



245 West Ohio Ave. • Suite A • Lake Helen, FL 32744
Phone (386) 451-0169 • coastalair123@aol.com

COMPLETE EMISSIONS TESTING SERVICES • PERMITTING ASSISTANCE • CEMS CERTIFICATION • AMBIENT AIR MONITORING

October 21, 2013

Mr. Lee Hoefert
Department of Environmental Protection
Southeast District
400 N. Congress Ave., 3rd Floor
West Palm Beach, FL 33401

Dear Mr. Hoefert,

Enclosed please find the Test Protocol for the INEOS Bio plant Compliance Testing.

If you have any questions regarding this test protocol please call me at (386) 943-9241.

Sincerely,

Stephen C. Webb
President
Coastal Air Consulting, Inc.



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EMISSIONS TEST PROTOCOL

No. 169-001

INEOS BIO
VERO BEACH PLANT

THE VENT GAS BOILER &
THE FEED STOCK DRIERS NO 1 & 2

Prepared for:

INEOS Bio
Vero Beach plant
925 74th Ave.
Vero Beach, FL 32968

Prepared by:

Coastal Air Consulting, Inc.
1531 Wyngate Dr.
DeLand, FL 32724
(386) 451-0169

October 21, 2013

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PROJECT STATISTICS

Client: INEOS Bio

Facility: Vero Beach Plant

Location: 925 74th Ave.
Vero Beach, FL 32968

Type of Process: Vent Gas Boiler

Test Protocols Performed: Oxygen/Carbon Dioxide-EPA Method 3A
Sulfur Dioxide-EPA Method 6C
Nitrogen Oxide-EPA Method 7E
Carbon Monoxide-EPA Method 10

Testing Firm: Coastal Air Consulting, Inc.
1531 Wyngate Dr.
DeLand, FL 32724

Test Personnel: Stephen Webb Site Supervisor
Bob Righter Technician
Donnie Leeper Technician
Troy Marlowe Technician

Test Dates: November 11-14, 2013

Client Representative: Bill Smith

1.0 Introduction

Coastal Air Consulting, Inc. (Coastal) has been contracted by INEOS Bio to perform compliance and RATA testing at the INEOS Bio Plant located in Vero Beach, Florida.

The sampling program will be conducted on the week of November 11, 2013.

2.0 Description of Process

INEOS Bio Vero Beach plant is a waste to ethanol production facility that uses as its primary feedstock biomass, vegetative matter, yard waste, land clearing debris, untreated wood and similar materials available from the Indian River County Solid Waste Disposal District curbside collection program. Once fully commissioned, the facility is expected to produce up to 8 million gallons of ethanol per megawatts year, and although it will generate a small amount of electricity available for commercial use (about 6 megawatts gross, with 2 megawatts net exported), it is categorized under Standard Industrial Classification Code No. 2869-Industrial Organic Chemicals.

3.0 Description of Sampling Location

The vent gas boiler exhaust stack is 80 feet tall and 2.5 feet in diameter. Flow rate at the vent gas boiler stack exit is approximately 19,000 dry standard cubic feet per minute at 7 percent O₂. Exit velocity corresponding to this flow rate at the vent gas boiler stack is estimated to be 61 feet per second.

The two feedstock dryers stacks are approximately 50 feet tall and the flue gas from the dryers are vented to the atmosphere through a dust control system. The PM emissions from the dryer exhaust are controlled with a baghouse.

4.0 Sampling Procedures

EPA testing protocols utilized during The Vent Gas Boiler test program will include the following;

EPA Method 3A	Gas Analysis for CO ₂ , O ₂ , Excess Air and Dry Molecular Weight (Instrumental Analyzer Method)
EPA Method 5	Determination of Particulate Emissions from Stationary Sources
EPA Method 6C	Determination of Sulfur Dioxides Emissions from Stationary Sources (instrumental Analyzer Method)
EPA Method 7E	Determination of Nitrogen Oxides Emissions From Stationary Sources (Instrumental Analyzer Method)
EPA Method 9	Visual Determination of the Opacity Emissions From Stationary Sources
EPA Method 10	Determination of Carbon Monoxide Emissions From Stationary Sources (Instrumental Analyzer Method)

EPA Method 25A	Determination of VOC Emissions From Stationary Sources (Flame Ionization Detection Analyzer)
EPA Method 23	Determination of Total Polychlorinated Dibenzo-P-Dioxin (CCD) and Polychlorinated Dibenzofurans (CDF) From Stationary Sources
EPA Method 26A	Determination of Hydrogen Chloride Emissions From Stationary Sources (Isokinetic Method)
EPA Method 29	Determination of Metals Emissions From Stationary Sources

For the RATA a sample is continuously extracted and introduced into a Thermo Environmental 42C Chemiluminescent NOx analyzer set at the appropriate ppm span range, a servomex 1400B O2/CO2 analyzer set at the 20/25% span range, a Thermo Environmental 48C CO analyzer set at the appropriate ppm span range and a Western Research AT2 SO2 analyzer set at the appropriate ppm span range. The sample is extracted through a stainless steel probe, heated sample line and sample conditioner to dry the sample before it enters the analyzers. A sample flow control system is used to control the flow into the analyzers. The analyzers are calibrated prior to starting the testing with EPA Protocol 1, calibration gases. A system bias check is performed before each run by introducing the zero and upscale gas at the back end of the sample probe. The system bias check is repeated at the end of each test run to determine the analyzer zero calibration drift.

EPA testing protocols utilized during The Feedstock Dryers No 1 & 2 test program will include the following;

EPA Method 9	Visual Determination of the Opacity Emissions From Stationary Sources
EPA Method 25A	Determination of VOC Emissions From Stationary Sources (Flame Ionization Detection Analyzer)

5.0 Operating Conditions

INEOS Bio will be responsible for operation of the Feedstock Driers and The Vent Gas Boiler and CEMS.

The compliance testing will require each unit to be operating at least 90% or greater load on its primary fuel for the entire test period.

The CEMS data acquisition and handling system will provide emissions data to determine the system relative accuracy. The testing will be performed with the unit operating at least 50% or greater load on its primary fuel for the entire test period.

6.0 Quality Assurance Procedures

Quality assurance procedures followed during these testing activities were applied consistent with the requirements outlined by the EPA methods referenced in 40 CFR Parts 60 & 75. Analyzer calibrations, system bias and drift checks will be run utilizing EPA Protocol 1 calibration gases.