Compliance Test Report must follow the order shown below and must be separated accordingly. All sections that apply must be provided. If a section is not applicable, enter N/A and the reason why it is not applicable. The test report must contain all the information required by the AQD stationary source permit.

All tests required by the AQD permit, local or federal regulations must be carried out whether or not such tests are included in the protocol.

I. Introduction – Background information pertinent to the test is presented in this section, including but not limited to:

A. Reasons for conducting test (i.e. permit requirement, NSPS requirement, permit application, etc.)

B. Concise statement of applicable regulations and permits, including permit number and issuance date.

C. Test date(s).

D. Start-up and maximum production rate dates for the source being tested.

E. If the test is not done within 60 days after achieving the maximum production rate at which the source will operate or within 180 days after the initial startup of the source **(if maximum production rate was not achieved), please explain why**.

F. Brief description of plant process and pollutant points being sampled. Include the stack diagram(s) with dimensions such as inside diameter, height, and port locations.

G. Company name, contact person, mailing address, and e-mail address. Also include telephone, fax, and cell phone numbers.

H. Facility name and location.

I. Name of testing organization, contact person, mailing address, and e-mail address. Also include telephone, fax, and cell phone numbers.

J. Name of each person present at the test and each person's affiliation.

K. Unit description(s) and permitted process rate(s). Include unit make, model number, serial number, and location within plant. Identify each unit as stated in the AQD permit and permit application.

L. Control equipment description. Include the make, model number, serial number and control efficiency.

II. Summary - This section summarizes in tabular form the test results for each unit tested:

A. Stack Parameters

1. For each test run, report the following test information:

a) velocities (stack velocity in feet/second)
b) flows (stack exhaust flow in actual cubic feet/minute and dry standard cubic feet/minute)
c) concentrations
d) emission rates including the average of the emission rates from all test runs
e) allowable emission limits
f) stack temperature and pressure
g) sampling times
h) pitot tube average results, etc.
i) include other information as deemed necessary.
j) include opacity reading if applicable (A minimum of one visible emission reading per test run is required every time a Method 5 test is done.)
k) show the results of cyclonic flow determination

B. Unit operating parameters at time of the test:

1. For engines include:

a) actual horsepower, kilowatt (at test time)
b) engine speed (rpm)
c) ignition timing
d) intake manifold pressure
e) fuel consumption rate (if available)
f) A/F ratio controller setting

2. For residue turbines include:

a) actual horsepower (at test time)
b) turbine speed (rpm)
c) fuel consumption rate
d) turbine exhaust temperature
e) ambient temperature
f) relative humidity.

g) for steam injected turbines, also include fuel to water ratio

3. For heaters, boilers, or furnace include:

a) fuel consumption rate
b) feedstock rate
c) firebox temperature

4. If the engine or turbine drives a compressor or pump include:

a) suction, discharge pressures and temperatures
b) interstage pressures and temperatures
c) suction volume and type of fluid pumped or compressed.
d) if the engine or turbine drives a generator, include output voltage, current, and power

e) Unit operating level at time of test. If the unit was not operated at the minimum of 90% of permitted capacity (derated horsepower for IC engines) give explanation.
f) If testing a turbine using Method 20, include the four required operating loads.
g) For RATA's , report calibration gas concentrations and range of pollutants concentrations anticipated or measured.

C. Control Equipment Operating Parameters at Time of Test

1. Include, if applicable,

a) the pressure drops,
b) inlet and outlet temperatures,
c) T/R readings for electrostatic precipitators,
d) water flow rates for scrubbers, and
e) bed temperatures for Claus sulfur recovery plants, etc.

D. Comparison of Measured and Modeled Parameters (See Table 1)

For each unit tested, enter the required stack data in Table 1. This table compares the measured emission parameters (stack height and diameter, stack gas exit velocity, and stack gas temperature) with the parameters used in the atmospheric dispersion modeling. Disregard this section if the Division did not require atmospheric dispersion modeling for this source.

III. Test Procedures - This section describes the test procedures, including any variations from EPA test methods. This section includes, but is not limited to:

A. Schematic drawing of the process being tested showing emission points, samplings sites, and stacks cross section. The sampling points are labeled and dimensions indicated.

B. Schematic drawing of the sampling device/train used. Each component is labeled and explained in a legend.

C. A brief description of the EPA reference methods used to operate the sampling train and the procedures used to recover and analyze the samples. Include sampling durations, number of test runs, calibration procedures, leak checks, cyclonic flow checks, etc.

D. Any deviation from EPA reference methods or from the original protocol and who at the Air Quality Division approved the deviation.

E. Make and model of test instrumentation and specifications including sensitivity, interferences, response time, linearity, span and range, calibration dates, and method.

F. A brief description of the methods used to obtain plant or unit operating parameters/ conditions. Measured parameters must be clearly distinguished from derived parameters.

IV. Data and Calculations- This section includes copies of all raw data and at least one example calculation for every derived number showing all equations used. This section includes, but is not limited to:

A. All raw data used in the emissions calculations:

1. Plant operating parameters.
2. Unit operating parameters.
3. Stack parameters (including cyclonic flow data).
4. Control equipment operating parameters.
5. Isokinetic calculations, if applicable.

B. Laboratory data, including blanks, tare weights, and results of analysis.

C. Labeled copies of strip charts.

D. An example calculation for every calculated result showing how the result was derived from the raw data. Show all equations used and any approximations. Carry out to completion the calculations for at least one test run.

E. Analysis and certification documents for calibration gases. List expiration dates. (Warning: transferring the gas to a secondary container voids the certification).

F. Audit sample results (if applicable).

G. Visible emissions field sheets (Method 9 or where applicable).

H. Sample chain of custody, if applicable. Show names of custodians, method of transportation, departure and arrival times/locations.

V. Appendix – Place any additional information in this section, including but not limited to:

A. Any complications during the tests or with plant operations and how these might have biased the results.

B. Any special information that might be helpful for performing future tests at this site.

C. Brief resumes including experience of test personnel.

Notes:

The Division reserves the right to withdraw or modify this Standard Operating Procedure without advance notice.

The test report must contain all information required by the permit.

See Table 1 on next page

Double left click (mouse) on spreadsheet to enter information.
After entering the information, single left click on the outside of the spreadsheet to exit the sheet.

TABLE 1. MEASURED VS MODELED PARAMETERS

Complete this table for all stacks tested

(NOTE: If a unit has two or more stacks, a separate table must be completed for each separate stack.)

Unit Description(s) (engine, heater, etc.):	
Make(s) and Model(s):	
Date(s) tested:	

STACK PARAMETERS

	Modeled	Measured	Difference
Stack diameter (inches)	0	0	0
Stack height (ft.) (above ground level)	0	0	0
Exit gas velocity	0	0	0
Exit gas temp.	0	0	0