

EPA-600/4-77-027b

August 1977-

February 1994

# **QUALITY ASSURANCE HANDBOOK FOR AIR POLLUTION MEASUREMENT SYSTEMS**

## **Volume III — Stationary Source Specific Methods**

**U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Research and Development  
Environmental Monitoring and Support Laboratory  
Research Triangle Park, North Carolina 27711**

#### ACKNOWLEDGMENTS

This volume of the Quality Assurance Handbook has been prepared by the Quality Assurance Branch of the Environmental Monitoring and Support Laboratory, Research Triangle Park, North Carolina in cooperation with PEDCo-Environmental, Inc., of Cincinnati, Ohio.

#### DISCLAIMER

Mention of trade names or commercial products does not constitute EPA endorsement or recommendation for use.

# Volume III

## Table of Contents

| Section          |                                                                                                                                                                                                        | Pages         | Date               |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|
|                  | Purpose and Overview of the Quality Assurance Handbook                                                                                                                                                 | 3             | 1-04-85            |
| 3.0              | General Aspects of Quality Assurance for Stationary Source Emissions Testing Programs                                                                                                                  |               |                    |
| 3.0.1            | Planning the Test Program                                                                                                                                                                              | 12            | 5-01-79            |
| 3.0.2            | General Factors Involved in Stationary Source Testing                                                                                                                                                  | 9             | 5-01-79            |
| 3.0.3            | Chain-of-Custody Procedure for Source Sampling                                                                                                                                                         | 7             | 5-01-79            |
| <del>3.0.4</del> | <del>Procedure for NBS Traceable Certification of Compressed Gas Working Standards Used for Calibration and Audit of Continuous Source Emission Monitoring (Revised Traceability Protocol No. 1)</del> | <del>14</del> | <del>6-09-87</del> |
| 3.0.5            | Specific Procedures to Assess Accuracy of Reference Methods Used for SPNSS                                                                                                                             | 58            | 9-23-85            |
| 3.0.6            | Specific Procedures to Assess Accuracy of Reference Methods Used for NESHAP                                                                                                                            | 14            | 9-23-85            |
| 3.0.7            | Calculation and Interpretation of Accuracy for Continuous Emission Monitoring Systems (CEMS)                                                                                                           | 14            | 11-05-85           |
| 3.0.8            | Audit Materials Available from U.S.E.P.A.                                                                                                                                                              | 7             | 11-04-85           |
| 3.0.9            | Continuous Emission Monitoring Systems (CEMS) Good Operating Practices                                                                                                                                 | 47            | 6-01-86            |
| 3.0.10           | Guideline for Developing Quality Control Procedures for Gaseous Continuous Emission Monitoring Systems                                                                                                 | 11            | 11-26-85           |
| 3.1              | Method 2-Determination of Stack Gas Velocity and Volumetric Flow Rate                                                                                                                                  |               |                    |
| 3.1.1            | Procurement of Apparatus and Supplies                                                                                                                                                                  | 15            | 1-15-80            |
| 3.1.2            | Calibration of Apparatus                                                                                                                                                                               | 21            | 1-15-80            |
| 3.1.3            | Presampling Operations                                                                                                                                                                                 | 7             | 1-15-80            |
| 3.1.4            | On-Site Measurements                                                                                                                                                                                   | 12            | 1-15-80            |
| 3.1.5            | Postsampling Operations                                                                                                                                                                                | 3             | 1-15-80            |
| 3.1.6            | Calculations                                                                                                                                                                                           | 4             | 1-15-80            |
| 3.1.7            | Maintenance                                                                                                                                                                                            | 1             | 1-15-80            |
| 3.1.8            | Auditing Procedure                                                                                                                                                                                     | 5             | 1-15-80            |
| 3.1.9            | Recommended Standards for Establishing Traceability                                                                                                                                                    | 1             | 1-15-80            |
| 3.1.10           | Reference Method                                                                                                                                                                                       | 11            | 1-15-80            |
| 3.1.11           | References                                                                                                                                                                                             | 2             | 1-15-80            |
| 3.1.12           | Data Forms                                                                                                                                                                                             | 8             | 1-15-80            |

## Table of Contents (continued)

| Section    |                                                                                               | Pages | Date    |
|------------|-----------------------------------------------------------------------------------------------|-------|---------|
| <b>3.2</b> | <b>Method 3--Determination of Carbon Dioxide, Oxygen Excess Air, and Dry Molecular Weight</b> |       |         |
| 3.2.1      | Procurement of Apparatus and Supplies                                                         | 15    | 1-15-80 |
| 3.2.2      | Calibration of Apparatus                                                                      | 4     | 1-15-80 |
| 3.2.3      | Presampling Operations                                                                        | 6     | 1-15-80 |
| 3.2.4      | On-Site Measurements                                                                          | 12    | 1-15-80 |
| 3.2.5      | Postsampling Operations                                                                       | 2     | 1-15-80 |
| 3.2.6      | Calculations                                                                                  | 3     | 1-15-80 |
| 3.2.7      | Maintenance                                                                                   | 1     | 1-15-80 |
| 3.2.8      | Auditing Procedure                                                                            | 5     | 1-15-80 |
| 3.2.9      | Recommended Standards for Establishing Traceability                                           | 1     | 1-15-80 |
| 3.2.10     | Reference Method                                                                              | 3     | 1-15-80 |
| 3.2.11     | References                                                                                    | 1     | 1-15-80 |
| 3.2.12     | Data Forms                                                                                    | 6     | 1-15-80 |
| <b>3.3</b> | <b>Method 4-Determination of Moisture in Stack Gases</b>                                      |       |         |
| 3.3.1      | Procurement of Apparatus and Supplies                                                         | 9     | 1-15-80 |
| 3.3.2      | Calibration of Apparatus                                                                      | 19    | 1-15-80 |
| 3.3.3      | Presampling Operations                                                                        | 7     | 1-15-80 |
| 3.3.4      | On-Site Measurements                                                                          | 10    | 1-15-80 |
| 3.3.5      | Postsampling Operations                                                                       | 4     | 1-15-80 |
| 3.3.6      | Calculations                                                                                  | 8     | 1-15-80 |
| 3.3.7      | Maintenance                                                                                   | 3     | 1-15-80 |
| 3.3.8      | Auditing Procedure                                                                            | 4     | 1-15-80 |
| 3.3.9      | Recommended Standards for Establishing Traceability                                           | 1     | 1-15-80 |
| 3.3.10     | Reference Method                                                                              | 5     | 1-15-80 |
| 3.3.11     | References                                                                                    | 1     | 1-15-80 |
| 3.3.12     | Data Forms                                                                                    | 14    | 1-15-80 |
| <b>3.4</b> | <b>Method 5-Determination of Particulate Emissions from Stationary Sources</b>                |       |         |
| 3.4.1      | Procurement of Apparatus and Supplies                                                         | 15    | 1-15-80 |
| 3.4.2      | Calibration of Apparatus                                                                      | 22    | 1-15-80 |
| 3.4.3      | Presampling Operations                                                                        | 20    | 1-15-80 |
| 3.4.4      | On-Site Measurements                                                                          | 19    | 1-15-80 |
| 3.4.5      | Postsampling Operations                                                                       | 15    | 1-15-80 |
| 3.4.6      | Calculations                                                                                  | 10    | 1-15-80 |
| 3.4.7      | Maintenance                                                                                   | 3     | 1-15-80 |
| 3.4.8      | Auditing Procedure                                                                            | 7     | 1-15-80 |
| 3.4.9      | Recommended Standards for Establishing Traceability                                           | 1     | 1-15-80 |
| 3.4.10     | Reference Method                                                                              | 6     | 1-15-80 |
| 3.4.11     | References                                                                                    | 2     | 1-15-80 |
| 3.4.12     | Data Forms                                                                                    | 21    | 1-15-80 |
| <b>3.5</b> | <b>Method 6-Determination of Sulfur Dioxide Emissions from Stationary Sources</b>             |       |         |
| 3.5.1      | Procurement of Apparatus and Supplies                                                         | 6     | 5-01-79 |
| 3.5.2      | Calibration of Apparatus                                                                      | 6     | 5-01-79 |
| 3.5.3      | Presampling Operations                                                                        | 3     | 5-01-79 |
| 3.5.4      | On-Site Measurements                                                                          | 7     | 5-01-79 |
| 3.5.5      | Postsampling Operations                                                                       | 7     | 5-01-79 |
| 3.5.6      | Calculations                                                                                  | 2     | 5-01-79 |
| 3.5.7      | Maintenance                                                                                   | 1     | 5-01-79 |
| 3.5.8      | Auditing Procedure                                                                            | 6     | 9-23-85 |
| 3.5.9      | Recommended Standards for Establishing Traceability                                           | 1     | 5-01-79 |

## Table of Contents (continued)

| Section    | Pages                                                                                                       | Date |
|------------|-------------------------------------------------------------------------------------------------------------|------|
| 3.5.10     | Reference Method                                                                                            | 4    |
| 3.5.11     | References                                                                                                  | 1    |
| 3.5.12     | Data Forms                                                                                                  | 13   |
| <b>3.6</b> | <b>Method 7-Determination of Nitrogen<br/>Oxide Emissions from Stationary Sources</b>                       |      |
| 3.6.1      | Procurement of Apparatus and Supplies                                                                       | 5    |
| 3.6.2      | Calibration of Apparatus                                                                                    | 5    |
| 3.6.3      | Presampling Operations                                                                                      | 5    |
| 3.6.4      | On-Site Measurements                                                                                        | 8    |
| 3.6.5      | Postsampling Operations                                                                                     | 5    |
| 3.6.6      | Calculations                                                                                                | 4    |
| 3.6.7      | Maintenance                                                                                                 | 1    |
| 3.6.8      | Auditing Procedure                                                                                          | 6    |
| 3.6.9      | Recommended Standards for Establishing<br>Traceability                                                      | 1    |
| 3.6.10     | Reference Method                                                                                            | 5    |
| 3.6.11     | References                                                                                                  | 1    |
| 3.6.12     | Data Forms                                                                                                  | 13   |
| <b>3.7</b> | <b>Method 8-Determination of Sulfuric Mist<br/>and Sulfur Dioxide Emissions from<br/>Stationary Sources</b> |      |
| 3.7.1      | Procurement of Apparatus and Supplies                                                                       | 7    |
| 3.7.2      | Calibration of Apparatus                                                                                    | 10   |
| 3.7.3      | Presampling Operations                                                                                      | 4    |
| 3.7.4      | On-Site Measurements                                                                                        | 10   |
| 3.7.5      | Postsampling Operations                                                                                     | 9    |
| 3.7.6      | Calculations                                                                                                | 6    |
| 3.7.7      | Maintenance                                                                                                 | 2    |
| 3.7.8      | Auditing Procedure                                                                                          | 3    |
| 3.7.9      | Recommended Standards for Establishing<br>Traceability                                                      | 1    |
| 3.7.10     | Reference Method                                                                                            | 5    |
| 3.7.11     | References                                                                                                  | 1    |
| 3.7.12     | Data Forms                                                                                                  | 17   |
| <b>3.8</b> | <b>Method 10-Determination of Carbon<br/>Monoxide Emissions from Stationary<br/>Sources</b>                 |      |
| 3.8.1      | Procurement of Apparatus and Supplies                                                                       | 13   |
| 3.8.2      | Calibration of Apparatus                                                                                    | 18   |
| 3.8.3      | Presampling Operations                                                                                      | 6    |
| 3.8.4      | On-Site Measurements                                                                                        | 12   |
| 3.8.5      | Postsampling Operations                                                                                     | 5    |
| 3.8.6      | Calculations                                                                                                | 3    |
| 3.8.7      | Maintenance                                                                                                 | 2    |
| 3.8.8      | Auditing Procedure                                                                                          | 7    |
| 3.8.9      | Recommended Standards for Establishing<br>Traceability                                                      | 7    |
| 3.8.10     | Reference Method                                                                                            | 3    |
| 3.8.11     | References                                                                                                  | 2    |
| 3.8.12     | Data Forms                                                                                                  | 11   |

## Table of Contents (continued)

| Section     |                                                                                                                     | Pages | Date    |
|-------------|---------------------------------------------------------------------------------------------------------------------|-------|---------|
| <b>3.9</b>  | <b>Method 13B-Determination of Total Fluoride Emissions from Stationary Sources (Specific-Ion Electrode Method)</b> |       |         |
| 3.9.1       | Procurement of Apparatus and Supplies                                                                               | 20    | 1-04-82 |
| 3.9.2       | Calibration of Apparatus                                                                                            | 25    | 1-04-82 |
| 3.9.3       | Presampling Operations                                                                                              | 6     | 1-04-82 |
| 3.9.4       | On-Site Measurements                                                                                                | 21    | 1-04-82 |
| 3.9.5       | Postsampling Operations                                                                                             | 19    | 1-04-82 |
| 3.9.6       | Calculations                                                                                                        | 7     | 1-04-82 |
| 3.9.7       | Maintenance                                                                                                         | 3     | 1-04-82 |
| 3.9.8       | Auditing Procedure                                                                                                  | 8     | 1-04-82 |
| 3.9.9       | Recommended Standards for Establishing Traceability                                                                 | 1     | 1-04-82 |
| 3.9.10      | Reference Method                                                                                                    | 2     | 1-04-82 |
| 3.9.11      | References                                                                                                          | 1     | 1-04-82 |
| 3.9.12      | Data Forms                                                                                                          | 22    | 1-04-82 |
| <b>3.10</b> | <b>Method 13A-Determination of Total Fluoride Emissions from Stationary Sources (SPADNS Zirconium Lake Method)</b>  |       |         |
| 3.10.1      | Procurement of Apparatus and Supplies                                                                               | 13    | 1-04-82 |
| 3.10.2      | Calibration of Apparatus                                                                                            | 5     | 1-04-82 |
| 3.10.3      | Presampling Operations                                                                                              | 3     | 1-04-82 |
| 3.10.4      | On-Site Measurements                                                                                                | 3     | 1-04-82 |
| 3.10.5      | Postsampling Operations                                                                                             | 18    | 1-04-82 |
| 3.10.6      | Calculations                                                                                                        | 7     | 1-04-82 |
| 3.10.7      | Maintenance                                                                                                         | 2     | 1-04-82 |
| 3.10.8      | Auditing Procedure                                                                                                  | 1     | 1-04-82 |
| 3.10.9      | Recommended Standards for Establishing Traceability                                                                 | 1     | 1-04-82 |
| 3.10.10     | Reference Method                                                                                                    | 5     | 1-04-82 |
| 3.10.11     | References                                                                                                          | 1     | 1-04-82 |
| 3.10.12     | Data Forms                                                                                                          | 6     | 1-04-82 |
| <b>3.11</b> | <b>Method 17-Determination of Particulate Emissions from Stationary Sources (In-Stack Filtration Method)</b>        |       |         |
| 3.11.1      | Procurement of Apparatus and Supplies                                                                               | 9     | 1-04-82 |
| 3.11.2      | Calibration of Apparatus                                                                                            | 2     | 1-04-82 |
| 3.11.3      | Presampling Operations                                                                                              | 3     | 1-04-82 |
| 3.11.4      | On-Site Measurements                                                                                                | 6     | 1-04-82 |
| 3.11.5      | Postsampling Operations                                                                                             | 1     | 1-04-82 |
| 3.11.6      | Calculations                                                                                                        | 1     | 1-04-82 |
| 3.11.7      | Maintenance                                                                                                         | 2     | 1-04-82 |
| 3.11.8      | Auditing Procedure                                                                                                  | 2     | 1-04-82 |
| 3.11.9      | Recommended Standards for Establishing Traceability                                                                 | 1     | 1-04-82 |
| 3.11.10     | Reference Method                                                                                                    | 11    | 1-04-82 |
| 3.11.11     | References                                                                                                          | 1     | 1-04-82 |
| 3.11.12     | Data Forms                                                                                                          | 1     | 1-04-82 |
| <b>3.12</b> | <b>Method 9-Visible Determination of the Opacity Emissions from Stationary Sources</b>                              |       |         |
| 3.12.1      | Certification and Training of Observers                                                                             | 5     | 4-20-83 |
| 3.12.2      | Procurement of Apparatus and Supplies                                                                               | 2     | 4-20-83 |
| 3.12.3      | Preobservation Operations                                                                                           | 2     | 4-20-83 |

## Table of Contents (continued)

| Section                                                                                                                                                    | Pages | Date    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------|
| 3.12.4 On-Site Field Observations                                                                                                                          | 18    | 4-20-83 |
| 3.12.5 Postobservation Operations                                                                                                                          | 2     | 4-20-83 |
| 3.12.6 Calculations                                                                                                                                        | 7     | 4-20-83 |
| 3.12.7 Auditing Procedure                                                                                                                                  | 2     | 4-20-83 |
| 3.12.8 Reference Method                                                                                                                                    | 5     | 4-20-83 |
| 3.12.9 References and Bibliography                                                                                                                         | 1     | 4-20-83 |
| 3.12.10 Data Forms                                                                                                                                         | 9     | 4-20-83 |
| <br><b>3.13 Methods 6A and 6B-Determinations<br/>of Sulfur Dioxide, Moisture, and Carbon<br/>Dioxide Emissions from Fossil Fuel<br/>Combustion Sources</b> |       |         |
| 3.13.1 Procurement of Apparatus and Supplies                                                                                                               | 18    | 7-01-86 |
| 3.13.2 Calibration of Apparatus                                                                                                                            | 14    | 7-01-86 |
| 3.13.3 Presampling Operations                                                                                                                              | 6     | 7-01-86 |
| 3.13.4 On-Site Measurements                                                                                                                                | 25    | 7-01-86 |
| 3.13.5 Postsampling Operations                                                                                                                             | 15    | 7-01-86 |
| 3.13.6 Calculations                                                                                                                                        | 9     | 7-01-86 |
| 3.13.7 Maintenance                                                                                                                                         | 3     | 7-01-86 |
| 3.13.8 Auditing Procedure                                                                                                                                  | 11    | 7-01-86 |
| 3.13.9 Recommended Standards for Establishing<br>Traceability                                                                                              | 1     | 7-01-86 |
| 3.13.10 Reference Method                                                                                                                                   | 5     | 7-01-86 |
| 3.13.11 References                                                                                                                                         | 2     | 7-01-86 |
| 3.13.12 Data Forms                                                                                                                                         | 18    | 7-01-86 |
| <br><b>3.14 Method 7A-Determination of Nitrogen<br/>Oxide Emissions from Stationary<br/>Sources (Grab Sampling-Ion<br/>Chromatographic Method)</b>         |       |         |
| 3.14.1 Procurement of Apparatus and Supplies                                                                                                               | 10    | 7-01-86 |
| 3.14.2 Calibration of Apparatus                                                                                                                            | 14    | 7-01-86 |
| 3.14.3 Presampling Operations                                                                                                                              | 6     | 7-01-86 |
| 3.14.4 On-Site Measurements                                                                                                                                | 7     | 7-01-86 |
| 3.14.5 Postsampling Operations                                                                                                                             | 11    | 7-01-86 |
| 3.14.6 Calculations                                                                                                                                        | 6     | 7-01-86 |
| 3.14.7 Maintenance                                                                                                                                         | 2     | 7-01-86 |
| 3.14.8 Auditing Procedure                                                                                                                                  | 6     | 7-01-86 |
| 3.14.9 Recommended Standards for Establishing<br>Traceability                                                                                              | 1     | 7-01-86 |
| 3.14.10 Reference Method                                                                                                                                   | 3     | 7-01-86 |
| 3.14.11 References                                                                                                                                         | 2     | 7-01-86 |
| 3.14.12 Data Forms                                                                                                                                         | 12    | 7-01-86 |
| <br><b>3.15 Method 7D-Determination of Nitrogen<br/>Oxide Emissions from Stationary<br/>Sources (Alkaline-Permanganate-Ion<br/>Chromatographic Method)</b> |       |         |
| 3.15.1 Procurement of Apparatus and Supplies                                                                                                               | 18    | 7-01-86 |
| 3.15.2 Calibration of Apparatus                                                                                                                            | 20    | 7-01-86 |
| 3.15.3 Presampling Operations                                                                                                                              | 6     | 7-01-86 |
| 3.15.4 On-Site Measurements                                                                                                                                | 10    | 7-01-86 |
| 3.15.5 Postsampling Operations                                                                                                                             | 13    | 7-01-86 |
| 3.15.6 Calculations                                                                                                                                        | 5     | 7-01-86 |
| 3.15.7 Maintenance                                                                                                                                         | 3     | 7-01-86 |
| 3.15.8 Auditing Procedure                                                                                                                                  | 6     | 7-01-86 |
| 3.15.9 Recommended Standards for Establishing<br>Traceability                                                                                              | 1     | 7-01-86 |

## Table of Contents (continued)

| Section                                                                                                             | Pages | Date    |
|---------------------------------------------------------------------------------------------------------------------|-------|---------|
| <b>3.16 Method 18-Measurement of Gaseous Organic Compound Emissions by Gas Chromatography</b>                       |       |         |
| Summary and Method Highlights                                                                                       | 22    | 6-30-88 |
| 3.16.1 Procurement of Apparatus and Supplies                                                                        | 16    | 6-30-88 |
| 3.16.2 Calibration of Apparatus                                                                                     | 15    | 6-30-88 |
| 3.16.3 Presampling Operations                                                                                       | 44    | 6-30-88 |
| 3.16.4 On-site Measurements                                                                                         | 33    | 6-30-88 |
| 3.16.5 Postsampling Operations                                                                                      | 39    | 6-30-88 |
| 3.16.6 Calculations                                                                                                 | 6     | -30-88  |
| 3.16.7 Maintenance                                                                                                  | 3     | 6-30-88 |
| 3.16.8 Auditing Procedure                                                                                           | 8     | 6-30-88 |
| 3.16.9 Recommended Standards for Establishing Traceability                                                          | 1     | 6-30-88 |
| 3.16.10 Reference Methods                                                                                           | 22    | 6-30-88 |
| 3.16.11 References                                                                                                  | 5     | 6-30-88 |
| 3.16.12 Data Forms                                                                                                  | 21    | 6-30-88 |
| <b>3.17 Method 25-Determination of Total Gaseous Nonmethane Organic Emissions as Carbon from Stationary Sources</b> |       |         |
| Summary and Method Highlights                                                                                       | 5     | -31-91  |
| 3.17.1 Procurement of Apparatus and Supplies                                                                        | 25    | 5-31-91 |
| 3.17.2 Calibration of Apparatus                                                                                     | 9     | 5-31-91 |
| 3.17.3 Presampling Operations                                                                                       | 9     | 5-31-91 |
| 3.17.4 On-site Measurements                                                                                         | 14    | 5-31-91 |
| 3.17.5 Postsampling Operations                                                                                      | 30    | 5-31-91 |
| 3.17.6 Calculations                                                                                                 | 11    | 5-31-91 |
| 3.17.7 Maintenance                                                                                                  | 2     | 5-31-91 |
| 3.17.8 Auditing Procedure                                                                                           | 9     | 5-31-91 |
| 3.17.9 Recommended Standards for Establishing Traceability                                                          | 1     | 5-31-91 |
| 3.17.10 Reference Methods                                                                                           | 25    | 5-31-91 |
| 3.17.11 References                                                                                                  | 1     | 5-31-91 |
| <b>3.18 Method 23- Not Yet Available</b>                                                                            |       |         |
| <b>3.19 Method 101A-Determination of Particulate and Gaseous Mercury Emissions from Stationary Sources</b>          |       |         |
| Summary and Method Highlights                                                                                       | 3     | 9-3-92  |
| 3.19.1 Procurement of Apparatus and Supplies                                                                        | 18    | 9-3-92  |
| 3.19.2 Calibration of Apparatus                                                                                     | 25    | 9-3-92  |
| 3.19.3 Presampling Operations                                                                                       | 7     | 9-3-92  |
| 3.19.4 On-site Measurements                                                                                         | 19    | 9-3-92  |
| 3.19.5 Postsampling Operations                                                                                      | 29    | 9-3-92  |
| 3.19.6 Calculations                                                                                                 | 10    | 9-3-92  |
| 3.19.7 Maintenance                                                                                                  | 4     | 9-3-92  |
| 3.19.8 Auditing Procedure                                                                                           | 4     | 9-3-92  |
| 3.19.9 Recommended Standards for Establishing Traceability                                                          | 1     | 9-3-92  |
| 3.19.10 Reference Methods                                                                                           | 18    | 9-3-92  |
| 3.19.11 References                                                                                                  | 2     | 9-3-92  |

## OVERVIEW OF THE INTERIM EDITION OF VOLUME III

The Quality Assurance (QA) Handbook is comprised of five volumes: Volume I (Principles), Volume II (Ambient Air Methods), Volume III (Stationary Source Methods), Volume IV (Meteorological Measurements), and Volume V (Precipitation Measurement Systems). Much of the material in Volumes II, III and V are out-of-date and some portions of these volumes have long been out-of-print.

EPA is now preparing an updated version of the QA Handbook series which will be available in September 1995<sup>4</sup>. To meet the needs of the user community until the updated version is available, EPA has published Interim Editions of Volumes I, II, III, IV and V. Each volume of the Interim Editions, is being issued as a complete unit with out-of-date sections either deleted or modified using addendum sheets and handwritten notations in the text.

This volume and the other four volumes of the Interim Edition of the QA Handbook are available at no charge from:

USEPA/ORD  
Center for Environmental Research Information  
26 West Martin Luther King Drive  
Cincinnati, Ohio 45268

This Interim Edition contains all previous sections of Volume III with the exception of **Section 3.0.4** (Protocol 1 Gases). This latter section was combined with **Section 2.0.7** of Volume II (Protocol 2 Gases) and published as a separate document entitled "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (Revised September 1993)," EPA 600/R93/224. This document provides guidance to those who prepare and sell gaseous pollutant standards traceable to the National Institute of Standards and Technology (NIST).

Many of the EPA contacts and organizational units identified in Volume III are no longer correct and some of the reference materials and procedures cited have been discontinued or replaced. This type of out-of-date information is widely dispersed throughout Volume III. Rather than change every affected section, for clarity and neatness sake, we have provided below a listing of the original information and the corresponding updated information.

1) NBS is now the National Institute of Standards and Technology (NIST).

2) EMSL is now the Atmospheric Research and Exposure Assessment Laboratory (AREAL).

3) QAD is now the Quality Assurance and Technical Support Division (QATSD/AREAL).

4) CRM is now NIST Traceable Reference Material (NTRM).

5) Due to the current widespread use of data loggers references made to chart recorders should also be considered to include data loggers.

6) The address of the coordinator for EPA's National Performance Audit Program for Stationary Sources is now:

US EPA/AREAL/QATSD/MD-77B  
Research Triangle Park, NC 27711

The updated version of Volume III, which will be available in September 1995, will be radically different from the Interim Version. **Sections 3.0** (Summary), **3.0.1** (Planning the Test Program), **3.0.2** (General Factors Involved in Stationary Source Testing), and **3.0.3** (Chain-of-Custody Procedures for Source Sampling) will have been revised and placed in the "Introduction." **Section 3.0.1** will contain only general concepts. **Section 3.0.2** will be replaced with a discussion of the general importance of QA activities (defensibility of data), what must be done to defend or define the data. **Section 3.0.3** will be shorter. Also, individual test methods will be cross-referenced to reduce duplication. Approximately 35 methods will have been added. Information on the features unique to the test method, areas where more guidance is needed, and alternative methods will be provided. Data sheets to help the user determine if the proper equations, units, constants, sampling parameters are being used will also be provided in the text.

Finally, the user of the QA Handbook is cautioned to bear in mind that the information provided in the handbook is for guidance purposes only. EPA regulations are published in the Code of Federal Regulations (CFR). When information in the CFR conflicts with information in the QA Handbook, the CFR shall be considered the authoritative and legally bonding document

William E. Mitchell  
Chief  
Quality Assurance Support Branch