United States Environmental Protection Agency

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National Performance Evaluation Program (NPEP) "Through the Probe" (TTP) Method

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NPEP TTP

What is a 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 is:

- Independent
- Objective
- Nationally Comparable

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A Snapshot of the National Performance Audit Program (NPAP) in the Past…

1. Audit device shipped to operator address
2. Audit(s) conducted
3. Audit device shipped back to contractor
4. Audit device verified/calibrated
5. Audit device readied for next shipment

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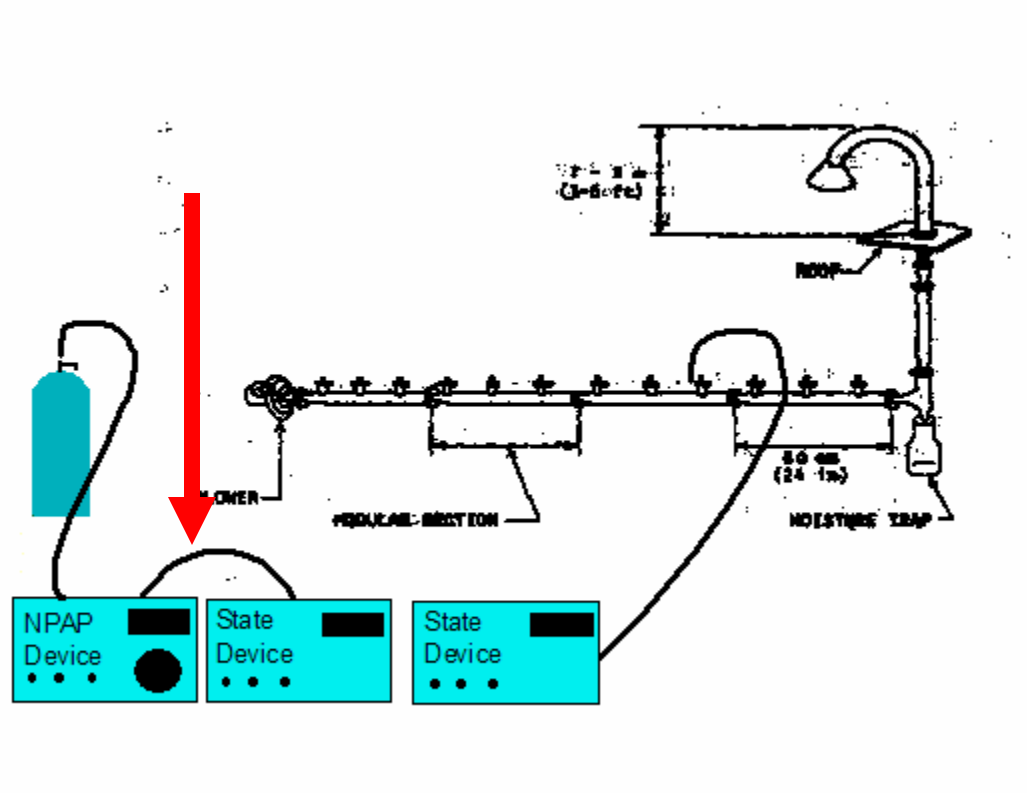
NPEP TTP NPAP Method in the Past



This method misses the inlet, tubing, manifolds, and fittings that air must pass through before reaching the instrument itself

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Past NPAP Method Limitations

1. Audits omit sample collection tubing, manifolds, and fittings where contamination or losses may occur
2. Substantial costs involved because of labor, recalibration, repair, and shipping of instrumentation
3. Substantial time required to complete an audit due to shipping
4. Transport of instrumentation through mail
5. Less sensitive instruments used due to shipping through the mail

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New NPAP Method Implementation Goals

1. Use PM2.5 Performance Evaluation Program Field Scientists to perform performance audits
2. Construct and use a mobile audit vehicle (truck or towed trailer)
3. Perform audits “through the probe”
4. Use state of the art instrumentation
5. Immediate results for site operator

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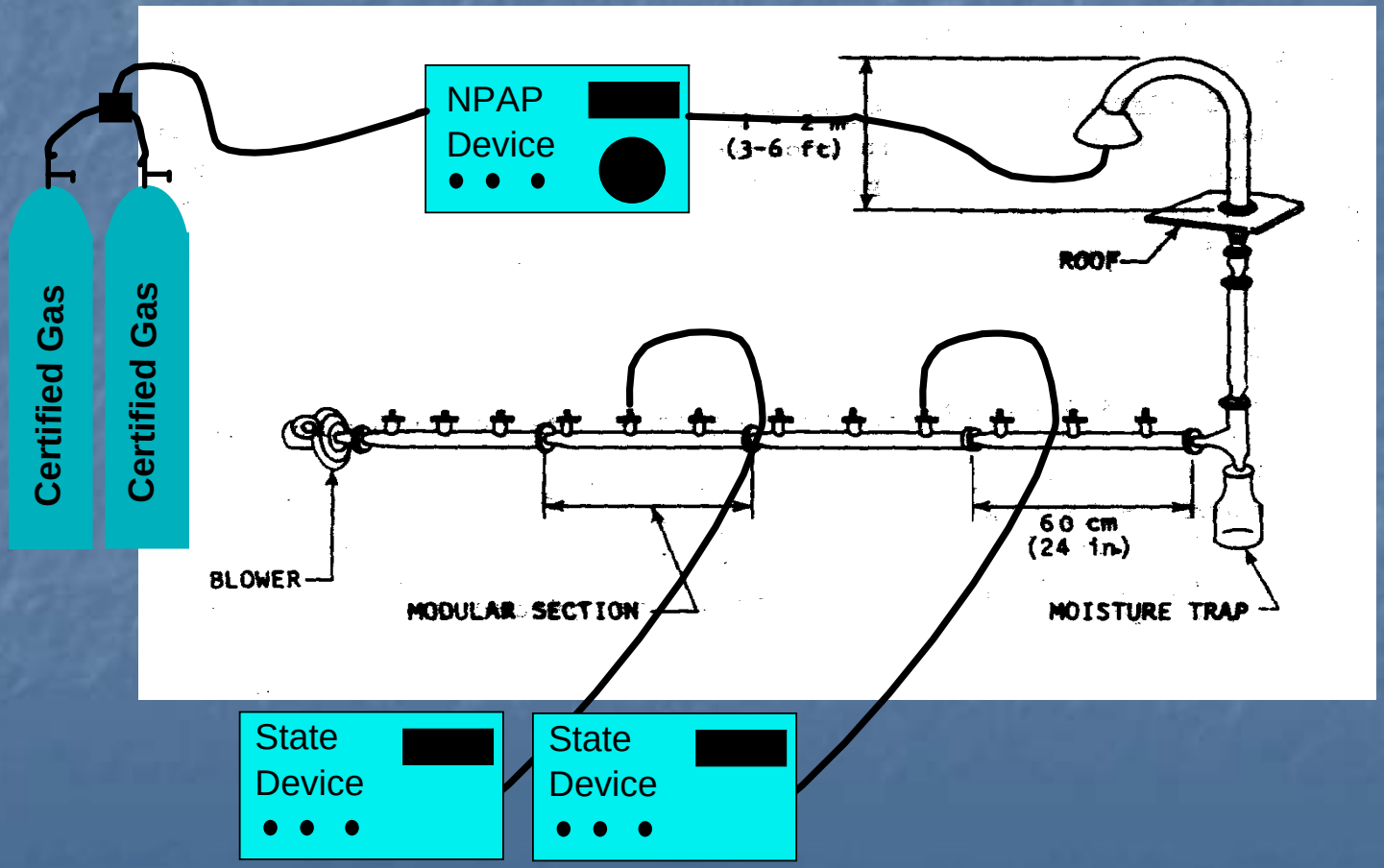
NPAP "Through the Probe" Method



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NPAP Through the Probe Advantages

1. Auditing "through the probe" includes inlet, manifold, and sample collection tubing where contamination or losses may occur

Combining the PM2.5 Performance Evaluation Program (PEP) and the National Performance Audit Program (NPAP) gives us the National Performance Evaluation Program (NPEP)

3. A mobile audit vehicle can visit many sites and audit many parameters at once
4. Since no shipping is involved, more sensitive instrumentation can be used yielding more accurate audits
5. Audits are real-time! If differences are seen, troubleshooting can be done, and possibly a solution can be found on site.

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Goals for 2004 Region 4 NPEP Pilot Program

1. Gain proficiency in operating the instrumentation and using the mobile laboratory
2. Provide training for the ESAT auditors in continuous monitoring

   Air Pollution Training Institute

   EPA OAQPS certifications

   Hands on experience
3. Complete 21 site audits (approximately 40 parameters)
4. Gain enough proficiency in continuous performance audits to increase audits in 2005 by 50%

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NPAP Through the Probe and SESD

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A Few Specifics:

1. 16 foot module set on a Ford F-450 chassis
2. Module powered by 110V shore line or one of two Onan gasoline generators
3. Capable of auditing ozone, carbon monoxide, sulfur dioxide, nitrogen oxides
4. 150 feet of braided stainless steel over ½ inch Teflon tubing hose to introduce audit concentrations
5. Over 11 feet tall
6. Can be operated by a single auditor

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Front view

Rear view, ladder for roof access, diamond plate surfaced work area

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Onan generator on slide out tray for easy maintenance

Side view showing generator compartment

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Hose reel

Hose reel access door

Instrument racks and compressed gases

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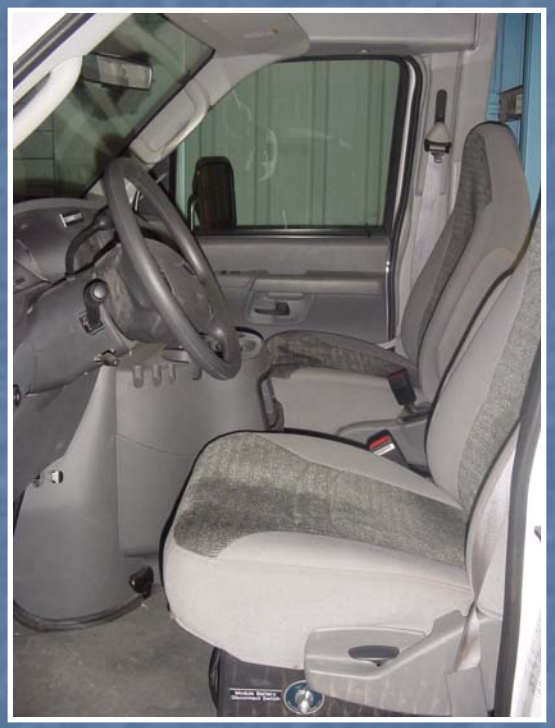
Interior from rear door

Right side of interior



Cabin view

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Vehicle roof with diamond plate work area

Computer work station

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Other Possible Uses for the Mobile TTP Vehicle

1. Specific state and local issues
2. Emergency response
3. Fill in your request…

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