National Performance Audit Program (NPAP)

Purpose- Plan for effective use of 375K QA initiative funds
Objectives

- Describe two options for the use of NPAP initiative funds
- Gain acceptance to pursue either approach
What is NPAP?

Performance Evaluation - A type of audit in which quantitative data generated in a measurement system are obtained independently and compared with routinely obtained data to evaluate the proficiency of an analyst or laboratory or measurement system.

Both NPAP and the PM2.5 Performance Evaluation Program (PEP) are performance evaluation programs and provide for an assessment of data quality that's:

- Independent
- Objective
- Comparable nationally
Planning
DQOs, Guidance, SOPs

Assessments
NPAP, PEP
Regional MSRs

Planning
QAPP Review & Approval

Assessments
Technical System Audits, Network Reviews, PE's
Site Characterization

Planning
QAPP, SOPs

Assessments
Precision and Accuracy PE's, QC
Technical Systems Audits

Quantitative
NPAP 98/2000 Comparisons
98- ~ 1million, 2000- ~ 600K

- 2000 focus was Ozone
- Goal - ~2500 audits by FY02
NPAP Improvements

Goal - Increase audits to acceptable level and create a more cost efficient program

The Options

Option #1
Current NPAP
- Revise site selection criteria
- Improve Information Management
- Improve logistics

Option #2
New Direction
- Thru-the-Probe Audits
Revise site selection criteria

- Different options - based on resources
  - all sites - proficiency of instruments/operators
  - all operators - proficiency of operators to maintain instruments
  - sites around NAAQS - control of accuracy at most important sites for NAAQS comparison purposes
  - operators at sites around NAAQS - audit at least 1 site from each operator within some range of NAAQS

- eliminate redundancy -
  - use NPAP to "certify" State implemented audits
  - allows NPAP to focus on sites where State audits are not performed for an overall increase

Costs do not necessarily have to be greater but meeting the criteria would take longer
Improve Information Management

- Get rid of snail mail
  - Build an e-mail list of monitoring participants
- Complete thorough review of data base
  - Identify what is "really" needed
- Redevelop data base in a more user-friendly software system
- Get most of it on the web for real-time access by State/locals
- Do the entry work in-house
Improve Logistics

- Present- Equipment shipped to operator address--audit(s) conducted --shipped back to contractor --verified/calibrated--readied for next shipment
- New - #1 Equipment given to PEP Field Scientists to transport to sites- reduces wear and tear and accomplishes more audits
- New - #2 Equipment shipped and left in the State for other monitoring organizations to use-- comes back when it appears (data evaluation) it's drifting
- Purchase additional audit equipment to increase number of audits
Option #1 - Current NPAP

Summary

- Site selection - Eliminate redundancies and increase audits to an acceptable level
- Info Management - Create a new information management system
- Logistics - Eliminate shipping and purchase new instrumentation to increase audits

Goal - Increase audits to an acceptable level and create a more cost efficient program
Option #2 New Direction
Thru-the-Probe (TTP) Audits

- Current NPAP
  - Standards enter the samplers through a port in the back of the instrument;
  - disregards sample collection tubing where contamination or losses may occur.
  - Standard devices sacrifice sensitivity for ruggedness but still need TLC.
  - Devices spend a lot of time in the mail
  - No real time feedback
Thru- the- Probe

- Evaluates entire sampling stream
- Equipment can be state of the art
- Little potential for damage
- More audits less down time
- Multi-purpose use
TTP- The Plan-FY01

- Acquire mobile laboratories containing
  - State of the art samplers, devices and analyzers
  - Info management systems - immediate reporting of results
- Involve ORIA to the extent that they can contribute
- Work with CARB
  - Vehicle Specs
  - Intensive technician training
  - Use their documentation
  - Use their information management system
- Pilot the program in the East
  - Determine cost savings & implementation issues
  - Improve program and phase in additional vehicles

Key-- NPAP + PEP = NPEP

In order to make TTP work we need to take advantage of the PM2.5 Performance Evaluation Program (PEP) personnel currently in each Region. Need to combine PEP and NPAP dollars
TTP - Pros

- Efficiency - ESAT PEP program already in the field
  - They have extra time between PM2.5 audit so no substantial labor cost.
  - It works, CARB does it- we can use there expertise and information management systems
- More Audits
- Can implement better, more sensitive devices
- Don't need to ship audit devices- reduces damage
- Immediate data feed back to State/local/locals/Tribes
- May be available for use in rapid response data collection situations (e.g., WTI, agriculture/forestry burns?)
- ORIA/Regions will provide technical expertise and cooperate on implementation
Decentralized data base - more coordination needed
Additional training required
Need to phase program into existence
Need additional personnel trained for back-up and rotation
Still need a small mailable audit program (AK, HI, VI, PR)
Requires lead time for purchasing, testing, and implementation
It's an investment and requires a commitment to QA
TTP Phase In

- FY01 -
  - Acquire mobile labs with FY01 initiative funds
  - Use remaining funds to make some improvements to current system
  - Use base funds (540K) to implement current NPAP

- FY02 -
  - Acquire additional mobile labs with NPAP base (540K) and any initiative money
  - Use remaining portion of base funds to implement current NPAP

- FY03
  - Purchase remaining labs with NPAP Base funding (540K)
  - Keep needed portion for NPAP to perform necessary mail outs

NOTE - Probably do not need 10 labs. Monitoring Strategy and State PE programs may move TTP to a "regionally based" program utilizing fewer vehicles.
PM$_{2.5}$ (black) & Other Criteria sans PM$_{10}$ and Pb (cyan) Monitoring Sites

- PM$_{2.5}$ = 1061
- Other Criteria = 1656
- Collocated = 426

8 labs X 45 weeks x 2 sites/week = 720 Sites
NPAP audits completed in ~ 3 years (with 8 labs)
## TTP Program Costs  
### (8 laboratory Scenario)

### Weekly Breakdown

<table>
<thead>
<tr>
<th>Cost Break Down</th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
<th>Day 5</th>
<th>Total Cost</th>
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<tbody>
<tr>
<td>Fuel (5 mi/gal and 1.50 /gal)</td>
<td>105</td>
<td>30</td>
<td>30</td>
<td>30</td>
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<td>300</td>
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<td>Labor (45/hr)</td>
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<td>1800</td>
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<tr>
<td>Perdiem ($130/ day)</td>
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<td>130</td>
<td>130</td>
<td>130</td>
<td>50</td>
<td>570</td>
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<tr>
<td>Vehicle Repair (ave)</td>
<td>70</td>
<td>70</td>
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<td>70</td>
<td>350</td>
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<tr>
<td>Vehicle replacement</td>
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<td>335</td>
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<td>Equipment Replacement</td>
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<td>Instrument Certification</td>
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<td>125</td>
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<td>Miscellaneous</td>
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<td>20</td>
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<td>20</td>
<td>20</td>
<td>100</td>
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<td><strong>Costs</strong></td>
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<td><strong>752</strong></td>
<td><strong>752</strong></td>
<td><strong>752</strong></td>
<td><strong>747</strong></td>
<td><strong>3830</strong></td>
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### Summary Costs

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<thead>
<tr>
<th>Category</th>
<th>Costs</th>
<th>Comments</th>
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<tbody>
<tr>
<td>1)Total * 45 weeks</td>
<td>172350</td>
<td>1 van per region for 45 weeks/year</td>
</tr>
<tr>
<td>2) Cost for 8 Regions</td>
<td>1378800</td>
<td>Additional labor costs during 7 weeks van not running</td>
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<td>3) Labor 7 weeks * 8 FTE</td>
<td>100800</td>
<td>Additional PEP costs for 5 field personnel and two lab personnel + Admin. (80K)</td>
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<tr>
<td>4) PEP Labor Costs</td>
<td>735200</td>
<td>Shipping Costs, vehicle leases, repairs, &amp; Info Mgt. &amp; Miscellaneous</td>
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<td>5) PEP Costs</td>
<td>175600</td>
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<tr>
<td>6) Mailable NPAP</td>
<td>100000</td>
<td>Additional costs to run mailable NPAP</td>
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<td>7) Information Mgt.</td>
<td>8000</td>
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<td>8) Training</td>
<td>10000</td>
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<td><strong>Total NPAP + PEP</strong></td>
<td><strong>2508400</strong></td>
<td>Total estimated costs of program</td>
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<td><strong>Present NPAP + FY02 PEP</strong></td>
<td><strong>2542545</strong></td>
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See Time Line
Some Reminders

- NPAP as we know it does not end
  - Need it for sites outside continental US
  - Continue with PAMS as is
- Need stable level of funding
  - PEP dollars must remain available
  - Won't work without ESAT or similar contract
  - Need NPAP base of 500-600 K (currently 540K for FY01)
  - Through Monitoring Strategy discussions, need to move PE programs into a "cost of monitoring"
- Anticipating help from the Regions
  - Some Regions may want to implement audit with EPA personnel
Summary

NPAP Goal - Increase audits to acceptable level and create more cost efficient program

- We can improve current NPAP
  - Network reductions (Monitoring Strategy) may help
  - Probably need ~750K to be adequate
- TTP - Meets the goal
  - Technically it's a better approach
  - Real time feedback
  - Anticipate doing it with 500-600K of NPAP funds and current PEP funding (1.7 million)