

# PQAO Appendix A QC and audits requirements

MRB

*(PQAO workshop day 1 morning)*

# 4 categories of audits:

- 1. Six-month flow rate audits you make with non-routine standards (PM)
- 2. Annual Performance Evaluations (gas)
- 3. NPAP and PEP audits conducted by certified auditors
- 4. Technical Systems Audits conducted by EPA regions (every 3 years)
- To see how many/often of the 1<sup>st</sup> three types you need for NAAQS-comparable data, see *Calculations for Tribes Interested in Joining a Tribal PQAO - 2011-02-08B.xls*

# QC Checks (and audits):

Method	Pollutants	Frequency	MQO	
One-Point QC	SO <sub>2</sub> , NO <sub>2</sub> , O <sub>3</sub> , CO	Every 2 Weeks	O <sub>3</sub> : Precision = 7% Bias = 7%	SO <sub>2</sub> , NO <sub>2</sub> , CO : Precision = 10% Bias = 10%
Annual Performance Evaluation (Audit)	SO <sub>2</sub> , NO <sub>2</sub> , O <sub>3</sub> , CO	Once per Year	<= 15% for each audit concentration	
Flow Rate Verification (QC check)	PM <sub>10</sub> (lo-Vol), PM <sub>2.5</sub>	Once every 4 weeks	<= 4% of Standard & 5% of Design Value	
Flow Rate Verification (QC check)	PM <sub>10</sub> (high-Vol), TSP	Once per quarter	<= 7% of Standard & 10% of Design Value	
Semi-Annual Flow Rate Audit	PM <sub>10</sub> , PM <sub>2.5</sub>	Every 6 Months	<= 4% of Standard & 5% of Design Value	
Semi-Annual Flow Rate Audit	PM <sub>10</sub> (high-Vol), TSP	Every 6 Months	<= 10% of Standard & 10% of Design Value	
Collocated Sampling	PM <sub>10</sub> , TSP, PM <sub>2.5</sub>	15% of Network Every 12 Days	PM <sub>2.5</sub> , TSP, PM <sub>10</sub> : Precision = 10%	
PM <sub>2.5</sub> PEP Program NPAP	PM <sub>2.5</sub> SO <sub>2</sub> , NO <sub>2</sub> , O <sub>3</sub> , CO	Quarter *! Year (see Calculations... spreadsheet)	Bias = 10%	

# Who can do these, and with what?

Method	Pollutants	Frequency	Who? With What?	
One-Point QC	SO <sub>2</sub> , NO <sub>2</sub> , O <sub>3</sub> , CO	Every 2 Weeks	Site operator	Annual calibration standard, owned by tribe
<b>Annual Performance Evaluation</b>	<b>SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub>, CO</b>	Once per Year	<b>Preferably not</b> site operator, no national certification required, <b>not</b> the same standard that is used for routine QC checks	
Flow Rate Verification (not required to be reported to AQS)	PM <sub>10</sub> , PM <sub>2.5</sub>	Every 4 weeks	Can be site operator, no national certification required, <b>not</b> the same standards that are used to calibrate your analyzer	
<b>Semi-Annual Flow Rate Audit</b>	<b>PM10, PM2.5</b>	Every 6 Months	Preferably not site operator, no national certification required, <b>not</b> the same standards that are used for monthly QC checks	
<b>PM PEP, NPAP</b>	<b>PM<sub>2.5</sub>, All gaseous</b>	<b>See Calculations...spreadsheet</b>	<b>OAQPS/TAMS certified auditor</b>	<b>OAQPS/TAMS equipment</b>

First type: PM flow rate audits (*counts as an audit, for bias, because it is not the stnd used for precision FR checks*):

Flow Rate Verification	PM <sub>10</sub> , PM <sub>2.5</sub> automated and manual	Every 4 weeks	Can be site operator, no national certification required, the flow rate standard used must be certified annually
Flow Rate Verification	PM <sub>10</sub> (high-Vol), TSP manual	Once per quarter	
<b>Semi-Annual Flow Rate Audit</b>	<b>PM<sub>10</sub>, PM<sub>2.5</sub></b> automated and manual	<b>Every 6 Months</b>	Preferably not site operator, no national certification required, <b>not</b> the same standards that are used to calibrate the analyzer, but can be calibrated to the same primary stnd as your cal stnd

# CFR Language on PEP/NPAP Responsibilities

- Part of 40 CFR Part 58 Appendix A QA Requirements
  - Any data used for comparison to the NAAQS must meet these regs.
- PEP and NPAP are SLT Responsibility
- Audits must be adequate & independent
  - Some of this defined in guidance, some in the regulation
- Flexible implementation
  - SLT
  - Federal - with STAG funds

# Adequate NPAP/PEP (abridged version)

## NPAP

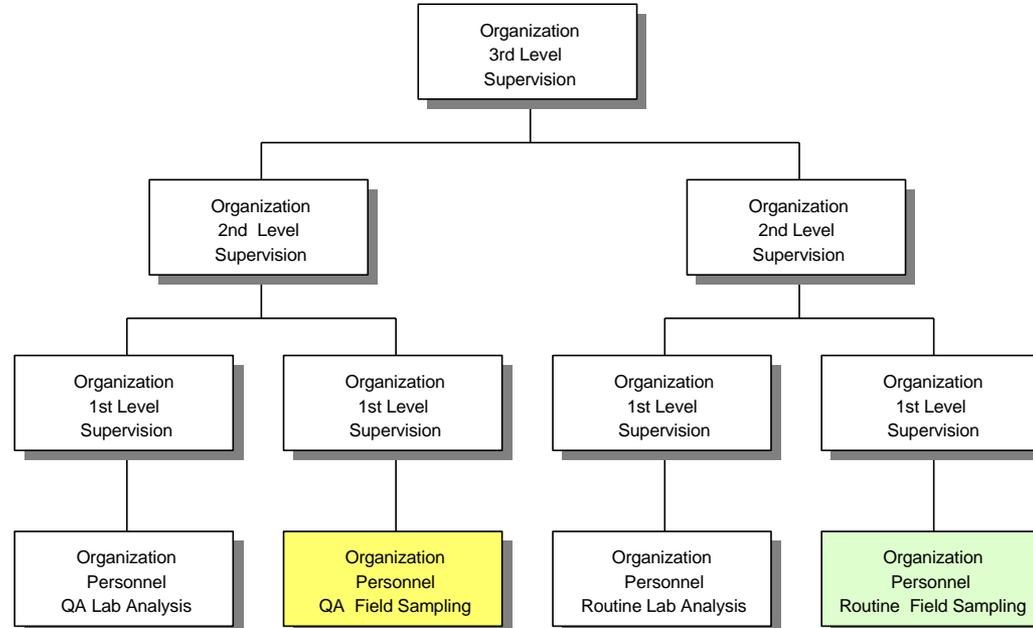
- Performing audits at a risk-targeted **20% of monitoring sites/instruments**
- Data submission to AQS
- TTP delivery system
- Follow NPAP field/lab SOP critical performance criteria
- Use of audit gasses that are NIST certified and validated at least once a year
- Validation/certification with the EPA NPAP program
- Incorporated in QAPP

## PEP

- Valid audits of **5 or 8 per PQAQO per year**
- Data submission to AQS
- Use of independent personnel, sampling devices (FRMs) weighing laboratory and standards
- Follow PEP field/lab SOPs critical performance criteria
- Follow PEP validation criteria
- Validation/certification with the EPA PEP program
- Incorporated into QAPP

# Independence PEP/NPAP

- Not part of the organization directly performing and accountable for the work being assessed.
- A management structure that allow for the separation of its routine sampling personnel from its auditing personnel by two levels of management
- Submission of a plan demonstrating independence to the EPA Regional Office.



**For PEP, labs must also be independent.**

**Region 4 contractor Operated PEP Lab is available (STAG Funds required) as well as LV and others.**

# Thanks!

- Melinda Ronca-Battista [melinda.ronca-battista@nau.edu](mailto:melinda.ronca-battista@nau.edu)
- Our materials at [http://itep68.itep.nau.edu/itep\\_downloads/Appendix\\_A\\_Resources/](http://itep68.itep.nau.edu/itep_downloads/Appendix_A_Resources/)

