DRAFT (REVISION)

QUALITY ASSURANCE PROJECT PLAN FOR THE AUDIT SUPPORT PROGRAM

Approved by:

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A.2.1 - DOCUMENT CONTROL LIST-7/14/1999

1. Converted to R-5 format
   (A) See Table of Contents

2. Change from NERL to OAQPS in 1998
   (A) Coordinator to Manager
      (1) Shifted some coordinator's duties to contractor
         (a) Move procedures from QA Plan and SOP 001 to the contractor.
      (2) NERL laboratory to EPA Region 7 laboratory

A.2.2 ABBREVIATIONS:

NERL: National Environmental Research LaboratoryPart of EPA ORD(Office of Research and Development

OAQPS: Office OF Air Quality Planning and Standards

EMAD: Emissions, Monitoring, and Analysis Division

MQAG: Monitoring and Quality Assurance Group

NPAP: National Performance Audit Program

AMTIC: Ambient Monitoring Technology Information Center, Website on EPA's TTN

TTN: Technology Transfer Network

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APPENDICES

Appendix A: NPAP-SOP-002: Procedure for EPA Selection and Prioritization of Agencies and Sites Required To Perform NPAP Audits

Appendix B: QAPP and SOPs for Evaluation (Verification) by EPA Region 7 of NPAP Contractor Performance- These will be posted on AMTIC

Appendix C: Procedures for Laboratory Verification Of NPAP Audit Devices By NPAP Contractor- These are posted on AMTIC

NPAP-SOP-008: Carbon Monoxide (CO) Audit
NPAP-SOP-009: Sulfur Dioxide (SO_2) Audit
NPAP-SOP-010: Nitric Oxide (NO) Audit
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NPAP-SOP-012: Ozone (O_3) Audit
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Appendix D: Audit Data Processing SOPs- These are Posted on AMTIC

NPAP-SOP-005: Computer Data Entry, Report Printing and Maintenance for the NPAP

NPAP-SOP-006: Data Validation for Data Bases of the National Performance Audit Program
NPAP-SOP-007: Editing NPAP Data Bases

Appendix E: Instructions for Operating NPAP Audit Devices at Field Audit Site Locations - These will be posted on AMTIC:

Field Instructions for Conducting an Ozone Audit Using TECO 165 (3 pages).

Field Instructions for the TECO 175 Multi-pollutant Audit Device (11 pages)

Instructions for Auditing PM-10 (SSI) Samplers Using the (ReF) Flow Device (7Pages)

Field Instructions for the Gas Dilution (GDS) System Multi-Pollutant (7 pages)

A3 - DISTRIBUTION LIST

Person	Organization
Manager	Support Contractor
Vickie Presnell	EPA, Project Officer
Mark Shanis	EPA, Work Assignment Manager
Michael Papp	EPA, Group QA Team Leader
Joe Elkins	EPA, OAQPS QA Manager

A4 - PROJECT/TASK ORGANIZATION

The Audit Support Program is conducted by EPA OAQPS and their contractor, with 3rd party, independent verification support provided as needed through an MOU with EPA Region 7.

The EPA Work Assignment Manager is Mark Shanis, who reports to Rich Scheffe, Group Leader, OAQPS/EMAD/MQAG. The EPA Work Assignment Manager is responsible for overseeing the activities of the contractor relative to the program. EPA also performs systems and performance audits on the contractor. The NPAP OAQPS Manager works with the10 EPA Regional Office Contacts for NPAP to oversee the participation of the state, local, private, and tribal agency participants in their respective Regions.

The contractor personnel consists of the Contractor's Program Manager and staff. The contractor's responsibilities are listed in Section A6.

The EPA Region 7 NPAP Laboratory conducts performance evaluations on a sampling of the audit devices and materials provided to NPAP participants by the contractor. The details for responsibility of the Region 7 NPAP laboratory are provided in the QAPP for that laboratory. See Appendix B.

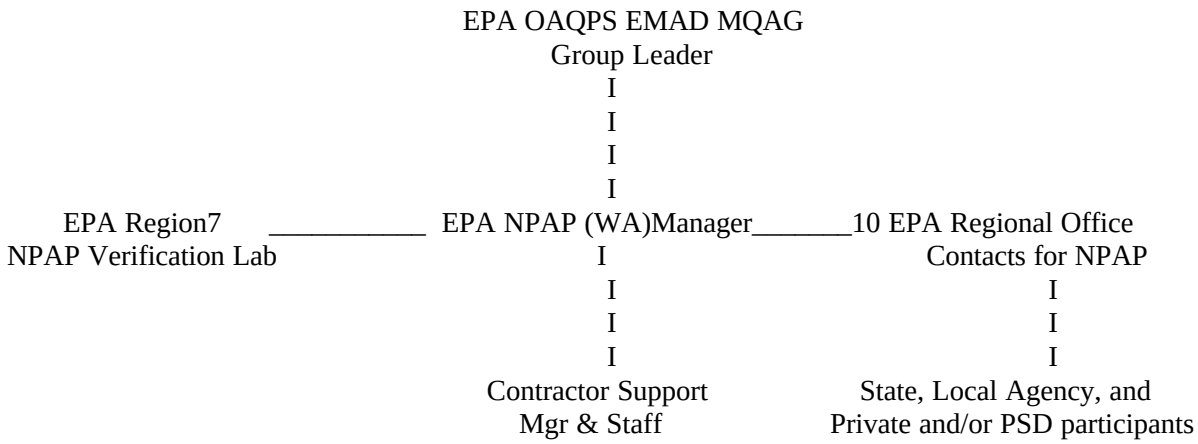


Figure A4-1. Project Structure

A5 - PROBLEM DEFINITION/BACKGROUND

The National Performance Audit Program (NPAP) provides EPA a means to assess the proficiency of agencies that are operating monitors in the State and Local Air Monitoring System (SLAMS) network under the Prevention of Significant Deterioration(PSD) permits program and the CASTNet with an important quality control program required under Section 2.0 of 40 Code of Federal Regulations Part 58, Appendix A (SLAMS) and Appendix B (PSD). This data is of the utmost importance in protecting the public health. It is used to determine if an area is in attainment or non-attainment of the National Ambient Air Quality Standards (NAAQS). If the area is determined to be in non-attainment by this data then the State and Local agencies must develop a control strategy (State Implementation Plan - SIP) to come into attainment. The economic impact of this decision can be in the millions of dollars and the integrity of the data to make this decision is essential. The NPAP is a key regulatory requirement in maintaining the integrity in this data.

A6 - PROJECT DESCRIPTION AND SCHEDULE

The NPAP audits all of the pollutants for which there is the NAAQS, as well as the precursors for the formation of ozone. Specifically, the following criteria air pollutants will be audited under the NPAP during the period of this contract: high-volume (HV)/PM-10 (fraction of total particulate matter approximately at or below 10 microns in diameter; SSI(Size Selective Inlet)/dicot) flow rate, $PM_{2.5}$ (fraction of total particle size distribution approximately at and below 2.5 microns in diameter), sulfur dioxide (SO2), nitrogen dioxide (NO2), carbon monoxide (CO), ozone (O3), lead (PB-analysis and flow are audited separately), as well as aldehydes and volatile organic compounds (VOCs) which are precursors for the formation of ozone.

There are approximately 5,000 air pollution monitors in the ambient air network comprised of the SLAMS and PSD sites. In 1997, the monitors were distributed as follows: SO_2 (645); CO (540); NO_2 (373), O_3 (943); Pb (418); PM-10(1584), and high-volume TSP (653). The SLAMS monitors are operated by approximately 170 state and local agencies, all of whom are audited in the NPAP. Also included in the NPAP are approximately 135 organizations (both governmental and private) that operate air monitors at PSD sites (for a grand total of approximately 305 participating organizations).

As a result of changes in the law regulating lead monitoring requirements, the number of required monitors is now less than half of the 1997 network. Many agencies and organizations still operate the monitors that are no longer required by the law..

Additionally there are 22 local agencies that operate Photochemical Assessment Monitoring Systems (PAMS) monitoring stations using Gas Chromatograph/Flame Ionization Detector GC/FID) for volatile organics and Dinitrophenol Hydrazine (DNPH) tubes for aldehydes.

The NPAP audits are accomplished using a variety of mailable audit systems. The participants use these audit systems to generate pollutant concentrations and flowing air streams, which they introduce into their sampling system. The pollutant concentrations and air stream flow rates are unknown to the audit participants. The outputs from the sampler that result from the use of the audit systems are recorded on a data form, returned to EPA, and compared to the concentration or flow rate that should have been generated by the audit system under the environmental conditions at the site where it was used. The differences between the EPA expected (certified) values and the NPAP participants reported values are calculated and returned to the participant. Summaries of the results that are within the NPAP acceptable limits, and all the results that are not within these limits, as well as corrective action responses, are also reported monthly to the WAM and designated NPAP contacts in the 10 EPA Regional Offices.

The Audit Support Contractor's responsibilities are listed below:

1. <u>Preparation, Calibration of Audit Systems and Execution of Technical Systems Audits</u>

The contractor shall provide support for the preparation, calibration of audit systems and execution of technical systems audits as described below:

1. Preparation and Calibration of Audit Systems. The contractor shall prepare/calibrate the audit systems/materials according to the NPAP Standard Operating Procedures (SOPs). The contractor shall check each audit device for cleanliness, operational fitness and calibration prior to its use in the NPAP. The specific internal quality control guidelines are located in "A7. Quality Objectives and Criteria for Measurement Data" of this document.

   The contractor shall select the system used for a NPAP audit based on the types of monitors to be audited and the costs involved in calibrating, shipping and using the audit system. For example, the contractor shall use three gaseous pollutant dilution systems: the gas dilution system (GDS), the TECO 165, and the TECO 175:The TECO 165 is used when only O_3 monitors are to be audited; the GDS is used when only SO_2 and/or CO monitors are to be audited; and the TECO 175 is used when NO_2 and/or O_3 monitors are to be audited along with SO_2 and/or CO monitors. The contractor shall follow procedures in EPA SOPs for these monitors.

   Similarly, for the PAMS network participants, the contractor shall provide, for the August shipment of Volatile Organic Compound (VOC) Audits, mixtures that will contain between 15 and 35 PAMS analytes at concentrations from 5 to 60 ppbv as carbon. For the scheduled August shipment of PAMS Carbonyl Audits, the contractor shall provide mailable spiked samples containing from 0.2 to 10 micrograms of acetone, formaldehyde and acetaldehyde.

2. Lead Audits. The EPA Work Assignment Manager (WAM) will notify the contractor in writing of the concentration and number of filters needed for the next calendar year's lead audit. The concentrations will range from 100-300 and from 600-1000 :g of lead per strip. The number of samples requested will be based on the present year's participation plus extra filters for EPA acceptance testing. The contractor shall submit to the EPA NPAP Manager twenty sets of filter strips for each batch of NPAP audit samples for acceptance testing by EPA. The EPA NPAP Manager gives half of the filters to the EPA Region 7 NPAP Verification Laboratory and the other half to an independent contractor for acceptance testing. Filters shall be considered acceptable if within ±5 percent relative standard deviation from the average of the determined values. Any filters not meeting this criteria shall be rejected and the NPAP contractor will be instructed to remake the rejected level. The remade filters will be sent out for acceptance testing as described above. After the acceptance testing is completed, the EPA Work Assignment Manager will send the contractor a memo confirming the EPA determined values to be used in the lead audit. (See Table B5-1 and NPAP-SOP-015.)

3. NPAP Flow Calibration Services. The contractor shall provide State and Local Agencies and EPA Regional laboratories with a National Institute of Standards and Technology (NIST) traceable certification service for NPAP related flow calibration devices.

4. Technical Systems Audits (TSA). On request of the EPA (WA) Manager, the contractor shall perform technical systems audits for State and Local Agencies as required in 40 CFR 58 Appendix A in accordance with the guidance in Quality Assurance Handbook for Air Pollution Measurement Systems Volume II; Part 1, Ambient Air Quality Monitoring Program Quality System Development Section 15.3.

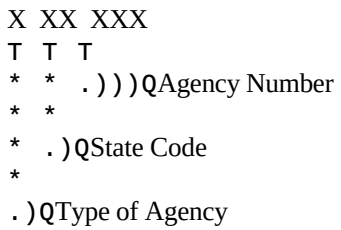
   If requested, the contractor shall accompany the EPA Work Assignment Manager on a TSA of the Region 7 NPAP Verification Laboratory. Prior to the Region 7 audit trip, the contractor shall provide any recommendations for modifications to the Technical systems audit checklist in the NPAP QA Plan. Within 1 week following the trip, The contractor shall provide written recommendations to the EPA Work Assignment Manager for the Manager to use in preparing the Audit report, and comments on the NPAP Program Manager's draft report.

2. Registration, Scheduling and Shipment of Audit Systems

1. NPAP Registration. The EPA NPAP Manager will determine eligibility of any potential new participant in the NPAP. If a new participant is determined by the NPAP Manager, the Manager will then assign the new participant a unique NPAP identification number. The contractor shall handle all other issues associated with each year's registration in the NPAP.

1.1 Registration of New Participants

Any agency that participates in the NPAP must have an NPAP identification (ID) number assigned by the NPAP Manager before registration is possible. The ID number is 6 digits long and consists of the following components.



where X = one digit code for type of agency

1 = Federal Agency
2 = Regional Office
3 = State Agency
4 = City/County Agency
5 = Private Company
7 = Foreign

XX = Two digit state code that is located in the FIPS (Federal Information Processing Standards) directory

XXX = Three digit agency number code. This is determined by checking the master list of agencies and selecting the next available number. The new number and agency name and address will be written in the master listing.

3.2 Registration of Participants From Prior Years

The NPAP Manager approves all changes--including but not limited to additions, deletions, corrections--prior to the NPAP contractor implementing the changes.

2. Installation/support of a Toll-Free Number. The contractor shall install/support a toll-free number for the NPAP participants and shall be expected to answer this phone during the hours of 8 am to 6 pm (East Coast Time Zone) on normal working days (Monday-Friday except Federal holidays). The contractor shall identify himself as EPA's contractor when answering the phone. The NPAP participants will use this number to receive clarification of audit instructions and use of audit equipment and/or to report problems with the equipment. Any questions received from NPAP participants that do not relate to the aforementioned items shall be referred to the EPA NPAP Program Manager. The contractor shall maintain a record of

incoming calls including questions asked and responses given. This information will be transmitted to the EPA NPAP Program Manager via the monthly progress reports.

3. NPAP Required Sites

3.1 As early as circumstances allow in each Calendar year, the EPA Manager for NPAP proposes lists of selected agencies and associated required sites for each pollutant.

3.1.1 The lists of selected agencies and required sites are organized by EPA Region, state or local agency, and site. The list is limited to the number of agencies that anticipated EPA funds will allow to be sent audits devices or materials in the next CY year. Each selected agency gets only one audit device or set of materials that year. Each device or set of materials can be used to audit more than one site.

3.1.2 The lists contain few enough sites for each selected agency so that that agency can also perform audits on sites that they wish to audit, in addition to the EPA required sites. The Regional proposed lists of agencies and required sites are sent to each Region with a request that the Region get feedback from the state and local agencies and provide OAQPS with any resulting corrections for errors and/or recommendations for switches of sites or selected agencies. If we add one agency, the funding limit requires us to drop an agency.

3.1.3 The proposed required lists are amended based on the feedback from the Regions. Since the limit of the number of agencies we can fund in one year is way below what is requested, in the next and 2nd years after an agency is not audited for a pollutant, we raise the priority of those agencies for selection in the next years.

3.1.4 The EPA Manager uses the criteria and process described in Appendix A to prepare these Proposed lists.

3.2 Invitation for Regional Audit Requests..The revised proposed lists are sent to the contractor for incorporation into the requested schedule for the year. In Oct- Nov of each CY, the contractor send out invitations to the registered organizations that have participated during that year, inviting them to participate in the next years audits, as required by 40 CFR part 58, Appendices A through C by completing and returning the enclosed forms for each audit of each criteria pollutant that they should audit.

4. Scheduling Audits. The contractor shall develop a shipping schedule and have it approved by the EPA NPAP Program Manager. The registered “Required” NPAP agencies combined with sites and their “Requested “schedule shall be submitted to the EPA NPAP Program Manager via computer no later than December 15 for the upcoming year. The Required agencies are indicated on the Requested Schedule by the placement of an “R” beside the number of samplers/monitors for each pollutant that they anticipate needing to audit. I call this the R and R schedule.

5. Shipping. The contractor shall ship the audit equipment to and from the NPAP participants. With each audit system, the contractor shall include a package that contains: a cover letter from the contractor, instructions for the audit, including a list of special sites for each pollutant to be audited, data reporting form(s), a self-addressed return envelope, and, if applicable, return shipping instructions.

3. Data Base Maintenance, Processing, Analysis and Distribution

The contractor shall provide support for data base maintenance, processing, analysis and distribution that includes the following:

1. Data Base Maintenance. The contractor shall maintain all NPAP information in a data base that is accessible by all NPAP participants, EPA Headquarters and EPA Regional contacts. The contractor shall maintain the NPAP data base as described in **NPAP-SOP-005, NPAP-SOP-006, and NPAP-SOP-007**. The appropriate NPAP information shall be entered into the EPA AIRS Air Quality Subsystem (AQS).

   Access to the NPAP data base shall be appropriately secured and include passwords. Complete access shall be limited to only those persons actually working with the NPAP. The EPA NPAP Program Manager shall have full and unlimited access to the NPAP data base via a modem hook-up between the EPA NPAP Program Manager's computer and the contractor's computer(s).

2. Data Receipt and Entry. The NPAP participants shall mail [MBS??6601:?fax?]or electronically submit the audit results directly to The contractor. The contractor shall enter the data exactly as received according to **NPAP-SOP-005**. The contractor shall additionally enter the appropriate information into the AIRS.

3. Incorrectly Completed Data Sheets. Data sheets that are completed incorrectly (e.g., wrong units of measurement; forms incomplete; resistance plates used with flow-controlled PM-10 samplers) shall be stamped by The contractor with the date received. The contractor shall contact the participant and give him/her the opportunity to correct the data sheets. The contractor shall then enter the changed results from the corrected data sheets into the NPAP data base.

4. Data Distribution. The contractor shall provide electronic access to the audit results and related information. If for any reason a NPAP participant is not able to access the electronic data, the data shall be mailed along with a cover letter to the audit participants. The contractor shall provide access or mail the audit results for ozone, high-volume/PM-10 (SSI/dicot), $PM_{2.5}$, sulfur dioxide, nitrogen dioxide, and carbon monoxide to the audit participants within 5 days after the NPAP participant has returned the audit equipment to The contractor. The contractor shall not provide access or mail data, under any circumstances, to the audit participants until the audit equipment has been returned. The contractor shall provide access

or mail the lead audit results to the audit participants within 5 days after the closing date of the audit. The contractor shall provide access or mail the PAMS audit results to the audit participants within 5 days after receiving the data and the audit equipment, whichever comes last.

5. Corrections to Data. Corrections to data that have been sent to the audit participant shall be done as described in NPAP-SOP-007.

6. Data Analysis. As the audit schedule allows, in preparation for the submission of the Annual Data Summary, that is anticipated to be submitted under Option Period I, if exercised, the The contractor shall provide data analysis of the NPAP data as well as data analysis of any SLAMS/National Air Monitoring System (NAMS)/PAMS or other data that is on AIRS. These analyses shall include summary statistics and explanatory analyses that are pollutant specific and aggregated by reporting agency and method code.

A7. QUALITY OBJECTIVES AND CRITERIA FOR MEASUREMENT

The quality objectives and criteria for measurement are to provide audit materials and devices that will enable EPA to assess the proficiency of agencies that are operating monitors in the SLAMS/NAMS/PAMS/PSD networks. To accomplish this, NPAP, based on criteria for each of the audit materials and devices provided in the program, has established acceptable limits or criteria for each of the audit materials and devices provided in the program. Each material or device is tested following established SOPs (See Appendix). Quality criteria for each audited parameter are discussed in Section "B5. Quality Control Requirements"below and in referenced SOPs. Any device or material not meeting these pre-determined criteria are not used in the program.

A7.1 Audit Devices/Materials

All audit devices and materials used in the NPAP will be certified as to their true value and that certification will be traceable to an NIST standards material or device where ever possible. Accuracy and precision will be dependent on the NIST standard material or device but in all cases will be known. Control charts showing the trends of critical parameters will be maintained. SOPs for the calibration of all instruments, devices, and the analysis of performance audit samples will be maintained and kept up to date.

The audit materials used in the NPAP will be as representative and comparable as possible to the calibration materials and actual air samples used/collected by the SLAMS/NAMS/PAMS/PSD networks.

A7.2 Audits. The objectives for the audits are two-fold: (1) to complete at least 95 percent of the scheduled audits by the end of the year and (2) to determine if the participants' performance exceeds the limits as shown in Table A7. NPAP Audit Accepted Limits.

A7.3 Data Base. All audit results will be entered into the NPAP data base as received from the participants. In order to assess data entry accuracy, a data summary will be calculated for each audit and quarter to be reviewed. This summary will consist of the mean percent differences and the standard deviations for each audit concentration level in each U.S. EPA Region. If any mean or standard deviation is 20% or more, all data sets included in that result will be checked by comparing the original data sheets to the values stored in the NPAP data base. SOPs (See Appendix A) for data entry and report production will be maintained and kept up to date.

A8. SPECIAL TRAINING REQUIREMENTS/CERTIFICATION

Training will be conducted as necessary for the implementation of the $PM_{2.5}$ program. Training may involve both self-training and seminars/classes, as available. On-the job training will occur as the audit is performed and experience gained. In-house training will be conducted by personnel with the application of principals and techniques used in similar audits, such as Hi-Vol and PM10.

A9. DOCUMENTATION AND RECORDS

Participants will be sent a data report package consisting of a report showing their results compared to EPA values and a cover letter showing where their results fall in a distribution based on the cumulative results of the audit from the previous year.

Data and records from participants are maintained on site for one year by The contractor. The data is then turned over to EPA where it is maintained for one year; it is then archived by EPA.

GROUP B. MEASUREMENT/DATA ACQUISITION

B1 SAMPLING PROCESS DESIGN (EXPERIMENTAL DESIGN)

Within the Audit Support program, field sampling is required for $PM_{2.5}$ activities.

B2 SAMPLING METHODS REQUIREMENTS

The term "critical" or "non-critical" can be applied to data received from the field audits as well as the calibration/verification data for audit devices and analyzers. Whether data is critical varies from audit to audit. For example, the barometric pressure is requested during the CO audit, but it is not critical since data is not affected by this entry. However, barometric pressure is critical to the ozone audit since it is used in calculations.

The sampling process design issues have been addressed and documented in Section 10 of the EPA Quality Assurance Document, Quality Assurance Project Plan for the $PM_{2.5}$ Performance Evaluation Program.

The specific sampling methods for $PM_{2.5}$ are documented in the SOPs found in EPA QA Guidance Document, Method Compendium, $PM_{2.5}$ Mass Weighing Laboratory SOP for the PE Program and The contractor will comply with these verbatim as required by the QA Project Plan.

PEPF 3.01 Cassette Receipts, Storage and Handling
PEPF 8.01 Conducting the Filter Exposure
PEPF 8.02 Filter Sample and Data Retrieval
PEPF 8.03 Filter Packing and Shipment

B3 SAMPLE HANDLING AND CUSTODY REQUIREMENTS

B3.1 Data Custody

NPAP data custody follows standard QA procedures to ensure all data generated or received is trackable. This includes the tracking of data results from shipment of audit materials/devices to the NPAP audit participants; receiving data results from the participants; validating data results, and storing results in the NPAP data base. Records are also kept on acceptance testing of audit materials and calibration of audit devices. These records allow the tracking of an audit material/device from its acceptance testing or calibration through to the storage of the audit results in the NPAP data base. Additional details on tracking audit results data, acceptance test data and calibration results are contained in the SOPs for each audit procedure.

B3.2 Sample Custody and Handling

Since the NPAP is an auditing program and not a sampling project, there will be no sampling handling and custody requirements. However, special handling will apply to the removal and transport of the $PM_{2.5}$ filters. These filters will be properly packaged (i.e. maintained at 24°C, or at 4°C, etc). In addition, the filters received from EPA will be stored, equilibrated, and documented following appropriate QA procedures.

The sample handling and custody requirements are documented in Section 11 of the EPA Quality Assurance Document, Quality Assurance Project Plan for the $PM_{2.5}$ Performance Evaluation Program. PEPF 9.01 Filter Chain of Custody and Field Data Sheet.

B4 Analytical Methods Requirements

Since the NPAP is an auditing program and not a sampling project, there will be no analytical procedures for analysis of samples other than those used to certify the quality of the audit materials or devices. These analytical and certification procedures are discussed in "Section B7. Instrument Calibration and Frequency."

B5. Quality Control Requirements

The adequacy of the internal SOPs and adherence to these SOPs will be annually reviewed by The contractor's Quality Assurance officer and the NPAP Manager**.**

All audit devices or materials will be checked prior to each use for cleanliness, operational fitness, and calibration. One point verifications may be used. If the device fails the preliminary test, a 5-point calibration will be done prior to the audit device's use in the NPAP.

Checks on calibrations will be performed using alternative materials from a different manufacturer or lot number. Control charts will be prepared for each critical parameter. Initial values will be assigned according to the individual SOPs. Changes in the acceptable range will be documented with the reason for the change in the appropriate laboratory notebook. Specific internal QC guidelines follow in Table B5-1.

B5-1. NPAP Table Internal Quality Control Acceptance Values

Device/Material	Frequency of Checks	QC Check
Compressed Gas cylinders (with the exception of VOC cylinders)	Prior to shipping	± 3% of certified value
Laminar flow element (LFE)	Yearly	Certified vs. NIST-certified LFE
Dichot	Prior to shipping	± 2°C NIST-traceable thermometer ± 2% NIST-traceable LFE flows ± 1% NIST-traceable barometer Maintain fluid level in manometer
Gas dilution system	Prior to shipping	± 3% of the calculated value for valves 1 & 3 ± 5% of the calculated value for valves 2 & 3 ± 7% of the calculated value for valve 3
ReF	Prior to shipping	± 2 % of a slope determined from 6 years of flow data
Lead (Pb)	Yearly	± 5 % RSD from the average of the determined values and a coefficient of variation # 2%
Ozone (O_3) TECO 165	Prior to shipping	± 4% or 4 ppb of the calculated concentration Rotameter reading logged initially and traced for repeatability.
VOC	Prior to preparing samples	2 [MBS??6-5-01]cylinders and 2 regulators are checked using GC/FID. Total carbon must be <10 ppbC and no individual target compound can be > 0.2 ppbV.
Carbonyls	Prior to shipping	Exposure blanks, solvent blanks, and spiked cartridges are analyzed using HPLC. Analytical values are compared to “theoretical” values and must be within the EPA NPAP Manager’s determined limits.

Device/Material	Frequency of Checks	QC Check
TECO 175 Multi-pollutant Dilution System:	Prior to shipping	
	(CO, SO_2, NO)	± 3 % of the calculated value for high setting ± 5 % of the calculated value for the med setting ± 7 % of the calculated valued for the low setting
		± 4 % or ±4 ppb of the calculated concentration
	(O_3)	Ozone pot settings established for NO_2, within ± 4 % or ±4 ppb of the calculated concentration
	(NO_2)	

B6 INSTRUMENT/EQUIPMENT TESTING, INSPECTION, AND MAINTENANCE REQUIREMENTS

B6.1 All instrumentation used to calibrate or analyze NPAP audit devices or material will be maintained in accordance with the manufacturer's guidelines for routine maintenance of that instrument. Instrument/equipment testing and inspection for each audit is performed as per each SOP. See Appendix B. Quality control limits for each audit device are included in each SOP and in "Table B5-1. NPAP Table Internal Quality Control Acceptance Values" above.

B6.2 Preventive maintenance is performed as in Table B6-1.

Table B6-1. Preventive Maintenance Procedures

NPAP Audit Devices	PM
Hi-Vol/PM-10	Clean manometers after each use Plastic storage bags/gaskets, RAN*
GDS	Clean case as needed Check threads on fittings for excessive wear after each audit
Zero air systems	Replace silica gel after any color change is noted Replace Moleculite®, annually Replace Purafil® when entire cartridge is brown Check pump output with dummy scrubber train prior to each audit Check tubing for cracks and worn threads prior to each audit

NPAP Analyzers	PM
Model 42 (NO/NO_x)	Replace silica gel in ozonator air feed drying column, as needed Check Teflon® Sample filter quarterly, RAN Inspect and clean capillaries, annually Inspect and clean thermoelectric cooler fins, yearly Perform digital to analog converter test, quarterly
Model 43H (SO_2)	Inspect and clean capillaries, annually Check Teflon® Sample filter quarterly, RAN
Model 48H (CO)	Clean optics, annually Source replacement, annually Check detector frequencies, annually Perform digital to analog converter test, annually Check Teflon® Sample filter quarterly, RAN
Model 43A (SO_2)	Check Teflon® Sample filter quarterly, RAN Inspect and clean capillaries, annually
Model 49 and 49PS (O_3)	Scrubber replaced (49), annually UV photometer lamp replaced, annually Photometer bench assembly completely disassembled and cleaned (tubes, mirrors, etc.), annually UV ozonator lamp replaced (49PS), annually Solenoid valves disassembled and cleaned, annually Internal tubing cleaned (blown out) or replaced, annually Temperature transducer calibrated, annually Pressure reducer calibrated, annually Sample pump diaphragm and flapper valve replaced, annually Sample pump head cleaned, annually Capillaries cleaned (2 in 49, 4 in 49PS), annually Blow out ozonator manifold (49PS), annually Blow dust out of cabinet, annually Check Teflon® sample filter quarterly (49), RAN

House Zero Air System (Scrubbers)	Charcoal replaced, annually Silica gel replaced, annually Particulate filters cleaned, annually Oil separator filter replaced, annually Water separator filter replaced, annually
Compressor	Change oil, quarterly Air filter replaced, quarterly Belt replaced (as needed) Leak check, quarterly Call AirMac, when required
Compressor (In-house personnel)	Drain water from tank, as needed Drain water from lines, as needed Check oil level, daily
GC/MS	Call Hewlett Packard when service is required

* RAN - replace as needed

B7. INSTRUMENT CALIBRATION AND FREQUENCY

B7.1 Calibration Procedures

The calibration procedures for audit devices/materials used in the NPAP are detailed in the SOPs in Appendix C (See Table B7.1-1.)

Table B7.1-1. NPAP SOPs

NPAP SOP #	Title
008	Carbon Monoxide (CO) Audit
009	Sulfur Dioxide (SO_2) Audit
010	Nitric Oxide (NO) Audit
011	Nitrogen Dioxide (NO_2) Audit
012	Ozone (O_3) Audit
013	Dicot Audit
014	Hi-Vol Audit
015	Lead (Pb) Audit
016	Analysis of Cylinders Containing CO, SO_2, and NO
017	VOC Audit
018	Carbonyl Audit

B7.2 Sample Materials

Lead. See Section A6, Lead Audits.

Sulfur Dioxide, Oxides of Nitrogen (NO and NO_2), Carbon Monoxide, and Ozone. Audits of these analyzers are performed using dilution devices (SO_2, CO and NO), an ozone generation system (O_3), and gas phase titration (NO_2), The sulfur dioxide, nitric oxide and carbon monoxide audits additionally use a compressed gas cylinder. Participants select only 1 audit per year. Use of the audit devices are described in the following NPAP SOPs: NPAP-SOP-008 (CO), NPAP-SOP-009 (SO_2), NPAP-SOP-010 (NO), NPAP-SOP-011 (NO_2), and NPAP-SOP-012 (O_3).

High Volume/SSIPM-10/and Dichot/PM Particulate Collectors. Currently, due to resource limitations, EPA only funds a limited number of PM 10 audits per year, primarily based on the attainment/ non-attainment issues in each organization. Before the resource reductions occurring in 2000, audits of particulate collectors were offered quarterly and participants selected a maximum of two non-consecutive quarters. Calibration of the reference flow (REF) device used in the high volume/SSI PM-10/ and Dichot/PM audits is described in NPAP-SOP-014. The procedure for performing operational checks on the dichot audit device is contained in NPAP-SOP-013.

PAMS Volatile Organic Compound (VOC) Audit. This audit uses stock mixtures that have been mixed and diluted using a gas transfer system. The resulting mixture is placed into 1.5L audit canisters. The canisters contain between 15 and 35 PAMS analytes at concentrations from 5 to 60 ppbv as carbon. The audits are offered, if funding and contract resources allow, at least once, at the beginning of the season, and as many as 3 times, in April, June, and August. Participants may select at least one and, if funding allows, up to all 3. Preparation procedures are contained in NPAP-SOP-017.

PAMS Carbonyl Compound Audit. This audit uses a sample set comprised of three cartridges which include one blank and two spikes samples. The spiked samples contain from 0.2 to 10 micrograms of acetone, formaldehyde and acetaldehyde. The audits are offered in April, June and August and participants may select all three. Preparation procedures are contained in NPAP-SOP-018.

B7.3 Frequency

The frequency of calibrations and acceptance testing is detailed in the SOPS.

B8. Inspection/Acceptance Requirements for Supplies and Consumables

The inspection or acceptance requirements for supplies and consumables are specified in the relative SOP (See Appendix C) or are listed in "Table B6-1. Instrument/Equipment Testing, Inspection, and Maintenance Requirements" above.

B9. Data Acquisition Requirements (Non-direct Measurements)

No data needed for project implementation is obtained from non-measurement sources.

B10. Data Management

B10.1 Overview of Data Management. Registration requests are mailed to all participants who return the NPAP invitation forms with their names, addresses, phone numbers, and requested audits. These are entered in the data system. When all requests are received, or the first of the year, a schedule is printed of all participants requesting audits in the first quarter. Audit materials are prepared and their "actual values" entered in the data system. Audit materials are shipped to participants and the shipment recorded in the computer which associates the "actual values" with the participant. The participant performs the audits and send back their reported values which will be entered into the NPAP data base as received from the participants. These values are compared with the "actual values" previously stored and computes the results and prints a report which is sent to the participant. Changes to the data base will be made only upon written approval from the contractor's Program Manager. Documentation of the change will be made in a change control logbook. In order to assess data entry accuracy, a data summary will be calculated for each audit and quarter to be reviewed. This summary will consist of the mean percent differences and the standard deviations for each audit concentration level in each U.S. EPA Region. If any mean or standard deviation is 20% or more, all data sets included in that result will be checked by comparing the original data sheets to the values stored in the NPAP

data base. Errors found will be corrected and will be noted in the change control logbook. SOPs for data entry and report production will be maintained and kept up to date.

B10.2 The contractor will maintain in the database the proper location and FIPS code for each participant. This data will be obtained from the participant's data form.

B10.3 Data management is controlled by procedures in NPAP-SOP-005, Computer Data Entry, Report Printing and Maintenance for the NPAP, NPAP-SOP-006, Data Validation for Data Bases of the National Performance Audit Program, NPAP-SOP-007, Editing NPAP Data Bases. Six "Non-Routine Protocols for EPA NPAP Data Bases, June 5, 1998" supplement the above SOPs. See Appendix D.

B10.4 Data processing and reporting.

1. Data Receipt and Entry. See "A6 - Project Description and Schedule; Data Base Maintenance, Processing, Analysis and Distribution, #2." Data entry will be performed following NPAP-SOP-005.

2. Incorrectly Completed Data Sheets. See "A6. Project Description and Schedule; 3. Data Base Maintenance, Processing, Analysis and Distribution, #3."

3. Correction to Data. See "A6 - Project Description and Schedule; 3. Data Base Maintenance, Processing, Analysis and Distribution, #5."

4. Data Distribution. See "A6 - Project Description and Schedule; 3. Data Base Maintenance, Processing, Analysis and Distribution, #4."

5. Final Closing Date. The current year's audits close on December 31.

B10.5 Unacceptable Results

Audit data results that exceed the EPA determined limits (see below) are considered unacceptable and follow-up measures are instituted. In the past, ORD had all unacceptable results entered into a "poor performance" logbook. Currently, the EPA Regional Office contacts for NPAP are responsible for reviewing the monthly audits result and corrective action summaries for their Region and following up on potential problems identified by the audit results outside of the acceptance limits. As need indicates, follow-up calls are made by OAQPS. to the Point of Contact for each EPA Regional Office that has sites with audit results that are outside the acceptance limits. The NPAP Manager prints out a list from the NPAP data base of Bad Data Results not resolved after a 30 day period and then follow-up calls are made using this list.

Table 10.5-1. NPAP Audit Accepted Limits

Audit	EPA Determined Acceptance Limits
High Volume/PM 10 (SSI)	% Difference > ± 15% for 1 or more flows
Dicot (PM/10)	% Difference > ±15% for one or more flows
Lead - Analysis	% Difference > ±15% for one or more levels
Sulfur Dioxide	Mean Absolute % difference > 15%
Nitrogen Dioxide	Mean Absolute % difference > 15%
Ozone	Mean Absolute % difference > 15%
Carbon Monoxide	Mean Absolute % difference > 15%
Volatile Organic Compounds	Individual compound percent difference within 30%. Exceptions: acetylene, undecane, styrene, and isoprene percent difference within 40%.
Carbonyls	The acceptance limits are -23 to +22 formaldehyde, acetaldehyde, and the low level acetone spike and -29 to +16 for the high level acetone spike. The concentration cut off for what constitutes a high level acetone spike is a judgment call.*

B10.6 Data Reports

The contractor distributes the data results to the NPAP participants and data summaries to the NPAP Manager and EPA Regional NPAP points of contact. Audit results that are unacceptable are handled as described in B10.5 of this plan.

GROUP C - ASSESSMENT/OVERSIGHT

C1. ASSESSMENTS AND RESPONSE ACTIONS

C1.1 Performance Audits

The objective of this project is to provide an independent Government assessment of the mailable NPAP contractor. The EPA NPAP Manager will randomly select an audit device prepared for shipment to a NPAP participant from the contractor's facility. The device will be relabeled for shipment to the EPA Region 7 NPAP Verification Laboratory. The NPAP Manager will notify the EPA R7 NPAP Verification Laboratory lead analyst and team leader via e-mail when the selected audit device has been shipped. The EPA NPAP Manager will supply with each audit device the applicable data reporting form(s) that R7 NPAP Laboratory will need to complete and return. R7 NPAP Laboratory will perform the audit and return via FAX the data reporting form(s) within 3-5 business days of receipt of the equipment to the EPA NPAP Manager for comparison with the NPAP contractor's determined values. The report to the EPA NPAP Manager will also contain an assessment of the condition of the equipment (i.e., external appearance). The audit device will be considered acceptable if an agreement of ±5 percent is achieved between the NPAP contractor's determined values and the R7 NPAP Laboratory determined values. If the results are unacceptable, the R7 NPAP Laboratory will run the audit a second time to confirm the initial results. The EPA NPAP Manager will notify R7 NPAP Laboratory whether to return the equipment or to reaudit within 1 business day. The audit equipment will be returned to the NPAP contractor in accordance with the prepaid shipping instructions enclosed with each audit device.

The following are audits that were to be performed in accordance with the schedule contained in Table **C1.1, based on the full schedule of mailable audits accomplished prior to the 4th calendar quarter of 1999**:

Sulfur Dioxide Nitrogen Dioxide/Carbon Monoxide and Ozone. Four to six audit devices of each type (GDS, TECO 165 and TECO 175) will be selected each quarter (one device of each type every two weeks for a total of twelve to eighteen audit devices per quarter) to verify The contractor's determined values. The EPA Program Manager will select the audit devices by requesting that The contractor pull the next device that is ready for shipment to the field. The quality assurance audits will be conducted by the R7 NPAP laboratory. The audit will consist of running one zero point and three upscale points following the procedures in the appropriated SOPs referenced below.*

High Volume/PM-10 (SSI). Six ReF devices will be selected at the beginning of each quarter. The quality assurance audits will be conducted by the R7 NPAP Laboratory. The audit will consist of verifying The contractor's calibration of the ReF device by using an NIST-certified roots meter and following the procedures in the NPAP-SOP-014.*
Dichot (PM-10). One system consisting of an inclined manometer, an altimeter, a small dial thermometer, and a laminar flow element (LFE) will be selected each quarter. The audit will be conducted by the R7 NPAP Laboratory personnel using a primary standard NIST traceable BIOS frictionless piston type flow measurement device. The accuracy of the NPAP barometer and thermometer will be verified by the R7 NPAP laboratory using NIST traceable temperature and pressure standards. The NPAP audit system is

considered acceptable if the two air flow measurements determined by the audit system and the EPA R7 NPAP laboratory system agree within +/- 5 percent. Procedures in NPAP-SOP-013 will be followed.*

Lead Filter Strips. In July of each year the EPA NPAP Manager will deliver 10 sets of filters from each audit for the upcoming calendar year (a total of 80 filter strips) for acceptance testing. Within three weeks of receipt of the samples, the R7 NPAP laboratory will analyze all filter strips and provide the EPA NPAP Manager with the results and appropriate associated statistics (i.e., mean, standard deviation, % relative standard deviation). *

Volatile Organic Compounds and Carbonyls. Region 1, Region 2, and the California Air Resources Board have acted as reference laboratories. The reference laboratories' analysis results serve as bench mark for data comparisons, not true values. Currently, the theoretical values are used to evaluate the laboratories being audited. The reference laboratory results are used to show consistency and agreement with the theoretical values. Each year each laboratory receives audit cylinders for analyses and performs a minimum of 2 analyses per cylinder. The reference laboratories will adhere to the equilibration, sample introduction and analysis procedures as stipulated by the EPA. The reference laboratories will report an average concentration and standard deviation for each identified compound: and an average reference concentration and standard deviation will be calculated for each identified compound.

Note: If one laboratory's result(s) are not in agreement, then that result(s) would not be included in the average reference concentration (acceptable range to be determined by working group).

Note: If all of the reference laboratories are in disagreement, then than particular compound(s) would not be included in the audit.

L ***If there are discrepancies/concerns between the laboratories being audited and the theoretical values, we could use the reference laboratory results. If further analysis is recommended, an EPA laboratory should be considered the main contact. One concern expressed by CARB is that the laboratory did not want to lose the flexibility for investigating new technological/procedures. As a reference laboratory, they would feel required to maintain one particular method.***

*Since 2000, the EPA NPAP Manager has sent a reduced number of audit devices to the Region 7 Verification Laboratory, due to the reduced number of audits funded , and due to the limitation of devices to do the scheduled audits, let alone verification evaluations, in that reduced support environment.

Table C1.1-1 NPAP Shipping Schedule for Performance Audits

Pollutant	Frequency	Device Type/No.	Responsible Party
SO_2	Quarterly	GDS/4-6	R7 Lab
CO	Quarterly	GDS/4-6	R7 Lab
NO_2	Quarterly	TECO 1-5/4-6	R7 Lab
O_3	Quarterly	TECO 1-5/4-6	R7 Lab
PM-10 (HiVol)	Quarterly	ReF/6	R7 Lab
PM-10 (Dichot)	Quarterly	System(4)/1	R7 Lab
Lead	Annually	Strips/80	R7 Lab
VOCs	Annually	Canisters(2/lab)	Reference Lab
Carbonyls	Annually	Cartridges(1set/lab)	Reference Lab

C1.2 Systems Audit of NPAP Contractor

Twice a year, a systems audit will be performed by the EPA Manager and appropriate EPA technical staff member to ensure that the contractor is adhering to the SOPs that cover conducting audits, entering data, distributing data, and maintaining files. The systems audit will follow a set format based on the information contained in NPAP SOPs. The systems audit will be coordinated with the contractor Manager. The results of the systems audit will be forwarded in writing within 5 working days to the contractor Manager for review. The contractor will determine the cause of deficiencies, if any, and report to the EPA Manager within 5 working days the cause and corrective action taken.

Table C1.2-1 Verification Procedure for Systems Audit

Pollutant	Responsible Party	SOP #
SO_2	R7 Laboratory	009
CO	R7 Laboratory	008
NO_2	R7 Laboratory	011
O_3	R7 Laboratory	012
PM-10 (HiVol)	R7 Laboratory	014
PM-10 (Dichot)	R7 Laboratory	013
Lead	R7 Laboratory	015
VOCs	Reference Laboratory	017
Cos	Reference Laboratory	018

C1.3 Audit of NPAP

The EPA NPAP Manager will arrange an independent management systems review of the total NPAP program once every two years (odd years).

C1.4 Corrective Action

When results of the internal quality control checks or the external quality assurance audits exceed the limits specified in the Quality Assurance Project Plan or in the individual SOPs, appropriate action will be instituted by the EPA NPAP Manager and/or the contractor Manager. This corrective action will be documented in the summary reports. In an appropriate amount of time after corrective action plan has been implemented, a follow up audit should be done. Perform a follow up audit after completing corrective action required by an initial audit using contractor plan and SOPs for the new contract. For corrective action of questionable results, see B10.5.

C1.5 Reports

The NPAP Manager will receive copies of the reports of all systems and performance audits, MSR's, and follow-up activities, it any.

C2. REPORTS TO MANAGEMENT

The EPA NPAP Manager and the EPA NPAP Contractor will prepare a comprehensive yearly quality assurance summary report by March 15 for the previous calendar year. The report will include the internal quality control reviews and assessments and will incorporate any independent (non-contractor) quality audit reports of the latest independently performed audits on the entire NPAP system.

Table C2-1. List of Reports Required of Contractor

Types of Reports	Frequency	Authors / Recipients	Due Date
Progress Report	Monthly	Contractor/EPA	**3/15/200_**
QA Summary Report	Annually	Contractor/EPA NPAP Manager	3/15/200_
NPAP Data Summary	Annually	OAQPS / EPA Regional NPAP Contacts	4or5/200_
PAMS Audit (VOC/CO)	Annually	Contractor/NPAP participants/EPA Regions/NPAP points of contact/NPAP Manager	10/31/200_
AIRS Sites Report	Annually	Contractor/NPAP participants/EPA Regions/NPAP points of contact/NPAP Manager	8/31/200_

If requested, the contractor will prepare and submit:

< Prior to a Region 7 audit trip, the contractor shall provide any recommendations for modifications to the Technical Systems Audit checklist in the this plan. Within 1 week following the trip, the contractor shall provide written recommendations to the EPA Manager for the Manager to use in preparing the Audit report, and comments on the NPAP Program Manager's draft report.

< An Annual Update of the AIRS Sites Report for EPA's National Performance Audit Program 1989-Present. The contractor shall prepare and distribute this report to all NPAP participants, EPA Regional NPAP points of contact, and the EPA NPAP Work Assignment Manager.

< An annual summary of the NPAP VOC and Carbonyl audit data and distribute to all NPAP VOC and Carbonyl NPAP participants no later than the middle of the month after the season ends. The contractor shall incorporate this into a summary of all the NPAP data from that data collection year.

< Three copies of the combined monthly technical and financial progress report on or before the 15th of each month, following the first complete reporting period of the contract, to EPA Administrative Contract Specialist, EPA Project Officer, and the EPA Work Assignment Manager.

- An annual NPAP Data Summary Report of all the NPAP data to all NPAP participants, EPA Regional NPAP points of contact, and the NPAP Manager by May 31 or each year. The contractor shall present the NPAP Data Summary Report at the Annual Air & Waste Management Association Meeting.
- Schedule for the calendar year incorporating participant requests with Agency and Site Prioritization list from EPA, based on when last audited and approved Criteria queries from AIRS

In addition, the contractor and the EPA Work Assignment Manager shall also communicate by phone and/or in person on an as needed basis.

GROUP D - DATA VALIDATION AND USABILITY

D1. DATA REVIEW, VALIDATION, AND VERIFICATION REQUIREMENTS

The criteria used to review and validate data is detailed in NPAP-SOP-006 Data Validation for Data Bases of the National Performance Audit Program.

D2. VALIDATION AND VERIFICATION METHODS

The process used for validating and verifying data is found in NPAP-SOP-006 Data Validation for Data Bases of the National Performance Audit Program. Audit Support data custody follows standard QA procedures to ensure all data generated or received is trackable. This includes the tracking of data results from shipment of audit materials/devices to the audit participants; receiving data results from the participants; validating data results, and storing results in the NPAP data base. Records are also kept on acceptance testing of audit materials and calibration of audit devices. These records allow the tracking of an audit material/device from its acceptance testing or calibration through to the storage of the audit results in the NPAP data base. Additional details on tracking audit results data, acceptance test data and calibration results are contained in the SOPs for each audit procedure.

Verification of participant's data sheets occurs during data entry. The data on the reporting data sheet is checked for completeness and that it is in the proper units. However, data validation, which is a formally defined process, involves checking the accuracy of the data entry and is conducted following NPAP-SOP-006 Data Validation for Data Bases of the National Performance Audit Program.

D3. RECONCILIATION WITH USER REQUIREMENTS

The contractor will examine all data prior to submitting it to EPA to ensure that the requirements defined are met. Procedures in NPAP-SOP-006 Data Validation for Data Bases of the National Performance Audit Program will be followed and where anomalies do occur, NPAP-SOP-007 Editing NPAP Data Bases and "Non-Routine Protocols for EPA NPAP Data Bases, June 5, 1998" will be followed.

APPENDIX A

PROCEDURE FOR EPA SELECTION AND PRIORITIZATION OF REGISTERED AGENCIES REQUIRED TO PERFORM NPAP AUDITS AT SPECIFIED SITES OR LABORATORIES IN THE NEXT CALENDAR YEAR-"REQUIRED AGENCIES AND SITES'

A. Based on $ available, prepare and use the following summary table numbers as maximums:

TABLE 1. SUMMARY TABLE- CY 200_ MAXIMUM NUMBER NPAP DEVICES

Cost Basis	O3	PM-10	CO	PB	SO2	NOx	VOC	CARB	
# Devices-RE	45	7		10	6	9	9	22	22
# Devices-RA	5	4		1	10	1	1	0	0
Total # Devices	50	11	11	16	10	10	22	22	

Where RE = Required Audits and RA = Random audits. For comparison (cf) note the number of non attainment areas (#NA) for each pollutant in the latest 3 trends reports:

cf Sum #NA Areas-98	32	77	20	8	31	0	Not in Trends Report
cf Sum #NA Areas-97	38	77	20	10	34	0	" " " "
cf Sum #NA Areas-96	59	79	29	10	38	1	" " " "

B. Follow this prioritization and selection process:

1. Within the limits of Table 1, above, select the [number of the highest priority] organizations and/or sites that have "design" or related values that are near (for O3 = within + or - 2.5% of; for CO, SO2, PM10, or NO/NO2 = within + or - 10% of) the NAAQS- and therefore increase the risk of managers and other decision makers making an incorrect attainment or other decision- but are not included in the lists.

After the selection of sites for each pollutant, check the EPA AIR Data website to be certain that each site is currently open. (www.epa.gov/aqspubl1/air_quality_tables.htm) Click on Sampling Period. Use the Sample Period Table Query to get current information.

2) Select that number of the highest priority organizations and/or sites that are no longer active and should be deleted or are new and are/will be operating/reporting data soon and should be added; or

3) have bad precision or accuracy data reported in AIRS;

4) meet these criteria but were not audited in the current calendar year (CY); assign a higher priority if they were also not audited in the previous year;

5) meet these criteria and have never been audited; or

6) for PAMS, are on OAQPS' list of active "Type 2" sites.

Example: Regarding PM10, prepare or obtain the list of the agencies and associated sites, ranked from the highest to the lowest design-related value (24hr Max, for 1999). Those agencies with sites that have 24hr MAX1 values within + or - 10% of the NAAQS, and were not audited last year (2000) are put into a new list organized by Region, then state, and then by AIRS Monitoring ID#. Add sites for agencies with P&A data greater than 5% over the P&A acceptance criteria. Then select the ~ 10 agencies (PM10 Column in summary table attachment) with the sites closest to the NAAQS.

C. Regarding the proposed table of required agencies and sites selected to receive NPAP NO/NO2 audits in the coming year, being planned:

To make the selections, first list the agencies from which audits are scheduled in the year still being completed, but due to the limit of available devices will or may not be able to be shipped as planned Do not yet use the design value ranking criteria for selecting agencies and required sites for NO/NO2 audits if the following reasons apply:

1) Very few/no agencies were anywhere **near** a significant % **below** the NAAQS last year and this year;

2) a significant number of agencies were selected for 2000 but were not audited- no blame to either participants or contractor;

3) The only agency-by- agency P&A data I have were used in making last year's selections.

4) The maximum number of devices allocated for NO/NO2 was dropped. There are no longer any areas in the country with ambient air NO2 levels above the NAAQS. See the FYI numbers from the last 3 trends reports that are cited for NO/NO2 in the 1st draft table, sent to the EPA NPAP Regional Office Contacts(ROCs), and shown above, at the beginning of this text, in Table 1. The # of non attainment areas for NO/NO2 in '96 was 1, in '97 was 0, and in '98 was 0.

D. REVISED AND EXPANDED PROPOSED OZONE SELECTIONS:

If additional resources allow , an expansion form an original list may be possible. The following considerations were used to prepare the expansion:

The table of agencies and associated required sites selected for NPAP ozone audits for the coming year, being planned, and shown in the 1st draft may only list the approximately 35 agencies that were **not** audited in the year before but **were** within the +or-2.5% interval around the NAAQS in the ozone sites ranked by the '01 ozone design value(DV) parameter.

As needed, for example, to add additional agencies (15 to 2nd draft for CY2001, for ozone) that are allowed by the ozone column in the file "CY'01MAX#SUMRY.wpd," use the list of agencies that were in the interval outside of the +or -2.5% but within the +or - 10% interval around the NAAQS in that same '01 DV ranking.

If ozone audit results from the year before the year in planning are still coming in, use that information to add or delete agencies and/or sites, as the data indicate. Delete or question sites that have been audited recently (revise table to reflect results showing date in “as of”).

E. When participant receives the audit device:
The audit device is shipped to each participating organization with instructions and the list of required sites and alternates. If any of the sites listed are no longer active- based on sources starting with Regional, State and/or local comments from review of the tables generated from the selection process- then just go on the larger table to the agencies with sites that have design-related values a little greater or less than the ones first selected. That is how this adjustable system is used.

F. Recommended Changes: The state and local agencies, through their designated EPA Region, can specify some other criteria (and data/information to be evaluated by that criteria). OAQPS has to agree that the proposed criteria have an equal or higher priority vs the criteria given here. If you want to add a site, or especially an agency, the Regional staff must recommend a trade off to remove from the list already , since the number of agencies devices, that can be sent in year , in the mailable program , is currently limited by the reducing budget resources for the program.

APPENDIX B

QA Project Plan FOR EPA REGION 7 VERIFICATION LAB Support for NPAP-Will be Posted on AMTIC; until then, request from EPA NPAP Manager.

Appendix C

NPAP-SOP-008: Carbon Monoxide (CO) Audit
NPAP-SOP-009: Sulfur Dioxide (SO_2) Audit
NPAP-SOP-010: Nitric Oxide (NO) Audit
NPAP-SOP-011: Nitrogen Dioxide (NO_2) Audit
NPAP-SOP-012: Ozone (O_3) Audit
NPAP-SOP-013: Dichot Audit
NPAP-SOP-014: Hi-Vol Audit
NPAP-SOP-015: Lead (Pb) Audit
NPAP-SOP-016: Analysis of Cylinders Containing CO, SO_2, and NO
NPAP-SOP-017: VOC Audit
NPAP-SOP-018: Carbonyl Audit

Appendix D

NPAP-SOP-005: Computer Data Entry, Report Printing and Maintenance for the NPAP
NPAP-SOP-006: Data Validation for Data Bases of the National Performance Audit Program
NPAP-SOP-007: Editing NPAP Data Bases

6 Non-Routine Protocols for EPA NPAP Data Bases (June 5, 1998)

1 - Edit address, edit number of samplers to be audited, or change the audit quarter within the year
2 - Change date from late one year to early the next year
3 - Re-Audit due to NPAP equipment failure
4 - Remove an agency from one or more audits
5 - Add an organization after the start of the audit year
6 - Audit data outside the specified limits

Appendix E:

Instructions for Operating NPAP Audit Devices at Field Audit Site Locations - These will be posted on AMTIC:

Field Instructions for Conducting an Ozone Audit Using TECO 165 (3 pages).

Field Instructions for the TECO 175 Multi-pollutant Audit Device (11 pages)

Instructions for Auditing PM-10 (SSI) Samplers Using the (ReF) Flow Device (7Pages)

Field Instructions for the Gas Dilution (GDS) System Multi-Pollutant (7 pages)