

Growth of the Field Audit Program for EPA's Speciation and IMPROVE Networks

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Overview

- What did we accomplish in 2005?
 - What could we conclude from our audits?
 - Did we learn any valuable lessons?
 - Where do we go from here?
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What did we accomplish in 2005 for Speciation?

- 16 Speciation sites and 19 samplers; 11 passed everything
 - ◆ Significant findings:
 - ★ At 4 sites a total of 7 Channels exhibited leaks of 0.10 L/min or greater
 - ★ 1 safety issue
 - ★ Two sites with flow rates outside of 10 percent acceptance criteria, but these were corrected on site, re-audited, and passed.
 - ◆ Minor findings were minimal

What did we accomplish in 2005 for IMPROVE?

- 34 IMPROVE sites and 35 samplers; 5 passed everything
 - ◆ Two clocks were $>\pm 60$ minutes from reference standard.
 - ◆ Two leaks where the Vacuum reading < 33 mm Hg.
 - ◆ Two sites where calibration plug was missing, thus creating zero flow through filter (for 12 weeks).
 - ◆ Five flowrates with difference $> \pm 10$ percent of theoretical or the flow rate was questionable due to differences between calibration values and the expected design flow.
 - ◆ Three sites with temperature reading $> \pm 10$ degrees Celsius from reference standard.

What did we accomplish in 2005 for IMPROVE? Cont.

- ◆ Four flow rates calculated from the vacuum reading were $> \pm 10$ percent of flow measured by standard.
- ◆ One reference standard failed during audit of sampler flow rates.
- ◆ Three sites reported operator errors with respect to handling filter cassettes or reading the instrument temperature sensor.
- ◆ One had flies that were observed in one exposed filter cassette (fly eggs on the filter).
- ◆ One site was improperly positioned with respect to an adjacent shelter which caused water to drip onto one module box and then it infiltrated the sample train and sharp cut cyclone. (This has been corrected as of the writing of this memorandum.)

Conclusions

- Speciation

- ◆ Need more coverage of the Speciation network—60 sites
- ◆ Need a tool to identify sites that should be audited

- IMPROVE Network

- ◆ Close to 25% coverage
- ◆ Need procedure for providing auditors with site coefficients
- ◆ Need mechanism to provide UC Davis preliminary results
- ◆ IMPROVE should improve their temperature sensors
- ◆ Site operators should be trained to reset clocks and temperature

- General

- ◆ Need a procedure to track follow-up actions for both networks!!
- ◆ Need to compare reference std flow rates to design values

What did we learn?

- On-site, regional training pays off
- Contractor support for training will be essential
- A few critical audit do's and don'ts
 - ◆ Know the idiosyncrasies of the TriCal
 - ◆ Use an auditor's check-out sheet
- We cannot short-cut tools necessary to do the audits
- Electronic reporting is the way of the future!
- We need to compile and publish "tricks of the trade"

Where do We Go from Here?

- Need to increase the auditor corps
 - ◆ EPA Regional; State; Local; Tribal personnel
 - ◆ Conduct local/regional courses rather than national
 - ◆ Develop electronic recertification
- Got to get Audit Modules and Cassettes into Auditors' hands
- Complete revision of audit SOPs
- Revise the Speciation QAPP

Where do We Go from Here? Cont.

- Advance Reporting System
 - ◆ Monthly parameter Check Forms
 - ◆ New Field Audit Worksheets
 - ◆ Electronic Audit Reports & follow-up to audit findings
 - ◆ Initiate QA Website
 - ◆ Engage data analyst and modelers
- Data Validation

Upcoming Training Courses

- Frostburg, MD -- June 5-7
 - Kansas City/St. Louis -- July
 - Las Vegas – November
 - Others will depend on budget constraints and dual event opportunities
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