



Form STP



PROPOSED SOURCE TEST PLAN PROTOCOL

(as amended on November 5, 2019)

Pursuant to the Linn County Code of Ordinances Section (LCCO Sec.) 10-70(e), owners and operators of emission sources required to complete performance tests are required to notify the Department in writing not less than fifteen (15) days before a required test or before a performance evaluation of a continuous emission monitor to determine compliance with an applicable emission limit or a permit condition. The following form is a template to guide the owner or operator in the information required in a written submittal to satisfy LCCO Sec. 10-70(e)(2).

Plant Information and Address (i.e., physical location of the Owner / Operator)

Proposed Test Date: _____ Facility ID Number: _____

Company Name: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Local Contact Name: _____ Phone Number: _____

Source Information

Identification of Source to be Tested: _____ Permit Number of Source: _____

Type of Source: _____

Address of Source: _____

Initial Startup Date: _____

Testing Firm Information

Name of Testing Firm: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Contact Name: _____ Phone Number: _____

Number of Employees of the Firm: _____

Number of Employees Engaged in Air Pollution Source Testing (including support personnel): _____

Location and Description of Laboratory Facilities: _____

Subcontractor(s) Utilized by Firm for Source Testing Activities: _____

Number of Air Pollution Sources Previously Tested by Firm: _____

Types of Sources Previously Tested by Firm: _____

List all pollutants to be sampled.

No.	Pollutant	Number of Sampling Points	Total Time per Test Run	Number of Test Runs	Test Methods to be Used
1					
2					
3					
4					
5					

For particulate matter (PM), PM₁₀, and PM_{2.5} tests, indicate the length of each run to collect 7.62 milligrams, 4.32 milligrams, and 4.05 milligrams of sample, respectively. Use the estimated emissions after control as the stack gas concentration.

When calculating the sample time, the length of each run should be such that sample catches listed above will be collected. Any variation from this must be pre-approved by the Department. Should the sample catch be less than the lower detection limit (LDL) of 2.54 milligrams for PM, 1.44 milligrams for PM₁₀, or 1.35 milligrams for PM_{2.5} after applying the above method, the test may be subject to rejection or the LDL sample weight may be assumed.

Include a description of any test procedure to be used in the conduct of the performance tests which differ from the specified method(s). _____

Use the space below for a drawing (or include separately) with the sampling location showing the stack or duct dimensions, air pollution control equipment, fans and location(s) of disturbances which affect the sampling location determination.

Axial fans and cyclone collectors generally cause flow conditions which are not suitable for testing and do not give reliable results. It is generally advisable to install flow straighteners in such situations. Please indicate if such problems are anticipated and what has been done to correct the flow problems prior to testing. Please refer to 40 CFR 60, Appendix A, Reference Method 2.

Protocol Supplement – Operating Data

This form is to be filled out and returned with the test protocol.

Maximum Continuous Process Weight (Manufacturer's Rating): _____

Historical Average Process Weight: _____

Product Recycling Capability: Yes / No

Type and Sources of Fuels Normally Burned: _____

Type of Control Equipment: _____

Range of Pressure Drop Across Control Equipment: _____ Inches of Water Column

Average Pressure Drop Across Control Equipment: _____ Inches of Water Column

Person Responsible for this Data: _____

Person Responsible for Collecting Process Data during Testing: _____

Complete and submit one these forms for each test to be conducted. This information is especially important to determine the operating conditions of the equipment under which the tests will be conducted. The tests must be conducted while operating a maximum capacity or the highest capacity which this source will be operated. **Failure to test at the permitted capacity may result in derating this source.**

This information is also required to be submitted on the fomrs found at the end of the protocol package. These two forms, the Compliance Emission Test Operating Data, and the Air Pollution Control Equipment Operating Data forms, must be filled out with the data collected on the actual date of the tests. **Failure to complete the forms on the day of the testing may be cause for rejecting the test results.**

Safety Concerns

List any special safety concerns, including possible hazardous chemical exposures, at your facility. This should include the area near the process being tested as well as the sampling location. Also include a list of personal safety equipment that will be required to audit the testing. Unexpected hazardous conditions are grounds for cancelling testing.

Protocol Supplement

1. Copies of current calibration data must be available to the observer prior to the beginning of the test. This calibration data will include, but is not necessarily limited to the meter box, pitot tubes, and temperature gauges. If the pitot tube coefficient is assumed to be 0.84, it must be documented that the equipment meets the design criteria.
2. All equipment must be in good working order prior to arriving on-site. Except for extraordinary circumstances, delays solely to broken equipment may result in the test being canceled by the observer. All glassware must be clean.
3. Glass probes must be used for all tests unless specifically mentioned to the contrary in the test method or agreed to in writing in a pre-test conference. Spare liners must be available in case one or more is broken. The breaking of a glass liner is not an acceptable excuse for using steel liners. Particular attention should be paid to the probe and filter box heating elements.
4. Enough spare equipment should be on-hand to replace any that should break down. If necessary, this should include consoles. Delays due to broken equipment may be cause for canceling the test.
5. All members of the test crews should be familiar with the test methods in order to conduct the tests in strict accordance with the test methods.
6. No variations from the test methods will be accepted in the field unless agreed to by the observer or by prior written agreement. The determination of whether the departure from the method will affect the test results will be made by the observer.
7. **The Air Quality Branch must be notified in writing by the affected facility at least 15 days prior to conducting any test that will be submitted for a compliance demonstration.** This notification must be made by the source, not the consultant or contractor. Failure to notify the appropriate staff may result in the test being rejected. The Air Quality Branch can be contacted at (319) 892-6000.
8. The two forms attached at the end of this protocol must be correctly and accurately filled out by the responsible plant personnel. One form concerns the production levels during the test. Tests are to be conducted at full capacity. **If the tests are conducted at less than full capacity, the source may be limited to this level of production.** The other form contains control equipment operating data. The appropriate section should be filled out. If the source does not have any control equipment, this should be indicated on the form. Both forms must be signed by a representative of the facility.

The following information shall be provided:

- A. Sampling Equipment Information
The manufacturer and model of the sampling equipment to be used by the tester for the performance tests, along with a description of any equipment which *may* differ from that required by the specified test method(s).
- B. Test Procedures
A description of any test procedures to be used in the conduct of the performance tests which *may* differ from the specified test method(s).
- C. Analytical Procedures
A description of any analytical procedure(s) which differ from the specified test method(s).
- D. Data Sheets
A sample of all field data sheets which do not provide the data shown on the example sheets in 40 CFR Part 60 for the specified test method(s).
- E. Air Pollution Control Equipment
A description of the air pollution control equipment including, as a minimum, the following:
- Types and manufacturers for all control equipment;
 - Design or guarantee efficiency;
 - Design gas volume at full load (acfm);
 - Design pressure drop;
 - Description of any preconditioning equipment;
 - Normal operating conditions of air pollution control equipment;
 - Normal maintenance schedule on control equipment, such as cleaning, replacement of components, checking for leaks, and repairs;
 - Description of fly ash handling and disposal system; and
 - Any problems with air pollution control equipment performance, operation, and maintenance.
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Source Test Report Format

- I. **Cover:** Should indicate the name and location of the plant, the specific source tested, the name and address of the testing firm (or agency), and the month and year of the tests.
- II. **Certification:** A page including a certification by the test team leader that he is the person responsible for the test data, and one by the reviewer of the report (normally the supervisor of the team leader) attesting to the authenticity and accuracy of the report.
- III. **Table of Contents**
- IV. **Introduction:** Pertinent background information should be presented in this section. This information shall include, but not be limited to, the following:
1. Name, address, and owner of plant;
 2. Test Purpose
 3. Name and address of the testing organization
 4. Test dates;
 5. Pollutants tested;
 6. Names of persons presented for tests (industry and agency); and
 7. Any other important background information.
- V. **Summary of Test Results:** A summary of the test results necessary to evaluate the process with respect to the applicable emission standard(s) should be presented in this session.
1. A summary of the emission results;
 2. Allowable emissions;
 3. Isokinetic sampling rates, when applicable;
 4. The operating level of the process during the tests;
 5. A description of the collected samples; and
 6. Discussion of errors, both real and apparent, in the tests.

- VI. **Facility Operation During Testing:** This section shall contain a description of the facility including, but not limited to, the following:
1. General description of the facility, including the air pollution control equipment, and the process principle;
 2. A discussion of the maximum and normal operating conditions;
 3. Presentation of the process data for the tests, with calculations where necessary to show the production or burning rates to demonstrate that the operating conditions are sufficiently representative of those required for testing. Calculations may be included in the Appendix.
 4. Process and control equipment flow diagram; and
 5. Any changes in operating conditions from those previously agreed upon by the source and agency.
- VII. **Sampling and Analytical Procedures:** A description of the sampling and analytical methods should be presented in this section. The information shall include, but not be limited to, the following:
1. A description of the sampling location(s) and sampling points;
 2. Schematic drawings of the facility showing sampling location(s), major and minor flow disturbances, and stack or duct cross-section(s) with the dimensions indicated;
 3. A description of the sampling equipment;
 4. Schematic drawings of the sampling trains (may be included in the Appendix);
 5. A description of the sampling procedures, with a discussion of deviations from the standard methods, along with the sampling times;
 6. A brief description of the analytical procedures, with a discussion of deviations from the standard methods; and
 7. A description of the method(s) employed for other types of sampling and analyses, such as fuel.
- VIII. **Appendix**
1. A summary of all data used in the calculations;
 2. Calculations for all data submitted;
 3. Copies of **all raw** field data sheets (initialed by observer, where applicable), including those indicating sampling point locations;
 4. Laboratory report, complete with analytical data sheets and chain of custody;
 5. Production and/or operational data, signed by a plant official if provided by the source;
 6. Calibration procedures and work sheets for sampling equipment;
 7. Copies of calibration records for plant or process instrumentation;
 8. Pertinent correspondence concerning the tests; and
 9. Any other information necessary to assist the agency in making a determination of compliance
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COMPLIANCE EMISSION TEST OPERATING DATA

(Submit with Source Test Final Report)

Owner: _____ **Date:** _____

Source: _____ **Permit #:** _____

Maximum Continuous Process Rate (Manufacturer's Rating): _____

Historical Average Process Rate: _____

Historical Maximum Process Rate: _____

Types and Sources (if any) of Fuels Normally Burned: _____

Type of Fuel Burned During Test: _____

Approximate Quantities of Fuels Used Annually: _____

Recycling Capability: Yes / No

Recycling in Progress: Yes / No

Process Data During Runs

	Run 1	Run 2	Run 3
Wet Process Rate¹: (gal/hr, lb/hr, tons/hr, etc.)			
Moisture (%)			
Dry Process Rate¹: (gal/hr, lb/hr, tons/hr, etc.)			

How Process Rate Was Determined:

¹ Please indicate the wet and dry process rates in the same units as historical information.

Certification of Compliance Emission Test Operating Data

Person Responsible for Data: _____

Signature: _____

Title: _____

AIR POLLUTION CONTROL EQUIPMENT OPERATING DATA

(Submit with Source Test Final Report)

Plant Information

Plant: _____ Location: _____
Source Type: _____ Rated Production: _____
Date: _____ Actual Production: _____
Air Flow Data: _____ Run No. _____

Mechanical Collector

Tube Diameter (inches): _____ Number of Tubes: _____ Design ΔP (inches H₂O): _____
Temperature (°F): _____ Fan Rating (horsepower): _____ Observed ΔP (inches H₂O): _____
Design Flow (cubic feet per minute) per Tube at the Observed ΔP : _____ inches H₂O @ _____ °F
Operating Volts (V): _____ Operating Amps (A): _____

Electrostatic Precipitator

Field No.	Primary Voltage (V)	Primary Current (A)	Secondary Voltage (kV)	Secondary Current (mA)	Spark Rate (per minute)

Scrubber

Type: _____ Design ΔP (inches H₂O): _____ Fan Rating (horsepower): _____
Liquid Circulation Rate (Gallons per minute): _____ Make-Up (%): _____ Blowdown (gpm): _____
Scrubbing Water Change Interval: _____ Settling Tank Cleaning Interval: _____
Operating Volts (V): _____ Operating Amps (A): _____

Baghouse

Type: Positive Pressure / Negative Pressure # of Compartments: _____ Temperature (°F): _____
Type of Cleaning Cycle: _____ Clean Cycle Frequency (minutes): _____
Average ΔP (inches H₂O): _____ ΔP Range: _____ Fan Rating (horsepower): _____
Operating Volts (V): _____ Operating Amps (A): _____

Cyclone

Type: _____ ΔP (inches H₂O): _____ Diameter: _____
Fan Rating (Horsepower): _____ Operating Volts (V): _____ Operating Amps (A): _____

Certification of Compliance Emission Test Operating Data

Person Responsible for Data: _____
Signature: _____
Title: _____