RESOLUTION NO. 540

RESOLUTION OF THE BOARD OF DIRECTORS
OF THE PUGET SOUND AIR POLLUTION
CONTROL AGENCY ADOPTING MODIFIED
PARTICULATE SOURCE TEST PROCEDURES

WHEREAS, Regulation I Section 9.09(f) requires procedures for source sampling performed in connection with standards of Regulation I and II for particulate and gases to be done using current Environmental Protection Agency requirements or procedures and definitions adopted by the Board; and

WHEREAS, to conform to current safe and less toxic chemical storage, the particulate measurement procedures currently used by the Agency have been proposed for modification; and

WHEREAS, the Expanded Advisory Council reviewed and approved said source test laboratory procedure modifications; and

WHEREAS, a public hearing was held by the Puget Sound Air Pollution Control Agency Board of Directors on August 11, 1983, to allow public input and critique on the proposal; and

WHEREAS, the Board deems it necessary to adopt said modification to source test procedures; now therefore,

BE IT RESOLVED BY THE BOARD OF PUGET SOUND AIR POLLUTION CONTROL AGENCY:

The Board of Directors does hereby adopt the modifications to the source test procedures, a copy of which is attached hereto and made a part hereof.

PASSED AND APPROVED by the Board of Directors of the Puget Sound Air Pollution Control Agency held this 11th day of August, 1983.

PUGET SOUND AIR POLLUTION CONTROL AGENCY

By _____
Chairman

Attest:

_____
Air Pollution Control Officer

Approved as to form:

_____
Agency Attorney

Proposed Revised PSAPCA

Particulate Source Test Procedures

Engineering Division

Puget Sound Air Pollution Control Agency

200 West Mercer Street, Room 205

P.O. Box 9863

Seattle, Washington 98109

June 9, 1983

I. Procedures for Particulate Source Sampling

Unless otherwise authorized by the Control Officer, all particulate source sampling performed to demonstrate compliance with the emission standards of Regulation I shall be done using current Environmental Protection Agency Methods 1-5 contained in 40 CFR Part 60, Appendix A, as modified in Section II of this document.

II. Procedure for Determining Particulate Matter in the Impinger Catch (Back Half)

The analysis and calculations for Method 5 shall conform to that described by EPA in the current 40 CFR Part 60, Appendix A, except that the back half catch shall be included as particulate matter. The back half weight is the sum of the impinger catch (organic and inorganic) and the back half acetone rinse weights.

A. Sample Recovery of the Back Half

1. Purging

Whenever SO_2 interference is suspected, purge the impingers immediately after the test run is complete with N_2 or clean air for a minimum of one-half the sample volume.

2. Impinger Liquid

Measure the volume of water collected in all impingers and place the water from the first three impingers in a container. Thoroughly rinse all sample-exposed surfaces between the filter and fourth impinger with water and place in above container.

3. Acetone Rinse

Thoroughly rinse all sample-exposed surfaces between the filter and the fourth impinger with acetone and place the washings in a tared beaker to dry.

B. Analysis of the Back Half

1. Impinger Liquid Extraction

a. Add 50-100 mℓ of dichloromethane to the impinger liquid.

b. Spin for at least ten minutes.

c. Pour the liquid into a separatory funnel and drain the organic phase into a tared beaker (organic fraction).

d. Drain the remaining liquid into a beaker and repeat Steps a, b, and c. Perform the extraction several times with fresh dichloromethane until the organic fraction is clear. Keep each organic extraction in a separate beaker.

e. Following the last extraction, drain the remaining liquid from the separatory funnel into a tared beaker (inorganic fraction).

f. Allow the organic fraction beakers to dry under a hood at room temperature.

g. Evaporate the inorganic fraction in such a manner that the beaker contents do not become exposed to temperatures greater then 212°F.

h. Dry weighed beakers containing a sample of the acetone, dichloromethane and a sample of distilled deionized water to check for blank weight.

i. Desiccate organic, inorganic and blank beakers for at least 24 hours at room temperature in a disiccator containing silica gel. Weigh to a constant weight and report the results to the nearest 0.1 mg. Constant weight is defined in Section 4.3 of Method 5.

2. Back Half Acetone Rinse

a. Dry the acetone rinse in a hood at room temperature.

b. Desiccate and weigh the beaker to constant weight and record.

C. Reagents

1. Water

Use distilled deionized water in the impingers and to rinse all glassware.

2. Acetone

Use reagent grade, $\leq$ 0.001 percent residue in glass bottles.

3. Dichloromethane

Use reagent grade, $\leq$ 0.001 percent residue in glass bottles.

Revised July 12, 1990

STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

SOURCE TEST METHOD 9A

VISUAL DETERMINATION OF OPACITY FOR A THREE MINUTE STANDARD

1. Principle

The opacity of emissions from stationary sources is determined visually by a qualified observer.

2. Procedure

The observer must be certified in accordance with the provisions of Section 3 of 40 CFR Part 60, Appendix A, Method 9, as in effect on July 1, 1990, which are hereby adopted by reference.

The qualified observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented in the 140° sector to his back. Consistent with maintaining the above requirement, the observer shall, as much as possible, make his observations from a position such that his line of vision is approximately perpendicular to the plume direction, and when observing opacity of emissions from rectangular outlets (e.g., roof monitors, open baghouses, noncircular stacks), approximately perpendicular to the longer axis of the outlet. The observer's line of sight should not include more than one plume at a time when multiple stacks are involved, and in any case, the observer should make his observations with his line of sight perpendicular to the longer axis of such a set of multiple stacks (e.g., stub stacks on baghouses).

The observer shall record the name of the plant, emission location, type of facility, observer's name and affiliation, and the date on a field data sheet. The time, estimated distance to the emission location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), and plume background are recorded on a field data sheet at the time opacity readings are initiated and completed.

The observer should make note of the ambient relative humidity, ambient temperature, the point in the plume that the observations were made, the estimated depth of the plume at the point of observation, and the color and condition of the plume. It is also helpful if pictures of the plume are taken.

Opacity observations shall be made at the point of greatest opacity in the portion of the plume where condensed water vapor is not present. The observer shall not look continuously at the plume, but instead shall observe the plume momentarily at 15-second intervals.

When condensed water vapor is present within the plume as it emerges from the emission outlet, opacity observations shall be made beyond the point in the plume at which condensed water vapor is no longer visible.

When water vapor in the plume condenses and becomes visible at a distinct distance from the emission outlet, the opacity of emissions should be evaluated at the emission outlet prior to the condensation of water vapor and the formation of the steam plume.

Opacity observations shall be recorded to the nearest 5 percent at 15-second intervals on an observational record sheet. Each momentary observation recorded shall be deemed to represent the average opacity of emissions for a 15-second period.

3. Analysis

The opacity of the plume is determined by individual visual observations. Opacity shall be reported as the range of values observed during a specified time period, not to exceed 60 consecutive minutes. The opacity standard is exceeded if there are more than 12 observations, during any consecutive 60-minute period, for which an opacity greater than the standard is recorded.

4. References

Federal Register, Vol. 36, No. 247, page 24895, Dec. 23, 1971.

"Criteria for Smoke and Opacity Training School 1970-1971" Oregon-Washington Air Quality Committee.

"Guidelines for Evaluation of Visible Emissions" EPA 340/1-75-007.

RESOLUTION NO. 644

RESOLUTION OF THE BOARD OF DIRECTORS OF THE PUGET SOUND AIR POLLUTION CONTROL AGENCY AMENDING REGULATION I BY AMENDING SECTIONS 1.07(bbb), 9.12, 9.15, 12.01, 12.02, 12.03, 12.04, AND 12.05

WHEREAS, the Board of Directors of the Puget Sound Air Pollution Control Agency deems it necessary to amend Regulation I to establish odor and nuisance control measures, clarify the fugitive dust control requirements and establish performance standards for gaseous continuous emission monitors; and

WHEREAS, a threshold determination of environmental impact has been made and a Declaration of Nonsignificance has been issued dated July 10, 1989; and

WHEREAS, the Board established August 10, 1989 as the date of the public hearing on the proposed amendments and additions to Regulation I; and

WHEREAS, the Board has considered the public comments and the staff report; and

WHEREAS, the Board deems it in the interest of the health, safety and welfare of the inhabitants of the area served by the Puget Sound Air Pollution Control Agency that revisions of Regulation I be adopted as set forth below; Now, therefore,

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE PUGET SOUND AIR POLLUTION CONTROL AGENCY:

Section 1: Section 1.07(bbb) of Regulation I is hereby amended to read as follows:

(bbb) "Fugitive dust" means particulate matter or any visible air contaminant other than uncombined water that is not collected by a capture system and emitted from a stack, but is released to the atmosphere at the point of generation.

Section 2: Section 9.12 of Regulation I is hereby amended to read as follows:

SECTION 9.12 ODOR AND NUISANCE CONTROL MEASURES

(a) It is the policy of the Board that effective control apparatus and measures shall be installed and operated to control the emission of odor-bearing air contaminants and thereby prevent air pollution.

(b) It shall be unlawful for any person to cause or allow the emission of odor-bearing air contaminants unless such person uses the best available control technology to control the emissions.

Section 3: Section 9.15 of Regulation I is hereby amended to read as follows:

SECTION 9.15 FUGITIVE DUST: EMISSION STANDARD

(a) It shall be unlawful for any person to cause or allow the emission of fugitive dust unless such person uses the best available control technology to control the emissions.

(b) It shall be unlawful for any person to cause or allow a vehicle to be operated on a paved roadway open to the public:

(1) unless such vehicle is so constructed or loaded as to prevent any of its load from dropping, sifting, leaking, or otherwise escaping therefrom, except that sand may be dropped for the purpose of securing traction, and except road construction and maintenance by public agencies.

(2) with a load of dirt, sand, gravel or other material susceptible to being dropped, spilled or otherwise escaping therefrom unless it is covered or has adequate freeboard so as to prevent spillage.

(3) with deposits of mud, dirt, or other debris on the vehicle's body, fenders, frame, undercarriage, wheels, or tires.

Deposits of particulate matter on a paved roadway open to the public shall be prima facie evidence of a violation of subsection 9.15(b).

(c) It shall be unlawful for any person to cause or allow the emission of fugitive dust from any refuse burning equipment, fuel burning equipment, equipment used in a manufacturing process, or control apparatus.

(d) It shall be unlawful for any person to cause or allow the emission of fugitive dust in sufficient quantities and of such characteristics and duration as is, or is likely to be, injurious to human health, plant or animal life, or property, or which unreasonably interferes with enjoyment of life and property.

Section 4: Article 12 of Regulation I is hereby amended to read as follows:

ARTICLE 12
STANDARDS OF PERFORMANCE FOR CONTINUOUS EMISSION MONITORING SYSTEMS

SECTION 12.01 INTRODUCTION

Section 12.02 requires the continuous monitoring and periodic source testing of particulate matter emitted from certain sources which could have a substantial impact on the maintenance of ambient air quality standards for particulate matter. It also requires continuous emission or operation monitors for certain new sources. Nothing in Section 12.02 shall be construed to limit the Control Officer's authority to require continuous monitoring or source testing pursuant to Articles 3 or 6 of this Regulation.

Sections 12.03 and 12.04 establish the design specifications, performance specifications, performance test procedures, quality assurance requirements, and data storage and reporting requirements for all continuous emission monitoring (CEM) systems.

A CEM system will be considered inoperative until it has been certified as meeting the EPA or Agency performance specifications using instrumental performance test procedures of 40 CFR Part 60, Appendix B, or those approved by the Agency. The Agency must be advised in writing at least two weeks prior to performance specification testing and provided the opportunity to observe and participate in all testing. The Agency reserves the right to require an approved test plan prior to any performance specification testing and to audit a CEM system at any time to determine if it meets the performance specifications.

SECTION 12.02 CONTINUOUS EMISSION MONITORING REQUIREMENTS

(a) It shall be unlawful for any person to cause or allow the operation of the following equipment without the continuous monitoring of emissions for opacity in accordance with the requirements of Sections 12.03 and 12.04:

(1) Cement kilns;

(2) Clinker coolers;

(3) Glass furnaces rated at greater than one ton of glass per hour burning fuel;

(4) Fuel burning equipment (excluding equipment burning distillate oil or gaseous fuel) rated at 100 million Btu per hour or greater.

(5) Refuse burning equipment rated at greater than 12 tons per day.

(b) It shall be unlawful for any source above to operate using a wet control apparatus unless:

(1) The suspended and dissolved solids are checked using procedures approved by the Agency and the following continuous operation monitoring devices are installed, calibrated, maintained and operated and the results recorded:

(i) A monitoring device for the continuous measurement of the pressure loss of the gas stream through the scrubber.

(ii) A monitoring device for continuous measurement of the scrubbing liquid supply rate to the control device.

(iii) A monitoring device for the continuous measurement of the exhaust gas temperature of the scrubber.

(2) All sources subject to the requirements of this section are tested for particulate matter at least once per year using procedures adopted by the Board. The operation standards shall be set by the Control Officer based on the operating conditions of the wet control device during the source test.

(c) It shall be unlawful for any person to cause or allow the operation of any equipment which is required to use CEM through an Order of Approval without the continuous monitoring of the emissions or operations in accordance with the requirements of Sections 12.03 and 12.04.

SECTION 12.03 QUALITY ASSURANCE REQUIREMENTS

(a) All continuous monitors shall meet the performance specifications contained in 40 CFR Part 60, Appendix B. Where there is no EPA performance specification the monitor shall meet a performance specification established by the Agency.

(b) All temperature monitors shall be accurate within 5^{o} F.

(c) All devices for monitoring pressure loss through a scrubber shall be accurate within one inch of water.

(d) All devices for monitoring scrubber liquid supply rate shall be accurate within 5 percent of the design scrubbing liquid supply rate.

(e) All gaseous continuous emission monitors shall be maintained in accordance with the requirements of 40 CFR Part 60, Appendix F, or alternate requirements approved by the Agency.

(f) All continuous opacity monitors shall be maintained in accordance with the EPA "Recommended Quality Assurance Procedures for Opacity Continuous Emission Monitoring Systems" (EPA 340/1-86-010).

(g) All temperature, scrubber pressure drop and scrubber liquid supply rate monitors shall be maintained in accordance with the manufacturer's recommendations.

(h) Continuous monitoring data shall be considered invalid if any of the following conditions occur:

(1) The monitor is not operated in accordance with the requirements of Sections 12.03(a) through (g).

(2) The monitor is being zeroed, spanned or is otherwise inoperative.

(3) An hour contains less than 75 percent valid data readings.

(4) A day contains less than 90 percent valid hours when the source is in operation.

SECTION 12.04 RECORD KEEPING AND REPORTING REQUIREMENTS

(a) Valid monitoring results for opacity shall be reduced to one minute averages on a clock basis.

(b) Valid monitoring results for scrubber operation shall be reduced to one hour averages on a clock basis in units consistent with the applicable operation standard.

(c) Valid monitoring results for gaseous pollutants shall be reduced to one hour averages on a clock basis, or other time periods approved by the Agency, in units consistent with the applicable emissions standard.

(d) Valid monitoring results for temperature shall be reduced to fifteen minute averages on a clock basis.

(e) A chronological file shall be maintained for each monitoring system which includes:

(1) All measurements from the monitoring system.

(2) All valid averages as calculated in (a), (b), (c) and (d) above.

(3) The cause, time period and magnitude of all emissions or operations which violate the applicable standards.

(4) The cause and time periods for any invalid data averages.

(5) Data and results of all performance tests and recalibrations.

(6) A record of any repairs, adjustments or maintenance to the monitoring system.

(7) Any data necessary for conversion of the monitoring system data to units consistent with the applicable emission or operation standards.

All data shall be retained for a period of two years after the record was made and made available for Agency review upon request.

(f) The following information shall be reported to the Control Officer on a monthly basis within 30 days after the end of the month:

(1) The cause, time periods and magnitudes for all emissions or operations which violate the applicable standards and any corrective action taken.

(2) The cause and time periods of any bypass of the air pollution control equipment.

(3) The cause and time periods for any invalid hours.

(4) The results from all performance tests and recalibrations conducted during the month.

(5) The amount of fuel or refuse burned or the process weight charged to the equipment per day.

(6) The total monthly emissions of all monitored gaseous pollutants.

(7) Any other additional information requested by the Agency.

The report shall be submitted in a format approved by the Control Officer and shall be signed by the person exercising managerial responsibility over the operation of the equipment for which monitoring is required.

SECTION 12.05 EFFECTIVE DATE

The provisions of Section 12.02(a)(2), shall take effect January 1, 1990.

Section 5: This resolution shall be effective on the 10th day of August, 1989.

PASSED AND APPROVED at a regular meeting of the Board of Directors of the Puget Sound Air Pollution Control Agency on this 10th day of August, 1989.

PUGET SOUND AIR POLLUTION CONTROL AGENCY

By _____
Doug Sutherland
Chairman, Board of Directors

Attest:

_____
Anita J. Frankel
Air Pollution Control Officer

Approved as to form:

_____
Keith D. McGoffin
Agency Attorney