced by the EPA are collected and archived in a safe and secure manner.

6.2.2 UATMP Contractor: The UATMP Contractor will utilize a Data Base Management System (DBMS). This system will be utilized by the UATMP Contractor to manage, store analyze the database as the data are collected. The final database will be tested and follow the guidelines set down by EPA Directive 2182. The UATMP Contractor will have a data base Technical Supervisor who is tasked to perform the following duties:

< quality expectations (i.e., configuration testing);
< control to changes to hardware;
< follow their QAPP for developing, validating, verifying software so that it meets EPA Directive 2182;
< evaluate purchased software before it is utilized by UATMP Contractor scientists;
< ensure that data and information produced for the EPA are collected and archived in a safe and secure manner.

6.2.3 State/Local/Tribal Agencies: Each S/L/T agency will be encouraged to create a DBMS for their agency. It is the responsibility of each agency to store their data in a secure fashion.

7.0 Planning

This section will outline planning and implementation procedures that will be employed in the NATTS. This program has several diverse agencies that will be interacting at several levels. Therefore, to ensure that the work is being performed and that the quality of the data is acceptable, clear communication must be employed for this program. The following sections will outline how this will be accomplished.

7.1 Project Goals and Objectives

As stated in Section 1, the NATTS is a component of the NATA. The programmatic objectives of the NATTS network are to track:

- **Track trends at ambient levels, which will facilitate tracking progress toward emission and risk reduction goals. This will help assess the effectiveness of emission reduction activities and this goal relates back to the GPRA goal identified above;**
- Evaluate and subsequently improve air toxics emission inventories; and
- Evaluate and subsequently improve model performance and help to establish an ambient baseline for toxics risk characterization.

It has been decided that air toxics data over a period of 6 or more years (as defined in the DQOs) would be sufficient for statistical analysis of the data. This data will be utilized as input to models and for development of emission control strategies and determination of their long-term effectiveness. Public health officials and epidemiological researchers will also use the data to test health based research.

The ATSC meets annually to assess the progress of the NATA program. Milestones were set by the ATSC by which EPA would adhere. The following is a description of the milestones;

1. First Year, Network Design and Objectives: During the first year, the EPA staff will focus its efforts on the design of the NATTS network. In 2002, the ATSC reviewed the objectives of the network and agreed upon the initial monitoring locations. Their recommendations have been given to EPA.
2. Second Year, Implementation of the Initial Network: The focus will be on the writing the QAPPs, completion of the monitoring stations and sampler tests, completion of the sampling and analysis protocols, and start-up of the first 13 sampling sites. The PE samples will be sent to the laboratories, initial IPAs and TSAs will be performed by EPA Regions, ORIA and OAQPS.
3. Third Year, Development of Expertise in Data Interpretation: The expertise for data interpretation lies with EPA, Research and S/L/T scientists. Since AT monitoring and analysis has been available for 15-20 years, many in the scientific community can reap the rewards of analysis. OAQPS currently has an annual air toxic workshop that is conducted in Research Triangle Park, North Carolina. This workshop will be the

appropriate venue to integrate the results of the NATTS into the rest of the AT community.

7.2 Key Planning Personnel

7.2.1 Monitoring and Quality Assurance Group Leader: The group leader has the responsibility to make the final decision on the implementation of the program. He/she has the following responsibilities:

< meet with the ATSC to review the progress of the program;
< direct OAQPS personnel listed below;
< review the progress of the program and assure that it is moving forward as recommended by the expert panel.

7.2.3 Program Manager: The program manager is the person who performs the following planning activities:

< identify program schedules;
< writes the level of effort proposals;
< coordinate and adjourn the ATSC meetings;
< coordinate and adjourn the QA/monitoring teleconferences;

7.2.4 Quality Assurance Coordinator: The QAC is responsible for the QA planning for the program. He/she is responsible for:

< overseeing the overall QA for the program;
< making sure that proper QA is being performed;
< meet with other QA members via meetings and tele-conferences

7.3 Other Planning Activities

The following activities will facilitate the success of the program.

OAQPS must assure that each agency within the program receives the proper training, equipment, goods, services and technical knowledge to perform their duties. In addition, all parties must be made aware of events and deadlines. Part of this is clear communication amongst all agencies. The following methods will be used to impart information to ensure proper planning.

7.3.1 Tele-communications: Tele-conferencing is an extremely useful tool to impart information and ensure that the planning process is moving forward. For the past 18 months, Ms. Sharon Nizich has led a tele-conference working group for the Air Toxics Pilot Program. The working group has consisted of OAQPS, Regional EPA and State and Local Agency staff. Ms. Nizich has guided this working group by informing the group concerning the development

of the NATTS samplers, discussion of the laboratory operations and the time lines of implementation of the program.

7.3.2 Internet: EPA supports and maintains a web site on the Word Wide Web. Guidance documents, special announcements, newsletter and related documents are posted on the website. These documents can be downloaded from the File Transfer Protocol (FTP) areas of the web site. In addition, the EPA and all of the agencies involved in this program have electronic mail (email) capabilities, by which information can be transmitted and all affected parties can be informed of meetings and special events. Any persons interested in the program may find information at the following location: *http://www.epa.gov/ttn/amtic/airtxfil.html.*

7.3.3 Data Analysis: Preliminary data analysis will be performed by the UATMP Contractor on UATMP data collected as described in their QAPP. However, it is OAQPS Trends Analysis Group will also review and analyze the data sets. Results and summaries will be presented a various seminars and technical workshops.

8.0 Implementation of Work

Each organization involved in this program will develop a QAPP that will describe the process and work performed for their program. The S/L/T agencies' QAPPs will be submitted to EPA Regional Offices, which will review, provide comments and finally approve their QAPPs. On the other hand, the UATMP Contractor's and ORIA's QAPPs will be submitted to OAQPS for review, comments and final approval. Since each agency/laboratory has developed their own QAPPs, ultimately each agency is responsible for the implementation of the program in their city, county, state or laboratory. This section will outline the individuals in each agency that will be required to implement the work.

8.1 Implementation Roles

8.1.1 Program Manager: The program managers are responsible for overall work to be performed. These include:

< ensuring that work is being performed according the agency QAPP;
< development and implementation of procedures;
< standardization of techniques;
< development of special or "critical" techniques that might deviate from the normal good laboratory practices;

8.1.2 Quality Assurance Managers: The QA managers oversee through internal TSAs and review of data that procedures are being followed as specified by the agency QAPP. In addition, the QA managers must also:

< identify operations needing procedures;
< help prepare the procedures by writing and revising the QAPP;
< review and approve procedures before they are implemented;
< provide new tools to the monitoring or laboratory staff that may enhance or increase the productivity of the operation;
< control the release, change and use of planned procedures;
< work with the program manager in approving changes to procedures;
< revise the QAPP to remove obsolete techniques and keep up-to-date procedures available to field and laboratory staff;
< verify that changes made in the field, through TSAs, as performed as prescribed in the QAPP.
< if contract laboratories are used, then it is the QA managers responsibility that the contractor write a QAPP and SOPs that can be incorporated into the agency-submitted QAPP.

9. Data Quality Assessments

This section describes the quality-related activities necessary to support the NATTS operations and the associated data acquisition, validation, assessment, and reporting.

Important benefits of regular DQAs include the opportunity to alert the management of data quality problems, to propose viable solutions to problems, and to procure necessary additional resources. Management should not rely entirely upon the MSRs and TSAs for their assessment of the data. The MSR and TSA only occur annually. Quality assessment, including the evaluation of the technical systems, the measurement of performance, and the assessment of data, is conducted to help insure that measurement results meet program objectives and to insure that necessary corrective actions are taken early, when they will be most effective.

9.1 Program Assessment Techniques

Assessment is an all-inclusive term used to denote any of the following: TSAs, PEs, MSRs and data quality assessments (DQAs). Definitions for each of these activities can be found in the Glossary. Table 10.1 provides information on the parties implementing the assessment and their frequency.

Table 9.1 Assessment Schedule

Agency	Type of Assessment	Agency Assessed	Frequency
ORIA	TSA and PEs, round robin inter-laboratory samples	UATMP Contractor	Annually
UATMP Contractor	PEs	S/L/T agencies	Annually
OAQPS-EMAD	MSRs, TSAs	UATMP Contractor, ORIA, EPA Regional and S/L/T agencies	As needed by EMAD determination
Regional Offices	Network Reviews	S/L/T agencies	Once every 5 years
Regional Offices	TSAs and IPAs	S/L/T agencies	Annually *

* Not all instruments in the program will be audited every year. It is estimated that 25% of the instruments will be audited annually.

9.1.1 Technical System Audit: The results of the TSAs will be included in the QAAR reports that will be submitted to OAQPS. Other agencies will submit their reports to OAQPS as well. Information on how these will be conducted can be found in EPA QA/R- 5 document.

9.1.2 Network Reviews: Network Reviews will be performed by EPA Regional staff on each State and Local Agency once every five years. The EPA Regional offices will be tasked to review the NATTS network at the same time as the criteria pollutant Network Review. The Regional offices will notify OAQPS of any anomalies in the network.

9.1.3 Management System Review: Management System Review will be conducted by the EPA-EMAD- MQAG staff. UATMP Contractor and selected EPA Regional office will be reviewed annually.

9.1.4 Data Quality Assessments: The EPA-EMAD-MQAG will produce a Data Quality Assessment report during the first year and every year thereafter. The data quality assessment will be an important part of the QAAR. The assessment will be performed using standard statistical tests to ascertain the uncertainty of the data.

9. 2 Reports to Management

The ORIA and UATMP Contractor laboratories will submit assessments and reports performed by the organization, to OAQPS. The OAQPS QAC will annually compile the information, along with estimates of precision and variance (i.e., Data Quality Assessments) and publish an annual QA report. The QAARs will be placed on OAQPS' Ambient Monitoring Technology Information Center (AMTIC) website for national distribution.

9.3 Planning, Training and Authority

The following sections will discuss process of planning, training and the authority of those whom will be performing assessments.

9.3.1 Planning: The QMP is the first step towards having an effective planning process. This QMP outlines how assessors for this program will plan, schedule and implement assessments. At the beginning of the year, those who have been assigned to perform assessments will set out their tentative schedule for assessments. This schedule will first be submitted to management, who can modify the schedule. After management approval, the schedule is submitted in writing (or email) to the agencies that will be assessed. Usually, one month before the assessment, the agency to be assessed is notified by telephone of the exact dates and times. At this time, the assessment form (TSA or MSR forms) are submitted to the agency to be assessed(in writing or via email). This allows the agency the time to review the forms and gather the information needed to be presented to the assessors. This has a two-fold objective: notification of what will be required during the assessment, and will minimize the field efforts of the assessors.

9.3.2 Training: Training is essential to assessors in two ways: the assessor needs to understand the process by which data are generated, without this knowledge the assessment may be inadequate, and in order to communicate clearly with the agency that is being assessed, the

assessor must be competent. Training fills these needs. A part of training that is not seen or documented is the fact that those chosen for assessment should have experience in the field in which they are assessing. Although most QA criteria and theory are universal, understanding the process by being experienced in working in that field is essential. Below is a list of assessment training that will be provided in this program.

< OAQPS will continue to offer satellite courses on QA and QC, as well as programs that update the state and local agencies on the NATTS.
< UATMP Contractor will continue to train operators of the UATMP samplers.

9.3.3 Authority: All personnel that are chosen to conduct assessments to this program have the authority to do so through the EPA. OAQPS has the overall responsibility and authority over this program. It delegates this authority to perform assessments to all agencies that perform such duties. All personnel in this capacity have the right and responsibility to:

< Identify problems;
< Identify and cite noteworthy practices that may be shared with others to improve the quality of their operations;
< Propose recommendations for resolving quality problems;
< Independently confirm implementation and effectiveness of solutions;
< Report these finding to the EPA Regional Offices or directly to OAQPS.

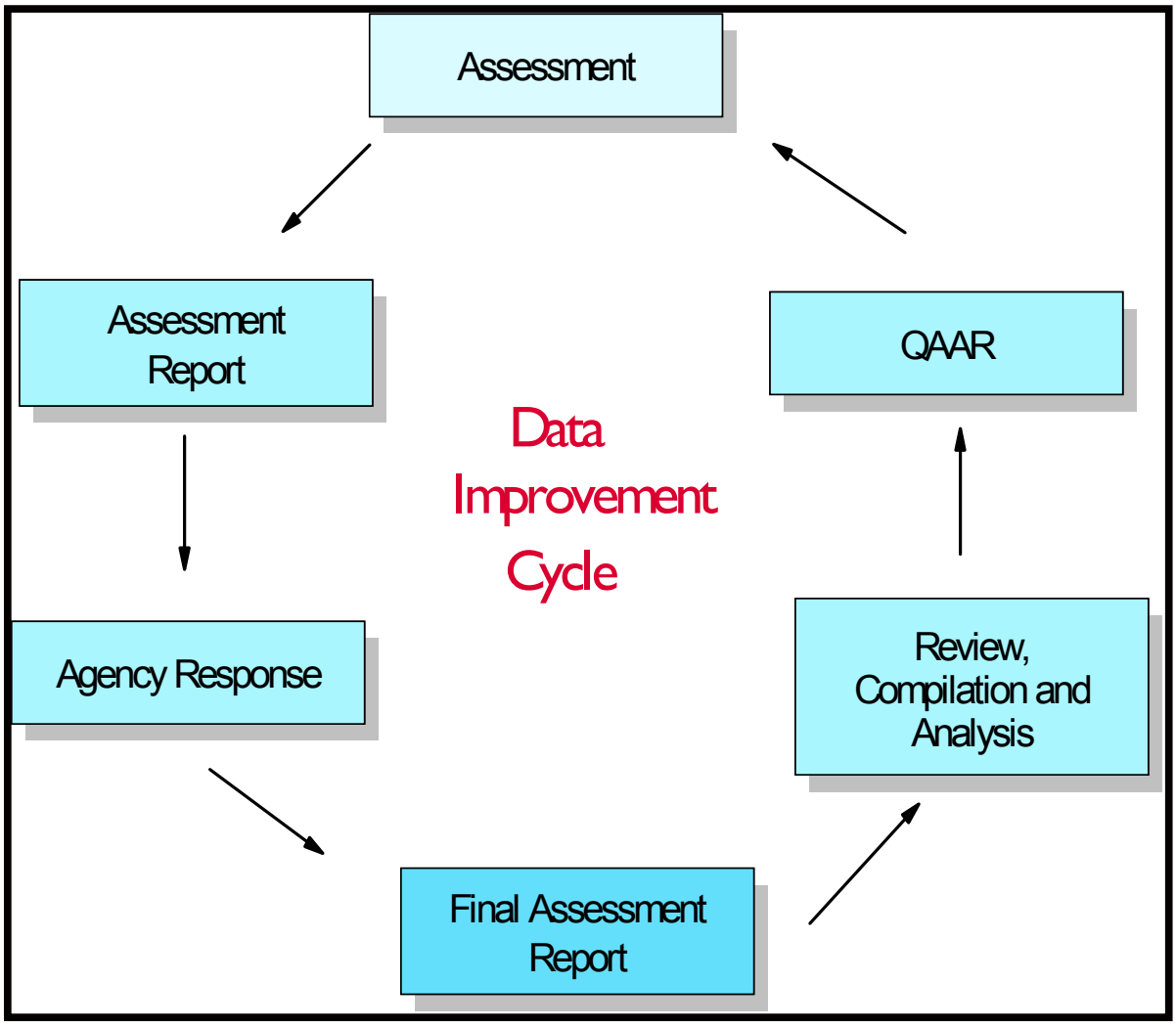
Reports of assessments are discussed in section 10.2.

9.3.4 Disputes: Occasionally, findings in an assessment report may be disputed by the agency assessed. Any disputes that are announced by an agency should first be handled by the Regional Offices. If this fails to satisfy the situation, then OAQPS has the final authority to make a decision concerning a dispute. In the case of assessments made by ORIA or the EPA Regional offices, OAQPS has the authority to discuss and satisfy disputes.

10.0 Quality Improvement

This section will outline planning and implementation procedures that will be employed for improving the quality of the program. All agencies participating in the NATTS have the responsibility to improve the quality of the program over an unspecified period of time. There can be no set dates on when this improvement can or will occur, however, all agencies will make every effort to improve the system over a period of many years. The following figures illustrates the quality improvement process that OAQPS will institute for this program.

Figure 10.1 Data Improvement Flow Diagram



10.1 Quality Improvement Process Flow

This section will outline the process flow of the quality improvement paradigm . Please refer to figure 10.1.

10.1.1 Assessment: The assessments that are planned for the NATTS are detailed in section 9 of this QMP. Once the assessment agency has completed the assessment, a report will be sent to the assessed agency.

10.1.2 Assessment Report: The assessment report will state the who, what, where and when of the assessment. The report will highlight the findings of the assessment and allow the assessed agency the ability to respond to all assessment findings (usually 45 days).

10.1.3 Response: The assessed agency has the right to respond in writing, or email. All responses will be reviewed by the assessment agency and will respond in kind. If any disputes arise from the assessment, this will be resolved as detailed in section 9.3.4 of this QMP. In addition, the EPA and all of the agencies involved in this program have electronic mail (email) capabilities, by which information can be transmitted and all affected parties can be informed of meetings and tele-conferences.

10.1.4 Final Assessment Report: The final assessment report will be sent to OAQPS and the assessed agency. This report will highlight the findings of the assessment and recommendations.

10.1.5 Review, Compilation and Analysis: Once OAQPS has received the final assessment reports, the agency will review the findings, compile the information and analyze the data. Any disputes concerning the assessments will be finalized at that time.

10.1.6 QAAR: The OAQPS QAAR will be the final report for a given calendar year. This report, created by OAQPS, will highlight the major findings of the assessment and recommendations will be made in this report. This report will then be sent to all Regional Offices, UATMP Contractor, the S/L/T agencies participating in the NATTS and ORIA. In addition, the report will be posted on the AMTIC website. Any other parties that wish to obtain this report must contact the person listed in the forward of this QMP. Regional offices will be required to forward this report to the state and local agencies.

10.2 Quality Improvement Assurance

The QAAR and the assessment reports will ensure that quality will continually improve by allowing the assessed agencies the ability to participate, review and have input into the final reports. Once the assessment reports are issued, the assessment agencies will note where improvement needs to be addressed. When the next assessment is performed, the previous deficiency will be noted and brought to the assessed agency's attention. At that time, the assessed agency must provide proof that the previous years assessment deficiencies were addressed between the assessments. Any deficiencies that were not addressed will be documented in the next assessment report. Deficiencies that are not addressed over a one year period will be noted by OAQPS. OAQPS will request that the Regional Offices contact the management of the assessed agency and take action as needed. This assures that OAQPS management will have resolution to deficiencies and that these deficiencies do not remain un-addressed. This above mentioned process will allow OAQPS and all stakeholders the ability to evaluate planning, implementation of programs, and evaluate the effectiveness of the program.

In the case of action items that threaten the quality of the data, the assessment team will identify who (organizationally) is responsible for improvements. If immediate action is needed, EPA-OAQPS gives the authority to the assessment agency to follow-up (within two weeks) to ensure that corrective action are taken and adverse conditions to quality are remedied as soon as practical

Staff members at all agencies are encouraged to identify and establish communications between all agencies. This includes S/L/T agencies to OAQPS and from any assessment agency to the S/L/T agencies. Staff members are encouraged to bring any improvements to the assessment agencies during the assessments and to discuss the most practical and cost effective remedies for any problem.

GLOSSARY OF QUALITY ASSURANCE AND RELATED TERMS

Activity — An all-inclusive term describing a specific set of operations of related tasks to be performed, either serially or in parallel (e.g., research and development, field sampling, analytical operations, equipment fabrication), that, in total, result in a product or service.

Assessment — The evaluation process used to measure the performance or effectiveness of a system and its elements. As used here, assessment is an all-inclusive term used to denote any of the following: audit, performance evaluation (PE), management systems review (MSR), peer review, inspection, or surveillance.

Audit (quality) — A systematic and independent examination to determine whether quality activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives.

Audit of Data Quality (ADQ) — A qualitative and quantitative evaluation of the documentation and procedures associated with environmental measurements to verify that the resulting data are of acceptable quality.

Authenticate — The act of establishing an item as genuine, valid, or authoritative.

Collocated samples — Two or more portions collected at the same point in time and space so as to be considered identical. These samples are also known as field replicates and should be identified as such.

Computer program — A sequence of instructions suitable for processing by a computer. Processing may include the use of an assembler, a compiler, an interpreter, or a translator to prepare the program for execution. A computer program may be stored on magnetic media and referred to as "software," or it may be stored permanently on computer chips, referred to as "firmware." Computer programs covered in a QAPP are those used for design analysis, data acquisition, data reduction, data storage (databases), operation or control, and database or document control registers when used as the controlled source of quality information.

Configuration — The functional, physical, and procedural characteristics of an item, experiment, or document.

Corrective action — Any measures taken to rectify conditions adverse to quality and, where possible, to preclude their recurrence.

Data Quality Assessment (DQA) — The scientific and statistical evaluation of data to determine if data obtained from environmental operations are of the right type, quality, and quantity to support their intended use. The five steps of the DQA Process include: 1) reviewing the DQOs and sampling design, 2) conducting a preliminary data review, 3) selecting the statistical test, 4) verifying the assumptions of the statistical test, and 5) drawing conclusions from the data.

Data Quality Objectives (DQOs) — The qualitative and quantitative statements derived from the DQO Process that clarify study's technical and quality objectives, define the appropriate type of data, and specify tolerable levels of potential decision errors that will be used as the basis for establishing the quality and quantity of data needed to support decisions.

Data reduction — The process of transforming the number of data items by arithmetic or statistical calculations, standard curves, and concentration factors, and collating them into a more useful form. Data reduction is irreversible and generally results in a reduced data set and an associated loss of detail.

Design — The specifications, drawings, design criteria, and performance requirements. Also, the result of deliberate planning, analysis, mathematical manipulations, and design processes.

Document — Any written or pictorial information describing, defining, specifying, reporting, or certifying activities, requirements, procedures, or results.

Document control — The policies and procedures used by an organization to ensure that its documents and their revisions are proposed, reviewed, approved for release, inventoried, distributed, archived, stored, and retrieved in accordance with the organization's requirements.

Environmental data — Any parameters or pieces of information collected or produced from measurements, analyses, or models of environmental processes, conditions, and effects of pollutants on human health and the ecology, including results from laboratory analyses or from experimental systems representing such processes and conditions.

Financial assistance — The process by which funds are provided by one organization (usually governmental) to another organization for the purpose of performing work or furnishing services or items. Financial assistance mechanisms include grants, cooperative agreements, and governmental interagency agreements.

Finding — An assessment conclusion that identifies a condition having a significant effect on an item or activity. An assessment finding may be positive or negative, and is normally accompanied by specific examples of the observed condition.

Independent assessment — An assessment performed by a qualified individual, group, or organization that is not a part of the organization directly performing and accountable for the work being assessed.

Inspection — The examination or measurement of an item or activity to verify conformance to specific requirements.

Management — Those individuals directly responsible and accountable for planning, implementing, and assessing work.

Management system — A structured, non-technical system describing the policies, objectives, principles, organizational authority, responsibilities, accountability, and implementation plan of an organization for conducting work and producing items and services.

Management Systems Review (MSR) — The qualitative assessment of a data collection operation and/or organization(s) to establish whether the prevailing quality management structure, policies, practices, and procedures are adequate for ensuring that the type and quality of data needed are obtained.

Organization — A company, corporation, firm, enterprise, or institution, or part thereof, whether incorporated or not, public or private, that has its own functions and administration.
Organization structure — The responsibilities, authorities, and relationships, arranged in a pattern, through which an organization performs its functions.

Procedure — A specified way to perform an activity.

Process — A set of interrelated resources and activities that transforms inputs into outputs. Examples of processes include analysis, design, data collection, operation, fabrication, and calculation.

Project — An organized set of activities within a program.

Quality — The totality of features and characteristics of a product or service that bears on its ability to meet the stated or implied needs and expectations of the user.

Quality Assurance (QA) — An integrated system of management activities involving planning, implementation, assessment, reporting, and quality improvement to ensure that a process, item, or service is of the type and quality needed and expected by the client.

Quality Assurance Project Plan (QAPP) — A formal document describing in comprehensive detail the necessary quality assurance (QA), quality control (QC), and other technical activities that must be implemented to ensure that the results of the work performed will satisfy the stated performance criteria. The QAPP components are divided into four classes: 1) Project Management, 2) Measurement/Data Acquisition, 3) Assessment/Oversight, and 4) Data Validation and Usability. Guidance and requirements on preparation of QAPPs can be found in EPA QA/R-5 and QA/G-5.

Quality Control (QC) — The overall system of technical activities that measures the attributes and performance of a process, item, or service against defined standards to verify that they meet the stated requirements established by the customer; operational techniques and activities that are used to fulfill requirements for quality. The system of activities and checks used to ensure that measurement systems are maintained within prescribed limits, providing protection against "out of control" conditions and ensuring the results are of acceptable quality.

Quality improvement — A management program for improving the quality of operations. Such management programs generally entail a formal mechanism for encouraging worker recommendations with timely management evaluation and feedback or implementation.

Quality management — That aspect of the overall management system of the organization that determines and implements the quality policy. Quality management includes strategic planning, allocation of resources, and other systematic activities (e.g., planning, implementation, and assessment) pertaining to the quality system.

Quality Management Plan (QMP) — A formal document that describes the quality system in terms of the organization's structure, the functional responsibilities of management and staff, the lines of authority, and the required interfaces for those planning, implementing, and assessing all activities conducted.

Quality system — A structured and documented management system describing the policies, objectives, principles, organizational authority, responsibilities, accountability, and implementation plan of an organization for ensuring quality in its work processes, products (items), and services. The quality system provides the framework for planning, implementing, and assessing work performed by the organization and for carrying out required quality assurance (QA) and quality control (QC).

Requirement — A formal statement of a need and the expected manner in which it is to be met.

Round-robin study — A method validation study involving a predetermined number of laboratories or analysts, all analyzing the same sample(s) by the same method. In a round-robin study, all results are compared and used to develop summary statistics such as inter-laboratory precision and method bias or recovery efficiency.

Self-assessment — The assessments of work conducted by individuals, groups, or organizations directly responsible for overseeing and/or performing the work.

Specification — A document stating requirements and referring to or including drawings or other relevant documents. Specifications should indicate the means and criteria for determining conformance.

Standard Operating Procedure (SOP) — A written document that details the method for an operation, analysis, or action with thoroughly prescribed techniques and steps and that is officially approved as the method for performing certain routine or repetitive tasks.

Technical review — A documented critical review of work that has been performed within the state of the art. The review is accomplished by one or more qualified reviewers who are independent of those who performed the work but are collectively equivalent in technical expertise to those who performed the original work. The review is an in-depth analysis and evaluation of documents, activities, material, data, or items that require technical verification or validation for applicability, correctness, adequacy, completeness, and assurance that established requirements have been satisfied.

Technical Systems Audit (TSA) — A thorough, systematic, on-site qualitative audit of facilities, equipment, personnel, training, procedures, record keeping, data validation, data management, and reporting aspects of a system.

Vendor — Any individual or organization furnishing items or services or performing work according to a procurement document or a financial assistance agreement. An all-inclusive term used in place of any of the following: seller, contractor, subcontractor, fabricator, or consultant.

Verification — Confirmation by examination and provision of objective evidence that specified requirements have been fulfilled. In design and development, verification concerns the process of examining a result of a given activity to determine conformance to the stated requirements for that activity.

Contact List

The following list is a compilation of contacts for the NATTS Program.

Contact	Agency	Phone Number	Email
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Draft Memo to Air Toxics Monitoring Steering Committee
Proposed FY2002 Trends Sites
Updated August 7, 2002

The purpose of this memo is to propose a list of candidate trends sites, which constitute the initial roll-out of the national air toxics monitoring network. This list was developed by a subcommittee of the Steering Committee (Mike Gilroy, Rich Scheffe, and Mike Koerber), with input from Steve Bortnick, Sharon Nizich, and Dennis Mikel. Please note that the list is a subset of the larger table of candidate sites prepared by Battelle (copy attached).

Background
The draft FY02 grant guidance provides $80,000 for the establishment and operation (for the first 12 months) of at least 10 (and, hopefully, as many as 20) initial trends sites. Based on a preliminary analysis by our data analysis contractor (Battelle) - see "Trends Straw Plan: Conceptual Framework for Network Design and Trends Estimation" (January 31, 2002) - the proposed allocation of these 10 - 20 trends sites is as follows:

- First 10 sites: one urban site in each of the 10 EPA regions;
- Second 6 sites: one rural site each in EPA regions 1/2, 3/4, 5, 6, 7/8, 9/10
- Final 4 sites: an additional urban site in EPA regions 2, 9, 5, and 4 (in that order)

Proposed Sites
The proposed list of the first 10 urban sites is provided below. Please note that it is assumed that the appropriate state/local agencies are willing to conduct this monitoring and if needed, then move equipment to the site if it is not complete already with toxics monitoring and PM2.5-speciation equipment.

The sites labeled "1a" and "1b" are backup sites if the proposed number 1 site does not want to participate.

The sites labeled "2a" and "2b" are proposed additional trends sites that could be added if more funds become available beyond the first 10 urban sites.

Region	Priority	Site id/location	Comments
I	1	East Providence RI-44-007-1010	**Begins Jan 2003**
	1a	Boston, MA-25-025-0042	Have plans for carbonyl sampling and purchase of aetholemeter - good variation of NATA source contributions relative to the RI site. **Begins Jan 2003**

II	1	New York City-36-005-0083	Includes PAMS and speciation-ultimately will be a trends site **Begins Jan 2003 (Queens)**
	1a	Elizabeth, NJ-34-039-0004	Can give us more information on site differences- contributions will be different than NY's.
	2	Rochester NY-36-055-6001	Additional site if we get more funds for trends sites.
III	1	Essex, MD-24-005-3001	Assumption that equipment is all there - toxics sampling will have to begin with these funds we're distributing.
	1a	Washington DC-11-001-0043	**Begins Jan 2003**
	1b	Pittsburgh, PA-42-003-0008	Additional site if we get more funds for trends sites, unique sources -may give some us some interesting data
IV	1	Decatur, GA-13-089-0002	All equipment there - will need to begin toxics sampling with these funds. **Begins Jan 2003**
	2a	Tampa, FL-12-057-1075	Already a pilot trends site and includes speciation equipment. Backup if Decatur doesn't want to participate..
V	1	Allen Park, MI-26-163-0001	Already a pilot trends site and includes speciation equipment. **Begins Jan 2003**
	2a	Minneapolis, MN-27-053-0960	Additional site if we get more funds for trends sites.
	2b	Indianapolis, IN-18-097-0078	Back-up if MN does not want to participate.
VI	1	Deer Park, TX-48-201-1039	Former super site - will need to move toxics equipment to site **Begins Jan 2003**
	1a	Dallas TX-48-113-0069	Backup if Deer Park (Houston) does not want to participate
VII	1	St. Louis, MO-29-510-0089	Will need to move toxics sampling equipment to site **Begins Jan 2003**

	1a	Cedar Rapids, IA-19-113-0037	Backup if St. Louis does not want to participate
VIII	1	Bountiful UT	Will need to move toxics equipment to site, already has speciation equipment **Begins Jan 2003**
	1a	Grand Junction CO	Backup if Salt Lake City does not want to participate **RURAL SITE - Begins Jan 2003**
IX	1	Rubidoux, CA-06-065-8001	Has all equipment -will need to begin toxics sampling with these funds.
	2a	San Jose CA-06-085-0004	Has all equipment- backup if Rubidoux does not want to participate **Begins Jan 2003**
	2b	Phoenix, AZ-04-013-9997	Unique inland city - will need to move toxics equipment to site. Additional site if we get more funds for trends sites.
X	1	Seattle, WA-53-033-0080	Current Pilot trends site and has a speciation sampler **Begins Jan 2003**
	1a	Portland, OR-41-051-0246	Preferred second urban site- very flexible about moving monitors
RURAL CHOICES			
1,2 combo		Chittenden County,VT-(Proctor Maple Research Center -Champlain Valley 50-007-0007	Has all equipment- IMPROVE site CHOICE FOR FY2003
3,4 combo		Hazard, KY (SE part of State-21-193-0003	**Begins Jan 2003**
	1a	Lawrence County, AL	IMPROVE site- need regional input
	1b	Murray County, GA	IMPROVE site- need regional input - logistical and equipment issues
5		Dodge City, WI, near Mayville-55-027-0007	Need regional input

	1a	Missaukee City, MI (upper MI, not in a city)- 26-113-0001	Has all equipment in place.
6		Harrison Cnty, TX- Longview/Marshall MSA- 48-203-0002	Need regional input
	1a	Polk County, AR	IMPROVE site- Need Regional input
	1b	Tillman County, OK	IMPROVE site -Need Regional input
7,8 combo	1	Durango, CO- 08-067-0008	Need Regional input
	1a	Flathead City- 30-029 GLAC	Need Regional input - other IMPROVE sites to consider?
	1b	Sanders City, MT 30-089 CABI	Need Regional input- other IMPROVE sites to consider?
9,10 combo	1	Siskiyou City, CA- 06-093 LABE	Need Regional input
	1a	Del Norte, CA - 06-015 REDW	Need Regional input
	1b	Bend OR- 41-017-0120	**Chosen for fy2003**

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15. SUPPLEMENTARY NOTES

16. ABSTRACT

The Quality Management Plan for the National Air Toxics Trends Stations details the management structure National Air Toxics Trends Monitoring Program. The guidance document gives details on which organizations will be involved with the national program. It details the responsibilities and rights of each organization that will be involved in the national trends network. It also discusses the data management and storage of the long term data. An important discussion point is the Quality Assurance Assessment and Improvement System.

. KEY WORDS AND DOCUMENT ANALYSIS

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