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# Summary of Changes to 40 CFR Part 58 Appendix A

| Change | Previous App A Section[1] | New App A Section | Comments |
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| Title | Title | NA | EPA changed the title of Appendix A to "Quality Assurance Requirements for Monitors used in Evaluations of National Ambient Air Quality Standards" and removed the terms SLAMS and special purpose monitors (SPMs) from the title. The applicability section also provides a mechanism in AQS to identify any criteria monitors that are not used for NAAQS evaluations which will require review and approval by the EPA Regions. This process will create transparency and efficiencies in the designation process and will assist in the data quality evaluation and data certification processes. |
| Format Revision | NA | NA | EPA reformatted the document by pollutant rather than method type. The previous regulation had separate sections for automated (continuous) and manual methods. Since some of the particulate matter methods are both continuous and manual and in some cases have different quality control requirements, monitoring organizations found the Appendix A requirements confusing. The four gaseous pollutants (CO, NO2, SO2 and O3) will be in one section since the quality control requirements are the same, and separate sections are provided for PM10, PM2.5 and Pb QA requirements. |
| Removing PSD from Appendix A | NA | NA | The combined regulations have caused some confusion and EPA moved the PSD requirements back to Appendix B. This also provides more flexibility for revision if changes in PSD requirements are needed. |
| Emphasis on PQAO | NA | 1.2 | Since appendix A emphasizes the primary quality assurance organizations (PQAO), EPA moved the definition and explanation to the beginning of the regulation in order to ensure that the application and use of PQAO in App A is clearly understood. |
| PQAO Oversight | NA | 1.2.1 | Since the PQAO can be a consolidation of a number of local monitoring organizations, the EPA added a sentence clarifying that the agency identified as the PQAO (usually the state agency) will be responsible for overseeing that the Appendix A requirements are being met by all consolidated monitoring organizations within the PQAO. |
| Approval of PQAO by EPA | 3.1.1 | 1.2 | EPA removed language requiring PQAO approvals only during events like network reviews or audits. EPA believes this approval can occur at any time. |
| Removal of $PM_{10-2.5}$ QA Requirements | Number of Sections | NA | EPA eliminated the $PM_{10-2.5}$ requirements in Appendix A to reduce burden. Similar to the CSN and PAMS networks, EPA will develop QA guidance for the $PM_{10-2.5}$ network which will afford more flexibility for change/revision. |
| Removing the QA Requirement for Pb Monitoring at non-source NCore sites | Number of Sections | NA | EPA eliminated the QA requirements for Pb at non-source NCore sites. |
| QAPP Courtesy Submission to EPA | 2.1.1 | 2.1.1 | EPA added in reg that if a PQAO or monitoring organization has been delegated authority to review and approve their QAPP, an electronic copy must be submitted to the EPA Region at the time it is submitted to the PQAO/monitoring organizations QAPP approving authority. In most cases, quality assurance project plans (QAPPs) are submitted to EPA Regions for review and approval. In some cases the EPA Regions may delegate approval of QAPPs to the monitoring organization based upon a monitoring organizations quality system as documented in their EPA Regionally approved quality management plan (QMP). In these cases, EPA may not receive a copy of the QAPP which may have some inaccuracies that can be caught and corrected prior to the start of data collection activities. |

[1] The section numbers are referencing the section numbers of the previous regulation. Reformatting of the document may change some of the section numbers.

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| QMP and QAPP submission and approval reporting to AQS. | 2.1.1 and 2.1.2 | 2.1.1 and 2.1.2 | EPA requires that QMP and QAPP submission dates be reported to AQS by monitoring organizations and that QMP and QAPP approval dates be reported by EPA or the monitoring organization (if delegated self-approval). This will allow for timely and accurate reporting of this information. EPA has developed AQS transactions for the reporting of QMPs and QAPPs. |
| PM2.5 Precision and Bias Statistics | 2.3.1.1 | 2.3.1.1 | EPA revised the $PM_{2.5}$ precision DQO to include the upper confidence limits (CL). The $PM_{2.5}$ DQO intended to include the upper confidence limits (CL) for the precision in earlier CFR versions. It was included in the statistical section (Section 4) but was inadvertently missed in the DQO section. |
| National Performance Evaluation Program | 2.4 | 2.4 | EPA added clarifying language to the National Performance Evaluation Program explaining self-implementation of the performance evaluation. The clarification also adds the definition of independent assessment which is included in the $PM_{2.5}$ PEP and NPAP QAPPs and guidance, and is included in the self-implementation memo sent to the monitoring organizations on an annual basis. The clarification is not a new requirement but provides a better reference for this information than the annual memo sent to the monitoring organizations. |
| Revision of TSA Language to Cover Consolidated PQAOs | 2.5 | 2.5 | EPA revised the TSA language to perform TSAs for each PQAO every three years and if a PQAO is made up of a number of monitoring organizations, all monitoring organizations within the PQAO should be audited within 6 years. This would allow EPA Regions to audit monitoring organizations within the PQAO. |
| Participation in AA-PGVP | NA | 2.6.1 | EPA added the AA-PGVP annual survey requirement to Appendix A. In addition, EPA added language that monitoring organizations participate, at the request of EPA, in the AA-PGVP by sending a gas standard to one of the verification laboratories every 5 years. Since many monitoring organizations volunteer to send in cylinders, monitoring organization may not be obligated to comply with this requirement but EPA may request a cylinder from a monitoring organization minimally every 5 years. |
| I- Point QC Checks<br><br>Change from Proposal | 3.2.1 | 3.1.1 | EPA lowered the audit concentrations of the 1-point QC checks to 0.005 and 0.08 parts per million (ppm) for $SO_2$, $NO_2$, and $O_3$, (previously 0.01 to 0.1 ppm) and between 0.5 and 5 ppm for CO monitors (previously 1 and 10 ppm) in order to better reflect the precision and bias of the routine ambient air data. EPA initially proposed the selection of the concentrations be based on mean or median routine concentration data (guidance on this is provided in the QA Handbook). **Based on comments, the regulation was revised to state that the QC check gas concentration selected within the prescribed range should be related to the monitoring objectives for the monitor. If monitoring at an NCore site or for trace level monitoring, the QC check concentration should be selected to represent the mean or median concentrations at the site. EPA added some clarification to the language to require monitoring organizations to select either the highest or lowest concentration in the ranges identified if their mean or median routine concentrations are or above or below the range.** |
| I-Point QC Checks CO Modification | 3.2.1.1 | NA | EPA removed language in this section allowing the CO point monitor to be temporarily modified during the QC check to reduce vent or purge flows, or the allowance of the test atmosphere to enter the monitor at a point other than the normal sample inlet, provided that the monitor's response is not likely to be altered by these deviations from the normal operational mode. From technical discussions it did not appear that this is necessary and was eliminated to reduce confusion. |
| I-Point QC Check revision for zero/span adjustments | 3.2.1.1 | 3.1.1 (b) | In order to be consistent with more recent guidance, EPA removed reference to zero and span adjustments and revised the language to simply require that the QC check be conducted before any calibration or adjustment to the monitor. Recent revisions of the QA Handbook discourage the implementation of frequent span adjustments and therefore eliminated in the regulation. |

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| Annual Performance Evaluation Burden Reduction | 3.2.2 | NA | EPA removed the suggestion to re-audit monitors in order to perform annual PE in all 4 quarters. The minimum requirement for the annual performance evaluation (PE) for the primary monitor at a site is one per year. The previous regulation required evaluation of the monitors at 25% per quarter so that the PEs are performed in all four quarters. There are cases where some monitoring organizations have less than 4 primary monitors for a gaseous pollutant and the previous language suggests that a monitor already receiving a PE be re-audited to fulfill PEs in all four quarters. |
| Annual Performance Evaluation Audit Level Increase and Audit Level Selection Revision<br><br>Change from Proposal | 3.2.2 | | EPA expanded the audit levels from five to ten and removed the requirement to audit three consecutive levels. The previous regulation required that the three audit levels should bracket 80% of the ambient air concentrations measured by the analyzer. EPA initially proposed language so that two of the audits levels selected should represent 10-80 percent of routine ambient concentrations measured by the monitor or in the PQAOs network of monitors. The third point should be at the NAAQS or above the highest 3-year routine concentration, whichever is greater. **Based on comments, the regulation was revised to: One point must be within two to three times the method detection limit of the instruments within the PQAOs network, the second point will be less than or equal to the 99th percentile of the data at the site or the network of sites in the PQAO or the next highest audit concentration level. The third point can be around the primary NAAQS or the highest 3-year concentration at the site or the network of sites in the PQAO.** |
| Annual Performance Evaluation Audit Gases at higher than Normal Operating Ranges | 3.2.2 (b) | 3.1.2.1 | EPA removed the requirement for Regional approval for use of audit gases at ranges higher that 1.0 ppm for O3, SO2 and NO2 and greater than 50 ppm for CO. EPA does not believe any regulatory monitors need to be operated above these ranges and eliminated this requirement but added language to notify AQS to accommodate a higher concentration so data reporting does not get rejected. |
| NPAP Description | NA | 3.1.3 | EPA included NPAP requirements in appendix A. Appendix A never had a description of the NPAP requirements. Since 2007, EPA distributes a memo to all monitoring organizations in order to determine whether the monitoring organization plans to self-implement the NPAP program or utilize the federally implemented program. In order to make this decision, the NPAP adequacy and independence requirements are described in the memo and now in the regulations. |
| Flow rate verification | 3.2.3 | 3.2.1 | EPA will require flow rate verifications of all PM and Pb monitors/samplers be reported to AQS. The requirement to perform the flow rate verification has been a requirement but the reporting to AQS has only been a requirement for $PM_{10}$ continuous instruments. This is the only quality control requirement in Appendix A that was not required for reporting to AQS for all pollutants and has been a cause of confusions. |
| PM2.5 Collocation Clarification | 3.2.5 | 3.2.3.3 | EPA added language clarifying that since the collocation requirements are used to assess precision of the primary monitors, and since there can only be one primary monitor at a monitoring site, a site can only count for the collocation of the method designation of the primary monitor at that site. EPA had become aware that some monitoring organizations have been using single monitoring sites to achieve more than one required collocation for precision assessments. Regions have been taking corrective action on this but EPA decided to provide additional clarity to the intent of the original regulation that one site cannot be used to achieve multiple collocation requirements. |
| Removing TSP Cutoff Value | 4(c)(1) | NA | EPA eliminated the TSP cutoff value since TSP is no longer a NAAQS standard. The cutoff value is the concentration below which collocated data or performance evaluation data is not evaluated due to its measurement uncertainty at this low concentration. , |
| Reducing Pb cutoff values | 4 (c)(2) | 4 (c)( 1&2) | EPA lowered the Pb cutoff to 0.002 µg/$m^3$ for methods approved after 3/04/2010 with exception of manual equivalent method EQLA-0813-803 and will keep the 0.02 µg/m3 cutoff value for methods approved before 3/04/2010 and manual equivalent |

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| | | | method EQLA-0813-803. Quite a bit of collocated data and performance evaluation data collected is not used due to the previous Pb (0.02 ug/$m^3$) cutoff values. The new Pb method by ICP-MS, promulgated in 2013 in 40 CFR Part 50 Appendix G, showed that the MDLs were below 0.0002 µg/$m^3$ which is well below the EPA requirement of five percent of the previous Pb NAAQS or 0.0075 µg/$m^3$. |
| Removing Annual PE Validation Check | 4.1.4 and 4.1.5 | NA | EPA eliminated this statistic from the regulation since acceptance criteria for the Annual PE and 1-point QCs are already identified in guidance. A check was developed in Appendix A to perform an evaluation of the 1 point QC checks and the annual performance evaluations. PQAOs with very good repeatability on the one point QC check data had a hard time meeting this requirement since the probability interval became very tight, making it harder for better performing PQAOs to meet the requirement. |
| Removing Flow Rate Audit Validation Check | 4.2.4 | NA | EPA eliminated this statistic from the regulation since acceptance criteria for the flow rate audits and the flow rate verifications are already identified in guidance. Monitoring organizations with very good repeatability created a tight probability interval making it harder for better performing PQAOs to meet the requirement. |