



**Commonwealth of Pennsylvania  
Dept. of Environmental Protection  
Bureau of Air Quality  
Division of Source Testing  
and Monitoring**



**Continuous Source  
Monitoring Manual**

**Revision No. 8**

**274-0300-001**

**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
**Bureau of Air Quality**

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**AUTHORITY:** 35 P.S. Sec. 4001-4005 (Air Pollution Control Act) and Act 95  
(75 PA C.S. Section 4706(I))

**POLICY:** This manual includes procedures for use in performance and reporting of source emission data.

**PURPOSE:** This manual contains design specifications, performance specifications, performance test procedures, data storage and reporting requirements, quality assurance criteria, and administrative procedures for obtaining Department approval of continuous emission monitoring systems or other monitoring systems required pursuant to the Pennsylvania Department of Environmental Protection Rules and Regulations.

**APPLICABILITY:** This guidance document applies to the owners of monitored sources that must comply with the requirements of 25 Pa. Code § 139.102(3) (Manual) (Document No. 274-0300-001). The Manual contains requirements relative to monitoring system design and performance, testing, record keeping, reporting, and quality assurance for affected industrial and utility sources which are required to continuously monitor emissions of pollutants or operational parameters. The owners of approximately 105 companies currently maintain approximately 900 Continuous Source Monitoring Systems that may be affected by this guidance document.

**DISCLAIMER:** The policies and procedures outlined in this guidance are intended to supplement existing requirements. Nothing in the policies or procedures shall affect regulatory requirements.

The policies and procedures herein are not an adjudication or a regulation. There is no intent on the part of the Department of Environmental Protection (DEP) to give the rules in these policies that weight or deference. This document establishes the framework within which DEP will exercise its administrative discretion in the future. DEP reserves the discretion to deviate from this policy statement if circumstances warrant.

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## APPLICABILITY

For monitoring systems required pursuant to only 40 CFR, Part 64 (Compliance Assurance Monitoring), the criteria published in 40 CFR, Part 64 will apply.

For monitoring systems required pursuant to only 40 CFR, Part 70, Paragraph 70.6(a)(3)(i)(B), (“gap” monitoring), the criteria published by the Environmental Protection Agency (EPA) for that purpose will apply.

For monitoring systems required pursuant to only 25 PA Code, Chapter 145 (Interstate Pollution Transport Reduction), the criteria in 25 PA Code, Chapter 145 will apply.

For monitoring systems required pursuant to only 40 CFR, Part 75 (acid rain), the criteria in 40 CFR, Part 75 will apply. Approval for compliance with 40 CFR, Part 75 (even if the monitoring system is also required pursuant to other regulations) must be obtained from the appropriate office(s) of the Federal Environmental Protection Agency.

For all other monitoring systems, the criteria in this manual will apply. The criteria in this manual are designed such that compliance with the criteria also constitute compliance with the criteria of 40 CFR, Part 64 and of 40 CFR, Part 70, Paragraph 70.6(a)(3)(i)(B), thus obviating the need to implement additional monitoring systems for compliance with those requirements. It may be necessary to implement an additional monitoring system (or additional components of a monitoring system) for compliance with 40 CFR, 75, or with 25 PA Code, Chapter 145, where applicable.

Approval for monitoring systems not subject to the criteria in this manual (and choosing not to use the criteria in this manual) must be obtained from the appropriate DEP Regional Office.

NOTE: Approval of alternatives to certain criteria in this manual may be requested in accordance with criteria contained in the following references:

- (1) “Minimum Emission Monitoring Requirements,” 40 Code of Federal Regulations (CFR), Chapter I, Subchapter C, Part 51, Appendix P, Superintendent of Documents, U. S. Government Printing Office, Washington, D.C. 20402-9328.
- (2) “Standards of Performance for New Stationary Sources,” 40 CFR, Chapter I, Subchapter C, Part 60, Superintendent of Documents, U. S. Government Printing Office, Washington, D.C. 20402-9328.
- (3) “Continuous Emission Monitoring (CEM),” 40 CFR, Chapter I, Subchapter C, Part 75, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402-9328.
- (4) A formal approval granted by the Environmental Protection Agency (EPA) for compliance with the requirements listed in (1), (2) or (3), above.

Requests for approval of alternatives must be submitted to the Chief of the Division of Source Testing and Monitoring, Bureau of Air Quality (BAQ). The request must include a description of which of the specific alternative criteria is being requested (including citation of the appropriate paragraph(s) of the reference(s) involved), the reason for the request, and any supporting data. The Department has the authority to determine which alternatives are applicable.

## INTRODUCTION

This manual is not intended to provide step-by-step instructions on designing, selecting, installing, or performance testing of continuous source emission monitoring systems or other monitoring systems. It does contain design specifications, performance specifications, performance test procedures, data storage and reporting requirements, quality assurance criteria, and administrative procedures for obtaining Department approval of continuous source emission monitoring systems or other monitoring systems required pursuant to the Pennsylvania Department of Environmental Protection Rules and Regulations.

The contents of this manual are ordered as follows:

### **Submittal and Approval**

This section contains the administrative procedures for obtaining approval of continuous source emission monitoring systems and other monitoring systems. Included are performance testing requirements which must be met in addition to the general requirements which appear in the attachments listed in the appendix.

### **Record Keeping and Reporting**

This section contains data storage, handling, and reporting requirements.

### **Quality Assurance**

This section contains data validation criteria, data reduction procedures and recalibration requirements.

### **Appendix**

The appendix contains a list of documents that provide information concerning design specifications, installation requirements, performance specifications, performance specification test procedures, and standard electronic data reporting formats.

It is recommended that, prior to design, selection, or installation of any system, equipment, or sites, the most recent revision of this manual be obtained to eliminate controversies, which may arise as a result of updating of the information contained herein.

All questions relative to this manual should be directed to the Division of Source Testing and Monitoring, Continuous Emission Monitoring Section, P.O. Box 8468, Harrisburg, PA 17105-8468. This manual and related environmental information are available electronically via the Internet. Access the DEP Website at: [www.dep.state.pa.us](http://www.dep.state.pa.us).

Access this manual at: [www.dep.state.pa.us/dep/deputate/airwaste/aq/cemspage/cemshome.htm](http://www.dep.state.pa.us/dep/deputate/airwaste/aq/cemspage/cemshome.htm).

### **Important note concerning terminology change**

Beginning with this revision (no. 8), the names of certain CEMS and measurement device tests are being changed in order to be compatible with terminology used in 40 CFR, Part 75. The table below lists the legacy DEP terminology (used in past revisions) and the new 40 CFR, Part 75-compatible terminology.

#### **Legacy DEP Terminology**

Relative Accuracy Test  
Calibration Error Test  
24-Hr Zero and Calibration Drift Test  
Response Time Test

#### **40 CFR, Part 75-Compatible Terminology**

Relative Accuracy Test Audit (RATA)  
Linearity Test  
7-Day Calibration Error Test  
Cycle Time Test

## **SUBMITTAL AND APPROVAL**

Systems will be evaluated on an individual basis. The Department will maintain no approved list of equipment. Final approval will be contingent upon the system meeting the performance standards established by the Pennsylvania Department of Environmental Protection (PADEP) in this manual. The standards, while based on those established in the Code of Federal Regulations, have been modified in order to meet the specific needs of the Department in enforcing its Rules and Regulations. Standards not specified in this manual or in the Department of Environmental Protection Rules and Regulations shall be in accordance with those established in the Code of Federal Regulations.

The approval process will consist of three phases: the initial application, performance testing and final approval. The initial application (Phase I) must be submitted to the appropriate Regional Office (the one in which the source is located). Phases II and III will be coordinated directly between the source owner and the BAQ, Division of Source Testing and Monitoring, Continuous Emission Monitoring Section. Note that changes to approved systems (for example, addition of components, replacement of components, changing of software programs, etc.) are subject to the "Component Addition, Maintenance or Replacement" requirements in the Quality Assurance section of this manual.

Changes to process operational conditions (including but not limited to changes in raw materials, changes in fuels, changes in operating rates, addition of, implementation of, or changes to process equipment or control equipment), that may affect the ability of a previously approved monitoring system to provide data that is accurate and representative of actual emissions, require approval of monitoring systems for use under such changed conditions. Such systems may be comprised of 1) Completely different components, relative to the previously approved monitoring system, for sample acquisition, measurement, data acquisition and handling, quality assurance, and reporting., 2) Some or most of the components of the previously approved monitoring system with additional components as necessary to provide accurate and representative results under the changed conditions., 3) The same components as the previously approved monitoring system with testing as necessary to demonstrate that the system provides accurate and representative results under the changed conditions and, thus, does not require alteration. In cases where multiple process operational conditions of this type are anticipated to occur on an ongoing basis, approval of 'Primary' monitoring systems may be requested for use under conditions expected to be most frequently encountered, with approval of 'Standby' or 'Backup' monitoring systems requested for use under other conditions.

## INITIAL APPLICATION (PHASE I)

Upon promulgation of a monitoring requirement, the following information must be submitted to the Air Quality Program Manager of the appropriate DEP Regional Office and to the CEM Section Chief of the BAQ Central Office. Department approval of this Phase must be obtained prior to initial startup of new sources and within six months of promulgation of a monitoring requirement for existing sources. This information must indicate the probable capability of a monitoring system to meet all of the regulatory requirements. A monitoring system is considered to be all of the hardware and software used for the determination of a value for compliance with an emission standard, operational criteria or informational reporting requirement. It includes the measurement interface, all necessary measurement devices and associated calibration and data handling apparatus and procedures. Only information concerning one specific proposed system should be submitted. Multiple proposals will not be evaluated. The information must be clearly identified in the submittal. Information must be submitted in an outline format as specified below. If electronic monitoring plan record formats are specified in Attachment No. 3 to this Manual, such records must also be submitted. If the submittal represents a revision of a previously approved submittal, only such hardcopy information that represents a change from the previously approved submittal need be submitted (in addition to all required electronic monitoring plan records).

### I. Continuous Gas, Opacity, “Stack” Flow and Temperature Monitoring Systems

- A. A general description of the process(es) and pollution control equipment. All factors that may affect the operation or maintenance of the monitoring system must be included.
- B. The location of the monitoring system measurement point(s) or path(s) in relation to:
  - 1. Flow disturbances (fans, elbows, inlets, outlets, etc.).
  - 2. Pollution control equipment.
  - 3. Emission point of monitored gases to the atmosphere.
  - 4. Flue walls at the measurement interface location.

Provide a flow diagram that clearly shows the location of the measurement point(s) or path(s). Include any test data and an explanation as to the basis for the choice of the location. Explain reasons for deviations from location criteria in 40 CFR, Part 60, Appendix B, Performance Specification 2 (for gases), 40 CFR, Part 60, Appendix B, Performance Specification 1 (for opacity), or the “Flow Monitors” paragraph under the “Installation and Measurement Location” section of 40 CFR, Part 75, Appendix A (for “stack” flow).

- C. The following system information:
  - 1. Pollutant(s) or parameters to be monitored.
  - 2. A separate document explaining, in detail, the operating principles of the measurement devices.



3. Number of measurement devices, including number of measurement point(s) or path(s) per device and locations monitored by each. Note that measurement devices must be designated as primary (devices normally used), standby (additional device operated and maintained identical to primary, but not measuring until needed) or backup (additional device not installed until needed). All valid data from primary devices must be used.
  4. Equipment manufacturer(s) and model number(s).
  5. Manufacturer's literature.
  6. A copy of the electronics checklist to be used by instrument technicians for periodic checking of the measurement device(s). The checklist must include a description of checks to be done using either on-board diagnostics or electronics test equipment. Normal values or ranges for each check must also be included.
  7. The expected normal and maximum measurement device readings.
- D. Information listed in the tables following this section (as applicable). This information will be verified as part of Phase II.
- E. Process and pollution control equipment operating parameters, which affect the emission levels of the pollutant(s) being monitored or the parameters being monitored, with an explanation of the method to be used to record these parameters.
- F. A step-by-step quality assurance plan, including an explanation of procedures to be used to address all of the items in applicable paragraphs of the Quality Assurance section of this manual.
- G. An explanation of procedures to be used to satisfy the Department's requirements as listed in the "Record Keeping and Reporting" section of this manual.
- H. The UTM Northing, UTM Easting, UTM Zone, latitude and longitude of the facility main gate (general public entrance) area. For existing facilities, this information may be obtained from the Department. This information is used by the Continuous Emission Monitoring Section for facility identification purposes (not for modeling purposes).
- I. For each measurement device for which readings are expected to fluctuate in conjunction with changes in the parameter reported for compliance, except for fuel flowmeters, opacity, O<sub>2</sub>, or CO<sub>2</sub> measurement devices, calculate the equivalent reading at the level of the monitored emission standard(s) (all standards for which the specific measurement device range is used to provide data) for the system, using values for other measurement devices in the system that would be expected to occur during expected normal operation. For purposes of this determination, assume that the only "unknown" is the value for the measurement device for which the determination is being made (substitute "normal" values for all other variables in the equation for calculation of emissions in terms of the applicable standard and solve for the "unknown"). For each measurement device for which readings are not expected to fluctuate in conjunction with changes in the parameter reported for compliance, use the "typical" measurement device reading as the equivalent reading at the

level of the monitored emission standard(s). These values will be used in calculation of measurement device calibration error.

Note: If an equivalent emission standard is not well defined in terms of the measurement device output or multiple measurement devices are required to monitor a pollutant or parameter, an alternative equivalent emission standard may be proposed for Department consideration.

## II. Coal Sampling/Analysis Systems

- A. A general description of the process(es) and pollution control equipment. All factors that may affect the operation or maintenance of the sampling/analysis system must be included.
- B. The location of the sample acquisition point(s) in relation to:
  - 1. The point at which the coal is burned.
  - 2. Any coal processing devices.
  - 3. Pollution control equipment.
  - 4. Emission point of pollutant gases to the atmosphere.

Provide a flow diagram that clearly shows the location of the sample acquisition point(s). Include any test data and an explanation as to the basis for the choice of the location.

- C. A description of the equipment, methods, and procedures to be used to comply with each of the following system design specifications or their equivalent, where applicable (for explanation of terms, see Table VII). Equivalency must be demonstrated to the Department's satisfaction.
  - 1. Points of sample acquisition must be located as close as possible to the point at which the coal is burned.
  - 2. Points of sample acquisition must be located downstream of any coal processing devices, including but not limited to pulverizers, unless an alternate location will yield representative results.
  - 3. A separate point of sample acquisition must be located in each separate coal feed stream to a particular combustion unit unless it can be demonstrated that sampling conducted at fewer points will yield representative results.
  - 4. Sample collection must be by means that do not allow for operator discretion with respect to portions of sample retained or rejected.
  - 5. Sampling devices must comply with ASTM D2234-76, Sections 6.4 through 6.10 (or the most recent version of the procedure available on the implementation date of this manual), unless alternate devices yield representative results.

6. A minimum of two subincrement point samples must be collected from each point of sample acquisition for each discrete hourly time period.
7. An hourly increment point sample must consist of all subincrement point samples collected at a particular sample acquisition point during a discrete hourly time period. Each hourly increment point sample must weigh at least two pounds, except for fluidized, pulverized coal where lower sample weights yield representative results.
8. An hourly increment unit sample must consist of all hourly increment point samples for a particular combustion unit during a particular discrete hourly time period.
9. An hourly increment system sample, which consists of hourly increment unit samples for all combustion units which discharge to a common flue during a particular discrete hourly time period, must accurately represent the actual SO<sub>2</sub> emissions from the flue for that time period.
10. A daily composite unit sample must consist of all subincrement point samples collected for a particular combustion unit during a discrete daily time period.
11. A daily composite system sample, which consists of daily composite unit samples for all combustion units which discharge to a common flue during a particular daily time period, must accurately represent the actual SO<sub>2</sub> emissions from the flue for that time period. Combination of daily composite unit samples to form daily composite system samples must be conducted in accordance with all applicable quality assurance criteria.
12. For sampling of coal streams other than fluidized, pulverized coal, each subincrement point sample must consist of a Type I, Condition A or B, Spacing 1 sample as specified in ASTM D2234-76 (or the most recent version of the procedure available on the implementation date of this manual).
13. For sampling of fluidized, pulverized coal, each subincrement point sample must consist of a Type I, Condition A, B, or C, Spacing 1 sample as specified in ASTM D2234-76 (or the most recent version of the procedure available on the implementation date of this manual).
14. Subincrement point samples must be collected in proportion to the weight of coal passing the point of sample acquisition during the time period represented by the samples. The factor of proportionality (lbs. sample/lb. coal burned) must be as nearly identical as possible for all sample acquisition points within a particular system.
15. For sampling systems that do not inherently sample on a proportional basis, the following method shall be used to determine the sampling strategy.
  - a. Determine the maximum rated coal burning capacity in lb. per hour for each combustion unit within a system (all units discharging to a common flue).

- b. Select the unit with the lowest rated coal burning capacity as the base unit.
- c. Calculate the ideal factor of proportionality for the system by the equation:

$$F_0 = \frac{4N_m}{C_{b0}}$$

Where  $F_0$  = ideal factor of proportionality (lbs. sample/lb. coal burned).

$C_{b0}$  = rated coal burning capacity of base unit (lbs. coal burned/hr).

$N_m$  = maximum number of sample acquisition points for any unit within the system.

**NOTE:** Record  $F_0$  retaining two significant digits.

- d. Calculate the subincrement point sample weight for each combustion unit within the system by the equation

$$W_i = \frac{F_0 C_{i0}}{4N_i}$$

Where  $W_i$  = subincrement point sample weight for unit i (lbs).

$F_0$  = ideal factor of proportionality (lbs. sample/lb. coal burned).

$C_{i0}$  = rated coal burning capacity of unit i (lbs./hr).

$N_i$  = number of sample acquisition points for unit i.

**NOTE:** Record  $W_i$  retaining two significant digits.

- e. At the beginning of each discrete hourly time period, determine the number and spacing of subincrement point samples to be collected at each point of sample acquisition for each combustion unit within the system according to the following table.

$\frac{C_{ia}}{C_{i0}}$	<u>Number of Subincrements</u>	<u>Spacing</u>
0.00 to 0.50	2	30 minutes
0.51 to 0.75	3	20 minutes
0.76 to 1.00	4	15 minutes

Where  $C_{ia}$  = actual coal burning rate for unit i anticipated for the hour (lbs. coal burned/hr.)

$C_{i0}$  = rated coal burning capacity for unit i (lbs. coal burned/hr).

- f. Collect the samples according to the specified weight, numbers, and spacings.
16. Each daily composite unit sample must be weighed prior to combining, in accordance with all quality assurance criteria, to form the daily composite system sample. All data necessary to calculate the actual factors of proportionality ( $F_{ia}$ ) for daily composite unit samples from each individual combustion unit within the system (i.e., the weight of each daily composite unit sample and the weight of coal burned in the unit during the same daily time period) must be recorded.
  17. Preparation of a 50-gram laboratory sample from each daily composite system sample must be conducted in accordance with ASTM D2013-72 (78) (or the most recent version of the procedure available on the implementation date of this manual) as for Group B samples.
  18. Analysis of each laboratory sample for BTU/lb. must be conducted in duplicate using ASTM D2015-77(78) (or the most recent version of the procedure available on the implementation date of this manual) or methods which produce equivalent results. Results must be recorded on a dry basis.
  19. Analysis of each laboratory sample for percent sulfur must be conducted in duplicate using ASTM D3177-75 (or the most recent version of the procedure available on the implementation date of this manual), Method B- Bomb Washing Method, ASTM D4239-83 (or the most recent version of the procedure available on the implementation date of this manual), or methods which produce equivalent results. Results must be recorded on a dry basis.
  20. Analysis of each laboratory sample for percent moisture must be conducted in accordance with ASTM D3173-73(79) (or the most recent version of the procedure available on the implementation date of this manual) or the appropriate portion of ASTM D3302 (or the most recent version of the procedure available on the implementation date of this manual).
  21. Results for each laboratory sample must be converted to lb.  $\text{SO}_2/10^6$  BTU using the average values of percent sulfur and BTU/lb. from the duplicate analysis as follows:

$$\bar{S} = (S_1 + S_2) / 2$$

$$\bar{H} = (H_1 + H_2) / 2$$

$$E = (2\bar{S} \cdot 10^4) / \bar{H}$$

Where $S_1$	=	first measured value of percent sulfur.
$S_2$	=	second measured value of percent sulfur.
$S$	=	average of $S_1$ and $S_2$ .
$H_1$	=	first measured value of BTU/lb.
$H_2$	=	second measured value of BTU/lb.
$H$	=	average of $H_1$ and $H_2$ .
$E$	=	lbs. $SO_2/10^6$ BTU.

22. The linearity with respect to percent sulfur analysis must be checked at minimum every seven days using an appropriate NIST SRM coal sample.
  23. The value of the calorimeter water equivalent must be checked at minimum every seven days using ASTM D2015-77(78), Section 7 (or the most recent version of the procedure available on the implementation date of this manual).
- D. The claimed performance specifications as listed in Table VIII (will be verified as part of Phase II).
  - E. Process and pollution control equipment operating parameters which affect the  $SO_2$  emission level, along with an explanation of the method to be used to record these parameters.
  - F. A step-by-step quality assurance plan, including an explanation of procedures to be used to address all of the items in applicable paragraphs of the Quality Assurance section of this manual.
  - G. An explanation of procedures to be used to satisfy the Department's requirements as listed in the "Record Keeping and Reporting" section of this manual.
  - H. The UTM Northing, UTM Easting, UTM Zone, latitude and longitude of the facility main gate (general public entrance) area. For existing facilities, this information may be obtained from the Department. This information is used by the Continuous Emission Monitoring Section only for facility identification purposes (not for modeling purposes).

**TABLE I****Specifications for Opacity Monitors**

<b><u>TYPE</u></b>	<b><u>PARAMETER</u></b>	<b><u>SPECIFICATION</u></b>
Design.	Design and manufacturer's performance specification requirements of ASTM D6216 (or the most recent version of the procedure available on the implementation date of this manual).....	Certificate of conformance
Install.	Monitor pathlength (ft).....	as measured
	Emission outlet pathlength (ft).....	as measured
	Range (% opacity) .....	0- $\geq$ 80
	Data recorder resolution (%opacity).....	0.5 maximum
	Number of cycles per minute (measurement) .....	6 minimum
	Number of cycles per minute (recording).....	1 minimum
	Schedule for zero and calibration checks .....	daily minimum***
	Procedures for zero and calibration checks .....	all system components checked
Perform.	Linearity (% opacity).....	3.0 maximum*
	Zero calibration error (% opacity) .....	2.0 maximum*
	Upscale calibration error (% opacity) .....	2.0 maximum*
	Cycle time (seconds to 95% response) .....	10 maximum
	Averaging period calculation and recording (% opacity) .....	2 maximum
	Optical alignment .....	Indicator devices show proper alignment
	Operational test period (hours without corrective maintenance) .....	168 minimum
	Data acquisition system accuracy, 1-minute avgs(% opacity).....	1 maximum**
	Data acquisition system accuracy, 1-hour avgs(% opacity).....	1 maximum**

\* Expressed as the sum of the absolute value of the mean and the absolute value of the 95% confidence coefficient.

\*\* If data recording is digital, expressed as the absolute value of the mean. If data recording is analog, expressed as the absolute value of the mean and the absolute value of the 95% confidence coefficient.

\*\*\* In accordance with the data validation requirements of the Quality Assurance section of this manual.

**TABLE II**

**Specifications for Sulfur Dioxide and Nitrogen Oxides Monitors**

<b><u>TYPE</u></b>	<b><u>PARAMETER</u></b>	<b><u>SPECIFICATION</u></b>
Install. 1	Highest Range (ppm) .....	0 to >= max.
		expected & (>=1.25 x highest std.)
	Optional Lower Range(s) .....	0 to >=1.25 x highest std. for range
	Data recorder resolution (% of lowest std) .....	1.0 maximum
	Data recorder resolution (minutes) .....	15 maximum
	Number of cycles per hour (meas. and record.) .....	4 minimum
	Schedule for zero and calibration checks .....	daily minimum***
	Procedures for zero and calibration checks .....	all system components checked
	Calibration gas ports.....	close to sample point
		++
Perform.	Relative accuracy-in terms of standard either (% of reference method) .....	20.0 maximum*
	or (% of lowest standard) .....	10.0 maximum*
	or (units of standard in ppm).....	5.0 maximum*+
	or (units of standard in lbs/mm Btu).....	0.02 maximum*+
	or (units of standard in % reduction) .....	2.0 maximum*+
	or (units of standard in lbs/hr).....	5.0 maximum*+
	Linearity (% of actual concentration) .....	5.0 maximum++
	or (abs ppm).....	5.0 maximum*+,++
	2 Zero calibration error (% of lowest monitored emission standard equivalent for range as determined during Phase I) .....	+++ 5.0 maximum
	or (ppm) .....	2.0 maximum
	or .....	as specified in applicable Federal regulations if more stringent in terms of units of measurement
	2 Upscale calibration error (% of lowest monitored emission standard equivalent for range as determined during Phase I) .....	+++ 5.0 maximum
	or (ppm) .....	2.0 maximum
	or .....	as specified in applicable Federal regulations if more stringent in terms of units of measurement
	Cycle time (minutes to 95% response) .....	15 maximum++
	Operational test period (hours without corrective maintenance) .....	168 minimum
	Data acquisition system accuracy, 1-hour avgs (% of lowest std).....	1 maximum**



- \* Expressed as the sum of the absolute value of the mean and the absolute value of the 95% confidence coefficient.
- \*+ For reference method averages of twice the specification or less, expressed as the absolute value of the mean, otherwise expressed as the mean of the absolute values.
- \*\* If data recording is digital, expressed as the absolute value of the mean. If data recording is analog, expressed as the absolute value of the mean and the absolute value of the 95% confidence coefficient.
- \*\*\* In accordance with the data validation requirements of the Quality Assurance section of this manual.
- ++ Sources may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- +++ Sources may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs). Sources may also petition the Department to use a less stringent applicable Federal requirement if they can demonstrate that the less stringent requirement will not adversely impact the Department's ability to enforce compliance with all applicable requirements. In either case, should the Department approve the petition, the source must convert the alternative requirement to terms of "% of lowest monitored emission standard equivalent" for use by the Department.
- 1 NOTE: Unnecessarily high ranges should be avoided in order to enhance the probability of meeting calibration error specifications.
- 2 NOTE: For measurement device ranges not used to determine compliance with emission standards for a single source combination (as opposed to emission standards for the facility), the specification shall be the equivalent, in device units of measurement, of 2.5% of the measurement device range.

**TABLE III**

**Specifications for Oxygen and Carbon Dioxide Monitors**

<b><u>TYPE</u></b>	<b><u>PARAMETER</u></b>	<b><u>SPECIFICATION</u></b>
Install.	Range (%O <sub>2</sub> , % CO <sub>2</sub> ) .....	0-25, 0-20
	Data recorder resolution (%O <sub>2</sub> or % CO <sub>2</sub> ) .....	0.1 maximum
	Data recorder resolution (minutes) .....	15 maximum
	Number of cycles per hour (meas. and record) .....	4 minimum
	Schedule for zero and calibration checks .....	daily minimum**+
	Procedures for zero and calibration checks .....	all system components checked
	Calibration gas ports.....	close to sample point
Perform.	Relative accuracy-in terms of standard***	++
	either (% of reference method.....	20.0 maximum*
	or (% of lowest standard .....	10.0 maximum*
	or (%O <sub>2</sub> or % CO <sub>2</sub> .....	1.0 maximum*+
	Linearity (% of actual concentration.....	5.0 maximum++
	or (%O <sub>2</sub> or % CO <sub>2</sub> .....	0.5 maximum++
	Zero calibration error (%O <sub>2</sub> or % CO <sub>2</sub> .....	0.5 maximum+++
	Upscale calibration error (%O <sub>2</sub> or % CO <sub>2</sub> .....	0.5 maximum+++
	Cycle time (minutes to 95% response .....	15 maximum++
	Operational test period (hours without corrective maintenance .....	168 minimum
	Data acquisition system accuracy, 1-hour avgs(% O <sub>2</sub> or % CO <sub>2</sub> .....	0.1 maximum**
*	Expressed as the sum of the absolute value of the mean and the absolute value of the 95% confidence coefficient.	
*+	For reference method averages of twice the specification or less, expressed as the absolute value of the mean, otherwise expressed as the mean of the absolute values.	
**	If data recording is digital, expressed as the absolute value of the mean. If data recording is analog, expressed as the absolute value of the mean and the absolute value of the 95% confidence coefficient.	
**+	In accordance with the data validation requirements of the Quality Assurance section of this manual.	
***	Only required if data must be reported for compliance with a standard or operational criterion in terms of %O <sub>2</sub> or %CO <sub>2</sub> .	
++	Sources may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).	
+++	Sources may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs). Sources may also petition the Department to use a less stringent applicable Federal requirement if they can demonstrate that the less stringent requirement will not adversely impact the	

Department's ability to enforce compliance with all applicable requirements. In either case, should the Department approve the petition, the source must convert the alternative requirement to terms of "% of lowest monitored emission standard equivalent" for use by the Department.

**TABLE IV**

**Specifications for Carbon Monoxide Monitors**

<b><u>TYPE</u></b>	<b><u>PARAMETER</u></b>	<b><u>SPECIFICATION</u></b>
Install. 1	Highest Range (ppm) 0 to >= max .....	0 to >=max.
		expected (>=1.25 x highest std.)
	Optional Lower Range(s) .....	0 to >=1.25 x highest std. for range
	Data recorder resolution (% of lowest std) .....	1.0 maximum <sup>++</sup>
	Data recorder resolution (minutes) .....	5 maximum
	Number of cycles per hour (meas. and record) .....	12 minimum
	Schedule for zero and calibration checks .....	daily minimum***
	Procedures for zero and calibration checks .....	all system component checked
	Calibration gas ports.....	close to sample point
		++
Perform.	Relative accuracy-in terms of standard either (% of reference method) .....	10.0 maximum*
	or (% of lowest standard) .....	5.0 maximum*
	or (units of standard in ppm) .....	5.0 maximum* <sup>+</sup>
	or (units of standard in lbs/mm Btu) .....	0.02 maximum
	or (units of standard in lbs/hr) .....	5.0 maximum* <sup>+</sup>
	Linearity (% of actual concentration) .....	5.0 maximum <sup>++</sup>
	or (abs ppm).....	5.0 maximum* <sup>+,++</sup>
		+++
	2 Zero calibration error (% of lowest monitored emission standard equivalent for range as determined during Phase I) .....	10.0 maximum
	or (ppm).....	2.0 maximum
	or .....	as specified in applicable Federal regulations if more stringent in terms of units of measurement
		+++
	2 Upscale calibration error (% of lowest monitored emission standard equivalent for range as determined during Phase I) .....	10.0 maximum
	or (ppm) .....	2.0 maximum
	or .....	as specified in applicable Federal regulations if more stringent in terms of units of measurement
	Cycle time (minutes to 95% response) .....	5 maximum <sup>++</sup>
	Operational test period (hours without corrective maintenance) .....	168 minimum
	Data acquisition system accuracy, 1-hour avgs (% of lowest std).....	1 maximum**

- \* Expressed as the sum of the absolute value of the mean and the absolute value of the 95% confidence coefficient.
  - \*+ For reference method averages of twice the specification or less, expressed as the absolute value of the mean, otherwise expressed as the mean of the absolute values.
  - \*\* If data recording is digital, expressed as the absolute value of the mean. If data recording is analog, expressed as the absolute value of the mean and the absolute value of the 95% confidence coefficient.
  - \*\*\* In accordance with the data validation requirements of the Quality Assurance section of this manual.
  - ++ Sources may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
  - +++ Sources may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs). Sources may also petition the Department to use a less stringent applicable Federal requirement if they can demonstrate that the less stringent requirement will not adversely impact the Department's ability to enforce compliance with all applicable requirements. In either case, should the Department approve the petition, the source must convert the alternative requirement to terms of "% of lowest monitored emission standard equivalent" for use by the Department.
- 1 NOTE: Unnecessarily high ranges should be avoided in order to enhance the probability of meeting calibration error specifications.
  - 2 NOTE: For measurement device ranges not used to determine compliance with emission standards for a single source combination (as opposed to emission standards for the facility), the specification shall be the equivalent, in device units of measurement, of 2.5% of the measurement device range.

TABLE V

Specifications for Total Reduced Sulfur Compound and H<sub>2</sub>S Monitors

<u>TYPE</u>	<u>PARAMETER</u>	<u>SPECIFICATION</u>
Install. 1	Highest Range (ppm) .....	0 to $\geq$ max.
		expected $\&(\geq 1.25 \times$ highest std.)
	Optional Lower Range(s) .....	0 to $\geq 1.25 \times$ highest std. for range
	Data recorder resolution (% of lowest std) .....	1.0 maximum
	Data recorder resolution (minutes) .....	15 maximum
	Number of cycles per hour (meas. and record) .....	4 minimum
	Schedule for zero and calibration checks .....	daily minimum***
	Procedures for zero and calibration checks .....	all system components checked
	Calibration gas ports.....	close to sample point
		++
Perform.	Relative accuracy-in terms of standard either (% of reference method) .....	20.0 maximum*
	or (% of lowest standard) .....	10.0 maximum*
	or(units of standard in ppm).....	5.0 maximum* <sup>+</sup>
	or(units of standard in lbs/hr).....	1.0 maximum* <sup>+</sup>
	Linearity (% of actual concentration) .....	5.0 maximum <sup>++</sup>
	or (abs ppm).....	5.0 maximum* <sup>+,++</sup>
		+++
	2 Zero calibration error (% of lowest monitored emission standard equivalent for range as determined during Phase I) .....	10.0 maximum
	or (ppm) .....	2.0 maximum
	or .....	as specified in applicable Federal regulations if more stringent in terms of units of measurement
		+++
	2 Upscale calibration error (% of lowest monitored emission standard equivalent for range as determined during Phase I) .....	10.0 maximum
	or (ppm) .....	2.0 maximum
	or .....	as specified in applicable Federal regulations if more stringent in terms of units of measurement
	Cycle time (minutes to 95% response) .....	15 maximum <sup>++</sup>
	Operational test period (hours without corrective maintenance) .....	168 minimum
	Data acquisition system accuracy, 1-hour avgs (% of lowest std).....	1 maximum**

- \* Expressed as the sum of the absolute value of the mean and the absolute value of the 95% confidence coefficient.
- \*+ For reference method averages of twice the specification or less, expressed as the absolute value of the mean, otherwise expressed as the mean of the absolute values.
- \*\* If data recording is digital, expressed as the absolute value of the mean. If data recording is analog, expressed as the absolute value of the mean and the absolute value of the 95% confidence coefficient.
- \*\*\* In accordance with the data validation requirements of the Quality Assurance section of this manual.
- ++ Sources may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- +++ Sources may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs). Sources may also petition the Department to use a less stringent applicable Federal requirement if they can demonstrate that the less stringent requirement will not adversely impact the Department's ability to enforce compliance with all applicable requirements. In either case, should the Department approve the petition, the source must convert the alternative requirement to terms of "% of lowest monitored emission standard equivalent" for use by the Department.
- 1 NOTE: Unnecessarily high ranges should be avoided in order to enhance the probability of meeting calibration error specifications.
- 2 NOTE: For measurement device ranges not used to determine compliance with emission standards for a single source combination (as opposed to emission standards for the facility), the specification shall be the equivalent, in device units of measurement, of 2.5% of the measurement device range.

TABLE VI

## Specifications for Hydrogen Chloride Monitors

<u>TYPE</u>	<u>PARAMETER</u>	<u>SPECIFICATION</u>
Install. 1	Highest Range (ppm) .....	0 to $\geq$ max.
		expected & ( $\geq 1.25 \times$ highest std.)
	Optional Lower Range(s).....	0 to $\geq 1.25 \times$ highest std. for range
	Data recorder resolution (% of lowest std) .....	1.0 maximum
	Data recorder resolution (minutes) .....	15 maximum
	Number of cycles per hour (meas. and record) .....	4 minimum
	Schedule for zero and calibration checks .....	daily minimum***
	Procedures for zero and calibration checks .....	all system components checked
	Calibration gas ports.....	close to sample point
		++
Perform.	Relative accuracy-in terms of standard either (% of reference method) .....	20.0 maximum*
	or (% of lowest standard) .....	10.0 maximum*
	or (units of standard in ppm) .....	5.0 maximum <sup>+</sup>
	or (units of standard in % reduction) .....	2.0 maximum <sup>+</sup>
	Linearity (% of actual concentration) .....	5.0 maximum <sup>++</sup>
	or (abs ppm).....	5.0 maximum <sup>+,++</sup>
	2 Zero calibration error (% of lowest monitored emission standard equivalent for range as determined during Phase I) .....	+++ 10.0 maximum
	or (ppm) .....	2.0 maximum
	or .....	as specified in applicable Federal regulations if more stringent in terms of units of measurement
	2 Upscale calibration error (% of lowest monitored emission standard equivalent for range as determined during Phase I) .....	+++ 10.0 maximum
	or (ppm) .....	2.0 maximum
	or .....	as specified in applicable Federal regulations if more stringent in terms of units of measurement
	Cycle time (minutes to 95% response) .....	5 maximum <sup>++</sup>
	Operational test period (hours without corrective maintenance) .....	168 minimum
	Data acquisition system accuracy, 1-hour avgs (% of lowest std).....	1 maximum**



- \* Expressed as the sum of the absolute value of the mean and the absolute value of the 95% confidence coefficient.
- \*+ For reference method averages of twice the specification or less, expressed as the absolute value of the mean, otherwise expressed as the mean of the absolute values.
- \*\* If data recording is digital, expressed as the absolute value of the mean. If data recording is analog, expressed as the absolute value of the mean and the absolute value of the 95% confidence coefficient.
- \*\*\* In accordance with the data validation requirements of the Quality Assurance section of this manual.
- ++ Sources may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- +++ Sources may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs). Sources may also petition the Department to use a less stringent applicable Federal requirement or a DEP approved alternative if they can demonstrate that the less stringent requirement will not adversely impact the Department's ability to enforce compliance with all applicable requirements. In either case, should the Department approve the petition, the source must convert the alternative requirement to terms of "% of lowest monitored emission standard equivalent" for use by the Department.
- 1 NOTE: Unnecessarily high ranges should be avoided in order to enhance the probability of meeting calibration error specifications.
- 2 NOTE: For measurement device ranges not used to determine compliance with emission standards for a single source combination (as opposed to emission standards for the facility), the specification shall be the equivalent, in device units of measurement, of 2.5% of the measurement device range.

**TABLE VII****DEFINITION OF SAMPLE TERMINOLOGY FOR COAL SAMPLING/ANALYSIS SYSTEMS**

<b><u>Time Period</u></b>	<b><u>Term</u></b>	<b><u>Can Represent</u></b>	<b><u>Definition</u></b>
(< one hour)	subincrement	point (1)	individual sample collected at a single point
hourly	increment	point	accumulation of (1) for a single point for one hour
		unit	accumulation of (1) for all points in unit for one hour
		system	accumulation of (1) for all units in system for one hour
daily	composite	unit	accumulation of (1) for all points in unit for 24-hours
		system	accumulation of (1) for all units in system for 24 hours

**TABLE VIII**  
**COAL SAMPLING PERFORMANCE SPECIFICATIONS**

<u>Parameter</u>	<u>Specification</u>
1. Number of subincrement point samples per hour per point of sample acquisition	$\geq 2$
2. Weight of hourly increment point sample	$\geq 2$ lbs.
3. Variation of actual factor of proportionality for daily composite unit samples (7 days, individual unit)	Each daily value within $\pm 20\%$ of the 7-day average
4. Variation of actual factor of proportionality for daily composite unit samples (daily, all units within system)	$\pm 20\%$ of the average value
5. Precision of sample preparation	Ratio of variance $\leq 3.29$
6. Linearity for percent sulfur analysis, dry basis	$\leq 10$ percent val (hi, mid, low ranges), each NIST SRM
7. Precision of analysis for percent sulfur, dry basis	$\leq 0.05\%$ sulfur if sample contains $< 2.0\%$ sulfur. $\leq 0.1\%$ sulfur if sample contains $\geq 2.0\%$ sulfur.
8. Standardization, calorimeter water equivalent	Must comply with ASTM D2015-77(78), Section 6 (or the most recent version of the procedure available on the implementation date of this manual)
9. Precision of analysis for BTU/lb., dry basis	$\leq 50$ BTU/lb.
10. Cycle time of system	$\leq 168$ hours
11. Operational period of system	$\geq 168$ hours
12. Relative accuracy of system lb. $\text{SO}_2/10^6$ BTU results.	$\leq 20$ percent of mean value of reference method test results plus 95% confidence interval
13. Data acquisition system accuracy	computations correct

TABLE IX

**“Stack” Flow Monitoring Performance Specifications**

<b><u>TYPE</u></b>	<b><u>PARAMETER</u></b>	<b><u>SPECIFICATION</u></b>
Install.	Range (SCFM) .....	0 to $\geq$ max. expected & ( $\geq 1.25 \times$ highest std.)
	Data recorder resolution (% of lowest std) .....	1.0 maximum
	Data recorder resolution (minutes) .....	15 maximum
	Number of cycles per hour (meas. and record) .....	4 minimum
	Schedule for zero and calibration checks .....	Daily minimum <sup>*+</sup>
	Procedures for zero and calibration checks .....	measurement simulation if possible otherwise signal simulation
	Schedule for checking pressure lines/detectors .....	Daily
	Schedule for back-purging/build-up checks .....	Daily
	Schedule for leak checks .....	Quarterly
	Simulated signal application point .....	close to signal generation point
Perform.	Relative accuracy *** either(% of reference method) .....	++ 10.0 maximum*
	or (units of standard in fps)+ .....	2.0 maximum <sup>++++</sup>
	Zero calibration error (% of lowest monitored emission standard equivalent for range as determined during Phase I) .....	+++ 6.0 maximum or as specified in applicable Federal regulations if more stringent in terms of units of measurement
	Upscale calibration error (% of lowest monitored emission standard equivalent for range as determined during Phase I) .....	+++ 6.0 maximum or as specified in applicable Federal regulations if more stringent in terms of units of measurement
	Cycle time (minutes to 95% response) .....	5 maximum <sup>++</sup>
	Orientation sensitivity where applicable) (degrees for $\pm 4\%$ or more flow inaccuracy) .....	10 minimum
	Operational test period (hours without corrective maintenance) .....	168 minimum
	Data acquisition system accuracy, 1 - hour avgs (% of lowest std) ( $\geq 1.25 \times$ highest std.) .....	1 maximum**

- \* Expressed as the sum of the absolute value of the mean and the absolute value of the 95% confidence coefficient.
- \*+ In accordance with the data validation requirements of the Quality Assurance section of this manual.
- \*\* If data recording is digital, expressed as the absolute value of the mean. If data recording is analog, expressed as the absolute value of the mean and the absolute value of the 95% confidence coefficient.
- \*\*\* Only required if data must be reported for compliance with a standard or operational criterion in units of flow.
- + If mean value of reference method results is less than 10.0 fps
- ++ Sources may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- +++ Sources may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs). Sources may also petition the Department to use a less stringent applicable Federal requirement if they can demonstrate that the less stringent requirement will not adversely impact the Department's ability to enforce compliance with all applicable requirements. In either case, should the Department approve the petition, the source must convert the alternative requirement to terms of "% of lowest monitored emission standard equivalent" for use by the Department.
- ++++ Expressed as the absolute value of the difference between the mean of the reference method results and the mean of the Continuous Emission Monitoring System (CEMS) results

**TABLE X****Temperature Monitoring Specifications**

<b><u>TYPE</u></b>	<b><u>PARAMETER</u></b>	<b><u>SPECIFICATION</u></b>
Install.	Range (Degrees F).....	0 to $\geq$ max. expected & ( $\geq 1.25 \times$ highest std.)
	Data recorder resolution (% of lowest std).....	1.0 maximum
	Data recorder resolution (minutes) .....	1 maximum
	Number of cycles per minute (measurement) .....	6 minimum
	Number of cycles per minute (recording).....	1 minimum
	Schedule for zero and calibration checks .....	daily minimum****+
	Procedures for zero and calibration checks .....	signal simulation***
	Simulated signal application point.....	close to signal generation point***
Perform.	Linearity (% of reference temperature or emf).....	5.0 maximum <sup>++</sup> , +
	Zero calibration error (% of lowest monitored emission standard equivalent as determined during Phase I).....	5.0 maximum*
	Upscale calibration error (% of lowest monitored emission standard equivalent as determined during Phase I).....	5.0 maximum*
	Operational test period hours without corrective maintenance) .....	168 minimum
	Data acquisition system accuracy, 1 - minute avgs (% of lowest operational criterion) .....	1 maximum**
	Data acquisition system accuracy, 1 - hour avgs (% of lowest operational criterion) .....	1 maximum**

\* Expressed as the sum of the absolute value of the mean and the absolute value of the 95% confidence coefficient.

\*+ In accordance with the data validation requirements of the Quality Assurance section of this manual.

\*\* If data recording is digital, expressed as the absolute value of the mean. If data recording is analog, expressed as the absolute value of the mean and the absolute value of the 95% confidence coefficient.

\*\*\* This requirement may be waived if quarterly recalibration is conducted in accordance with, or if the temperature measurement device is exempted from quarterly recalibration in accordance with, the procedures specified in the Quality Assurance section of this manual.

+ In accordance with the procedures specified in the Quality Assurance section of this manual, if temperature used as reference (5 repetitions at each of 3 levels), expressed as the sum of the absolute value of the mean and the absolute value of the 95% confidence coefficient for each level. If emf used as reference (single measurement every 200 degrees), expressed as the absolute value of the mean for each comparison.

- ++ This requirement may be waived if the temperature measurement device is exempted from quarterly recalibration in accordance with the procedures specified in the Quality Assurance section of this manual.

TABLE XI

**Specifications for pollutants or parameters reported in terms of emission standards or operational criteria not listed elsewhere**

<u>TYPE</u>	<u>PARAMETER</u>	<u>SPECIFICATION</u>
Install.	Highest Range (terms of device measurement).....	0 to $\geq$ max.
1		expected & ( $\geq 1.25 \times$ highest std.)
1	Optional Lower Range(s).....	0 to $\geq 1.25 \times$ highest std. for range
	Data recorder resolution (% of lowest std).....	1.0 maximum <sup>++</sup>
	Data recorder resolution (minutes) .....	5 maximum
	Number of cycles per hour (meas. and record) .....	12 minimum
	Schedule for zero and calibration checks .....	daily minimum <sup>***</sup>
	Procedures for zero and calibration checks .....	all system components checked
	Calibration gas ports.....	close to sample point
	Temperature range for all components of FID used to measure total hydrocarbons (deg F) .....	300 to 350
	Minimum temperature for all components of GC used to measure gaseous organic compounds (deg C) .....	120
Perform.	Relative accuracy-in terms of standard <sup>***</sup>	++
	either (% of reference method) .....	20.0 maximum*
	or (% of lowest standard) .....	10.0 maximum*
	or (units of standard in ppm).....	5.0 maximum <sup>+</sup>
	or (units of standard in lbs/mm Btu).....	0.02 maximum <sup>+</sup>
	or (units of standard in ) .....	2.0 maximum <sup>+</sup>
	or (units of standard in lbs/hr).....	1.0 maximum <sup>+</sup>
	Linearity (% of actual concentration) .....	5.0 maximum <sup>++</sup>
	or (abs ppm).....	5.0 maximum <sup>*,++</sup>
2	Zero calibration error (% of lowest monitored emission standard equivalent for range as determined during Phase I) .....	+++
	or (ppm) .....	5.0 maximum
	or .....	2.0 maximum
		as specified in applicable Federal regulations if more stringent in terms of units of measurement



<b><u>TYPE</u></b>	<b><u>PARAMETER</u></b>	<b><u>SPECIFICATION</u></b>
2	Upscale calibration error (% of lowest monitored emission standard equivalent for range as determined during Phase I) .....	5.0 maximum <sup>++</sup>
	or (ppm) .....	2.0 maximum
	or .....	as specified in applicable Federal regulations if more stringent in terms of units of measurement
	Cycle time (minutes to 95% response) .....	15 maximum <sup>++</sup>
	Operational test period (hours without corrective maintenance) .....	168 minimum
	Data acquisition system accuracy, 1 - hour avgs (% of lowest std)...	1 maximum**

- \* Expressed as the sum of the absolute value of the mean and the absolute value of the 95% confidence coefficient.
- \*+ For reference method averages of twice the specification or less, expressed as the absolute value of the mean, otherwise expressed as the mean of the absolute values.
- \*\* If data recording is digital, expressed as the absolute value of the mean. If data recording is analog, expressed as the absolute value of the mean and the absolute value of the 95% confidence coefficient.
- \*\*+ In accordance with the data validation requirements of the Quality Assurance section of this manual.
- \*\*\* Only required if data must be reported for compliance with a standard or operational criterion in terms of the pollutant.
- ++ Sources may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- +++ Sources may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs). Sources may also petition the Department to use a less stringent applicable Federal requirement if they can demonstrate that the less stringent requirement will not adversely impact the Department's ability to enforce compliance with all applicable requirements. In either case, should the Department approve the petition, the source must convert the alternative requirement to terms of "% of lowest monitored emission standard equivalent" for use by the Department.
- 1 NOTE: Unnecessarily high ranges should be avoided in order to enhance the probability of meeting calibration error specifications.
- 2 NOTE: For measurement device ranges not used to determine compliance with emission standards for a single source combination (as opposed to emission standards for the facility), the specification shall be the equivalent, in device units of measurement, of 2.5% of the measurement device range.

**TABLE XII**

**Specifications for parameters used as components of monitoring systems but not listed elsewhere, based on basic measurements of length, mass, time, temperature, current, luminous intensity or events, or derived from such basic measurements (for instance, volume rate, mass rate, velocity, force, pressure, torque, rpm, voltage, resistance, spark rate, etc.). For use only when specified or allowed by an applicable monitoring requirement, or when necessary to convert data to terms of the applicable standard or operational criterion.**

<u><b>TYPE</b></u>	<u><b>PARAMETER</b></u>	<u><b>SPECIFICATION</b></u>
Install. 1	Highest Range (terms of measurement).....	0 to $\geq$ max.  expected & ( $\geq 1.25 \times$ highest std.)
	Optional Lower Range(s) .....	0 to $\geq 1.25 \times$ highest std. for range
	Schedule for zero and calibration checks .....	daily minimum**
	Procedures for zero and calibration checks .....	measurement simulation if possible otherwise signal simulation**,+
	Calibration point.....	close to measurement point**
	Data recorder resolution (% of lowest std) .....	1.0 maximum
	Data recorder resolution (minutes) .....	1 maximum
	Number of cycles per hour (meas. and record) .....	60 minimum
	Linearity (% of actual measurement or simulated signal).....	5.0 maximum
	Zero calibration error (% of lowest monitored emission standard equivalent for range as determined during Phase I).....	5.0 maximum
Perform. 2	or (ppm) .....	2.0 maximum
	or .....	as specified in applicable Federal regulations if more stringent in terms of units of measurement
	Upscale calibration error (% of lowest monitored emission standard equivalent for range as determined during Phase I).....	5.0 maximum
	or (ppm) .....	2.0 maximum
	or .....	as specified in applicable Federal regulations if more stringent in terms of units of measurement
	Cycle time (minutes to 95% response) .....	equal to recorder resolution
	Operational test period (hours without corrective maintenance) .....	168 minimum
	Data acquisition system accuracy, 1 - hour avgs (% of lowest std)...	1 maximum*

- \* If data recording is digital, expressed as the absolute value of the mean. If data recording is analog, expressed as the absolute value of the mean and the absolute value of the 95% confidence coefficient.
- \*\* This requirement may be waived if quarterly recalibration of the measurement device/readout device combination is conducted using NIST procedures, ASTM procedures, or other procedures approved by the Department each calendar quarter.
- + In accordance with the data validation requirements of the Quality Assurance section of this manual.
- 1 NOTE: Unnecessarily high ranges should be avoided in order to enhance the probability of meeting calibration error specifications.
- 2 NOTE: For measurement device ranges not used to determine compliance with emission standards for a single source combination (as opposed to emission standards for the facility), the specification shall be the equivalent, in device units of measurement, of 2.5% of the measurement device range.

**TABLE XIII**

**Specifications for Fuel Flowmeters.**

<b><u>TYPE</u></b>	<b><u>SPECIFICATION</u></b>
Certification	Per 40 CFR, Part 75, Appendix D, Paragraph 2.1.5, “Initial Certification Requirement for all Fuel Flowmeters” and all subparagraphs
Quality Assurance	Per 40 CFR, Part 75, Appendix D, Paragraph 2.1.6, “Quality Assurance” and all subparagraphs

NOTE: Flowmeters used in “Situations in Which Certified Flowmeter is Not Required”, per 40 CFR, Part 75, Appendix D, Paragraph 2.1.4 and all subparagraphs are exempt from these requirements.

## PERFORMANCE TESTING (PHASE II)

After approval of Phase I, the applicant should proceed with purchasing, installation, and performance testing. The CEM Section must be advised in writing at least 45 days prior to Performance Specification Testing and provided the opportunity to observe and participate in all testing. Sources may petition the Department to use a more stringent applicable Federal requirement for agency notification (in order to maintain consistency between requirements of multiple agency programs). A testing protocol, describing all testing procedures and methodology to be used must accompany the notice of testing. Schedule changes must be reported seven days prior to testing except that failed tests may be repeated immediately. During testing, the source must be operated in a manner that is representative of normal operating conditions.

The CEM Section must also be advised in writing within 10 days after the completion of testing. If electronic certification CEMS and analyzer test completion data record formats are specified in Attachment No. 3 to this Manual, such records must also be submitted. The CEM Section reserves the right to conduct testing during the Performance Specification Testing or at any time thereafter.

For new sources, Phase II must be completed within 210 days of startup and within 60 days of achieving normal process capacity. Sources may petition the Department to use a more stringent applicable Federal requirement for time allowed for test completion (in order to maintain consistency between requirements of multiple agency programs). All performance specification testing must be conducted in accordance with the appropriate performance specification test procedures in this manual. Note that the entire CEMS, including all data handling, record keeping and reporting systems/procedures must be operational prior to testing. Upon approval of new CEMSs, data will be required to be reported beginning with data collected the day following completion of testing. Upon request, the Bureau will consider a petition to accept data from the new CEMS starting from the time the CEMS was installed, adjusted and calibrated, provided no corrective maintenance was performed in the interim.

Electronic data records 844, "Certification Report CEMS Test Completion Date" and 848, "Certification Report Analyzer Test Completion Date" (as specified in Attachment No. 3) must be submitted within 10 days of completion of applicable testing.

For testing required due to changes made to previously approved CEMSs, data collected from the CEMS from the time changes were instituted through completion of changes including any necessary adjustment and calibration should be identified as invalid due to "Corrective Maintenance (20)". Reports for all such affected parameters, beginning with reports for the quarter in which the changes were instituted, should be retained at the facility and reported upon receipt of Department approval of the affected monitoring systems.

### I. Continuous Gas Monitoring Systems

- A. Conduct tests of each measurement device, except for fuel flowmeters for cycle time in accordance with the procedures specified in the "Cycle Time Test" section of 40 CFR, Part 75, Appendix A (except that the test must be conducted on all ranges of each measurement device and the requirements for calibration gas levels, data validation, and acceptability shall be as specified in this Manual), calibration error in accordance with the procedures specified in the "Gas Monitor 7-day Calibration Error Test" section of 40 CFR, Part 75, Appendix A (except that the test must be conducted on all ranges of each measurement device and the requirements for calibration gas levels, data validation, and

acceptability shall be as specified in this Manual), and linearity in accordance with the procedures specified in the “Linearity Check” section of 40 CFR, Part 75, Appendix A (except that the test must be conducted on all ranges of each measurement device, no adjustments of the measurement device are permitted during the test period, and the requirements for calibration gas levels, data validation, and acceptability shall be as specified in this Manual). Fuel flowmeters must meet the certification requirements listed in Table XIII of this Manual.

- B. Conduct the relative accuracy test audit of the overall system results in accordance with the procedures specified in the “Relative Accuracy Test Procedure” section of 40 CFR, Part 60, Appendix B, Performance Specification 2. For monitoring systems with multiple ranges, perform the relative accuracy test on the range normally used for measuring emissions. If more than one range is considered “normal”, perform the relative accuracy test on the range that is in use at the time of the scheduled test. If the multiple measurement ranges are connected to separate sampling probes and interfaces, testing on all such ranges is required. Additional requirements are:
1. Data from the monitoring system must be converted to units consistent with the applicable emission standard.
  2. The relative accuracy test audit must be conducted in accordance with the procedures specified in the Department’s Source Testing Manual. The Department will accept the use of any approved EPA test method or equivalent method (as per 1.3.4.2. of the Source Testing Manual, Revision 3.3) unless a specific method is required by an applicable Federal emission standard or performance specification. All emission points serving the source combination to which the emission standard or operational criterion applies must be sampled simultaneously, unless the Department approves an alternative strategy. Interference checks, where required, are to be conducted using gas concentrations near or above concentrations expected in the stack gases. At locations where stratification is likely to occur (e.g., following a wet scrubber or when dissimilar gas streams are combined), the short measurement line from the “Relative Accuracy Test Procedure” section of 40 CFR, Part 60, Appendix B, Performance Specification 2 (or the alternative line described in the “Reference Method Traverse Point” section of 40 CFR, Part 75, Appendix A) may be used in lieu of the prescribed “long” measurement line in the “Relative Accuracy Test Procedure” section of 40 CFR, Part 60, Appendix B, Performance Specification 2, provided that the 12-point stratification test described in the “Reference Method Traverse Point” section of 40 CFR, Part 75, Appendix A is performed and passed one time at the location and provided that either the 12-point stratification test or the alternative (abbreviated) stratification test in the “Reference Method Traverse Point” section of 40 CFR, Part 75, Appendix A is performed and passed prior to each subsequent relative accuracy test audit at the location. Each relative accuracy test audit run must be at least 21 minutes in duration. The duration must be a multiple of the actual cycle times of all measurement devices. All relative accuracy test audit testing must be completed within a period of 168 consecutive source operating hours. If required relative accuracy test audit testing at multiple source operating loads cannot be completed within this time period, up to 720 consecutive source operating hours may be taken to complete relative accuracy test audit testing at such multiple loads.

3. For each relative accuracy test audit run, all necessary measurements must, to the extent practicable, be made within a 60-minute period. For each of at least nine reference method tests (if more than nine tests are conducted, the results from additional tests, up to a maximum of three tests may be eliminated from determination of relative accuracy), the following must also be determined (if necessary to convert data to units of the applicable emission standard or operational criterion):
    - a. Volumetric flow rate according to the procedures specified in the Department's Source Testing Manual.
    - b. For combustion units, the heat input to the unit using heat balance or actual fuel feed data.
    - c. Moisture, except that if moisture results are used only to determine molecular weight, determinations may be performed before and after a series of volumetric flow rate determinations at a particular process operational level, provided that the time interval between the two moisture measurements does not exceed three hours. If this option is selected, the results of the two moisture determinations shall be averaged arithmetically and applied to all intervening relative accuracy test audit runs.
  4. For all tests, results must be reported in units consistent with the applicable emission standard or operational criterion. Where applicable, emissions in lbs./10<sup>6</sup> BTU must be calculated using either - 1) the data collected in 3 above, or 2) diluent measurement and the appropriate F-factor as determined in paragraph 5 below.
  5. For combustion units, the F-factor for the fuel must be verified (if necessary to convert data to units of the applicable emission standard or operational criterion) by analyzing a composite sample using the procedure specified in 40 CFR, Part 60, Subpart D, Section 60.45(f)(5). For periodic self-audits, if a source: (1) burns a 'uniform' fuel (anthracite coal, bituminous coal, a single grade of fuel oil, natural gas, etc.), (2) does not blend fuels, and (3) uses the 'published' F-factor for the fuel in both the CEMS data handling system and the source testing calculations, the F-factor 'reverification' may be waived.
  6. For existing, previously approved monitoring systems, results from any "aborted" relative accuracy test audit runs or attempts or from "diagnostic" activities that lead to corrective actions must be reported.
- C. Document the system status with respect to the operational test period specification. If corrective maintenance is performed on the system, demonstration of compliance with the operational test period specification must be repeated.
- D. Document the accuracy of computations performed by the data acquisition system by comparing the results of "manual calculation" (using a calculator or independent, manually operated computer system) of nine hourly averages (using values from the CEMS data

recorders and the same equations, constants and variables used by the data acquisition system) with the hourly averages calculated by the data acquisition system.

## II. Opacity Monitoring Systems

- A. Conduct tests for cycle time, 7-day calibration error, linearity, averaging period calculation and recording, and optical alignment in accordance with the procedures in Attachment No. 1.
- B. Opacity monitoring system data must be verified by a trained observer in accordance with the Opacity Monitoring Relative Accuracy Test Audit Procedure as follows:
  - 1. Visual opacity readings, obtained in accordance with the procedures specified in 40 CFR 60, Appendix A, Method 9, must be recorded for nine 15-minute time periods conducted at any time during the 168-hour operational test period. The results for each 15-minute time period must be reduced to 15 one-minute averages.
  - 2. The opacity monitoring system output for each of the time periods corresponding to those used for the visual observations, as conducted in (1) above, must be reduced to 15 one-minute averages.
  - 3. For each of the corresponding visual and system one-minute averages, the absolute value of the difference in percent opacity must be determined.
  - 4. The results of the verification will be considered acceptable if, for each of the nine 15-minute tests:
    - a. None of the individual differences, as calculated in (3) above, exceeds 15 percent opacity.
    - b. The average of the 15 differences does not exceed 7.5 percent opacity.
  - 5. For existing, previously approved monitoring systems, results from any “aborted” relative accuracy test audit runs or attempts or from “diagnostic” activities that lead to corrective actions must be reported.
- C. Document the system status with respect to the operational test period specification. If corrective maintenance is performed on the system, demonstration of compliance with the operational test period specification must be repeated.
- D. Document the accuracy of computations performed by the data acquisition system by comparing the results of “manual calculation” (using a calculator or independent, manually operated computer system) of nine hourly averages (using values from the CEMS data recorders and the same equations, constants and variables used by the data acquisition system) with the hourly averages calculated for the same time periods by the data acquisition system. In addition, compare the results of manual calculation of 60 one-minute averages (using values from the CEMS data recorders and the same equations, constants and variables used by the data acquisition system) with the one-minute averages calculated for the same time periods by the data acquisition system.



### III. Coal Sampling/Analysis Systems

#### A. Conditioning Period

1. Determine the calorimeter water equivalent in accordance with ASTM D2015-77(78), Section 6 (or the most recent version of the procedure available on the implementation date of this manual). Record all data and results for submission with performance test report.
2. Operate the system for an initial 168-hour conditioning period in a normal operating manner.

#### B. Operational test period. Operate the system for an additional 168-hour period in a normal operating manner during which time all performance testing must be completed (with the exception of Sections B.5. through B.9. below, which must be completed within 168 hours after the completion of the operational test period).

1. Test for number of subincrement point samples per hour. Conduct this test in triplicate for each point of sample acquisition.
  - a. Collect and weigh a single subincrement point sample.
  - b. Collect and weigh the next subsequent hourly increment point sample.
2. Test for weight of hourly increment point samples. Conduct this test in triplicate for each point of sample acquisition.
  - a. Use the weights determined in B.1.b. above for this test.
3. Test for variation of actual factor of proportionality for daily composite unit samples (7 days, individual unit).
  - a. For each unit monitored, collect all data necessary to determine the actual factor of proportionality ( $F_{ia}$ ) for each of the seven daily time periods during the operational test period (i.e., the weight of each daily composite unit sample and the weight of coal burned in the unit during the same daily time period).
4. Test for variation of actual factor of proportionality for daily composite unit samples (daily, all units within system).
  - a. Use the data collected as in B.3.a. above for this test.
5. Test for precision of sample preparation. Conduct this test for each system monitored using any five of the seven daily composite system samples normally collected during the 168-hour operational test period.
  - a. Divide the daily composite system sample into two equal subsamples.

- b. Prepare and analyze one of the subsamples according to normal procedures (in duplicate).
  - c. Prepare and analyze the remaining subsample for dry ash content using ASTM D2013-72(78), Appendix A2, Section A2.2 (or the most recent version of the procedure available on the implementation date of this manual).
- 6. Test for linearity of percent sulfur analysis, dry basis.
  - a. For each measurement device to be used, conduct five non-consecutive analyses on each of an NIST SRM low, middle, and high range for percent sulfur, dry basis at any time during the 168-hour operational test period.
- 7. Test for precision of analysis for percent sulfur, dry basis.
  - a. Conduct the normal duplicate analyses of the daily composite system samples for the 168-hour operational test period.
- 8. Test for precision of analysis for BTU/lb., dry basis.
  - a. Conduct the normal duplicate analyses of the daily composite system samples for the 168-hour operational test period.
- 9. Test for cycle time of monitoring system.
  - a. Record the date and time that each calculation of lbs.  $\text{SO}_2/10^6$  BTU is completed for each daily composite system sample during the 168-hour operational test period.
- 10. Test for standardization of calorimeter water equivalent.
  - a. Use data and results as obtained in A.1. above.
- 11. Test for operational period of monitoring system.
  - a. Keep records indicating compliance with all performance specifications for the 168-hour operational test period.
- 12. Relative accuracy test audit of monitoring system lbs.  $\text{SO}_2/10^6$  BTU results. This test must be conducted for each system monitored.
  - a. Conduct a series of at least nine source tests for  $\text{SO}_2$  emissions in accordance with the procedures listed in the Department's Source Testing Manual. (If more than nine tests are conducted, the results from additional tests, up to a maximum of three tests may be eliminated from determination of relative accuracy). Each test must be conducted for a duration of

between 30 and 60 minutes and must consist of the following determinations:

- i. Effluent SO<sub>2</sub> concentration in accordance with the procedures specified in Chapter 139, Section 139.4(10).
  - ii. Effluent volumetric flow rate according to Methods 1, 2, 3 and 4 of 40 CFR, Part 60, Appendix A of the Code of Federal Regulations.
  - iii. Heat input to the source(s) being monitored, using heat balance or actual fuel feed data.
- b. Results of each source test must be expressed as lbs. SO<sub>2</sub>/10<sup>6</sup> BTU for a known, discrete hourly time period, using the data collected in i above and either - 1) the data collected in ii and iii above, or 2) diluent measurement and the appropriate F-factor.
  - c. Collect and analyze, in the normal manner, hourly increment system samples for the system monitored for time periods corresponding to each source test.
  - d. Results of the monitoring system must be expressed as lbs. SO<sub>2</sub>/10<sup>6</sup> BTU for the time periods corresponding to each source test.
13. For existing, previously approved monitoring systems, results from any “aborted” relative accuracy test audit runs or attempts or from “diagnostic” activities that lead to corrective actions must be reported.

#### C. Calculations

1. Number of subincrement point samples per hour.
  - a. Using the data collected as in B.1.a and B.1.b., calculate the average number of subincrement point samples as follows:

$$\overline{N} = \frac{\overline{X_i}}{\overline{X_{si}}}$$

where N = average number of subincrement point samples per hour

X<sub>i</sub> = average of the three weights determined as in B.1.b.

X<sub>si</sub> = average of the three weights determined as in B.1.a.

2. Weight of hourly increment point samples

- a. Using the data collected as in B.1.b., calculate the average weight of hourly increment point samples as follows:

$$\bar{X}_i = \frac{\sum_{i=1}^3 X_i}{3}$$

where  $X_i$  = average weight of hourly increment point samples

$i$  = individual weights determined as in B.1.b.

3. Variation of actual factor of proportionality for daily composite unit samples (seven day, individual unit).

- a. Calculate the actual factor of proportionality for each daily composite unit sample for each daily time period as follows:

$$F_{ia} = \frac{X_i}{C'_{ia}}$$

where  $F_{ia}$  = actual factor of proportionality for daily composite unit sample

$X_i$  = weight of daily composite unit sample

$C'_{ia}$  = weight of coal burned in unit during the corresponding daily time period

- b. Calculate the average of the actual factors of proportionality for the 168-hour operational test period as follows:

$$\bar{F}_{ia} = \frac{\sum_{i=1}^7 F_{ia}}{7}$$

where  $\bar{F}_{ia}$  = average of the actual factors of proportionality for the 168-hour operational test period

$F_{ia}$  = individual actual factors of proportionality for each daily composite unit sample

- c. Calculate the variation as follows for each of the 7 actual factors of proportionality:

$$V_i = \frac{F_{ia}}{\bar{F}_{ia}}$$

where  $V_i$  = variation of an individual actual factor of proportionality

$F_{ia}$  = individual actual factor of proportionality

$\bar{F}_{ia}$  = average of the actual factors of proportionality as calculated in C.3.b.

4. Variation of actual factors of proportionality for daily composite unit samples (daily, all units within system)

- a. Calculate the average of the actual factors of proportionality for all units within a system, for each daily time period during the 168-hour operational test period as follows:

$$\bar{F}_{sa} = \frac{\sum_{i=1}^n F_{ia}}{n}$$

where  $\bar{F}_{sa}$  = average of the actual factors of proportionality for all units within a system for a particular daily time period during the 168-hour operational test period.

$F_{ia}$  = individual actual factor of proportionality

$n$  = number of units within system

- b. Calculate the variation as follows for each of the units for each of the seven daily time periods during the operational test period:

$$V_i = \frac{F_{ia}}{\bar{F}_{sa}}$$

where  $V_i$  = variation of an individual actual factor of proportionality

$F_{ia}$  = individual actual factor of proportionality

$\bar{F}_{sa}$  = average of the actual factors of proportionality for all units within a system for a particular daily time period as calculated in C.4.a.

5. Precision of sample preparation

- a. Using the data collected in B.5.c., calculate the ratio of the largest variance of any set of four subsamples to the average variance of the five sets of four subsamples according to ASTM D2013-72(78), Appendix A2 (or the most recent version of the procedure available on the implementation date of this manual).
- b. The ratio calculated in C.5.a. must be  $\leq 3.29$  in order to comply with Performance Specification 5.

6. Linearity of percent sulfur analysis, dry basis

- a. Using the data collected in B.6.a., calculate each error as follows:

$$E_i = \left| \frac{\%S_{mi}}{\%S_{ci}} * 100\% \right| - 100\%$$

where  $E_i$  = error of an individual analysis

$\%S_{mi}$  = measured percent sulfur, dry basis

$\%S_{ci}$  = certified percent sulfur, dry basis

7. Precision of analysis for percent sulfur, dry basis

- a. Using the data collected as in B.7.a., calculate the precision of analysis for percent sulfur, dry basis for each pair of duplicate analyses as follows:

$$P_i = |\%S1_i - \%S2_i|$$

where  $P_i$  = precision of analysis for an individual pair of duplicate analyses

$\%S1_i$  = percent sulfur results for first analysis

$\%S2_i$  = percent sulfur results for second (duplicate) analysis

8. Precision of analysis for BTU/lb., dry basis

- a. Using the data collected in B.8.a., calculate the precision of analysis for BTU/lb., dry basis for each pair of duplicate analyses as follows:

$$P_i = |H1_i - H2_i|$$

where  $P_i$  = precision of analysis for an individual pair of duplicate analyses

$H1_i$  = BTU/lb. results for first analysis

$H2_i$  = BTU/lb. results for second (duplicate) analysis

9. Cycle time of monitoring system.
  - a. Using the data collected as in B.9.a., calculate the time between recording of lbs.  $\text{SO}_2/10^6$  BTU results and the end of the daily time period represented by the results.
10. Standardization of calorimeter water equivalent
  - a. Using the data collected in A.1., calculate the standard deviation of the test series in accordance with ASTM D2015-77(78), Appendix A1 (or the most recent version of the procedure available on the implementation date of this manual). This value must be  $\leq 3.6$  BTU/degree F in order to comply with Performance Specification 8.
11. Operational period of monitoring system.
  - a. If the monitoring system fails to comply with any performance specification during the 168-hour operational test period, the test period must be repeated. During the repetition, compliance need be demonstrated only with the failed specification(s).
12. Relative accuracy of monitoring system lbs.  $\text{SO}_2/10^6$  BTU results. Using the data collected as in B.12.a. through B.12.d., calculate the relative accuracy plus 95 percent confidence interval as follows:

$$A_r = \left| \frac{[(\sum_{i=1}^9 (X_{si} - X_{mi})) + CI_{0.95}]}{\sum_{i=1}^9 X_{si}} \right| * 100\%$$

$$CI_{0.95} = 0.09 \sqrt{9 \left[ \sum_{i=1}^9 (X_{si} - X_{mi})^2 \right] - \left[ \sum_{i=1}^9 (X_{si} - X_{mi}) \right]^2}$$

where  $A_r$  = relative accuracy plus 95 percent confidence interval

$X_{si}$  = lbs.  $\text{SO}_2/10^6$  BTU source test results

$X_{mi}$  = lbs.  $\text{SO}_2/10^6$  BTU monitoring system results

#### IV. “Stack” Flow and Temperature Monitoring Systems

- A. “Stack” flow Monitoring Systems. If negative calibration error of at least 5% of range cannot be determined normally, the recorder must be offset so as to allow for such determination.
1. Conduct the test for linearity in accordance with the procedures specified in the “Linearity Check” section of 40 CFR, Part 75, Appendix A (except that the test must be conducted on all ranges of each measurement device, no adjustments of the measurement device are permitted during the test period, and the requirements for calibration levels, data validation, and acceptability shall be as specified in this Manual).
  2. Relative Accuracy Test Audit. Conduct at least nine volumetric flow rate determinations at each of three different velocities (low, mid and high) using the reference method as listed in the Department’s Source Testing Manual and the continuous flow monitoring system (if more than nine tests are conducted, the results from additional tests, up to a maximum of three tests may be eliminated from determination of relative accuracy). The reference method traverse location may be any location acceptable for volumetric flow rate determination in accordance with the Department’s Source Testing Manual. The minimum time per run shall be 5 minutes.
  3. Conduct the test for calibration error in accordance with the procedures specified in the “Flow Monitor 7-day Calibration Error Test” section of 40 CFR, Part 75, Appendix A (except that the test must be conducted on all ranges of each measurement device and the requirements for calibration gas levels, data validation, and acceptability shall be as specified in this Manual).
  4. Conduct the test for cycle time in accordance with the procedures specified in the “Cycle Time Test” section of 40 CFR, Part 75, Appendix A (except that the test must be conducted on all ranges of each measurement device and the requirements for calibration levels, data validation, and acceptability shall be as specified in this Manual).
  5. Orientation Sensitivity (where applicable as determined by the Department). Rotate the measurement device  $10^{\circ}$  on each side of the direction of flow in increments of  $5^{\circ}$ . Record the continuous flow monitoring system output at the  $0^{\circ}$ ,  $5^{\circ}$ , and  $10^{\circ}$  increments. Conduct the test three times each at low, mid and high velocities.
  6. Operational Test Period. Document that for at least 168 continuous hours, the system required no corrective maintenance.
  7. Document the accuracy of computations performed by the data acquisition system by comparing the results of manual calculation of nine hourly averages (using values from the CEMS data recorders and the same equations, constants and variables used by the data acquisition system) with the hourly averages calculated for the same time periods by the data acquisition system.



- B. Temperature Monitoring Systems. If negative calibration error of at least 5% of range cannot be determined normally, the recorder must be offset so as to allow for such determination.
1. Conduct tests for 7-day calibration error and linearity.
  2. 7-day calibration error. At 24-hour intervals, or more frequently if recommended by the manufacturer, subject the system to zero and calibration procedures. Record the monitoring system output readings before and after any adjustments.
  3. Cycle Time. Make five determinations of both upscale and downscale cycle time by measuring the time to 95% response from the normal on-line reading of the monitoring system to the zero or calibration points, as appropriate.
  4. Operational Test Period. Document that for at least 168 continuous hours, the system required no corrective maintenance.
  5. Document the accuracy of computations performed by the data acquisition system by comparing the results of “manual calculation” (using a calculator or independent, manually operated computer system) of nine hourly averages (using values from the CEMS data recorders and the same equations, constants and variables used by the data acquisition system) with the hourly averages calculated for the same time periods by the data acquisition system. In addition, compare the results of manual calculation of 60 one-minute averages (using values from the CEMS data recorders and the same equations, constants and variables used by the data acquisition system) with the one-minute averages calculated for the same time periods by the data acquisition system.

## **FINAL APPROVAL (PHASE III)**

A report must be submitted to the Bureau verifying the monitoring system's compliance with all regulatory requirements. The report must be submitted within two months after completion of Phase II. Sources may petition the Department to use a more stringent applicable Federal requirement for report submittal deadline (in order to maintain consistency between requirements of multiple agency programs). The report must include identification of all analyzer/measurement device serial numbers, all raw data and calculations for testing as specified in Phase II and data as specified in the following:

### **I. Continuous Source Emission Monitoring**

- A. For opacity monitoring, Paragraph 8.0, including subparagraphs, of Attachment No. 1.
- B. For gas monitoring, information as follows:
  - 1. Relative Accuracy Test Audit Testing – information as specified with respect to “RA tests” in the “Reporting” paragraph under the “Relative Accuracy Test Procedure” section of 40 CFR, Part 60, Appendix B, Performance specification 2.
  - 2. Cycle Time Testing – information as specified in the “Cycle Time Test” section of 40 CFR, Part 75, Appendix A.
  - 3. Zero and Upscale Calibration Error Testing – information as specified in the “Calibration Error” section under “Calculations” of 40 CFR, Part 75, Appendix A except that the “equivalent reading at the level of the lowest monitored emission standard” for the measurement device (as determined during Phase I) must be used as the “Span of the instrument” (S in Eq. A-5).
  - 4. Linearity Testing – information as specified in the “Linearity Check” section under “Calculations” of 40 CFR, Part 75, Appendix A.
  - 5. Documentation of no corrective maintenance for at least 168 continuous hours.

### **II. “Stack” Flow and Temperature Monitoring**

- A. For each relative accuracy test audit (“stack” flow), the sum of 1) the absolute value of the average of the differences of the paired relative accuracy test audit readings and 2) the 95% confidence coefficient. Divide this sum by the mean reference value or by the value of the applicable emission standard or operational criterion and report the results as a percentage. Also, as appropriate, report the average of the absolute values of the differences of the paired relative accuracy readings. Include all raw data and calculations.
- B. For each of the three linearity levels (two if zero is used as the first level) the sum of 1) the average of the differences of the nine paired reference and measurement device readings and 2) the 95% confidence coefficient. Divide this sum by the reference value and report the results as a percentage. Include all raw data and calculations.
- C. The sum of the absolute values of the differences between successive zero calibration error readings and the 95% confidence coefficient. Divide this sum by the lowest emissions

standard equivalent value, as determined during Phase I, and report the results as a percentage. Include all raw data and calculations.

- D. The sum of the absolute values of the differences between successive upscale calibration error readings and the 95% confidence coefficient. Divide this sum by the lowest emissions standard equivalent value, as determined during Phase I, and report the result as a percentage. Include all raw data and calculations.
- E. All raw data and calculations for cycle time.
- F. Documentation of no corrective maintenance for at least 168 continuous hours.

The method used to convert the monitoring data to the required reporting format must be verified in the report using actual test data. The report must also include a description of any changes, additions, or deletions made to the information submitted in the initial application (Phase I).

If electronic certification record formats are specified in Attachment No. 3 to this Manual, such records must also be submitted.

Samples of all applicable Emissions Data Report electronic data record types, as specified in Attachment No. 3, must be submitted with the report.

## RECORD KEEPING AND REPORTING

NOTE: All reporting is to be on an Eastern Standard Time basis.

NOTE: The data acquisition system must be capable of reading all values over the full range of each measurement device and must create a permanent record of all required raw and calculated data for storage, review and reporting. In addition, a continuous readout in units of each applicable emission standard or operating criteria is required.

NOTE: Monitoring systems used to report data for compliance with emission standards based on total mass, tons per year, etc. are required to report “substitute” data for hours when the data hour is considered invalid. DEP will notify sources when such data substitution is required. Such “substitute” data must be reported in accordance with any one of the following:

- 1) The “Missing Data Substitution Procedures” subpart of 40 CFR, Part 75 (only for the specific parameters covered by that subpart).
- 2) The emission value for any hours that are invalid during which the process operated for the entire hour should be calculated using data collected during valid data periods for the hour and the highest valid one-hour emission value that occurred during the reporting quarter for any invalid data periods during that hour (if no valid data were collected during the reporting quarter, use the most recent quarter for which valid data were collected; if no valid data were collected during the reporting quarter or any previous quarter, contact the Department for specific instructions). For instance,

If the highest valid one-hour emission value that occurred during the reporting quarter = 1.234, , invalid data time = 20 minutes, and valid data for each of the remaining 40 minutes = 0.123, the hourly value would be calculated as follows:

Minute	Value	Minute	Value	Minute	Value
1	1.234	21	0.123	41	0.123
2	1.234	22	0.123	42	0.123
3	1.234	23	0.123	43	0.123
4	1.234	24	0.123	44	0.123
5	1.234	25	0.123	45	0.123
6	1.234	26	0.123	46	0.123
7	1.234	27	0.123	47	0.123
8	1.234	28	0.123	48	0.123
9	1.234	29	0.123	49	0.123
10	1.234	30	0.123	50	0.123
11	1.234	31	0.123	51	0.123
12	1.234	32	0.123	52	0.123
13	1.234	33	0.123	53	0.123
14	1.234	34	0.123	54	0.123
15	1.234	35	0.123	55	0.123
16	1.234	36	0.123	56	0.123
17	1.234	37	0.123	57	0.123
18	1.234	38	0.123	58	0.123

Invalid Time

Valid Time

Average = 0.493

<b>Minute</b>	<b>Value</b>	<b>Minute</b>	<b>Value</b>	<b>Minute</b>	<b>Value</b>
19	1.234	39	0.123	59	0.123
20	1.234	40	0.123	60	0.123

The emission value for all ‘Process Down’ hours should be reported as 0.000, if none of the monitored emissions are released for the entire hour.

The emission value for any hours that are invalid during which the process operated for some time (but less than the entire hour) should be calculated using data collected during valid data periods for the hour, an emission value of zero for any periods of process down time during that hour, and the highest one-hour emission value that occurred during the reporting quarter (in accordance with the parenthetical information in the first sentence of this note) for any invalid data periods, other than process down time, during that hour. For instance,

If the highest valid one-hour emission value that occurred during the reporting quarter = 1.234, process down time during the hour = 20 minutes, invalid data time other than process down time = 20 minutes, and valid data for each of the remaining 20 minutes = 0.123, the hourly value would be calculated as follows,

<b>Minute</b>	<b>Value</b>	<b>Minute</b>	<b>Value</b>	<b>Minute</b>	<b>Value</b>
1	0.000	21	1.234	41	0.123
2	0.000	22	1.234	42	0.123
3	0.000	23	1.234	43	0.123
4	0.000	24	1.234	44	0.123
5	0.000	25	1.234	45	0.123
6	0.000	26	1.234	46	0.123
7	0.000	27	1.234	47	0.123
8	0.000	28	1.234	48	0.123
9	0.000	29	1.234	49	0.123
10	0.000	30	1.234	50	0.123
11	0.000	31	1.234	51	0.123
12	0.000	32	1.234	52	0.123
13	0.000	33	1.234	53	0.123
14	0.000	34	1.234	54	0.123
15	0.000	35	1.234	55	0.123
16	0.000	36	1.234	56	0.123
17	0.000	37	1.234	57	0.123
18	0.000	38	1.234	58	0.123
19	0.000	39	1.234	59	0.123
20	0.000	40	1.234	60	0.123

Process Down Time  
Invalid Time other than Down Time  
Valid Time

- 3) An alternative method of data substitution as approved concurrently by the Air Quality Program Manager of the appropriate DEP Regional Office and the Chief of the Division of Source Testing and Monitoring.

In addition, sources not required by the Department to report “substitute” data during periods of invalid CEMS data may petition the Department to allow data substitution as required by an

applicable Federal regulation (in order to maintain consistency between data reported for multiple agency programs).

NOTE: Unless instructed otherwise by the Department, use of Monitoring Code 13, “monitoring not required”, is allowed to identify hours of invalid data if the total time of “monitoring not required” during the hour exceeds: 1) 6 minutes for monitoring of CO, Combustion Efficiency, and Temperature for incinerators, or 2) 15 minutes in all other cases.

NOTE: A cover letter shall accompany all reports and shall include:

1. The statement:

“I am authorized to make this submission on behalf of the owners and operators of the affected facility or affected units for which the submission is made. I certify under penalty of law under 35 P.S. § 4008 (relating to unlawful conduct), and 18 Pa.C.S. § 4903 (relating to false swearing), or § 4904 (relating to unsworn falsification to authorities) that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.”

“I understand that DEP may reject any electronic data submission if it does not conform to the formatting requirements specified by DEP.”

“To the extent that information has been submitted in electronic format, I acknowledge that DEP will rely solely on electronic information as accurate and complete information. I certify that the data provided in electronic format with this submission contains correct and current data and is consistent with all current hardcopy information.”

2. The signature of the person exercising managerial responsibility over the operation of the source(s) for which monitoring is required or of the designated representative pursuant to 40 CFR 75.

NOTE: For monitoring systems used to report data for compliance with emission standards or operational criteria that may vary depending on operational factors such as fuel being fired, operational mode, operation in conjunction with other sources, etc., an “allowable emissions” report must be submitted in addition to the required hourly emission report. DEP will notify affected sources when such reports are necessary.

The data values for each hour of the “allowable emissions” report must represent the value of the emission standard or operational criterion applicable for that hour. The Monitoring Code and Process Code values for each hour of the “allowable emissions” report must be identical to those reported for the same hour in the hourly emission report.

## I. Continuous Source Emission Monitoring Systems

### A. Record Keeping

1. The company shall reduce all of the monitoring system results to one-hour averages on a clock basis in units consistent with the applicable emission standard(s). The method(s) must be in accordance with the data validation and reduction criteria in the Quality Assurance section of this manual.
2. The company shall reduce all of the monitoring system results for opacity and temperature to one-minute averages on a clock basis in accordance with the data validation and reduction criteria in the Quality Assurance section of this manual.
3. A chronological file shall be maintained by the company that includes:
  - a. All measurements from the monitoring system on at least the minimum data recording frequency (chart recordings of the proper resolution are acceptable).
  - b. All valid averages as specified above.
  - c. The cause, time periods, and magnitude of all emissions that exceed the applicable emission standard(s).
  - d. Data and results for all tests, audits and recalibrations.
  - e. A record of any repairs, adjustments, or maintenance to the monitoring system.
  - f. The data necessary for conversion of the monitoring system data to units consistent with the applicable emission standard or operational criterion, including the values for any manually-adjustable "K-factors" or other "constants".
  - g. The cause and time periods for any invalid data averages.
  - h. The process and pollution control equipment operating data for all parameters which have a significant affect the levels of the emissions or operational criterion being monitored.
  - i. Copies of the Phase I application, Phase II testing protocol, Phase III performance specification testing report and all correspondence related thereto.
  - j. Records of all corrective actions taken in response to exceedances of emission standards, operational criteria or data availability standards.
4. All data must be maintained by the company for a period of five years (either on-line or off-line) and be provided to the Department upon request at any time.

## B. Reporting Requirements

1. The following information shall be reported to the Department on a calendar quarter basis:
  - a. Information in accordance with the appropriate electronic data report record formats in Attachment No. 3 of this manual or as specified by the Department.
  - b. The results from all tests, audits and recalibrations conducted during the quarter. In addition to information already included in the electronic data format referenced in “a”, above, report only the overall results of any “Periodic Self-audit” indicating the compliance status of the monitoring system with respect to the applicable performance specification. The complete report of such testing must be submitted to the Department under separate cover in accordance with the requirements of the “Final Approval (Phase III)” section of this manual which are also referenced in the “Quality Assurance” section of this manual.
2. The report shall be submitted to the central office by the 30th day following the close of the reporting period. (NOTE: Delinquency penalties, in accordance with an applicable compliance assurance policy or enforcement policy, may apply to reports received after this time).
3. The report shall be submitted in a format specified by the Department and must be signed by the person exercising managerial responsibility over the operation of the source(s) for which monitoring is required or by the designated representative pursuant to 40 CFR 75.
4. Data for monitoring systems installed on municipal waste incinerators shall be made available in accordance with the Interim Data Telemetry Protocol in Attachment No. 4 of this manual.
5. If a required report is not received by the Bureau within 15 days after the report due date, the Bureau will provide official notification to the appropriate official of the monitored source that the report was not received. (NOTE: Delinquency penalties, in accordance with an applicable compliance assurance policy or enforcement policy, would already be applicable by this date; Data invalidation consequences, in accordance with the Quality Assurance section of this manual, may apply if no acceptable report is received by 120 days after the end of the reporting period.)
6. Unacceptable reports, Bureau-requested resubmittals, company-initiated resubmittals
  - a. Unacceptable reports. The Bureau will review each Data Report for errors that would render the data unacceptable (improper format, incorrect component identification, inconsistency between hourly and incident



reports, incorrect units of measurement, improper data invalidation, improper use of codes, incompleteness, etc.). When errors are found during this initial data review, the Bureau will provide official notice to the appropriate official of the monitored source that the report is unacceptable, advising the company of the necessary corrections, and requesting submittal of a corrected report. Any Data Report that is determined to be unacceptable will not be considered a valid submittal for purposes of compliance with report timeliness requirements of this manual.

- i. Delinquency of acceptable submittals. Submittals to resolve unacceptability that are received, and subsequently determined by the Bureau to be acceptable, more than 30 days after the end of the reporting period will be considered delinquent and may be subject to delinquency penalties in accordance with an appropriate compliance assurance policy or enforcement policy.
  - ii. Failure of the Department to receive an acceptable report for a particular reporting period by 120 days after the end of the reporting period constitutes a violation of 25 Pa. Code, Subpart C, Article III, Chapter 139.101 (E).
- b. Bureau-requested resubmittals. If data inaccuracies are discovered after Bureau acceptance of the Data Report, the Bureau will provide official notice to the appropriate official of the monitored source that certain data in the report are not accurate, advising the company of the necessary corrections, and requesting resubmittal of a corrected report by a specific due date. Reports received beyond the due date will be considered delinquent and subject to late penalties in accordance with the appropriate compliance assurance policy or enforcement policy.
  - i. Delinquency for unacceptable resubmittals or non-resubmittals. Data invalidation consequences, in accordance with the Quality Assurance section of this manual, may apply if no acceptable resubmittal in response to an official notice by the Bureau of data inaccuracies is received within 30 days after the date of such official notification.
- c. Company-initiated resubmittals. An official of a monitored source may choose to resubmit data reports to correct self-discovered inaccuracies even though a previously submitted report has been determined by the Bureau to be acceptable. The justification for such a resubmittal must be approved by the appropriate regional office.
  - i. Data invalidation for unacceptable resubmittals or non-resubmittals. Data invalidation consequences, in accordance with the Quality Assurance section of this manual, may apply if no acceptable resubmittal in response to an official notice by the Bureau of data unacceptability of a report submitted to resolve

self-discovered data inaccuracies is received within 30 days after the date of such official notification.

## II. Coal Sampling/Analysis Systems

### A. Record Keeping

1. The company shall reduce all of the system results to daily averages in lbs SO<sub>2</sub>/10<sup>6</sup> BTU in accordance with the data validation and reduction criteria in the Quality Assurance section of this manual.
2. A chronological file shall be maintained by the company that includes:
  - a. All laboratory samples identified by system and date represented.
  - b. The results of each analysis for percent sulfur and BTU/lb.
  - c. All valid averages as calculated in 1. above, along with the date and time the result was recorded.
  - d. The cause, time periods, and magnitude of all calculated emissions which exceed the applicable emission standard(s).
  - e. Data and results for all CSAS performance tests and recalibrations.
  - f. The data necessary to show compliance with all data validation and reduction criteria in the Quality Assurance section of this manual.
  - g. The cause and time periods for any invalid data averages.
  - h. A record of any repairs, adjustments, or maintenance to the system.
  - i. The process and pollution control equipment operating data for all parameters which affect the emission level of SO<sub>2</sub>.
  - j. Copies of the Phase I application, Phase II testing protocol, Phase III performance specification testing report and all correspondence related thereto.
  - k. Records of all corrective actions taken in response to exceedances of emission standards, operational criteria or data availability standards.
3. All data must be maintained by the company for a period of five years (either on-line or off-line) and be provided to the Department upon request at any time. Laboratory samples must be maintained until the end of the next subsequent reporting period.

## B. Reporting Requirements

1. The following information shall be reported to the Department on a calendar quarter basis:
  - a. Information in accordance with the appropriate electronic data report record formats in Attachment No. 3 of this manual or as specified by the Department. For reporting formats requiring hourly averages, report the daily average value for each of the valid data hours, reporting the appropriate information for the invalid data hours.
  - b. For each day, the number of valid hours and causes for any invalid daily averages.
  - c. The results from all CSAS performance tests and recalibrations conducted during the quarter.
2. The report shall be submitted to the central office by the 30th day following the close of the reporting period. (NOTE: Delinquency penalties, in accordance with an applicable compliance assurance policy or enforcement policy, may apply to reports received after this time).
3. The report shall be submitted in a format specified by the Department and must be signed by the person exercising managerial responsibility over the operation of the source(s) for which monitoring is required or by the designated representative pursuant to 40 CFR 75.
4. If a required report is not received by the Bureau within 15 days after the report due date, the Bureau will provide official notification to the appropriate official of the monitored source that the report was not received. (NOTE: Delinquency penalties, in accordance with an applicable compliance assurance policy or enforcement policy, would already be applicable by this date; Data invalidation consequences, in accordance with the Quality Assurance section of this manual, may apply if no acceptable report is received by 120 days after the end of the reporting period.)
5. Unacceptable reports, Bureau-requested resubmittals, company-initiated resubmittals
  - a. Unacceptable reports. The Bureau will review each Data Report for errors that would render the data unacceptable (improper format, incorrect component identification, inconsistency between hourly and incident reports, incorrect units of measurement, improper data invalidation, improper use of codes, incompleteness, etc.). When errors are found during this initial data review, the Bureau will provide official notice to the appropriate official of the monitored source that the report is unacceptable, advising the company of the necessary corrections, and requesting submittal of a corrected report. Any Data Report that is determined to be unacceptable will not be considered a valid submittal for

purposes of compliance with report timeliness requirements of this manual.

- i. Delinquency of acceptable submittals. Submittals to resolve unacceptability that are received, and subsequently determined by the Bureau to be acceptable, more than 30 days after the end of the reporting period will be considered delinquent and may be subject to delinquency penalties in accordance with an appropriate compliance assurance policy or enforcement policy.
- ii. Failure of the Department to receive an acceptable report for a particular reporting period by 120 days after the end of the reporting period constitutes a violation of 25 Pa. Code, Subpart C, Article III, Chapter 139.101 (E).
- b. Bureau-requested resubmittals. If data inaccuracies are discovered after Bureau acceptance of the Data Report, the Bureau will provide official notice to the appropriate official of the monitored source that certain data in the report are not accurate, advising the company of the necessary corrections, and requesting resubmittal of a corrected report by a specific due date. Reports received beyond the due date will be considered delinquent and subject to late penalties in accordance with the appropriate compliance assurance policy or enforcement policy.
  - i. Delinquency for unacceptable resubmittals or non-resubmittals. Data invalidation consequences, in accordance with the Quality Assurance section of this manual, may apply if no acceptable resubmittal in response to an official notice by the Bureau of data inaccuracies is received within 30 days after the date of such official notification.
- c. Company-initiated resubmittals. An official of a monitored source may choose to resubmit data reports to correct self-discovered inaccuracies even though a previously submitted report has been determined by the Bureau to be acceptable. The justification for such a resubmittal must be approved by the appropriate regional office.
  - i. Data invalidation for unacceptable resubmittals or non-resubmittals. Data invalidation consequences, in accordance with the Quality Assurance section of this manual, may apply if no acceptable resubmittal in response to an official notice by the Bureau of data unacceptability of a report submitted to resolve self-discovered data inaccuracies is received within 30 days after the date of such official notification.

### III. “Stack” Flow and Temperature Monitoring Systems

#### A. Record Keeping

1. The company shall reduce all of the monitoring system results to 1-hour averages on a clock basis in accordance with the data validation and reduction criteria in the Quality Assurance section of this manual.
2. The company shall reduce all of the monitoring system results for temperature to 1-minute averages on a clock basis in accordance with the data validation and reduction criteria in the Quality Assurance section of this manual.
3. A chronological file shall be maintained by the company, which includes:
  - a. All measurements from the monitoring system on at least the minimum data recording frequency (chart recordings are acceptable).
  - b. All valid averages as required above.
  - c. Data and results for all performance tests and recalibrations.
  - d. A record of any repairs, adjustments or maintenance to the monitoring system.
  - e. The cause and time periods for any invalid data averages.
  - f. The data necessary for conversion of the monitoring system data to units consistent with the applicable emission standard or operational criterion, including the values for any manually-adjustable “K-factors” or other “constants”.
  - g. The process and pollution control equipment operating data which affects the parameters being monitored.
  - h. Copies of the Phase I application, Phase II testing protocol, Phase III performance specification testing report and all correspondence related thereto.
  - i. Records of all corrective actions taken in response to exceedances of emission standards, operational criteria or data availability standards.
4. All data must be maintained by the company for a period of five years (either on-line or off-line) and be provided to the Department upon request at any time.

## B. Reporting Requirements

1. The following information shall be reported to the Department on a calendar quarter basis:
  - a. Information in accordance with the appropriate standard electronic data report record formats in Attachment No. 3 of this manual or as specified by the Department.
  - b. The results from all tests, audits and recalibrations conducted during the quarter. In addition to information already included in the electronic data format referenced in “a”, above, report only the overall results of any “Periodic Self-audit” indicating the compliance status of the monitoring system with respect to the applicable performance specification. The complete report of such testing must be submitted to the Department under separate cover in accordance with the requirements of the “Final Approval (Phase III)” section of this manual which are also referenced in the “Quality Assurance” section of this manual.
2. The report shall be submitted to the central office by the 30th day following the close of the reporting period. (NOTE: Delinquency penalties, in accordance with an applicable compliance assurance policy or enforcement policy, may apply to reports received after this time).
3. The report shall be submitted in a format specified by the Department and must be signed by the person exercising managerial responsibility over the operation of the sources(s) for which monitoring is required or by the designated representative pursuant to 40 CFR 75.
4. Data for monitoring systems installed on municipal waste incinerators shall be made available in accordance with the Interim Data Telemetry Protocol in Attachment No. 4 of this manual.
5. If a required report is not received by the Bureau within 15 days after the report due date, the Bureau will provide official notification to the appropriate official of the monitored source that the report was not received. (NOTE: Delinquency penalties, in accordance with an applicable compliance assurance policy or enforcement policy, would already be applicable by this date; Data invalidation consequences, in accordance with the Quality Assurance section of this manual, may apply if no acceptable report is received by 120 days after the end of the reporting period.)
6. Unacceptable reports, Bureau-requested, company-initiated resubmittals
  - a. Unacceptable reports. The Bureau will review each Data Report for errors that would render the data unacceptable (improper format, incorrect component identification, inconsistency between hourly and incident reports, incorrect units of measurement, improper data invalidation, improper use of codes, incompleteness, etc.). When errors are found during this initial data review, the Bureau will provide official notice to

the appropriate official of the monitored source that the report is unacceptable, advising the company of the necessary corrections, and requesting submittal of a corrected report. Any Data Report that is determined to be unacceptable will not be considered a valid submittal for purposes of compliance with report timeliness requirements of this manual.

- i. Delinquency of acceptable resubmittals. Submittals to resolve unacceptability that are received, and subsequently determined by the Bureau to be acceptable, more than 30 days after the end of the reporting period will be considered delinquent and may be subject to delinquency penalties in accordance with an appropriate compliance assurance policy or enforcement policy.
  - ii. Failure of the Department to receive an acceptable report for a particular reporting period by 120 days after the end of the reporting period constitutes a violation of 25 Pa. Code, Subpart C, Article III, Chapter 139.101 (E).
- b. Bureau-requested resubmittals. If data inaccuracies are discovered after Bureau acceptance of the Data Report, the Bureau will provide official notice to the appropriate official of the monitored source that certain data in the report are not accurate, advising the company of the necessary corrections, and requesting resubmittal of a corrected report by a specific due date. Reports received beyond the due date will be considered delinquent and subject to late penalties in accordance with the appropriate compliance assurance policy or enforcement policy.
  - i. Delinquency for unacceptable resubmittals or non-resubmittals. Data invalidation consequences, in accordance with the Quality Assurance section of this manual, may apply if no acceptable resubmittal in response to an official notice by the Bureau of data inaccuracies is received within 30 days after the date of such official notification.
- c. Company-initiated resubmittals. An official of a monitored source may choose to resubmit data reports to correct self-discovered inaccuracies even though a previously submitted report has been determined by the Bureau to be acceptable. The justification for such a resubmittal must be approved by the appropriate regional office.
  - i. Data invalidation for unacceptable resubmittals or non-resubmittals. Data invalidation consequences, in accordance with the Quality Assurance section of this manual, may apply if no acceptable resubmittal in response to an official notice by the Bureau of data unacceptability of a report submitted to resolve self-discovered data inaccuracies is received within 30 days after the date of such official notification.

## QUALITY ASSURANCE

NOTE 1: The step-by-step quality assurance plan, submitted as part of the Phase I initial application, must be reviewed annually. If revised, the revised QA plan must be submitted with the report of required annual quality assurance activities (the submitter may refer to a quality assurance plan submitted with a previously approved Phase I application and submit only the revised information). Quality assurance plans for monitoring systems approved prior to the effective date of this manual revision must be submitted with the first report of required annual quality assurance activities conducted after such effective date.

NOTE 2: (Infrequent operation/extended outage/shutdown) Regardless of the number of hours or process operation during a calendar quarter, quarterly emission reports must continue to be submitted, with hourly data during process downtime entered as “II13.08” (or “0000.13” if the reports are subject to data substitution requirements). Quarterly and annual quality assurance activities must continue to be conducted during such time in accordance with the requirements listed in the “Periodic calibration” and “Periodic Self-Audits” sections below. Note that, for extended outages or shutdowns, “Daily calibration” procedures need only be conducted as necessary to validate data collected during actual source operating hours (successful daily calibration necessary in order to validate data for subsequent hours).

NOTE 3: Records of any manual adjustments performed in conjunction with either 1) a zero or calibration check, 2) quarterly linearity check, 3) periodic self-audit or 4) as a result of other checks, tests or observations must be maintained in accordance with the requirements of the Record Keeping And Reporting section of this manual.

NOTE 4: Upon the successful completion of the required initial performance specification testing specified in the “Performance Testing (Phase II)” section of this manual (or such retesting conducted as a result of addition or replacement of components or software programs as addressed in this manual), or upon the successful completion of a test for calibration error conducted prior to such successful initial testing or retesting (provided no corrective maintenance is conducted on the monitoring system during the intervening time period), data from the monitoring system shall be deemed provisionally valid pending the Department’s review and approval of the results of testing. However, no reports containing such provisionally valid data may be submitted to the Department prior to notification by the Department that the results of testing have been reviewed and approved. Such delayed reports shall not be considered “late” with respect to the report submittal requirements specified in this manual if submitted within the time period specified in the Department’s notice of approval.

NOTE 5: Sources subject to applicable Federal requirements for substitute data for “Default Value”, “Diluent Cap”, or “Over-scaling” purposes may petition the Department for use of such substitute data for DEP purposes if they can demonstrate that the use of such substitute data will not adversely impact the Department’s ability to enforce compliance with all applicable requirements.

### I. Continuous Source Emission Monitoring Systems

#### A. Data Validation Criteria

1. Data must be considered invalid if any of the following conditions occur:
  - a. The monitoring system is not operated in accordance with the performance specifications in this manual.



- b. The monitoring system is not operated in accordance with the quality assurance criteria in the approved initial application (Phase I) or in this manual.
- c. Any portion of the monitoring system is inoperative.
- d. The results of a daily zero or upscale calibration error check for any measurement device exceeds twice the applicable calibration error performance specification as indicated in this manual. Data is considered invalid from the time of the failed zero or upscale calibration error check until the successful completion of a zero and upscale calibration error check. Sources may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- e. A zero or upscale calibration error check for a measurement device is not conducted during or before the 26th hour following a successful zero or upscale calibration error check, except that if the process has been out of operation for at least one complete clock hour during the time period from the 19th clock hour through the 26th clock hour following the previous successful zero or upscale calibration error check, successful zero and upscale calibration error checks are required to be conducted within 8 process operating hours following startup. Data is considered invalid starting with the 27th hour following the previous successful zero and upscale calibration error check or the 9th process operating hour following startup (as applicable) and until completion of successful zero and upscale calibration error checks.
- f. The monitored process is not operating and/or not emitting the pollutant being monitored.
- g. The results of the required quarterly linearity check for any measurement device range at any calibration level exceed the applicable performance standard or the linearity check is aborted due to a problem with the measurement device or monitoring system. Data are considered invalid from the time the failed test is completed or aborted until successful completion of a linearity check following corrective action and/or measurement device repair.
- h. The required linearity check is not conducted in accordance with the “quarterly linearity check” requirements below. Data is considered invalid from the hour following the last hour meeting the “quarterly linearity check” requirements below and until completion of a successful linearity check.
- i. For measurement devices used in accordance with Table XII of this manual and not undergoing daily calibration nor quarterly linearity checks, if the quarterly calibration, conducted in accordance with NIST procedures,

ASTM procedures, or other procedures approved by the Department, shows error in excess of the linearity performance specification. Data is considered invalid for the entire time the measurement/readout device combination was used prior to the calibration and subsequent to a previously conducted successful calibration.

- j. The results of a periodic self-audit exceed the applicable performance standard or the periodic self-audit is aborted due to a problem with the monitoring system. If the periodic self-audit is aborted due to a problem with the monitoring system, monitoring system data are considered invalid starting from the time the self-audit is aborted. If a failed periodic self-audit is conducted using reference test methodology that provides on-site data, monitoring system data are considered invalid starting from the time the failed periodic self-audit is completed. If a failed periodic self-audit is conducted using reference test methodology that does not provide on-site data, monitoring system data are considered invalid starting from the time results of the failed periodic self-audit are received by the company or the first hour of the fifteenth day following the day of completion of the self-audit, whichever is earlier. Once considered invalid, monitoring system data remain invalid until either successful completion of a periodic self-audit or successful completion of a test for linearity conducted prior to such successful periodic self-audit (provided no corrective maintenance is conducted on the monitoring system during the intervening time period).
- k. A periodic self-audit is not conducted in accordance with the provisions of either E or F, below (as applicable). Data is considered invalid from the hour following the last hour meeting the requirements in either E or F, below (as applicable) and until completion of a successful periodic self-audit.
- l. An acceptable quarterly report is not received by the Bureau within
  - 1) 120 days after the end of the calendar quarter represented thereby,
  - 2) within 30 days after official notification by the Bureau that certain data in a previously-acceptable report are not accurate, or 3) within 30 days after official notification by the Bureau that a resubmittal submitted to resolve self-discovered inaccuracies is not acceptable. In such cases, the Bureau will process data for the affected quarter as if such data were received on the day following the 120-day or 30-day period, as applicable, with data for every hour identified as invalid. In addition, such non-reception will be considered a failure to satisfy the requirements in 25 Pa. Code § 139.101(5) and will be treated as a “High Priority Violation” (HPV) as defined in the U.S. Environmental Protection’s HPV Policy (effective date, April 1999) per general HPV Criteria 7 which indicates that “...violations that involve testing, monitoring, record-keeping, or reporting that substantially interfere with enforcement or determining the source’s compliance with applicable emission limits...” trigger HPV status.

- B. Data Reduction Criteria. The following data reduction criteria apply unless other criteria are stipulated in Title 25 of the Pennsylvania Code, in a plan approval, permit condition or

in an order issued by the Department. (Note: for multipoint sampling systems serving a single source, the total number of readings from all points are considered when determining percentages of valid readings)

Note: Sources may petition the Department to use a more stringent applicable Federal data reduction criterion (in order to maintain consistency between data considered invalid by multiple agency programs).

1. All data averages must be calculated using valid data only.
2. A one-minute average will be considered valid if it contains at least 75 percent valid data readings.
3. A six-minute average will be considered valid if it contains at least 75 percent valid data readings.
4. Hourly averages.
  - a. All parameters except for opacity, temperature, CO, parameters addressed by Tables XI, XII, or XIII of this manual - data from measurement devices of these types can be used to calculate a valid monitoring system hourly average if at least one valid data reading is obtained in each 15-min quadrant during which the process was operating. Notwithstanding this requirement, if the process operated during more than one quadrant of the hour and if some data is unavailable as a result of the performance of calibration, quality assurance activities, preventive maintenance activities, or backups of data from the data acquisition and handling system, valid data readings from at least two points separated by a minimum of 15 minutes may be used.
  - b. For opacity, temperature, CO, parameters addressed by Tables XI, XII, or XIII of this manual - data from measurement devices of these types can be used to calculate a valid monitoring system hourly average if it contains at least 75 percent of the segments of the hour corresponding to the minimum required cycle time (for measurement) during which the process was operating.
5. A three-hour average will be considered valid if it contains at least 2 valid hourly averages.
6. A four-hour average will be considered valid if it contains at least 3 valid hourly averages.
7. A six-hour average will be considered valid if it contains at least 4 valid hourly averages.
8. An eight-hour average will be considered valid if it contains at least 6 valid hourly averages.

9. A twelve-hour average will be considered valid if it contains at least 9 valid hourly averages.
10. A daily average will be considered valid if it contains at least 18 valid hourly averages at any time during that daily time period.
11. A four-day average will be considered valid if it contains at least 3 valid daily averages.
12. A 30-day average will be considered valid if it contains at least 23 valid daily averages.

C. Component Addition, Maintenance or Replacement

1. Maintenance

- a. Zero and upscale calibration error checks should be conducted immediately prior to any maintenance, if possible.
- b. Zero and upscale calibration error checks must be conducted immediately following any maintenance.
- c. If the post-maintenance zero or upscale calibration error checks show calibration error in excess of twice the applicable performance specifications, recalibration must be conducted in accordance with the quarterly linearity check procedures in D.2. below. Measurement devices may be calibrated in-situ.

2. Addition or Replacement

Whenever the owner or operator makes a replacement, modification, or change in a approved CEMS that may significantly affect the ability of the system to accurately measure or record results in terms of the applicable emission standard or process operational criterion, the owner or operator shall obtain Department approval of the altered CEMS or continuous opacity monitoring system, according to the procedures in this paragraph. Furthermore, whenever the owner or operator makes a replacement, modification, or change to the flue gas handling system or the unit operation that may significantly change the flow or concentration profile, the owner or operator shall obtain Department approval for use of the monitoring system under such altered conditions according to the procedures in this paragraph. Examples of changes which require recertification include: replacement of the analyzer; change in location or orientation of the sampling probe or site; and complete replacement of an existing CEMS. Additional guidance is located in Attachment No. 5 of this manual. Note that Attachment No. 5 is presented for guidance purposes only and is not intended to be all-inclusive. Contact the Department for specific guidance if addition or replacement is not specifically addressed in Attachment No. 5.

- a. Scheduled addition of or replacement of components or software programs with components or software programs of different makes or models will normally require submittal of a revised Phase I application prior to such change and successful completion of performance testing (upon approval of the Phase I application by the Department) prior to use of data from the monitoring system. Unscheduled addition of or replacement of components or software programs with components or software programs of different makes or models will normally require successful completion of performance testing prior to use of data from the monitoring system and submittal of a revised Phase I application as soon as possible after such addition or replacement. Contact the Department for specific instructions if the situation is not specifically addressed in Attachment No. 5.
- b. Addition of or replacement of components or software programs with like makes and models may require 1) submittal of a revised Phase I application as soon as possible after such addition or replacement, and 2 successful completion of performance testing prior to use of data from the monitoring system. Contact the Department for specific instructions if the specific situation is not addressed in Attachment No. 5.
- c. Replacement, modification, or change to the flue gas handling system or the unit operation that may significantly change the flow or concentration profile requires submittal of a revised Phase I application prior to such change and successful completion of relative accuracy testing after such change (upon approval of the Phase I application by the Department).

D. Periodic calibration (cylinder gas requirements appear in paragraph G below)

Note: Sources may petition the Department to use Federal calibration level requirements rather than those listed below if they can demonstrate that the requirements will not adversely impact the Departments ability to enforce compliance with all applicable requirements.

1. Daily calibration

Note: Sources may petition the Department to use a more stringent applicable Federal daily calibration error check procedure requirement than that listed below (in order to maintain consistency between data considered invalid by multiple agency programs).

- a. Calibration must be conducted at least daily for determination of measurement device zero and upscale calibration error on all measurement device ranges, except for fuel flowmeters. Fuel flowmeters must meet the quality assurance requirements specified in Table XIII of this Manual. The results of daily calibrations are calculated as the value of the reference material used minus the measurement device reading and as [the value of the reference material used minus the measurement device reading] divided by the lowest monitored emission standard equivalent.

- b. For measurement devices that use calibration gas, the gas must be introduced as close to the point of sample acquisition as possible. For other devices, simulated signals must be applied as close to the point of signal generation as possible
- c. The monitoring system must be adjusted whenever the zero or upscale calibration error performance specifications are exceeded.
- d. The zero calibration error check must be conducted at a measurement level at or between 0% and 30% of measurement device range. The value selected must be lower than the lowest value that would be expected to occur under normal source operating conditions.
- e. The upscale calibration error check must be conducted at a measurement level at or between 40% and 100% of measurement device range. An alternative level may be used, provided it can be demonstrated to better represent normal source operating levels.

## 2. Quarterly linearity check

Note: Sources may petition the Department to use a more stringent applicable Federal linearity check procedure requirement than that listed below (in order to maintain consistency between data considered invalid by multiple agency programs).

- a. Conduct the test for linearity on each range of each measurement device, except for fuel flowmeters, in accordance with the procedures specified in, for gases, the "Linearity Check" section of 40 CFR, Part 75, Appendix A (except that the test must be conducted on all ranges of each measurement device, no adjustments of the measurement device are permitted during the test period, and the requirements for calibration gas levels, data validation, and acceptability shall be as specified in this Manual), or, for opacity, Attachment No. 1, or with procedures previously approved by the Department, at least once during each calendar quarter in which the source operates for 168 hours or more, or within 168 source operating hours after the close of such quarter (If source did not operate at all during the calendar quarter, the provisions of the Extended outage/shutdown note, above, apply), except that if four consecutive calendar quarters elapse after the last linearity testing was performed, the test for linearity must be performed within 168 source operating hours. Fuel flowmeters must meet the Quality assurance requirements specified in Table XIII of this Manual.
- b. The high-level measurement values must be at or between 80% and 100% of measurement device range unless an alternative concentration can be demonstrated to better correspond to the level of the applicable emission standard or operational criterion. Alternatively, a high-level value may be used that is higher than the highest measurement device reading that occurred since the last linearity check.

- c. The mid-level measurement values must be at or between 40% and 60% of measurement device range unless an alternative value can be demonstrated to better represent normal source operating levels.
  - d. The low-level measurement values must be at or between 0% and 30% of measurement device range. The value selected must be lower than the lowest value that would be expected to occur under normal source operation conditions. Note that, if zero is used, low-level linearity is not calculated in terms of “% of actual concentration”.
  - e. Thermocouples and recording devices must be calibrated each calendar quarter using NIST procedures, ASTM E220-86(1996)e1 (or the most recent version of the procedures available on the implementation date of this manual), or other procedures approved by the Department. This requirement may be waived provided that the procedures for daily calibration and quarterly linearity check in 1 and 2 above are conducted, or if the thermocouple is of Type R (Platinum-10% Rhodium/Platinum) or S (Platinum-13% Rhodium/Platinum).
- E. Periodic Self-Audits (except opacity). At least once in every four calendar quarters in which the source operates for 168 hours or more, or within 720 source operating hours after the close of such four quarters conduct a System Performance Audit in accordance with the relative accuracy test audit procedures listed in the ‘Performance Testing (Phase II)’ section of this Manual. If the source did not operate at all during an entire calendar quarter, the provisions of the Extended outage/shutdown note, above, apply. When eight consecutive calendar quarters elapse after the last System Performance Audit, a System Performance Audit must be conducted within 720 source operating hours. Notification of System Performance Audit testing must be provided at least 21 days prior to testing. A periodic self-audit conducted for purposes of meeting the requirements of this manual may not be conducted within 6 months of the previous successful periodic self-audit on the same existing, previously approved monitoring system to which no changes have been made.
- F. Periodic Self-Audits (opacity). At least once in every four calendar quarters in which the source operates for 168 hours or more, or within 720 source operating hours after the close of such four quarters conduct a System Performance Audit in accordance with the relative accuracy test audit procedures listed in the ‘Performance Testing (Phase II)’ section of this Manual. If the source did not operate at all during an entire calendar quarter, the provisions of the Extended outage/shutdown note, above, apply. When eight consecutive calendar quarters elapse after the last Opacity Monitoring Relative Accuracy Test Audit, an Opacity Monitoring Relative Accuracy Test Audit must be conducted within 720 source operating hours. Notification of Opacity Monitoring Relative Accuracy Test Audit testing must be provided at least 21 days prior to testing. A periodic self-audit conducted for purposes of meeting the requirements of this manual may not be conducted within 6 months of the previous successful periodic self-audit on the same existing, previously approved monitoring system to which no changes have been made.

#### G. Gas Cylinder Certification

Cylinder gases, except for Zero Air Material, must be in accordance with the requirements specified in the “Reference Gases” section of 40 CFR, Part 75, Appendix A or as specified in an applicable Federal regulation. Additional requirements are:

1. Multicomponent mixtures are acceptable provided that none of the components interferes with the analysis of other components and provided that individual components must not react with each other or with the balance gas.
2. Cylinder gases used to calibrate CEMSs employing critical orifice dilution techniques must be multicomponent mixtures to closely approximate the molecular weight of the actual flue gases being monitored, unless other measures to compensate for molecular weight discrepancies are approved by the Department.
3. Zero Air Materials must be in accordance with the requirements specified in the “Definitions” section of 40 CFR, Part 72 except for the measurement of gases other than SO<sub>2</sub>, NO<sub>x</sub>, Total Hydrocarbons, CO, or CO<sub>2</sub>. The gases must be certified by the vendor to not contain a concentration of the target gas that is within the detection limit of the intended analyzer and must not contain concentrations of other gases that will interfere with or cause the analyzer to measure concentrations of the target gas. Alternative procedures may be utilized if approved by the Department.

#### H. F-factor determination.

1. For CEMSs requiring an F-factor for conversion of monitoring data to units of the applicable standard, published F-factors for uniform fuels (coal, oil, natural gas, etc., not blended) must be used unless fuel sampling and analysis is conducted in order to determine an F-factor for the fuel being burned during the relative accuracy test audit.
2. For non-uniform fuels (culm, black liquor, etc.) daily fuel sampling must be conducted, with samples composited for analysis as follows:
  - a. Initially, analyses are to be conducted every 7 days. If the results of any 7-day analysis indicate a change of more than 5% in the value of the F-factor, the new value must be used for subsequent CEMS data.
  - b. If no analytical results indicate a change of more than 5% in the value of the F-factor for 12 consecutive 7-day periods, the frequency of analysis may be decreased to 30-day.
  - c. If the results of any 30-day analysis indicate a change of more than 5% in the value of the F-factor, the new value must be used for subsequent CEMS data and the frequency of analysis must be increased to 7-day.



## II. Coal Sampling/Analysis Systems

### A. Data Validation Criteria

1. Daily composite unit samples. A daily composite unit sample shall be considered invalid if any of the following conditions occur:
  - a. The sampling/analysis system is not operated in accordance with the performance specifications set forth in this manual.
  - b. The sampling/analysis system is not operated in accordance with the quality assurance criteria of this manual.
  - c. Any combination of sampling/analysis system downtime and monitored unit downtime exceeds six consecutive hours.
  - d. The actual weight of the daily composite unit sample is less than

$$0.75 \bar{F}_{ia} C'_{ia} \text{ lbs}$$

where  $\bar{F}_{ia}$  = average of the actual factors of proportionality for unit i determined during the most recent performance specification test (lbs. sample/lb. fired).

$C'_{ia}$  = weight of coal burned in unit i that day (lbs. fired).

- e. The actual factor of proportionality for the daily composite unit sample is not within  $\pm 20\%$  of the average of the actual factors of proportionality for all valid composite unit samples within the system, unless all valid daily composite unit samples are analyzed individually and results weighted according to the actual amount of coal fired in each unit.
2. Daily Composite System Samples
  - a. A daily composite system sample shall be considered invalid if the total actual valid sample weight is less than

$$0.75 \sum_{i=1}^M (\bar{F}_{ia} C'_{ia}) \text{ lbs}$$

Where  $M$  = number of units within the system

- - 
  3. Laboratory sample analysis. The results of analysis of a laboratory sample shall be considered invalid if any of the following conditions occur:
    - a. The next subsequent calibration check indicates noncompliance with Performance Specification 6 or Performance Specification 8.

- b. The precision of analysis for percent sulfur, dry basis, is not in compliance with Performance Specification 7.
  - c. The precision of analysis for BTU/lb., dry basis, is not in compliance with Performance Specification 9.
- 4. An acceptable quarterly report is not received by the Bureau within 1) 120 days after the end of the calendar quarter represented thereby, 2) within 30 days after official notification by the Bureau that certain data in a previously-acceptable report are not accurate, or 3) within 30 days after official notification by the Bureau that a resubmittal submitted to resolve self-discovered inaccuracies is not acceptable. In such cases, the Bureau will process data for the affected quarter as if such data were received on the day following the 120-day or 30-day period, as applicable, with data for every hour identified as invalid. In addition, such non-reception will be considered a failure to satisfy the requirements in 25 Pa. Code § 139.101(5) and will be treated as a “High Priority Violation” (“HPV”) as defined in the U.S. Environmental Protection’s HPV Policy (effective date, April 1999) per general HPV Criteria 7 which indicates that “...violations that involve testing, monitoring, record-keeping, or reporting that substantially interfere with enforcement or determining the source’s compliance with applicable emission limits...” trigger HPV status.

B. Data Reduction Procedure

- 1. All data averages must be calculated using valid data only.
- 2. A daily average shall be considered valid if all of the data validation criteria above are complied with.
- 3. A running 30-day average shall be considered valid if it contains at least 23 valid daily averages.

C. Maintenance Requirements

- 1. Sulfur analyzer maintenance
  - a. Conduct the test for linearity, as specified in item III.B.6 of the “Performance Testing” section of this manual, immediately following any corrective maintenance to the sulfur analyzer.
- 2. Calorimeter Maintenance
  - a. Conduct standardization of the calorimeter water equivalent, in accordance with ASTM D2015-77(78), Section 6 (or the most recent version of the procedure available on the implementation date of this manual), immediately following any corrective maintenance to the calorimeter.

3. Sample Acquisition Maintenance

- a. Conduct tests, as specified in items III.B.1, III.B.2, III.B.3, and III.B.4 of the “Performance Testing” section of this manual, immediately following any corrective maintenance to the point of sample acquisition.

4. Sample Preparation Maintenance

- a. Conduct tests, as specified in item III.B.5 of the “Performance Testing” section of this manual, immediately following any corrective maintenance on equipment used in sample preparation.

D. Periodic Recalibration

1. Quarterly Recalibration

Performance specification tests, as specified in items III.B.1 through III.B.11 of the “Performance Testing” section of this manual, must be conducted at least once each calendar quarter in which the source operates for 168 hours or more. If three consecutive calendar quarters elapse after the last Performance Testing was performed, the Performance Testing must be performed during the next calendar quarter. If four calendar quarters elapse after the last linearity testing, the Department’s approval of the affected coal sampling and analysis system(s) will be rescinded in accordance with 25 PA Code, Chapter 139, Section 139.101(9). In order to request approval of the affected coal sampling and analysis system(s) after such rescission, a new Phase I monitoring plan must be submitted in accordance with all then-applicable requirements.

- E. Periodic Self-Audits (CSASs used to provide emission data). At least once in every four calendar quarters in which the source operates for 168 hours or more, or within 720 source operating hours after the close of such four quarters conduct a System Performance Audit in accordance with the procedures in item III.B.12 of the “Performance Testing (Phase II)” section of the Manual. If the source did not operate at all during the calendar quarter, the provisions of the Extended outage/shutdown note, above, apply. When eight consecutive calendar quarters elapse after the last System Performance Audit, a System Performance Audit must be conducted within 720 source operating hours. Notification of System Performance Audit testing must be provided at least 21 days prior to testing. A periodic self-audit conducted for purposes of meeting the requirements of this manual may not be conducted within 6 months of a previous successful periodic self-audit on the same existing, previously approved monitoring system to which no changes have been made. The final report of testing must be submitted to the Department no later than two months after completion of testing.

### III. “Stack” Flow and Temperature Monitoring Systems

#### A. Data Validation Criteria

1. Data must be considered invalid if any of the following conditions occur:
  - a. The monitoring system is not operated in accordance with the performance specifications in this manual.
  - b. The monitoring system is not operated in accordance with the quality assurance criteria in the approved initial application (Phase I) or in this manual.
  - c. Any portion of the monitoring system is inoperative.
  - d. The results of a zero or upscale daily calibration error check for any measurement device exceeds twice the applicable calibration error performance specification as indicated in this manual, or a flow interference check for any measurement device exceeds the performance specification for “checking pressure lines/detectors” or “back purging/build up checks”. Data is considered invalid from the time of the failed zero or upscale daily calibration error check or flow interference check until the successful completion of a zero and upscale calibration error check or flow interference check, as applicable. Sources may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
  - e. A zero or upscale calibration error check for a measurement device is not conducted during or before the 26th hour following a successful zero or upscale calibration error check, except that if the process has been out of operation for at least one complete clock hour during the time period from the 19th clock hour through the 26th clock hour following the previous successful zero or upscale calibration error check, successful zero and upscale calibration error checks are required to be conducted within 8 process operating hours following startup. Data is considered invalid starting with the 27th hour following the previous successful zero or upscale calibration error check or the 9th process operating hour following startup (as applicable) and until completion of successful zero and upscale calibration error checks.
  - f. The monitored process is not operating and/or not emitting the pollutant of interest.
  - g. The results of the required quarterly linearity check (only for temperature monitoring systems) or quarterly leak check, as appropriate, for any measurement device range at any calibration level exceed the applicable performance standard or the linearity check or leak check is aborted due to a problem with the measurement device or monitoring system. Data are considered invalid from the time the failed test is completed or aborted until

successful completion of a linearity check or leak check, as appropriate, following corrective action and/or measurement device repair.

- h. The required linearity check (only for temperature monitoring systems) is not conducted in accordance with the “quarterly linearity check” requirements below. Data is considered invalid from the hour following the last hour meeting the “quarterly linearity check” requirements below and until completion of a successful linearity check.
- i. For measurement devices not undergoing daily calibration or quarterly linearity checks (the linearity requirement is applicable only to temperature monitoring systems), if the quarterly calibration, conducted in accordance with the procedures in D.3 below, shows error in excess of the linearity performance specification, data is considered invalid for the entire time the measurement/readout device was used prior to the calibration and subsequent to a previously conducted successful calibration.
- j. The results of a periodic self-audit exceed the applicable performance standard or the periodic self-audit is aborted due to a problem with the monitoring system. If the periodic self-audit is aborted due to a problem with the monitoring system, monitoring system data are considered invalid starting from the time the self-audit is aborted. If a failed periodic self-audit is conducted using reference test methodology that provides on-site data, monitoring system data are considered invalid starting from the time the failed periodic self-audit is completed. If a failed periodic self-audit is conducted using reference test methodology that does not provide on-site data, monitoring system data are considered invalid starting from the time results of the failed periodic self-audit are received by the company or the first hour of the fifteenth day following the day of completion of the self-audit, whichever is earlier. Once considered invalid, monitoring system data remain invalid until either successful completion of a periodic self-audit or successful completion of a test for linearity conducted prior to such successful periodic self-audit (provided no corrective maintenance is conducted on the monitoring system during the intervening time period).
- k. A periodic self-audit is not conducted in accordance with the provisions of either E or F, below (as applicable). Data is considered invalid from the hour following the last hour meeting the requirements in either E or F, below (as applicable) and until completion of a successful periodic self-audit.
- l. An acceptable quarterly report is not received by the Bureau within
  - 1) 120 days after the end of the calendar quarter represented thereby,
  - 2) within 30 days after official notification by the Bureau that certain data in a previously-acceptable report are not accurate, or
  - 3) within 30 days after official notification by the Bureau that a resubmittal submitted to resolve self-discovered inaccuracies is not acceptable.In such cases, the Bureau will process data for the affected quarter as if such data were received on the day following the 120-day or 30-day period, as applicable, with data for

every hour identified as invalid. In addition, such non-reception will be considered a failure to satisfy the requirements in 25 Pa. Code § 139.101(5) and will be treated as a “High Priority Violation” (“HPV”) as defined in the U.S. Environmental Protection’s HPV Policy (effective date, April 1999) per general HPV Criteria 7 which indicates that “...violations that involve testing, monitoring, record-keeping, or reporting that substantially interfere with enforcement or determining the source’s compliance with applicable emission limits...” trigger HPV status.

B. Data Reduction Criteria. The data reduction criteria of I.B, above, apply.

C. Component Maintenance or Replacement

1. Maintenance

- a. Zero and upscale calibration error checks should be conducted immediately prior to any maintenance, if possible.
- b. Zero and upscale calibration error checks must be conducted immediately following any maintenance.
- c. If the post-maintenance zero or upscale calibration error checks show calibration error in excess of twice the applicable performance specifications, recalibration must be conducted in accordance with the quarterly linearity check procedures in D.2. below. Measurement devices may be calibrated in-situ.

2. Addition or Replacement

Whenever the owner or operator makes a replacement, modification, or change in an approved CEMS that may significantly affect the ability of the system to accurately measure or record results in terms of the applicable emission standard or process operational criterion, the owner or operator shall obtain Department approval of the altered CEMS or continuous opacity monitoring system, according to the procedures in this paragraph. Furthermore, whenever the owner or operator makes a replacement, modification, or change to the flue gas handling system or the unit operation that may significantly change the flow or concentration profile, the owner or operator shall obtain Department approval for use of the monitoring system under such altered conditions according to the procedures in this paragraph. Examples of changes which require recertification include: replacement of the analyzer; change in location or orientation of the sampling probe or site; and complete replacement of an existing continuous emission monitoring system. Additional guidance is located in Attachment No. 5 of this manual. Note that Attachment No. 5 is presented for guidance purposes only and is not intended to be all-inclusive. Contact the Department for specific guidance if addition or replacement is not specifically addressed in Attachment No. 5.

- a. Scheduled addition of or replacement of components or software programs with components or software programs of different makes or models will

normally require submittal of a revised Phase I application prior to such change and successful completion of performance testing (upon approval of the Phase I application by the Department) prior to use of data from the monitoring system. Unscheduled addition of or replacement of components or software programs with components or software programs of different makes or models will normally require successful completion of performance testing prior to use of data from the monitoring system and submittal of a revised Phase I application as soon as possible after such addition or replacement. Contact the Department for specific instructions if the situation is not specifically addressed in Attachment No. 5.

- b. Addition of or replacement of components or software programs with like makes and models may require 1) submittal of a revised Phase I application as soon as possible after such addition or replacement, and 2) successful completion of performance testing prior to use of data from the monitoring system. Contact the Department for specific instructions if the specific situation is not addressed in Attachment No. 5.
- c. Replacement, modification, or change to the flue gas handling system or the unit operation that may significantly change the flow or concentration profile requires submittal of a revised Phase I application prior to such change and successful completion of relative accuracy testing after such change (upon approval of the Phase I application by the Department).

D. Periodic calibration

- 1. Daily calibration. For thermocouples, this requirement may be waived provided that quarterly recalibration is conducted in accordance with the procedures specified in 3 below.
  - a. Calibration must be conducted at least daily for determination of measurement device zero and upscale calibration error on all measurement device ranges.
  - b. Simulated measurement signals must be applied as close as possible to the point of measurement device signal generation.
  - c. The monitoring system must be adjusted whenever the zero or upscale calibration error performance specifications are exceeded.
  - d. The zero calibration error check must be conducted at a measurement level at or between 0% and 30% of measurement device range. The value selected must be lower than the lowest value that would be expected to occur under normal source operating conditions.
  - e. The upscale calibration error check must be conducted at a measurement level at or between 40% and 100% of measurement device range unless an alternative concentration can be demonstrated to better represent normal source operating levels.

- f. For determination of compliance with “stack” flow measurement device installation specifications for “checking pressure lines/detectors” and “back purging/build up checks”, conduct the Flow Interference Check in accordance with the procedures specified in the “Daily Flow Interference Check” section of 40 CFR, Part 75, Appendix B at least daily for each “stack” flow measurement device.
- 2. Quarterly linearity check (only for temperature monitoring systems). This requirement may be waived provided that quarterly recalibration is conducted in accordance with the procedures specified in 3 below.
  - a. Conduct the test for linearity on each range of each measurement device in accordance with the procedures specified in the “Linearity Check” section of 40 CFR, Part 75, Appendix A (except that the test must be conducted on all ranges of each measurement device, no adjustments of the measurement device are permitted during the test period, and the requirements for calibration levels, data validation, and acceptability shall be as specified in this Manual) at least once during each calendar quarter in which the source operates for 168 hours or more, or within 168 source operating hours after the close of such quarter (if source did not operate at all during the calendar quarter, the provisions of the Extended outage/shutdown note, above, apply), except that if four consecutive calendar quarters elapse after the last linearity testing was performed, the test for linearity must be performed within 168 source operating hours.
  - b. The high-level measurement values must be at or between 80% and 100% of measurement device range unless an alternative concentration can be demonstrated to better correspond to the level of the applicable emission standard or operational criterion. Alternatively, a high-level value may be used that is higher than the highest measurement device reading that occurred since the last linearity check.
  - c. The mid-level measurement values used must be at or between 40% and 60% of measurement device range unless an alternative value can be demonstrated to better represent normal source operating levels.
  - d. The low-level measurement values used must be at or between 0% and 30% of measurement device range. The value selected must be lower than the lowest value that would be expected to occur under normal source operation conditions.
- 3. For determination of compliance with “stack” flow measurement device installation specifications for “leak checks”, conduct the Leak Check in accordance with the procedures specified in the “Leak Check” section of 40 CFR, Part 75, Appendix B at least once each calendar quarter for each “stack” flow measurement device, as appropriate (except that data validation procedures must be in accordance with the requirements of this manual).



4. Thermocouples, other measurement devices and recording devices must be calibrated each calendar quarter using NIST procedures, ASTM E220-86(1996)e1 (or the most recent version of the procedure available on the implementation date of this manual), or other procedures approved by the Department. This requirement may be waived provided that the procedures for daily calibration and quarterly linearity check in 1 and 2 above are conducted, or if the thermocouple is of Type R (Platinum-10% Rhodium/Platinum) or S (Platinum-13% Rhodium/Platinum).
- E. Periodic Self-Audits for “Stack” Flow Monitoring Systems. At least once every four calendar quarters in which the source operates for 168 hours or more, or within 720 source operating hours after the close of such four quarters conduct a System Performance Audit in accordance with the relative accuracy test audit procedures listed in the “Performance Testing (Phase II)” section of this Manual. If the source did not operate at all during the calendar quarter, the provisions of the Extended outage/shutdown note, above, apply. When eight consecutive calendar quarters elapse after the last System Performance Audit, a System Performance Audit must be conducted within 720 source operating hours. Notification of testing must be provided at least 21 days prior to testing. A periodic self-audit conducted for purposes of meeting the requirements of this manual may not be conducted within 6 months of a previous successful periodic self-audit on the same existing, previously approved monitoring system to which no changes have been made. The final report of testing must be submitted to the Department no later than two months after completion of testing.

## MAJOR CHANGES TO CEM MANUAL FROM REVISION 7 TO REVISION 8

### INTRODUCTION

- Added an explanatory note concerning the terminology change to Part 75 definitions of “Relative Accuracy Test Audit”, “Linearity”, “Calibration Error”, and “Cycle Time”. Throughout the manual terminology has been revised to reflect this change.

### SUBMITTAL AND APPROVAL

- Added a paragraph addressing changes to process operational conditions that could require additional monitoring approvals.

### INITIAL APPLICATION (PHASE I)

- Added a requirement to explain deviations from 40 CFR, Part 60 location requirements.
- Added an explanation of how to calculate the “equivalent reading at the level of the monitored emission standard(s)” to be used in the calculation of measurement device calibration error.
- Added language indicating that if a submittal represents a revision of a previously approved submittal, only such hardcopy information that represents a change from the previously approved submittal need be submitted (in addition to all required electronic monitoring plan records).
- Changed referenced ASTMs to the most recent version of the procedure available on the implementation date of the manual.

### TABLE I

- Changed the design reference to D6216 or the most recent version of the procedure available on the implementation date of the manual.
- Added a footnote to the schedule for zero and calibration checks to be conducted in accordance with the data validation requirements of the Quality Assurance section of the manual.

### TABLE II

- The table now includes requirements for “Highest” and “Optional Lower” range(s), including a footnote cautioning against the use of unnecessarily high ranges.
- Added a footnote to the relative accuracy specification to remind sources that they may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- Removed the asterisk from the linearity and calibration error specifications, thereby dropping the requirement to use the 95% confidence coefficient in the calculation.

- Added a footnote to the linearity specification to remind sources that they may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- Eliminated requirements for 2-hr drift.
- Removed the reference that data recorder resolution and number of cycles per hour must meet the most stringent requirements of other analyzers in CEMS (except temperature).
- Added a footnote to explain that for measurement device ranges not used to determine compliance with emission standards for a single source combination (as opposed to emission standards for the facility), the specification shall be the equivalent, in device units of measurement, of 2.5% of the measurement device range.
- Added a footnote to the calibration error specification that reminds sources that they may petition the Department to use either a more stringent applicable Federal requirement or a less stringent applicable Federal requirement with proper justification.
- Added an alternative 2.0-ppm calibration error specification and language that allows application of an alternative, more stringent Federal specification.
- Added a footnote to the cycle time specification to remind sources that they may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- Added a footnote to the schedule for zero and calibration checks to indicate that they must be conducted in accordance with the data validation requirements of the Quality Assurance section of the manual.

#### TABLE III

- Added a footnote to the relative accuracy specification to remind sources that they may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- Removed the asterisk from the linearity and calibration error specifications, thereby dropping the requirement to use the 95% confidence coefficient in the calculation.
- Added a footnote to the linearity specification to remind sources that they may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- Added a footnote to the calibration error specification that reminds sources that they may petition the Department to use either a more stringent applicable Federal requirement or a less stringent applicable Federal requirement with proper justification.
- Removed the reference that data recorder resolution and number of cycles per hour must meet the most stringent requirements of other analyzers in CEMS (except temperature).

- Added a footnote to the cycle time specification to remind sources that they may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- Added a footnote to the schedule for zero and calibration checks to indicate that they must be conducted in accordance with the data validation requirements of the Quality Assurance section of the manual.

#### TABLE IV

- The table now includes requirements for “Highest” and “Optional Lower” range(s), including a footnote cautioning against the use of unnecessarily high ranges.
- Added a footnote to the relative accuracy specification to remind sources that they may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- Removed the asterisk from the linearity and calibration error specifications, thereby dropping the requirement to use the 95% confidence coefficient in the calculation.
- Added a footnote to the linearity specification to remind sources that they may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- Eliminated requirements for 2-hr drift.
- Removed the reference that data recorder resolution and number of cycles per hour must meet the most stringent requirements of other analyzers in CEMS (except temperature).
- Added a footnote to explain that for measurement device ranges not used to determine compliance with emission standards for a single source combination (as opposed to emission standards for the facility), the specification shall be the equivalent, in device units of measurement, of 2.5% of the measurement device range.
- Added a footnote to the calibration error specification that reminds sources that they may petition the Department to use either a more stringent applicable Federal requirement or a less stringent applicable Federal requirement with proper justification.
- Added an alternative 2.0-ppm calibration error specification and language that allows application of an alternative, more stringent Federal specification.
- Added a footnote to the cycle time specification to remind sources that they may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- Added a footnote to the schedule for zero and calibration checks to indicate that they must be conducted in accordance with the data validation requirements of the Quality Assurance section of the manual.

TABLE V

- The table now includes requirements for “Highest” and “Optional Lower” range(s), including a footnote cautioning against the use of unnecessarily high ranges.
- Added a footnote to the relative accuracy specification to remind sources that they may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- Removed the asterisk from the linearity and calibration error specifications, thereby dropping the requirement to use the 95% confidence coefficient in the calculation.
- Added a footnote to the linearity specification to remind sources that they may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- Eliminated requirements for 2-hr drift.
- Removed the reference that data recorder resolution and number of cycles per hour must meet the most stringent requirements of other analyzers in CEMS (except temperature).
- Added a footnote to explain that for measurement device ranges not used to determine compliance with emission standards for a single source combination (as opposed to emission standards for the facility), the specification shall be the equivalent, in device units of measurement, of 2.5% of the measurement device range.
- Added a footnote to the calibration error specification that reminds sources that they may petition the Department to use either a more stringent applicable Federal requirement or a less stringent applicable Federal requirement with proper justification.
- Added an alternative 2.0-ppm calibration error specification and language that allows application of an alternative, more stringent Federal specification.
- Added a footnote to the cycle time specification to remind sources that they may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- Added a footnote to the schedule for zero and calibration checks to indicate that they must be conducted in accordance with the data validation requirements of the Quality Assurance section of the manual.

TABLE VI

- The table now includes requirements for “Highest” and “Optional Lower” range(s), including a footnote cautioning against the use of unnecessarily high ranges.
- Changed the Data recorder resolution (minutes) specification from 5 to 15.
- Changed the Number of cycles per hour (meas. and record.) specification from 12 to 4.

- Added a footnote to the relative accuracy specification to remind sources that they may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- Removed the asterisk from the linearity and calibration error specifications, thereby dropping the requirement to use the 95% confidence coefficient in the calculation.
- Added a footnote to the linearity specification to remind sources that they may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- Eliminated requirements for 2-hr drift.
- Removed the reference that data recorder resolution and number of cycles per hour must meet the most stringent requirements of other analyzers in CEMS (except temperature).
- Added a footnote to explain that for measurement device ranges not used to determine compliance with emission standards, the specification shall be the equivalent, in device units of measurement, of 2.5% of the measurement device range.
- Added a footnote to the calibration error specification that reminds sources that they may petition the Department to use either a more stringent applicable Federal requirement or a less stringent applicable Federal requirement with proper justification.
- Added an alternative 2.0-ppm calibration error specification and language that allows application of an alternative, more stringent Federal specification.
- Added a footnote to the cycle time specification to remind sources that they may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).

#### TABLE VIII

- Added language to indicate that the standardization, calorimeter water equivalent must comply with ASTM D2015-77(78), Section 6 or the most recent version of the procedure available on the implementation date of the manual.

#### TABLE IX

- Added a footnote to the relative accuracy specification to remind sources that they may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- Added alternative relative accuracy specifications in terms of “% of reference method” and “units of standard in fps”.
- Removed the asterisk from the calibration error specifications, thereby dropping the requirement to use the 95% confidence coefficient in the calculation.

- Removed the reference that data recorder resolution and number of cycles per hour must meet the most stringent requirements of other analyzers in CEMS (except temperature).
- Added a footnote to the calibration error specification that reminds sources that they may petition the Department to use either a more stringent applicable Federal requirement or a less stringent applicable Federal requirement with proper justification.
- Added language that allows application of an alternative, more stringent Federal specification.
- Added a footnote to the cycle time specification to remind sources that they may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- Added a footnote to the schedule for zero and calibration checks to indicate that they must be conducted in accordance with the data validation requirements of the Quality Assurance section of the manual.

TABLE X

- Added a specification for “Data recorder resolution (minutes)”
- Changed the “Number of cycles per minute (measurement)” specification from 60 to 12.
- Clarified that the “Number of cycles per minute (recording)” specification is “1”, not “1.0”.
- Added “+” to the linearity performance specification.
- Removed the asterisk from the linearity and calibration error specifications, thereby dropping the requirement to use the 95% confidence coefficient in the calculation.
- Eliminated requirements for 2-hr drift.
- Added a footnote to the schedule for zero and calibration checks to indicate that they must be conducted in accordance with the data validation requirements of the Quality Assurance section of the manual.

TABLE XI

- The table now includes requirements for “Highest” and “Optional Lower” range(s), including a footnote cautioning against the use of unnecessarily high ranges.
- Added specifications for “Temperature range for all components of FID used to measure total hydrocarbons (deg F)” and “Minimum temperature for all components of GC used to measure gaseous organic compounds (deg C)”.
- Added a footnote to the relative accuracy specification to remind sources that they may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).

- Removed the asterisk from the linearity and calibration error specifications, thereby dropping the requirement to use the 95% confidence coefficient in the calculation.
- Added a footnote to the linearity specification to remind sources that they may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- Eliminated requirements for 2-hr drift.
- Removed the reference that data recorder resolution and number of cycles per hour must meet the most stringent requirements of other analyzers in CEMS (except temperature).
- Added a footnote to explain that for measurement device ranges not used to determine compliance with emission standards for a single source combination (as opposed to emission standards for the facility), the specification shall be the equivalent, in device units of measurement, of 2.5% of the measurement device range.
- Added a footnote to the calibration error specification that reminds sources that they may petition the Department to use either a more stringent applicable Federal requirement or a less stringent applicable Federal requirement with proper justification.
- Added an alternative 2.0-ppm calibration error specification and language that allows application of an alternative, more stringent Federal specification.
- Added a footnote to the cycle time specification to remind sources that they may petition the Department to use a more stringent applicable Federal requirement (in order to maintain consistency between data considered invalid by multiple agency programs).
- Added a footnote to the schedule for zero and calibration checks to indicate that they must be conducted in accordance with the data validation requirements of the Quality Assurance section of the manual.

TABLE XII

- The table now includes requirements for “Highest” and “Optional Lower” range(s), including a footnote cautioning against the use of unnecessarily high ranges.
- Removed the asterisk from the linearity and calibration error specifications, thereby dropping the requirement to use the 95% confidence coefficient in the calculation.
- Removed the reference that data recorder resolution and number of cycles per hour must meet the most stringent requirements of other analyzers in CEMS (except temperature).
- Added a footnote to explain that for measurement device ranges not used to determine compliance with emission standards for a single source combination (as opposed to emission standards for the facility), the specification shall be the equivalent, in device units of measurement, of 2.5% of the measurement device range.



- Added an alternative 2.0-ppm calibration error specification and language that allows application of an alternative, more stringent Federal specification.
- Added a footnote to the schedule for zero and calibration checks to indicate that they must be conducted in accordance with the data validation requirements of the Quality Assurance section of the manual.

## PERFORMANCE TESTING (PHASE II)

- Added language to remind sources that they may petition the Department to use a more stringent applicable Federal requirement for agency notification (in order to maintain consistency between requirements of multiple agency programs) and/or petition the Department to use a more stringent applicable Federal requirement for time allowed for test completion (in order to maintain consistency between requirements of multiple agency programs).
- Changed the language for performance specification testing to be more consistent with Federal requirements.
- Added language indicating that electronic data records 844, "Certification Report CEMS Test Completion Date" and 848, "Certification Report Analyzer Test Completion Date" (as specified in Attachment No. 3) must be submitted within 10 days of completion of applicable testing.
- Changed referenced ASTMs in the Coal Sampling/Analysis Systems section to the most recent version of the procedure available on the implementation date of the manual.

## FINAL APPROVAL

- Added language to remind sources that they may petition the Department to use a more stringent applicable Federal requirement for report submittal deadline (in order to maintain consistency between requirements of multiple agency programs).
- Updated the language with respect to Federal references for information to be reported.
- Added language that documentation that no unscheduled maintenance was conducted for at least 168 continuous hours was added.

## RECORD KEEPING AND REPORTING

- Added a note to explain the reporting of "substitute" data for affected sources.
- Added a note to explain when use of Monitoring Code "13" is allowed.
- Added a note to explain the use of "allowable emissions" reports.
- Added language to explain information to be reported relative to tests, audits, and recalibrations.
- Added language to remind sources that delinquency penalties may apply if reports are not submitted in a timely manner.

- Added language to explain report timeliness issues and consequences.

## QUALITY ASSURANCE

- Changed requirements for addressing “infrequent operation/extended outage/shutdown”.
- Added a note to address provisional validation of data.
- Added a note to address substitute data for “Default Value”, “Diluent Cap”, or “Over-scaling” purposes.
- Changed language to make data validation provisions more consistent with Federal requirements.
- Added language to explain invalidation of data by the Bureau if reports not submitted in a timely manner.
- Changed language to make data reduction provisions more consistent with Federal requirements.
- Changed language with respect to notifications and testing required due to component maintenance or replacement.
- Added a note to remind sources that they may petition the Department to use Federal calibration level requirements rather than those listed, with proper justification.
- Added notes to remind sources that they may petition the Department to use more stringent applicable Federal daily calibration error check or linearity procedure requirements than that listed, with proper justification.
- Changed referenced ASTMs to the most recent version of the procedure available on the implementation date of the manual.
- Removed language relative to opacity monitors installed or replaced after April 1, 2000 since any related requirements applied to manufacturers rather than users.
- Moved language relative to zero gas materials from individual calibration range specifications to a separate section.
- Changed language to make provisions for “operating hours exemptions” and “grace periods” more consistent with Federal requirements.
- Added language relative to determination of compliance with “stack” flow measurement device installation specifications for “leak checks”.

## APPENDIX

- Renamed Attachment No. 2 as “Reserved”.
- Added a listing for Attachment No. 5 - Recertification Guidance.

### ATTACHMENT NO. 3

- Replaced old Attachment No. 3 with new PA EDR Record specifications.

### ATTACHMENT NO. 5

- Added Attachment No. 5 - Recertification Guidance.

## ATTACHMENT NO. 1

### APPENDIX

- Attachment No. 1 - “Standards of Performance for New Stationary Sources,” 40 CFR, Chapter I, Subchapter C, Part 60, Performance Specification 1
- Attachment No. 2 - Reserved
- Attachment No. 3 - Standard Electronic Data Reporting Formats
- Attachment No. 4 - Data Telemetry Protocol
- Attachment No. 5 - Recertification Guidance

**“Standards of Performance for New Stationary Sources,” 40 CFR, Chapter I, Subchapter C, Part 60, Performance Specification 1** may be obtained from the U.S. Government Printing Office, Superintendent of Documents, Mail Stop: SSOP, Washington, DC 20402-2938, or via the Internet from the National Archives and Records Administration at [www.access.gpo.gov/nara/cfr/cfr-table-search.html](http://www.access.gpo.gov/nara/cfr/cfr-table-search.html).

## **ATTACHMENT NO. 2**

Reserved

**ATTACHMENT NO. 3**

**PA EDR VERSION 2.00  
RECORD TYPE FORMATS AND  
REPORTING INSTRUCTIONS**

## I. INTRODUCTION

The purpose of this attachment is to provide the necessary information for owners and operators to meet reporting requirements for monitoring systems required to be installed and operated by the Pennsylvania Department of Environmental Protection, Bureau of Air Quality (PADEP, BAQ). These instructions apply to all EDR submissions from units affected including:

1) monitoring plan information, 2) test protocol information, 3) certification report information, and 4) quarterly emissions data report information.

This attachment specifies and explains the specific formats and reporting requirements as referenced in the applicable regulations and guidance documents. Owners or operators of sources subject to the PADEP BAQ CEMS Program should use this attachment in conjunction with the applicable regulations and guidance documents.

### **Organization of the Instructions**

**Section II** provides general information on PA EDR v2.00. This general information is relevant to all submittals using the PA EDR v2.00 format.

**Section III** provides specific information on each record type in numerical record type order.

**Section IV** is a guideline for determining which record types to include in an EDR submission.

## II. GENERAL INSTRUCTIONS

### A. EDR Record Structures

Information in section III, below, for each record type, provides the record structures that define the order, length, and placement of information within the EDR submittal or “file.” All EDR submittal files must be in ASCII text format. Section III, below, provides the Record Type, Type Code, Start Column, Data Element Description, Units, Range, Length, and Fortran (FTN) Format for each data element in the electronic report. A detailed explanation of the information follows:

**Record Type** describes the type of information contained in the record.

**Type Code** is the three-digit code for identifying the Record Type.

**Start Column** indicates the column in which the data element begins.

**Data Element Description** provides a text description of the data element.

**Units** indicates the units of measure in which the value is reported (e.g., ppm for NO<sub>x</sub> concentration data). Where applicable, the units column specifies how to format the data (e.g., YYYYMMDD).

**Range** provides information, where applicable, on the acceptable lower and upper values or acceptable codes for the data element.

**Length** indicates the number of columns designated for the data element.

**Format** specifies the type of data and Fortran (FTN) format that should be used for the data element. There are three data types: “I” for integer, “A” for alphanumeric, and “F” for fixed decimal point. A format of “I3” indicates that the data will be an integer of up to three digits. A data element with an “I” format should never contain a decimal point, and all data elements requiring an “I” format must be right-justified. Right-justification ensures that leading zeros are not necessary; instead, these spaces should be left blank. “A3” indicates an alphanumeric data element containing up to three characters, which may be either alphabetic or numeric and is left-justified. “F5.1” indicates a numeric field, five columns wide, with one numeral to the right of the decimal point. A decimal point (.) must be included in all data elements requiring an “F” format (fixed decimal point format). In addition, all data elements requiring an “F” format must be decimally-justified. In other words, the decimal point must be placed to allow the correct number of columns to the right of the decimal point. Decimal-justification ensures that leading zeros are not necessary; instead, these spaces should be left blank. For decimal-justified numbers of less than 1, a single zero to the left of the decimal point must be included.

**Total Record Length** indicates the total number of assigned spaces (columns) for all required data elements in a specific record type (e.g., for RT 807, “TEST PROTOCOL CEMSs TO BE TESTED”, each record will appear as a single line, 27 columns in length). See Illustration 1 below for an example record structure. Each record (line) must begin with the three-digit “Record Type Code,” followed by the associated data elements for the record type. The Record Type Code is a number that DEP has assigned to label a category of information to be reported. The Record Structure for each record type provides the location of each data element within the record. The example in Illustration 1 shows the record structure for RT 807, “TEST PROTOCOL CEMSs TO BE TESTED.”

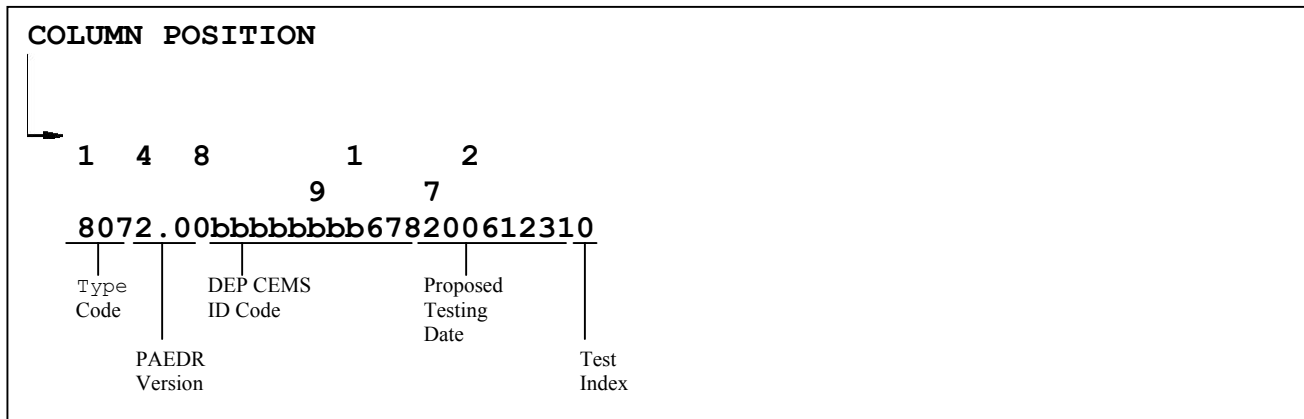
Illustration 1: Example Record Structure For Record Type 807

TEST PROTOCOL CEMSs TO BE TESTED (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Test Protocol CEMSs to be tested (submit records as necessary to identify all CEMSs to which testing protocol applies (for submittals containing a testing protocol))	807	1	Record Type Code		807	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	DEP CEMS ID code			11	I11
		19	Proposed testing date	YYYYMMDD		8	A8
		27	Test index		*	1	I1
	Total Record Length 27						
	Test index 0 through 9 - Assign as necessary to uniquely identify testing conducted on the same date by different testing firms						



Illustration 2, below, presents an example line of TEST PROTOCOL CEMSs TO BE TESTED data (RT 807). The top line of numbers indicates the starting column position for each data element. The second line of numbers represents one record of TEST PROTOCOL CEMSs TO BE TESTED data, as the data would appear in an electronic file, (where “b” indicates a blank space).

### EXAMPLE DATA FOR RECORD TYPE 807



## B. File Organization and Ordering

### (1) File Content

For data submitted in EDR format, information for separate facilities must be submitted in separate files, (e.g., one file would be submitted for Plant A and a separate file would be submitted for Plant B).

Section IV of these instructions specifies which record types must be reported in each of the four types of EDR submittals (i.e., monitoring plan submittals, test protocol submittals, certification/recertification reports, and quarterly emissions reports). Illustration 3 below shows an example file summary for a quarterly emissions report.

## (2) Record Order

RTs 801 and 802 must appear first in any electronic submission. Following these records, order all records in the quarterly report file first by record type code, then in accordance with the following:

**(a) Monitoring Plan Submittals**

Source Combination ID Code, then Emission Result ID Code, then CEMS ID Code, then Analyzer ID Code.

### (b) Test Protocol Submittals

Proposed testing date, then CEMS ID Code.

**(c) Certification/Recertification Submittals**

Date of Test Completion, then Test ID, then CEMS ID Code, then Analyzer ID Code.

**(d) Quarterly Data Submittals**

Emission Result ID Code, then Date (or Date of Test Completion), then Hour.

Illustration 2: Example Summary of Quarterly Emissions Data Report

**EXAMPLE SUMMARY OF QUARTERLY EMISSIONS DATA REPORT SUBMITTAL FOR FACILITY WITH TWO SOURCES WITH EACH SOURCE HAVING THREE EMISSION RESULTS (GAS /w two analyzers, OPACITY /w one analyzer, AND TEMPERATURE /w one analyzer - SIX TOTAL EMISSION RESULTS FOR THE FACILITY, EIGHT ANALYZERS TOTAL FOR THE FACILITY)**

**RECORDSET SUBMITTER INFORMATION**

*Type 801 Record (Recordset Submitter Information I)*

*Type 802 Record (Recordset Submitter Information II)*

**EMISSIONS DATA REPORT CONTENTS**

*Type 880 Records (Data Report Contents)*

*(Record for first Emission Result)*

*(Record for second Emission Result)*

*(Record for third Emission Result)*

*(Record for fourth Emission Result)*

*(Record for fifth Emission Result)*

*(Record for sixth Emission Result)*

**HOURLY AVERAGES**

*Type 884 Records (Data Report Hourly Average Monitoring Data)*

*(Records for first Emission Result by date and hour)*

*(Records for second Emission Result by date and hour)*

*(Records for third Emission Result by date and hour)*

*(Records for fourth Emission Result by date and hour)*

*(Records for fifth Emission Result by date and hour)*

*(Records for sixth Emission Result by date and hour)*

**CALIBRATION ERROR RESULTS**

*Type 888 Records (Data Report Linearity Results)*

*(Records for first Analyzer for first Emission Result by Date of Test Completion, Test ID, and Range)*

*(Records for second Analyzer for first Emission Result by Date of Test Completion, Test ID, and Range)*

*(Records for Analyzer for second Emission Result by Date of Test Completion, Test ID, and Range)*

*(Records for Analyzer for third Emission Result by Date of Test Completion, Test ID, and Range)*

*(Records for first Analyzer for fourth Emission Result by Date of Test Completion, Test ID, and Range)*

*(Records for second Analyzer for fourth Emission Result by Date of Test Completion, Test ID, and Range)*

*(Records for Analyzer for fifth Emission Result by Date of Test Completion, Test ID, and Range)*

*(Records for Analyzer for sixth Emission Result by Date of Test Completion, Test ID, and Range)*

## **OPACITY EXCESS EMISSION DATA**

**Type 892 Records** *(Data Report Opacity Excess Emission Data)*

*(Records for second Emission Result by Date and Hour)*

*(Records for fifth Emission Result by Date and Hour)*

## **LOW TEMPERATURE DATA**

**Type 896 Records** *(Data Report Low Temperature Data)*

*(Records for third Emission Result by Date and Hour)*

*(Records for sixth Emission Result by Date and Hour)*

### **C. General EDR Instructions**

#### **(1) Definition of Reporting Period**

Throughout these instructions, the terms “quarterly report” and “quarterly emissions file” are used to describe the required data submittals. In other places, the term “reporting period” is used. For purposes of meeting PA DEP monitoring requirements, all sources are required to report emissions data on a year-round basis. There are four reporting periods in each calendar year, corresponding to the four quarters of the year. A quarterly report submittal is required for each of these reporting periods.

#### **(2) Identification Numbers**

To ensure accurate processing by the Continuous Emissions Monitoring Data Processing System (CEMDPS), the system that processes the quarterly report files, each record in the quarterly report must contain consistent and accurate ID numbers.

##### **(a) Facility ID Code**

A Facility is the plant at which the monitoring system is located. It is commonly referred to by Company Name and Facility Name (for example, “Ajax Widget Co., Harrisburg”).

A Facility is uniquely identified by its UTM Northing and Easting coordinates and its UTM zone. Each Facility is given its own unique (system-wide) ID Code. The Facility ID Code may be up to 5 digits in length.

PADEP assigns the Facility ID Code upon processing of the initial Monitoring Plan submittal for a Facility. For preparation of the initial

Monitoring Plan submittal for a Facility, the submitter may use any “temporary” 5 digit number, with the first digit being “9”, as the Facility ID Code (the same “temporary” code must be used in all affected records). In such cases, the “New/Existing Facility Flag” field must contain the value “N”. PADEP BAQ will assign the actual Facility ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**(b) Source Combination ID Code**

A Source Combination consists of one or more processes (emissions from multiple processes are sometimes combined prior to monitoring) from which emissions or operational parameters are monitored to determine compliance with applicable emission standards or operational criteria.

A Source Combination is uniquely identified by its associated unique Facility ID Code and the Source Combination Name. It is commonly referred to by Company Name, Facility Name, and Source Combination Name (for example, “Ajax Widget Co., Harrisburg, Unit 1”). Each Source Combination is given its own unique (system-wide) ID Code. The Source Combination ID Code may be up to 7 digits in length.

PADEP assigns the Source Combination ID Code upon processing of the initial Monitoring Plan submittal for a Source Combination. For preparation of the initial Monitoring Plan submittal for a Source Combination, the submitter may use any “temporary” 7 digit number, with the first digit being “9”, as the Source Combination ID Code (same “temporary” code must be used in all affected records for the affected Source Combination). In such cases, the “New/Existing Source Combination Flag” field must contain the value “N”. PADEP BAQ will assign the actual Source Combination ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**(c) Emission Result ID Code**

An Emission Result represents data in terms of an applicable emission standard or operational criterion, for a particular Source Combination, as reported to PADEP BAQ.

An Emission Result is uniquely identified by its associated unique Source Combination ID Code, Parameter Name (SO<sub>2</sub>, Temperature, etc.), and Units of Measurement (ppm, lbs/hr, etc.). Each Emission Result is given its own unique (system-wide) ID Code. The Emission Result ID Code may be up to 9 digits in length.

PADEP assigns the Emission Result ID Code upon processing of the initial Monitoring Plan submittal for a Source Combination/Emission

Result combination. For preparation of the initial Monitoring Plan submittal for a Source Combination/Emission Result combination, the submitter may use any “temporary” 9 digit number, with the first digit being “9”, as the Emission Result ID Code (same “temporary” code must be used in all affected records for the affected Source Combination/Emission Result combination). In such cases, the “New/Existing Emission Result Flag” field must contain the value “N”. PADEP BAQ will assign the actual Emission Result ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**(d) CEMS ID Code**

A CEMS represents the monitoring system used to collect and report data, in terms of the applicable emission standard or operational criterion, for a particular Emission Result.

A CEMS is uniquely identified by its associated unique Emission Result identification number, a code identifying it as the single “Primary” system (always used to collect and report data if data is “valid”) or one of several (potentially) “Standby” systems (online but data used only if data for Primary system is invalid) or “Backup” systems (offline but installed and used to collect and report data only if data for Primary system is invalid), and the Revision Number (incremented for changes to the initially-installed system). Each CEMS is given its own unique (system-wide) ID Code. The CEMS ID Code may be up to 11 digits in length.

PADEP assigns the CEMS ID Code upon processing of the initial Monitoring Plan submittal for a CEMS. For preparation of the initial Monitoring Plan submittal for a CEMS, the submitter may use any “temporary” 11 digit number, with the first digit being “9”, as the CEMS ID Code (same “temporary” code must be used in all affected records for the affected CEMS). In such cases, the “New/Existing CEMS Flag” field must contain the value “N”. PADEP BAQ will assign the actual CEMS ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**(e) ANALYZER ID Code**

An Analyzer represents a measurement device (or other component, data acquisition system (DAHS), etc.) used to measure, calculate, and report information for an emission or operational parameter for one or more Source Combinations at a Facility.

An Analyzer is uniquely identified by its associated unique Facility ID Code, Parameter Name (SO<sub>2</sub>, Temperature, etc.), Units of Measurement (ppm, lbs/hr, etc.), Moisture Basis of Measurement (Wet, Dry, NA), Monitoring Point Code (to differentiate between Analyzers with identical Facility/Parameter Name/Units of Measurement/Moisture Basis of

Measurement combinations), and Revision Number (incremented for changes to initially-installed Analyzer such as change to full scale value, etc.). Each Analyzer is given its own unique (system-wide) ID Code. The Analyzer ID Code may be up to 13 digits in length.

PADEP assigns the Analyzer ID Code upon processing of the initial Monitoring Plan submittal for an Analyzer. For preparation of the initial Monitoring Plan submittal for an Analyzer, the submitter may use any “temporary” 13 digit number, with the first digit being “9”, as the Analyzer ID Code (same “temporary” code must be used in all affected records for the affected Analyzer). In such cases, the “New/Existing Analyzer Flag” field must contain the value “N”. PADEP BAQ will assign the actual Analyzer ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

### **(3) Data Entry and Editing of Submittals**

This section clarifies which data must be automatically recorded and reported by the DAHS and which data may be manually edited or entered (or recorded in a computer system outside of the DAHS and merged in the final submittal file). If data needs to be manually entered or edited in a submittal for a situation that is not addressed below, contact PADEP BAQ’s Continuous Emission Monitoring Section. PADEP BAQ will determine whether the request is allowable under applicable regulations. If the situation is allowable under applicable regulations, PADEP BAQ still may require documentation indicating the use of manually entered or edited data.

#### **(a) Emissions Data From CEMS**

##### **1. Data Recorded Automatically**

Except as noted below, all emissions values recorded from a CEMS must be automatically recorded by the DAHS.

##### **2. Data Entered or Edited Manually**

In some cases, you may determine, using sound engineering judgment, that a measured emissions value (or values) or other field value are clearly in error and should be invalidated. When this situation occurs, determine whether correction of all the measured value(s) believed to be in error results in a significant change in the reported information. If the effect of replacing the erroneous values is not significant, you may make the replacements and do not have to notify DEP. However, if replacement of the erroneous data values has a significant effect, contact PADEP BAQ’s Continuous Emission Monitoring Section to request approval of the change. In either case, document the error as part of the submittal cover letter.

**(b) Calibration Error Results**

Calibration Error Results may be either automatically recorded and reported by the DAHS or manually edited or entered (or recorded in a computer system outside of the DAHS and merged in the final submittal file).

**(c) Relative Accuracy Test Data**

**1. Data Recorded Automatically**

Emissions or other values from the CEMS being tested must be automatically recorded, by the DAHS that is a component of the system, on at least the minimum required cycle time frequency. However, you may export this data to an external data system or spreadsheet to perform the actual calculations. It is not necessary for the external software package to be part of the monitoring system.

**2. Data Entered or Edited Manually**

Reference method data may be recorded by and entered into the DAHS manually. It may also be entered into a separate computer system that calculates the results and exports the data into EDR format. This separate computer system does not have to be identified as part of the monitoring system. You may manually enter calculated results into the DAHS.

**(d) Linearity Test Data**

**1. Data Recorded Automatically**

Emissions or other values from the Analyzer being tested must be automatically recorded, by the DAHS that is a component of the system, on at least the minimum required cycle time frequency. However, you may export this data to an external data system or spreadsheet to perform the actual calculations. It is not necessary for the external software package to be part of the monitoring system.

**2. Data Entered or Edited Manually**

Calculated results may be manually entered into the DAHS.

**(e) 7-day Calibration Error Test Data**

**1. Data Recorded Automatically**

Emissions or other values from the Analyzer being tested must be automatically recorded, by the DAHS that is a component of the system, on at least the minimum required cycle time frequency. However, you may export this data to an external data system or spreadsheet to perform the actual calculations. It is not necessary for the external software package to be part of the monitoring system.

**2. Data Entered or Edited Manually**

Calculated results may be manually entered into the DAHS.

**(f) Cycle Time Test Data**

**1. Data Recorded Automatically**

Emissions or other values from the Analyzer being tested must be automatically recorded, by the DAHS that is a component of the system, on at least the minimum required cycle time frequency. However, you may export this data to an external data system or spreadsheet to perform the actual calculations. It is not necessary for the external software package to be part of the monitoring system.

**2. Data Entered or Edited Manually**

Calculated results may be manually entered into the DAHS.

**(g) Operational Test Period Results**

Operational Test Period Results may be either automatically recorded and reported by the DAHS or manually edited or entered (or recorded in a computer system outside of the DAHS and merged in the final submittal file).

**(h) DAHS Test Results**

Due to the nature of this type of test, the results must be manually edited or entered.

**(i) Missing Data**

All substitute data values (when required) must be automatically calculated and recorded by the DAHS.



**(j) Other Operating Data**

PADEP BAQ recommends, but does not require, that other operating data (e.g., unit load, unit operating time) be automatically recorded by the DAHS. If these data are automatically recorded in another computer system, this system does not have to be identified as a DAHS component of the monitoring system.

**(4) Use of Leading or Trailing Blank Spaces**

In cases where data available for a field is shorter than the specified field length, the data must be “padded” in accordance with the following:

**(a) Alpha Fields (FTN format type “A”)**

Pad with trailing blanks. For example, in RT 801 (Recordset Submitter Information I) the field beginning in column 14 is “First Name”, with a required format of A25. If the data value is “Joseph”, that value would be entered in columns 14 through 19, with blanks entered in columns 20 through 25.

**(b) Integer Fields (FTN format type “I”)**

Pad with leading spaces. For example, in RT 801 (Recordset Submitter Information I) the field beginning in column 9 is “DEP Facility ID Code”, with a required format of I5. If the data value is “123”, that value would be entered in columns 11 through 13, with spaces entered in columns 9 through 10.

**(c) Floating Point Decimal Fields (FTN format type “D”)**

The decimal point must be located in accordance with the specified format. All required digits to the right of the decimal point must be included, even if zero (0). If the value to be reported is less than 1.0, a single zero (0) must appear to the left of the decimal point. Pad any remaining columns with leading spaces. For example, in RT 884 (Data Report Hourly Average Monitoring Data) the field beginning in column 27 is “Value for the Hour”, with a required format of F13.3 (length of 13, including the decimal point). If the data value is “.45”, the value “0.450” would be entered in columns 35 through 39, with blanks entered in columns 27 through 34.

**(5) Reporting of Dates and Times**

Report time data according to the 24-hour clock: Report hours as an integer (0 - 23) in I2 format, and minutes as an integer (0 - 59) in I2 format. Format dates from left to right: YYYYMMDD, where YYYY represents the four digits in the calendar year, MM is a two digit month (01 - 12), and DD is a two digit day (01 - 31).

**(6) Reporting in Eastern Standard Time**

Report all data in Eastern Standard Time. Each hour reported in the file represents a clock hour, not an operating hour.

**(7) Computational Requirements and Rounding**

**(a) Computing Hourly Emissions Values**

When computing monitor readings for a specific hour (for example, NO<sub>x</sub> concentration for the hour), use all the decimal digits that the DAHS computer normally employs for floating point calculations. Double-precision numbers (8 to 16 digits) may be used for these calculations and should be employed when needed to compute the recorded emissions value.

**(b) Rounding Conventions for Reported Data**

When it is necessary to round a value to report it using the number of required decimal places, use the standard arithmetic rounding convention where numbers 5 through 9 round to the next highest number in the previous decimal position to the left. It is not always appropriate to report values to the number of decimal places in the EDR format. The precision of each measured parameter should be the same as the precision of the hourly record for the parameter. Zeros may be used as placeholders to the right of the last digit in each measurement, but are not considered to be significant figures.

**(c) Use of Reported Data for Emissions and Quality Assurance (QA) Test Calculations**

For quantities calculated from the reported CEM data, perform the calculations or summations using values rounded to the number of decimals defined in the EDR.

**(d) QA Test Calculations**

Whenever you perform QA test calculations that involve a number of steps in sequence (e.g., calibration error or calibration drift), begin the calculation sequence with the raw data values. However, once you have begun the calculation sequence, do not round off any of the intermediate values. Rather, retain the full decimal display of the computer in the intermediate values until the final result is obtained and then round off the final result. Similarly, do not use rounded intermediate values of statistical terms such as the standard deviation, mean difference, and confidence coefficient.

**(8) Reporting Data Outside the Reporting Period**

Do not submit any hourly emissions data in the submittal file representing emissions values recorded for any time period outside of the applicable quarter and year.

**(9) Blank Emissions or Other Values**

For each operating hour report a non-blank emissions value and an appropriate method of determination code unless the emissions value for the hour is invalid and no data substitution is required. In such cases, leave the emissions value blank and use “NV” as the method of determination code.

**(10) Data Reporting Requirements for Non-operating Quarters**

If you have been operating and reporting for a unit and your unit does not operate for a quarter (and you do not notify PADEP BAQ that the unit has permanently retired), you must still submit a quarterly emissions report for the non-operating quarter.

The quarterly emissions report for a non-operating quarter must contain the following record types:

**Table 1: Reporting Requirements For Non-operating Quarters**

	<b>RTs</b>	<b>Required?</b>
801	Recordset Submitter Information I	Required
802	Recordset Submitter Information II	Required
880	Data Report Contents	Required for each Emission Result
884	Data Report Hourly Average Monitoring Data	Required for each Emission Result
888	Data Report Linearity Results	Required for each Analyzer
892	Data Report Opacity Excess Emission Data (if opacity is required to be monitored)	Not applicable
896	Data Report Low Temperature Data (if temperature is required to be monitored)	Not applicable

**Record Type Instructions for Non-operating Quarters**

**RT 884.** The “Value for the Hour” in columns 27 through 39 should be entered as “bbbbbb0.000” (where “b” represents a blank space). The “Process Code” in columns 40 through 41 should be entered as “08”. The “Monitoring Code” in columns 42 through 43 should be entered as “13”. The “Method of Determination Code” in columns 44 through 46 should be entered as “Pbb” (where “b” represents a blank space).

### III. RECORD TYPE INSTRUCTIONS

**NOTE – The first 7 columns of all records must be as follows** – Columns 1 through 3 must be the 3-digit Type Code, columns 4 through 7 must be “2.00”.

**The instructions below begin at column 8 for all records.**

#### A. Recordset Submitter Records

##### (1) RT 801: Recordset Submitter Information I

RECORD SET SUBMITTER INFORMATION I (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Record set submitter information I (submit one record for each set of records submitted on a single medium [floppy disk, CD, etc.])	801	1	Record Type Code		801	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	New/Existing Facility Flag		*N or E	1	A1
		9	DEP Facility ID code (if new, assign number unique to current submittal)			5	I5
		14	First Name			25	A25
		39	Middle Initial			1	A1
		40	Last Name			25	A25
		65	Title			50	A50
		115	Company Name			50	A50
		165	Salutation		*	30	A30
		195	Street line 1			50	A50
				Total Record Length 244			
* Explanation of selected fields							
<u>New/Existing Facility Flag</u>							
N = Facility ID code below assigned by submitter E = Facility ID code below is existing code assigned by DEP							
<u>Salutation:</u>							
End with colon							
Examples = “Dear Mr. Smith:”, “Dear Ms. Smith:”, etc.							

Report only one RT 801 in each file for all submittal types. This record must be the first record in all EDR file submittals. This record provides information concerning the submitter of the data in the file.

#### Field Descriptions and Instructions

**New/Existing Facility Flag (8).** If the DEP Facility ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the facility), report “E”. If this is the initial monitoring plan submittal for the facility, report “N” (see instructions for “DEP Facility ID Code”, below).

**DEP Facility ID Code (9).** Report the DEP Facility ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Facility ID Code upon processing of the initial Monitoring Plan submittal for a Facility. For preparation of the initial Monitoring Plan submittal for a Facility, the submitter may use any “temporary” 5-digit number, with the first digit being “9”, as the Facility ID Code (same “temporary” code

must be used in all affected records). In such cases, the “New/Existing Facility Flag” field must contain the value “N”. PADEP BAQ will assign the actual Facility ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**First Name (14).** Report the first name of the person submitting the EDR. The name should be left-justified and padded to the right with trailing blanks.

**Middle Initial (39).** Report the middle initial of the person submitting the EDR. If the person submitting the EDR has no middle initial, leave this field blank.

**Last Name (40).** Report the last name of the person submitting the EDR. The name should be left-justified and padded to the right with trailing blanks.

**Title (65).** Report the title of the person submitting the EDR. The title should be left-justified and padded to the right with trailing blanks. If the person submitting the EDR has no title, leave this field blank.

**Company Name (115).** Report the company name of the person submitting the EDR. The company name should be left-justified and padded to the right with trailing blanks.

**Salutation (165).** Report the preferred correspondence salutation for the person submitting the EDR (for example “Dear Mr. Smith:”). The salutation should be left-justified and padded to the right with trailing blanks.

**Street Line 1 (195).** Report the first line of the street address of the person submitting the EDR. The street line 1 should be left-justified and padded to the right with trailing blanks.

## (2) RT 802: Recordset Submitter Information II

RECORD SET SUBMITTER INFORMATION II (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Record set submitter information II (submit one record for each set of records submitted on a single medium [floppy disk, CD, etc.])	802	1	Record Type Code		802	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	New/Existing Facility Flag		*N or E	1	A1
		9	DEP Facility ID code (if new, assign number unique to current submittal)			5	I5
		14	Street line 2			50	A50
		64	City			50	A50
		114	State Code			2	A2
		116	Zip Code			5	I5
		121	Zip Plus 4 Code			4	I4
		125	Phone Area Code			3	I3
		128	Phone Exchange		*	3	I3
		131	Phone Number		*	4	I4
		135	Fax Area Code			3	I3
		138	Fax Exchange		*	3	I3
		141	Fax Number		*	4	I4
		145	E-mail Address			75	A75
		220	Submittal Type		*	1	A1
				Total Record Length 220			
<p>* Explanation of selected fields</p> <p><u>New/Existing Facility Flag</u> N = Facility ID code below assigned by submitter E = Facility ID code below is existing code assigned by DEP</p> <p><u>Phone Exchange, Fax Exchange:</u> First three numerals after area code</p> <p><u>Phone Number, Fax Number:</u> Last 4 numerals of complete number</p> <p>NOTE: Complete number would take the form AAA-EEE-NNNN, where: AAA = Area Code EEE = Exchange NNNN = Number</p> <p><u>Submittal Type</u> C = Certification (test results for Diagnostic, Initial Certification, or Periodic Self-audit testing) E = Emissions Data M = Monitoring Plan S = Special T = Test Protocol</p>							

Report only one RT 802 in each file for all submittal types. This record must be the second record in all EDR file submissions. This record contains information concerning the submitter of the data in the file.

### Field Descriptions and Instructions

**New/Existing Facility Flag (8).** If the DEP Facility ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the facility), report “E”. If this is the initial monitoring plan submittal for the facility, report “N” (see instructions for “DEP Facility ID Code”, below).

**DEP Facility ID Code (9).** Report the DEP Facility ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Facility ID Code upon processing of the initial Monitoring

Plan submittal for a Facility. For preparation of the initial Monitoring Plan submittal for a Facility, the submitter may use any “temporary” 5-digit number, with the first digit being “9”, as the Facility ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Facility Flag” field must contain the value “N”. PADEP BAQ will assign the actual Facility ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**Street Line 2 (14).** Report the second line of the street address of the person submitting the EDR. The street line 2 should be left-justified and padded to the right with trailing blanks. If there is no second line of the street address, leave this field blank.

**City (64).** Report the city name of the person submitting the EDR. The city name should be left-justified and padded to the right with trailing blanks.

**State Code (114).** Report the 2-character state postal code of the person submitting the EDR.

**Zip Code (116).** Report the 5-digit zip code of the person submitting the EDR.

**Zip Plus 4 Code (121).** Report the 4-digit zip plus 4 code of the person submitting the EDR. If the person submitting the EDR has no zip plus 4 code, report all zeros for this field.

**Phone Area Code (125).** Report the 3-digit phone area code for the person submitting the EDR.

**Phone Exchange (128).** Report the 3-digit phone exchange (first 3 digits of phone number after the area code) for the person submitting the EDR.

**Phone Number (131).** Report the 4-digit phone number (last 4 digits of phone number) for the person submitting the EDR.

**Fax Area Code (135).** Report the 3-digit fax area code for the person submitting the EDR. If the person submitting the EDR has no fax, report all zeros for this field.

**Fax Exchange (138).** Report the 3-digit fax exchange (first 3 digits of fax number after the area code) for the person submitting the EDR. If the person submitting the EDR has no fax, report all zeros for this field.

**Fax Number (141).** Report the 4-digit fax number (last 4 digits of fax number) for the person submitting the EDR. If the person submitting the EDR has no fax, report all zeros for this field.

**E-mail Address (145).** Report the E-mail address of the person submitting the EDR. The E-mail address should be left-justified and padded to the right with trailing blanks. If the person submitting the EDR has no E-mail address, leave this field blank.

**Submittal Type (220).** Report the Report Submittal Type as one of the following characters:

C = Certification (test results for Diagnostic, Initial Certification, or Periodic Self-audit testing)  
E = Emissions Data  
M = Monitoring Plan  
S = Special  
T = Test Protocol



## B. Test Protocol Records

### (1) RT 803: Test Protocol Testing Firm Information I

TEST PROTOCOL TESTING FIRM INFORMATION I (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Test Protocol Testing firm information I (submit one record for submittals containing a testing protocol)	803	1	Record Type Code		803	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	New/Existing Facility Flag		*N or E	1	A1
		9	DEP Facility ID code (if new, assign number unique to current submittal)			5	I5
		14	Proposed testing date	YYYYMMDD		8	A8
		22	Test firm index		*	1	I1
		23	Contact First Name			25	A25
		48	Contact Middle Initial			1	A1
		49	Contact Last Name			25	A25
		74	Contact Title			50	A50
		124	Test Company Name			50	A50
		174	Salutation		*	30	A30
		204	Street line 1			50	A50
				Total Record Length 254			
<p>* Explanation of selected fields</p> <p><u>New/Existing Facility Flag</u> N = Facility ID code below assigned by submitter E = Facility ID code below is existing code assigned by DEP</p> <p><u>Test firm index</u> 0 through 9 - Assign as necessary to uniquely identify testing conducted on the same date by different testing firms</p> <p><u>Salutation:</u> End with colon Examples = “Dear Mr. Smith:”, “Dear Ms. Smith:”, etc.</p>							

Report only one RT 803 in each Test Protocol Submittal file. If testing is conducted by more than one firm, a separate Test Protocol Submittal file must be submitted for each firm. This record must be the third record in each Test Protocol EDR file submission. This record contains information concerning the firm that will be conducting testing.

### Field Descriptions and Instructions

**New/Existing Facility Flag (8).** As test protocol submittals should be made only after the DEP Facility ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the facility), report "E".

**DEP Facility ID Code (9).** Report the DEP Facility ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Facility ID Code upon processing of the initial Monitoring Plan submittal for a Facility.

**Proposed Testing Date (14).** Report the proposed testing date in the format YYYYMMDD.

**Test Firm Index (22).** Report a one-digit sequential number between 0 and 9 as necessary to uniquely identify testing conducted on the same date by different testing firms.

**Contact First Name (23).** Report the first name of the test firm contact person.

**Contact Middle Initial (48).** Report the middle initial of the test firm contact person. If the test firm contact person has no middle initial, leave this field blank.

**Contact Last Name (49).** Report the first name of the test firm contact person.

**Contact Title (74).** Report the title of the test firm contact person. The title should be left-justified and padded to the right with trailing blanks. If the test firm contact person has no title, leave this field blank.

**Test Company Name (124).** Report the testing company name. The company name should be left-justified and padded to the right with trailing blanks.

**Salutation (174).** Report the preferred correspondence salutation for the test company contact person (for example “Dear Mr. Smith:”. The salutation should be left-justified and padded to the right with trailing blanks.

**Street Line 1 (204).** Report the first line of the street address of the test company contact person. The street line 1 should be left-justified and padded to the right with trailing blanks.

## (2) RT 804: Test Protocol Testing Firm Information II

TEST PROTOCOL TESTING FIRM INFORMATION II (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Test Protocol Testing firm information II (submit one record for submittals containing a testing protocol)	804	1	Record Type Code		804	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	New/Existing Facility Flag		*N or E	1	A1
		9	DEP Facility ID code (if new, assign number unique to current submittal)			5	I5
		14	Proposed testing date	YYYYMMDD		8	A8
		22	Test firm index		*	1	I1
		23	Street line 2			50	A50
		73	City			30	A50
		103	State Code			2	A2
		105	Zip Code			5	I5
		110	Zip Plus 4 Code			4	I4
		114	Phone Area Code			3	I3
		117	Phone Exchange		*	3	I3
		120	Phone Number		*	4	I4
		124	Fax Area Code			3	I3
		127	Fax Exchange		*	3	I3
		130	Fax Number		*	4	I4
		134	E-mail Address			75	A75
		209	Name of pdf file included in submittal containing testing protocol			25	A25
		234	Test Purpose		*	1	A1
Total Record Length 234							
<p>* Explanation of selected fields</p> <p><u>New/Existing Facility Flag</u> N = Facility ID code below assigned by submitter E = Facility ID code below is existing code assigned by DEP</p> <p><u>Test firm index</u> 0 through 9 - Assign as necessary to uniquely identify testing conducted on the same date by different testing firms</p> <p><u>Phone Exchange, Fax Exchange:</u> First three numerals after area code</p> <p><u>Phone Number, Fax Number:</u> Last 4 numerals of complete number</p> <p>NOTE: Complete number would take the form AAA-EEE-NNNN, where: AAA = Area Code EEE = Exchange NNNN = Number</p> <p><u>Test Purpose</u> D = Diagnostic I = Initial Certification (of new or revised CEMS) P = Periodic Self-audit</p>							

Report only one RT 804 in each Test Protocol Submittal file. If more than one firm conducts testing, a separate Test Protocol Submittal file must be submitted for each firm. This record must be the fourth record in each Test Protocol EDR file submission. This record contains additional information concerning the firm that will be conducting testing.

## **Field Descriptions and Instructions**

**New/Existing Facility Flag (8).** As test protocol submittals should be made only after the DEP Facility ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the facility), report “E”.

**DEP Facility ID Code (9).** Report the DEP Facility ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Facility ID Code upon processing of the initial Monitoring Plan submittal for a Facility.

**Proposed Testing Date (14).** Report the proposed testing date in the format YYYYMMDD.

**Test Firm Index (22).** Report a one-digit sequential number between 0 and 9 as necessary to uniquely identify testing conducted on the same date by different testing firms.

**Street Line 2 (23).** Report the second line of the street address of the test company contact person. The street line 2 should be left-justified and padded to the right with trailing blanks. If there is no second line of the street address, leave this field blank.

**City (73).** Report the city name of the test company contact person. The city name should be left-justified and padded to the right with trailing blanks.

**State Code (103).** Report the 2-character state postal code of the test company contact person.

**Zip Code (105).** Report the 5-digit zip code of the test company contact person.

**Zip Plus 4 Code (110).** Report the 4-digit zip plus 4 code of the test company contact person. If the test company contact person has no zip plus 4 code, report all zeros for this field.

**Phone Area Code (114).** Report the 3-digit phone area code for the test company contact person.

**Phone Exchange (117).** Report the 3-digit phone exchange (first 3 digits of phone number after the area code) for the test company contact person.

**Phone Number (120).** Report the 4-digit phone number (last 4 digits of phone number) for the test company contact person.

**Fax Area Code (124).** Report the 3-digit fax area code for the test company contact person. If the test company contact person has no fax, report all zeros for this field.

**Fax Exchange (127).** Report the 3-digit fax exchange (first 3 digits of fax number after the area code) for the test company contact person. If the test company contact person has no fax, report all zeros for this field.

**Fax Number (130).** Report the 4-digit fax number (last 4 digits of fax number) for the test company contact person. If the test company contact person has no fax, report all zeros for this field.

**E-mail Address (134).** Report the E-mail address of the test company contact person. The E-mail address should be left-justified and padded to the right with trailing blanks. If the test company contact person has no E-mail address, leave this field blank.

**Name of pdf file included in submittal containing testing protocol (209).** Report the name of a pdf file that will be included in the submittal containing the testing protocol. The pdf file name should be left-justified and padded to the right with trailing blanks.

**Test Purpose (234).** Report the appropriate one-character code describing the purpose of the test (D = Diagnostic, I = Initial Certification (of new or revised CEMS), P = Periodic Self-audit).

### (3) RT 805: Test Protocol Analytical Laboratory Information I

TEST PROTOCOL ANALYTICAL LABORATORY INFORMATION I (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Test Protocol Analytical laboratory Information I (submit one record for submittals containing a testing protocol for each analytical laboratory, including testing firm laboratory)	805	1	Record Type Code		805	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	New/Existing Facility Flag		*N or E	1	A1
		9	DEP Facility ID code (if new, assign number unique to current submittal)			5	I5
		14	Proposed testing date	YYYYMMDD		8	A8
		22	Test firm index		*	1	I1
		23	Contact First Name			25	A25
		48	Contact Middle Initial			1	A1
		49	Contact Last Name			25	A25
		74	Contact Title			50	A50
		124	Company Name			50	A50
		174	Salutation		*	30	A30
		204	Street line 1			50	A50
<div> <div>Total Record Length 253</div> <div> * Explanation of selected fields  <u>New/Existing Facility Flag</u>  N = Facility ID code below assigned by submitter E = Facility ID code below is existing code assigned by DEP   <u>Test index</u>  0 through 9 - Assign as necessary to uniquely identify testing conducted on the same date by different testing firms   <u>Salutation:</u>  End with colon  Examples = "Dear Mr. Smith:", "Dear Ms. Smith:", etc. </div> </div>							

Report at least one record of type 805. Submit additional records of type 805 if more than one analytical laboratory is involved. Remember to submit record type 805 for the testing firm if the testing firm is also conducting analyses.

#### Field Descriptions and Instructions

**New/Existing Facility Flag (8).** As test protocol submittals should be made only after the DEP Facility ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the facility), report "E".

**DEP Facility ID Code (9).** Report the DEP Facility ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Facility ID Code upon processing of the initial Monitoring Plan submittal for a Facility.

**Proposed Testing Date (14).** Report the proposed testing date in the format YYYYMMDD.

**Test Firm Index (22).** Report a one-digit sequential number between 0 and 9 as necessary to uniquely identify testing conducted on the same date by different testing firms.

**Contact First Name (23).** Report the first name of the analytical laboratory contact person.

**Contact Middle Initial (48).** Report the middle initial of the test firm contact person. If the test firm contact person has no middle initial, leave this field blank.

**Contact Last Name (49).** Report the first name of the test firm contact person.

**Contact Title (74).** Report the title of the test firm contact person. The title should be left-justified and padded to the right with trailing blanks. If the test firm contact person has no title, leave this field blank.

**Laboratory Company Name (124).** Report the analytical laboratory company name. The analytical laboratory company name should be left-justified and padded to the right with trailing blanks.

**Salutation (174).** Report the preferred correspondence salutation for the analytical laboratory contact person (for example "Dear Mr. Smith:"). The salutation should be left-justified and padded to the right with trailing blanks.

**Street Line 1 (204).** Report the first line of the street address of the analytical laboratory contact person. The street line 1 should be left-justified and padded to the right with trailing blanks.

#### (4) RT 806: Test Protocol Analytical Laboratory Information II

TEST PROTOCOL ANALYTICAL LABORATORY INFORMATION II (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Test Protocol Analytical laboratory Information II (submit one record for submittals containing a testing protocol for each analytical laboratory, including testing firm laboratory)	806	1	Record Type Code		806	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	New/Existing Facility Flag		*N or E	1	A1
		9	DEP Facility ID code (if new, assign number unique to current submittal)			5	I5
		14	Proposed testing date	YYYYMMDD		8	A8
		22	Test firm index		*	1	I1
		23	Street line 2			50	A50
		73	City			30	A50
		103	State Code			2	A2
		105	Zip Code			5	I5
		110	Zip Plus 4 Code			4	I4
		114	Phone Area Code			3	I3
		117	Phone Exchange		*	3	I3
		120	Phone Number		*	4	I4
		124	Fax Area Code			3	I3
		127	Fax Exchange		*	3	I3
		130	Fax Number		*	4	I4
		134	E-mail Address			75	A75
		209	PA Environmental Laboratory Accreditation Act Registration Number		*	7	A7
<div> <div>Total Record Length 215</div> <div>* Explanation of selected fields</div> <div> <u>New/Existing Facility Flag</u>  N = Facility ID code below assigned by submitter E = Facility ID code below is existing code assigned by DEP </div> <div> <u>Test index</u>  0 through 9 - Assign as necessary to uniquely identify testing conducted on the same date by different testing firms </div> <div> <u>Phone Exchange, Fax Exchange:</u>  First three numerals after area code </div> <div> <u>Phone Number, Fax Number:</u>  Last 4 numerals of complete number </div> <div> NOTE: Complete number would take the form AAA-EEE-NNNN, where:  AAA = Area Code  EEE = Exchange  NNNN = Number </div> <div> <u>PA Environmental Laboratory Accreditation Act Registration Number</u>  Format is either ##-### or ##-#### </div> </div>							

Report at least one record of type 806. Submit additional records of type 806 if more than one analytical laboratory is involved. Remember to submit record type 806 for the testing firm if the testing firm is also conducting analyses.

#### Field Descriptions and Instructions

**New/Existing Facility Flag (8).** As test protocol submittals should be made only after the DEP Facility ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the facility), report “E”.



**DEP Facility ID Code (9).** Report the DEP Facility ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Facility ID Code upon processing of the initial Monitoring Plan submittal for a Facility.

**Proposed Testing Date (14).** Report the proposed testing date in the format YYYYMMDD.

**Test Firm Index (22).** Report a one-digit sequential number between 0 and 9 as necessary to uniquely identify testing conducted on the same date by different testing firms.

**Street Line 2 (23).** Report the second line of the street address of the analytical laboratory contact person. The street line 2 should be left-justified and padded to the right with trailing blanks. If there is no second line of the street address, leave this field blank.

**City (73).** Report the city name of the analytical laboratory contact person. The city name should be left-justified and padded to the right with trailing blanks.

**State Code (103).** Report the 2-character state postal code of the analytical laboratory contact person.

**Zip Code (105).** Report the 5-digit zip code of the analytical laboratory contact person.

**Zip Plus 4 Code (110).** Report the 4-digit zip plus 4 code of the analytical laboratory contact person. If the analytical laboratory contact person has no zip plus 4 code, report all zeros for this field.

**Phone Area Code (114).** Report the 3-digit phone area code for the analytical laboratory contact person.

**Phone Exchange (117).** Report the 3-digit phone exchange (first 3 digits of phone number after the area code) for the analytical laboratory contact person.

**Phone Number (120).** Report the 4-digit phone number (last 4 digits of phone number) for the analytical laboratory contact person.

**Fax Area Code (124).** Report the 3-digit fax area code for the analytical laboratory contact person. If the analytical laboratory contact person has no fax, report all zeros for this field.

**Fax Exchange (127).** Report the 3-digit fax exchange (first 3 digits of fax number after the area code) for the analytical laboratory contact person. If the analytical laboratory contact person has no fax, report all zeros for this field.

**Fax Number (130).** Report the 4-digit fax number (last 4 digits of fax number) for the analytical laboratory contact person. If the analytical laboratory contact person has no fax, report all zeros for this field.

**E-mail Address (134).** Report the E-mail address of the analytical laboratory contact person. The E-mail address should be left-justified and padded to the right with trailing blanks. If the analytical laboratory contact person has no E-mail address, leave this field blank.

**PA Environmental Laboratory Accreditation Act Registration Number (209).** Report the PA Environmental Laboratory Accreditation Act Registration Number of the analytical laboratory in either ###-### or ##-#####. The number should be should be left-justified and padded to the right with trailing blanks.

**(5) RT 807: Test Protocol CEMSs to be Tested**

TEST PROTOCOL CEMSs TO BE TESTED (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Test Protocol CEMSs to be Tested (submit records as necessary to identify all CEMSs to which testing protocol applies (for submittals containing a testing protocol))	807	1	Record Type Code		807	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	DEP CEMS ID code			11	I11
		19	Proposed testing date	YYYYMMDD		8	A8
		27	Test firm index		*	1	I1
Total Record Length 27							
<u>Test index</u> 0 through 9 - Assign as necessary to uniquely identify testing conducted on the same date by different testing firms							

Report at least one of record type 807. Submit additional records of type 807 if more than one CEMS is involved.

**Field Descriptions and Instructions**

**DEP CEMS ID Code (8).** As test protocol submittals should be made only after the DEP CEMS ID Code for the CEMS involved has been assigned by PADEP BAQ (as a result of a previously-submitted initial monitoring plan submittal for the facility), report the DEP CEMS ID Code for the CEMS involved. The number should be right-justified and padded to the left with leading zeros.

**Proposed Testing Date (19).** Report the proposed testing date in the format YYYYMMDD.

**Test Firm Index (27).** Report a one-digit sequential number between 0 and 9 as necessary to uniquely identify testing conducted on the same date by different testing firms.

## C. Monitoring Plan Records

### (1) RT 810: Monitoring Plan Facility Information

MONITORING PLAN FACILITY INFORMATION (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Monitoring plan facility information	810	1	Record Type Code		810	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D, I, D	1	A1
		9	Reason For Information Change		*	50	A50
		59	Effective Date of Information (blank if N or R above)	YYYYMMDD		8	A8
		67	New/Existing Facility Flag		*N or E	1	A1
		68	DEP Facility ID code (if new, assign number unique to current submittal)			5	I5
		73	UTM Northing coordinate	Meters		6	I6
		79	UTM Easting coordinate	Meters		7	I7
		86	UTM zone		17, 18	2	I2
		88	EPA CDS ID Code (Contact EPA or DEP for code)			10	I10
		98	Company name			50	A50
		148	Facility name			50	A50
		198	County number (in alphabetical list)			2	I2
		200	DEP region number		1 – 6	1	I1
		201	Municipality name			30	A50
Total Record Length 220							
<p>* Explanation of selected fields</p> <p><u>Change Flag</u> N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original I = Change Status to Inactive, D = Delete Record</p> <p><u>Reason For Information Change</u> If Change Flag = N, enter “No Change” If Change Flag = A, enter “Initial Submittal” Otherwise, enter short explanation of reason for information change</p> <p><u>New/Existing Facility Flag</u> N = Facility ID code below assigned by submitter E = Facility ID code below is existing code assigned by DEP</p>							

Report only one RT 810 for the facility.

### Field Descriptions and Instructions

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The “R = Revision of Existing Record to Correct Original” code should be used to correct previously submitted incorrect information. The “C = Change of Existing Record” code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The “I = Change Status to Inactive” code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the “Effective Date of Information”. The “D = Delete Record” code should be used to indicate that a record was added in error and should be removed from the system (the “Effective Date of Information” in such cases should be entered as “99991231”).

**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**Effective Date of Information (59).** If Change Flag was reported as either “A” or “C”, enter the effective date of the submitted information in the format YYYYMMDD. Otherwise, leave this field blank.

**New/Existing Facility Flag (67).** If the DEP Facility ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the facility), report “E”. If this is the initial monitoring plan submittal for the facility, report “N” (see instructions for “DEP Facility ID Code”, below).

**DEP Facility ID Code (68).** Report the DEP Facility ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Facility ID Code upon processing of the initial Monitoring Plan submittal for a Facility. For preparation of the initial Monitoring Plan submittal for a Facility, the submitter may use any “temporary” 5-digit number, with the first digit being “9”, as the Facility ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Facility Flag” field must contain the value “N”. PADEP BAQ will assign the actual Facility ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**UTM Northing Coordinate (73).** Report the UTM Northing Coordinate, for the front gate of the facility, in meters as an integer. The number should be right-justified and padded to the left with leading blanks.

**UTM Easting Coordinate (79).** Report the UTM Easting Coordinate, for the front gate of the facility, in meters as an integer. The number should be right-justified and padded to the left with leading blanks.

**UTM Zone (86).** Report the UTM Zone, for the front gate of the facility (either 17 or 18).

**EPA CDS ID Code (88).** Report the EPA Compliance Data System ID Code for the facility. This code may be obtained either from EPA or PADEP. The number should be right-justified and padded to the left with leading blanks.

**Company Name (98).** Report the company name for the facility. The company name should be left-justified and padded to the right with trailing blanks.

**Facility Name (148).** Report the facility name (plant name). The facility name should be left-justified and padded to the right with trailing blanks.

**County Number (198).** Report the number (from an alphabetical listing of counties in PA), of the county in which the facility is located, as an integer. The number should be right-justified and padded to the left with leading blanks.

**DEP Region Number (200).** Report the DEP Region Number (1 through 6), in which the facility is located, as an integer.

**Municipality Name (201).** Report the name of the municipality in which the facility is located. The municipality name should be left-justified and padded to the right with trailing blanks.

## (2) RT 812: Monitoring Plan Source Combination Information

MONITORING PLAN SOURCE COMBINATION INFORMATION (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Monitoring plan source combination information	812	1	Record Type Code		812	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change		*	50	A50
		59	Effective Date of Information (blank if N or R above)	YYYYMMDD		8	A8
		67	New/Existing Facility Flag		*N or E	1	A1
		68	DEP Facility ID code			5	I5
		73	New/Existing Source Combination Flag		*N or E	1	A1
		74	DEP Source Combination ID Code (if new, assign number unique to current submittal)			7	I7
		81	Source Combination Name			50	A50
		131	DEP Plan Approval Number (old style CC-SSS-NN)		*	10	A10
		141	Rated Capacity Units of Measure		*	16	A16
		157	Rated Capacity	Units of Measure	0.0 – 999999999.99	12	F12.2
		169	Source of Rated Capacity Information		*	50	A50
Total Record Length 218							
<p>* Explanation of selected fields</p> <p><u>Change Flag</u> N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original I = Change Status to Inactive, D = Delete Record</p> <p><u>Reason For Information Change</u> If Change Flag = N, enter "No Change" If Change Flag = A, enter "Initial Submittal" Otherwise, enter short explanation of reason for information change</p> <p><u>DEP Plan Approval Number:</u> CC-SSS-NNN, where: CC = County number (00 – 67) SSS = Source Type Code NN = Sequential Number</p> <p><u>Rated Capacity Units of Measure</u> ACFM            bbl/day            Confidential            lbs/day lbs/hr            Mbtu/hr            None            tons/cycle tons/day            tons/hr            tons/yr</p> <p><u>Source of Rated Capacity Information</u> Short explanation (Manufacturer's Rating, Test Results, etc.)</p> <p><u>New/Existing Facility Flag</u> N = Facility ID code below assigned by submitter            E = Facility ID code below is existing code assigned by DEP</p> <p><u>New/Existing Source Combination Flag</u> N = Source Combination ID code below assigned by submitter            E = Source Combination ID code below is existing code assigned by DEP</p>							

Report one record of type 812 for each existing or proposed new Source Combination at the Facility.

### Field Descriptions and Instructions

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The "R = Revision of Existing Record to Correct Original" code should be used to correct previously submitted incorrect information. The "C = Change of Existing

Record” code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The “I = Change Status to Inactive” code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the “Effective Date of Information”. The “D = Delete Record” code should be used to indicate that a record was added in error and should be removed from the system (the “Effective Date of Information” in such cases should be entered as “99991231”).

**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**Effective Date of Information (59).** If Change Flag was reported as either “A” or “C”, enter the effective date of the submitted information in the format YYYYMMDD. Otherwise, leave this field blank.

**New/Existing Facility Flag (67).** If the DEP Facility ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the facility), report “E”. If this is the initial monitoring plan submittal for the facility, report “N” (see instructions for “DEP Facility ID Code”, below).

**DEP Facility ID Code (68).** Report the DEP Facility ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Facility ID Code upon processing of the initial Monitoring Plan submittal for a Facility. For preparation of the initial Monitoring Plan submittal for a Facility, the submitter may use any “temporary” 5-digit number, with the first digit being “9”, as the Facility ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Facility Flag” field must contain the value “N”. PADEP BAQ will assign the actual Facility ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**New/Existing Source Combination Flag (73).** If the DEP Source Combination ID Code for the Source Combination has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the Source Combination), report “E”. If this is the initial monitoring plan submittal for the Source Combination, report “N” (see instructions for “DEP Source Combination ID Code”, below).

**DEP Source Combination ID Code (74).** Report the DEP Source Combination ID Code for the Source Combination. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Source Combination ID Code upon processing of the initial Monitoring Plan submittal for a Source Combination. For preparation of the initial Monitoring Plan submittal for a Source Combination, the submitter may use any “temporary” 7-digit number, with the first digit being “9”, as the Source Combination ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing



Source Combination Flag” field must contain the value “N”. PADEP BAQ will assign the actual Source Combination ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**Source Combination Name (81).** Report the name for the Source Combination. The Source Combination name should be left-justified and padded to the right with trailing blanks.

**Old Style DEP Plan Approval Number (131).** Report the old-style DEP Plan Approval Number for the Source Combination (the number may be obtained from DEP) in the format CC-SSS-NN. The number should be left-justified and padded to the right with trailing blanks.

**Rated Capacity Units of Measure (141).** Report the units of measurement for the rated capacity of the Source Combination. Acceptable values are:

ACFM, bbl/day	Confidential	lbs/day	lbs/hr	Mbtu/hr	None	tons/cycle
tons/day	tons/hr	tons/yr				

Contact DEP should other units of measurement for the rated capacity of the Source Combination be necessary. The Rated Capacity Units of Measure should be left-justified and padded to the right with trailing blanks.

**Rated Capacity (157).** Report the Rated Capacity of the Source Combination, in the Rated Capacity Units of Measure. The number should be decimal-justified in F12.2 format and padded with blanks to the left.

**Source of Rated Capacity Information (169).** Report a short explanation of the source of the information (Manufacturer’s Rating, Test Results, etc.). The Source of Rated Capacity Information should be left-justified and padded to the right with trailing blanks.

### (3) RT 820: Monitoring Plan Emission Result Information

MONITORING PLAN EMISSION RESULT INFORMATION (PAEDR 2.00)																																															
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)																																								
Monitoring plan emission result information	820	1	Record Type Code		820	3	I3																																								
		4	PAEDR Version		2.00	4	F4.2																																								
		8	Change Flag		*N, A, C, R, I, D	1	A1																																								
		9	Reason For Information Change		*	50	A50																																								
		59	Effective Date of Information (blank if N or R above)	YYYYMMDD		8	A8																																								
		67	New/Existing Source Combination Flag		*N or E	1	A1																																								
		68	DEP Source Combination ID code			7	I7																																								
		75	New/Existing Emission Result Flag		*N or E	1	A1																																								
		76	DEP Emission Result ID Code (if new, assign number unique to current submittal)			9	I9																																								
		85	Parameter Name		*	50	A50																																								
		135	Units of Measurement		*	10	A10																																								
		145	Basis of Measurement		*W, D, N	1	A1																																								
		146	“Corrected To” Description		*	10	A10																																								
		156	Data Substitution Required Flag		*1 or 0	1	I1																																								
Total Record Length 156																																															
<p>* Explanation of selected fields</p> <p><u>Change Flag</u> N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original I = Change Status to Inactive, D = Delete Record</p> <p><u>Reason For Information Change</u> If Change Flag = N, enter “No Change” If Change Flag = A, enter “Initial Submittal” Otherwise, enter short explanation of reason for information change</p> <p><u>New/Existing Source Combination Flag</u> N = Source Combination ID code below assigned by submitter E = Source Combination ID code below is existing code assigned by DEP</p> <p><u>New/Existing Emission Result Flag</u> N = Emission Result ID code below assigned by submitter E = Emission Result ID code below is existing code assigned by DEP</p> <table><tr><td><u>Parameter Name</u></td><td>CO</td><td>CO<sub>2</sub></td><td>Culm Gas %</td><td><u>Units of Measurement</u></td></tr><tr><td>CE</td><td>Fuel Rate</td><td>H<sub>2</sub>O</td><td>H<sub>2</sub>S</td><td>% Btu/hr</td></tr><tr><td>Flow</td><td>HCl</td><td>HCl Reduction</td><td>Heat Input</td><td>Degrees F</td></tr><tr><td>HC</td><td>NO<sub>2</sub></td><td>NO<sub>x</sub></td><td>NO<sub>x</sub> Allowable</td><td>gph</td></tr><tr><td>NO</td><td>Opacity</td><td>Pressure</td><td>SO<sub>2</sub></td><td>lbs/Mbtu</td></tr><tr><td>O<sub>2</sub></td><td>SO<sub>2</sub> Reduction</td><td>Steam Flow</td><td>Temperature</td><td>ppm</td></tr><tr><td>SO<sub>2</sub> Allowable</td><td>VCM</td><td>VOC</td><td></td><td>psi</td></tr><tr><td>TRS</td><td></td><td></td><td></td><td></td></tr></table> <p><u>Basis of Measurement</u> W = Wet D = Dry N = Not Applicable</p> <p><u>Corrected To Description</u> ** = Not Applicable 0% O<sub>2</sub> 10% O<sub>2</sub> 12% O<sub>2</sub> 15% O<sub>2</sub> 7% O<sub>2</sub> 8% O<sub>2</sub></p> <p><u>Data Substitution Required Flag</u> 1 = Data substitution required when data invalid 0 = Data substitution not required</p>								<u>Parameter Name</u>	CO	CO <sub>2</sub>	Culm Gas %	<u>Units of Measurement</u>	CE	Fuel Rate	H <sub>2</sub> O	H <sub>2</sub> S	% Btu/hr	Flow	HCl	HCl Reduction	Heat Input	Degrees F	HC	NO <sub>2</sub>	NO <sub>x</sub>	NO <sub>x</sub> Allowable	gph	NO	Opacity	Pressure	SO <sub>2</sub>	lbs/Mbtu	O <sub>2</sub>	SO <sub>2</sub> Reduction	Steam Flow	Temperature	ppm	SO <sub>2</sub> Allowable	VCM	VOC		psi	TRS				
<u>Parameter Name</u>	CO	CO <sub>2</sub>	Culm Gas %	<u>Units of Measurement</u>																																											
CE	Fuel Rate	H <sub>2</sub> O	H <sub>2</sub> S	% Btu/hr																																											
Flow	HCl	HCl Reduction	Heat Input	Degrees F																																											
HC	NO <sub>2</sub>	NO <sub>x</sub>	NO <sub>x</sub> Allowable	gph																																											
NO	Opacity	Pressure	SO <sub>2</sub>	lbs/Mbtu																																											
O <sub>2</sub>	SO <sub>2</sub> Reduction	Steam Flow	Temperature	ppm																																											
SO <sub>2</sub> Allowable	VCM	VOC		psi																																											
TRS																																															

Submit at least one record of type 820 for each existing or proposed new Emission Result at the Facility.

#### Field Descriptions and Instructions

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change

Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The “R = Revision of Existing Record to Correct Original” code should be used to correct previously submitted incorrect information. The “C = Change of Existing Record” code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The “I = Change Status to Inactive” code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the “Effective Date of Information”. The “D = Delete Record” code should be used to indicate that a record was added in error and should be removed from the system (the “Effective Date of Information” in such cases should be entered as “99991231”).

**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**Effective Date of Information (59).** If Change Flag was reported as either “A” or “C”, enter the effective date of the submitted information in the format YYYYMMDD. Otherwise, leave this field blank.

**New/Existing Source Combination Flag (67).** If the DEP Source Combination ID Code for the Source Combination has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the Source Combination), report “E”. If this is the initial monitoring plan submittal for the Source Combination, report “N” (see instructions for “DEP Source Combination ID Code”, below).

**DEP Source Combination ID Code (68).** Report the DEP Source Combination ID Code for the Source Combination. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Source Combination ID Code upon processing of the initial Monitoring Plan submittal for a Source Combination. For preparation of the initial Monitoring Plan submittal for a Source Combination, the submitter may use any “temporary” 7-digit number, with the first digit being “9”, as the Facility ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Source Combination Flag” field must contain the value “N”. PADEP BAQ will assign the actual Source Combination ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**New/Existing Emission Result Flag (75).** If the DEP Emission Result ID Code for the Emission Result has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the Emission Result), report “E”. If this is the initial monitoring plan submittal for the Emission Result, report “N” (see instructions for “DEP Emission Result ID Code”, below).

**DEP Emission Result ID Code (76).** Report the DEP Emission Result ID Code for the Emission Result. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Emission Result ID Code upon

processing of the initial Monitoring Plan submittal for an Emission Result. For preparation of the initial Monitoring Plan submittal for a Emission Result, the submitter may use any “temporary” 9-digit number, with the first digit being “9”, as the Emission Result ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Emission Result Flag” field must contain the value “N”. PADEP BAQ will assign the actual Emission Result ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**Parameter Name (85).** Report the Parameter Name for the Emission Result. Acceptable values are:

CE	CO	CO <sub>2</sub>	Culm Gas %
Flow	Fuel Rate	H <sub>2</sub> O	H <sub>2</sub> S
HC	HCl	HCl Reduction	Heat Input
NO	NO <sub>2</sub>	NO <sub>x</sub>	NO <sub>x</sub> Allowable
O <sub>2</sub>	Opacity	Pressure	SO <sub>2</sub>
SO <sub>2</sub> Allowable	SO <sub>2</sub> Reduction	Steam Flow	Temperature
TRS	VCM	VOC	

Contact DEP should other values for the Parameter Name be necessary. The Parameter Name should be left-justified and padded to the right with trailing blanks.

**Units of Measurement (135).** Report the Units of Measurement for the Emission Result. Acceptable values are:

%	Btu/hr	cfh	Cfm
Degrees F	gph	gpm	lbs/hr
lbs/Mbtu	lbs/ton	Mbtu/hr	Mcfh
ppm	psi		

Contact DEP should other Units of Measurement for the Emission Result be necessary. The Units of Measurement for the Emission Result should be left-justified and padded to the right with trailing blanks.

**Basis of Measurement (145).** Report the Basis of Measurement for the Emission Result. Acceptable values are:

W = Wet      D = Dry      N = Not Applicable

The Basis of Measurement for the Emission Result should be left-justified and padded to the right with trailing blanks.

**“Corrected To” Description (146).** Report the “Corrected To” Description for the Emission Result. Acceptable values are:

\*\* = Not Applicable    0% O<sub>2</sub>    10% O<sub>2</sub>    12% O<sub>2</sub>    15% O<sub>2</sub>    7% O<sub>2</sub>    8% O<sub>2</sub>

Contact DEP should other “Corrected To” Descriptions for the Emission Result be necessary. The “Corrected To” Description should be left-justified and padded to the right with trailing blanks.

**Data Substitution Required Flag (156).** Report the Data Substitution Required Flag (as provided by PA DEP). Acceptable values are:

1 = Data substitution required when data invalid

0 = Data substitution not required

**(4) RT 821: Monitoring Plan Emission Result Reason Information**

MONITORING PLAN EMISSION RESULT REASON INFORMATION (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Monitoring plan emission result reason information (submit one record for each of up to 5 reasons for installation of CEMS)	821	1	Record Type Code		821	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change		*	50	A50
		59	Effective Date of Information (blank if N or R above)	YYYYMMDD		8	A8
		67	New/Existing Source Combination Flag		*N or E	1	A1
		68	DEP Source Combination ID code			7	I7
		75	New/Existing Emission Result Flag		*N or E	1	A1
		76	DEP Emission Result ID Code (if new, assign number unique to current submittal)			9	I9
		85	Reason Number		1 – 5	1	I1
		86	Reason For Installation Code		*	10	A10
		96	Citation for Code		I	50	A50
<p style="text-align: right;">Total Record Length 145</p> <p>* Explanation of selected fields</p> <p><u>Change Flag</u>  N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original  I = Change Status to Inactive, D = Delete Record</p> <p><u>Reason For Information Change</u>  If Change Flag = N, enter “No Change”  If Change Flag = A, enter “Initial Submittal”  Otherwise, enter short explanation of reason for information change</p> <p><u>New/Existing Source Combination Flag</u>  N = Source Combination ID code below assigned by submitter E = Source Combination ID code below is existing code assigned by DEP</p> <p><u>New/Existing Emission Result Flag</u>  N = Emission Result ID code below assigned by submitter E = Emission Result ID code below is existing code assigned by DEP</p> <p><u>Reason For Installation Code</u>  ** = Not Applicable ? = Unknown Ne = NESHAPS Ns = NSPS  O = Department Order P1=Acid Rain Phase I P2 = Acid Rain Phase II Pa = Plan Approval  Ps = PSD R = RACT S = SIP T = Trading Program</p> <p><u>Citation for Code</u>  Regulatory reference (‘25 PA Code, Chapter 127’, etc.)</p> <p><u>Data Substitution Required Flag</u>  1 = Data substitution required when data invalid  0 = Data substitution not required</p>							

Report one record of type 821 for each of up to 5 reasons for why monitoring is required for each existing or proposed new Emission Result at the Facility (up to 5 reasons per Emission Result). Submit records of type 821 as applicable (multiple reasons for reporting each individual Emission Result).

**Field Descriptions and Instructions**

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The “R = Revision of Existing Record to Correct Original” code should be used to correct

previously submitted incorrect information. The “C = Change of Existing Record” code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The “I = Change Status to Inactive” code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the “Effective Date of Information”. The “D = Delete Record” code should be used to indicate that a record was added in error and should be removed from the system (the “Effective Date of Information” in such cases should be entered as “99991231”).

**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**Effective Date of Information (59).** If Change Flag was reported as either “A” or “C”, enter the effective date of the submitted information in the format YYYYMMDD. Otherwise, leave this field blank.

**New/Existing Source Combination Flag (67).** If the DEP Source Combination ID Code for the Source Combination has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the Source Combination), report “E”. If this is the initial monitoring plan submittal for the Source Combination, report “N” (see instructions for “DEP Source Combination ID Code”, below).

**DEP Source Combination ID Code (68).** Report the DEP Source Combination ID Code for the Source Combination. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Source Combination ID Code upon processing of the initial Monitoring Plan submittal for a Source Combination. For preparation of the initial Monitoring Plan submittal for a Source Combination, the submitter may use any “temporary” 7-digit number, with the first digit being “9”, as the Facility ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Source Combination Flag” field must contain the value “N”. PADEP BAQ will assign the actual Source Combination ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**New/Existing Emission Result Flag (75).** If the DEP Emission Result ID Code for the Emission Result has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the Emission Result), report “E”. If this is the initial monitoring plan submittal for the Emission Result, report “N” (see instructions for “DEP Emission Result ID Code”, below).

**DEP Emission Result ID Code (76).** Report the DEP Emission Result ID Code for the Emission Result. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Emission Result ID Code upon processing of the initial Monitoring Plan submittal for an Emission Result. For preparation of the initial Monitoring Plan submittal for a Emission Result, the submitter may use any “temporary” 9-digit number, with the first digit being “9”,

as the Emission Result ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Emission Result Flag” field must contain the value “N”. PADEP BAQ will assign the actual Emission Result ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**Reason Number (85).** Report a sequential reason number as an integer (1 through 5).

**Reason For Installation Code (86).** Report the applicable Reason For Installation Code. Acceptable values are:

** = Not Applicable	? = Unknown	Ne = NESHAPS	Ns = NSPS
O = Department Order	P1=Acid Rain Phase I	P2 = Acid Rain Phase II	Pa = Plan Approval
Ps = PSD	R = RACT	S = SIP	T = Trading Program

Contact DEP should other values for the Reason For Installation Code be necessary. The Reason For Installation Code should be left-justified and padded to the right with trailing blanks.

**Citation For Code (96).** Report the regulatory citation for the reason represented by the Reason For Installation Code (for instance, “25 PA Code - Chapter 127”, “25 PA Code – Chapter 145”, etc.).



**(5) RT 822: Monitoring Plan Emission Standard Information**

MONITORING PLAN EMISSION STANDARD INFORMATION (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Monitoring plan emission standard information	822	1	Record Type Code		822	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change		*	50	A50
		59	New/Existing Emission Result Flag		*N or E	1	A1
		60	DEP emission result ID code			9	A9
		69	DEP emission standard ID code		*	2	I2
		71	Starting date standard applies	YYYYMMDD		8	A8
		79	Last date standard applies (99991231 if unknown)	YYYYMMDD		8	A8
		87	Emission standard value (all zeros if "variable")	Units of measure		16	F16.6
		103	DEP emission result ID code for emission standard (if "variable")		*	9	A9
		112	Emission standard direction		*	2	A2
		114	Truncation level indicator		*-6 to +9	2	A2
		116	Emission standard penalty parameter code (Contact DEP for code)			3	I3
		119	And/Or flag (for "or'd" standards)		*	1	A1
		120	DEP emission result ID code for or'd standard (all zeros if not or'd)		*	9	A9
		129	DEP emission standard ID code for or'd standard (all zeros if not or'd)		*	2	I2
<p style="text-align: right;">Total Record Length 130</p> <p>* Explanation of selected fields</p> <p><u>Change Flag</u>  N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original  I = Change Status to Inactive, D = Delete Record</p> <p><u>Reason For Information Change</u>  If Change Flag = N, enter "No Change" If Change Flag = A, enter "Initial Submittal" Otherwise, enter short explanation of reason for information change</p> <p><u>New/Existing Emission Result Flag</u>  N = Emission Result ID code below assigned by submitter E = Emission Result ID code below is existing code assigned by DEP</p> <p><u>*DEP emission standard ID code</u>  0 = No ESIDC (Use for DA Std Only!!!) 1 = 1-Minute average, 3 exceptions in hour 2 = 1-Minute average, block  3 = 1-day average, block 4 = Daily averages, 2 exceptions in 30-day 5 = 30-day average, rolling by 1 day  6 = 1-hour average, block 7 = 4-day average, rolling by 1 day 8 = 3-hour average, rolling by 1 hour  9 = 4-hour average, rolling by 1 hour 10 = 8-hour average, rolling by 1 hour 11 = 12-hour average, rolling by 1 hour  12 = 1-Year sum 13 = Std1dev, 3 exceptions in hour 14 = Std1dev, no exceptions  15 = Std2dev, no exceptions 16 = 4-hour average, block 17 = 12-hour average, block  18 = 24-hour average, rolling by 1 hour 19 = 6-minute average, block 20 = 1-day sum  21 = 12-month sum, rolling by 1 month 22 = 12-month average, rolling by 1 month 23 = 3-hour average, block  24 = 7-day average, rolling by 1 day 25 = 1-day average, block, geometric 26 = 30-Operating-Day operating hour average, by 1 day  27 = 1-month average, block</p> <p><u>DEP emission result ID code for emission standard (if "variable")</u>  If emission standard is variable, enter DEP emission result ID code under which the emission standard information will be submitted</p> <p><u>Emission standard direction</u>  LT = Violation if monitoring result is less than the emission standard value  LE = Violation if monitoring result is less than or equal to the emission standard value  GT = Violation if monitoring result is greater than the emission standard value  GE = Violation if monitoring result is greater than or equal to the emission standard value</p> <p><u>Truncation level indicator</u> <u>And/Or flag (for "or'd" standards)</u>  (-2 = .01, -1 = 0.1, 1 = whole number, 2 = 10, 3 = 100, etc.) O = Standard is "or'd" with another (30ppm outlet OR 90% reduction, etc.)  A = Standard is not "or'd"</p> <p><u>DEP emission result ID code for or'd standard</u>  If And/Or flag = O, enter DEP emission result ID code representing emission result with which standard will be "or'd"  If And/Or flag = A, enter all zeros</p> <p><u>DEP emission standard ID code for or'd standard</u>  If And/Or flag = O, enter DEP emission standard ID code with which standard will be "or'd"  If And/Or flag = A, enter all zeros</p>							

Report at least one record of type 822 for each existing or proposed new Emission Result at the Facility. Submit additional records of type 822 as applicable

(multiple emission standards for individual Emission Result/multiple Emission Results).

### **Field Descriptions and Instructions**

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The “R = Revision of Existing Record to Correct Original” code should be used to correct previously submitted incorrect information. The “C = Change of Existing Record” code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The “I = Change Status to Inactive” code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the “Effective Date of Information”. The “D = Delete Record” code should be used to indicate that a record was added in error and should be removed from the system (the “Effective Date of Information” in such cases should be entered as “99991231”).

**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**New/Existing Emission Result Flag (59).** If the DEP Emission Result ID Code for the Emission Result has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the Emission Result), report “E”. If this is the initial monitoring plan submittal for the Emission Result, report “N” (see instructions for “DEP Emission Result ID Code”, below).

**DEP Emission Result ID Code (60).** Report the DEP Emission Result ID Code for the Emission Result. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Emission Result ID Code upon processing of the initial Monitoring Plan submittal for an Emission Result. For preparation of the initial Monitoring Plan submittal for a Emission Result, the submitter may use any “temporary” 9-digit number, with the first digit being “9”, as the Emission Result ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Emission Result Flag” field must contain the value “N”. PADEP BAQ will assign the actual Emission Result ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**DEP Emission Standard ID Code (69).** Report the DEP Emission Standard ID Code (as provided by PADEP) to identify the type of averaging/summation period involved. Acceptable values are:

- 0 = No ESIDC (Use for DA Std Only!!!)
- 1 = 1-Minute average, 3 exceptions in hour

- 2 = 1-Minute average, block
- 3 = 1-day average, block
- 4 = Daily averages, 2 exceptions in 30-day
- 5 = 30-day average, rolling by 1 day
- 6 = 1-hour average, block
- 7 = 4-day average, rolling by 1 day
- 8 = 3-hour average, rolling by 1 hour
- 9 = 4-hour average, rolling by 1 hour
- 10 = 8-hour average, rolling by 1 hour
- 11 = 12-hour average, rolling by 1 hour
- 12 = 1-Year sum
- 13 = Std1dev, 3 exceptions in hour
- 14 = Std1dev, no exceptions
- 15 = Std2dev, no exceptions
- 16 = 4-hour average, block
- 17 = 12-hour average, block
- 18 = 24-hour average, rolling by 1 hour
- 19 = 6-minute average, block
- 20 = 1-day sum
- 21 = 12-month sum, rolling by 1 month
- 22 = 12-month average, rolling by 1 month
- 23 = 3-hour average, block
- 24 = 7-day average, rolling by 1 day
- 25 = 1-day average, block, geometric
- 26 = 30-Operating-Day operating hour average, by 1 day
- 27 = 1-month average, block

Contact DEP should other values for the Emission Standard ID Code be necessary.

**Starting Date Standard Applies (71).** Report the Starting Date the Standard Applies, in YYYYMMDD format.

**Last Date Standard Applies (79).** Report the Last Date the Standard Applies. If standard is still applicable, report “99991231”.

**Emission Standard Value (87).** Report the value of the emission standard. If the Emission Result is subject to a “variable” standard (based on process operating conditions, etc.), enter zeros. The Emission Standard Value should be decimal-justified in a F16.6 format, padded with blanks to the left.

**DEP Emission Result ID Code for Emission Standard (if “variable”) (103).** Should the Emission Result be subject to a “variable” standard (based on process operating conditions, etc.), enter the DEP Emission Result ID Code for the Emission Result used to report such “variable” emission standard for comparison with the Emission Result represented by this record. The DEP Emission Result ID Code for Emission Standard (if “variable”) should be left-justified and padded with trailing blanks.

**Emission Standard Direction (112).** Report the Emission Standard Direction. Acceptable values are:

LT = Violation if monitoring result is less than the emission standard value  
LE = Violation if monitoring result is less than or equal to the emission standard value  
GT = Violation if monitoring result is greater than the emission standard value  
GE = Violation if monitoring result is greater than or equal to the emission standard value

**Truncation Level Indicator (114).** Report the Truncation Level Indicator (as supplied by PADEP). Acceptable values are in the range “-6” to “+9”, with “+0” as a valid value.

**Emission Standard Penalty Parameter Code (116).** Report the Emission Standard Penalty Parameter Code (as supplied by PADEP) as an integer. The Emission Standard Penalty Parameter Code should be right-justified and padded with blanks to the left.

**And/Or Flag (119).** If the emission standard applies in addition to any other emission standards (or is the only emission standard), enter “A”. If the emission standard is one of a number of alternatives, enter “O”.

**DEP Emission Result ID Code For or’d Standard (120).** If the Emission Standard is one of a number of alternatives, enter the DEP Emission Result ID Code to which the or’d standard applies. Otherwise, enter all zeros. The DEP Emission Result ID Code for or’d Standard should be left-justified and padded with blanks to the right.

**DEP Emission Standard ID Code For or’d Standard (129).** If the Emission Standard is one of a number of alternatives, enter the DEP Emission Standard ID Code of the DEP Emission Result ID Code For or’d Standard, which applies. Otherwise, enter all zeros. The DEP Emission Standard ID Code for or’d Standard should be right-justified and padded with blanks to the left.

**(6) RT 823: Monitoring Plan Data Availability Standard Information**

MONITORING PLAN DATA AVAILABILITY STANDARD INFORMATION (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Monitoring plan data availability standard information	823	1	Record Type Code		823	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change		*	50	A50
		59	New/Existing Emission Result Flag		*N or E	1	A1
		60	DEP emission result ID code			9	A9
		69	DEP data availability standard ID code		*	2	I2
		71	Starting date standard applies	YYYYMMDD		8	A8
		79	Last date standard applies (99991231 if unknown)	YYYYMMDD		8	A8
		87	DEP emission standard ID code to which standard applies		*	2	I2
		89	And/Or flag (for "or'd" standards)		*	1	A1
		90	DEP emission standard ID code for or'd standard (all zeros if not or'd)		*	2	I2
		92	DEP data availability standard ID code for or'd standard (all zeros if not or'd)		*	2	I2
<p align="right">Total Record Length 93</p> <p>* Explanation of selected fields</p> <p><u>Change Flag</u>  N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original  I = Change Status to Inactive, D = Delete Record</p> <p><u>Reason For Information Change</u>  If Change Flag = N, enter "No Change"  If Change Flag = A, enter "Initial Submittal"  Otherwise, enter short explanation of reason for information change</p> <p><u>New/Existing Emission Result Flag</u>  N = Emission Result ID code below assigned by submitter      E = Emission Result ID code below is existing code assigned by DEP</p> <p><u>DEP data availability standard ID code</u>  1 = 90% hours in month      2 = 95% hours in quarter      3 = 90% averages in month      4 = 75% averages in month  5 = 85% averages in quarter      6 = 100% hours in quarter      7 = 95% hours in day      8 = 50% hours in 30-day  9 = 23 days in 30-day      10 = 100% hours in day</p> <p><u>DEP emission standard ID code to which standard applies</u>  Enter DEP emission standard ID code from appropriate record type 822</p> <p><u>And/Or flag (for "or'd standards)</u>  O = Standard is "or'd" (90% of hours in month OR 95% hours in quarter, etc.)  A = Standard is not "or'd"</p> <p><u>DEP emission standard ID code for or'd standard</u>  If And/Or flag = O, enter DEP emission standard ID code as appropriate for or'd standard  If And/Or flag = A, enter all zeros</p> <p><u>DEP data availability standard ID code for or'd standard</u>  If And/Or flag = O, enter DEP data availability standard ID code as appropriate for or'd standard  If And/Or flag = A, enter all zeros</p>							

Report at least one record of type 823 for each existing or proposed new Emission Result at the Facility. Submit additional records of type 823 as applicable (multiple data availability standards for individual Emission Result/multiple Emission Results).

## Field Descriptions and Instructions

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The “R = Revision of Existing Record to Correct Original” code should be used to correct previously submitted incorrect information. The “C = Change of Existing Record” code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The “I = Change Status to Inactive” code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the “Effective Date of Information”. The “D = Delete Record” code should be used to indicate that a record was added in error and should be removed from the system (the “Effective Date of Information” in such cases should be entered as “99991231”).

**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**New/Existing Emission Result Flag (59).** If the DEP Emission Result ID Code for the Emission Result has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the Emission Result), report “E”. If this is the initial monitoring plan submittal for the Emission Result, report “N” (see instructions for “DEP Emission Result ID Code”, below).

**DEP Emission Result ID Code (60).** Report the DEP Emission Result ID Code for the Emission Result. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Emission Result ID Code upon processing of the initial Monitoring Plan submittal for an Emission Result. For preparation of the initial Monitoring Plan submittal for a Emission Result, the submitter may use any “temporary” 9-digit number, with the first digit being “9”, as the Emission Result ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Emission Result Flag” field must contain the value “N”. PADEP BAQ will assign the actual Emission Result ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**DEP Data Availability Standard ID Code (69).** Report the DEP Data Availability Standard ID Code (as provided by PADEP) to identify the specific Data Availability Standard involved. Acceptable values are:

- 1 = 90% hours in month
- 2 = 95% hours in quarter
- 3 = 90% averages in month
- 4 = 75% averages in month
- 5 = 85% averages in quarter

- 6 = 100% hours in quarter
- 7 = 95% hours in day
- 8 = 50% hours in 30-day
- 9 = 23 days in 30-day
- 10 = 100% hours in day

Contact DEP should other values for the Data Availability Standard ID Code be necessary.

**Starting Date Standard Applies (71).** Report the Starting Date the Standard Applies, in YYYYMMDD format.

**Last Date Standard Applies (79).** Report the Last Date the Standard Applies. If standard is still applicable, report “99991231”

**DEP Emission Standard ID Code to which Standard Applies (87).** Report the DEP Emission Standard ID code to which the Data Availability Standard applies. If the Data Availability Standard is not related to an Emission standard, enter 0. Acceptable values are:

- 0 = No ESIDC (Use for DA Std Only!!!)
- 1 = 1-Minute average, 3 exceptions in hour
- 2 = 1-Minute average, block
- 3 = 1-day average, block
- 4 = Daily averages, 2 exceptions in 30-day
- 5 = 30-day average, rolling by 1 day
- 6 = 1-hour average, block
- 7 = 4-day average, rolling by 1 day
- 8 = 3-hour average, rolling by 1 hour
- 9 = 4-hour average, rolling by 1 hour
- 10 = 8-hour average, rolling by 1 hour
- 11 = 12-hour average, rolling by 1 hour
- 12 = 1-Year sum
- 13 = Std1dev, 3 exceptions in hour
- 14 = Std1dev, no exceptions
- 15 = Std2dev, no exceptions
- 16 = 4-hour average, block
- 17 = 12-hour average, block
- 18 = 24-hour average, rolling by 1 hour
- 19 = 6-minute average, block
- 20 = 1-day sum
- 21 = 12-month sum, rolling by 1 month
- 22 = 12-month average, rolling by 1 month
- 23 = 3-hour average, block
- 24 = 7-day average, rolling by 1 day
- 25 = 1-day average, block, geometric
- 26 = 30-Operating-Day operating hour average, by 1 day
- 27 = 1-month average, block

**And/Or Flag (89).** If the Data Availability Standard applies in addition to any other Data Availability Standards (or is the only Data Availability Standard), enter “A”. If the Data Availability Standard is one of a number of alternatives, enter “O”.

**DEP Emission Standard ID Code For or’d Standard (90).** If the Emission Standard is one of a number of alternatives, enter the DEP Emission Standard ID Code of the DEP Emission Result ID Code For or’d Standard, which applies. Otherwise, enter all zeros. Also enter all zeros if the or’d Data Availability Standard is not related to a specific Emission Standard. The DEP Emission Standard ID Code for or’d Standard should be right-justified and padded with blanks to the left. Acceptable values are:

- 0 = No ESIDC (Use for DA Std Only!!!)
- 1 = 1-Minute average, 3 exceptions in hour
- 2 = 1-Minute average, block
- 3 = 1-day average, block
- 4 = Daily averages, 2 exceptions in 30-day
- 5 = 30-day average, rolling by 1 day
- 6 = 1-hour average, block
- 7 = 4-day average, rolling by 1 day
- 8 = 3-hour average, rolling by 1 hour
- 9 = 4-hour average, rolling by 1 hour
- 10 = 8-hour average, rolling by 1 hour
- 11 = 12-hour average, rolling by 1 hour
- 12 = 1-Year sum
- 13 = Std1dev, 3 exceptions in hour
- 14 = Std1dev, no exceptions
- 15 = Std2dev, no exceptions
- 16 = 4-hour average, block
- 17 = 12-hour average, block
- 18 = 24-hour average, rolling by 1 hour
- 19 = 6-minute average, block
- 20 = 1-day sum
- 21 = 12-month sum, rolling by 1 month
- 22 = 12-month average, rolling by 1 month
- 23 = 3-hour average, block
- 24 = 7-day average, rolling by 1 day
- 25 = 1-day average, block, geometric
- 26 = 30-Operating-Day operating hour average, by 1 day
- 27 = 1-month average, block

**DEP Data Availability Standard ID Code For or’d Standard (92).** If the Data Availability Standard is one of a number of alternatives, enter the DEP Data Availability Standard ID Code for the or’d Standard, which applies. Otherwise, enter all zeros. The DEP Emission Standard ID Code for or’d Standard should be right-justified and padded with blanks to the left. Acceptable values are:



- 1 = 90% hours in month
- 2 = 95% hours in quarter
- 3 = 90% averages in month
- 4 = 75% averages in month
- 5 = 85% averages in quarter
- 6 = 100% hours in quarter
- 7 = 95% hours in day
- 8 = 50% hours in 30-day
- 9 = 23 days in 30-day
- 10 = 100% hours in day

(7) **RT 824: Monitoring Plan CEMS Information**

MONITORING PLAN CEMS INFORMATION (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Monitoring plan CEMS information	824	1	Record Type Code		824	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change		*	50	A50
		59	Effective Date of Information (blank if N or R above)	YYYYMMDD		8	A8
		67	New/Existing Emission Result Flag		*N or E	1	A1
		68	DEP Emission Result ID code			9	I9
		77	New/Existing CEMS Flag		*N or E	1	A1
		78	DEP CEMS ID Code (if new, assign number unique to current submittal)			11	I11
		89	Primary/Standby/Backup Code		*	3	A3
		92	Revision Number		*	2	I2
		94	Penalty Factor (Contact DEP for Factor)			5	A5
		99	Date of DEP Phase III approval (99991231 if not yet approved)	YYYYMMDD		8	A8
		107	CEM Manual Revision Number		*	2	I2
				Total Record Length 108			
<p>* Explanation of selected fields</p> <p><u>Change Flag</u> N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original I = Change Status to Inactive, D = Delete Record</p> <p><u>Reason For Information Change</u> If Change Flag = N, enter “No Change” If Change Flag = A, enter “Initial Submittal” Otherwise, enter short explanation of reason for information change</p> <p><u>New/Existing Emission Result Flag</u> N = Emission Result ID code below assigned by submitter      E = Emission Result ID code below is existing code assigned by DEP</p> <p><u>New/Existing CEMS Flag</u> N = CEMS ID code below assigned by submitter      E = CEMS ID code below is existing code assigned by DEP</p> <p><u>Primary/Standby/Backup Code</u> Primary = P      Standby = S00 – S99      Backup = B00 – B09</p> <p><u>Revision Number</u> Use 0 (zero) for original submittal, increment if monitoring system changed so as to require recertification</p> <p><u>CEM Manual Revision Number:</u> Use applicable revision number of CEM Manual</p>							

Report at least one record of type 824 for each existing or proposed new Emission Result at the Facility. Submit additional records of type 824 as applicable (multiple CEMSs for individual Emission Result/multiple Emission Results).

**Field Descriptions and Instructions**

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The "R = Revision of Existing Record to Correct Original" code should be used to correct previously submitted incorrect information. The "C = Change of Existing Record" code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The "I = Change Status

to Inactive” code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the “Effective Date of Information”. The “D = Delete Record” code should be used to indicate that a record was added in error and should be removed from the system (the “Effective Date of Information” in such cases should be entered as “99991231”).

**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**Effective Date of Information (59).** If Change Flag was reported as either “A” or “C”, enter the effective date of the submitted information in the format YYYYMMDD. Otherwise, leave this field blank.

**New/Existing Emission Result Flag (67).** If the DEP Emission Result ID Code for the Emission Result has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the Emission Result), report “E”. If this is the initial monitoring plan submittal for the Emission Result, report “N” (see instructions for “DEP Emission Result ID Code”, below).

**DEP Emission Result ID Code (68).** Report the DEP Emission Result ID Code for the Emission Result. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Emission Result ID Code upon processing of the initial Monitoring Plan submittal for an Emission Result. For preparation of the initial Monitoring Plan submittal for a Emission Result, the submitter may use any “temporary” 9-digit number, with the first digit being “9”, as the Emission Result ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Emission Result Flag” field must contain the value “N”. PADEP BAQ will assign the actual Emission Result ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**New/Existing CEMS Flag (77).** If the DEP CEMS ID Code for the CEMS has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the CEMS), report “E”. If this is the initial monitoring plan submittal for the CEMS, report “N” (see instructions for “DEP CEMS ID Code”, below).

**DEP CEMS ID Code (78).** Report the DEP CEMS ID Code for the CEMS. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the CEMS ID Code upon processing of the initial Monitoring Plan submittal for an CEMS. For preparation of the initial Monitoring Plan submittal for a CEMS, the submitter may use any “temporary” 11-digit number, with the first digit being “9”, as the CEMS ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing CEMS Flag” field must contain the value “N”. PADEP BAQ will assign the actual CEMS ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**Primary/Standby/Backup Code (89).** Report the Primary/Standby/Backup Code for the CEMS to indicate whether the CEMS is the Primary CEMS (only one allowed, data from this CEMS must be report unless they are invalid and other Standby or Backup CEMSs exist), one of up to 100 Standby CEMSs (CEMSs installed and undergoing all normal operation and quality assurance requirements, data from Standby CEMSs may be used if the data from the Primary CEMS are invalid, data from Standby CEMSs must be used from the first Standby CEMS with valid data in number order from lowest to highest), or one of up to 100 Backup CEMSs (CEMSs installed only when needed, quality assurance checks must be conducted prior to use of data from Backup CEMSs, data from Backup CEMSs may be used if the data from the Primary CEMS and all -- if any -- Standby CEMSs are invalid, data from Backup CEMSs must be used from the first Backup CEMS with valid data in number order from lowest to highest). Acceptable values for the Primary/Standby/Backup Code are:

Primary = P  
Standby = S00 – S99  
Backup = B00 – B09

The Primary/Standby/Backup Code should be left-justified and padded with blanks to the right.

**Revision Number (92).** Report the Revision Number for the CEMS. The Revision Number for the CEMS in the initial Monitoring Plan information for the CEMS should be zero (0) with the revision number incremented whenever the Monitoring Plan information for the CEMS is changed. The Revision Number should be right-justified and padded with blanks to the left.

**Penalty Factor (94).** Report the Penalty Factor (as supplied by DEP). The Penalty Factor should be left-justified and padded with blanks to the right.

**Date of DEP Phase III Approval (99).** Report the date DEP approved the use of the CEMS, in the format YYYYMMDD. If approval of the CEMS is still pending, enter “99991231”.

**CEM Manual Revision Number (107).** Report the CEM Manual Revision Number under which the CEMS has obtained or is requesting approval. The CEM Manual Revision Number should be right-justified and padded with spaces to the left.

**(8) RT 828: Monitoring Plan Analyzer Information I**

MONITORING PLAN ANALYZER INFORMATION I (PAEDR 2.00)																																																																							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)																																																																
Monitoring plan analyzer information I	828	1	Record Type Code		828	3	I3																																																																
		4	PAEDR Version		2.00	4	F4.2																																																																
		8	Change Flag		*N, A, C, R, I, D	1	A1																																																																
		9	Reason For Information Change		*	50	A50																																																																
		59	Effective Date of Information (blank if N or R above)	YYYYMMDD		8	A8																																																																
		67	New/Existing Facility Flag		*N or E	1	A1																																																																
		68	DEP Facility ID code			5	I5																																																																
		73	New/Existing Analyzer Flag		*N or E	1	A1																																																																
		74	DEP Analyzer ID Code (if new, assign number unique to current submittal)			13	I13																																																																
		87	Parameter Name		*	50	A50																																																																
		137	Units of Measurement		*	10	A10																																																																
		147	Basis of Measurement		*	1	A1																																																																
		148	Monitoring Point Code		*	3	A3																																																																
		151	Revision Number		*	2	I2																																																																
		153	Manufacturer Name			50	A50																																																																
		203	Model Number			50	A50																																																																
<p style="text-align: right;">Total Record Length 252</p> <p>* Explanation of selected fields</p> <p><u>Change Flag</u>  N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original  I = Change Status to Inactive, D = Delete Record</p> <p><u>Reason For Information Change</u>  If Change Flag = N, enter "No Change"  If Change Flag = A, enter "Initial Submittal"  Otherwise, enter short explanation of reason for information change</p> <p><u>New/Existing Source Combination Flag</u>  N = Source Combination ID code below assigned by submitter E = Source Combination ID code below is existing code assigned by DEP</p> <p><u>New/Existing Analyzer Flag</u>  N = Analyzer ID code below assigned by submitter E = Analyzer ID code below is existing code assigned by DEP</p> <table border="0"> <thead> <tr> <th colspan="4"><u>Parameter Name</u></th> <th colspan="4"><u>Units of Measurement</u></th> </tr> </thead> <tbody> <tr> <td>CE</td> <td>CO</td> <td>CO<sub>2</sub></td> <td>Culm Gas %</td> <td>%</td> <td>Btu/hr</td> <td>cfh</td> <td>Cfm</td> </tr> <tr> <td>Flow</td> <td>Fuel Rate</td> <td>H<sub>2</sub>O</td> <td>H<sub>2</sub>S</td> <td>Degrees F</td> <td>gph</td> <td>gpm</td> <td>lbs/hr</td> </tr> <tr> <td>HC</td> <td>HCl</td> <td>HCl Reduction</td> <td>Heat Input</td> <td>lbs/Mbtu</td> <td>lbs/ton</td> <td>Mbtu/hr</td> <td>Mcfh</td> </tr> <tr> <td>NO</td> <td>NO<sub>2</sub></td> <td>NO<sub>x</sub></td> <td>NO<sub>x</sub> Allowable</td> <td>ppm</td> <td>psi</td> <td></td> <td></td> </tr> <tr> <td>O<sub>2</sub></td> <td>Opacity</td> <td>Pressure</td> <td>SO<sub>2</sub></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SO<sub>2</sub> Allowable</td> <td>SO<sub>2</sub> Reduction</td> <td>Steam Flow</td> <td>Temperature</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>TRS</td> <td>VCM</td> <td>VOC</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p><u>Basis of Measurement</u>  W = Wet  D = Dry  N = Not Applicable</p> <p><u>Monitoring Point Code</u>  For outlet, use letter "O" followed by numeral to uniquely identify analyzer  For inlet, use letter "I" followed by numeral to uniquely identify analyzer  For Primary Temperature, use letter "P" followed by numeral to uniquely identify analyzer  For Secondary Temperature, use letter "S" followed by numeral to uniquely identify analyzer</p> <p><u>Revision Number</u>  Use 0 (zero) for original submittal, increment if monitoring system changed so as to require recertification</p>								<u>Parameter Name</u>				<u>Units of Measurement</u>				CE	CO	CO <sub>2</sub>	Culm Gas %	%	Btu/hr	cfh	Cfm	Flow	Fuel Rate	H <sub>2</sub> O	H <sub>2</sub> S	Degrees F	gph	gpm	lbs/hr	HC	HCl	HCl Reduction	Heat Input	lbs/Mbtu	lbs/ton	Mbtu/hr	Mcfh	NO	NO <sub>2</sub>	NO <sub>x</sub>	NO <sub>x</sub> Allowable	ppm	psi			O <sub>2</sub>	Opacity	Pressure	SO <sub>2</sub>					SO <sub>2</sub> Allowable	SO <sub>2</sub> Reduction	Steam Flow	Temperature					TRS	VCM	VOC					
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HC	HCl	HCl Reduction	Heat Input	lbs/Mbtu	lbs/ton	Mbtu/hr	Mcfh																																																																
NO	NO <sub>2</sub>	NO <sub>x</sub>	NO <sub>x</sub> Allowable	ppm	psi																																																																		
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SO <sub>2</sub> Allowable	SO <sub>2</sub> Reduction	Steam Flow	Temperature																																																																				
TRS	VCM	VOC																																																																					

Report one record of type 828 for each existing or proposed new Analyzer at the Facility.

## Field Descriptions and Instructions

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The “R = Revision of Existing Record to Correct Original” code should be used to correct previously submitted incorrect information. The “C = Change of Existing Record” code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The “I = Change Status to Inactive” code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the “Effective Date of Information”. The “D = Delete Record” code should be used to indicate that a record was added in error and should be removed from the system (the “Effective Date of Information” in such cases should be entered as “99991231”).

**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**Effective Date of Information (59).** If Change Flag was reported as either “A” or “C”, enter the effective date of the submitted information in the format YYYYMMDD. Otherwise, leave this field blank.

**New/Existing Facility Flag (67).** If the DEP Facility ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the facility), report “E”. If this is the initial monitoring plan submittal for the facility, report “N” (see instructions for “DEP Facility ID Code”, below).

**DEP Facility ID Code (68).** Report the DEP Facility ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Facility ID Code upon processing of the initial Monitoring Plan submittal for a Facility. For preparation of the initial Monitoring Plan submittal for a Facility, the submitter may use any “temporary” 5-digit number, with the first digit being “9”, as the Facility ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Facility Flag” field must contain the value “N”. PADEP BAQ will assign the actual Facility ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**New/Existing Analyzer Flag (73).** If the DEP Analyzer ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the Analyzer), report “E”. If this is the initial monitoring plan submittal for the Analyzer, report “N” (see instructions for “DEP Analyzer ID Code”, below).

**DEP Analyzer ID Code (74).** Report the DEP Analyzer ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Analyzer ID Code upon processing of the initial Monitoring Plan submittal for a Analyzer. For preparation of the initial Monitoring Plan submittal for an Analyzer, the submitter may use any “temporary” 13-digit number, with the first digit being “9”, as the Analyzer ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Analyzer Flag” field must contain the value “N”. PADEP BAQ will assign the actual Analyzer ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**Parameter Name (87).** Report the Parameter Name for the Analyzer. Acceptable values are:

CE	CO	CO <sub>2</sub>	Culm Gas %
Flow	Fuel Rate	H <sub>2</sub> O	H <sub>2</sub> S
HC	HCl	HCl Reduction	Heat Input
NO	NO <sub>2</sub>	NO <sub>x</sub>	NO <sub>x</sub> Allowable
O <sub>2</sub>	Opacity	Pressure	SO <sub>2</sub>
SO <sub>2</sub> Allowable	SO <sub>2</sub> Reduction	Steam Flow	Temperature
TRS	VCM	VOC	

Contact DEP should other values for the Parameter Name be necessary. The Parameter Name should be left-justified and padded to the right with trailing blanks.

**Units of Measurement (137).** Report the Units of Measurement for the Analyzer. Acceptable values are:

%	Btu/hr	cfh	Cfm
Degrees F	gph	gpm	lbs/hr
lbs/Mbtu	lbs/ton	Mbtu/hr	Mcfh
ppm	psi		

Contact DEP should other Units of Measurement for the Emission Result be necessary. The Units of Measurement for the Emission Result should be left-justified and padded to the right with trailing blanks.

**Basis of Measurement (147).** Report the Basis of Measurement for the Analyzer. Acceptable values are:

W = Wet      D = Dry      N = Not Applicable

The Basis of Measurement for the Emission Result should be left-justified and padded to the right with trailing blanks.

**Monitoring Point Code (148).** Report the monitoring point code in order to allow differentiation between similar analyzers at the same facility. Acceptable values are:

For outlet, use letter “O” followed by numeral to uniquely identify analyzer  
For inlet, use letter “I” followed by numeral to uniquely identify analyzer  
For Primary Temperature, use letter “P” followed by numeral to uniquely identify analyzer  
For Secondary Temperature, use letter “S” followed by numeral to uniquely identify analyzer  
The Monitoring Point Code should be left-justified and padded with blanks to the right.

**Revision Number (151).** Report the Revision Number for the Analyzer. The Revision Number for the Analyzer in the initial Monitoring Plan information for the Analyzer should be zero (0) with the revision number incremented whenever the Monitoring Plan information for the Analyzer is changed. The Revision Number should be right-justified and padded with blanks to the left.

**Manufacturer Name (153).** Report the Manufacturer Name for the Analyzer. The Manufacturer Name should be left-justified and padded with blanks to the right.

**Model Number (203).** Report the Model Number for the Analyzer. The Model Number should be left-justified and padded with blanks to the right.



(9) **RT 829: Monitoring Plan Analyzer Information II**

MONITORING PLAN ANALYZER INFORMATION II (PAEDR 2.00)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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Monitoring plan analyzer information II	829	1	Record Type Code		829	3	I3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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	<p>* Explanation of selected fields</p> <p><u>Change Flag</u> N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original I = Change Status to Inactive, D = Delete Record</p> <p><u>Reason For Information Change</u> If Change Flag = N, enter "No Change" If Change Flag = A, enter "Initial Submittal" Otherwise, enter short explanation of reason for information change</p> <p><u>New/Existing Source Combination Flag</u> N = Source Combination ID code below assigned by submitter      E = Source Combination ID code below is existing code assigned by DEP</p> <p><u>New/Existing Analyzer Flag</u> N = Analyzer ID code below assigned by submitter      E = Analyzer ID code below is existing code assigned by DEP</p> <table><tr><td><u>Analytical Technique</u></td><td></td><td><u>Sample Interface Technique</u></td></tr><tr><td>2<sup>nd</sup> Derivative UV</td><td>Chemiluminescence</td><td>E = Extractive      DE = Dilution 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Report one record of type 829 for each existing or proposed new Analyzer at the Facility.

### Field Descriptions and Instructions

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The "R = Revision of Existing Record to Correct Original" code should be used to correct

previously submitted incorrect information. The “C = Change of Existing Record” code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The “I = Change Status to Inactive” code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the “Effective Date of Information”. The “D = Delete Record” code should be used to indicate that a record was added in error and should be removed from the system (the “Effective Date of Information” in such cases should be entered as “99991231”).

**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**Effective Date of Information (59).** If Change Flag was reported as either “A” or “C”, enter the effective date of the submitted information in the format YYYYMMDD. Otherwise, leave this field blank.

**New/Existing Facility Flag (67).** If the DEP Facility ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the facility), report “E”. If this is the initial monitoring plan submittal for the facility, report “N” (see instructions for “DEP Facility ID Code”, below).

**DEP Facility ID Code (68).** Report the DEP Facility ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Facility ID Code upon processing of the initial Monitoring Plan submittal for a Facility. For preparation of the initial Monitoring Plan submittal for a Facility, the submitter may use any “temporary” 5-digit number, with the first digit being “9”, as the Facility ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Facility Flag” field must contain the value “N”. PADEP BAQ will assign the actual Facility ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**New/Existing Analyzer Flag (73).** If the DEP Analyzer ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the Analyzer), report “E”. If this is the initial monitoring plan submittal for the Analyzer, report “N” (see instructions for “DEP Analyzer ID Code”, below).

**DEP Analyzer ID Code (74).** Report the DEP Analyzer ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Analyzer ID Code upon processing of the initial Monitoring Plan submittal for a Analyzer. For preparation of the initial Monitoring Plan submittal for an Analyzer, the submitter may use any “temporary” 13-digit number, with the first digit being “9”, as the Analyzer ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Analyzer Flag” field must contain the value “N”. PADEP BAQ

will assign the actual Analyzer ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**Serial Number (87).** Report the Serial Number for the Analyzer. If the actual analyzer has not yet been received, enter zero (0) and, upon reception of the analyzer, submit a record type 829 with the Reason For Information Change Flag set to “R” in order to correct the Serial Number information. The Serial Number should be left-justified and padded with blanks to the right.

**Full Scale Value (107).** Report the Full Scale Value for the Analyzer, in units of Analyzer measurement, in the format F13.3. The Full Scale Value should be decimal-justified and padded with blanks to the left.

**Equivalent Reading at Emission Standard Level (120).** Report the Equivalent Reading at Emission Level for the Analyzer at the lowest applicable Emission Standard, in the format F13.3. Determination of this value is explained in the Continuous Source Monitoring Manual. The Equivalent Reading at Emission Standard Level should be decimal-justified and padded with blanks to the left.

**Analytical Technique (133).** Report the Analytical Technique of the Analyzer. Acceptable values are:

2nd Derivative UV	Chemiluminescence	Coulometric Titration
Differential Pressure	Diffusion/absorption	Double Pass Transmissometry
Electrochemical Cell	Fluorescence	Fuel Cell
Fuel Sampling	GC	Ion Mobility Spectrometry
IRGFC	Lead Acetate Tape	NA
NDIR	NDUV	Orifice Plate
Paramagnetic	Single Pass Transmissometry	Thermal Mass Flow
Thermocouple	Ultrasonic	UV Diode Array
Vortex Flowmeter	Wheel Meter	

Contact DEP should additional values for Analytical Technique be needed. The Analytical Technique should be left-justified and padded with blanks to the right.

**Sample Interface Technique (163).** Report the code for the Sample Interface Technique. Acceptable values are:

E = Extractive	DE = Dilution Extractive
I = In-situ	DI = Dilution In-situ
N = Not Applicable	

The code for Sample Interface Technique should be left-justified and padded with blanks to the right.

**Linearity Limit as % of Reference Value (165).** Report the Linearity Limit as % of Reference Value for the Analyzer in F6.2 format. The Linearity Limit as % of Reference Value should be decimal-justified and padded with blanks to the left.

**Linearity Limit in Units of Measurement (171).** Report the Linearity Limit in Units of Measurement for the Analyzer in F13.3 format. The Linearity Limit as in Units of Measurement should be decimal-justified and padded with blanks to the left.

**(10) RT 830: Monitoring Plan Calibration Error Limit Information**

MONITORING PLAN CALIBRATION ERROR LIMIT INFORMATION (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Monitoring plan calibration error limit information	830	1	Record Type Code		830	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change		*	50	A50
		59	Effective Date of Information (blank if N or R above)	YYYYMMDD		8	A8
		67	New/Existing Analyzer Flag		*N or E	1	A1
		68	DEP analyzer ID code			13	A13
		81	DEP calibration error limit ID code		*	2	I2
		83	Calibration error limit value as % of Equivalent Value at Emission Limit	%		6	F6.2
		89	Calibration error limit value as % of Reference Value	%		6	F6.2
		95	Calibration error limit value in units of measurement	Units of measurement		16	F16.6
		111	And/Or flag		A	1	A1
				Total Record Length 111			
<p>* Explanation of selected fields</p> <p><u>Change Flag</u> N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original I = Change Status to Inactive, D = Delete Record</p> <p><u>Reason For Information Change</u> If Change Flag = N, enter "No Change" If Change Flag = A, enter "Initial Submittal" Otherwise, enter short explanation of reason for information change</p> <p><u>New/Existing Analyzer Flag</u> N = Analyzer ID code below assigned by submitterE = Analyzer ID code below is existing code assigned by DEP</p> <p><u>Calibration Error Limit ID Code</u> 2 = 2-hour      24 = 24-hour</p>							

Report at least one record of type 830 for each existing or proposed new Analyzer at the Facility. Submit additional records of type 830 as applicable (multiple Calibration Error Limits for Analyzer/multiple Analyzers).

**Field Descriptions and Instructions**

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The "R = Revision of Existing Record to Correct Original" code should be used to correct previously submitted incorrect information. The "C = Change of Existing Record" code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The "I = Change Status to Inactive" code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the "Effective Date of Information". The "D = Delete Record" code should be used to indicate that a record was added in error and should be removed from the system (the "Effective Date of Information" in such cases should be entered as "99991231").

**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**Effective Date of Information (59).** If Change Flag was reported as either “A” or “C”, enter the effective date of the submitted information in the format YYYYMMDD. Otherwise, leave this field blank.

**New/Existing Analyzer Flag (67).** If the DEP Analyzer ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the Analyzer), report “E”. If this is the initial monitoring plan submittal for the Analyzer, report “N” (see instructions for “DEP Analyzer ID Code”, below).

**DEP Analyzer ID Code (68).** Report the DEP Analyzer ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Analyzer ID Code upon processing of the initial Monitoring Plan submittal for a Analyzer. For preparation of the initial Monitoring Plan submittal for an Analyzer, the submitter may use any “temporary” 13-digit number, with the first digit being “9”, as the Analyzer ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Analyzer Flag” field must contain the value “N”. PADEP BAQ will assign the actual Analyzer ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**DEP Calibration Limit ID Code (81).** Report the DEP Calibration Limit ID Code. Acceptable values are:

2 = 2-hour      24 = 24-hour

The DEP Calibration Limit ID Code should be right-justified and padded with blanks to the left.

**Calibration Error Limit Value as % of Equivalent Value at Emission Limit (83).** Report the Calibration Error Limit Value as % of Equivalent Value at Emission Limit (as specified in the Continuous Source Monitoring Manual) in the format F6.2. The Calibration Error Limit Value as % of Equivalent Value at Emission Limit should be decimal-justified and padded with blanks to the left.

**Calibration Error Limit Value as % of Reference Value (89).** Report the Calibration Error Limit Value as % of Reference Value (as specified in the Continuous Source Monitoring Manual) in the format F6.2. The Calibration Error Limit Value as % of Reference Value should be decimal-justified and padded with blanks to the left.

**Calibration Error Limit Value in Units of Measurement (95).** Report the Calibration Error Limit Value in Units of Measurement (as specified in the

Continuous Source Monitoring Manual) in the format F6.2. The Calibration Error Limit Value in Units of Measurement should be decimal-justified and padded with blanks to the left.

**And/Or Flag (111).** Report “A” since, currently, all calibration error standards are “And’d”.

**(11) RT 832: Monitoring Plan Analyzer/CEMS Cross-Reference Information**

MONITORING PLAN ANALYZER/CEMS CROSS-REFERENCE INFORMATION (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Monitoring plan analyzer/cems cross-reference information	832	1	Record Type Code		832	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change		*	50	A50
		59	Effective Date of Information (blank if N or R above)	YYYYMMDD		8	A8
		67	New/Existing Analyzer Flag		*N or E	1	A1
		68	DEP analyzer ID code			13	A13
		81	New/Existing CEMS Flag		*N or E	1	A1
		82	DEP CEMS ID Code			11	I11
<div> <div>Total Record Length 92</div> <div>* Explanation of selected fields</div> <div> <u>Change Flag</u>  N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original  I = Change Status to Inactive, D = Delete Record </div> <div> <u>Reason For Information Change</u>  If Change Flag = N, enter "No Change"  If Change Flag = A, enter "Initial Submittal"  Otherwise, enter short explanation of reason for information change </div> <div> <u>New/Existing Analyzer Flag</u>  N = Analyzer ID code below assigned by submitter E = Analyzer ID code below is existing code assigned by DEP </div> <div> <u>New/Existing CEMS Flag</u>  N = CEMS ID code below assigned by submitter E = CEMS ID code below is existing code assigned by DEP </div> </div>							

Report at least one record of type 832 for each existing or proposed new Analyzer at the Facility. Submit additional records of type 832 as applicable (Analyzer used by multiple CEMSs/multiple Analyzers) in order to identify the CEMSs with which each analyzer is associated.

**Field Descriptions and Instructions**

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The "R = Revision of Existing Record to Correct Original" code should be used to correct previously submitted incorrect information. The "C = Change of Existing Record" code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The "I = Change Status to Inactive" code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the "Effective Date of Information". The "D = Delete Record" code should be used to indicate that a record was added in error and should be removed from the system (the "Effective Date of Information" in such cases should be entered as "99991231").

**Reason For Information Change (9).** If Change Flag was reported as "N", enter "No Change". If Change Flag was reported as "A", enter "Initial Submittal".



Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded with blank spaces to the right.

**Effective Date of Information (59).** If Change Flag was reported as either “A” or “C”, enter the effective date of the submitted information in the format YYYYMMDD. Otherwise, leave this field blank.

**New/Existing Analyzer Flag (67).** If the DEP Analyzer ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the Analyzer), report “E”. If this is the initial monitoring plan submittal for the Analyzer, report “N” (see instructions for “DEP Analyzer ID Code”, below).

**DEP Analyzer ID Code (68).** Report the DEP Analyzer ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Analyzer ID Code upon processing of the initial Monitoring Plan submittal for a Analyzer. For preparation of the initial Monitoring Plan submittal for an Analyzer, the submitter may use any “temporary” 13-digit number, with the first digit being “9”, as the Analyzer ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Analyzer Flag” field must contain the value “N”. PADEP BAQ will assign the actual Analyzer ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**New/Existing CEMS Flag (81).** If the DEP CEMS ID Code for the CEMS has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the CEMS), report “E”. If this is the initial monitoring plan submittal for the CEMS, report “N” (see instructions for “DEP CEMS ID Code”, below).

**DEP CEMS ID Code (82).** Report the DEP CEMS ID Code for the CEMS. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the CEMS ID Code upon processing of the initial Monitoring Plan submittal for an CEMS. For preparation of the initial Monitoring Plan submittal for a CEMS, the submitter may use any “temporary” 11-digit number, with the first digit being “9”, as the CEMS ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing CEMS Flag” field must contain the value “N”. PADEP BAQ will assign the actual CEMS ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

(12) RT 834: Monitoring Plan Opacity CEMS Specification Information

MONITORING PLAN OPACITY CEMS SPECIFICATION INFORMATION (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Monitoring plan opacity CEMS information	834	1	Record Type Code		834	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change			50	
		59	Effective Date of Information (blank if N or R above)	YYYYMMDD		8	A8
		67	New/Existing CEMS Flag		*N or E	1	A1
		68	DEP CEMS ID Code (if new, assign number unique to current submittal)			11	I11
		79	Manufacturer's claimed time without corrective maintenance	Hours		4	I4
		83	Claimed opacity relative accuracy, 1-minute averages	%	0 – 100	3	I3
		86	Claimed opacity relative accuracy, average of 15 1-minute averages	%	0 – 100	3	F3.1
		89	Manufacturer's claimed DAS system accuracy, 1-minute averages	% Opacity		6	F6.2
		95	Manufacturer's claimed DAS system accuracy, 1-hour averages	% Opacity		6	F6.2
Total Record Length 100							
<p>* Explanation of selected fields</p> <p><u>Change Flag</u> N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original I = Change Status to Inactive, D = Delete Record</p> <p><u>Reason For Information Change</u> If Change Flag = N, enter "No Change" If Change Flag = A, enter "Initial Submittal" Otherwise, enter short explanation of reason for information change</p> <p><u>New/Existing CEMS Flag</u> N = CEMS ID code below assigned by submitter E = CEMS ID code below is existing code assigned by DEP</p>							

Report one record of type 834 for each existing or proposed new opacity CEMS at the Facility.

**Field Descriptions and Instructions**

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The "R = Revision of Existing Record to Correct Original" code should be used to correct previously submitted incorrect information. The "C = Change of Existing Record" code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The "I = Change Status to Inactive" code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the "Effective Date of Information". The "D = Delete Record" code should be used to indicate that a record was added in error and should be removed from the system (the "Effective Date of Information" in such cases should be entered as "99991231").

**Reason For Information Change (9).** If Change Flag was reported as "N", enter "No Change". If Change Flag was reported as "A", enter "Initial Submittal".

Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**Effective Date of Information (59).** If Change Flag was reported as either “A” or “C”, enter the effective date of the submitted information in the format YYYYMMDD. Otherwise, leave this field blank.

**New/Existing CEMS Flag (67).** If the DEP CEMS ID Code for the CEMS has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the CEMS), report “E”. If this is the initial monitoring plan submittal for the CEMS, report “N” (see instructions for “DEP CEMS ID Code”, below).

**DEP CEMS ID Code (68).** Report the DEP CEMS ID Code for the CEMS. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the CEMS ID Code upon processing of the initial Monitoring Plan submittal for an CEMS. For preparation of the initial Monitoring Plan submittal for a CEMS, the submitter may use any “temporary” 11-digit number, with the first digit being “9”, as the CEMS ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing CEMS Flag” field must contain the value “N”. PADEP BAQ will assign the actual CEMS ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**Manufacturer’s Claimed Time Without Corrective Maintenance (79).** Report the Manufacturer’s Claimed Time Without Corrective Maintenance in hours. The Manufacturer’s Claimed Time Without Corrective Maintenance should be right-justified and padded with blanks to the left.

**Claimed Opacity Relative Accuracy, 1-minute Averages (83).** Report the Claimed Opacity Relative Accuracy, 1-minute Averages, in integer %. The Claimed Opacity Relative Accuracy, 1-minute Averages should be right-justified and padded with blanks to the left.

**Claimed Opacity Relative Accuracy, Average of 15 1-minute Averages (86).** Report the Claimed Opacity Relative Accuracy, Average of 15 1-minute Averages, in % in F3.1 format. The Claimed Opacity Relative Accuracy, Average of 15 1-minute Averages should be decimal-justified and padded with blanks to the left.

**Manufacturer’s Claimed DAS System Accuracy, 1-minute Averages (89).** Report the Manufacturer’s Claimed DAS System Accuracy, 1-minute Averages, in % Opacity in F6.2 format. The Manufacturer’s Claimed DAS System Accuracy, 1-minute Averages should be decimal-justified and padded with blanks to the left.

**Manufacturer’s Claimed DAS System Accuracy, 1-hour Averages (95).** Report the Manufacturer’s Claimed DAS System Accuracy, 1-hour Averages, in

% Opacity in F6.2 format. The Manufacturer's Claimed DAS System Accuracy, 1-hour Averages should be decimal-justified and padded with blanks to the left.

**(13) RT 835: Monitoring Plan Non-Opacity CEMS Specification Information**

MONITORING PLAN NON-OPACITY CEMS SPECIFICATION INFORMATION (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Monitoring plan non-opacity CEMS information	835	1	Record Type Code		835	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change		*	50	A50
		59	Effective Date of Information (blank if N or R above)	YYYYMMDD		8	A8
		67	New/Existing CEMS Flag		*N or E	1	A1
		68	DEP CEMS ID Code (if new, assign number unique to current submittal)			11	I11
		79	Manufacturer's claimed time without corrective maintenance	Hours		4	I4
		83	Manufacturer's claimed relative accuracy vs reference method	%	0.0 – 999.9	5	F5.1
		88	Manufacturer's claimed relative accuracy vs emission standard	%	0.0 – 999.9	5	F5.1
		93	Manufacturer's claimed relative accuracy in units of measurement	Units of meas.		13	F13.3
		106	Manufacturer's claimed DAS system accuracy, 1-hour averages	% of lowest emission standard		6	F6.2
						Total Record Length 111	
<p>* Explanation of selected fields</p> <p><u>Change Flag</u> N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original I = Change Status to Inactive, D = Delete Record</p> <p><u>Reason For Information Change</u> If Change Flag = N, enter “No Change” If Change Flag = A, enter “Initial Submittal” Otherwise, enter short explanation of reason for information change</p> <p><u>New/Existing CEMS Flag</u> N = CEMS ID code below assigned by submitter E = CEMS ID code below is existing code assigned by DEP</p>							

Report one record of type 835 for each existing or proposed new non-opacity CEMS at the Facility.

**Field Descriptions and Instructions**

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The "R = Revision of Existing Record to Correct Original" code should be used to correct previously submitted incorrect information. The "C = Change of Existing Record" code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The "I = Change Status to Inactive" code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the "Effective Date of Information". The "D = Delete Record" code should be used to indicate that a record was added in error and should be removed from the system (the "Effective Date of Information" in such cases should be entered as "99991231").

**Reason For Information Change (9).** If Change Flag was reported as "N", enter "No Change". If Change Flag was reported as "A", enter "Initial Submittal".

Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**Effective Date of Information (59).** If Change Flag was reported as either “A” or “C”, enter the effective date of the submitted information in the format YYYYMMDD. Otherwise, leave this field blank.

**New/Existing CEMS Flag (67).** If the DEP CEMS ID Code for the CEMS has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the CEMS), report “E”. If this is the initial monitoring plan submittal for the CEMS, report “N” (see instructions for “DEP CEMS ID Code”, below).

**DEP CEMS ID Code (68).** Report the DEP CEMS ID Code for the CEMS. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the CEMS ID Code upon processing of the initial Monitoring Plan submittal for an CEMS. For preparation of the initial Monitoring Plan submittal for a CEMS, the submitter may use any “temporary” 11-digit number, with the first digit being “9”, as the CEMS ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing CEMS Flag” field must contain the value “N”. PADEP BAQ will assign the actual CEMS ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**Manufacturer’s Claimed Time Without Corrective Maintenance (79).** Report the Manufacturer’s Claimed Time Without Corrective Maintenance in hours. The Manufacturer’s Claimed Time Without Corrective Maintenance should be right-justified and padded with blanks to the left.

**Manufacturer’s Claimed Relative Accuracy vs Reference Method (83).** Report the Manufacturer’s Claimed Relative Accuracy vs Reference Method, in % in F5.1 format. The Manufacturer’s Claimed Relative Accuracy vs Reference Method should be decimal-justified and padded with blanks to the left.

**Manufacturer’s Claimed Relative Accuracy vs Emission Standard (88).** Report the Manufacturer’s Claimed Relative Accuracy vs Emission Standard, in % in F5.1 format. The Manufacturer’s Claimed Relative Accuracy vs Emission Standard should be decimal-justified and padded with blanks to the left.

**Manufacturer’s Claimed Relative Accuracy in Units of Measurement (93).** Report the Manufacturer’s Claimed Relative Accuracy vs Emission Standard, in % in F13.3 format. The Manufacturer’s Claimed Relative Accuracy in Units of Measurement should be decimal-justified and padded with blanks to the left.

**Manufacturer’s Claimed DAS System Accuracy, 1-hour Averages (106).** Report the Manufacturer’s Claimed DAS System Accuracy, 1-hour Averages, in % Opacity in F6.2 format. The Manufacturer’s Claimed DAS System Accuracy, 1-hour Averages should be decimal-justified and padded with blanks to the left.

**(14) RT 836: Monitoring Plan Non-Opacity Analyzer Specification Information I**

MONITORING PLAN NON-OPACITY ANALYZER SPECIFICATION INFORMATION I (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Monitoring plan non-opacity analyzer specification information I	836	1	Record Type Code		836	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change			50	
		59	Effective Date of Information (blank if N or R above)	YYYYMMDD		8	A8
		67	New/Existing Analyzer Flag		*N or E	1	A1
		68	DEP Analyzer ID Code (if new, assign number unique to current submittal)			13	I13
		81	Expected normal reading	Units of Measurement		13	F13.3
		94	Expected maximum reading	Units of Measurement		13	F13.3
		107	Data recorder resolution in % of equivalent reading at emission limit	%		6	F6.2
		113	Data recorder resolution in units of measurement	Units of Measurement		13	F13.3
		126	Data recorder resolution in seconds	Seconds		4	I4
		130	Number of cycles per hour, measure and record			3	I3
		133	Number of zero and calibration checks per week			3	I3
				Total Record Length 135			
* Explanation of selected fields							
<u>Change Flag</u> N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original I = Change Status to Inactive, D = Delete Record							
<u>Reason For Information Change</u> If Change Flag = N, enter "No Change" If Change Flag = A, enter "Initial Submittal" Otherwise, enter short explanation of reason for information change							
<u>New/Existing Analyzer Flag</u> N = Analyzer ID code below assigned by submitterE = Analyzer ID code below is existing code assigned by DEP							

Report one record of type 836 for each existing or proposed new non-opacity Analyzer at the Facility.

**Field Descriptions and Instructions**

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The "R = Revision of Existing Record to Correct Original" code should be used to correct previously submitted incorrect information. The "C = Change of Existing Record" code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The "I = Change Status to Inactive" code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the "Effective Date of Information". The "D = Delete Record" code should be used to indicate that a record was added in error and should be removed from the system (the "Effective Date of Information" in such cases should be entered as "99991231").

**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**Effective Date of Information (59).** If Change Flag was reported as either “A” or “C”, enter the effective date of the submitted information in the format YYYYMMDD. Otherwise, leave this field blank.

**New/Existing Analyzer Flag (67).** If the DEP Analyzer ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the Analyzer), report “E”. If this is the initial monitoring plan submittal for the Analyzer, report “N” (see instructions for “DEP Analyzer ID Code”, below).

**DEP Analyzer ID Code (68).** Report the DEP Analyzer ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Analyzer ID Code upon processing of the initial Monitoring Plan submittal for a Analyzer. For preparation of the initial Monitoring Plan submittal for an Analyzer, the submitter may use any “temporary” 13-digit number, with the first digit being “9”, as the Analyzer ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Analyzer Flag” field must contain the value “N”. PADEP BAQ will assign the actual Analyzer ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**Expected Normal Reading (81).** Report the Expected Normal Reading for the Analyzer, in Units of Measurement in F13.3 format. The Expected Normal Reading should be decimal-justified and padded with blanks to the left.

**Expected Maximum Reading (94).** Report the Expected Maximum Reading for the Analyzer, in Units of Measurement in F13.3 format. The Expected Maximum Reading should be decimal-justified and padded with blanks to the left.

**Data Recorder Resolution in % of Equivalent Reading at Emission Limit (107).** Report the Data Recorder Resolution in % of Equivalent Reading at Emission Limit in F6.2 format. The Data Recorder Resolution in % of Equivalent Reading at Emission Limit should be decimal-justified and padded with blanks to the left.

**Data Recorder Resolution in Units of Measurement (113).** Report the Data Recorder Resolution in Units of Measurement in F13.3 format. The Data Recorder Resolution in Units of Measurement should be decimal-justified and padded with blanks to the left.

**Data Recorder Resolution in Seconds (126).** Report the Data Recorder Resolution in Seconds in I4 format. The Data Recorder Resolution in Seconds should be right-justified and padded with blanks to the left.

**Number of Cycles Per Hour, Measure and Record (130).** Report the Number of Cycles Per Hour, Measure and Record in I3 format. The Number of Cycles Per



Hour, Measure and Record should be right-justified and padded with blanks to the left.

**Number of Zero and Calibration Checks per Week (133).** Report the Number of Zero and Calibration Checks per Week in I3 format. The Number of Zero and Calibration Checks per Week should be right-justified and padded with blanks to the left.

**(15) RT 837: Monitoring Plan Opacity Analyzer Specification Information I**

MONITORING PLAN OPACITY ANALYZER SPECIFICATION INFORMATION I (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Monitoring plan opacity analyzer specification information I	837	1	Record Type Code		837	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change		*	50	A50
		59	Effective Date of Information (blank if N or R above)	YYYYMMDD		8	A8
		67	New/Existing Analyzer Flag		*N or E	1	A1
		68	DEP Analyzer ID Code (if new, assign number unique to current submittal)			13	I13
		81	Expected normal reading	Units of Measurement		13	F13.3
		94	Expected maximum reading	Units of Measurement		13	F13.3
		107	Has certificate of conformance with ASTM D6216-03 (or the most recent version of the procedure available on the implementation date of this manual) been obtained?	*	1 or 0	1	I1
		108	Monitor pathlength	Feet		5	F5.2
		113	Emission outlet pathlength	Feet		6	F6.2
		119	Data recorder resolution in % of equivalent reading at emission limit	%		6	F6.2
		125	Data recorder resolution in units of measurement	Units of Measurement		13	F13.3
		138	Data recorder resolution in seconds	Seconds		4	I4
		142	Number of cycles per hour, measure			3	I3
		145	Number of cycles per hour, record			3	I3
		148	Number of zero and calibration checks per week			3	I3
Total Record Length 150							
<p>* Explanation of selected fields</p> <p><u>Change Flag</u>  N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original  I = Change Status to Inactive, D = Delete Record</p> <p><u>Reason For Information Change</u>  If Change Flag = N, enter "No Change"  If Change Flag = A, enter "Initial Submittal"  Otherwise, enter short explanation of reason for information change</p> <p><u>New/Existing Analyzer Flag</u>  N = Analyzer ID code below assigned by submitter E = Analyzer ID code below is existing code assigned by DEP</p> <p><u>Has certificate of conformance with ASTM D6216-03 (or the most recent version of the procedure available on the implementation date of this manual) been obtained?</u>  1 = certificate obtained  0 = certificate not obtained</p>							

Report one record of type 837 for each existing or proposed new opacity Analyzer at the Facility.

**Field Descriptions and Instructions**

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The "R = Revision of Existing Record to Correct Original" code should be used to correct previously submitted incorrect information. The "C = Change of Existing

Record” code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The “I = Change Status to Inactive” code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the “Effective Date of Information”. The “D = Delete Record” code should be used to indicate that a record was added in error and should be removed from the system (the “Effective Date of Information” in such cases should be entered as “99991231”).

**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**Effective Date of Information (59).** If Change Flag was reported as either “A” or “C”, enter the effective date of the submitted information in the format YYYYMMDD. Otherwise, leave this field blank.

**New/Existing Analyzer Flag (67).** If the DEP Analyzer ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the Analyzer), report “E”. If this is the initial monitoring plan submittal for the Analyzer, report “N” (see instructions for “DEP Analyzer ID Code”, below).

**DEP Analyzer ID Code (68).** Report the DEP Analyzer ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Analyzer ID Code upon processing of the initial Monitoring Plan submittal for a Analyzer. For preparation of the initial Monitoring Plan submittal for an Analyzer, the submitter may use any “temporary” 13-digit number, with the first digit being “9”, as the Analyzer ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Analyzer Flag” field must contain the value “N”. PADEP BAQ will assign the actual Analyzer ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**Expected Normal Reading (81).** Report the Expected Normal Reading for the Analyzer, in Units of Measurement in F13.3 format. The Expected Normal Reading should be decimal-justified and padded with blanks to the left.

**Expected Maximum Reading (94).** Report the Expected Maximum Reading for the Analyzer, in Units of Measurement in F13.3 format. The Expected Maximum Reading should be decimal-justified and padded with blanks to the left.

**Has Certificate of Conformance With ASTM D6216-03 (or the most recent version of the procedure available on the implementation date of this manual) Been Obtained? (107).** Report “1” if the certificate has been obtained. Otherwise, report “0”.

**Monitor Pathlength (108).** Report the Monitor Pathlength, in feet in F5.2 format. The Monitor Pathlength should be decimal-justified and padded with blanks to the left.

**Emission Outlet Pathlength (113)** Report the Emission Outlet Pathlength, in feet in F6.2 format. The Emission Outlet Pathlength should be decimal-justified and padded with blanks to the left.

**Data Recorder Resolution in % of Equivalent Reading at Emission Limit (119).** Report the Data Recorder Resolution in % of Equivalent Reading at Emission Limit in F6.2 format. The Data Recorder Resolution in % of Equivalent Reading at Emission Limit should be decimal-justified and padded with blanks to the left.

**Data Recorder Resolution in Units of Measurement (125).** Report the Data Recorder Resolution in Units of Measurement in F13.3 format. The Data Recorder Resolution in Units of Measurement should be decimal-justified and padded with blanks to the left.

**Data Recorder Resolution in Seconds (138).** Report the Data Recorder Resolution in Seconds in I4 format. The Data Recorder Resolution in Seconds should be right-justified and padded with blanks to the left.

**Number of Cycles per Hour, Measure (142).** Report the Number of Cycles per Hour, Measure in I3 format. The Number of Cycles per Hour, Measure should be right-justified and padded with blanks to the left.

**Number of Cycles per Hour, Record (145).** Report the Number of Cycles per Hour, Record in I3 format. The Number of Cycles per Hour, Record should be right-justified and padded with blanks to the left.

**Number of Zero and Calibration Checks per Week (148).** Report the Number of Zero and Calibration Checks per Week in I3 Format. The Number of Zero and Calibration Checks per Week should be right-justified and padded with blanks to the left.

**(16) RT 840: Monitoring Plan Opacity and Non-Opacity Analyzer Specification Information II**

MONITORING PLAN OPACITY AND NON-OPACITY ANALYZER SPECIFICATION INFORMATION II (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Monitoring plan opacity and non-opacity analyzer specification information II	840	1	Record Type Code		840	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change		*	50	A50
		59	Effective Date of Information (blank if N or R above)	YYYYMMDD		8	A8
		67	New/Existing Analyzer Flag		*N or E	1	A1
		68	DEP Analyzer ID Code (if new, assign number unique to current submittal)			13	I13
		81	Manufacturer's claimed linearity as % of reference value	%		6	F6.2
		87	Manufacturer's claimed linearity as units of measurement	Units of Measurement		13	F13.3
		100	Manufacturer's claimed 7-day calibration error as % of equivalent value at emission standard	%		6	F6.2
		106	Manufacturer's claimed 7-day calibration error as % of reference value	%		6	F6.2
		112	Manufacturer's claimed 7-day calibration error as units of measurement	Units of Measurement		13	F13.3
		125	Manufacturer's claimed cycle time	Seconds		4	I4
* Explanation of selected fields  <u>Change Flag</u> N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original I = Change Status to Inactive, D = Delete Record  <u>Reason For Information Change</u> If Change Flag = N, enter "No Change" If Change Flag = A, enter "Initial Submittal" Otherwise, enter short explanation of reason for information change  <u>New/Existing Analyzer Flag</u> N = Analyzer ID code below assigned by submitterE = Analyzer ID code below is existing code assigned by DEP				Total Record Length 138			

Report one record of type 840 for each existing or proposed new Analyzer at the Facility.

**Field Descriptions and Instructions**

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The "R = Revision of Existing Record to Correct Original" code should be used to correct previously submitted incorrect information. The "C = Change of Existing Record" code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The "I = Change Status to Inactive" code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the "Effective Date of Information". The "D = Delete Record" code should be used to indicate that a record was added in error and should be removed from the system (the "Effective Date of Information" in such cases should be entered as "99991231").

**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**Effective Date of Information (59).** If Change Flag was reported as either “A” or “C”, enter the effective date of the submitted information in the format YYYYMMDD. Otherwise, leave this field blank.

**New/Existing Analyzer Flag (67).** If the DEP Analyzer ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the Analyzer), report “E”. If this is the initial monitoring plan submittal for the Analyzer, report “N” (see instructions for “DEP Analyzer ID Code”, below).

**DEP Analyzer ID Code (68).** Report the DEP Analyzer ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Analyzer ID Code upon processing of the initial Monitoring Plan submittal for a Analyzer. For preparation of the initial Monitoring Plan submittal for an Analyzer, the submitter may use any “temporary” 13-digit number, with the first digit being “9”, as the Analyzer ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Analyzer Flag” field must contain the value “N”. PADEP BAQ will assign the actual Analyzer ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**Manufacturer’s Claimed Linearity as % of Reference Value (81).** Report the Manufacturer’s Claimed Linearity as % of Reference Value in F6.2 format. The Manufacturer’s Claimed Linearity as % of Reference Value should be decimal-justified and padded with blanks to the left.

**Manufacturer’s Claimed Linearity as Units of Measurement (87).** Report the Manufacturer’s Claimed Linearity as Units of Measurement in F13.3 format. The Manufacturer’s Claimed Linearity as Units of Measurement should be decimal-justified and padded with blanks to the left.

**Manufacturer’s Claimed 7-day Calibration Error as % of Equivalent Value at Emission Standard (100).** Report the Manufacturer’s Claimed 7-day Calibration Error as % of Equivalent Value at Emission Standard in F6.2 format. The Manufacturer’s Claimed 7-day Calibration Error as % of Equivalent Value at Emission Standard should be decimal-justified and padded with blanks to the left.

**Manufacturer’s Claimed 7-day Calibration Error as % of Reference Value (106).** Report the Manufacturer’s Claimed 7-day Calibration Error as % of Reference Value in F6.2 format. The Manufacturer’s Claimed 7-day Calibration Error as % of Reference Value should be decimal-justified and padded with blanks to the left.

**Manufacturer’s Claimed 7-day Calibration Error as Units of Measurement (112).** Report the Manufacturer’s Claimed 7-day Calibration Error as Units of Measurement in F13.3 format. The Manufacturer’s Claimed 7-day Calibration

Error as Units of Measurement should be decimal-justified and padded with blanks to the left.

**Manufacturer's Claimed Cycle Time (125).** Report the Manufacturer's Claimed Cycle Time in I4 format. The Manufacturer's Claimed Cycle Time should be right-justified and padded with blanks to the left.

**(17) RT 841: Monitoring Plan Record Keeping Information**

MONITORING PLAN RECORD KEEPING INFORMATION (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Monitoring plan record keeping information (submit one record for each facility)	841	1	Record Type Code		841	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change			50	
		59	Effective Date of Information (blank if N or R above)	YYYYMMDD		8	A8
		67	New/Existing Facility Flag		*N or E	1	A1
		68	DEP Facility ID code (if new, assign number unique to current submittal)			5	I5
		73	All monitoring system results reduced to 1-hr avgs in terms of standard per Quality Assurance Section of CEM Manual?		*1, 9, or 0	1	I1
		74	All monitoring system results for Opacity and Temperature reduced to 1-minute avgs per QA Section of CEM Manual?		*1, 9, or 0	1	I1
		75	Does chronological file contain the following for 5 years? All measurements on at least the minimum cycle time?		*1, 9, or 0	1	I1
		76	All 1-hr and 1-min avgs, as applicable?		*1, 9, or 0	1	I1
		77	Cause, time periods, and magnitude of emissions which exceed standards?		*1, 9, or 0	1	I1
		78	Data and results for all tests, audits and recalibrations?		*1, 9, or 0	1	I1
		79	Record of repairs, adjustments, or maintenance?		*1, 9, or 0	1	I1
		80	Data necessary for conversion to units of standard?		*1, 9, or 0	1	I1
		81	Cause and time periods for invalid data?		*1, 9, or 0	1	I1
		82	Process and control equipment data that affect emissions?		*1, 9, or 0	1	I1
		83	Copies of Phase I application, Phase II protocol, Phase III report and related correspondence?		*1, 9, or 0	1	I1
		84	Record of corrective actions in response to exceedances or invalid data?		*1, 9, or 0	1	I1
		85	Reports specified in CEM Manual to be reported on calendar quarter basis?		*1, 9, or 0	1	I1
		86	Results from tests, audits and recalibrations reported on calendar quarter basis?		*1, 9, or 0	1	I1
		87	Report to be submitted by 30th day after quarter close?		*1, 9, or 0	1	I1
		88	Reports to be submitted in format specified in CEM Manual and signed by responsible person?		*1, 9, or 0	1	I1
		89	Monitoring data available via telemetry in accordance with CEM Manual? (not required for all CEMSs)		*1, 9, or 0	1	I1
		90	Comments			160	A160
				Total Record Length 249			
<div>* Explanation of selected fields</div> <div><u>Change Flag</u> N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original I = Change Status to Inactive, D = Delete Record</div> <div><u>Reason For Information Change</u> If Change Flag = N, enter "No Change" If Change Flag = A, enter "Initial Submittal" Otherwise, enter short explanation of reason for information change</div> <div><u>New/Existing Facility Flag</u> N = Facility ID code below assigned by submitter E = Facility ID code below is existing code assigned by DEP</div> <div><u>All fields with range 1, 9, or 0</u> 1 = Yes 9 = Not Applicable 0 = No</div>							

Report one record type 841.



## Field Descriptions and Instructions

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The “R = Revision of Existing Record to Correct Original” code should be used to correct previously submitted incorrect information. The “C = Change of Existing Record” code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The “I = Change Status to Inactive” code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the “Effective Date of Information”. The “D = Delete Record” code should be used to indicate that a record was added in error and should be removed from the system (the “Effective Date of Information” in such cases should be entered as “99991231”).

**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**Effective Date of Information (59).** If Change Flag was reported as either “A” or “C”, enter the effective date of the submitted information in the format YYYYMMDD. Otherwise, leave this field blank.

**New/Existing Facility Flag (67).** If the DEP Facility ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the facility), report “E”. If this is the initial monitoring plan submittal for the facility, report “N” (see instructions for “DEP Facility ID Code”, below).

**DEP Facility ID Code (68).** Report the DEP Facility ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Facility ID Code upon processing of the initial Monitoring Plan submittal for a Facility. For preparation of the initial Monitoring Plan submittal for a Facility, the submitter may use any “temporary” 5-digit number, with the first digit being “9”, as the Facility ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Facility Flag” field must contain the value “N”. PADEP BAQ will assign the actual Facility ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**All Monitoring System Results Reduced to 1-hr Avgs in Terms of Standard per Quality Assurance Section of CEM Manual? (73).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise report “0”.

**All Monitoring System Results for Opacity and Temperature Reduced to 1-minute Avgs per QA Section of CEM Manual? (74).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise report “0”.

**All Measurements on at Least the Minimum Cycle Time Kept for Five Years? (75).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise report “0”.

**All 1-hr and 1-min avgs, as Applicable Kept for Five Years? (76).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise report “0”.

**Cause, Time Periods, and Magnitude of Emissions Which Exceed Standards Kept for Five Years? (77).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise report “0”.

**Data and Results for All Tests, Audits and Recalibrations Kept for Five Years? (78).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise report “0”.

**Record of Repairs, Adjustments, or Maintenance Kept for Five Years? (79).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise report “0”.

**Data Necessary for Conversion to Units of Standard Kept for Five Years? (80).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise report “0”.

**Cause and Time Periods for Invalid Data Kept for Five Years? (81).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise report “0”.

**Process and Control Equipment Data That Affect Emissions Kept for Five Years? (82).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise report “0”.

**Copies of Phase I Application, Phase II Protocol, Phase III Report and Related Correspondence Kept for Five Years? (83).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise report “0”.

**Record of Corrective Actions in Response to Exceedances or Invalid Data Kept for Five Years? (84).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise report “0”.

**Reports Specified in CEM Manual to be Reported on Calendar Quarter Basis? (85).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise report “0”.

**Results From Tests, Audits and Recalibrations Reported on Calendar Quarter Basis? (86).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise report “0”.

**Report to be Submitted by 30th Day After Quarter Close? (87).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise report “0”.

**Reports to be Submitted in Format Specified in CEM Manual and Signed by Responsible Person? (88).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise report “0”.

**Monitoring Data Available via Telemetry in Accordance With CEM Manual? (not required for all CEMSs) (89).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise report “0”.

**Comments (90).** Enter up to 160 characters of comments, as necessary. The Comments should be left-justified and padded with blanks to the right.

# (18) RT 842: Monitoring Plan QA Information

MONITORING PLAN QA INFORMATION (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Monitoring QA information (submit one record for each facility)	842	1	Record Type Code		842	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change			50	
		59	Effective Date of Information (blank if N or R above)	YYYYMMDD		8	A8
		67	New/Existing Facility Flag		*N or E	1	A1
		68	DEP Facility ID code (if new, assign number unique to current submittal)			5	I5
		73	Name of pdf file included on submittal medium containing Quality Assurance Plan			25	A25
		98	Data validation to comply with QA Section of CEM Manual (CEMM)?		*1, 9, or 0	1	I1
		99	Data reduction to comply with QA Section of CEMM?		*1, 9, or 0	1	I1
		100	Cal error checks to be conducted prior to maintenance if possible?		*1, 9, or 0	1	I1
		101	Cal Error checks to be conducted following maintenance?		*1, 9, or 0	1	I1
		102	Linearity Test to be conducted if post-maintenance checks exceed twice performance specification?		*1, 9, or 0	1	I1
		103	Daily zero and cal to be conducted on all measurement device ranges?		*1, 9, or 0	1	I1
		104	Reference material/signal to be applied as close to sample acquisition point as possible?		*1, 9, or 0	1	I1
		105	Measurement devices to be adjusted if cal error performance specifications exceeded?		*1, 9, or 0	1	I1
		106	Daily zero check to be conducted at 0%-30% of range or lower than lowest reading expected?		*1, 9, or 0	1	I1
		107	Daily cal check to be conducted at 40%-100% of range or near normal reading expected?		*1, 9, or 0	1	I1
		108	Quarterly linearity to be conducted on all measurement device ranges?		*1, 9, or 0	1	I1
		109	Quarterly low check to be conducted at 0%-30% of range or lower than lowest reading expected?		*1, 9, or 0	1	I1
		110	Quarterly mid check to be conducted at 40%-60% of range or near normal reading expected?		*1, 9, or 0	1	I1
		111	Quarterly high check to be conducted at 80%-100% of range, or higher than highest reading since last test?		*1, 9, or 0	1	I1
		112	Thermocouples calibrated using NIST/ASTM procedures or R-type or S-type used?		*1, 9, or 0	1	I1
		113	Annual relative accuracy test audit to be conducted on all monitoring systems per Phase II Section of CEM Manual?		*1, 9, or 0	1	I1
		114	Calibration gases prepared per EPA Traceability Protocol?		*1, 9, or 0	1	I1
		115	Multicomponent gases free from interferents and non-reactive?		*1, 9, or 0	1	I1
		116	Calibration gases for monitors with critical orifices approximate sonic velocity of flue gases or approved alternative compensation procedure used?		*1, 9, or 0	1	I1
		117	Zero gases in accordance with QA Section of CEMM?		*1, 9, or 0	1	I1
		118	Published F-factors used?		*1, 9, or 0	1	I1
		119	Fuel sampling/analysis to determine F-factors?		*1, 9, or 0	1	I1
		120	F-factors for non-uniform fuels determined per QA Section of CEMM?		*1, 9, or 0	1	I1
		121	QA per 40 CFR 75, Appendix D, 2.1.6, & all subparagraphs (if no fuel flow meters included in systems, enter 0)?		*1, 9, or 0	1	I1
		122	Records of manual adjustments maintained?		*1, 9, or 0	1	I1
		123	Record of changes to "K-factors" or other constants maintained?		*1, 9, or 0	1	I1
		124	Comments			125	A125
				Total Record Length 248			
				<p>* Explanation of selected fields</p> <p><u>Change Flag</u>  N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original  I = Change Status to Inactive, D = Delete Record</p> <p><u>Reason For Information Change</u>  If Change Flag = N, enter "No Change"  If Change Flag = A, enter "Initial Submittal"  Otherwise, enter short explanation of reason for information change</p> <p><u>New/Existing Facility Flag</u>  N = Facility ID code below assigned by submitter E = Facility ID code below is existing code assigned by DEP</p> <p style="text-align: right;">All fields with range 1, 9, or 0  1 = Yes 9 = Not Applicable 0 = No</p>			

Report one record type 842.

## **Field Descriptions and Instructions**

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The “R = Revision of Existing Record to Correct Original” code should be used to correct previously submitted incorrect information. The “C = Change of Existing Record” code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The “I = Change Status to Inactive” code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the “Effective Date of Information”. The “D = Delete Record” code should be used to indicate that a record was added in error and should be removed from the system (the “Effective Date of Information” in such cases should be entered as “99991231”).

**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**Effective Date of Information (59).** If Change Flag was reported as either “A” or “C”, enter the effective date of the submitted information in the format YYYYMMDD. Otherwise, leave this field blank.

**New/Existing Facility Flag (67).** If the DEP Facility ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the facility), report “E”. If this is the initial monitoring plan submittal for the facility, report “N” (see instructions for “DEP Facility ID Code”, below).

**DEP Facility ID Code (68).** Report the DEP Facility ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Facility ID Code upon processing of the initial Monitoring Plan submittal for a Facility. For preparation of the initial Monitoring Plan submittal for a Facility, the submitter may use any “temporary” 5-digit number, with the first digit being “9”, as the Facility ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Facility Flag” field must contain the value “N”. PADEP BAQ will assign the actual Facility ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**Name of Pdf File Included on Submittal Medium Containing Quality Assurance Plan (73).** Enter the Name of Pdf File Included on Submittal Medium Containing Quality Assurance Plan in A25 format. The Name of Pdf File

Included on Submittal Medium Containing Quality Assurance Plan should be left-justified and padded with blanks to the right.

**Data Validation to Comply With QA Section of CEM Manual (CEMM)?**

**(98).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Data Reduction to Comply With QA Section of CEMM? (99).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Cal Error Checks to be Conducted Prior to Maintenance if Possible? (100).**

If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Cal Error Checks to be Conducted Following Maintenance? (101).**

If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Linearity Test to be Conducted if Post-maintenance Checks Exceed Twice Performance Specification? (102).**

If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Daily Zero and Cal to be Conducted on All Measurement Device Ranges? (103).**

If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Reference Material/Signal to be Applied as Close to Sample Acquisition Point as Possible? (104).**

If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Measurement Devices to be Adjusted if Cal Error Performance Specifications Exceeded? (105).**

If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Daily Zero Check to be Conducted at 0%-30% of Range or Lower Than Lowest Reading Expected? (106).**

If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Daily Cal Check to be Conducted at 40%-100% of Range or Near Normal Reading Expected? (107).**

If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Quarterly Linearity to be Conducted on All Measurement Device Ranges? (108).**

If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Quarterly Low Check to be Conducted at 0%-30% of Range or Lower Than Lowest Reading Expected? (109).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Quarterly Mid Check to be Conducted at 40%-60% of Range or Near Normal Reading Expected? (110).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Quarterly High Check to be Conducted at 80%-100% of Range, or Higher Than Highest Reading Since Last Test? (111).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Thermocouples Calibrated Using NIST/ASTM Procedures or R-type or S-type Used? (112).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Annual Relative Accuracy Test Audit to be Conducted on All Monitoring Systems Per Phase II Section of CEM Manual? (113).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Calibration Gases Prepared Per EPA Traceability Protocol? (114).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Multicomponent Gases Free From Interferents and Non-reactive? (115).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Calibration Gases for Monitors With Critical Orifices Approximate Sonic Velocity of Flue Gases or Approved Alternative Compensation Procedure Used? (116).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Zero Gases in Accordance With QA Section of CEMM? (117).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Published F-factors Used? (118).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Fuel Sampling/Analysis to Determine F-factors? (119).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**F-factors for Non-uniform Fuels Determined Per QA Section of CEMM? (120).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**QA Per 40 CFR 75, Appendix D, 2.1.6, & All Subparagraphs (if no fuel flow meters included in systems, enter 0)? (121).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Records of Manual Adjustments Maintained? (122).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Record of Changes to “K-factors” or Other Constants Maintained? (123).** If the statement is true, report “1”. If the statement is not applicable, report “9”. Otherwise, report “0”.

**Comments (124).** Enter up to 125 characters of comments, as necessary. The Comments should be left-justified and padded with blanks to the right.



**(19) RT 843: Monitoring Plan General Information**

MONITORING PLAN GENERAL INFORMATION (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Monitoring plan general information (submit one record for each source combination)	843	1	Record Type Code		843	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change		*	50	A50
		59	Effective Date of Information (blank if N or R above)	YYYYMMDD		8	A8
		67	New/Existing Facility Flag		*N or E	1	A1
		68	DEP Facility ID code			5	I5
		73	New/Existing Source Combination Flag		*N or E	1	A1
		74	DEP Source Combination ID Code (if new, assign number unique to current submittal)			7	I7
		81	Name of pdf file included on submittal medium to describe the process and pollution control equipment. (All factors that may affect the operation or maintenance of the monitoring system must be included.)			25	A25
		106	Equivalent diameter of the flue at the monitoring system measurement location (MSML)	Feet		4	F4.1
		110	Type of nearest upstream disturbance		*	10	A10
		120	Distance of nearest upstream disturbance to MSML	Feet		4	F4.1
		124	Type of nearest downstream disturbance		*	10	A10
		134	Distance of nearest downstream disturbance to MSML	Feet		4	F4.1
		138	Type of nearest pollution control equipment		*	10	A10
		148	Distance of nearest pollution control equipment to MSML	Feet		4	F4.1
		152	Is pollution control equipment Upstream or Downstream of MSML?		*U or D	1	A1
		153	Distance of Emission point of monitoring gases to MSML	Feet		4	F4.1
		157	Distance of flue walls from sample acquisition point	Feet		4	F4.1
		161	Name of pdf file included on submittal medium to describe any process and/or pollution control equipment operating parameters which affect the emission levels of the pollutant(s) being monitored or the parameters being monitored (With an explanation of the method to be used to record these operating parameters.)			25	A25
		186	Name of pdf file included on submittal medium of a flow diagram that clearly shows the location of the measurement point(s) or path(s). Include any test data and an explanation as to the basis for the choice of the location. [Explaining any reasons for deviations from location criteria in Continuous Emission Monitoring Manual (CEMM) Attachment No. 2 (for gases) or CEMM Attachment No. 1 (for opacity)]			25	A25
		211	Comments			40	A40
<p style="text-align: right;">Total Record Length 250</p> <p>* Explanation of selected fields</p> <p><u>Change Flag</u> N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original I = Change Status to Inactive, D = Delete Record</p> <p><u>Reason For Information Change</u> If Change Flag = N, enter "No Change" If Change Flag = A, enter "Initial Submittal" Otherwise, enter short explanation of reason for information change</p> <p><u>New/Existing Facility Flag</u> N = Facility ID code below assigned by submitter      E = Facility ID code below is existing code assigned by DEP</p> <p><u>New/Existing Source Combination Flag</u> N = Source Combination ID code below assigned by submitter    E = Source Combination ID code below is existing code assigned by DEP</p> <p><u>Type of nearest upstream or downstream disturbance (examples):</u> Fan    Elbow    Inlet    Outlet</p> <p><u>Type of nearest pollution control equipment (examples):</u> B      C      CM      DA      DL      DLNB      ESP      FBL      H2O      LNB      LNBO      LNC1      LNC2      LNC3 LNCB   MO    NH3    O      OFA    SB      SCR      SNCR    SO2      STM      WL      WLS      WS</p>							

Report one record type 843.

## Field Descriptions and Instructions

Report one record of type 843 for each existing or proposed new Source Combination at the Facility.

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The “R = Revision of Existing Record to Correct Original” code should be used to correct previously submitted incorrect information. The “C = Change of Existing Record” code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The “I = Change Status to Inactive” code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the “Effective Date of Information”. The “D = Delete Record” code should be used to indicate that a record was added in error and should be removed from the system (the “Effective Date of Information” in such cases should be entered as “99991231”).

**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**Effective Date of Information (59).** If Change Flag was reported as either “A” or “C”, enter the effective date of the submitted information in the format YYYYMMDD. Otherwise, leave this field blank.

**New/Existing Facility Flag (67).** If the DEP Facility ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the facility), report “E”. If this is the initial monitoring plan submittal for the facility, report “N” (see instructions for “DEP Facility ID Code”, below).

**DEP Facility ID Code (68).** Report the DEP Facility ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Facility ID Code upon processing of the initial Monitoring Plan submittal for a Facility. For preparation of the initial Monitoring Plan submittal for a Facility, the submitter may use any “temporary” 5-digit number, with the first digit being “9”, as the Facility ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Facility Flag” field must contain the value “N”. PADEP BAQ will assign the actual Facility ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**New/Existing Source Combination Flag (73).** If the DEP Source Combination ID Code for the Source Combination has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the Source

Combination), report “E”. If this is the initial monitoring plan submittal for the Source Combination, report “N” (see instructions for “DEP Source Combination ID Code”, below).

**DEP Source Combination ID Code (74).** Report the DEP Source Combination ID Code for the Source Combination. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Source Combination ID Code upon processing of the initial Monitoring Plan submittal for a Source Combination. For preparation of the initial Monitoring Plan submittal for a Source Combination, the submitter may use any “temporary” 7-digit number, with the first digit being “9”, as the Source Combination ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Source Combination Flag” field must contain the value “N”. PADEP BAQ will assign the actual Source Combination ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**Name of Pdf File Included on Submittal Medium to Describe the Process and Pollution Control Equipment. (All factors that may affect the operation or maintenance of the monitoring system must be included.) (81).** Enter the Name of Pdf File Included on Submittal Medium to Describe the Process and Pollution Control Equipment in A25 format. The Name of Pdf File Included on Submittal Medium to Describe the Process and Pollution Control Equipment should be left-justified and padded with blanks to the right.

**Equivalent Diameter of the Flue at the Monitoring System Measurement Location (MSML) (106).** Report the Equivalent Diameter of the Flue at the Monitoring System Measurement Location in feet in F4.1 format. The Equivalent Diameter of the Flue at the Monitoring System Measurement Location should be decimal-justified and padded with blanks to the left.

**Type of Nearest Upstream Disturbance (110).** Report the Type of Nearest Upstream Disturbance. Acceptable values are:

Fan            Elbow            Inlet            Outlet

Contact DEP should additional acceptable values be necessary. The Type of Nearest Upstream Disturbance should be left-justified and padded with blanks to the right.

**Distance of Nearest Upstream Disturbance to MSML (120).** Report the Distance of Nearest Upstream Disturbance to MSML, in feet in F4.1 format. The Distance of Nearest Upstream disturbance to MSML should be decimal-justified and padded with blanks to the left.

**Type of Nearest Downstream Disturbance (124).** Report the Type of Nearest Downstream Disturbance. Acceptable values are:

Fan            Elbow            Inlet            Outlet

Contact DEP should additional acceptable values be necessary. The Type of Nearest Downstream Disturbance should be left-justified and padded with blanks to the right.

**Distance of Nearest Downstream Disturbance to MSML (134).** Report the Distance of Nearest Downstream Disturbance to MSML, in feet in F4.1 format. The Distance of Nearest Downstream disturbance to MSML should be decimal-justified and padded with blanks to the left.

**Type of Nearest Pollution Control Equipment (138).** Report the Type of Nearest **Pollution Control Equipment**. Acceptable values are:

B	Baghouse(s)
C	Cyclone
CM	Combustion Modification/Fuel Reburning
DA	Dual Alkali
DL	Dry Lime FGD
DLNB	Dry Low NO <sub>x</sub> Burners (Turbines only)
ESP	Electrostatic Precipitator
FBL	Fluidized Bed Limestone Injection
H2O	Water Injection (Turbines and Cyclone Boilers only)
LNB	Low NO <sub>x</sub> Burner Technology (Dry Bottom Boilers only)
LNBO	Low NO <sub>x</sub> Burner Technology with Overfire Air (Dry Bottom Boilers Only)
LNC1	Low NO <sub>x</sub> Burner Technology with Close-coupled OFA (Tangentially fired units only)
LNC2	Low NO <sub>x</sub> Burner Technology with Separated OFA (Tangentially fired units only)
LNC3	Low NO <sub>x</sub> Burner Technology with Close-coupled and Separated OFA (Tangentially fired units only)
LNCB	Low NO <sub>x</sub> Burner Technology for Cell Burners
MO	Magnesium Oxide
NH3	Ammonia Injection
O	Other
OFA	Overfire Air
SB	Sodium Based
SCR	Selective Catalytic Reduction
SNCR	Selective Non-catalytic Reduction
SO2	Controls
STM	Steam Injection
WL	Wet Lime FGD
WLS	Wet Limestone
WS	Wet Scrubber

Contact DEP should additional acceptable values be necessary. The Type of Nearest Pollution Control Equipment should be left-justified and padded with blanks to the right.

**Distance of Nearest Pollution Control Equipment to MSML (148).** Report the Distance of Nearest Pollution Control Equipment to MSML, in feet in F4.1 format. The Distance of Nearest Pollution Control Equipment to MSML should be decimal-justified and padded with blanks to the left.

**Is Pollution Control Equipment Upstream or Downstream of MSML? (152).** If upstream, report “U”. Otherwise, report “D”.

**Distance of Emission Point of Monitoring Gases to MSML (153).** Report the Distance of Emission Point of Monitoring Gases to MSML, in feet in F4.1 format. The Distance of Emission Point of Monitoring Gases to MSML should be decimal-justified and padded with blanks to the left.

**Name of Pdf File Included on Submittal Medium to Describe Any Process And/Or Pollution Control Equipment Operating Parameters Which Affect the Emission Levels of the Pollutant(s) Being Monitored or the Parameters Being Monitored (With an explanation of the method to be used to record these operating parameters.) (161).** Report the Name of Pdf File Included on Submittal Medium to Describe Any Process And/Or Pollution Control Equipment Operating Parameters Which Affect the Emission Levels of the Pollutant(s) Being Monitored or the Parameters Being Monitored (With an explanation of the method to be used to record these operating parameters.) in A25 format. The Name of Pdf File Included on Submittal Medium to Describe Any Process And/Or Pollution Control Equipment Operating Parameters Which Affect the Emission Levels of the Pollutant(s) Being Monitored or the Parameters Being Monitored (With an explanation of the method to be used to record these operating parameters.) should be left-justified and padded with blanks to the right.

**Name of Pdf File Included on Submittal Medium of a Flow Diagram That Clearly Shows the Location of the Measurement Point(s) or Path(s). Include Any Test Data and an Explanation as to the Basis for the Choice of the Location. [Explaining any reasons for deviations from location criteria in Continuous Emission Monitoring Manual (CEMM) Attachment No. 2 (for gases) or CEMM Attachment No. 1 (for opacity)] (186).** Report the Name of Pdf File Included on Submittal Medium of a Flow Diagram That Clearly Shows the Location of the Measurement Point(s) or Path(s). Include Any Test Data and an Explanation as to the Basis for the Choice of the Location. [Explaining any reasons for deviations from location criteria in Continuous Emission Monitoring Manual (CEMM) Attachment No. 2 (for gases) or CEMM Attachment No. 1 (for opacity)] in A25 format. The Name of Pdf File Included on Submittal Medium of a Flow Diagram That Clearly Shows the Location of the Measurement Point(s) or Path(s). Include Any Test Data and an Explanation as to the Basis for the Choice of the Location. [Explaining any reasons for deviations from location criteria in Continuous Emission Monitoring Manual (CEMM) Attachment No. 2 (for gases) or CEMM Attachment No. 1 (for opacity)] should be left-justified and padded with blanks to the right.

**Comments (211).** Enter up to 40 characters of comments. The Comments should be left-justified and padded with blanks to the right.

## D. Certification Report Records

### (1) RT 844: Certification Report CEMS Test Completion Date

CERTIFICATION REPORT CEMS TEST COMPLETION DATE (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Certification Report CEMS Test Completion Date (report records for each test for each CEM)	844	1	Record Type Code		844	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change		*	50	A50
		59	New/Existing CEMS Flag		*N or E	1	A1
		60	DEP CEMS ID Code (if new, assign number unique to current submittal)			11	I11
		71	Type of testing		*	3	A3
		74	Date of test completion	YYYYMMDD		8	A8
		82	Test ID		*1 – 9	1	I1
<p style="text-align: right;">Total Record Length 82</p> <p>* Explanation of selected fields</p> <p><u>Change Flag</u>  N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original  I = Change Status to Inactive, D = Delete Record</p> <p><u>Reason For Information Change</u>  If Change Flag = N, enter "No Change"  If Change Flag = A, enter "Initial Submittal"  Otherwise, enter short explanation of reason for information change</p> <p><u>New/Existing CEMS Flag</u>  N = CEMS ID code below assigned by submitter      E = CEMS ID code below is existing code assigned by DEP</p> <p><u>Type of Testing</u>  RAI = Relative accuracy test audit for initial cert.      RAA = Annual relative accuracy test audit  OTP = Operational test period      DAS = Data acquisition system test</p> <p><u>Test ID</u>  Use 1 for first test series completed on date, increment for subsequent test series completed on same date</p>							

Report one record of type 844 for each CEMS test (Relative accuracy test audit for initial certification, Annual relative accuracy test audit, Operational test period verification, Data acquisition system test) completed.

### Field Descriptions and Instructions

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The "R = Revision of Existing Record to Correct Original" code should be used to correct previously submitted incorrect information. The "C = Change of Existing Record" code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The "I = Change Status to Inactive" code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the "Effective Date of Information". The "D = Delete Record" code should be used to indicate that a

record was added in error and should be removed from the system (the “Effective Date of Information” in such cases should be entered as “99991231”).

**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**New/Existing CEMS Flag (59).** If the DEP CEMS ID Code for the CEMS has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the CEMS), report “E”. If this is the initial monitoring plan submittal for the CEMS, report “N” (see instructions for “DEP CEMS ID Code”, below).

**DEP CEMS ID Code (60).** Report the DEP CEMS ID Code for the CEMS. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the CEMS ID Code upon processing of the initial Monitoring Plan submittal for an CEMS. For preparation of the initial Monitoring Plan submittal for a CEMS, the submitter may use any “temporary” 11-digit number, with the first digit being “9”, as the CEMS ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing CEMS Flag” field must contain the value “N”. PADEP BAQ will assign the actual CEMS ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**Type of Testing (71).** Report the code for Type of Testing. Acceptable values are:

RAI = Relative accuracy test audit for initial cert.  
RAA = Annual relative accuracy test audit  
OTP = Operational test period  
DAS = Data acquisition system test

**Date of Test Completion (74).** Report the date of test completion in the format YYYYMMDD.

**Test ID (82).** Report the Test ID as an integer 1 through 9. Use 1 for the first test series completed on the reported date, increment for subsequent test series completed on the same date.

## (2) RT 848: Certification Report Analyzer Test Completion Date

CERTIFICATION REPORT ANALYZER TEST COMPLETION DATE (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Certification Report Analyzer Test Completion Date (report records for each test on each analyzer)	848	1	Record Type Code		848	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change		*	50	A50
		59	New/Existing Analyzer Flag		*N or E	1	A1
		60	DEP Analyzer ID Code (if new, assign number unique to current submittal)			13	I13
		73	Type of Testing		*	3	A3
		76	Date of test completion	YYYYMMDD		8	A8
		84	Test ID		*1 – 9	1	I1
<p style="text-align: right;">Total Record Length 84</p> <p>* Explanation of selected fields</p> <p><u>Change Flag</u>  N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original  I = Change Status to Inactive, D = Delete Record</p> <p><u>Reason For Information Change</u>  If Change Flag = N, enter "No Change"  If Change Flag = A, enter "Initial Submittal"  Otherwise, enter short explanation of reason for information change</p> <p><u>New/Existing Analyzer Flag</u>  N = Analyzer ID code below assigned by submitter E = Analyzer ID code below is existing code assigned by DEP</p> <p><u>Type of Testing</u>  LIN = Linearity testing      24D = 7-day calibration error testing  CTT = Cycle time testing</p> <p><u>Test ID</u>  Use 1 for first test series completed on date, increment for subsequent test series completed on same date</p>							

Report one record of type 848 for each Analyzer test (Linearity testing, 7-day calibration error testing, Cycle time testing) completed.

### Field Descriptions and Instructions

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The "R = Revision of Existing Record to Correct Original" code should be used to correct previously submitted incorrect information. The "C = Change of Existing Record" code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The "I = Change Status to Inactive" code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the "Effective Date of Information". The "D = Delete Record" code should be used to indicate that a record was added in error and should be removed from the system (the "Effective Date of Information" in such cases should be entered as "99991231").



**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**New/Existing Analyzer Flag (59).** If the DEP Analyzer ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the Analyzer), report “E”. If this is the initial monitoring plan submittal for the Analyzer, report “N” (see instructions for “DEP Analyzer ID Code”, below).

**DEP Analyzer ID Code (60).** Report the DEP Analyzer ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Analyzer ID Code upon processing of the initial Monitoring Plan submittal for a Analyzer. For preparation of the initial Monitoring Plan submittal for an Analyzer, the submitter may use any “temporary” 13-digit number, with the first digit being “9”, as the Analyzer ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Analyzer Flag” field must contain the value “N”. PADEP BAQ will assign the actual Analyzer ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**Type of Testing (73).** Report the code for Type of Testing. Acceptable values are:

LIN = Linearity testing  
24D = 7-day calibration error testing  
CTT = Cycle time testing

**Date of Test Completion (76).** Report the date of test completion in the format YYYYMMDD.

**Test ID (84).** Report the Test ID as an integer 1 through 9. Use 1 for the first test series completed on the reported date, increment for subsequent test series completed on the same date.

**(3) RT 852: Certification Report Non-Opacity Relative Accuracy Test Audit Data**

CERTIFICATION REPORT NON-OPACITY RELATIVE ACCURACY TEST AUDIT DATA (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Certification Report Non-Opacity Relative Accuracy Test Audit Data (report records for at least 9 test runs for each CEMS)	852	1	Record Type Code		852	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change		*	50	A50
		59	New/Existing CEMS Flag		*N or E	1	A1
		60	DEP CEMS ID Code (if new, assign number unique to current submittal)			11	I11
		71	Date of test completion	YYYYMMDD		8	A8
		79	Test ID		*1 – 9	1	I1
		80	Test Run Number Within Series		1 – 15	2	I2
		82	Reference Method Value	Units of Emission Standard		13	F13.3
		95	Monitoring System Value	Units of Emission Standard		13	F13.3
		108	Not Used/Used Flag		*0 – 1	1	I1
<div style="text-align: right;">Total Record Length 108</div> <p>* Explanation of selected fields</p> <p><u>Change Flag</u>  N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original  I = Change Status to Inactive, D = Delete Record</p> <p><u>Reason For Information Change</u>  If Change Flag = N, enter "No Change"  If Change Flag = A, enter "Initial Submittal"  Otherwise, enter short explanation of reason for information change</p> <p><u>New/Existing CEMS Flag</u>  N = CEMS ID code below assigned by submitter E = CEMS ID code below is existing code assigned by DEP</p> <p><u>Test ID</u>  Use 1 for first test series completed on date, increment for subsequent test series completed on same date</p> <p><u>Not Used/Used Flag</u>  0 = Run is not to be used in relative accuracy calculation  1 = Run is to be used in relative accuracy calculation</p>							

Report one record of type 852 for each non-opacity CEMS Relative Accuracy test audit run conducted (if any).

**Field Descriptions and Instructions**

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The "R = Revision of Existing Record to Correct Original" code should be used to correct previously submitted incorrect information. The "C = Change of Existing Record" code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The "I = Change Status to Inactive" code should be used to indicate that the associated monitoring system

has been permanently taken out of service as of the “Effective Date of Information”. The “D = Delete Record” code should be used to indicate that a record was added in error and should be removed from the system (the “Effective Date of Information” in such cases should be entered as “99991231”).

**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**New/Existing CEMS Flag (59).** If the DEP CEMS ID Code for the CEMS has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the CEMS), report “E”. If this is the initial monitoring plan submittal for the CEMS, report “N” (see instructions for “DEP CEMS ID Code”, below).

**DEP CEMS ID Code (60).** Report the DEP CEMS ID Code for the CEMS. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the CEMS ID Code upon processing of the initial Monitoring Plan submittal for an CEMS. For preparation of the initial Monitoring Plan submittal for a CEMS, the submitter may use any “temporary” 11-digit number, with the first digit being “9”, as the CEMS ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing CEMS Flag” field must contain the value “N”. PADEP BAQ will assign the actual CEMS ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**Date of Test Completion (71).** Report the date of test completion in the format YYYYMMDD.

**Test ID (79).** Report the Test ID as an integer 1 through 9. Use 1 for the first test series completed on the reported date, increment for subsequent test series completed on the same date.

**Test Run Number Within Series (80).** Report the Test Run Number Within Series as an integer 1 through 15 in I2 format. The Test Run Number Within Series should be right justified and padded with spaces to the left.

**Reference Method Value (82).** Report the Reference Method Value, in units of the emission standard in F13.3 format. The Reference Method Value should be decimal-justified and padded with blanks to the left.

**Monitoring System Value (95).** Report the Monitoring System Value, in units of the emission standard in F13.3 format. The Monitoring System Value should be decimal-justified and padded with blanks to the left.

**Not Used/Used Flag (108).** If the run is not to be used in calculation of results, report zero (0). Otherwise, Report one (1).

(4) **RT 856: Certification Report Opacity Relative Accuracy Test Audit Data**

CERTIFICATION REPORT OPACITY RELATIVE ACCURACY TEST AUDIT DATA (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Certification Report Opacity Relative Accuracy Test Audit Data (report records for at least 9 test runs for each opacity CEMS)	856	1	Record Type Code		856	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change		*	50	A50
		59	New/Existing CEMS Flag		*N or E	1	A1
		60	DEP CEMS ID Code (if new, assign number unique to current submittal)			11	I11
		71	Date of test completion	YYYYMMDD		8	A8
		79	Test ID		*1 – 9	1	I1
		80	Test Run Number Within Series		1 – 9	1	I1
		81	Reference Method Value (VEO)	% Opacity		6	F6.2
		87	Monitoring System Value	% Opacity		6	F6.2
<p style="text-align: right;">Total Record Length 92</p> <p>* Explanation of selected fields</p> <p>Change Flag N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original</p> <p>Reason For Information Change If Change Flag = N, enter "No Change" If Change Flag = A, enter "Initial Submittal" Otherwise, enter short explanation of reason for information change</p> <p>New/Existing CEMS Flag N = CEMS ID code below assigned by submitter E = CEMS ID code below is existing code assigned by DEP</p> <p>Test ID Use 1 for first test series completed on date, increment for subsequent test series completed on same date</p>							

Report one record of type 856 for each opacity CEMS Relative Accuracy test audit run conducted (if any).

**Field Descriptions and Instructions**

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The "R = Revision of Existing Record to Correct Original" code should be used to correct previously submitted incorrect information. The "C = Change of Existing Record" code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The "I = Change Status to Inactive" code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the "Effective Date of Information". The "D = Delete Record" code should be used to indicate that a record was added in error and should be removed from the system (the "Effective Date of Information" in such cases should be entered as "99991231").

**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**New/Existing CEMS Flag (59).** If the DEP CEMS ID Code for the CEMS has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the CEMS), report “E”. If this is the initial monitoring plan submittal for the CEMS, report “N” (see instructions for “DEP CEMS ID Code”, below).

**DEP CEMS ID Code (60).** Report the DEP CEMS ID Code for the CEMS. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the CEMS ID Code upon processing of the initial Monitoring Plan submittal for an CEMS. For preparation of the initial Monitoring Plan submittal for a CEMS, the submitter may use any “temporary” 11-digit number, with the first digit being “9”, as the CEMS ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing CEMS Flag” field must contain the value “N”. PADEP BAQ will assign the actual CEMS ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**Date of Test Completion (71).** Report the date of test completion in the format YYYYMMDD.

**Test ID (79).** Report the Test ID as an integer 1 through 9. Use 1 for the first test series completed on the reported date, increment for subsequent test series completed on the same date.

**Test Run Number Within Series (80).** Report the Test Run Number Within Series as an integer 1 through 9.

**Reference Method Value (81).** Report the Reference Method Value, in % Opacity in F6.2 format. The Reference Method Value should be decimal-justified and padded with blanks to the left.

**Monitoring System Value (87).** Report the Monitoring System Value, in % Opacity in F6.2 format. The Monitoring System Value should be decimal-justified and padded with blanks to the left.

(5) **RT 860: Certification Report Linearity Data**

CERTIFICATION REPORT LINEARITY DATA (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Certification Report Linearity Data (report records for required readings at low, mid, and high range fore each analyzer)	860	1	Record Type Code		860	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change		*	50	A50
		59	New/Existing Analyzer Flag		*N or E	1	A1
		60	DEP Analyzer ID Code (if new, assign number unique to current submittal)			13	I13
		73	Date of test completion	YYYYMMDD		8	A8
		81	Test ID		*1 – 9	1	I1
		82	Zero or Low/Mid/High Range Flag		Z, L, M, H	1	A1
		83	Reading Number Within Range		1 – 5	1	I1
		84	Reference standard value (gas, cell, filter, etc.)	Units of Measurement		13	F13.3
		97	Analyzer reading	Units of Measurement		13	F13.3
<div> <div>Total Record Length 109</div> <div>* Explanation of selected fields</div> <div>Change Flag N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original</div> <div>Reason For Information Change If Change Flag = N, enter "No Change" If Change Flag = A, enter "Initial Submittal" Otherwise, enter short explanation of reason for information change</div> <div>New/Existing Analyzer Flag N = Analyzer ID code below assigned by submitterE = Analyzer ID code below is existing code assigned by DEP</div> <div>Test ID Use 1 for first test series completed on date, increment for subsequent test series completed on same date</div> </div>							

Report one record of type 860 for each Analyzer Linearity test run conducted (if any).

**Field Descriptions and Instructions**

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The "R = Revision of Existing Record to Correct Original" code should be used to correct previously submitted incorrect information. The "C = Change of Existing Record" code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The "I = Change Status to Inactive" code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the "Effective Date of Information". The "D = Delete Record" code should be used to indicate that a record was added in error and should be removed from the system (the "Effective Date of Information" in such cases should be entered as "99991231").

**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**New/Existing Analyzer Flag (59).** If the DEP Analyzer ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the Analyzer), report “E”. If this is the initial monitoring plan submittal for the Analyzer, report “N” (see instructions for “DEP Analyzer ID Code”, below).

**DEP Analyzer ID Code (60).** Report the DEP Analyzer ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Analyzer ID Code upon processing of the initial Monitoring Plan submittal for a Analyzer. For preparation of the initial Monitoring Plan submittal for an Analyzer, the submitter may use any “temporary” 13-digit number, with the first digit being “9”, as the Analyzer ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Analyzer Flag” field must contain the value “N”. PADEP BAQ will assign the actual Analyzer ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**Date of Test Completion (73).** Report the date of test completion in the format YYYYMMDD.

**Test ID (81).** Report the Test ID as an integer 1 through 9. Use 1 for the first test series completed on the reported date, increment for subsequent test series completed on the same date.

**Zero or Low/Mid/High Range Flag (82).** Report the Zero or Low/Mid/High Range Flag. Acceptable values are:

Z = Zero  
L = Low  
M = Mid  
H = High

**Reading Number Within Range (83).** Report the Reading Number Within Range as an integer 1 through 5.

**Reference standard value (gas, cell, filter, etc.) (84).** Report the Reference standard value, in units of measurement in F13.3 format. The Reference standard value should be decimal-justified and padded with blanks to the left.

**Analyzer Reading (97).** Report the Analyzer Reading, in units of measurement in F13.3 format. The Analyzer Reading should be decimal-justified and padded with blanks to the left.

**(6) RT 868: Certification Report 7-Day Calibration Error Data**

CERTIFICATION REPORT 7-DAY CALIBRATION ERROR DATA (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Certification Report 7-day Calibration Error Test Data (report records for periods 1 through 7 for both zero and upscale for each analyzer)	868	1	Record Type Code		868	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change		*	50	A50
		59	New/Existing Analyzer Flag		*N or E	1	A1
		60	DEP Analyzer ID Code (if new, assign number unique to current submittal)			13	I13
		73	Date of test completion	YYYYMMDD		8	A8
		81	Zero/Upscale Flag		Z, U	1	A1
		82	Period Number		1 – 7	1	I1
		83	Reference Value	Units of Measurement		13	F13.3
		96	Monitoring System Value	Units of Measurement		13	F13.3
<p style="text-align: right;">Total Record Length 108</p> <p>* Explanation of selected fields</p> <p><u>Change</u> N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original</p> <p><u>Reason For Information Change</u> If Change Flag = N, enter “No Change” If Change Flag = A, enter “Initial Submittal” Otherwise, enter short explanation of reason for information change</p> <p><u>New/Existing Analyzer Flag</u> N = Analyzer ID code below assigned by submitter E = Analyzer ID code below is existing code assigned by DEP</p>							

Report one record of type 868 for each Analyzer 7-day calibration error test run conducted (if any).

**Field Descriptions and Instructions**

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The “R = Revision of Existing Record to Correct Original” code should be used to correct previously submitted incorrect information. The “C = Change of Existing Record” code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The “I = Change Status to Inactive” code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the “Effective Date of Information”. The “D = Delete Record” code should be used to indicate that a record was added in error and should be removed from the system (the “Effective Date of Information” in such cases should be entered as “99991231”).



**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**New/Existing Analyzer Flag (59).** If the DEP Analyzer ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the Analyzer), report “E”. If this is the initial monitoring plan submittal for the Analyzer, report “N” (see instructions for “DEP Analyzer ID Code”, below).

**DEP Analyzer ID Code (60).** Report the DEP Analyzer ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Analyzer ID Code upon processing of the initial Monitoring Plan submittal for a Analyzer. For preparation of the initial Monitoring Plan submittal for an Analyzer, the submitter may use any “temporary” 13-digit number, with the first digit being “9”, as the Analyzer ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Analyzer Flag” field must contain the value “N”. PADEP BAQ will assign the actual Analyzer ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**Date of Test Completion (73).** Report the date of test completion in the format YYYYMMDD.

**Zero/Upscale Flag (81).** Report “Z” if record represents Zero/Low level. Otherwise, report “U”.

**Period Number (82).** Report the period number (sequential day number) as an integer 1 through 7.

**Reference Value (83).** Report the Reference Value, in units of measurement in F13.3 format. The Reference Value should be decimal-justified and padded with blanks to the left.

**Monitoring System Value (96).** Report the Monitoring System Value, in units of measurement in F13.3 format. The Monitoring System Value should be decimal-justified and padded with blanks to the left.

(7) **RT 872: Certification Report Cycle Time Data**

CERTIFICATION REPORT CYCLE TIME DATA (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Certification Report Cycle Time Data (report records for each required reading for each analyzer)	872	1	Record Type Code		872	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change		*	50	A50
		59	New/Existing Analyzer Flag		*N or E	1	A1
		60	DEP Analyzer ID Code (if new, assign number unique to current submittal)			13	I13
		73	Date of test completion	YYYYMMDD		8	A8
		81	Test ID		*1 – 9	1	I1
		82	Zero/Upscale Flag		Z, U	1	A1
		83	Period Number		1 – 3	1	I1
		84	Minutes/Seconds Flag		*	1	I1
		85	Cycle Time	Minutes or Seconds		2	I2
<p style="text-align: right;">Total Record Length 86</p> <p>* Explanation of selected fields</p> <p><u>Change Flag</u>  N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original  I = Change Status to Inactive, D = Delete Record</p> <p><u>Reason For Information Change</u>  If Change Flag = N, enter “No Change”  If Change Flag = A, enter “Initial Submittal”  Otherwise, enter short explanation of reason for information change</p> <p><u>New/Existing Analyzer Flag</u>  N = Analyzer ID code below assigned by submitter  E = Analyzer ID code below is existing code assigned by DEP</p> <p><u>Minutes/Seconds Flag</u>  M = Cycle time in minutes  S = Cycle time in seconds</p>							

Report one record of type 872 for each Analyzer Cycle Time test run conducted (if any).

**Field Descriptions and Instructions**

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The “R = Revision of Existing Record to Correct Original” code should be used to correct previously submitted incorrect information. The “C = Change of Existing Record” code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The “I = Change Status to Inactive” code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the “Effective Date of Information”. The “D = Delete Record” code should be used to indicate that a record was added in error and should be removed from the system (the “Effective Date of Information” in such cases should be entered as “99991231”).

**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**New/Existing Analyzer Flag (59).** If the DEP Analyzer ID Code for the facility has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the Analyzer), report “E”. If this is the initial monitoring plan submittal for the Analyzer, report “N” (see instructions for “DEP Analyzer ID Code”, below).

**DEP Analyzer ID Code (60).** Report the DEP Analyzer ID Code for the facility. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the Analyzer ID Code upon processing of the initial Monitoring Plan submittal for a Analyzer. For preparation of the initial Monitoring Plan submittal for an Analyzer, the submitter may use any “temporary” 13-digit number, with the first digit being “9”, as the Analyzer ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing Analyzer Flag” field must contain the value “N”. PADEP BAQ will assign the actual Analyzer ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**Date of Test Completion (73).** Report the date of test completion in the format YYYYMMDD.

**Test ID (81).** Report the Test ID as an integer 1 through 9. Use 1 for the first test series completed on the reported date, increment for subsequent test series completed on the same date.

**Zero/Upscale Flag (82).** Report “Z” if record represents Zero/Low level. Otherwise, report “U”.

**Period Number (83).** Report the period number (test run number) as an integer 1 through 3.

**Minutes/Seconds Flag (84).** If Cycle Time is determined in minutes, report “M”. Otherwise, report “S”.

**Cycle Time (85).** Report the cycle time for the test run in minutes or seconds, according to the value reported in column 84, in I2 format. The Cycle Time should be right-justified and padded with spaces to the left.

**(8) RT 876: Certification Report Operational Test Period Results**

CERTIFICATION REPORT OPERATIONAL TEST PERIOD RESULTS (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Certification Report Operational Test Period Results (report one record for each CEMS	876	1	Record Type Code		876	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change		*	50	A50
		59	New/Existing CEMS Flag		*N or E	1	A1
		60	DEP CEMS ID Code (if new, assign number unique to current submittal)			11	I11
		71	Date of test completion	YYYYMMDD		8	A8
		79	Number of continuous hours without corrective maintenance			3	I3
				Total Record Length 81			
<p>* Explanation of selected fields</p> <p><u>Change Flag</u> N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original I = Change Status to Inactive, D = Delete Record</p> <p><u>Reason For Information Change</u> If Change Flag = N, enter “No Change” If Change Flag = A, enter “Initial Submittal” Otherwise, enter short explanation of reason for information change</p> <p><u>New/Existing CEMS Flag</u> N = CEMS ID code below assigned by submitter    E = CEMS ID code below is existing code assigned by DEP</p>							

Report one record of type 876 for each CEMS Operational Test Period test run conducted (if any).

**Field Descriptions and Instructions**

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The "R = Revision of Existing Record to Correct Original" code should be used to correct previously submitted incorrect information. The "C = Change of Existing Record" code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The "I = Change Status to Inactive" code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the "Effective Date of Information". The "D = Delete Record" code should be used to indicate that a record was added in error and should be removed from the system (the "Effective Date of Information" in such cases should be entered as "99991231").

**Reason For Information Change (9).** If Change Flag was reported as "N", enter "No Change". If Change Flag was reported as "A", enter "Initial Submittal". Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**New/Existing CEMS Flag (59).** If the DEP CEMS ID Code for the CEMS has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the CEMS), report “E”. If this is the initial monitoring plan submittal for the CEMS, report “N” (see instructions for “DEP CEMS ID Code”, below).

**DEP CEMS ID Code (60).** Report the DEP CEMS ID Code for the CEMS. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the CEMS ID Code upon processing of the initial Monitoring Plan submittal for an CEMS. For preparation of the initial Monitoring Plan submittal for a CEMS, the submitter may use any “temporary” 11-digit number, with the first digit being “9”, as the CEMS ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing CEMS Flag” field must contain the value “N”. PADEP BAQ will assign the actual CEMS ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**Date of Test Completion (71).** Report the date of test completion in the format YYYYMMDD.

**Number of Continuous Hours Without Corrective Maintenance (79).** Report the Number of Continuous Hours Without Corrective Maintenance as an integer in I3 format. The Number of Continuous Hours Without Corrective Maintenance should be right-justified and padded with spaces to the left.

(9) **RT 878: Certification Report DAS Test Data**

CERTIFICATION REPORT DAS TEST DATA (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Certification Report DAS Test Data (report one record for each test run for each CEMS)	878	1	Record Type Code		876	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Change Flag		*N, A, C, R, I, D	1	A1
		9	Reason For Information Change		*	50	A50
		59	New/Existing CEMS Flag		*N or E	1	A1
		60	DEP CEMS ID Code (if new, assign number unique to current submittal)			11	I11
		71	Date of test completion	YYYYMMDD		8	A8
		79	Minute/Hour Flag		*M or H	1	A1
		80	Period Number		1 – 60	2	I2
		82	Reference System Results	Units of emission standard		13	F13.3
		95	Monitoring System Results	Units of emission standard		13	F13.3
<p style="text-align: right;">Total Record Length 107</p> <p>* Explanation of selected fields</p> <p><u>Change Flag</u>  N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original  I = Change Status to Inactive, D = Delete Record</p> <p><u>Reason For Information Change</u>  If Change Flag = N, enter "No Change"  If Change Flag = A, enter "Initial Submittal"  Otherwise, enter short explanation of reason for information change</p> <p><u>New/Existing CEMS Flag</u>  N = CEMS ID code below assigned by submitter      E = CEMS ID code below is existing code assigned by DEP</p> <p><u>Minute/Hour Flag</u>  M = Minute   H = Hour</p>							

Report one record of type 878 for each CEMS DAS Test run conducted (if any).

**Field Descriptions and Instructions**

**Change Flag (8).** Report the code that represents the purpose for submitting the record type (N = No Change, A = Addition of New Record, C = Change of Existing Record, R = Revision of Existing Record to Correct Original, I = Change Status to Inactive, D = Delete Record). Note that this record must be submitted even if there is no change from the record previously submitted. The "R = Revision of Existing Record to Correct Original" code should be used to correct previously submitted incorrect information. The "C = Change of Existing Record" code should be used in cases where the previously submitted information was correct but, as of a particular date, is to be changed. The "I = Change Status to Inactive" code should be used to indicate that the associated monitoring system has been permanently taken out of service as of the "Effective Date of Information". The "D = Delete Record" code should be used to indicate that a record was added in error and should be removed from the system (the "Effective Date of Information" in such cases should be entered as "99991231").

**Reason For Information Change (9).** If Change Flag was reported as “N”, enter “No Change”. If Change Flag was reported as “A”, enter “Initial Submittal”. Otherwise, enter short explanation of the reason for information change. The text should be left-justified and padded to the right with trailing blanks.

**New/Existing CEMS Flag (59).** If the DEP CEMS ID Code for the CEMS has been obtained (as a result of a previously-submitted initial monitoring plan submittal for the CEMS), report “E”. If this is the initial monitoring plan submittal for the CEMS, report “N” (see instructions for “DEP CEMS ID Code”, below).

**DEP CEMS ID Code (60).** Report the DEP CEMS ID Code for the CEMS. The number should be right-justified and padded to the left with leading zeros. PADEP assigns the CEMS ID Code upon processing of the initial Monitoring Plan submittal for an CEMS. For preparation of the initial Monitoring Plan submittal for a CEMS, the submitter may use any “temporary” 11-digit number, with the first digit being “9”, as the CEMS ID Code (same “temporary” code must be used in all affected records). In such cases, the “New/Existing CEMS Flag” field must contain the value “N”. PADEP BAQ will assign the actual CEMS ID Code upon processing of the submittal and will notify the submitter of the code to be used in future submittals.

**Date of Test Completion (71).** Report the date of test completion in the format YYYYMMDD.

**Minute/Hour Flag (79).** If data is reported for minutes, report “M”. Otherwise, report “H”.

**Period Number (80).** Report the Period Number (test run number), as an integer (from 1 through 9 if “H” was reported in column 79, from 1 through 60 if “M” was reported in column 79) in I2 format. Period number should be right-justified and padded with spaces to the left.

**Reference System Results (82).** Report the Reference System Results, in units of the emission standard in F13.3 format. The Reference System Results should be decimal-justified and padded with blanks to the left.

**Monitoring System Results (95).** Report the Monitoring System Results, in units of the emission standard in F13.3 format. The Monitoring System Results should be decimal-justified and padded with blanks to the left.

## E. Emissions Data Report Records

### (1) RT 880: Emissions Data Report Contents

EMISSIONS DATA REPORT CONTENTS (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Emissions Data Report Contents (report one record for each quarterly report for emission result on report medium)	880	1	Record Type Code		880	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Emission Result ID Code (as assigned by DEP)			9	I9
		17	Date of first day of report	YYYYMMDD		8	I8
		25	Name of pdf file included in submittal containing cover letter statements and signature			25	A25
Total Record Length 49							

Report one record of type 880 for each Emission Result at the Facility for which emissions records are included.

#### Field Descriptions and Instructions

**Emission Result ID Code (8).** Report the Emission Result ID Code as assigned by DEP. The Emission Result ID Code should be right-justified and padded with blanks to the left.

**Date of First Day of Report (17).** Report the first day for which emissions data is reported for the Emission Result, in YYYYMMDD format.

**Name of pdf file included in submittal containing cover letter statement and signature (25).** Report the name of a pdf file, that will be included in the submittal containing the statements and signature normally required to be submitted in a hardcopy cover letter. The pdf file name should be left-justified and padded to the right with trailing blanks.



## (2) RT 884: Emissions Data Report Hourly Average Monitoring Data

EMISSIONS DATA REPORT HOURLY AVERAGE MONITORING DATA (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Emissions Data Report Hourly Average Monitoring Data (report records for each hour of reporting period for each emission result)	884	1	Record Type Code		884	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Emission Result ID Code (as assigned by DEP)			9	I9
		17	Date	YYYYMMDD		8	I8
		25	Hour		0 - 23	2	I2
		27	Value for the hour	Consistent with emission standard	(0.0 if invalid and no substitution)	13	F13.3
		40	Process Code		*	2	A2
		42	Monitoring Code (00 if valid and process not down)		*	2	A2
		44	Method of Determination Code		*	3	A3
*Explanation of selected fields:  <u>Process codes:</u> 01 = Changing fuels 02 = Control equip. malfn. 03 = Starting up 04 = Shutting down 05 = Changing operating level 06 = Clean process equip. 07 = Clean control equip. 08 = Normal operation 09 = Other  <u>Method of Determination Codes:</u> P = Certified primary monitoring system Bxx or Sxx = Certified backup/standby monitoring system (xx = no.) 03 = Approved alternative monitoring system 04 = Reference method testing 05 = Approved alternative parametric monitoring system 06 = Average of hour before and hour after missing data period 07 = Initial missing data procedures 08 = 90 <sup>th</sup> percentile  <u>Monitoring codes:</u> 10 = Required adjustment not made 11 = Excess cal error primary analyzer 12 = Excess cal error ancillary analyzer 13 = Process down 14 = Recalibration 15 = Preventive maintenance  16 = Primary analyzer malfunction 17 = Ancillary analyzer malfunction 18 = Data handling system malfunction 19 = Sample interface malfunction 20 = Corrective maintenance 21 = Other  NOTE: The Department may specify additional 2-digit alphanumeric Process or Monitoring Codes to be used in special situations.				Total Record Length 46			
				09 = 95 <sup>th</sup> percentile 10 = Maximum hourly 11 = Average in corresponding load range 12 = Maximum potential 13 = Other 14 = Minimum CO <sub>2</sub> /Maximum O <sub>2</sub> during startup 15 = Fuel sampling/analysis DA = Department agreed data substitution method  NV = No value (Data Invalid), no substitution required			

Report one record of type 884 for each hour in the reporting period for each Emission Result at the Facility for which emissions records are included.

### Field Descriptions and Instructions

**Emission Result ID Code (8).** Report the Emission Result ID Code as assigned by DEP. The Emission Result ID Code should be right-justified and padded with blanks to the left.

**Date (17).** Report the date represented by the emissions data, in YYYYMMDD format.

**Hour (25).** Report the hour represented by the emissions data (0 through 23), in I2 format. The Hour should be right-justified and padded with blanks to the left.

**Value For The Hour (27).** Report the Value For The Hour of the emissions, in units of the emission standard in F13.3 format. The Value For The Hour should be decimal-justified and padded with blanks to the left.

**Process Code (40).** Report the Process Code to explain the operating mode of the process during the majority of the hour. Acceptable values are:

- 01 = Changing fuels
- 02 = Control equipment malfunction
- 03 = Starting up
- 04 = Shutting down
- 05 = Changing operating level
- 06 = Clean process equipment
- 07 = Clean control equipment
- 08 = Normal operation
- 09 = Other

NOTE: The Department may specify additional 2-digit alphanumeric Process or Monitoring Codes to be used in special situations.

**Monitoring Code (42).** If the Value for the Hour represents valid data and the process is not down, report "00". Otherwise, report the primary reason for invalid data. Acceptable values are:

- 10 = Required adjustment not made
- 11 = Excess cal error primary analyzer
- 12 = Excess cal error ancillary analyzer
- 13 = Process down
- 14 = Recalibration
- 15 = Preventive maintenance
- 16 = Primary analyzer malfunction
- 17 = Ancillary analyzer malfunction
- 18 = Data handling system malfunction
- 19 = Sample interface malfunction
- 20 = Corrective maintenance
- 21 = Other

NOTE: The Department may specify additional 2-digit alphanumeric Process or Monitoring Codes to be used in special situations.

**Method of Determination Code (44).** Report the Method of Determination Code to explain how the Value For The Hour was collected. Acceptable Values are:

- P = Certified primary monitoring system
- Bxx or Sxx = Certified backup/standby monitoring system (xx = no.)
- 03 = Approved alternative monitoring system
- 04 = Reference method testing
- 05 = Approved alternative parametric monitoring system
- 06 = Average of hour before and hour after missing data period
- 07 = Initial missing data procedures
- 08 = 90th percentile
- 09 = 95th percentile
- 10 = Maximum hourly
- 11 = Average in corresponding load range
- 12 = Maximum potential
- 13 = Other
- 14 = Minimum CO<sub>2</sub>/Maximum O<sub>2</sub> during startup
- 15 = Fuel sampling/analysis
- DA = Department agreed data substitution method
- NV = No value (Data Invalid), no substitution required

**(3) RT 888: Emissions Data Report Linearity Results**

EMISSIONS DATA REPORT LINEARITY RESULTS (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Emissions Data Report Linearity Results (Report at least one record for each analyzer used to collect data)	888	1	Record Type Code		888	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Analyzer ID Code (as assigned by DEP)			13	I13
		21	Date of test completion	YYYYMMDD		8	A8
		29	Test ID (to differentiate multiple test series completed same day)		1 - 9	1	I1
		30	Low range linearity result	%		5	F5.1
		35	Low range linearity result	Units of Measurement		13	F13.3
		48	Mid range linearity result	%		5	F5.1
		53	Mid range linearity result	Units of Measurement		13	F13.3
		66	High range linearity result	%		5	F5.1
		71	High range linearity result	Units of Measurement		13	F13.3
		84	Comments			50	A50
Total Record Length						133	

Report one record of type 888 for each Analyzer at the Facility if related to a CEMS which is, in turn, related to an Emission Result at the Facility for which emissions records are included.

**Field Descriptions and Instructions**

**Analyzer ID Code (8).** Report the Analyzer ID Code as assigned by DEP, in I13 format. The Analyzer ID Code should be right-justified and padded with spaces to the left.

**Date of Test Completion (21).** Report the Date of Test Completion in YYYYMMDD format.

**Test ID (29).** Report the Test ID as an integer 1 through 9. Use 1 for the first test series completed on the reported date, increment for subsequent test series completed on the same date.

**Low Range Linearity Result (% of Reference Material Value) (30).** Report the Low Range Linearity Result , in units of % of Reference Material Value in F5.1 format. If zero is used as the reference material value, report the result as “999.9”. The Low Range Linearity (% of Reference Material Value) should be decimal-justified and padded with blanks to the left.

**Low Range Linearity Result (Units of Measurement) (35).** Report the Low Range Linearity Result , in Units of Measurement in F13.3 format. If zero is used as the reference material value, report the result as “999.9”. The Low Range

Linearity (Units of Measurement) should be decimal-justified and padded with blanks to the left.

**Mid Range Linearity Result (% of Reference Material Value) (48).** Report the Mid Range Linearity Result, in units of % of Reference Material Value in F5.1 format. The Mid Range Linearity (% of Reference Material Value) should be decimal-justified and padded with blanks to the left.

**Mid Range Linearity Result (Units of Measurement) (53).** Report the Mid Range Linearity Result, in Units of Measurement in F13.3 format. The Mid Range Linearity (Units of Measurement) should be decimal-justified and padded with blanks to the left.

**High Range Linearity Result (% of Reference Material Value) (66).** Report the High Range Linearity Result, in units of % of Reference Material Value in F5.1 format. The High Range Linearity (% of Reference Material Value) should be decimal-justified and padded with blanks to the left.

**High Range Linearity Result (Units of Measurement) (71).** Report the High Range Linearity Result, in Units of Measurement in F13.3 format. The High Range Linearity (Units of Measurement) should be decimal-justified and padded with blanks to the left.

**Comments (84).** Report up to 50 characters of comments. The Comments should be left-justified and padded with blanks to the right.

**(4) RT 892: Emissions Data Report Opacity Excess Emissions Data**

EMISSIONS DATA REPORT OPACITY EXCESS EMISSION DATA (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Emissions Data Report Opacity Excess Emission Data (Report record for each hour in which an incident occurs)	892	1	Record Type Code		892	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Emission Result ID Code (as assigned by DEP)			9	I9
		17	Date	YYYYMMDD		8	I8
		25	Hour		00 - 23	2	I2
		27	Number of incidents at or above standard 1 but below standard 2		*	2	I2
		29	Number of incidents at or above standard 2		*	2	I2
		31	Highest one-minute average	% opacity		13	F13.3
		44	Fourth highest one-minute average	% opacity		13	F13.3
<div>Total Record Length 56</div> <div>*Explanation of selected fields:</div> <div>Number of incidents at or above standard 1, Number of incidents at or above standard 2</div> <div>Range should be 00 through total number of possible incidents in an hour (e.g. for one-minute averages, 60; for 6-minute averages, 10; etc.)</div>							

Report one record of type 892\ for each “incident” that occurred during the reporting period for each opacity Emission Result at the Facility for which emissions records are included.

**Field Descriptions and Instructions**

**Emission Result ID Code (8).** Report the Emission Result ID Code as assigned by DEP. The Emission Result ID Code should be right-justified and padded with blanks to the left.

**Date (17).** Report the date represented by the emissions data, in YYYYMMDD format.

**Hour (25).** Report the hour represented by the emissions data (0 through 23), in I2 format. The Hour should be right-justified and padded with blanks to the left.

**Number of Incidents At or Above Standard 1 But Below Standard 2 (27).** Report the Number of Incidents At or Above Standard 1 But Below Standard 2 for the hour as an integer in I2 format. The Number of Incidents At or Above Standard 1 But Below Standard 2 should be right-justified and padded with blanks to the left.

**Number of Incidents At or Above Standard 2 (29).** Report the Number of Incidents At or Above Standard 2 for the hour as an integer in I2 format. The Number of Incidents At or Above Standard 2 should be right-justified and padded with blanks to the left.

**Highest One-Minute Average (31).** Report the Highest One-Minute Average for the hour, in % Opacity in F13.3 format. The Highest One-Minute Average should be decimal-justified and padded with blanks to the left.

**Fourth Highest One-Minute Average (44).** Report the Fourth Highest One-Minute Average for the hour, in % Opacity in F13.3 format. The Fourth Highest One-Minute Average should be decimal-justified and padded with blanks to the left.

(5) **RT 896: Emissions Data Report Low Temperature Data**

EMISSIONS DATA REPORT LOW TEMPERATURE DATA (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Emissions Data Report Low Temperature Data	896	1	Record Type Code		896	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Emission Result ID Code. (as assigned by DEP)			9	I9
		17	Date	YYYYMMDD		8	I8
		25	Hour		00 – 23	2	I2
		27	Minute in hour first incident in hour begins (each new hour separate incident)		00 – 59	2	I2
		29	Total number of minutes incidents occur during hour		00 – 59	2	I2
		31	Average temperature during incidents	Degrees F		13	F13.3
		44	Lowest temperature during incidents	Degrees F		13	F13.3
Total Record Length 56							

Report one record of type 896 for each “incident” that occurred during the reporting period for each temperature Emission Result at the Facility for which emissions records are included.

**Field Descriptions and Instructions**

**Emission Result ID Code (8).** Report the Emission Result ID Code as assigned by DEP. The Emission Result ID Code should be right-justified and padded with blanks to the left.

**Date (17).** Report the date represented by the emissions data, in YYYYMMDD format.

**Hour (25).** Report the hour represented by the emissions data (0 through 23), in I2 format. The Hour should be right-justified and padded with blanks to the left.

**Minute in Hour First Incident in Hour Begins (each new hour separate incident) (27).** Report the Minute in Hour First Incident in Hour Begins (0 through 59) as an integer in I2 format. The Minute in Hour First Incident in Hour Begins should be right-justified and padded with blanks to the left.

**Total Number of Minutes Incidents Occur During Hour (29).** Report the Total Number of Minutes Incidents Occur During Hour (0 through 59) as an integer in I2 format. The Total Number of Minutes Incidents Occur During Hour should be right-justified and padded with blanks to the left.

**Average Temperature During Incidents (31).** Report the Average Temperature During Incidents, in degrees F in F13.3 format. The Average Temperature During Incidents should be decimal-justified and padded with blanks to the left.

**Lowest Temperature During Incidents (44).** Report the Lowest Temperature During Incidents, in degrees F in F13.3 format. The Lowest Temperature During Incidents should be decimal-justified and padded with blanks to the left.

**F. Generic Records For Additional Information**

**(1) RT 898: Generic Records For Additional Information**

GENERIC RECORD FOR ADDITIONAL INFORMATION (PAEDR 2.00)							
RECORD TYPE	TYPE CODE	START COL	DATA ELEMENT DESCRIPTION	UNITS	RANGE	LENGTH	FORMAT (FTN)
Used to implement additional record types (as specified by DEP) without using additional "800 level" type codes.	898	1	Record Type Code		898	3	I3
		4	PAEDR Version		2.00	4	F4.2
		8	Record ID Code (as specified by DEP)			3	I3
		11	Total record length (as specified by DEP)			3	I3
		*	*	*	*	*	*
<div>Total Record Length *</div> <div>*Explanation of selected fields: One or more rows of "Start Col", "Data Element Description", "Units", "Range", "Length", and "Format (FTN)" columns as specified by DEP</div> <div>*Total Record Length specified by the "Total record length" element</div>							

Report records of type 898 only when directed by PADEP to report such records for special circumstances. PADEP will specify the contents of such records.



## **IV. GUIDELINES FOR PREPARATION OF AN EDR SUBMITTAL**

### **A. INTRODUCTION**

Under the PADEP Continuous Source Monitoring Program four types of electronic reports must be submitted in EDR format. These are: (1) monitoring plan information, (2) test protocol information, (3) certification report information, and (4) emissions data report information. This appendix explains which EDR record types are associated with each type of submittal. The record types for each type of submittal are presented in Section II, below. The guidelines in Section II apply to all affected facilities.

### **B. ELEMENTS OF AN EDR SUBMITTAL**

#### **1. Monitoring Plan Information Submittal**

Note that Monitoring Plan Information Submittals must contain a complete set of records applicable to the Facility, i.e. not only records for those items that are being (A)dded, (C)hanged, or (R)evised, but also for those items for which (N)o change is being proposed. The following record types are the elements of a Monitoring Plan Information Submittal:

**Table 2: Monitoring Plan Record Types**

<b>Record Type</b>	<b>Description</b>	<b>Comments</b>
801	Record Set Submitter Information I	Report one record
802	Record Set Submitter Information II	Report one record
810	Monitoring Plan Facility Information	Report one record
812	Monitoring Plan Source Combination Information	Report one record for each existing or proposed new Source Combination at the Facility
820	Monitoring Plan Emission Result Information	Report one record for each existing or proposed new Emission Result at the Facility
821	Monitoring Plan Emission Result Reason Information	Report at least one record for each existing or proposed new Emission Result at the Facility. Submit additional records as applicable (multiple reasons for reporting Emission Result).
822	Monitoring Plan Emission Standard Information	Report at least one record for each existing or proposed new Emission Result at the Facility. Submit additional records as applicable (multiple emission standards for Emission Result).
823	Monitoring Plan Data Availability Standard Information	Report at least one record for each existing or proposed new Emission Result at the Facility. Submit additional records as applicable (multiple data availability standards for Emission Result).
824	Monitoring Plan CEMS Information	Report at least one record for each existing or proposed new Emission Result at the Facility. Submit additional records as applicable (multiple CEMSs for Emission Result).
828	Monitoring Plan Analyzer Information I	Report one record for each existing or proposed new Analyzer at the Facility.
829	Monitoring Plan Analyzer Information II	Report one record for each existing or proposed new Analyzer at the Facility.
830	Monitoring Plan Calibration Error Limit Information	Report at least one record for each existing or proposed new Analyzer at the Facility. Submit additional records as applicable (multiple Calibration Error Limits for Analyzer).
832	Monitoring Plan Analyzer/CEMS Cross-Reference Information	Report at least one record for each existing or proposed new Analyzer at the Facility. Submit additional records as applicable (multiple CEMSs using the same Analyzer/multiple Analyzers).
834	Monitoring Plan Opacity CEMS Specification Information	Report one record for each existing or proposed new opacity CEMS, if any, at the Facility.
835	Monitoring Plan Non-Opacity CEMS Specification Information	Report one record for each existing or proposed new non-opacity CEMS, if any, at the Facility.
836	Monitoring Plan Non-Opacity Analyzer Specification Information I	Report one record for each existing or proposed new non-opacity Analyzer, if any, at the Facility.
837	Monitoring Plan Opacity Analyzer Specification Information I	Report one record for each existing or proposed new opacity Analyzer, if any, at the Facility.
840	Monitoring Plan Opacity And Non-Opacity Analyzer Specification Information II	Report one record for each existing or proposed new Analyzer at the Facility.
841	Monitoring Plan Record Keeping Information	Report one record
842	Monitoring Plan QA Information	Report one record
843	Monitoring Plan General Information	Report one record for each existing or proposed new Source Combination at the Facility.
898	Generic Record For Additional Information	Report records only as notified by DEP for special circumstances

## 2. Test Protocol Information Submittal

The following record types are the elements of a Test Protocol Information Submittal:

**Table 3: Test Protocol Record Types**

<b>Record Type</b>	<b>Description</b>	<b>Comments</b>
801	Record Set Submitter Information I	Report one record
802	Record Set Submitter Information II	Report one record
803	Test Protocol Testing Firm Information I	Report one record
804	Test Protocol Testing firm information II	Report one record
805	Test Protocol Analytical laboratory Information I	Report at least one record. Report additional records if more than one analytical laboratory is involved. Remember to submit a record for the testing firm if the testing firm is also conducting analyses.
806	Test Protocol Analytical laboratory Information II	Report at least one record. Report additional records if more than one analytical laboratory is involved. Remember to submit a record for the testing firm if the testing firm is also conducting analyses.
807	Test Protocol CEMSs to be Tested	Report at least one record. Report additional records if more than one CEMS is involved.
898	Generic Record For Additional Information	Report records only as notified by DEP for special circumstances

### 3. Certification Report Information Submittal

The following record types are the elements of a Certification Report Information Submittal:

**Table 4: Certification Report Record Types**

Record Type	Description	Comments
801	Record Set Submitter Information I	Report one record
802	Record Set Submitter Information II	Report one record
844	Certification Report CEMS Test Completion Date	Report one record for each CEMS test (Relative accuracy test audit for initial certification, Annual relative accuracy test audit, Operational test period, Data acquisition system test) completed.
848	Certification Report Analyzer Test Completion Date	Report one record for each Analyzer test (Linearity testing, 7-day calibration error testing, Cycle time testing) completed.
852	Certification Report Non-Opacity Relative Accuracy Test Audit Data	Report one record for each non-opacity CEMS Relative Accuracy test audit run conducted (if any).
856	Certification Report Opacity Relative Accuracy Test Audit Data	Report one record for each opacity CEMS Relative Accuracy test audit run conducted (if any).
860	Certification Report Linearity Data	Report one record for each Analyzer Linearity test run conducted (if any).
868	Certification Report 7-day Calibration Error Test Data	Report one record for each Analyzer 7-day calibration error test run conducted (if any).
872	Certification Report Cycle Time Data	Report one record for each Analyzer Cycle Time test run conducted (if any).
876	Certification Report Operational Test Period Results	Report one record for each CEMS Operational Test Period test run conducted (if any).
878	Certification Report DAS Test Data	Report one record for each CEMS DAS Test run conducted (if any).
898	Generic Record For Additional Information	Report records only as notified by DEP for special circumstances

#### 4. Emissions Data Report Information Submittal

The following record types are the elements of an Emissions Data Report Information Submittal:

**Table 5: Emissions Data Report Record Types**

<b>Record Type</b>	<b>Description</b>	<b>Comments</b>
801	Record Set Submitter Information I	Report one record
802	Record Set Submitter Information II	Report one record
880	Emissions Data Report Contents	Report one record for each Emission Result at the Facility for which emissions records are included.
884	Emissions Data Report Hourly Average Monitoring Data	Report one record for each hour in the reporting period for each Emission Result at the Facility for which emissions records are included.
888	Emissions Data Report Linearity Results	Report one record for each Analyzer at the Facility if related to a CEMS which is, in turn, related to an Emission Result at the Facility for which emissions records are included.
892	Emissions Data Report Opacity Excess Emission Data	Report one record for each “incident” that occurred during the reporting period for each opacity Emission Result at the Facility for which emissions records are included.
896	Emissions Data Report Low Temperature Data	Report one record for each “incident” that occurred during the reporting period for each temperature Emission Result at the Facility for which emissions records are included.
898	Generic Record For Additional Information	Report records only as notified by DEP for special circumstances

## DEFINITIONS OF PROCESS CODES IN REPORTS

### PROCESS CODES

- 01 = CHANGING FUELS  
Use only for hour during which fuel or fuel mix is significantly changed
- 02 = CONTROL EQUIP. MALF.  
Use for any hour during which pollution control equipment malfunctions
- 03 = STARTUP  
Use for hours between “PROCESS DOWN” and “NORMAL OPERATION”
- 04 = SHUTDOWN  
Use for hours between “NORMAL OPERATION” and “PROCESS DOWN”
- 05 = CHANGING OPERATING LEVEL  
Use for hour during which process level is significantly changed (not for normal fluctuations)
- 06 = CLEAN PROCESS EQUIP.  
Use for any hour during which process equipment cleaning (soot blowing, etc.) occurs
- 07 = CLEAN CONTROL EQUIP.  
Use for any hour during which pollution control equipment cleaning (bag shaking, rapping, etc.) occurs
- 08 = NORMAL OPERATION  
Default code
- 09 = OTHER  
Use only when directed by DEP

NOTE: The Department may specify additional 2-digit alphanumeric codes to be used in special situations.

## DEFINITIONS OF MONITORING CODES IN REPORTS

### MONITORING CODES

- 10 = REQUIRED ADJUSTMENT NOT MADE  
No longer applicable
- 11 = EXCESS CALIBRATION ERROR PRIMARY ANALYZER  
Use for hours invalid due to excess calibration error of primary analyzer (usually pollutant analyzer)
- 12 = EXCESS CALIBRATION ERROR ANCILLARY ANALYZER  
Use for hours invalid due to excess calibration error of ancillary analyzer (diluent, etc.)
- 13 = PROCESS DOWN  
Use for hours when process is not operating AND pollutant is not being emitted.
- For example:  
OPACITY - source not operating and air flow less than needed for startup of source  
SO<sub>2</sub> - no sulfur-bearing fuel burned  
NO<sub>x</sub> - no combustion occurring
- For incinerators:  
CE - no waste being burned  
CO - “  
HCL - “  
O<sub>2</sub> - “  
TEMPERATURE - “
- 14 = RECALIBRATION  
Use for hours invalid due to calibration (daily, quarterly, maintenance, etc.)
- 15 = PREVENTIVE MAINTENANCE  
Use for hours invalid due to preventive maintenance
- 16 = PRIMARY ANALYZER MALFUNCTION  
Use for hours invalid due to malfunction of primary analyzer (usually pollutant)
- 17 = ANCILLARY ANALYZER MALFUNCTION  
Use for hours invalid due to malfunction of ancillary analyzer (diluent, etc.)
- 18 = DATA HANDLING SYSTEM MALFUNCTION  
Use for hours invalid due to malfunction of any part of data handling system
- 19 = SAMPLE INTERFACE MALFUNCTION  
Use for hours invalid due to malfunction of any part of sample acquisition and conditioning system (probe, sample line, dryers, etc.)

20 = CORRECTIVE MAINTENANCE

Use for hours invalid due to corrective maintenance

21 = OTHER

Use only when directed by DEP

NOTE: The Department may specify additional 2-digit alphanumeric codes to be used in special situations.



## **ATTACHMENT NO. 4**

### **DATA RECORD KEEPING AND REPORTING FOR TELEMETRY**

Data, process codes and monitoring codes for each analyzer, in “raw” analyzer measurement units, and for each CEMS, in measurement units of the applicable standard, must be recorded for one-minute, one-hour and 24-hour averaging periods. The data telemetry system must provide the capability to display records to remote users based on user selection of analyzers or CEMSs and range of dates and times. Data must be maintained on-line for four months.

### **DATA TELEMETRY DATA ACCESS**

The source must provide the capability to display information to remote users in a manner acceptable to the appropriate DEP Regional office. The data telemetry system must allow simultaneous, exclusive access to information by at least one DEP staff member and at least one other.

## ATTACHMENT NO. 5

### Recertification Guidance

Recertification Guidance for Wet or Dry Extractive Measurement Devices							
Description of Event	Response Time	Daily Calibration	Linearity	Relative Accuracy	Operational Test Period	DAS Formula Verification	Submit Revised Phase I
Replace analyzer with like-kind analyzer (less than 720 reporting hours)	X	X	X		X		
Replace analyzer with like-kind analyzer (permanent replacement)	X	X	X	X	X		X
Replace analyzer with analyzer that does not qualify as a like-kind analyzer.	X	X	X	X	X		X
Replace or repair any of the following major analyzer components:							
Photomultiplier		X					
Lamp		X					
Internal analyzer particulate filter		X					
Analyzer vacuum pump		X					
Capillary tube		X					
Ozone generator		X					
Reaction chamber		X	X				
NO <sub>2</sub> converter		X	X				
Ozonator dryer							
Sample Cell		X	X				
Optical filters		X					
Replace or repair circuit board		X	X				

Contact the Department for emergency situations which may require the installation of an analyzer prior to submission of a Phase I. Although temporary like-kind analyzer replacements do not require submittal of a revised Phase I, please submit the results of testing to the Department and thoroughly document the occurrence in the cover letter of the Quarterly Report.

For repair or replacement of other major components that are not listed here (e.g., major components of new monitoring technologies or monitoring technology not addressed in this manual), contact DEP for a case-by case ruling. Document all changes and performance testing in the maintenance logbook.

## Recertification Guidance for Wet or Dry Extractive Measurement Devices

Description of Event	Response Time	Daily Calibration	Linearity	Relative Accuracy	Operational Test Period	DAS Formula Verification	Submit Revised Phase I	Comments
Replace, repair or perform routine maintenance (as specified in the QA /QC plan) on a minor analyzer component, including, but not limited to:								For repair or replacement of other minor components that are not listed here perform calibration error testing. DEP recommends that each facility develop its own list of major and minor components and document this list within their QA /QC plan. If there is uncertainty whether a component is major or minor, contact DEP for a case-by-case ruling. Document all changes and performance testing in the maintenance logbook.
PMT base		X						
O-rings		X						
Optical windows		X						
High voltage power supply		X						
Zero air scrubber		X						
Thermistor		X						
Reaction chamber heater		X						
Photomultiplier cooler		X						
Photomultiplier cooler fins		X						
DC power supply		X						
Valve		X						
Display								
Replace or repair signal wiring in CEMS shelter.		X						
Replace or repair sample tubing in CEMS shelter.		X						DEP recommends performing both a pressure and vacuum leak check. The term “sample tubing” includes any sample or calibration tubing, the sample or calibration manifold, and the solenoid valve.
Replace or repair vacuum pump or pressure pump (not the analyzer pumps)		X						DEP recommends that a leak check be performed, also.
Replace or repair moisture removal system (chiller).		X						DEP recommends performing both a pressure and vacuum leak check.
Replace CEMS probe (same probe length and location).		X						DEP recommends performing both a pressure and vacuum leak check.
Change probe length and/or location.	X	X	X	X			X	
Routine probe filter maintenance (e.g., clean or replace coarse filter).		X						
Replace umbilical line.								DEP recommends performing both a pressure and vacuum leak check. Contact the Department for guidance on the specific testing required.
Replace probe heater or sample line heaters.		X						
Change from extractive CEMS to in-situ CEMS.	X	X	X	X	X		X	
Change from extractive CEMS to dilution CEMS.	X	X	X	X	X		X	

Recertification Guidance for Dilution-Extractive Measurement Devices								
Description of Event	Response Time	Daily Calibration	Linearity	Relative Accuracy	Operational Test Period	DAS Formula Verification	Submit Revised Phase I	Comments
Replace analyzer with like-kind analyzer (less than 720 reporting hours)	X	X	X		X			Contact the Department for emergency situations which may require the installation of an analyzer prior to submission of a Phase I. Although temporary like-kind analyzer replacements do not require submittal of a revised Phase I, please submit the results of testing to the Department and thoroughly document the occurrence in the cover letter of the Quarterly Report.
Replace analyzer with like-kind analyzer (permanent replacement)	X	X	X	X	X		X	
Replace analyzer with analyzer that does not qualify as a like-kind analyzer.	X	X	X	X	X		X	
Replace or repair any of the following major components:								For repair or replacement of other major components that are not listed here (e.g., major components of new monitoring technologies or monitoring technology not addressed in this manual), contact DEP for a case-by case ruling. Document all changes and performance testing in the maintenance logbook.
Photomultiplier		X						
Lamp		X						
Internal analyzer particulate filter		X						
Analyzer vacuum pump		X						
Capillary tube		X						
Ozone generator		X						
Reaction chamber		X	X					
NO <sub>2</sub> converter		X	X					
Ozonator dryer								
Sample Cell		X	X					
Optical filters		X						
Replace or repair circuit board		X	X					

Recertification Guidance for Dilution-Extractive Measurement Devices								
Description of Event	Response Time	Daily Calibration	Linearity	Relative Accuracy	Operational Test Period	DAS Formula Verification	Submit Revised Phase I	Comments
Replace, repair or perform routine maintenance (as specified in the QA/QC plan) on a minor analyzer component, including, but not limited to:								For repair or replacement of other minor components that are not listed here perform calibration error testing. DEP recommends that each facility develop its own list of major and minor components and document this list within their QA /QC plan. If there is uncertainty whether a component is major or minor, contact DEP for a case-by-case ruling. Document all changes and performance testing in the maintenance logbook.
PMT base		X						
O-rings		X						
Optical windows		X						
High voltage power supply		X						
Thermistor		X						
Reaction chamber heater		X						
Photomultiplier cooler		X						
Photomultiplier cooler fins		X						
DC power supply		X						
Valve		X						
Display								
Replace or repair signal wiring in CEMS shelter.		X						
Replace or repair sample tubing in CEMS shelter.		X						DEP recommends performing both a pressure and vacuum leak check. The term “sample tubing” includes any sample or calibration tubing, the sample or calibration manifold, and the solenoid valve.
Replace or repair vacuum pump or pressure pump (not the analyzer pumps).		X						DEP recommends that a leak check be performed, also.
Replace critical orifice in dilution system with orifice of different size (alter the established dilution ratio in the original Phase I).	X	X	X	X			X	Changing the size of the critical orifice (outside the manufacturer’s tolerances for individual orifices) will significantly change the dilution ratio, may cause moisture problems and could introduce additional bias into the CEM system. Therefore, recertification testing must be performed.
Replace critical orifice in dilution system with orifice of the same size (within the manufacturer’s specified tolerance).		X						
Disassemble and reassemble dilution probe for maintenance or service.		X						DEP recommends performing both a pressure and vacuum leak check.
Replace umbilical line.								DEP recommends performing both a pressure and vacuum leak check. Contact the Department for guidance on the specific testing required.

<b>Recertification Guidance for Dilution-Extractive Measurement Devices</b>								
<b>Description of Event</b>	<b>Response Time</b>	<b>Daily Calibration</b>	<b>Linearity</b>	<b>Relative Accuracy</b>	<b>Operational Test Period</b>	<b>DAS Formula Verification</b>	<b>Submit Revised Phase I</b>	<b>Comments</b>
Replace CEMS probe (same probe length, location and dilution ratio).		X	X					Potential non-linear response with the new probe requires a linearity check.  DEP recommends performing both a pressure and vacuum leak check.
Change probe length and/or location.	X	X	X	X			X	
Routine probe filter maintenance (e.g., clean or replace coarse filter).		X						
Replace probe heater or sample line heaters.		X						
Change from dilution CEMS to in-situ CEMS.	X	X	X	X	X		X	
Change from dilution CEMS to extractive CEMS.	X	X	X	X	X		X	
Change from in-stack dilution to out-of-stack dilution methodology (or vice-versa).	X	X	X	X	X		X	DEP considers this to be equivalent to a monitoring system replacement. Thus, all tests are required.
Major modification to dilution air supply.		X						

<b>Recertification Guidance for In-situ Measurement Devices</b>								
<b>Description of Event</b>	<b>Response Time</b>	<b>Daily Calibration</b>	<b>Linearity</b>	<b>Relative Accuracy</b>	<b>Operational Test Period</b>	<b>DAS Formula Verification</b>	<b>Submit Revised Phase I</b>	<b>Comments</b>
Replace analyzer with like-kind analyzer (less than 720 reporting hours)	X	X	X		X			Contact the Department for emergency situations which may require the installation of an analyzer prior to submission of a Phase I. Although temporary like-kind analyzer replacements do not require submittal of a revised Phase I, please submit the results of testing to the Department and thoroughly document the occurrence in the cover letter of the Quarterly Report.
Replace analyzer with like-kind analyzer (permanent replacement)	X	X	X	X	X		X	
Replace analyzer with analyzer that does not qualify as a like kind analyzer.	X	X	X	X	X		X	
Replace or repair any of the following major components:								For repair or replacement of other major components that are not listed here, contact DEP for a case-by-case ruling. Document all changes and performance testing in the maintenance logbook.
Light source		X						
Projection mirrors		X	X					
UV filter		X						
Fiber optic cable		X						
Spectrometer grating		X	X					
Spectrometer mirrors		X	X					
Spectrometer mirror motor		X	X					
Replace or repair circuit board		X	X					
Replace or repair minor analyzer component or perform routine analyzer maintenance (as specified in the QA/QC plan).		X						Examples include display, filter replacement, power cord replacement, power supply, valves, and analyzer pumps.
Change from in-situ to dry-extractive or dilution extractive methodology.	X	X	X	X	X		X	
Change monitor location or measurement path	X	X	X	X	X		X	

<b>Recertification Guidance for “Stack” Flow Measurement Devices</b>								
<b>Description of Event</b>	<b>Response Time</b>	<b>Daily Calibration</b>	<b>Linearity</b>	<b>Relative Accuracy</b>	<b>Operational Test Period</b>	<b>DAS Formula Verification</b>	<b>Submit Revised Phase I</b>	<b>Comments</b>
Replace flow monitor (includes like-kind monitor).	X	X	X	X	X	X	X	
Replace or repair major component of flow monitor, such as:								
Ultrasonic transducer or Ultrasonic transducer interface (electronics)		X						
Differential Pressure Probe or Differential Pressure Transducer/transmitter electronics		X						
Thermal Probe or Thermal Electronics to condition/convert probe signal to calculated flow		X						
Replace or repair minor component of flow monitor, such as:								
Ultrasonic Purge system components, such as filters or fans		X						
Differential Pressure Back-purge probe cleaning system components		X						
Thermal Probe cleaning system components		X						
Change polynomial coefficients or K factors used to compute flow.		X	X	X				



<b>Recertification Guidance for Flue Gas Moisture Measurement Devices</b>								
<b>Description of Event</b>	<b>Response Time</b>	<b>Daily Calibration</b>	<b>Linearity</b>	<b>Relative Accuracy</b>	<b>Operational Test Period</b>	<b>DAS Formula Verification</b>	<b>Submit Revised Phase I</b>	<b>Comments</b>
Replace a flue gas moisture sensor	X	X	X	X	X	X	X	
Replace or repair moisture sensor electronics.		X						
Change the K-factor or mathematical algorithm used to compute percent moisture		X	X	X				If a K-factor or mathematical algorithm is used to set up the sensor vs. Method 4, a RATA is required whenever this K-factor or algorithm is changed.

Recertification Guidance for Fuel Flow Measurement Devices								
Description of Event	Response Time	Daily Calibration	Linearity	Relative Accuracy	Operational Test Period	DAS Formula Verification	Submit Revised Phase I	Comments
Replace a fuel flowmeter with one certified by design (e.g., orifice, nozzle, or venturi-type).			X				X	
Replace a fuel flowmeter with one certified by actual calibration.			X	X	X	X	X	
Replace primary element of a fuel flowmeter that was certified by actual calibration.			X		X		X	Examples of primary elements include vortex shedding element of vortex fuel flowmeter, turbine of turbine meter, coriolis flow tubes or vibrating element of coriolis meter, and transmitters or transducers of ultrasonic meters.
Replace primary element of fuel flowmeter that was certified by design with an element of the same dimensions.			X		X		X	
Replace primary element of fuel flowmeter that was certified by design with an element of different dimensions.			X		X		X	
Replace or repair flowmeter electronics.			X					

Recertification Guidance for DASs								
Description of Event	Response Time	Daily Calibration	Linearity	Relative Accuracy	Operational Test Period	DAS Formula Verification	Submit Revised Phase I	Comments
Replace entire DAHS (i.e., different vendor).						X	X	
Upgrade DAHS to support a new reporting format using existing hardware, same equations and algorithms to calculate emissions data.						X	X	
Change or insert new temperature, pressure or molecular weight correction algorithms in DAS		X	X	X				DEP recommends these types of changes be made immediately prior to the Relative Accuracy tests for affected systems.
Change missing data algorithm in DAS.						X	X	