

Florida Department of Environmental Protection



Office of Air Monitoring

Summary of Recent EPA TSA Findings

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Introduction

“Technical systems audits of each PQAO shall be conducted at least every 3 years by the appropriate EPA regional office and reported to the AQS. If a PQAO is made up of more than one monitoring organization, all monitoring organizations in the PQAO should be audited within 6 years (two TSA cycles of the PQAO).”

-40 CFR Part 58, Appendix A, Section 2.5
(Proposed Rule Revision)





Introduction



“A TSA will be performed during the early stage of the project to assist in identifying deficiencies and providing timely corrective actions. A TSA team or an individual TSA auditor may segregate TSA activities into three categories. The categories may be audited independently or they may be combined. The TSA categories are:

- Field activities – Sample handling, sampling, and shipping.
- Laboratory activities - Pre-sampling weighing, shipping, receiving, post-sampling weighing, archiving, and associated QA/QC activities.
- Data management activities – Collecting, flagging, editing, and uploading data; providing data security.

-Florida Gaseous Ambient Air Quality Monitoring Program QAPP
January 2014, Section 19.2.1



Recent TSA Findings/Recommendations

Data Management

- Qualifier flags were not being transmitted along with analytical results to AQS
- Missing quality control (QC) checks in AQS
- Precision checks were not properly coded in AQS
- Precision data were reversed in AQS
- Precision and accuracy data were being left in AQS after invalidation of associated raw data





Recent TSA Findings/Recommendations

Data Management

- Failure to invalidate ambient data associated with parameters outside of limits (i.e. ambient data associated with shelter temperature out of specification, QC check outside of acceptance limits, etc.)
- Erroneous data were entered in AQS
- Concerns about electronic forms and data tracking



Recent TSA Findings/Recommendations

Quality Assurance

- Electronic strip charts were not available to auditors and they were not reviewing them
- More independence needed in QA activities
- Lack of tracking system for the certification of standards
- Site review concerns





Recent TSA Findings/Recommendations

Field Operations

- Staff were not properly trained in the operation of instruments
- Failure to take corrective actions when a problem was detected (i.e. biweekly precision checks outside of required limits, blanks outside required limits, etc.)
- Multiple instances of lack of traceability of standards used for calibration and QC checks of ambient air monitoring instrumentation (ozone and other gaseous pollutants)
- Operators were creating their own forms for calibrations and other checks
- There was no process or written procedure for records management (i.e. operators were storing records in boxes in their vehicles, at the sites, etc.)





Recent TSA Findings/Recommendations

Field Operations (cont.)

- Sample Line Integrity Checks (SLICs) were not being performed when required
- Corrective action reports were not being completed timely
- Consistent documentation issues on records (i.e. incorrect serial numbers, AQS numbers, etc.)
- Monitors were not operating within the specified flow range
- Lack of narrative and detail on records explaining data loss or other issues
- Failure to calculate converter efficiency (CE) for NO-NO_x-NO₂ analyzer



Recent TSA Findings/Recommendations

Quality Control

- SOPs were outdated
- Certification of ozone monitoring site calibrators were being performed at longer than 365-day intervals.
- Lack of use of minute data for QC purposes





Recent TSA Findings/Recommendations

Laboratory Operations

- Concerns over conditioning of particulate matter filters (i.e. relative humidity and temperature)
- SOPs were outdated or confusing (methodology and procedures were not clear)
- Lack of documentation of internal audits
- Some methodologies were questionable
- Concerns over standards certifications





What are we doing to reverse this trend?

- Office of Air Monitoring (OAM) centralization of data validation and field staff
- Standardized SOPs and QA documents
- Standardized data validation procedures
 - Checklist
 - Data Handling SOP
- Increased training opportunities
- AQS access read-only access given to all agencies
- Uniform procedures for field staff
- OAM will be auditing the laboratories





Questions

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