



AIR HYGIENE, INC.

Testing Solutions for a Better World

**EMISSION COMPLIANCE TEST
FOR THE
MITSUBISHI, MODEL 501G, UNIT 2C
PREPARED FOR
FLORIDA POWER AND LIGHT
AT THE
WEST COUNTY ENERGY CENTER
LOXAHATCHEE, FLORIDA
NOVEMBER 10 AND 17, 2009**



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MITSUBISHI, MODEL 501G, UNIT 2C
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AT THE
WEST COUNTY ENERGY CENTER
LOXAHATCHEE, FLORIDA
NOVEMBER 10 AND 17, 2009

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**Emissions Compliance Test
Mitsubishi, Model 501G, Unit 2C
Florida Power and Light
West County Energy Center
Loxahatchee, Florida
November 10 and 17, 2009**

1.0 INTRODUCTION

Air Hygiene International, Inc. (Air Hygiene) has completed the emissions testing study for nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC), ammonia (NH₃), opacity, carbon dioxide (CO₂), and oxygen (O₂) from the exhaust of the Mitsubishi, Model 501G, Unit 2C for Florida Power and Light at the West County Energy Center near Loxahatchee, Florida. This report details the background, results, process description, and the sampling/analysis methodology of the stack sampling survey conducted on November 10 and 17, 2009.

1.1 TEST PURPOSE AND OBJECTIVES

The purpose of the test was to conduct an initial compliance emission test to document levels of selected pollutants at two test loads (Base Load and Base Load with Duct Burners). The information will be used to confirm compliance with the operating permit issued by the Florida Department of Environmental Protection (FDEP). The specific objective was to determine the emission concentration of NO_x, CO, VOC, NH₃, opacity, CO₂, and O₂ from the exhaust of Florida Power and Light's Mitsubishi, Model 501G, Unit 2C at Base Load and Base Load with Duct Burners of total capacity.

1.2 SUMMARY OF TEST PROGRAM

The following list details pertinent information related to this specific project:

- 1.2.1 Participating Organizations
 - Florida Department of Environmental Protection (FDEP)
 - Florida Power and Light
 - Black and Veatch
 - Air Hygiene
- 1.2.2 Industry
 - Electric Utility / Electric Services
- 1.2.3 Air Permit and Federal Requirements
 - Permit Number: PSD-FL-354
 - Emission Unit Identification (ID): 006
- 1.2.4 Plant Location
 - West County Energy Center near Loxahatchee, Florida
- 1.2.5 Equipment Tested
 - Mitsubishi, Model 501G, Unit 2C

- 1.2.6 Emission Points
 - Exhaust from the Mitsubishi, Model 501G, Unit 2C
 - For all gases, one sample point in the exhaust duct from the Mitsubishi, Model 501G, Unit 2C, determined after conducting a stratification test (refer to Appendix F)
 - For all NH₃ testing, 24 sampling points in the exhaust duct from the Mitsubishi, Model 501G, Unit 2C (refer to Appendix A)
 - For opacity, one sample visual observation point from the exit of the exhaust duct to the atmosphere from the Mitsubishi, Model 501G, Unit 2C
- 1.2.7 Pollutants Measured
 - NO_x
 - CO
 - VOC
 - NH₃
 - Opacity
 - CO₂
 - O₂
- 1.2.8 Dates of Emission Test
 - November 10 and 17, 2009

1.3 KEY PERSONNEL

| | | |
|--------------------------|-----------------|--------------|
| Florida Power and Light: | John Mirino | 305-242-3895 |
| Florida Power and Light: | David Fawcett | 561-904-4907 |
| Florida Power and Light: | Emmett Callow | 561-904-4922 |
| Black and Veatch: | Bill Stevenson | 913-458-8549 |
| FDEP: | Michael Helmke | 561-837-5936 |
| Air Hygiene: | Pandu Sattvika | 918-307-8865 |
| Air Hygiene: | Swanson Bierman | 918-307-8865 |

2.0 SUMMARY OF TEST RESULTS

Results from the sampling conducted on Florida Power and Light's Mitsubishi, Model 501G, Unit 2C located at the West County Energy Center on November 10 and 17, 2009 are summarized in the following table.

**TABLE 2.1
SUMMARY OF MITSUBISHI, 501G, UNIT #2C RESULTS**

| Parameter | Base W/O DB Load | Permit Limits | Base W/DB Load | Permit Limits |
|--|------------------|---------------|----------------|---------------|
| Run Duration (min / run) | 60 | – | 60 | – |
| Bar. Pressure (in. Hg) | 29.99 | – | 29.94 | – |
| Amb. Temp. (°F) | 72 | – | 79 | – |
| Rel. Humidity (%) | 77 | – | 59 | – |
| Spec. Humidity (lb water / lb air) | 0.012928 | – | 0.012286 | – |
| Turbine Fuel Flow (lb/min) | 1,827 | – | 1,649 | – |
| Duct Burner Fuel Flow (lb/min) | 0 | – | 147 | – |
| Total Fuel Flow (SCFH) | 2,506,333 | – | 2,464,409 | – |
| Stack Flow (RM19) (SCFH) | 57,516,074 | – | 52,715,175 | – |
| Stack Moisture (% Method 4) | 9.6 | – | 10.2 | – |
| Power Output (megawatts) | 251.1 | – | 244.7 | – |
| NOx (ppmvd) | 1.94 | – | 2.42 | – |
| NOx (ppm@15%O ₂) | 1.45 | 2.0 | 1.69 | 2.0 |
| NOx (ppm@15%O ₂ &ISO) | 1.58 | – | 1.79 | – |
| NOx (lb/hr) | 13.31 | 20.0 | 15.26 | 24.2 |
| NOx (ton/year) at 8760 hr/year | 58.29 | – | 66.85 | – |
| NOx (lb/MMBtu) | 0.005 | – | 0.006 | – |
| CO (ppmvd) | 0.53 | – | 0.82 | – |
| CO (ppm@15%O ₂) | 0.40 | 4.1 | 0.57 | 7.6 |
| CO (ppm@15%O ₂ &ISO) | 0.43 | – | 0.61 | – |
| CO (lb/hr) | 2.21 | 23.2 | 3.15 | 52.5 |
| CO (ton/year) at 8760 hr/year | 9.69 | – | 13.81 | – |
| CO (lb/MMBtu) | 0.001 | – | 0.001 | – |
| VOC (ppmvd) | 0.33 | – | 0.28 | – |
| VOC (ppm@15%O ₂) | 0.25 | 1.2 | 0.19 | 1.5 |
| VOC (ppm@15%O ₂ &ISO) | 0.27 | – | 0.21 | – |
| VOC (lb/hr) | 0.79 | 4.1 | 0.61 | 5.4 |
| VOC (ton/year) at 8760 hr/year | 3.44 | – | 2.68 | – |
| VOC (lb/MMBtu) | 0.000 | – | 0.000 | – |
| Sulfur (gr S/100 scf) | <0.032 | 2 | <0.032 | 2 |
| NH ₃ (ppmvd) | 3.16 | – | 2.89 | – |
| NH ₃ (ppm@15%O ₂) | 2.36 | 5.0 | 2.01 | 5.0 |
| NH ₃ (lb/hr) | 8.04 | – | 6.73 | – |
| Opacity (%) | 0 | 10 | 0 | 10 |
| CO ₂ (%) | 4.26 | – | 4.91 | – |
| O ₂ (%) | 13.01 | – | 12.43 | – |

The results of all measured pollutant emissions were below the required limits. All testing was performed without any real or apparent errors. All testing was conducted according to the approved testing protocol. Total hydrocarbons (THC) were report as VOC.

3.0 SOURCE OPERATION

3.1 PROCESS DESCRIPTION

Florida Power and Light (FPL) owns and operates the West County Energy Center (West County) located at 20505 State Road 80 in Loxahatchee, Florida. West County is a nominal 2,500 megawatt (MW) greenfield power plant and consists of two combined cycle units (Unit 1 and 2). Each combined cycle unit consists of: three nominal 250 MW Mitsubishi Model 501G combustion turbine-electrical generator (CTGs) sets with evaporative inlet cooling systems; three supplementary-fired heat recovery steam generators (HRSGs) with selective catalytic reduction (SCR) reactors; one nominal 428 million British thermal units per hour (MMBtu/hour) based on low heat value (LHV) natural gas-fired duct burner (DB) located within each of the three HRSG's; and a common nominal 500 MW steam turbine-electrical generator (STG). The total nominal generating capacity of each of the "3 on 1" combined cycle units is approximately 1,250 MW.

Each CTG has a nominal heat input rate of 2,333 MMBtu/hr when firing natural gas and 2,117 MMBtu/hr when firing distillate fuel oil (based on a compressor inlet air temperature of 59 degrees Fahrenheit (°F), the lower heating value (LHV) of each fuel, and 100 percent load), includes an automated gas turbine control system, and has dual-fuel capability of firing natural gas as the primary fuel or ultra low sulfur distillate (ULSD) fuel oil as a restricted alternate fuel. Each HRSG recovers exhaust, heat energy from each of the CTGs. Each Unit delivers steam to each STG. The efficient combustion of natural gas and restricted firing of ULSD fuel oil minimizes the emissions of carbon monoxide (CO), particulate matter (PM), sulfuric acid mist (H₂SO₄), sulfur dioxide (SO₂) and volatile organic compounds (VOCs). Dry Low-NOx (DLN) combustors for gas firing and water injection for oil firing reduce nitrogen oxides (NOx) emissions. A selective catalyst reduction (SCR) system further reduces NOx emissions.

3.2 SAMPLING LOCATION

The 501G stack is circular and measures 21.9 feet (ft) (263 inches) in diameter at the test ports which are approximately 138 ft above grade level with an exit elevation of approximately 150 ft above grade level. The test ports are located approximately 44.3 ft (531 inches) downstream and approximately 12 ft (144 inches) upstream from the nearest disturbances. All exhaust samples for gaseous emissions were continuously drawn from the exhaust system at the sample ports from a single point determined after conducting a stratification test (Appendix F). During the stratification test three points were traversed from each of the four ports. The probe was allowed to remain at a point for two times the system response time. For NH₃ testing, an initial velocity traverse was performed across the stack at base load from 24 total points. All NH₃ sampling occurred from the same 24 points by leaving the probe at each for an equal amount of time. All opacity observations were made by viewing the point where the exhaust system exited to the atmosphere at the top of the exhaust stack.

4.0 SAMPLING AND ANALYTICAL PROCEDURES

4.1 TEST METHODS

The emission test on the Mitsubishi, Model 501G, Unit 2C at the West County Energy Center was performed following United States Environmental Protection Agency (EPA) methods described by the Code of Federal Regulations (CFR). Table 4.1 outlines the specific methods performed on November 10 and 17, 2009.

**TABLE 4.1
SUMMARY OF SAMPLING METHODS**

| Pollutant or Parameter | Sampling Method | Analysis Method |
|-------------------------------|------------------------|---|
| Sample Point Location | EPA Method 1 | Equal Area Method |
| Stack Flow Rate | EPA Method 2 | Pitot |
| Oxygen | EPA Method 3a | Paramagnetic Cell |
| Carbon Dioxide | EPA Method 3a | Nondispersive Infrared Analyzer |
| Nitrogen Oxides | EPA Method 7e | Chemiluminescent Analyzer |
| Opacity | EPA Method 9 | Visual Observation |
| Carbon Monoxide | EPA Method 10 | Nondispersive Infrared Analyzer |
| Stack Flow Rate | EPA Method 19 | Dry Oxygen F Factor |
| Total Hydrocarbons | EPA Method 25a | Flame Ionization Detector |
| Ammonia Slip | EPA CTM-027 | Ion Chromatography M350.3 |
| Sulfur Content Analysis | ASTM D 6667 | Fuel Gas Sample and Laboratory Analysis |

4.2 INSTRUMENT CONFIGURATION AND OPERATIONS FOR GAS ANALYSIS

The sampling and analysis procedures used during these tests conform with the methods outlined in the Code of Federal Regulations (CFR), Title 40, Part 60, Appendix A, Methods 1, 2, 3a, 7e, 9, 10, 19, 25a, and Conditional Test Method (CTM)-027.

Figure 4.1 depicts the sample system used for the NO_x, CO, THC, CO₂, and O₂ tests. A stainless steel probe was inserted into the sample ports of the stack to extract gas measurements from the emission stream at a single point in the stack determined after passing an initial stratification test. The gas sample was continuously pulled through the probe and transported, via heat-traced Teflon® tubing, to a stainless steel minimum-contact condenser designed to dry the sample. Transportation of the sample, through Teflon® tubing, continued into the sample manifold within the mobile laboratory via a stainless steel/Teflon® diaphragm pump. From the manifold, the sample was partitioned to the NO_x, CO, CO₂, and O₂ analyzers through rotameters that controlled the flow rate of the sample. Exhaust samples were routed to the THC analyzer prior to gas conditioning.

Figure 4.1 shows that the sample system was also equipped with a separate path through which a calibration gas could be delivered to the probe and back through the entire sampling system. This allowed for convenient performance of system bias checks as required by the testing methods.

All instruments were housed in an air-conditioned, trailer-mounted mobile laboratory. Gaseous calibration standards were provided in aluminum cylinders with the concentrations certified by the vendor. EPA Protocol No. 1 was used to determine the cylinder concentrations where applicable (i.e. NO_x calibration gases).

Table 4.2 provides a description of the analyzers used for the instrument portion of the tests. All data from the continuous monitoring instruments were recorded on a Logic Beach Portable Data Logging System Hyperlogger which retrieves calibrated electronic data from each instrument every one second and reports an average of the collected data every 30 seconds. Data records can be found in Appendix A and B of this report.

Figure 4.2 represents the sample system used for the wet chemistry tests (NH₃). A heated stainless steel probe with an inconel liner and stainless steel nozzle was inserted into the sample ports of the stack to extract gas measurements from the emission stream through a filter and glass impinger train. Flow rates are monitored with oil filled manometers and total sample volumes are measured with a dry gas meter.

Three test runs of approximately 60 minutes each were conducted on the Mitsubishi, Model 501G, Unit 2C at each of the multiple test loads for NO_x, CO, THC, CO₂, NH₃, opacity, and O₂.

The stack gas analysis for O₂ and CO₂ concentrations was performed in accordance with procedures set forth in EPA Method 3a. The O₂ analyzer uses a paramagnetic cell detector and the CO₂ analyzer uses a continuous nondispersive infrared analyzer.

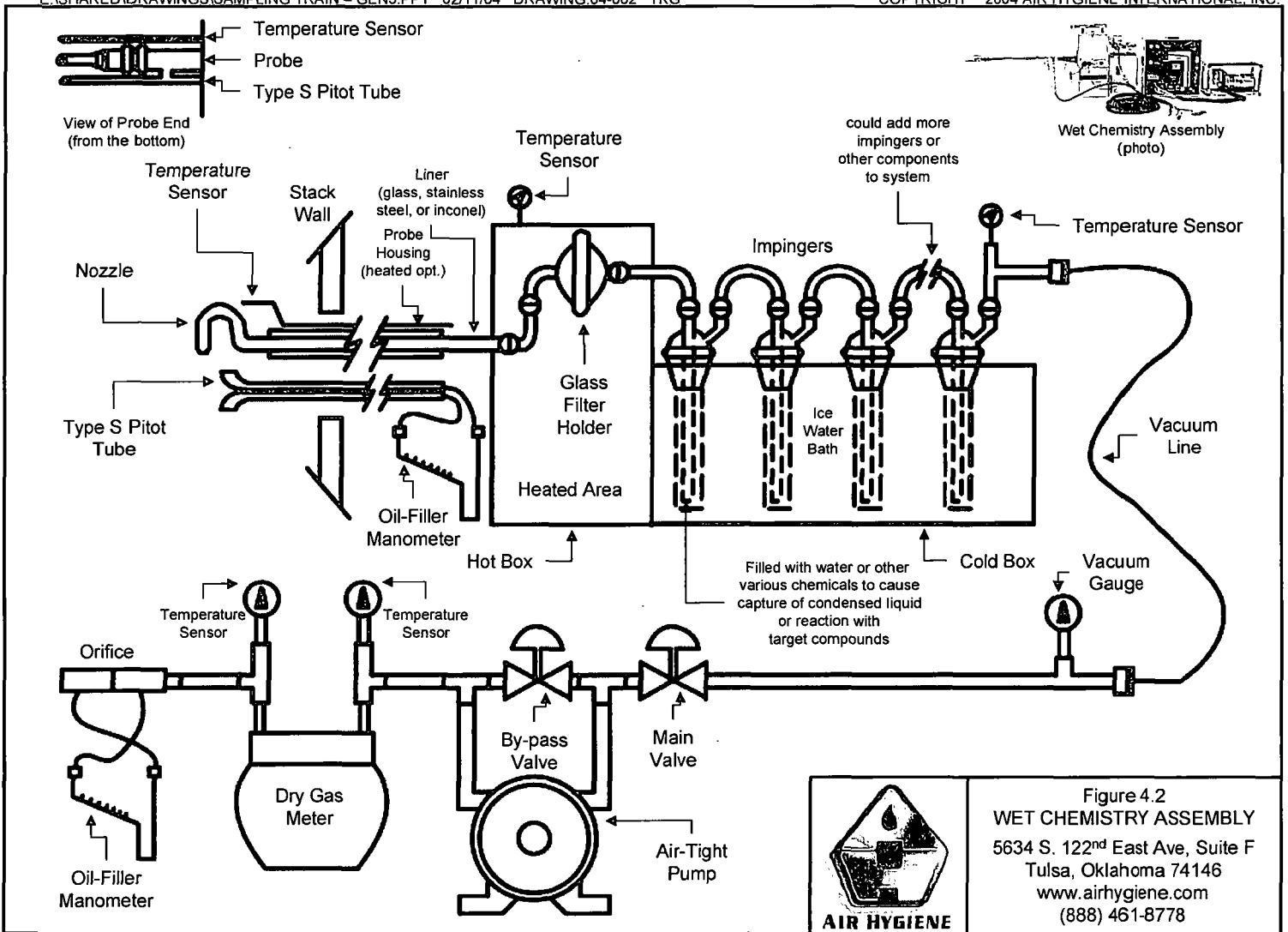
EPA Method 7e was used to determine concentrations of NO_x. A chemiluminescent analyzer was used to determine the nitrogen oxides concentration in the gas stream. A NO₂ in nitrogen certified gas cylinder was used to verify at least a 90 percent NO₂ conversion on the day of the test.

CO emission concentrations were quantified in accordance with procedures set forth in EPA Method 10. A continuous nondispersive infrared (NDIR) analyzer was used for this purpose.

THC emission concentrations were quantified in accordance with procedures set forth in EPA Method 25a. A continuous flame ionization (FID) analyzer was used for this purpose. THC emission concentrations were reported as VOC.

**TABLE 4.2
ANALYTICAL INSTRUMENTATION**

| Parameter | Model and Manufacturer | Range | Sensitivity | Detection Principle |
|-----------------|------------------------|----------------------------------|-------------|--|
| NO _x | THERMO 42i-LS | User may select up to 5,000 ppm | 0.1 ppm | Thermal reduction of NO ₂ to NO. Chemiluminescence of reaction of NO with O ₃ . Detection by PMT. Inherently linear for listed ranges. |
| CO | THERMO 48i-LS | User may select up to 5,000 ppm | 0.1 ppm | Infrared absorption, gas filter correlation detector, microprocessor based linearization. |
| CO ₂ | THERMO 410i | 0-20% | 0.1% | Non-dispersive infrared. |
| THC | THERMO 51C-HT | User may select up to 10,000 ppm | 0.1 ppm | Flame Ionization Detector. |
| O ₂ | THERMO 42i-LS | 0-25% | 0.1% | Paramagnetic cell, inherently linear. |



APPENDIX A
TEST RESULTS AND CALCULATIONS

**TABLE A.1:
EMISSIONS TESTING SCHEDULE**

| Unit | Load | Test Type | Run | Date | Start | Stop |
|-------------|-------------|---------------------|------------|-------------|--------------|-------------|
| 2C | Normal | Stratification Test | 1 | 11/10/09 | 10:39:06 | 11:18:06 |
| 2C | Base W/O Db | Compliance | 1-1 | 11/17/09 | 8:17:19 | 9:16:49 |
| 2C | Base W/O Db | Compliance | 1-2 | 11/17/09 | 10:28:49 | 10:28:49 |
| 2C | Base W/O Db | Compliance | 1-3 | 11/17/09 | 10:43:19 | 11:42:49 |
| 2C | Base W/Db | Compliance | 2-1 | 11/17/09 | 12:54:19 | 11:42:49 |
| 2C | Base W/Db | Compliance | 2-2 | 11/17/09 | 14:04:00 | 13:53:49 |
| 2C | Base W/Db | Compliance | 2-3 | 11/17/09 | 15:17:19 | 16:16:49 |
| 2C | Base W/O Db | Preliminaries | 2C-V1 | 11/17/09 | 7:46:00 | 8:09:00 |
| 2C | Base W/Db | Ammonia | 2C-1 | 11/17/09 | 12:56:00 | 14:01:00 |
| 2C | Base W/Db | Ammonia | 2C-2 | 11/17/09 | 14:07:00 | 15:14:00 |
| 2C | Base W/Db | Ammonia | 2C-3 | 11/17/09 | 15:19:00 | 16:24:00 |
| 2C | Base W/O Db | Ammonia | 2C-1 | 11/17/09 | 8:20:00 | 9:24:00 |
| 2C | Base W/O Db | Ammonia | 2C-2 | 11/17/09 | 9:29:00 | 10:36:00 |
| 2C | Base W/O Db | Ammonia | 2C-3 | 11/17/09 | 10:42:00 | 11:49:00 |
| 2C | Base W/O Db | Opacity | 1 | 11/17/09 | 8:15:00 | 9:14:00 |
| 2C | Base W/O Db | Opacity | 2 | 11/17/09 | 9:16:00 | 10:15:00 |
| 2C | Base W/O Db | Opacity | 3 | 11/17/09 | 10:16:00 | 11:15:00 |
| 2C | Base W/Db | Opacity | 1 | 11/17/09 | 12:47:00 | 13:46:00 |
| 2C | Base W/Db | Opacity | 2 | 11/17/09 | 13:47:00 | 14:46:00 |
| 2C | Base W/Db | Opacity | 3 | 11/17/09 | 0:00:00 | 15:46:00 |

TABLE A.2
MITSUBISHI, 501G, UNIT #2C BASE W/O DB LOAD DATA SUMMARY

| Parameter | Base W/O Db Load, Run - 1-1 | Base W/O Db Load, Run - 1-2 | Base W/O Db Load, Run - 1-3 | Average |
|--|--------------------------------|--------------------------------|--------------------------------|------------|
| Run Duration (min / run) | 60 | 60 | 60 | 60 |
| Bar. Pressure (in. Hg) | 29.98 | 29.99 | 29.99 | 29.99 |
| Amb. Temp. (°F) | 69 | 72 | 75 | 72 |
| Rel. Humidity (%) | 85 | 75 | 72 | 77 |
| Spec. Humidity (lb water / lb air) | 0.012865 | 0.012562 | 0.013356 | 0.012928 |
| Turbine Fuel Flow (lb/min) | 1,840 | 1,831 | 1,810 | 1,827 |
| Duct Burner Fuel Flow (lb/min) | 0 | 0 | 0 | 0 |
| Total Fuel Flow (SCFH) | 2,523,864 | 2,511,973 | 2,483,161 | 2,506,333 |
| Stack Flow (RM19) (SCFH) | 58,245,590 | 57,231,630 | 57,071,002 | 57,516,074 |
| Stack Moisture (% Method 4) | 9.2 | 9.8 | 9.8 | 9.6 |
| Power Output (megawatts) | 253.9 | 251.7 | 247.8 | 251.1 |
| NOx (ppmvd) | 1.94 | 1.97 | 1.90 | 1.94 |
| NOx (ppm@15%O ₂) | 1.46 | 1.46 | 1.43 | 1.45 |
| NOx (ppm@15%O ₂ &ISO) | 1.60 | 1.58 | 1.55 | 1.58 |
| NOx (lb/hr) | 13.49 | 13.45 | 12.98 | 13.31 |
| NOx (ton/year) at 8760 hr/year | 59.10 | 58.91 | 56.86 | 58.29 |
| NOx (lb/MMBtu) | 0.005 | 0.005 | 0.005 | 0.005 |
| CO (ppmvd) | 0.61 | 0.49 | 0.48 | 0.53 |
| CO (ppm@15%O ₂) | 0.46 | 0.37 | 0.36 | 0.40 |
| CO (ppm@15%O ₂ &ISO) | 0.50 | 0.40 | 0.39 | 0.43 |
| CO (lb/hr) | 2.59 | 2.06 | 2.00 | 2.21 |
| CO (ton/year) at 8760 hr/year | 11.32 | 9.02 | 8.74 | 9.69 |
| CO (lb/MMBtu) | 0.001 | 0.001 | 0.001 | 0.001 |
| VOC (ppmvd) | 0.44 | 0.31 | 0.23 | 0.33 |
| VOC (ppm@15%O ₂) | 0.33 | 0.23 | 0.17 | 0.25 |
| VOC (ppm@15%O ₂ &ISO) | 0.37 | 0.25 | 0.19 | 0.27 |
| VOC (lb/hr) | 1.08 | 0.74 | 0.55 | 0.79 |
| VOC (ton/year) at 8760 hr/year | 4.71 | 3.22 | 2.40 | 3.44 |
| VOC (lb/MMBtu) | 0.000 | 0.000 | 0.000 | 0.000 |
| Sulfur (gr S/100 scf) | <0.032 | <0.032 | <0.032 | <0.032 |
| NH ₃ (ppmvd) | 3.33 | 3.22 | 2.93 | 3.16 |
| NH ₃ (ppm@15%O ₂) | 2.50 | 2.39 | 2.20 | 2.36 |
| NH ₃ (lb/hr) | 8.58 | 8.15 | 7.40 | 8.04 |
| Opacity (%) | 0 | 0 | 0 | 0 |
| CO ₂ (%) | 4.28 | 4.17 | 4.33 | 4.26 |
| O ₂ (%) | 13.05 | 12.95 | 13.02 | 13.01 |

TABLE A.3
 MITSUBISHI, 501G, UNIT #2C BASE W/DB LOAD DATA SUMMARY

| Parameter | Base W/Db Load, Run - 2-1 | Base W/Db Load, Run - 2-2 | Base W/Db Load, Run - 2-3 | Average |
|--|------------------------------|------------------------------|------------------------------|------------|
| Run Duration (min / run) | 60 | 60 | 60 | 60 |
| Bar. Pressure (in. Hg) | 29.97 | 29.94 | 29.92 | 29.94 |
| Amb. Temp. (°F) | 78 | 79 | 79 | 79 |
| Rel. Humidity (%) | 60 | 58 | 58 | 59 |
| Spec. Humidity (lb water / lb air) | 0.012283 | 0.012283 | 0.012291 | 0.012286 |
| Turbine Fuel Flow (lb/min) | 1,643 | 1,642 | 1,664 | 1,649 |
| Duct Burner Fuel Flow (lb/min) | 151 | 151 | 138 | 147 |
| Total Fuel Flow (SCFH) | 2,460,979 | 2,459,836 | 2,472,413 | 2,464,409 |
| Stack Flow (RM19) (SCFH) | 52,411,565 | 52,528,376 | 53,205,584 | 52,715,175 |
| Stack Moisture (% Method 4) | 9.8 | 10.3 | 10.4 | 10.2 |
| Power Output (megawatts) | 244.7 | 244.4 | 245.1 | 244.7 |
| NOx (ppmvd) | 2.38 | 2.48 | 2.42 | 2.42 |
| NOx (ppm@15%O ₂) | 1.65 | 1.72 | 1.69 | 1.69 |
| NOx (ppm@15%O ₂ &ISO) | 1.75 | 1.82 | 1.79 | 1.79 |
| NOx (lb/hr) | 14.89 | 15.54 | 15.35 | 15.26 |
| NOx (ton/year) at 8760 hr/year | 65.22 | 68.08 | 67.25 | 66.85 |
| NOx (lb/MMBtu) | 0.006 | 0.006 | 0.006 | 0.006 |
| CO (ppmvd) | 0.82 | 0.87 | 0.77 | 0.82 |
| CO (ppm@15%O ₂) | 0.57 | 0.61 | 0.54 | 0.57 |
| CO (ppm@15%O ₂ &ISO) | 0.60 | 0.64 | 0.57 | 0.61 |
| CO (lb/hr) | 3.13 | 3.34 | 2.99 | 3.15 |
| CO (ton/year) at 8760 hr/year | 13.71 | 14.62 | 13.11 | 13.81 |
| CO (lb/MMBtu) | 0.001 | 0.001 | 0.001 | 0.001 |
| VOC (ppmvd) | 0.20 | 0.12 | 0.52 | 0.28 |
| VOC (ppm@15%O ₂) | 0.14 | 0.08 | 0.36 | 0.19 |
| VOC (ppm@15%O ₂ &ISO) | 0.15 | 0.09 | 0.39 | 0.21 |
| VOC (lb/hr) | 0.43 | 0.25 | 1.15 | 0.61 |
| VOC (ton/year) at 8760 hr/year | 1.89 | 1.12 | 5.04 | 2.68 |
| VOC (lb/MMBtu) | 0.000 | 0.000 | 0.000 | 0.000 |
| Sulfur (gr S/100 scf) | <0.032 | <0.032 | <0.032 | <0.032 |
| NH ₃ (ppmvd) | 3.06 | 3.01 | 2.60 | 2.89 |
| NH ₃ (ppm@15%O ₂) | 2.12 | 2.10 | 1.82 | 2.01 |
| NH ₃ (lb/hr) | 7.09 | 7.00 | 6.11 | 6.73 |
| Opacity (%) | 0 | 0 | 0 | 0 |
| CO ₂ (%) | 4.85 | 4.90 | 4.98 | 4.91 |
| O ₂ (%) | 12.40 | 12.42 | 12.48 | 12.43 |

TEST RESULTS

**NO_x, CO, VOC, CO₂, and O₂ Emissions
Base Load**

Florida Power and Light
Mitsubishi, 501G, Unit #2C
West County Energy Center

| Fuel Data | | |
|--------------------------|-----------|---------------|
| Fuel Fd factor | 8.648 | SCF mcf/MMBtu |
| Fuel Heating Value (HHV) | 1,002 | Btu/SCF fuel |
| Turbine Fuel Flow | 1,840 | lb/min |
| Duct Burner Fuel Flow | 0 | lb/min |
| Total Fuel Flow | 2,523,864 | SCFH |

| Weather Data | | |
|---------------------|----------|------------------------------|
| Barometric Pressure | 29.98 | In. Hg |
| Relative Humidity | 85 | % |
| Ambient Temperature | 69 | °F |
| Specific Humidity | 0.012865 | lb H ₂ O / lb air |

| Unit Data | | |
|--------------------------|------------|-----------|
| Unit Load | 253.9 | megawatts |
| Combustor Inlet Pressure | 271 | psig |
| Mean Stack Moisture | 9.2 | % |
| Stack Exhaust Flow (M19) | 58,245,590 | SCFH |

Data from: N#0 Run 1

Base W/O Db Load, Run - 1-1

| Date/Time (mm/dd/yy hh:mm:ss) | Elapsed Time (seconds) | O ₂ (%) | NOx (ppmv) | CO (ppmv) | VOC (ppmv) | CO ₂ (%) |
|----------------------------------|---------------------------|-----------------------|---------------|--------------|---------------|------------------------|
| 11/17/09 08:17:19 | 5100 | 13.01 | 1.82 | 0.84 | 0.62 | 4.30 |
| 11/17/09 08:17:49 | 5130 | 13.03 | 1.94 | 0.90 | 0.61 | 4.31 |
| 11/17/09 08:18:19 | 5160 | 13.04 | 1.91 | 0.90 | 0.62 | 4.32 |
| 11/17/09 08:18:49 | 5190 | 13.05 | 1.87 | 0.89 | 0.60 | 4.32 |
| 11/17/09 08:19:19 | 5220 | 13.05 | 1.85 | 0.93 | 0.58 | 4.34 |
| 11/17/09 08:19:49 | 5250 | 13.05 | 1.85 | 0.89 | 0.60 | 4.33 |
| 11/17/09 08:20:19 | 5280 | 13.04 | 1.89 | 0.85 | 0.59 | 4.36 |
| 11/17/09 08:20:49 | 5310 | 13.04 | 1.94 | 0.81 | 0.56 | 4.35 |
| 11/17/09 08:21:19 | 5340 | 13.06 | 1.94 | 0.80 | 0.55 | 4.36 |
| 11/17/09 08:21:49 | 5370 | 13.06 | 1.92 | 0.85 | 0.54 | 4.34 |
| 11/17/09 08:22:19 | 5400 | 13.06 | 1.89 | 0.86 | 0.54 | 4.35 |
| 11/17/09 08:22:49 | 5430 | 13.06 | 1.88 | 0.90 | 0.54 | 4.35 |
| 11/17/09 08:23:19 | 5460 | 13.06 | 1.86 | 0.90 | 0.54 | 4.36 |
| 11/17/09 08:23:49 | 5490 | 13.06 | 1.86 | 0.89 | 0.50 | 4.36 |
| 11/17/09 08:24:19 | 5520 | 13.07 | 1.89 | 0.83 | 0.52 | 4.36 |
| 11/17/09 08:24:49 | 5550 | 13.06 | 1.87 | 0.88 | 0.52 | 4.36 |
| 11/17/09 08:25:19 | 5580 | 13.06 | 1.85 | 0.89 | 0.50 | 4.37 |
| 11/17/09 08:25:49 | 5610 | 13.06 | 1.89 | 0.79 | 0.50 | 4.38 |
| 11/17/09 08:26:19 | 5640 | 13.06 | 1.92 | 0.82 | 0.50 | 4.38 |
| 11/17/09 08:26:49 | 5670 | 13.05 | 1.93 | 0.83 | 0.48 | 4.39 |
| 11/17/09 08:27:19 | 5700 | 13.05 | 1.96 | 0.78 | 0.48 | 4.38 |
| 11/17/09 08:27:49 | 5730 | 13.06 | 1.97 | 0.82 | 0.47 | 4.39 |
| 11/17/09 08:28:19 | 5760 | 13.06 | 1.98 | 0.77 | 0.47 | 4.38 |
| 11/17/09 08:28:49 | 5790 | 13.07 | 1.98 | 0.78 | 0.46 | 4.39 |
| 11/17/09 08:29:19 | 5820 | 13.06 | 1.98 | 0.74 | 0.47 | 4.39 |
| 11/17/09 08:29:49 | 5850 | 13.05 | 1.96 | 0.82 | 0.46 | 4.40 |
| 11/17/09 08:30:19 | 5880 | 13.06 | 1.96 | 0.82 | 0.46 | 4.39 |
| 11/17/09 08:30:49 | 5910 | 13.06 | 1.96 | 0.80 | 0.45 | 4.41 |
| 11/17/09 08:31:19 | 5940 | 13.06 | 1.98 | 0.78 | 0.44 | 4.39 |
| 11/17/09 08:31:49 | 5970 | 13.06 | 1.97 | 0.79 | 0.43 | 4.41 |
| 11/17/09 08:32:19 | 6000 | 13.06 | 1.99 | 0.78 | 0.43 | 4.39 |
| 11/17/09 08:32:49 | 6030 | 13.06 | 1.98 | 0.75 | 0.44 | 4.41 |
| 11/17/09 08:33:19 | 6060 | 13.06 | 2.00 | 0.82 | 0.43 | 4.39 |
| 11/17/09 08:33:49 | 6090 | 13.05 | 2.03 | 0.76 | 0.45 | 4.42 |
| 11/17/09 08:34:19 | 6120 | 13.05 | 2.04 | 0.76 | 0.45 | 4.40 |
| 11/17/09 08:34:49 | 6150 | 13.05 | 2.05 | 0.77 | 0.46 | 4.41 |
| 11/17/09 08:35:19 | 6180 | 13.05 | 2.07 | 0.76 | 0.43 | 4.40 |
| 11/17/09 08:35:49 | 6210 | 13.05 | 2.08 | 0.70 | 0.43 | 4.42 |
| 11/17/09 08:36:19 | 6240 | 13.05 | 2.07 | 0.67 | 0.42 | 4.40 |
| 11/17/09 08:36:49 | 6270 | 13.05 | 2.05 | 0.68 | 0.42 | 4.41 |
| 11/17/09 08:37:19 | 6300 | 13.06 | 2.06 | 0.73 | 0.40 | 4.39 |
| 11/17/09 08:37:49 | 6330 | 13.06 | 2.05 | 0.72 | 0.41 | 4.41 |
| 11/17/09 08:38:19 | 6360 | 13.06 | 2.03 | 0.74 | 0.41 | 4.40 |
| 11/17/09 08:38:49 | 6390 | 13.05 | 2.04 | 0.73 | 0.40 | 4.41 |
| 11/17/09 08:39:19 | 6420 | 13.06 | 2.05 | 0.71 | 0.39 | 4.39 |
| 11/17/09 08:39:49 | 6450 | 13.05 | 2.08 | 0.72 | 0.39 | 4.41 |
| 11/17/09 08:40:19 | 6480 | 13.04 | 2.08 | 0.67 | 0.39 | 4.39 |
| 11/17/09 08:40:49 | 6510 | 13.04 | 2.07 | 0.72 | 0.38 | 4.41 |
| 11/17/09 08:41:19 | 6540 | 13.04 | 2.09 | 0.67 | 0.39 | 4.39 |
| 11/17/09 08:41:49 | 6570 | 13.05 | 2.09 | 0.70 | 0.39 | 4.40 |
| 11/17/09 08:42:19 | 6600 | 13.05 | 2.09 | 0.69 | 0.38 | 4.39 |
| 11/17/09 08:42:49 | 6630 | 13.05 | 2.11 | 0.66 | 0.39 | 4.40 |
| 11/17/09 08:43:19 | 6660 | 13.06 | 2.10 | 0.73 | 0.39 | 4.39 |
| 11/17/09 08:43:49 | 6690 | 13.06 | 2.07 | 0.72 | 0.41 | 4.41 |
| 11/17/09 08:44:19 | 6720 | 13.06 | 2.12 | 0.63 | 0.37 | 4.41 |
| 11/17/09 08:44:49 | 6750 | 13.04 | 2.09 | 0.62 | 0.38 | 4.41 |
| 11/17/09 08:45:19 | 6780 | 13.04 | 2.10 | 0.62 | 0.40 | 4.40 |
| 11/17/09 08:45:49 | 6810 | 13.05 | 2.11 | 0.68 | 0.38 | 4.41 |
| 11/17/09 08:46:19 | 6840 | 13.06 | 2.11 | 0.66 | 0.37 | 4.40 |
| 11/17/09 08:46:49 | 6870 | 13.04 | 2.08 | 0.68 | 0.38 | 4.40 |
| 11/17/09 08:47:19 | 6900 | 13.02 | 2.08 | 0.64 | 0.40 | 4.41 |
| 11/17/09 08:47:49 | 6930 | 13.01 | 2.04 | 0.66 | 0.37 | 4.42 |
| 11/17/09 08:48:19 | 6960 | 13.02 | 2.06 | 0.62 | 0.37 | 4.42 |
| 11/17/09 08:48:49 | 6990 | 13.02 | 2.09 | 0.64 | 0.38 | 4.42 |
| 11/17/09 08:49:19 | 7020 | 13.03 | 2.08 | 0.65 | 0.38 | 4.42 |
| 11/17/09 08:49:49 | 7050 | 13.03 | 2.08 | 0.63 | 0.38 | 4.42 |
| 11/17/09 08:50:19 | 7080 | 13.02 | 2.07 | 0.60 | 0.37 | 4.43 |
| 11/17/09 08:50:49 | 7110 | 13.02 | 2.10 | 0.62 | 0.37 | 4.42 |
| 11/17/09 08:51:19 | 7140 | 13.03 | 2.12 | 0.62 | 0.38 | 4.43 |
| 11/17/09 08:51:49 | 7170 | 13.03 | 2.11 | 0.67 | 0.40 | 4.42 |
| 11/17/09 08:52:19 | 7200 | 13.02 | 2.08 | 0.60 | 0.38 | 4.43 |
| 11/17/09 08:52:49 | 7230 | 13.03 | 2.07 | 0.62 | 0.39 | 4.42 |
| 11/17/09 08:53:19 | 7260 | 13.04 | 2.09 | 0.60 | 0.38 | 4.43 |
| 11/17/09 08:53:49 | 7290 | 13.02 | 2.05 | 0.60 | 0.38 | 4.42 |
| 11/17/09 08:54:19 | 7320 | 13.03 | 2.05 | 0.64 | 0.37 | 4.43 |
| 11/17/09 08:54:49 | 7350 | 13.03 | 2.04 | 0.59 | 0.36 | 4.42 |
| 11/17/09 08:55:19 | 7380 | 13.02 | 2.05 | 0.65 | 0.38 | 4.44 |
| 11/17/09 08:55:49 | 7410 | 13.02 | 2.07 | 0.60 | 0.38 | 4.43 |
| 11/17/09 08:56:19 | 7440 | 13.03 | 2.06 | 0.61 | 0.37 | 4.44 |
| 11/17/09 08:56:49 | 7470 | 13.03 | 2.05 | 0.61 | 0.37 | 4.42 |
| 11/17/09 08:57:19 | 7500 | 13.03 | 2.05 | 0.60 | 0.39 | 4.44 |
| 11/17/09 08:57:49 | 7530 | 13.02 | 2.03 | 0.66 | 0.37 | 4.43 |
| 11/17/09 08:58:19 | 7560 | 13.03 | 2.03 | 0.63 | 0.36 | 4.44 |
| 11/17/09 08:58:49 | 7590 | 13.01 | 2.00 | 0.58 | 0.36 | 4.43 |

Florida Power and Light
Mitsubishi, 501G, Unit #2C
West County Energy Center

| Fuel Data | | |
|--------------------------|-----------|---------------|
| Fuel Fd factor | 8.648 | SCF ehh/MMBtu |
| Fuel Heating Value (HHV) | 1,002 | Btu/SCF fuel |
| Turbine Fuel Flow | 1,840 | lb/min |
| Duct Burner Fuel Flow | 0 | lb/min |
| Total Fuel Flow | 2,523.864 | SCFH |

| Weather Data | | |
|---------------------|----------|------------------------------|
| Barometric Pressure | 29.98 | in. Hg |
| Relative Humidity | 85 | % |
| Ambient Temperature | 69 | °F |
| Specific Humidity | 0.012885 | lb H ₂ O / lb air |

| Unit Data | | |
|--------------------------|------------|-----------|
| Unit Load | 253.9 | megawatts |
| Combustor Inlet Pressure | 271 | psig |
| Mass. Stack Moisture | 9.2 | % |
| Stack Exhaust Flow (M19) | 58,245,590 | SCFH |

Data from: NH3 Run 1

Base W/O Db Load, Run - 1-1

| Date/Time (mm/dd/yy hh:mm:ss) | Elapsed Time (seconds) | O ₂ (%) | NOx (ppmv) | CO (ppmv) | VOC (ppmv) | CO ₂ (%) |
|----------------------------------|---------------------------|-----------------------|---------------|--------------|---------------|------------------------|
| 11/17/09 08:59:19 | 7620 | 13.01 | 1.98 | 0.52 | 0.37 | 4.45 |
| 11/17/09 08:59:49 | 7650 | 13.00 | 2.02 | 0.54 | 0.35 | 4.44 |
| 11/17/09 09:00:19 | 7680 | 13.00 | 2.03 | 0.53 | 0.35 | 4.45 |
| 11/17/09 09:00:49 | 7710 | 13.00 | 2.01 | 0.54 | 0.36 | 4.45 |
| 11/17/09 09:01:19 | 7740 | 13.01 | 2.01 | 0.54 | 0.37 | 4.47 |
| 11/17/09 09:01:49 | 7770 | 13.02 | 2.03 | 0.59 | 0.35 | 4.45 |
| 11/17/09 09:02:19 | 7800 | 13.02 | 2.03 | 0.55 | 0.36 | 4.47 |
| 11/17/09 09:02:49 | 7830 | 13.01 | 2.02 | 0.54 | 0.33 | 4.45 |
| 11/17/09 09:03:19 | 7860 | 13.02 | 1.99 | 0.55 | 0.34 | 4.46 |
| 11/17/09 09:03:49 | 7890 | 13.01 | 2.00 | 0.54 | 0.34 | 4.45 |
| 11/17/09 09:04:19 | 7920 | 13.02 | 1.98 | 0.57 | 0.35 | 4.47 |
| 11/17/09 09:04:49 | 7950 | 13.02 | 2.01 | 0.56 | 0.34 | 4.45 |
| 11/17/09 09:05:19 | 7980 | 13.01 | 1.98 | 0.53 | 0.33 | 4.47 |
| 11/17/09 09:05:49 | 8010 | 13.01 | 2.01 | 0.54 | 0.32 | 4.46 |
| 11/17/09 09:06:19 | 8040 | 13.01 | 2.00 | 0.55 | 0.32 | 4.48 |
| 11/17/09 09:06:49 | 8070 | 13.01 | 2.00 | 0.54 | 0.33 | 4.47 |
| 11/17/09 09:07:19 | 8100 | 13.01 | 2.02 | 0.52 | 0.34 | 4.48 |
| 11/17/09 09:07:49 | 8130 | 13.00 | 2.00 | 0.52 | 0.30 | 4.47 |
| 11/17/09 09:08:19 | 8160 | 13.00 | 2.00 | 0.48 | 0.33 | 4.48 |
| 11/17/09 09:08:49 | 8190 | 13.00 | 2.02 | 0.55 | 0.31 | 4.47 |
| 11/17/09 09:09:19 | 8220 | 13.00 | 1.98 | 0.50 | 0.33 | 4.48 |
| 11/17/09 09:09:49 | 8250 | 13.01 | 1.99 | 0.53 | 0.30 | 4.48 |
| 11/17/09 09:10:19 | 8280 | 13.01 | 1.99 | 0.54 | 0.32 | 4.48 |
| 11/17/09 09:10:49 | 8310 | 13.01 | 2.02 | 0.54 | 0.32 | 4.48 |
| 11/17/09 09:11:19 | 8340 | 13.01 | 2.02 | 0.51 | 0.30 | 4.48 |
| 11/17/09 09:11:49 | 8370 | 13.00 | 1.97 | 0.48 | 0.30 | 4.49 |
| 11/17/09 09:12:19 | 8400 | 13.00 | 2.01 | 0.54 | 0.32 | 4.48 |
| 11/17/09 09:12:49 | 8430 | 13.02 | 1.99 | 0.51 | 0.32 | 4.49 |
| 11/17/09 09:13:19 | 8460 | 13.01 | 1.99 | 0.49 | 0.30 | 4.48 |
| 11/17/09 09:13:49 | 8490 | 13.02 | 2.01 | 0.51 | 0.31 | 4.48 |
| 11/17/09 09:14:19 | 8520 | 13.02 | 1.96 | 0.54 | 0.32 | 4.48 |
| 11/17/09 09:14:49 | 8550 | 13.02 | 1.96 | 0.49 | 0.32 | 4.48 |
| 11/17/09 09:15:19 | 8580 | 13.01 | 1.97 | 0.53 | 0.30 | 4.48 |
| 11/17/09 09:15:49 | 8610 | 13.02 | 1.99 | 0.53 | 0.31 | 4.50 |
| 11/17/09 09:16:19 | 8640 | 13.02 | 2.03 | 0.54 | 0.31 | 4.48 |
| 11/17/09 09:16:49 | 8670 | 13.01 | 2.00 | 0.44 | 0.31 | 4.50 |

RAW AVERAGE

| | O ₂ (%) | NOx (ppmv) | CO (ppmv) | VOC (ppmv) | CO ₂ (%) |
|---|-----------------------|---------------|--------------|---------------|------------------------|
| RAW AVERAGE | 13.03 | 2.01 | 0.67 | 0.40 | 4.42 |
| Serial Number: INST-N2-0001 INST-N2-0001 INST-CO-0015 INST-TH-0009 INST-C2-0009 | | | | | |
| | (%) | (ppmv) | (ppmv) | (ppmv) | (%) |
| Initial Zero | 0.17 | 0.09 | 0.12 | 0.03 | 0.01 |
| Final Zero | 0.30 | 0.09 | 0.01 | 0.01 | 0.39 |
| Avg. Zero | 0.24 | 0.09 | 0.07 | 0.02 | 0.20 |
| Initial UpScale | 12.00 | 5.05 | 4.99 | 2.92 | 8.60 |
| Final UpScale | 12.20 | 5.00 | 4.94 | 2.86 | 9.20 |
| Avg. UpScale | 12.10 | 5.03 | 4.97 | 2.89 | 8.90 |
| Upscale Cal Gas | 12.10 | 4.99 | 4.95 | 3.00 | 8.83 |

| EMISSIONS DATA | | | | | |
|--|----------------|-------|-------|-------|-----------------|
| Corrected Raw Average (ppm% dry basis) | O ₂ | NOx | CO | VOC | CO ₂ |
| Concentration (ppm@ 15%O ₂) | 13.05 | 1.94 | 0.61 | 0.44 | 4.28 |
| Concentration (ppm@ 15%O ₂ & ISO) | N/A | 1.46 | 0.46 | 0.33 | N/A |
| Emission Rate (lb/hr) | N/A | 1.60 | 0.50 | 0.37 | N/A |
| Emission Rate (tons/year) at 8760 hr/yr | N/A | 13.49 | 2.59 | 1.08 | N/A |
| Emission Rate (lb/MMBtu) | N/A | 59.10 | 11.32 | 4.71 | N/A |
| | N/A | 0.005 | 0.001 | 0.000 | N/A |

Florida Power and Light
Mitsubishi, 501G, Unit #2C
West County Energy Center

Fuel Data

| | | |
|--------------------------|-----------|---------------|
| Fuel Fd factor | 8.648 | SCF cwh/MMBtu |
| Fuel Heating Value (HHV) | 1,002 | Btu/SCF fuel |
| Turbine Fuel Flow | 1,831 | lb/min |
| Duct Burner Fuel Flow | 0 | lb/min |
| Total Fuel Flow | 2,511,973 | SCFH |

Weather Data

| | | |
|---------------------|----------|------------------------------|
| Barometric Pressure | 29.99 | In. Hg |
| Relative Humidity | 75 | % |
| Ambient Temperature | 72 | °F |
| Specific Humidity | 0.012562 | lb H ₂ O / lb air |

Unit Data

| | | |
|--------------------------|------------|-----------|
| Unit Load | 251.7 | megawatts |
| Combustor Inlet Pressure | 269 | psig |
| Meas. Stack Moisture | 9.8 | % |
| Stack Exhaust Flow (M19) | 57,231,630 | SCFH |

Data from: NFO Run 2

Base W/O Db Load, Run - 1-2

| Date/Time (mm/dd/yy hh:mm:ss) | Elapsed Time (seconds) | O ₂ (%) | NOx (ppmv) | CO (ppmv) | VOC (ppmv) | CO ₂ (%) |
|----------------------------------|---------------------------|-----------------------|---------------|--------------|---------------|------------------------|
| 11/17/09 09:29:19 | 9420 | 13.02 | 2.07 | 0.48 | 0.29 | 4.50 |
| 11/17/09 09:29:49 | 9450 | 13.02 | 2.07 | 0.51 | 0.31 | 4.52 |
| 11/17/09 09:30:19 | 9480 | 13.02 | 2.06 | 0.53 | 0.29 | 4.50 |
| 11/17/09 09:30:49 | 9510 | 13.01 | 2.02 | 0.50 | 0.29 | 4.52 |
| 11/17/09 09:31:19 | 9540 | 13.01 | 1.98 | 0.53 | 0.30 | 4.51 |
| 11/17/09 09:31:49 | 9570 | 13.01 | 2.00 | 0.51 | 0.31 | 4.52 |
| 11/17/09 09:32:19 | 9600 | 13.02 | 2.03 | 0.49 | 0.30 | 4.52 |
| 11/17/09 09:32:49 | 9630 | 13.02 | 2.05 | 0.50 | 0.29 | 4.52 |
| 11/17/09 09:33:19 | 9660 | 13.02 | 2.05 | 0.50 | 0.29 | 4.51 |
| 11/17/09 09:33:49 | 9690 | 13.00 | 2.05 | 0.51 | 0.29 | 4.53 |
| 11/17/09 09:34:19 | 9720 | 13.00 | 2.03 | 0.51 | 0.29 | 4.52 |
| 11/17/09 09:34:49 | 9750 | 13.01 | 2.07 | 0.47 | 0.28 | 4.52 |
| 11/17/09 09:35:19 | 9780 | 13.02 | 2.04 | 0.59 | 0.30 | 4.51 |
| 11/17/09 09:35:49 | 9810 | 13.02 | 2.01 | 0.51 | 0.31 | 4.51 |
| 11/17/09 09:36:19 | 9840 | 13.01 | 2.01 | 0.49 | 0.29 | 4.52 |
| 11/17/09 09:36:49 | 9870 | 13.01 | 2.08 | 0.55 | 0.27 | 4.52 |
| 11/17/09 09:37:19 | 9900 | 13.01 | 2.08 | 0.47 | 0.30 | 4.52 |
| 11/17/09 09:37:49 | 9930 | 13.01 | 2.07 | 0.45 | 0.29 | 4.51 |
| 11/17/09 09:38:19 | 9960 | 13.02 | 2.07 | 0.47 | 0.29 | 4.52 |
| 11/17/09 09:38:49 | 9990 | 13.03 | 2.05 | 0.56 | 0.30 | 4.50 |
| 11/17/09 09:39:19 | 10020 | 13.03 | 2.00 | 0.51 | 0.29 | 4.52 |
| 11/17/09 09:39:49 | 10050 | 13.03 | 1.97 | 0.50 | 0.28 | 4.50 |
| 11/17/09 09:40:19 | 10080 | 13.02 | 2.02 | 0.50 | 0.28 | 4.52 |
| 11/17/09 09:40:49 | 10110 | 13.01 | 2.03 | 0.52 | 0.29 | 4.50 |
| 11/17/09 09:41:19 | 10140 | 13.03 | 2.05 | 0.51 | 0.27 | 4.52 |
| 11/17/09 09:41:49 | 10170 | 13.02 | 2.02 | 0.51 | 0.27 | 4.51 |
| 11/17/09 09:42:19 | 10200 | 13.02 | 1.99 | 0.58 | 0.29 | 4.52 |
| 11/17/09 09:42:49 | 10230 | 13.02 | 1.99 | 0.56 | 0.30 | 4.51 |
| 11/17/09 09:43:19 | 10260 | 13.03 | 2.00 | 0.55 | 0.29 | 4.52 |
| 11/17/09 09:43:49 | 10290 | 13.02 | 2.02 | 0.51 | 0.26 | 4.51 |
| 11/17/09 09:44:19 | 10320 | 13.02 | 2.04 | 0.47 | 0.29 | 4.52 |
| 11/17/09 09:44:49 | 10350 | 13.02 | 2.06 | 0.51 | 0.27 | 4.51 |
| 11/17/09 09:45:19 | 10380 | 13.03 | 2.01 | 0.50 | 0.26 | 4.52 |
| 11/17/09 09:45:49 | 10410 | 13.02 | 1.97 | 0.47 | 0.26 | 4.52 |
| 11/17/09 09:46:19 | 10440 | 13.02 | 2.04 | 0.44 | 0.28 | 4.53 |
| 11/17/09 09:46:49 | 10470 | 13.04 | 2.05 | 0.51 | 0.29 | 4.52 |
| 11/17/09 09:47:19 | 10500 | 13.04 | 2.03 | 0.54 | 0.27 | 4.53 |
| 11/17/09 09:47:49 | 10530 | 13.03 | 2.02 | 0.50 | 0.27 | 4.52 |
| 11/17/09 09:48:19 | 10560 | 13.04 | 2.01 | 0.54 | 0.28 | 4.52 |
| 11/17/09 09:48:49 | 10590 | 13.04 | 1.99 | 0.54 | 0.29 | 4.52 |
| 11/17/09 09:49:19 | 10620 | 13.02 | 1.98 | 0.47 | 0.28 | 4.52 |
| 11/17/09 09:49:49 | 10650 | 13.02 | 2.01 | 0.46 | 0.28 | 4.53 |
| 11/17/09 09:50:19 | 10680 | 13.01 | 2.00 | 0.46 | 0.28 | 4.54 |
| 11/17/09 09:50:49 | 10710 | 13.01 | 2.09 | 0.47 | 0.28 | 4.54 |
| 11/17/09 09:51:19 | 10740 | 13.02 | 2.06 | 0.52 | 0.28 | 4.53 |
| 11/17/09 09:51:49 | 10770 | 13.03 | 2.00 | 0.54 | 0.28 | 4.54 |
| 11/17/09 09:52:19 | 10800 | 13.02 | 2.01 | 0.48 | 0.28 | 4.53 |
| 11/17/09 09:52:49 | 10830 | 13.01 | 2.04 | 0.49 | 0.29 | 4.54 |
| 11/17/09 09:53:19 | 10860 | 13.03 | 2.03 | 0.56 | 0.27 | 4.52 |
| 11/17/09 09:53:49 | 10890 | 13.03 | 2.02 | 0.54 | 0.26 | 4.54 |
| 11/17/09 09:54:19 | 10920 | 13.03 | 2.03 | 0.51 | 0.29 | 4.53 |
| 11/17/09 09:54:49 | 10950 | 13.03 | 2.01 | 0.50 | 0.27 | 4.54 |
| 11/17/09 09:55:19 | 10980 | 13.03 | 1.99 | 0.53 | 0.29 | 4.53 |
| 11/17/09 09:55:49 | 11010 | 13.04 | 1.99 | 0.51 | 0.28 | 4.54 |
| 11/17/09 09:56:19 | 11040 | 13.05 | 1.96 | 0.52 | 0.27 | 4.52 |
| 11/17/09 09:56:49 | 11070 | 13.03 | 1.94 | 0.53 | 0.27 | 4.54 |
| 11/17/09 09:57:19 | 11100 | 13.02 | 1.94 | 0.47 | 0.26 | 4.54 |
| 11/17/09 09:57:49 | 11130 | 13.01 | 2.00 | 0.50 | 0.28 | 4.55 |
| 11/17/09 09:58:19 | 11160 | 13.03 | 2.05 | 0.51 | 0.27 | 4.53 |
| 11/17/09 09:58:49 | 11190 | 13.03 | 2.06 | 0.47 | 0.25 | 4.55 |
| 11/17/09 09:59:19 | 11220 | 13.03 | 2.04 | 0.48 | 0.27 | 4.54 |
| 11/17/09 09:59:49 | 11250 | 13.04 | 2.02 | 0.48 | 0.27 | 4.55 |
| 11/17/09 10:00:19 | 11280 | 13.05 | 2.00 | 0.55 | 0.28 | 4.54 |
| 11/17/09 10:00:49 | 11310 | 13.04 | 2.00 | 0.54 | 0.27 | 4.55 |
| 11/17/09 10:01:19 | 11340 | 13.04 | 2.00 | 0.48 | 0.26 | 4.54 |
| 11/17/09 10:01:49 | 11370 | 13.04 | 1.97 | 0.44 | 0.26 | 4.55 |
| 11/17/09 10:02:19 | 11400 | 13.03 | 1.99 | 0.49 | 0.27 | 4.54 |
| 11/17/09 10:02:49 | 11430 | 13.03 | 2.06 | 0.51 | 0.26 | 4.56 |
| 11/17/09 10:03:19 | 11460 | 13.05 | 2.05 | 0.46 | 0.25 | 4.54 |
| 11/17/09 10:03:49 | 11490 | 13.05 | 2.03 | 0.48 | 0.28 | 4.55 |
| 11/17/09 10:04:19 | 11520 | 13.05 | 1.97 | 0.52 | 0.29 | 4.55 |
| 11/17/09 10:04:49 | 11550 | 13.04 | 1.99 | 0.50 | 0.26 | 4.55 |
| 11/17/09 10:05:19 | 11580 | 13.03 | 2.03 | 0.51 | 0.27 | 4.55 |
| 11/17/09 10:05:49 | 11610 | 13.02 | 2.10 | 0.47 | 0.28 | 4.56 |
| 11/17/09 10:06:19 | 11640 | 13.02 | 2.09 | 0.45 | 0.27 | 4.56 |
| 11/17/09 10:06:49 | 11670 | 13.04 | 2.08 | 0.51 | 0.28 | 4.55 |
| 11/17/09 10:07:19 | 11700 | 13.04 | 2.03 | 0.54 | 0.29 | 4.56 |
| 11/17/09 10:07:49 | 11730 | 13.05 | 1.99 | 0.54 | 0.28 | 4.54 |
| 11/17/09 10:08:19 | 11760 | 13.02 | 1.96 | 0.55 | 0.28 | 4.57 |
| 11/17/09 10:08:49 | 11790 | 13.04 | 1.98 | 0.52 | 0.29 | 4.55 |
| 11/17/09 10:09:19 | 11820 | 13.05 | 2.03 | 0.55 | 0.29 | 4.57 |
| 11/17/09 10:09:49 | 11850 | 13.05 | 2.00 | 0.59 | 0.29 | 4.55 |
| 11/17/09 10:10:19 | 11880 | 13.05 | 2.00 | 0.54 | 0.28 | 4.57 |
| 11/17/09 10:10:49 | 11910 | 13.05 | 2.03 | 0.50 | 0.29 | 4.56 |

Florida Power and Light
Mitsubishi, 501G, Unit #2C
West County Energy Center

Fuel Data

| | | |
|--------------------------|-----------|---------------|
| Fuel Fd factor | 8.648 | SCF est/MMBtu |
| Fuel Heating Value (HHV) | 1,002 | Btu/SCF fuel |
| Turbine Fuel Flow | 1.831 | lb/min |
| Duct Burner Fuel Flow | 0 | lb/min |
| Total Fuel Flow | 2,511,973 | SCFH |

Weather Data

| | | |
|---------------------|---------|------------------------------|
| Barometric Pressure | 29.99 | in. Hg |
| Relative Humidity | 75 | % |
| Ambient Temperature | 72 | *F |
| Specific Humidity | 0.01262 | lb H ₂ O / lb air |

Unit Data

| | | |
|--------------------------|------------|-----------|
| Unit Load | 251.7 | megawatts |
| Combustor Inlet Pressure | 269 | psig |
| Mass. Stack Moisture | 9.8 | % |
| Stack Exhaust Flow (M19) | 57,231,630 | SCFH |

Data from: N-3 Run 2

Base W/O Db Load, Run - 1-2

| Date/Time (mm/dd/yy hh:mm:ss) | Elapsed Time (seconds) | O ₂ (%) | NOx (ppmvd) | CO (ppmvd) | VOC (ppmvw) | CO ₂ (%) |
|----------------------------------|---------------------------|-----------------------|----------------|---------------|----------------|------------------------|
| 11/17/09 10:11:19 | 11940 | 13.05 | 2.05 | 0.51 | 0.28 | 4.57 |
| 11/17/09 10:11:49 | 11970 | 13.05 | 2.04 | 0.51 | 0.28 | 4.56 |
| 11/17/09 10:12:19 | 12000 | 13.06 | 2.06 | 0.53 | 0.28 | 4.57 |
| 11/17/09 10:12:49 | 12030 | 13.04 | 2.05 | 0.53 | 0.30 | 4.56 |
| 11/17/09 10:13:19 | 12060 | 13.03 | 2.03 | 0.51 | 0.29 | 4.58 |
| 11/17/09 10:13:49 | 12090 | 13.03 | 2.02 | 0.45 | 0.27 | 4.56 |
| 11/17/09 10:14:19 | 12120 | 13.03 | 2.01 | 0.46 | 0.28 | 4.58 |
| 11/17/09 10:14:49 | 12150 | 13.03 | 2.03 | 0.49 | 0.28 | 4.57 |
| 11/17/09 10:15:19 | 12180 | 13.02 | 1.98 | 0.47 | 0.29 | 4.59 |
| 11/17/09 10:15:49 | 12210 | 13.07 | 2.03 | 0.55 | 0.28 | 4.56 |
| 11/17/09 10:16:19 | 12240 | 13.08 | 1.93 | 0.59 | 0.27 | 4.56 |
| 11/17/09 10:16:49 | 12270 | 13.08 | 1.87 | 0.56 | 0.27 | 4.57 |
| 11/17/09 10:17:19 | 12300 | 13.06 | 1.93 | 0.53 | 0.26 | 4.58 |
| 11/17/09 10:17:49 | 12330 | 13.05 | 2.04 | 0.49 | 0.25 | 4.58 |
| 11/17/09 10:18:19 | 12360 | 13.05 | 2.09 | 0.41 | 0.26 | 4.58 |
| 11/17/09 10:18:49 | 12390 | 13.06 | 2.11 | 0.47 | 0.27 | 4.58 |
| 11/17/09 10:19:19 | 12420 | 13.07 | 2.07 | 0.52 | 0.26 | 4.57 |
| 11/17/09 10:19:49 | 12450 | 13.07 | 2.02 | 0.51 | 0.26 | 4.58 |
| 11/17/09 10:20:19 | 12480 | 13.06 | 2.01 | 0.49 | 0.26 | 4.58 |
| 11/17/09 10:20:49 | 12510 | 13.06 | 2.02 | 0.45 | 0.27 | 4.59 |
| 11/17/09 10:21:19 | 12540 | 13.06 | 2.08 | 0.51 | 0.27 | 4.58 |
| 11/17/09 10:21:49 | 12570 | 13.06 | 2.06 | 0.55 | 0.25 | 4.60 |
| 11/17/09 10:22:19 | 12600 | 13.06 | 2.04 | 0.51 | 0.25 | 4.58 |
| 11/17/09 10:22:49 | 12630 | 13.07 | 2.12 | 0.48 | 0.25 | 4.60 |
| 11/17/09 10:23:19 | 12660 | 13.07 | 2.11 | 0.44 | 0.25 | 4.59 |
| 11/17/09 10:23:49 | 12690 | 13.06 | 2.07 | 0.45 | 0.24 | 4.61 |
| 11/17/09 10:24:19 | 12720 | 13.06 | 2.06 | 0.50 | 0.24 | 4.59 |
| 11/17/09 10:24:49 | 12750 | 13.06 | 2.05 | 0.40 | 0.23 | 4.61 |
| 11/17/09 10:25:19 | 12780 | 13.07 | 2.04 | 0.44 | 0.23 | 4.60 |
| 11/17/09 10:25:49 | 12810 | 13.06 | 2.07 | 0.44 | 0.23 | 4.61 |
| 11/17/09 10:26:19 | 12840 | 13.07 | 2.02 | 0.50 | 0.23 | 4.60 |
| 11/17/09 10:26:49 | 12870 | 13.07 | 2.04 | 0.48 | 0.23 | 4.61 |
| 11/17/09 10:27:19 | 12900 | 13.07 | 2.05 | 0.52 | 0.23 | 4.60 |
| 11/17/09 10:27:49 | 12930 | 13.07 | 2.02 | 0.53 | 0.23 | 4.62 |
| 11/17/09 10:28:19 | 12960 | 13.07 | 2.05 | 0.50 | 0.24 | 4.61 |
| 11/17/09 10:28:49 | 12990 | 13.07 | 2.03 | 0.49 | 0.22 | 4.62 |

RAW AVERAGE

| | O ₂ (%) | NOx (ppmvd) | CO (ppmvd) | VOC (ppmvw) | CO ₂ (%) |
|-----------------------------|-----------------------|----------------|---------------|----------------|------------------------|
| Serial Number: INST-N2-0001 | | | | | |
| INST-N2-0001 | | | | | |
| INST-CO-0015 | | | | | |
| INST-TH-0009 | | | | | |
| INST-C2-0009 | | | | | |
| Initial Zero | 0.30 | 0.09 | 0.01 | 0.01 | 0.39 |
| Final Zero | 0.30 | 0.09 | 0.01 | 0.01 | 0.39 |
| Avg. Zero | 0.30 | 0.09 | 0.01 | 0.01 | 0.39 |
| Initial UpScale | 12.20 | 5.00 | 4.94 | 2.86 | 9.20 |
| Final UpScale | 12.20 | 5.00 | 4.94 | 2.86 | 9.20 |
| Avg. UpScale | 12.20 | 5.00 | 4.94 | 2.86 | 9.20 |
| Upscale Cal Gas | 12.10 | 4.99 | 4.95 | 3.00 | 8.83 |

| EMISSIONS DATA | O ₂ | NOx | CO | VOC | CO ₂ |
|--|----------------|-------|-------|-------|-----------------|
| Corrected Raw Average (ppm% dry basis) | 12.95 | 1.97 | 0.49 | 0.31 | 4.17 |
| Concentration (ppm@ 15%O ₂) | N/A | 1.46 | 0.37 | 0.23 | N/A |
| Concentration (ppm@ 15%O ₂ & ISO) | N/A | 1.58 | 0.40 | 0.25 | N/A |
| Emission Rate (lb/hr) | N/A | 13.45 | 2.06 | 0.74 | N/A |
| Emission Rate (tons/year) at 8760 hr/yr | N/A | 58.91 | 9.02 | 3.22 | N/A |
| Emission Rate (lb/MMBtu) | N/A | 0.005 | 0.001 | 0.000 | N/A |

Florida Power and Light
Mitsubishi, 501G, Unit #2C
West County Energy Center

Fuel Data

| | | |
|--------------------------|-----------|---------------|
| Fuel Fd factor | 8,648 | SCF exv/MMBtu |
| Fuel Heating Value (HHV) | 1,022 | Btu/SCF fuel |
| Turbine Fuel Flow | 1,810 | lb/min |
| Duct Burner Fuel Flow | 0 | lb/min |
| Total Fuel Flow | 2,483,161 | SCFH |

Weather Data

| | | |
|---------------------|----------|------------------------------|
| Barometric Pressure | 29.69 | in. Hg |
| Relative Humidity | 72 | % |
| Ambient Temperature | 75 | °F |
| Specific Humidity | 0.013356 | lb H ₂ O / lb air |

Unit Data

| | | |
|--------------------------|------------|-----------|
| Unit Load | 247.8 | megawatts |
| Combustor Inlet Pressure | 266 | psig |
| Meas. Stack Moisture | 9.8 | % |
| Stack Exhaust Flow (M19) | 57,071,002 | SCFH |

Data from: N-3 Run 3

Base W/O Db Load, Run - 1-3

| Date/Time (mm/dd/yy hh:mm:ss) | Elapsed Time (seconds) | O ₂ (%) | NOx (ppmvd) | CO (ppmvd) | VOC (ppmvv) | CO ₂ (%) |
|----------------------------------|---------------------------|-----------------------|----------------|---------------|----------------|------------------------|
| 11/17/09 10:43:19 | 13860 | 13.08 | 1.95 | 0.51 | 0.19 | 4.64 |
| 11/17/09 10:43:49 | 13890 | 13.08 | 1.96 | 0.42 | 0.20 | 4.65 |
| 11/17/09 10:44:19 | 13920 | 13.07 | 1.98 | 0.48 | 0.22 | 4.64 |
| 11/17/09 10:44:49 | 13950 | 13.08 | 2.04 | 0.55 | 0.23 | 4.65 |
| 11/17/09 10:45:19 | 13980 | 13.09 | 2.03 | 0.53 | 0.21 | 4.64 |
| 11/17/09 10:45:49 | 14010 | 13.08 | 2.00 | 0.49 | 0.21 | 4.65 |
| 11/17/09 10:46:19 | 14040 | 13.08 | 1.97 | 0.50 | 0.22 | 4.65 |
| 11/17/09 10:46:49 | 14070 | 13.08 | 1.99 | 0.51 | 0.21 | 4.65 |
| 11/17/09 10:47:19 | 14100 | 13.09 | 1.98 | 0.54 | 0.22 | 4.65 |
| 11/17/09 10:47:49 | 14130 | 13.09 | 1.99 | 0.51 | 0.20 | 4.65 |
| 11/17/09 10:48:19 | 14160 | 13.09 | 2.02 | 0.55 | 0.20 | 4.66 |
| 11/17/09 10:48:49 | 14190 | 13.09 | 1.99 | 0.53 | 0.20 | 4.65 |
| 11/17/09 10:49:19 | 14220 | 13.09 | 1.96 | 0.51 | 0.18 | 4.66 |
| 11/17/09 10:49:49 | 14250 | 13.09 | 1.98 | 0.53 | 0.19 | 4.65 |
| 11/17/09 10:50:19 | 14280 | 13.09 | 2.00 | 0.52 | 0.20 | 4.67 |
| 11/17/09 10:50:49 | 14310 | 13.08 | 2.02 | 0.50 | 0.19 | 4.65 |
| 11/17/09 10:51:19 | 14340 | 13.09 | 2.04 | 0.45 | 0.18 | 4.66 |
| 11/17/09 10:51:49 | 14370 | 13.10 | 2.04 | 0.50 | 0.20 | 4.65 |
| 11/17/09 10:52:19 | 14400 | 13.09 | 2.03 | 0.50 | 0.18 | 4.67 |
| 11/17/09 10:52:49 | 14430 | 13.08 | 1.98 | 0.45 | 0.16 | 4.66 |
| 11/17/09 10:53:19 | 14460 | 13.08 | 2.01 | 0.50 | 0.19 | 4.67 |
| 11/17/09 10:53:49 | 14490 | 13.08 | 2.06 | 0.50 | 0.18 | 4.65 |
| 11/17/09 10:54:19 | 14520 | 13.08 | 2.07 | 0.46 | 0.18 | 4.67 |
| 11/17/09 10:54:49 | 14550 | 13.08 | 2.08 | 0.48 | 0.17 | 4.66 |
| 11/17/09 10:55:19 | 14580 | 13.08 | 2.07 | 0.48 | 0.18 | 4.66 |
| 11/17/09 10:55:49 | 14610 | 13.10 | 2.06 | 0.50 | 0.19 | 4.66 |
| 11/17/09 10:56:19 | 14640 | 13.09 | 2.03 | 0.52 | 0.17 | 4.66 |
| 11/17/09 10:56:49 | 14670 | 13.08 | 2.03 | 0.54 | 0.19 | 4.67 |
| 11/17/09 10:57:19 | 14700 | 13.08 | 2.03 | 0.49 | 0.22 | 4.65 |
| 11/17/09 10:57:49 | 14730 | 13.07 | 2.03 | 0.53 | 0.23 | 4.67 |
| 11/17/09 10:58:19 | 14760 | 13.08 | 2.01 | 0.54 | 0.21 | 4.65 |
| 11/17/09 10:58:49 | 14790 | 13.07 | 1.99 | 0.48 | 0.22 | 4.68 |
| 11/17/09 10:59:19 | 14820 | 13.08 | 1.98 | 0.49 | 0.22 | 4.66 |
| 11/17/09 10:59:49 | 14850 | 13.11 | 2.01 | 0.51 | 0.23 | 4.66 |
| 11/17/09 11:00:19 | 14880 | 13.12 | 1.95 | 0.54 | 0.24 | 4.64 |
| 11/17/09 11:00:49 | 14910 | 13.12 | 1.87 | 0.54 | 0.20 | 4.65 |
| 11/17/09 11:01:19 | 14940 | 13.12 | 1.91 | 0.51 | 0.20 | 4.65 |
| 11/17/09 11:01:49 | 14970 | 13.11 | 1.95 | 0.50 | 0.21 | 4.66 |
| 11/17/09 11:02:19 | 15000 | 13.12 | 1.95 | 0.44 | 0.21 | 4.66 |
| 11/17/09 11:02:49 | 15030 | 13.10 | 1.98 | 0.48 | 0.23 | 4.66 |
| 11/17/09 11:03:19 | 15060 | 13.11 | 2.04 | 0.52 | 0.21 | 4.67 |
| 11/17/09 11:03:49 | 15090 | 13.11 | 2.03 | 0.55 | 0.22 | 4.65 |
| 11/17/09 11:04:19 | 15120 | 13.10 | 2.02 | 0.51 | 0.23 | 4.68 |
| 11/17/09 11:04:49 | 15150 | 13.08 | 2.00 | 0.47 | 0.22 | 4.67 |
| 11/17/09 11:05:19 | 15180 | 13.10 | 2.06 | 0.49 | 0.22 | 4.68 |
| 11/17/09 11:05:49 | 15210 | 13.11 | 2.06 | 0.55 | 0.22 | 4.66 |
| 11/17/09 11:06:19 | 15240 | 13.11 | 2.04 | 0.53 | 0.23 | 4.68 |
| 11/17/09 11:06:49 | 15270 | 13.11 | 2.03 | 0.51 | 0.23 | 4.66 |
| 11/17/09 11:07:19 | 15300 | 13.09 | 2.01 | 0.47 | 0.22 | 4.69 |
| 11/17/09 11:07:49 | 15330 | 13.06 | 2.07 | 0.48 | 0.23 | 4.70 |
| 11/17/09 11:08:19 | 15360 | 13.10 | 2.13 | 0.44 | 0.21 | 4.68 |
| 11/17/09 11:08:49 | 15390 | 13.12 | 2.08 | 0.52 | 0.20 | 4.67 |
| 11/17/09 11:09:19 | 15420 | 13.12 | 1.98 | 0.51 | 0.20 | 4.67 |
| 11/17/09 11:09:49 | 15450 | 13.11 | 2.02 | 0.47 | 0.21 | 4.68 |
| 11/17/09 11:10:19 | 15480 | 13.11 | 1.99 | 0.47 | 0.21 | 4.68 |
| 11/17/09 11:10:49 | 15510 | 13.07 | 2.02 | 0.49 | 0.21 | 4.71 |
| 11/17/09 11:11:19 | 15540 | 13.08 | 2.09 | 0.45 | 0.21 | 4.68 |
| 11/17/09 11:11:49 | 15570 | 13.08 | 2.09 | 0.47 | 0.21 | 4.71 |
| 11/17/09 11:12:19 | 15600 | 13.08 | 2.08 | 0.43 | 0.22 | 4.70 |
| 11/17/09 11:12:49 | 15630 | 13.11 | 2.09 | 0.50 | 0.22 | 4.68 |
| 11/17/09 11:13:19 | 15660 | 13.13 | 1.97 | 0.59 | 0.22 | 4.66 |
| 11/17/09 11:13:49 | 15690 | 13.11 | 1.89 | 0.61 | 0.21 | 4.69 |
| 11/17/09 11:14:19 | 15720 | 13.09 | 1.96 | 0.45 | 0.22 | 4.69 |
| 11/17/09 11:14:49 | 15750 | 13.06 | 2.04 | 0.41 | 0.20 | 4.73 |
| 11/17/09 11:15:19 | 15780 | 13.04 | 2.11 | 0.42 | 0.22 | 4.73 |
| 11/17/09 11:15:49 | 15810 | 13.11 | 2.16 | 0.45 | 0.23 | 4.70 |
| 11/17/09 11:16:19 | 15840 | 13.11 | 2.03 | 0.55 | 0.21 | 4.72 |
| 11/17/09 11:16:49 | 15870 | 13.10 | 1.89 | 0.50 | 0.21 | 4.71 |
| 11/17/09 11:17:19 | 15900 | 13.09 | 1.86 | 0.46 | 0.23 | 4.73 |
| 11/17/09 11:17:49 | 15930 | 13.09 | 1.85 | 0.52 | 0.22 | 4.72 |
| 11/17/09 11:18:19 | 15960 | 13.07 | 1.88 | 0.51 | 0.20 | 4.76 |
| 11/17/09 11:18:49 | 15990 | 13.09 | 1.93 | 0.42 | 0.22 | 4.73 |
| 11/17/09 11:19:19 | 16020 | 13.09 | 1.91 | 0.48 | 0.22 | 4.76 |
| 11/17/09 11:19:49 | 16050 | 13.09 | 1.87 | 0.48 | 0.21 | 4.74 |
| 11/17/09 11:20:19 | 16080 | 13.09 | 1.86 | 0.55 | 0.21 | 4.76 |
| 11/17/09 11:20:49 | 16110 | 13.11 | 1.86 | 0.51 | 0.22 | 4.74 |
| 11/17/09 11:21:19 | 16140 | 13.10 | 1.86 | 0.48 | 0.21 | 4.76 |
| 11/17/09 11:21:49 | 16170 | 13.08 | 1.84 | 0.43 | 0.21 | 4.77 |
| 11/17/09 11:22:19 | 16200 | 13.07 | 1.90 | 0.44 | 0.21 | 4.79 |
| 11/17/09 11:22:49 | 16230 | 13.19 | 1.94 | 0.53 | 0.23 | 4.71 |
| 11/17/09 11:23:19 | 16260 | 13.15 | 1.79 | 0.66 | 0.22 | 4.75 |
| 11/17/09 11:23:49 | 16290 | 13.14 | 1.79 | 0.52 | 0.21 | 4.75 |
| 11/17/09 11:24:19 | 16320 | 13.13 | 1.82 | 0.50 | 0.21 | 4.76 |
| 11/17/09 11:24:49 | 16350 | 13.13 | 1.90 | 0.52 | 0.22 | 4.76 |

Florida Power and Light
Mitsubishi, 501G, Unit #2C
West County Energy Center

Fuel Data

| | | |
|--------------------------|-----------|---------------|
| Fuel Fd factor | 8.648 | SCF edv/MMBtu |
| Fuel Heating Value (H+V) | 1,002 | Btu/SCF fuel |
| Turbine Fuel Flow | 1,810 | lb/min |
| Duct Burner Fuel Flow | 0 | lb/min |
| Total Fuel Flow | 2,480,161 | SCFH |

Weather Data

| | | |
|---------------------|----------|------------------------------|
| Barometric Pressure | 29.99 | in. Hg |
| Relative Humidity | 72 | % |
| Ambient Temperature | 75 | *F |
| Specific Humidity | 0.013356 | lb H ₂ O / lb air |

Unit Data

| | | |
|--------------------------|------------|-----------|
| Unit Load | 247.8 | megawatts |
| Combustor Inlet Pressure | 266 | psig |
| Mass Stack Moisture | 9.9 | % |
| Stack Exhaust Flow (M19) | 57,071,002 | SCFH |

Data from: M3 Run 3

Base W/O Db Load, Run - 1-3

| Date/Time (mm/dd/yy hh:mm:ss) | Elapsed Time (seconds) | O ₂ (%) | NO _x (ppmv d) | CO (ppmv d) | VOC (ppmv w) | CO ₂ (%) |
|----------------------------------|---------------------------|-----------------------|-----------------------------|----------------|-----------------|------------------------|
| 11/17/09 11:25:19 | 16380 | 13.15 | 1.96 | 0.46 | 0.20 | 4.75 |
| 11/17/09 11:25:49 | 16410 | 13.13 | 2.04 | 0.39 | 0.19 | 4.77 |
| 11/17/09 11:26:19 | 16440 | 13.12 | 2.05 | 0.43 | 0.19 | 4.77 |
| 11/17/09 11:26:49 | 16470 | 13.13 | 2.06 | 0.40 | 0.21 | 4.77 |
| 11/17/09 11:27:19 | 16500 | 13.10 | 2.10 | 0.45 | 0.20 | 4.78 |
| 11/17/09 11:27:49 | 16530 | 13.09 | 2.08 | 0.44 | 0.20 | 4.79 |
| 11/17/09 11:28:19 | 16560 | 13.10 | 2.07 | 0.44 | 0.21 | 4.77 |
| 11/17/09 11:28:49 | 16590 | 13.14 | 1.99 | 0.50 | 0.21 | 4.77 |
| 11/17/09 11:29:19 | 16620 | 13.13 | 1.84 | 0.57 | 0.21 | 4.76 |
| 11/17/09 11:29:49 | 16650 | 13.10 | 1.81 | 0.46 | 0.21 | 4.79 |
| 11/17/09 11:30:19 | 16680 | 13.13 | 1.86 | 0.42 | 0.21 | 4.76 |
| 11/17/09 11:30:49 | 16710 | 13.19 | 1.81 | 0.47 | 0.20 | 4.72 |
| 11/17/09 11:31:19 | 16740 | 13.18 | 1.75 | 0.57 | 0.21 | 4.71 |
| 11/17/09 11:31:49 | 16770 | 13.16 | 1.74 | 0.58 | 0.22 | 4.73 |
| 11/17/09 11:32:19 | 16800 | 13.15 | 1.80 | 0.52 | 0.21 | 4.73 |
| 11/17/09 11:32:49 | 16830 | 13.15 | 1.90 | 0.44 | 0.19 | 4.74 |
| 11/17/09 11:33:19 | 16860 | 13.13 | 1.96 | 0.43 | 0.20 | 4.75 |
| 11/17/09 11:33:49 | 16890 | 13.13 | 2.02 | 0.34 | 0.20 | 4.75 |
| 11/17/09 11:34:19 | 16920 | 13.13 | 2.06 | 0.39 | 0.21 | 4.75 |
| 11/17/09 11:34:49 | 16950 | 13.11 | 2.04 | 0.43 | 0.20 | 4.76 |
| 11/17/09 11:35:19 | 16980 | 13.11 | 2.01 | 0.39 | 0.21 | 4.77 |
| 11/17/09 11:35:49 | 17010 | 13.16 | 1.95 | 0.45 | 0.21 | 4.73 |
| 11/17/09 11:36:19 | 17040 | 13.16 | 1.83 | 0.49 | 0.20 | 4.75 |
| 11/17/09 11:36:49 | 17070 | 13.16 | 1.78 | 0.47 | 0.20 | 4.74 |
| 11/17/09 11:37:19 | 17100 | 13.10 | 1.83 | 0.49 | 0.20 | 4.79 |
| 11/17/09 11:37:49 | 17130 | 13.06 | 1.90 | 0.39 | 0.20 | 4.79 |
| 11/17/09 11:38:19 | 17160 | 13.06 | 1.96 | 0.38 | 0.20 | 4.80 |
| 11/17/09 11:38:49 | 17190 | 13.14 | 2.00 | 0.46 | 0.20 | 4.75 |
| 11/17/09 11:39:19 | 17220 | 13.15 | 1.82 | 0.59 | 0.19 | 4.75 |
| 11/17/09 11:39:49 | 17250 | 13.12 | 1.70 | 0.61 | 0.20 | 4.78 |
| 11/17/09 11:40:19 | 17280 | 13.10 | 1.75 | 0.53 | 0.20 | 4.78 |
| 11/17/09 11:40:49 | 17310 | 13.11 | 1.81 | 0.51 | 0.20 | 4.78 |
| 11/17/09 11:41:19 | 17340 | 13.15 | 1.87 | 0.49 | 0.20 | 4.75 |
| 11/17/09 11:41:49 | 17370 | 13.11 | 1.85 | 0.52 | 0.20 | 4.79 |
| 11/17/09 11:42:19 | 17400 | 13.14 | 1.89 | 0.46 | 0.20 | 4.76 |
| 11/17/09 11:42:49 | 17430 | 13.16 | 1.90 | 0.44 | 0.20 | 4.77 |
| RAW AVERAGE | | 13.11 | 1.96 | 0.49 | 0.21 | 4.71 |

| | Serial Number: | O ₂ | NO _x | CO | VOC | CO ₂ |
|-----------------|-----------------|----------------|-----------------|--------------|--------------|-----------------|
| | | (%) | (ppmv d) | (ppmv d) | (ppmv w) | (%) |
| | INST-A2-0001 | INST-A2-0001 | INST-CO-0015 | INST-TH-0009 | INST-C2-0009 | |
| | Initial Zero | 0.30 | 0.09 | 0.01 | 0.01 | 0.39 |
| | Final Zero | 0.30 | 0.09 | 0.01 | 0.01 | 0.39 |
| | Avg. Zero | 0.30 | 0.09 | 0.01 | 0.01 | 0.39 |
| Bias | Initial UpScale | 12.20 | 5.00 | 4.94 | 2.86 | 9.20 |
| | Final UpScale | 12.20 | 5.00 | 4.94 | 2.86 | 9.20 |
| | Avg. UpScale | 12.20 | 5.00 | 4.94 | 2.86 | 9.20 |
| Upscale Cal Gas | | 12.10 | 4.99 | 4.95 | 3.00 | 8.83 |

| EMISSIONS DATA | O ₂ | NO _x | CO | VOC | CO ₂ |
|--|----------------|-----------------|-------|-------|-----------------|
| Corrected Raw Average (ppm% dry basis) | 13.02 | 1.90 | 0.48 | 0.23 | 4.33 |
| Concentration (ppm@ 15%O ₂) | N/A | 1.43 | 0.36 | 0.17 | N/A |
| Concentration (ppm@ 15%O ₂ & ISO ₂) | N/A | 1.55 | 0.39 | 0.19 | N/A |
| Emission Rate (lb/hr) | N/A | 12.98 | 2.00 | 0.55 | N/A |
| Emission Rate (tons/year) at 8760 hr/yr | N/A | 56.86 | 8.74 | 2.40 | N/A |
| Emission Rate (lb/MMBtu) | N/A | 0.005 | 0.001 | 0.000 | N/A |

TEST RESULTS

**NO_x, CO, VOC, CO₂, and O₂ Emissions
Base Load with Duct Burners**

Florida Power and Light
Mitsubishi, 601G, Unit #2C
West County Energy Center

Fuel Data

| | | |
|---------------------------|-----------|---------------|
| Fuel Fd factor | 0.648 | SCF adv/MMBtu |
| Fuel Heating Value (H-FV) | 1.002 | Btu/SCF fuel |
| Turbine Fuel Flow | 1.643 | lb/min |
| Duct Burner Fuel Flow | 151 | lb/min |
| Total Fuel Flow | 2,460,979 | SCFH |

Weather Data

| | | |
|---------------------|----------|------------------------------|
| Barometric Pressure | 29.07 | In. Hg |
| Relative Humidity | 60 | % |
| Ambient Temperature | 78 | °F |
| Specific Humidity | 0.012283 | lb H ₂ O / lb air |

Unit Data

| | | |
|--------------------------|------------|-----------|
| Unit Load | 244.7 | megawatts |
| Combustor Inlet Pressure | 264 | psig |
| Meas. Stack Moisture | 9.6 | % |
| Stack Exhaust Flow (M19) | 52,411,565 | SCFH |

Data from: N#3 Run 1

Base W/Db Load, Run - 2-1

| Date/Time (mm/dd/yy hh:mm:ss) | Elapsed Time (seconds) | O ₂ (%) | NOx (ppmvd) | CO (ppmvd) | VOC (ppmvv) | CO ₂ (%) |
|----------------------------------|---------------------------|-----------------------|----------------|---------------|----------------|------------------------|
| 11/17/09 12:54:19 | 21720 | 12.47 | 2.52 | 0.64 | 0.22 | 5.23 |
| 11/17/09 12:54:49 | 21750 | 12.46 | 2.48 | 0.59 | 0.23 | 5.22 |
| 11/17/09 12:55:19 | 21780 | 12.48 | 2.53 | 0.64 | 0.24 | 5.22 |
| 11/17/09 12:55:49 | 21810 | 12.42 | 2.50 | 0.72 | 0.23 | 5.25 |
| 11/17/09 12:56:19 | 21840 | 12.44 | 2.67 | 0.66 | 0.24 | 5.26 |
| 11/17/09 12:56:49 | 21870 | 12.51 | 2.69 | 0.70 | 0.24 | 5.20 |
| 11/17/09 12:57:19 | 21900 | 12.49 | 2.47 | 0.68 | 0.22 | 5.22 |
| 11/17/09 12:57:49 | 21930 | 12.45 | 2.32 | 0.67 | 0.22 | 5.24 |
| 11/17/09 12:58:19 | 21960 | 12.43 | 2.39 | 0.75 | 0.23 | 5.26 |
| 11/17/09 12:58:49 | 21990 | 12.42 | 2.52 | 0.72 | 0.23 | 5.28 |
| 11/17/09 12:59:19 | 22020 | 12.42 | 2.64 | 0.74 | 0.22 | 5.27 |
| 11/17/09 12:59:49 | 22050 | 12.50 | 2.56 | 0.80 | 0.22 | 5.24 |
| 11/17/09 13:00:19 | 22080 | 12.50 | 2.31 | 0.76 | 0.22 | 5.23 |
| 11/17/09 13:00:49 | 22110 | 12.40 | 2.15 | 0.82 | 0.22 | 5.31 |
| 11/17/09 13:01:19 | 22140 | 12.40 | 2.23 | 0.96 | 0.24 | 5.30 |
| 11/17/09 13:01:49 | 22170 | 12.39 | 2.39 | 1.04 | 0.26 | 5.32 |
| 11/17/09 13:02:19 | 22200 | 12.42 | 2.45 | 1.05 | 0.24 | 5.30 |
| 11/17/09 13:02:49 | 22230 | 12.56 | 2.36 | 1.00 | 0.23 | 5.22 |
| 11/17/09 13:03:19 | 22260 | 12.55 | 2.09 | 0.94 | 0.23 | 5.24 |
| 11/17/09 13:03:49 | 22290 | 12.53 | 2.01 | 0.89 | 0.21 | 5.24 |
| 11/17/09 13:04:19 | 22320 | 12.49 | 2.14 | 0.82 | 0.21 | 5.28 |
| 11/17/09 13:04:49 | 22350 | 12.43 | 2.27 | 0.82 | 0.23 | 5.30 |
| 11/17/09 13:05:19 | 22380 | 12.44 | 2.48 | 0.92 | 0.24 | 5.32 |
| 11/17/09 13:05:49 | 22410 | 12.41 | 2.62 | 1.00 | 0.23 | 5.32 |
| 11/17/09 13:06:19 | 22440 | 12.46 | 2.63 | 0.92 | 0.22 | 5.30 |
| 11/17/09 13:06:49 | 22470 | 12.45 | 2.58 | 0.82 | 0.24 | 5.31 |
| 11/17/09 13:07:19 | 22500 | 12.43 | 2.50 | 0.93 | 0.23 | 5.32 |
| 11/17/09 13:07:49 | 22530 | 12.49 | 2.55 | 0.98 | 0.22 | 5.28 |
| 11/17/09 13:08:19 | 22560 | 12.44 | 2.41 | 0.96 | 0.21 | 5.31 |
| 11/17/09 13:08:49 | 22590 | 12.41 | 2.45 | 0.99 | 0.22 | 5.34 |
| 11/17/09 13:09:19 | 22620 | 12.40 | 2.56 | 1.00 | 0.22 | 5.33 |
| 11/17/09 13:09:49 | 22650 | 12.39 | 2.65 | 1.01 | 0.23 | 5.36 |
| 11/17/09 13:10:19 | 22680 | 12.47 | 2.63 | 1.10 | 0.23 | 5.29 |
| 11/17/09 13:10:49 | 22710 | 12.54 | 2.37 | 1.11 | 0.21 | 5.26 |
| 11/17/09 13:11:19 | 22740 | 12.51 | 2.10 | 0.89 | 0.21 | 5.27 |
| 11/17/09 13:11:49 | 22770 | 12.49 | 2.04 | 0.97 | 0.21 | 5.29 |
| 11/17/09 13:12:19 | 22800 | 12.45 | 2.18 | 0.92 | 0.23 | 5.32 |
| 11/17/09 13:12:49 | 22830 | 12.44 | 2.36 | 0.95 | 0.23 | 5.30 |
| 11/17/09 13:13:19 | 22860 | 12.44 | 2.46 | 0.92 | 0.21 | 5.32 |
| 11/17/09 13:13:49 | 22890 | 12.43 | 2.57 | 0.84 | 0.23 | 5.31 |
| 11/17/09 13:14:19 | 22920 | 12.43 | 2.59 | 0.85 | 0.23 | 5.33 |
| 11/17/09 13:14:49 | 22950 | 12.47 | 2.53 | 0.82 | 0.21 | 5.28 |
| 11/17/09 13:15:19 | 22980 | 12.40 | 2.38 | 0.88 | 0.22 | 5.35 |
| 11/17/09 13:15:49 | 23010 | 12.39 | 2.37 | 1.02 | 0.22 | 5.34 |
| 11/17/09 13:16:19 | 23040 | 12.38 | 2.42 | 1.08 | 0.23 | 5.36 |
| 11/17/09 13:16:49 | 23070 | 12.41 | 2.51 | 1.13 | 0.22 | 5.33 |
| 11/17/09 13:17:19 | 23100 | 12.45 | 2.42 | 1.03 | 0.21 | 5.31 |
| 11/17/09 13:17:49 | 23130 | 12.46 | 2.23 | 0.98 | 0.23 | 5.32 |
| 11/17/09 13:18:19 | 23160 | 12.44 | 2.17 | 0.93 | 0.21 | 5.32 |
| 11/17/09 13:18:49 | 23190 | 12.44 | 2.23 | 0.89 | 0.20 | 5.33 |
| 11/17/09 13:19:19 | 23220 | 12.49 | 2.35 | 0.89 | 0.21 | 5.29 |
| 11/17/09 13:19:49 | 23250 | 12.49 | 2.38 | 0.84 | 0.21 | 5.31 |
| 11/17/09 13:20:19 | 23280 | 12.47 | 2.40 | 0.84 | 0.20 | 5.31 |
| 11/17/09 13:20:49 | 23310 | 12.47 | 2.51 | 0.76 | 0.20 | 5.31 |
| 11/17/09 13:21:19 | 23340 | 12.47 | 2.59 | 0.76 | 0.21 | 5.31 |
| 11/17/09 13:21:49 | 23370 | 12.44 | 2.66 | 0.74 | 0.21 | 5.33 |
| 11/17/09 13:22:19 | 23400 | 12.44 | 2.64 | 0.75 | 0.21 | 5.34 |
| 11/17/09 13:22:49 | 23430 | 12.40 | 2.61 | 0.96 | 0.21 | 5.36 |
| 11/17/09 13:23:19 | 23460 | 12.44 | 2.54 | 0.99 | 0.22 | 5.35 |
| 11/17/09 13:23:49 | 23490 | 12.47 | 2.37 | 0.94 | 0.21 | 5.30 |
| 11/17/09 13:24:19 | 23520 | 12.50 | 2.19 | 0.95 | 0.21 | 5.31 |
| 11/17/09 13:24:49 | 23550 | 12.41 | 2.09 | 1.04 | 0.23 | 5.35 |
| 11/17/09 13:25:19 | 23580 | 12.40 | 2.21 | 1.18 | 0.24 | 5.37 |
| 11/17/09 13:25:49 | 23610 | 12.40 | 2.36 | 1.10 | 0.23 | 5.36 |
| 11/17/09 13:26:19 | 23640 | 12.47 | 2.46 | 0.99 | 0.22 | 5.32 |
| 11/17/09 13:26:49 | 23670 | 12.50 | 2.34 | 0.92 | 0.20 | 5.30 |
| 11/17/09 13:27:19 | 23700 | 12.46 | 2.23 | 0.86 | 0.22 | 5.32 |
| 11/17/09 13:27:49 | 23730 | 12.47 | 2.26 | 0.92 | 0.22 | 5.32 |
| 11/17/09 13:28:19 | 23760 | 12.44 | 2.44 | 0.86 | 0.21 | 5.32 |
| 11/17/09 13:28:49 | 23790 | 12.40 | 2.60 | 0.87 | 0.22 | 5.36 |
| 11/17/09 13:29:19 | 23820 | 12.41 | 2.71 | 0.83 | 0.23 | 5.34 |
| 11/17/09 13:29:49 | 23850 | 12.41 | 2.69 | 0.92 | 0.21 | 5.35 |
| 11/17/09 13:30:19 | 23880 | 12.47 | 2.56 | 0.91 | 0.21 | 5.31 |
| 11/17/09 13:30:49 | 23910 | 12.47 | 2.38 | 0.85 | 0.22 | 5.31 |
| 11/17/09 13:31:19 | 23940 | 12.48 | 2.27 | 0.79 | 0.21 | 5.32 |
| 11/17/09 13:31:49 | 23970 | 12.45 | 2.32 | 0.79 | 0.20 | 5.31 |
| 11/17/09 13:32:19 | 24000 | 12.43 | 2.42 | 0.84 | 0.20 | 5.34 |
| 11/17/09 13:32:49 | 24030 | 12.45 | 2.57 | 0.73 | 0.20 | 5.31 |
| 11/17/09 13:33:19 | 24060 | 12.46 | 2.53 | 0.68 | 0.19 | 5.33 |
| 11/17/09 13:33:49 | 24090 | 12.48 | 2.42 | 0.65 | 0.19 | 5.30 |
| 11/17/09 13:34:19 | 24120 | 12.48 | 2.33 | 0.66 | 0.20 | 5.31 |
| 11/17/09 13:34:49 | 24150 | 12.52 | 2.31 | 0.64 | 0.19 | 5.28 |
| 11/17/09 13:35:19 | 24180 | 12.49 | 2.32 | 0.64 | 0.19 | 5.30 |
| 11/17/09 13:35:49 | 24210 | 12.49 | 2.38 | 0.65 | 0.19 | 5.31 |

Florida Power and Light
Mitsubishi, 501G, Unit #2C
West County Energy Center

Fuel Data

| | | |
|--------------------------|-----------|----------------|
| Fuel Fd factor | 8.648 | SCF scfh/MMBtu |
| Fuel Heating Value (Btu) | 1,002 | Btu/SCF fuel |
| Turbine Fuel Flow | 1,643 | lb/min |
| Duct Burner Fuel Flow | 151 | lb/min |
| Total Fuel Flow | 2,460,679 | SCFH |

Weather Data

| | | |
|---------------------|----------|------------------------------|
| Barometric Pressure | 29.97 | In. Hg |
| Relative Humidity | 60 | % |
| Ambient Temperature | 78 | °F |
| Specific Humidity | 0.012283 | lb H ₂ O / lb air |

Unit Data

| | | |
|--------------------------|------------|-----------|
| Unit Load | 244.7 | megawatts |
| Combustor Inlet Pressure | 264 | psig |
| Meas. Stack Moisture | 9.8 | % |
| Stack Exhaust Flow (M19) | 52,411,565 | SCFH |

Data from: NHG Run 1

Base W/Db Load, Run - 2-1

| Date/Time (mm/dd/yy hh:mm:ss) | Elapsed Time (seconds) | O ₂ (%) | NOx (ppmv d) | CO (ppmv d) | VOC (ppmv w) | CO ₂ (%) |
|----------------------------------|---------------------------|-----------------------|-----------------|----------------|-----------------|------------------------|
| 11/17/09 13:36:19 | 24240 | 12.44 | 2.55 | 0.65 | 0.19 | 5.33 |
| 11/17/09 13:36:49 | 24270 | 12.46 | 2.72 | 0.67 | 0.18 | 5.33 |
| 11/17/09 13:37:19 | 24300 | 12.52 | 2.72 | 0.70 | 0.19 | 5.29 |
| 11/17/09 13:37:49 | 24330 | 12.51 | 2.52 | 0.70 | 0.19 | 5.31 |
| 11/17/09 13:38:19 | 24360 | 12.48 | 2.42 | 0.69 | 0.18 | 5.31 |
| 11/17/09 13:38:49 | 24390 | 12.44 | 2.40 | 0.73 | 0.19 | 5.34 |
| 11/17/09 13:39:19 | 24420 | 12.44 | 2.53 | 0.75 | 0.20 | 5.33 |
| 11/17/09 13:39:49 | 24450 | 12.43 | 2.54 | 0.89 | 0.19 | 5.35 |
| 11/17/09 13:40:19 | 24480 | 12.55 | 2.48 | 0.77 | 0.19 | 5.27 |
| 11/17/09 13:40:49 | 24510 | 12.67 | 2.17 | 0.81 | 0.20 | 5.26 |
| 11/17/09 13:41:19 | 24540 | 12.55 | 2.04 | 0.71 | 0.19 | 5.28 |
| 11/17/09 13:41:49 | 24570 | 12.55 | 2.07 | 0.66 | 0.17 | 5.28 |
| 11/17/09 13:42:19 | 24600 | 12.53 | 2.23 | 0.60 | 0.17 | 5.31 |
| 11/17/09 13:42:49 | 24630 | 12.49 | 2.39 | 0.65 | 0.19 | 5.31 |
| 11/17/09 13:43:19 | 24660 | 12.47 | 2.50 | 0.67 | 0.19 | 5.34 |
| 11/17/09 13:43:49 | 24690 | 12.42 | 2.62 | 0.67 | 0.18 | 5.35 |
| 11/17/09 13:44:19 | 24720 | 12.47 | 2.69 | 0.76 | 0.19 | 5.33 |
| 11/17/09 13:44:49 | 24750 | 12.54 | 2.60 | 0.72 | 0.19 | 5.29 |
| 11/17/09 13:45:19 | 24780 | 12.52 | 2.38 | 0.71 | 0.16 | 5.30 |
| 11/17/09 13:45:49 | 24810 | 12.48 | 2.35 | 0.65 | 0.18 | 5.33 |
| 11/17/09 13:46:19 | 24840 | 12.42 | 2.41 | 0.60 | 0.20 | 5.35 |
| 11/17/09 13:46:49 | 24870 | 12.41 | 2.55 | 0.78 | 0.19 | 5.37 |
| 11/17/09 13:47:19 | 24900 | 12.43 | 2.61 | 0.73 | 0.18 | 5.34 |
| 11/17/09 13:47:49 | 24930 | 12.44 | 2.48 | 0.81 | 0.19 | 5.34 |
| 11/17/09 13:48:19 | 24960 | 12.46 | 2.32 | 0.73 | 0.19 | 5.31 |
| 11/17/09 13:48:49 | 24990 | 12.47 | 2.19 | 0.76 | 0.17 | 5.34 |
| 11/17/09 13:49:19 | 25020 | 12.51 | 2.18 | 0.77 | 0.18 | 5.30 |
| 11/17/09 13:49:49 | 25050 | 12.49 | 2.15 | 0.74 | 0.19 | 5.32 |
| 11/17/09 13:50:19 | 25080 | 12.45 | 2.23 | 0.72 | 0.17 | 5.34 |
| 11/17/09 13:50:49 | 25110 | 12.46 | 2.40 | 0.64 | 0.17 | 5.33 |
| 11/17/09 13:51:19 | 25140 | 12.47 | 2.52 | 0.67 | 0.19 | 5.34 |
| 11/17/09 13:51:49 | 25170 | 12.48 | 2.48 | 0.75 | 0.18 | 5.32 |
| 11/17/09 13:52:19 | 25200 | 12.43 | 2.49 | 0.69 | 0.19 | 5.37 |
| 11/17/09 13:52:49 | 25230 | 12.45 | 2.53 | 0.75 | 0.19 | 5.35 |
| 11/17/09 13:53:19 | 25260 | 12.46 | 2.62 | 0.70 | 0.18 | 5.37 |
| 11/17/09 13:53:49 | 25290 | 12.54 | 2.52 | 0.71 | 0.17 | 5.30 |

RAW AVERAGE

| | O ₂ (%) | NOx (ppmv d) | CO (ppmv d) | VOC (ppmv w) | CO ₂ (%) |
|-----------------------------|-----------------------|-----------------|----------------|-----------------|------------------------|
| Serial Number: INST-N2-0001 | INST-N2-0001 | INST-CO-0015 | INST-TH-0009 | INST-C2-0009 | |
| Initial Zero | 0.30 | 0.07 | 0.01 | 0.01 | 0.39 |
| Final Zero | 0.35 | 0.07 | 0.01 | 0.06 | 0.47 |
| Avg. Zero | 0.33 | 0.07 | 0.01 | 0.04 | 0.43 |
| Initial UpScale | 12.20 | 5.00 | 4.94 | 2.86 | 9.20 |
| Final UpScale | 12.14 | 5.01 | 4.87 | 3.14 | 9.42 |
| Avg. UpScale | 12.17 | 5.01 | 4.91 | 3.00 | 9.31 |
| Upscale Cal Gas | 12.10 | 4.99 | 4.95 | 3.00 | 8.83 |

| EMISSIONS DATA | O ₂ | NOx | CO | VOC | CO ₂ |
|--|----------------|-------|-------|-------|-----------------|
| Corrected Raw Average (ppm% dry basis) | 12.40 | 2.38 | 0.82 | 0.20 | 4.85 |
| Concentration (ppm@ 15%O ₂) | N/A | 1.65 | 0.57 | 0.14 | N/A |
| Concentration (ppm@ 15%O ₂ & ISO) | N/A | 1.75 | 0.60 | 0.15 | N/A |
| Emission Rate (lb/hr) | N/A | 14.89 | 3.13 | 0.43 | N/A |
| Emission Rate (tons/year) at 8760 hr/yr | N/A | 55.22 | 13.71 | 1.89 | N/A |
| Emission Rate (lb/MMBtu) | N/A | 0.006 | 0.001 | 0.000 | N/A |

Florida Power and Light
Mitsubishi, 601G, Unit #2C
West County Energy Center

Fuel Data

| | | |
|--------------------------|-----------|--------------|
| Fuel Fd factor | 6.648 | SCF est/MBtu |
| Fuel Heating Value (HHV) | 1.032 | Btu/SCF fuel |
| Turbine Fuel Flow | 1.642 | lb/min |
| Duct Burner Fuel Flow | 151 | lb/min |
| Total Fuel Flow | 2,456,836 | SCFH |

Weather Data

| | | |
|---------------------|----------|------------------------------|
| Barometric Pressure | 29.94 | in. Hg |
| Relative Humidity | 56 | % |
| Ambient Temperature | 79 | °F |
| Specific Humidity | 0.012283 | lb H ₂ O / lb air |

Unit Data

| | | |
|--------------------------|------------|-----------|
| Unit Load | 244.4 | megawatts |
| Combustor Inlet Pressure | 264 | psig |
| Meas. Stack Moisture | 10.3 | % |
| Stack Exhaust Flow (M19) | 52,528,378 | SCFH |

Data from: N=0 Run 2

Base W/Db Load, Run - 2-2

| Date/Time (mm/dd/yy hh:mm:ss) | Elapsed Time (seconds) | O ₂ (%) | NOx (ppmvd) | CO (ppmvd) | VOC (ppmvv) | CO ₂ (%) |
|----------------------------------|---------------------------|-----------------------|----------------|---------------|----------------|------------------------|
| 11/17/09 14:04:19 | 25920 | 12.50 | 2.55 | 0.54 | 0.15 | 5.35 |
| 11/17/09 14:04:49 | 25950 | 12.47 | 2.57 | 0.61 | 0.15 | 5.35 |
| 11/17/09 14:05:19 | 25980 | 12.49 | 2.59 | 0.62 | 0.16 | 5.35 |
| 11/17/09 14:05:49 | 26010 | 12.45 | 2.55 | 0.55 | 0.16 | 5.37 |
| 11/17/09 14:06:19 | 26040 | 12.46 | 2.52 | 0.59 | 0.16 | 5.36 |
| 11/17/09 14:06:49 | 26070 | 12.42 | 2.47 | 0.71 | 0.17 | 5.40 |
| 11/17/09 14:07:19 | 26100 | 12.40 | 2.47 | 0.78 | 0.17 | 5.40 |
| 11/17/09 14:07:49 | 26130 | 12.50 | 2.49 | 0.71 | 0.15 | 5.35 |
| 11/17/09 14:08:19 | 26160 | 12.47 | 2.22 | 0.80 | 0.16 | 5.35 |
| 11/17/09 14:08:49 | 26190 | 12.48 | 2.12 | 0.73 | 0.18 | 5.36 |
| 11/17/09 14:09:19 | 26220 | 12.49 | 2.14 | 0.73 | 0.18 | 5.34 |
| 11/17/09 14:09:49 | 26250 | 12.47 | 2.22 | 0.74 | 0.17 | 5.37 |
| 11/17/09 14:10:19 | 26280 | 12.41 | 2.37 | 0.75 | 0.17 | 5.41 |
| 11/17/09 14:10:49 | 26310 | 12.39 | 2.55 | 0.96 | 0.19 | 5.42 |
| 11/17/09 14:11:19 | 26340 | 12.41 | 2.61 | 1.00 | 0.20 | 5.42 |
| 11/17/09 14:11:49 | 26370 | 12.46 | 2.50 | 1.00 | 0.18 | 5.37 |
| 11/17/09 14:12:19 | 26400 | 12.52 | 2.35 | 1.02 | 0.17 | 5.36 |
| 11/17/09 14:12:49 | 26430 | 12.47 | 2.11 | 0.94 | 0.18 | 5.38 |
| 11/17/09 14:13:19 | 26460 | 12.44 | 2.17 | 0.94 | 0.18 | 5.41 |
| 11/17/09 14:13:49 | 26490 | 12.41 | 2.33 | 0.95 | 0.18 | 5.43 |
| 11/17/09 14:14:19 | 26520 | 12.45 | 2.50 | 1.02 | 0.18 | 5.42 |
| 11/17/09 14:14:49 | 26550 | 12.39 | 2.59 | 0.98 | 0.18 | 5.44 |
| 11/17/09 14:15:19 | 26580 | 12.43 | 2.63 | 1.05 | 0.17 | 5.43 |
| 11/17/09 14:15:49 | 26610 | 12.47 | 2.50 | 1.03 | 0.18 | 5.40 |
| 11/17/09 14:16:19 | 26640 | 12.46 | 2.29 | 1.06 | 0.18 | 5.42 |
| 11/17/09 14:16:49 | 26670 | 12.50 | 2.26 | 0.95 | 0.16 | 5.39 |
| 11/17/09 14:17:19 | 26700 | 12.46 | 2.27 | 0.82 | 0.16 | 5.41 |
| 11/17/09 14:17:49 | 26730 | 12.50 | 2.37 | 0.71 | 0.16 | 5.40 |
| 11/17/09 14:18:19 | 26760 | 12.45 | 2.49 | 0.72 | 0.17 | 5.41 |
| 11/17/09 14:18:49 | 26790 | 12.48 | 2.62 | 0.76 | 0.16 | 5.41 |
| 11/17/09 14:19:19 | 26820 | 12.51 | 2.67 | 0.72 | 0.15 | 5.38 |
| 11/17/09 14:19:49 | 26850 | 12.45 | 2.56 | 0.74 | 0.16 | 5.42 |
| 11/17/09 14:20:19 | 26880 | 12.47 | 2.56 | 0.86 | 0.17 | 5.40 |
| 11/17/09 14:20:49 | 26910 | 12.48 | 2.55 | 0.92 | 0.16 | 5.40 |
| 11/17/09 14:21:19 | 26940 | 12.43 | 2.46 | 0.98 | 0.17 | 5.44 |
| 11/17/09 14:21:49 | 26970 | 12.42 | 2.47 | 0.95 | 0.18 | 5.43 |
| 11/17/09 14:22:19 | 27000 | 12.44 | 2.43 | 0.91 | 0.17 | 5.43 |
| 11/17/09 14:22:49 | 27030 | 12.45 | 2.33 | 0.86 | 0.16 | 5.40 |
| 11/17/09 14:23:19 | 27060 | 12.46 | 2.24 | 0.94 | 0.17 | 5.41 |
| 11/17/09 14:23:49 | 27090 | 12.42 | 2.20 | 1.07 | 0.18 | 5.42 |
| 11/17/09 14:24:19 | 27120 | 12.41 | 2.30 | 1.08 | 0.18 | 5.44 |
| 11/17/09 14:24:49 | 27150 | 12.44 | 2.40 | 1.00 | 0.16 | 5.41 |
| 11/17/09 14:25:19 | 27180 | 12.40 | 2.38 | 1.00 | 0.18 | 5.44 |
| 11/17/09 14:25:49 | 27210 | 12.44 | 2.37 | 1.07 | 0.17 | 5.43 |
| 11/17/09 14:26:19 | 27240 | 12.42 | 2.28 | 1.07 | 0.17 | 5.42 |
| 11/17/09 14:26:49 | 27270 | 12.41 | 2.24 | 1.14 | 0.17 | 5.45 |
| 11/17/09 14:27:19 | 27300 | 12.41 | 2.31 | 1.12 | 0.19 | 5.43 |
| 11/17/09 14:27:49 | 27330 | 12.43 | 2.35 | 1.16 | 0.18 | 5.44 |
| 11/17/09 14:28:19 | 27360 | 12.46 | 2.33 | 1.10 | 0.17 | 5.40 |
| 11/17/09 14:28:49 | 27390 | 12.44 | 2.32 | 1.17 | 0.17 | 5.43 |
| 11/17/09 14:29:19 | 27420 | 12.43 | 2.41 | 1.10 | 0.17 | 5.44 |
| 11/17/09 14:29:49 | 27450 | 12.41 | 2.59 | 1.03 | 0.16 | 5.45 |
| 11/17/09 14:30:19 | 27480 | 12.45 | 2.73 | 1.07 | 0.17 | 5.43 |
| 11/17/09 14:30:49 | 27510 | 12.44 | 2.63 | 1.06 | 0.17 | 5.42 |
| 11/17/09 14:31:19 | 27540 | 12.47 | 2.59 | 0.89 | 0.15 | 5.42 |
| 11/17/09 14:31:49 | 27570 | 12.41 | 2.48 | 0.89 | 0.15 | 5.44 |
| 11/17/09 14:32:19 | 27600 | 12.45 | 2.59 | 0.82 | 0.16 | 5.43 |
| 11/17/09 14:32:49 | 27630 | 12.46 | 2.60 | 0.84 | 0.15 | 5.42 |
| 11/17/09 14:33:19 | 27660 | 12.48 | 2.63 | 0.86 | 0.16 | 5.41 |
| 11/17/09 14:33:49 | 27690 | 12.41 | 2.58 | 1.01 | 0.17 | 5.46 |
| 11/17/09 14:34:19 | 27720 | 12.48 | 2.75 | 0.94 | 0.16 | 5.41 |
| 11/17/09 14:34:49 | 27750 | 12.44 | 2.74 | 0.93 | 0.17 | 5.45 |
| 11/17/09 14:35:19 | 27780 | 12.45 | 2.67 | 1.00 | 0.16 | 5.43 |
| 11/17/09 14:35:49 | 27810 | 12.42 | 2.63 | 0.99 | 0.18 | 5.46 |
| 11/17/09 14:36:19 | 27840 | 12.46 | 2.63 | 0.97 | 0.18 | 5.42 |
| 11/17/09 14:36:49 | 27870 | 12.45 | 2.46 | 0.94 | 0.16 | 5.43 |
| 11/17/09 14:37:19 | 27900 | 12.46 | 2.48 | 0.83 | 0.16 | 5.43 |
| 11/17/09 14:37:49 | 27930 | 12.45 | 2.48 | 0.83 | 0.16 | 5.43 |
| 11/17/09 14:38:19 | 27960 | 12.41 | 2.62 | 0.87 | 0.16 | 5.47 |
| 11/17/09 14:38:49 | 27990 | 12.40 | 2.72 | 0.99 | 0.16 | 5.46 |
| 11/17/09 14:39:19 | 28020 | 12.45 | 2.79 | 0.98 | 0.16 | 5.44 |
| 11/17/09 14:39:49 | 28050 | 12.46 | 2.71 | 0.95 | 0.18 | 5.42 |
| 11/17/09 14:40:19 | 28080 | 12.43 | 2.58 | 0.91 | 0.17 | 5.46 |
| 11/17/09 14:40:49 | 28110 | 12.46 | 2.60 | 0.94 | 0.17 | 5.43 |
| 11/17/09 14:41:19 | 28140 | 12.42 | 2.61 | 1.12 | 0.17 | 5.45 |
| 11/17/09 14:41:49 | 28170 | 12.45 | 2.72 | 0.98 | 0.16 | 5.44 |
| 11/17/09 14:42:19 | 28200 | 12.51 | 2.61 | 0.88 | 0.15 | 5.40 |
| 11/17/09 14:42:49 | 28230 | 12.45 | 2.52 | 0.81 | 0.15 | 5.45 |
| 11/17/09 14:43:19 | 28260 | 12.46 | 2.49 | 0.85 | 0.16 | 5.43 |
| 11/17/09 14:43:49 | 28290 | 12.43 | 2.60 | 0.83 | 0.16 | 5.46 |
| 11/17/09 14:44:19 | 28320 | 12.44 | 2.74 | 0.86 | 0.15 | 5.44 |
| 11/17/09 14:44:49 | 28350 | 12.43 | 2.82 | 0.93 | 0.16 | 5.47 |
| 11/17/09 14:45:19 | 28380 | 12.47 | 2.82 | 0.85 | 0.16 | 5.43 |
| 11/17/09 14:45:49 | 28410 | 12.51 | 2.71 | 0.72 | 0.15 | 5.42 |

Florida Power and Light
Mitsubishi, 501G, Unit #2C
West County Energy Center

Fuel Data

| | | |
|--------------------------|-----------|----------------|
| Fuel Fd factor | 8.648 | SCF estv/MMBtu |
| Fuel Heating Value (HHV) | 1,002 | Btu/SCF fuel |
| Turbine Fuel Flow | 1,642 | lb/min |
| Duct Burner Fuel Flow | 151 | lb/min |
| Total Fuel Flow | 2,459,836 | SCFH |

Weather Data

| | | |
|---------------------|----------|------------------------------|
| Barometric Pressure | 29.64 | in. Hg |
| Relative Humidity | 58 | % |
| Ambient Temperature | 79 | ° F |
| Specific Humidity | 0.012283 | lb H ₂ O / lb air |

Unit Data

| | | |
|--------------------------|------------|-----------|
| Unit Load | 244.4 | megawatts |
| Combustor Inlet Pressure | 264 | psig |
| Meas. Stack Moisture | 10.3 | % |
| Stack Exhaust Flow (M19) | 52,528,376 | SCFH |

Data from: NH3 Run 2

Base W/Db Load, Run - 2-2

| Date/Time (mm/dd/yy hh:mm:ss) | Elapsed Time (seconds) | O ₂ (%) | NOx (ppmvd) | CO (ppmvd) | VOC (ppmvw) | CO ₂ (%) |
|----------------------------------|---------------------------|-----------------------|----------------|---------------|----------------|------------------------|
| 11/17/09 14:46:19 | 28440 | 12.48 | 2.57 | 0.71 | 0.14 | 5.44 |
| 11/17/09 14:46:49 | 28470 | 12.48 | 2.51 | 0.66 | 0.16 | 5.45 |
| 11/17/09 14:47:19 | 28500 | 12.49 | 2.60 | 0.62 | 0.17 | 5.45 |
| 11/17/09 14:47:49 | 28530 | 12.47 | 2.69 | 0.63 | 0.15 | 5.45 |
| 11/17/09 14:48:19 | 28560 | 12.41 | 2.72 | 0.62 | 0.15 | 5.50 |
| 11/17/09 14:48:49 | 28590 | 12.49 | 2.81 | 0.64 | 0.15 | 5.44 |
| 11/17/09 14:49:19 | 28620 | 12.48 | 2.61 | 0.66 | 0.16 | 5.47 |
| 11/17/09 14:49:49 | 28650 | 12.41 | 2.46 | 0.79 | 0.16 | 5.49 |
| 11/17/09 14:50:19 | 28680 | 12.45 | 2.48 | 0.87 | 0.14 | 5.49 |
| 11/17/09 14:50:49 | 28710 | 12.50 | 2.51 | 0.80 | 0.15 | 5.45 |
| 11/17/09 14:51:19 | 28740 | 12.52 | 2.37 | 0.79 | 0.15 | 5.45 |
| 11/17/09 14:51:49 | 28770 | 12.46 | 2.32 | 0.87 | 0.14 | 5.49 |
| 11/17/09 14:52:19 | 28800 | 12.46 | 2.48 | 0.89 | 0.15 | 5.48 |
| 11/17/09 14:52:49 | 28830 | 12.40 | 2.68 | 0.87 | 0.15 | 5.53 |
| 11/17/09 14:53:19 | 28860 | 12.48 | 2.83 | 0.84 | 0.16 | 5.47 |
| 11/17/09 14:53:49 | 28890 | 12.48 | 2.70 | 0.79 | 0.14 | 5.48 |
| 11/17/09 14:54:19 | 28920 | 12.46 | 2.52 | 0.78 | 0.15 | 5.49 |
| 11/17/09 14:54:49 | 28950 | 12.44 | 2.46 | 0.78 | 0.16 | 5.51 |
| 11/17/09 14:55:19 | 28980 | 12.47 | 2.58 | 0.80 | 0.15 | 5.48 |
| 11/17/09 14:55:49 | 29010 | 12.45 | 2.66 | 0.80 | 0.14 | 5.49 |
| 11/17/09 14:56:19 | 29040 | 12.47 | 2.69 | 0.72 | 0.15 | 5.49 |
| 11/17/09 14:56:49 | 29070 | 12.39 | 2.62 | 0.90 | 0.17 | 5.51 |
| 11/17/09 14:57:19 | 29100 | 12.43 | 2.69 | 1.01 | 0.16 | 5.51 |
| 11/17/09 14:57:49 | 29130 | 12.47 | 2.74 | 0.92 | 0.15 | 5.46 |
| 11/17/09 14:58:19 | 29160 | 12.47 | 2.56 | 0.78 | 0.15 | 5.48 |
| 11/17/09 14:58:49 | 29190 | 12.45 | 2.49 | 0.76 | 0.14 | 5.48 |
| 11/17/09 14:59:19 | 29220 | 12.44 | 2.47 | 0.70 | 0.13 | 5.49 |
| 11/17/09 14:59:49 | 29250 | 12.43 | 2.60 | 0.74 | 0.15 | 5.50 |
| 11/17/09 15:00:19 | 29280 | 12.47 | 2.66 | 0.73 | 0.14 | 5.47 |
| 11/17/09 15:00:49 | 29310 | 12.45 | 2.60 | 0.71 | 0.13 | 5.50 |
| 11/17/09 15:01:19 | 29340 | 12.46 | 2.58 | 0.66 | 0.14 | 5.48 |
| 11/17/09 15:01:49 | 29370 | 12.47 | 2.53 | 0.76 | 0.14 | 5.50 |
| 11/17/09 15:02:19 | 29400 | 12.43 | 2.58 | 0.81 | 0.14 | 5.51 |
| 11/17/09 15:02:49 | 29430 | 12.41 | 2.64 | 0.93 | 0.14 | 5.55 |
| 11/17/09 15:03:19 | 29460 | 12.47 | 2.69 | 0.90 | 0.15 | 5.51 |
| 11/17/09 15:03:49 | 29490 | 12.50 | 2.56 | 0.84 | 0.14 | 5.49 |

RAW AVERAGE

O₂ 12.45 NOx 2.52 CO 0.87 VOC 0.16 CO₂ 5.44

Serial Number: INST-N2-0001 INST-N2-0001 INST-CO-0015 INST-TH-0009 INST-C2-0009

| | O ₂ (%) | NOx (ppmvd) | CO (ppmvd) | VOC (ppmvw) | CO ₂ (%) |
|-----------------|-----------------------|----------------|---------------|----------------|------------------------|
| Initial Zero | 0.35 | 0.07 | 0.01 | 0.06 | 0.47 |
| Final Zero | 0.35 | 0.07 | 0.01 | 0.06 | 0.47 |
| Avg. Zero | 0.35 | 0.07 | 0.01 | 0.06 | 0.47 |
| Initial UpScale | 12.14 | 5.01 | 4.87 | 3.14 | 9.42 |
| Final UpScale | 12.14 | 5.01 | 4.87 | 3.14 | 9.42 |
| Avg. UpScale | 12.14 | 5.01 | 4.87 | 3.14 | 9.42 |

Upscale Cal Gas

O₂ 12.10 NOx 4.99 CO 4.95 VOC 3.00 CO₂ 8.83

| EMISSIONS DATA | O ₂ | NOx | CO | VOC | CO ₂ |
|--|----------------|-------|-------|-------|-----------------|
| Corrected Raw Average (ppm% dry basis) | 12.42 | 2.48 | 0.87 | 0.12 | 4.90 |
| Concentration (ppm@ 15%O ₂) | N/A | 1.72 | 0.61 | 0.08 | N/A |
| Concentration (ppm@ 15%O ₂ & ISO) | N/A | 1.82 | 0.64 | 0.09 | N/A |
| Emission Rate (lb/hr) | N/A | 15.54 | 3.34 | 0.25 | N/A |
| Emission Rate (tons/year) at 8760 hr/yr | N/A | 68.08 | 14.62 | 1.12 | N/A |
| Emission Rate (lb/MMBtu) | N/A | 0.006 | 0.001 | 0.000 | N/A |

Florida Power and Light
 Mitsubishi, 501G, Unit #2C
 West County Energy Center

Fuel Data

| | | |
|--------------------------|-----------|--------------|
| Fuel Fd factor | 8.048 | SCF edv/MWbu |
| Fuel Heating Value (HHV) | 1.002 | Btu/SCF fuel |
| Turbine Fuel Flow | 1.664 | lb/min |
| Duct Burner Fuel Flow | 138 | lb/min |
| Total Fuel Flow | 2,472.413 | SCFH |

Weather Data

| | | |
|---------------------|----------|------------------------------|
| Barometric Pressure | 29.92 | in. Hg |
| Relative Humidity | 58 | % |
| Ambient Temperature | 79 | *F |
| Specific Humidity | 0.012291 | lb H ₂ O / lb air |

Unit Data

| | | |
|--------------------------|------------|-----------|
| Unit Load | 245.1 | megawatts |
| Combustor Inlet Pressure | 264 | psig |
| Meas. Stack Moisture | 10.4 | % |
| Stack Exhaust Flow (M19) | 53,205,584 | SCFH |

Data from: N-G Run 3

Base W/Db Load, Run - 2-3

| Date/Time (mm/dd/yy hh:mm:ss) | Elapsed Time (seconds) | O ₂ (%) | NOx (ppmv) | CO (ppmv) | VOC (ppmv) | CO ₂ (%) |
|----------------------------------|---------------------------|-----------------------|---------------|--------------|---------------|------------------------|
| 11/17/09 15:17:19 | 30300 | 12.58 | 2.34 | 0.73 | 0.13 | 5.46 |
| 11/17/09 15:17:49 | 30330 | 12.54 | 2.22 | 0.77 | 0.15 | 5.46 |
| 11/17/09 15:18:19 | 30360 | 12.51 | 2.25 | 0.75 | 0.14 | 5.50 |
| 11/17/09 15:18:49 | 30390 | 12.46 | 2.32 | 0.77 | 0.14 | 5.52 |
| 11/17/09 15:19:19 | 30420 | 12.47 | 2.44 | 0.67 | 0.15 | 5.51 |
| 11/17/09 15:19:49 | 30450 | 12.45 | 2.51 | 0.80 | 0.17 | 5.53 |
| 11/17/09 15:20:19 | 30480 | 12.49 | 2.56 | 0.79 | 0.15 | 5.51 |
| 11/17/09 15:20:49 | 30510 | 12.53 | 2.40 | 0.77 | 0.14 | 5.49 |
| 11/17/09 15:21:19 | 30540 | 12.46 | 2.19 | 0.84 | 0.15 | 5.52 |
| 11/17/09 15:21:49 | 30570 | 12.49 | 2.23 | 0.93 | 0.15 | 5.52 |
| 11/17/09 15:22:19 | 30600 | 12.48 | 2.31 | 0.85 | 0.14 | 5.51 |
| 11/17/09 15:22:49 | 30630 | 12.53 | 2.37 | 0.81 | 0.13 | 5.49 |
| 11/17/09 15:23:19 | 30660 | 12.52 | 2.33 | 0.83 | 0.15 | 5.48 |
| 11/17/09 15:23:49 | 30690 | 12.49 | 2.29 | 0.99 | 0.16 | 5.52 |
| 11/17/09 15:24:19 | 30720 | 12.52 | 2.40 | 0.91 | 0.15 | 5.49 |
| 11/17/09 15:24:49 | 30750 | 12.52 | 2.49 | 0.93 | 0.15 | 5.50 |
| 11/17/09 15:25:19 | 30780 | 12.47 | 2.55 | 0.82 | 0.16 | 5.53 |
| 11/17/09 15:25:49 | 30810 | 12.55 | 2.58 | 0.83 | 0.15 | 5.48 |
| 11/17/09 15:26:19 | 30840 | 12.59 | 2.52 | 0.78 | 0.14 | 5.47 |
| 11/17/09 15:26:49 | 30870 | 12.59 | 2.42 | 0.70 | 0.14 | 5.45 |
| 11/17/09 15:27:19 | 30900 | 12.59 | 2.44 | 0.64 | 0.14 | 5.47 |
| 11/17/09 15:27:49 | 30930 | 12.56 | 2.48 | 0.65 | 0.13 | 5.47 |
| 11/17/09 15:28:19 | 30960 | 12.55 | 2.60 | 0.63 | 0.13 | 5.49 |
| 11/17/09 15:28:49 | 30990 | 12.52 | 2.70 | 0.63 | 0.14 | 5.49 |
| 11/17/09 15:29:19 | 31020 | 12.56 | 2.79 | 0.63 | 0.14 | 5.49 |
| 11/17/09 15:29:49 | 31050 | 12.55 | 2.79 | 0.63 | 0.14 | 5.48 |
| 11/17/09 15:30:19 | 31080 | 12.58 | 2.69 | 0.66 | 0.13 | 5.48 |
| 11/17/09 15:30:49 | 31110 | 12.57 | 2.56 | 0.69 | 0.14 | 5.48 |
| 11/17/09 15:31:19 | 31140 | 12.52 | 2.54 | 0.62 | 0.14 | 5.51 |
| 11/17/09 15:31:49 | 31170 | 12.49 | 2.64 | 0.70 | 0.13 | 5.52 |
| 11/17/09 15:32:19 | 31200 | 12.57 | 2.74 | 0.78 | 0.13 | 5.47 |
| 11/17/09 15:32:49 | 31230 | 12.60 | 2.52 | 0.75 | 0.14 | 5.47 |
| 11/17/09 15:33:19 | 31260 | 12.57 | 2.32 | 0.73 | 0.12 | 5.48 |
| 11/17/09 15:33:49 | 31290 | 12.52 | 2.29 | 0.69 | 0.12 | 5.50 |
| 11/17/09 15:34:19 | 31320 | 12.49 | 2.39 | 0.75 | 0.13 | 5.51 |
| 11/17/09 15:34:49 | 31350 | 12.52 | 2.49 | 0.76 | 0.13 | 5.50 |
| 11/17/09 15:35:19 | 31380 | 12.52 | 2.46 | 0.71 | 0.12 | 5.49 |
| 11/17/09 15:35:49 | 31410 | 12.57 | 2.32 | 0.73 | 0.12 | 5.47 |
| 11/17/09 15:36:19 | 31440 | 12.52 | 2.15 | 0.77 | 0.13 | 5.50 |
| 11/17/09 15:36:49 | 31470 | 12.51 | 2.14 | 0.76 | 0.14 | 5.49 |
| 11/17/09 15:37:19 | 31500 | 12.54 | 2.22 | 0.76 | 0.12 | 5.48 |
| 11/17/09 15:37:49 | 31530 | 12.56 | 2.31 | 0.73 | 0.13 | 5.46 |
| 11/17/09 15:38:19 | 31560 | 12.53 | 2.29 | 0.69 | 0.13 | 5.49 |
| 11/17/09 15:38:49 | 31590 | 12.50 | 2.35 | 0.67 | 0.14 | 5.49 |
| 11/17/09 15:39:19 | 31620 | 12.55 | 2.47 | 0.71 | 0.13 | 5.48 |
| 11/17/09 15:39:49 | 31650 | 12.56 | 2.44 | 0.77 | 0.13 | 5.46 |
| 11/17/09 15:40:19 | 31680 | 12.61 | 2.40 | 0.66 | 0.14 | 5.44 |
| 11/17/09 15:40:49 | 31710 | 12.58 | 2.30 | 0.68 | 0.14 | 5.46 |
| 11/17/09 15:41:19 | 31740 | 12.57 | 2.33 | 0.65 | 0.15 | 5.46 |
| 11/17/09 15:41:49 | 31770 | 12.55 | 2.43 | 0.64 | 0.18 | 5.48 |
| 11/17/09 15:42:19 | 31800 | 12.53 | 2.57 | 0.65 | 0.19 | 5.48 |
| 11/17/09 15:42:49 | 31830 | 12.51 | 2.66 | 0.62 | 0.18 | 5.50 |
| 11/17/09 15:43:19 | 31860 | 12.53 | 2.76 | 0.56 | 0.21 | 5.48 |
| 11/17/09 15:43:49 | 31890 | 12.49 | 2.70 | 0.63 | 0.22 | 5.53 |
| 11/17/09 15:44:19 | 31920 | 12.51 | 2.63 | 0.65 | 0.22 | 5.52 |
| 11/17/09 15:44:49 | 31950 | 12.56 | 2.51 | 0.67 | 0.24 | 5.49 |
| 11/17/09 15:45:19 | 31980 | 12.55 | 2.31 | 0.67 | 0.24 | 5.50 |
| 11/17/09 15:45:49 | 32010 | 12.52 | 2.19 | 0.67 | 0.24 | 5.52 |
| 11/17/09 15:46:19 | 32040 | 12.58 | 2.28 | 0.65 | 0.23 | 5.50 |
| 11/17/09 15:46:49 | 32070 | 12.57 | 2.28 | 0.70 | 0.23 | 5.48 |
| 11/17/09 15:47:19 | 32100 | 12.51 | 2.32 | 0.74 | 0.26 | 5.53 |
| 11/17/09 15:47:49 | 32130 | 12.47 | 2.48 | 0.90 | 0.24 | 5.54 |
| 11/17/09 15:48:19 | 32160 | 12.48 | 2.64 | 0.84 | 0.24 | 5.55 |
| 11/17/09 15:48:49 | 32190 | 12.46 | 2.69 | 0.89 | 0.24 | 5.55 |
| 11/17/09 15:49:19 | 32220 | 12.58 | 2.57 | 0.88 | 0.24 | 5.49 |
| 11/17/09 15:49:49 | 32250 | 12.62 | 2.29 | 0.89 | 0.24 | 5.48 |
| 11/17/09 15:50:19 | 32280 | 12.57 | 2.10 | 0.91 | 0.28 | 5.49 |
| 11/17/09 15:50:49 | 32310 | 12.59 | 2.15 | 0.81 | 0.31 | 5.50 |
| 11/17/09 15:51:19 | 32340 | 12.58 | 2.30 | 0.74 | 0.32 | 5.49 |
| 11/17/09 15:51:49 | 32370 | 12.54 | 2.41 | 0.65 | 0.32 | 5.52 |
| 11/17/09 15:52:19 | 32400 | 12.53 | 2.52 | 0.65 | 0.33 | 5.51 |
| 11/17/09 15:52:49 | 32430 | 12.52 | 2.59 | 0.66 | 0.33 | 5.52 |
| 11/17/09 15:53:19 | 32460 | 12.50 | 2.63 | 0.61 | 0.32 | 5.53 |
| 11/17/09 15:53:49 | 32490 | 12.49 | 2.65 | 0.60 | 0.34 | 5.53 |
| 11/17/09 15:54:19 | 32520 | 12.47 | 2.62 | 0.66 | 0.35 | 5.55 |
| 11/17/09 15:54:49 | 32550 | 12.52 | 2.56 | 0.67 | 0.35 | 5.50 |
| 11/17/09 15:55:19 | 32580 | 12.54 | 2.35 | 0.72 | 0.34 | 5.52 |
| 11/17/09 15:55:49 | 32610 | 12.48 | 2.20 | 0.72 | 0.34 | 5.53 |
| 11/17/09 15:56:19 | 32640 | 12.46 | 2.28 | 0.76 | 0.33 | 5.56 |
| 11/17/09 15:56:49 | 32670 | 12.50 | 2.41 | 0.73 | 0.32 | 5.53 |
| 11/17/09 15:57:19 | 32700 | 12.48 | 2.38 | 0.77 | 0.33 | 5.54 |
| 11/17/09 15:57:49 | 32730 | 12.45 | 2.32 | 0.84 | 0.33 | 5.56 |
| 11/17/09 15:58:19 | 32760 | 12.46 | 2.37 | 0.86 | 0.31 | 5.54 |
| 11/17/09 15:58:49 | 32790 | 12.52 | 2.34 | 0.77 | 0.32 | 5.52 |

Florida Power and Light
Mitsubishi, 501G, Unit #2C
West County Energy Center

Fuel Data

| | | |
|---------------------------|-----------|---------------|
| Fuel Fd factor | 8.648 | SCF ecf/MMBtu |
| Fuel Heating Value (#Btu) | 1,022 | Btu/SCF fuel |
| Turbine Fuel Flow | 1,664 | lb/min |
| Duct Burner Fuel Flow | 138 | lb/min |
| Total Fuel Flow | 2,472,413 | SCFH |

Weather Data

| | | |
|---------------------|----------|------------------------------|
| Barometric Pressure | 29.92 | in. Hg |
| Relative Humidity | 58 | % |
| Ambient Temperature | 70 | °F |
| Specific Humidity | 0.012291 | lb H ₂ O / lb air |

Unit Data

| | | |
|--------------------------|------------|-----------|
| Unit Load | 245.1 | megawatts |
| Combustor Inlet Pressure | 264 | psig |
| Moist. Stack Moisture | 10.4 | % |
| Stack Exhaust Flow (M19) | 53,206,584 | SCFH |

Data from: NFG Run 3

Base W/Db Load, Run - 2-3

| Date/Time (mm/dd/yy hh:mm:ss) | Elapsed Time (seconds) | O ₂ (%) | NOx (ppmv d) | CO (ppmv d) | VOC (ppmv w) | CO ₂ (%) |
|----------------------------------|---------------------------|-----------------------|-----------------|----------------|-----------------|------------------------|
| 11/17/09 15:59:19 | 32820 | 12.47 | 2.21 | 0.82 | 0.32 | 5.55 |
| 11/17/09 15:59:49 | 32850 | 12.47 | 2.18 | 0.86 | 0.29 | 5.57 |
| 11/17/09 16:00:19 | 32880 | 12.43 | 2.30 | 0.81 | 0.29 | 5.57 |
| 11/17/09 16:00:49 | 32910 | 12.45 | 2.42 | 0.86 | 0.30 | 5.57 |
| 11/17/09 16:01:19 | 32940 | 12.50 | 2.41 | 0.84 | 0.27 | 5.53 |
| 11/17/09 16:01:49 | 32970 | 12.48 | 2.26 | 0.86 | 0.27 | 5.56 |
| 11/17/09 16:02:19 | 33000 | 12.48 | 2.26 | 0.88 | 0.27 | 5.54 |
| 11/17/09 16:02:49 | 33030 | 12.52 | 2.33 | 0.92 | 0.28 | 5.53 |
| 11/17/09 16:03:19 | 33060 | 12.50 | 2.32 | 0.97 | 0.26 | 5.55 |
| 11/17/09 16:03:49 | 33090 | 12.48 | 2.42 | 0.85 | 0.27 | 5.55 |
| 11/17/09 16:04:19 | 33120 | 12.49 | 2.52 | 0.76 | 0.31 | 5.55 |
| 11/17/09 16:04:49 | 33150 | 12.49 | 2.57 | 0.78 | 0.33 | 5.54 |
| 11/17/09 16:05:19 | 33180 | 12.46 | 2.58 | 0.83 | 0.33 | 5.58 |
| 11/17/09 16:05:49 | 33210 | 12.46 | 2.58 | 0.77 | 0.34 | 5.56 |
| 11/17/09 16:06:19 | 33240 | 12.51 | 2.64 | 0.79 | 0.51 | 5.55 |
| 11/17/09 16:06:49 | 33270 | 12.50 | 2.58 | 0.78 | 3.58 | 5.54 |
| 11/17/09 16:07:19 | 33300 | 12.51 | 2.49 | 0.81 | 3.18 | 5.56 |
| 11/17/09 16:07:49 | 33330 | 12.51 | 2.53 | 0.75 | 3.21 | 5.54 |
| 11/17/09 16:08:19 | 33360 | 12.46 | 2.59 | 0.75 | 2.98 | 5.57 |
| 11/17/09 16:08:49 | 33390 | 12.47 | 2.81 | 0.75 | 2.43 | 5.58 |
| 11/17/09 16:09:19 | 33420 | 12.48 | 2.87 | 0.70 | 1.92 | 5.57 |
| 11/17/09 16:09:49 | 33450 | 12.54 | 2.81 | 0.83 | 3.03 | 5.54 |
| 11/17/09 16:10:19 | 33480 | 12.53 | 2.57 | 1.02 | 2.93 | 5.52 |
| 11/17/09 16:10:49 | 33510 | 12.51 | 2.42 | 0.92 | 2.72 | 5.55 |
| 11/17/09 16:11:19 | 33540 | 12.50 | 2.53 | 0.86 | 2.59 | 5.54 |
| 11/17/09 16:11:49 | 33570 | 12.46 | 2.68 | 0.99 | 2.24 | 5.59 |
| 11/17/09 16:12:19 | 33600 | 12.43 | 2.79 | 0.95 | 1.86 | 5.60 |
| 11/17/09 16:12:49 | 33630 | 12.47 | 2.87 | 0.95 | 1.43 | 5.57 |
| 11/17/09 16:13:19 | 33660 | 12.50 | 2.72 | 0.88 | 1.24 | 5.55 |
| 11/17/09 16:13:49 | 33690 | 12.53 | 2.50 | 0.93 | 1.15 | 5.53 |
| 11/17/09 16:14:19 | 33720 | 12.50 | 2.37 | 0.87 | 1.06 | 5.57 |
| 11/17/09 16:14:49 | 33750 | 12.46 | 2.38 | 0.79 | 1.04 | 5.58 |
| 11/17/09 16:15:19 | 33780 | 12.47 | 2.58 | 0.74 | 1.07 | 5.59 |
| 11/17/09 16:15:49 | 33810 | 12.45 | 2.67 | 0.80 | 1.07 | 5.59 |
| 11/17/09 16:16:19 | 33840 | 12.48 | 2.71 | 0.88 | 1.04 | 5.60 |
| 11/17/09 16:16:49 | 33870 | 12.47 | 2.60 | 0.92 | 1.03 | 5.58 |

RAW AVERAGE

O₂ 12.51 NOx 2.46 CO 0.77 VOC 0.53 CO₂ 5.62

Serial Number: INST-N2-0001 INST-N2-0001 INST-CO-0015 INST-TH-0009 INST-C2-0009

| | O ₂ (%) | NOx (ppmv d) | CO (ppmv d) | VOC (ppmv w) | CO ₂ (%) |
|-----------------|-----------------------|-----------------|----------------|-----------------|------------------------|
| Initial Zero | 0.35 | 0.07 | 0.01 | 0.06 | 0.47 |
| Final Zero | 0.35 | 0.07 | 0.01 | 0.06 | 0.47 |
| Avg. Zero | 0.35 | 0.07 | 0.01 | 0.06 | 0.47 |
| Initial UpScale | 12.14 | 5.01 | 4.87 | 3.14 | 9.42 |
| Final UpScale | 12.14 | 5.01 | 4.87 | 3.14 | 9.42 |
| Avg. UpScale | 12.14 | 5.01 | 4.87 | 3.14 | 9.42 |

Upscale Cal Gas

O₂ 12.10 NOx 4.99 CO 4.95 VOC 3.00 CO₂ 8.83

| EMISSIONS DATA | O ₂ | NOx | CO | VOC | CO ₂ |
|--|----------------|-------|-------|-------|-----------------|
| Corrected Raw Average (ppm% dry basis) | 12.48 | 2.42 | 0.77 | 0.52 | 4.98 |
| Concentration (ppm@ 15%O ₂) | N/A | 1.69 | 0.54 | 0.36 | N/A |
| Concentration (ppm@ 15%O ₂ & ISO) | N/A | 1.79 | 0.57 | 0.39 | N/A |
| Emission Rate (lb/hr) | N/A | 15.35 | 2.99 | 1.15 | N/A |
| Emission Rate (tons/year) at 8760 hr/yr | N/A | 67.25 | 13.11 | 5.04 | N/A |
| Emission Rate (lb/MMBtu) | N/A | 0.006 | 0.001 | 0.000 | N/A |

TEST RESULTS

**NH₃ Emissions
Base Load**



Air Hygiene International, Inc.
5634 S. 122nd East Ave, Suite F
Tulsa, Oklahoma 74146
(888) 461-8778
www.airhygiene.com

AMMONIA ANALYSIS

| PARAMETER | UNITS | RUN | | | | | | BLANK |
|---|----------------------|------------|------------|------------|------------|------------|------------|------------|
| | | 1 | | 2 | | 3 | | |
| | | Front (f) | Back (b) | Front (f) | Back (b) | Front (f) | Back (b) | |
| Sample Number | | U2C-R1-FH | U2C-R1-FH | U2C-R2-FH | U2C-R2-FH | U2C-R3-FH | U2C-R3-FH | Blank |
| Lab Log Number | | 91117-2C-1 | 91117-2C-2 | 91117-2C-3 | 91117-2C-4 | 91117-2C-5 | 91117-2C-6 | 91117-2C-B |
| Results (C _f or C _b) | (mg/L) | 11.5000 | 0.1000 | 11.6000 | 0.1000 | 11.4000 | 0.1100 | 0.1000 |
| Practical Quantitation Limit (PQL) | (mg/L) | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 |
| Sample Volume (V _{NH3}) | (ml) | 250 | 240 | 250 | 200 | 230 | 220 | 100 |
| DGM Volume (V _m) _{dscf} | (dscf) | 40.42 | | 42.09 | | 41.92 | | 42.09 |
| DGM Volume (V _m) _{dstdL} | (L _{dstd}) | 1144.53 | | 1191.95 | | 1186.96 | | 1191.95 |
| Sum of NH ₃ Ion (N) | (mg/L) | 11.5000 | 0.1000 | 11.6000 | 0.1000 | 11.4000 | 0.1100 | 0.1000 |
| Total Sample Volume (S) | (ml) | 250 | 240 | 250 | 200 | 230 | 220 | 100 |
| Volume of NH ₃ (V _a) | (L) | 0.00378 | 0.00003 | 0.00381 | 0.00003 | 0.00345 | 0.00003 | 0.00001 |
| O ₂ Concentration | (%) | 13.05 | | 12.95 | | 13.02 | | N/A |
| NH ₃ Concentration (C _{NH3}) | (ppmvd) | 3.33 | | 3.22 | | 2.93 | | 0.011 |
| C _{NH3} @ 15% O ₂ | (ppmvd) | 2.50 | | 2.39 | | 2.20 | | N/A |

Equations & Constants:

Example Using Data from the 1st run

DGM Volume (L_{dstd})

$$(V_m)_{dstdL} (L_{dstd}) = (V_m)_{dscf} \times 28.31685$$

$$(V_m)_{dstdL} (L_{dstd}) = 40.42 \text{ dscf} \times 28.31685 \text{ L/ft}^3 = 1144.53 \text{ L}_{dstd}$$

(V_m)_{dscf} = Volume of gas sample measured by the DGM, corrected to standard conditions.

C_f = Concentration of NH₃ ion in the front half of train (main catch)

MW = molecular weight (ref. ASTM D 3588)

C_b = Concentration of NH₃ ion in the back half of train (breakthrough)

Volume of NH₃ (L)

$$V_a(L) = \frac{N \times S}{MW \times 1000} \times 22.4$$

$$V_a(L) = \frac{11.5 \text{ mg}}{L} \times \frac{250 \text{ ml}}{L} \times \frac{L}{1000 \text{ ml}} \times \frac{22.4 \text{ L ideal gas}}{\text{g-mol substance}} \times \frac{\text{g-mol NH}_3}{17.03 \text{ g}} \times \frac{\text{g}}{1000 \text{ mg}} = 0.00378 \text{ L}$$

NH₃ Concentration (ppmvd)

$$C_{NH_3}(\text{ppmvd}) = \frac{V_{a(\text{front})} + V_{a(\text{back})}}{(V_m)_{dstdL}} \times 10^6$$

$$C_{NH_3}(\text{ppmvd}) = \frac{0.00378 \text{ L} + 0.00003 \text{ L}}{1144.53 \text{ L}_{dstd}} \times \frac{10^6 \text{ parts}}{1 \text{ part}} = 3.332 \text{ ppmvd}$$

22.4 = liters of ideal gas per mol of substance at 0°C and 1 atm (ref. Civil Engineering Reference Manual, 7th ed. - Michael R. Lindeburg)

CTM 027 (AMMONIA) - RESULTS

| | | | |
|--------------------------|---------------------------|-------------------|----------------------------|
| Plant Name | West County Energy Center | Date | 11/17/09 |
| Sampling Location | Loxahatchee, Florida | Project # | bv-10-westcounty.fl-comp#1 |
| Operator | Pandu Sattvika | Stack Type | Circular |

| Historical Data | | | | | | |
|-----------------------------------|-------------------------------------|-----------|-----------|-----------|-----------|--------------------------------------|
| Run Number | | 2C-1 | 2C-2 | 2C-3 | Average | |
| Run Start Time | | 8:20 | 9:29 | 10:42 | | hh:mm |
| Run Stop Time | | 9:24 | 10:36 | 11:49 | | hh:mm |
| Meter Calibration Factor | (Y) | 0.992 | 0.992 | 0.992 | | |
| Pitot Tube Coefficient | (C _p) | 0.840 | 0.840 | 0.840 | | |
| Average Nozzle Diameter | (D _{na}) | 0.215 | 0.215 | 0.215 | | in |
| Stack Test Data | | | | | | |
| Initial Meter Volume | (V _m) _i | 243.501 | 284.730 | 328.000 | | ft ³ |
| Final Meter Volume | (V _m) _f | 284.430 | 327.710 | 370.910 | | ft ³ |
| Total Meter Volume | (V _m) | 40.929 | 42.980 | 42.910 | 42.273 | ft ³ |
| Total Sampling Time | (t) | 60.0 | 60.0 | 60.0 | 60.0 | min |
| Average Meter Temperature | (t _m) _{avg} | 73.0 | 77.9 | 79.1 | 76.7 | oF |
| Average Stack Temperature | (t _s) _{avg} | 199.8 | 196.8 | 194.7 | 197.1 | oF |
| Barometric Pressure | (P _b) | 29.98 | 29.99 | 29.99 | 29.99 | in Hg |
| Stack Static Pressure | (P _{static}) | 0.75 | 0.75 | 0.75 | 0.75 | in H ₂ O |
| Absolute Stack Pressure | (P _s) | 30.04 | 30.05 | 30.05 | 30.04 | in Hg |
| Average Orifice Pressure Drop | (ΔH) _{avg} | 1.36 | 1.42 | 1.40 | 1.39 | in H ₂ O |
| Absolute Meter Pressure | (P _m) | 30.10 | 30.11 | 30.11 | 30.10 | in Hg |
| Avg Square Root Pitot Pressure | (ΔP ^{1/2}) _{avg} | 0.97 | 0.99 | 0.99 | 0.98 | (in H ₂ O) ^{1/2} |
| Moisture Content Data | | | | | | |
| Impingers 1-3 Water Volume Gain | (V _w) | 83.5 | 86.9 | 88.2 | 86.2 | ml |
| Impinger 4 Silica Gel Weight Gain | (W _w) | 3.7 | 10.4 | 9.0 | 7.7 | g |
| Total Water Volume Collected | (V _w) | 87.2 | 97.3 | 97.2 | 93.9 | ml |
| Standard Water Vapor Volume | (V _w) _{std} | 4.102 | 4.579 | 4.574 | 4.418 | scf |
| Standard Meter Volume | (V _m) _{std} | 40.419 | 42.093 | 41.917 | 41.476 | dscf |
| Calculated Stack Moisture | (B _{ws(calc)}) | 9.21 | 9.81 | 9.83 | 9.62 | % |
| Saturated Stack Moisture | (B _{ws(svp)}) | 77.7 | 72.9 | 69.8 | 73.5 | % |
| Reported Stack Moisture Content | (B _{ws}) | 9.21 | 9.81 | 9.83 | 9.62 | % |
| Gas Analysis Data | | | | | | |
| Carbon Dioxide Percentage | (%CO ₂) | 4.3 | 4.2 | 4.3 | 4.3 | % |
| Oxygen Percentage | (%O ₂) | 13.1 | 13.0 | 13.0 | 13.0 | % |
| Carbon Monoxide Percentage | (%CO) | 0.0 | 0.0 | 0.0 | 0.0 | % |
| Nitrogen Percentage | (%N ₂) | 82.7 | 82.9 | 82.6 | 82.7 | % |
| Dry Gas Molecular Weight | (M _d) | 29.21 | 29.19 | 29.21 | 29.20 | lb/lb-mole |
| Wet Stack Gas Molecular Weight | (M _w) | 28.17 | 28.09 | 28.11 | 28.12 | lb/lb-mole |
| Calculated Fuel Factor | (F _c) | 1.834 | 1.906 | 1.820 | 1.853 | |
| Fuel F-Factor | (F _d) | 8648 | 8648 | 8648 | 8648 | dscf/MMBtu |
| Percent Excess Air | (%EA) | 148.7 | 145.0 | 148.0 | 147.2 | % |
| Volumetric Flow Rate Data | | | | | | |
| Average Stack Gas Velocity | (V _s) | 61.43 | 62.99 | 62.57 | 62.33 | ft/sec |
| Stack Cross-Sectional Area | (A _s) | 376.17 | 376.17 | 376.17 | 376.17 | ft ² |
| Actual Stack Flow Rate | (Q _{aw}) | 1,386,485 | 1,421,609 | 1,412,130 | 1,406,741 | acfm |
| Wet Standard Stack Flow Rate | (Q _{sw}) | 66,828 | 68,862 | 68,616 | 68,102 | wkscfh |
| Dry Standard Stack Flow Rate | (Q _{sd}) | 1,011,227 | 1,035,110 | 1,031,128 | 1,025,822 | dscfm |
| Percent of Isokinetic Rate | (I) | 100.1 | 101.6 | 101.3 | 101.0 | % |
| Ammonia Rate Data | | | | | | |
| Stack Ammonia Concentration | (C _{NH3}) | 3.33 | 3.22 | 2.93 | 3.16 | ppm |
| | (C _{NH3}) | 2.50 | 2.39 | 2.20 | 2.36 | ppm@15%O ₂ |

CTM 027 (AMMONIA) SOURCE SAMPLING TITLE PAGE

ALARMS exist and have been acknowledged.

| Source Information | | | | |
|---------------------|---------------------------|------|------|--|
| Plant Name | West County Energy Center | | | |
| Sampling Location | Loxahatchee, Florida | | | |
| Fuel or Source Type | Gas, Natural | | | |
| Fuel F-Factor | 8648 | 8648 | 8648 | |

| Test Information | | | |
|------------------------------|---------------|----------------------------|---------|
| Starting Test Date | | 11/17/09 | |
| Project # | | bv-10-westcounty.fl-comp#1 | |
| Operator | | Pandu Sattvika | |
| Standard Temperature | | 68 | oF |
| Standard Pressure | | 29.92 | in Hg |
| Minimum Required Sample Vol. | indust. spec. | 35 | scf |
| Run Duration | chk Subpart | 60 | minutes |
| Unit Number | | 2C | |
| Load | % or w/DB | Base wo DB | |
| Base Run Number | | 2C | |
| Number of Ports Available | | 4 | |
| Number of Ports Used | | 4 | |
| Port Inside Diameter | | 5.00 | in |
| Circular Stack | | | |

| Test Equipment Information | | | | | |
|---------------------------------|-------------------|--------------|--------------|--------------|---------------------|
| Run | | 1 | 2 | 3 | |
| Meter Box Number | from ACS | samp-cp-0012 | samp-cp-0012 | samp-cp-0012 | |
| Meter Calibration Factor | (Y) | 0.992 | 0.992 | 0.992 | |
| Orifice Meter Coefficient | ($\Delta H @$) | 1.597 | 1.597 | 1.597 | in H ₂ O |
| Pitot Tube Coefficient | (C _p) | 0.840 | 0.840 | 0.840 | |
| Nozzle Diameter | (D _n) | 0.215 | 0.215 | 0.215 | in |
| Probe Length | | 144.00 | 144.00 | 144.00 | in |
| (SS, Glass) Liner Material | from list | inconel | inconel | inconel | |

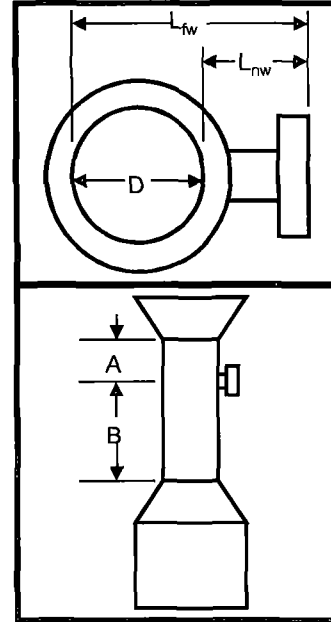
| Testing Company Information | |
|-----------------------------|---|
| Company Name | Air Hygiene International, Inc. (Tulsa, Oklahoma) |
| Address | 5634 S. 122nd East Ave., Suite F |
| City, State Country Zip | Tulsa, Oklahoma 74146 |
| Project Manager | Pandu Sattvika |
| Phone Number | (918) 307-8865 |
| Fax Number | (918) 307-9131 |

METHOD 1 - SAMPLE AND VELOCITY TRAVERSES FOR CIRCULAR SOURCES

| | | | |
|--------------------------|---------------------------|-----------------------------|----------------------------|
| Plant Name | West County Energy Center | Date | 11/17/09 |
| Sampling Location | Loxahatchee, Florida | Project # | bw-10-westcounty.fl-comp#1 |
| Operator | Pandu Sattvika | # of Ports Available | 4 |
| Stack Type | Circular | # of Ports Used | 4 |
| Stack Size | Large | Port Inside Diameter | 5.00 |

| Circular Stack or Duct Diameter | | | |
|---------------------------------------|--------------|--------|-----------------|
| Distance to Far Wall of Stack | (L_{fw}) | 281.75 | in |
| Distance to Near Wall of Stack | (L_{nw}) | 19.13 | in |
| Diameter of Stack | (D) | 262.62 | in |
| Area of Stack | (A_s) | 376.17 | ft ² |

| Distance from Port to Disturbances | | | |
|------------------------------------|-----------|--------|-----------|
| Distance Upstream | (A) | 144.00 | in |
| Diameters Upstream | (A_D) | 0.55 | diameters |
| Distance Downstream | (B) | 531.75 | in |
| Diameters Downstream | (B_D) | 2.02 | diameters |



| Number of Traverse Points Required | | | |
|------------------------------------|-----------|--|----------------------|
| Diameters to Flow Disturbance | | Minimum Number of ¹ Traverse Points | |
| Down Stream | Up Stream | Particulate Points | Velocity Points |
| 2.00-4.99 | 0.50-1.24 | 24 | 16 |
| 5.00-5.99 | 1.25-1.49 | 20 | 16 |
| 6.00-6.99 | 1.50-1.74 | 16 | 12 |
| 7.00-7.99 | 1.75-1.99 | 12 | 12 |
| >= 8.00 | >=2.00 | 8 or 12 ² | 8 or 12 ² |
| Upstream Spec | | 24 | 16 |
| Downstream Spec | | 24 | 16 |
| Traverse Pts Required | | 24 | 16 |

¹ Check Minimum Number of Points for the Upstream and Downstream conditions, then use the largest.

² 8 for Circular Stacks 12 to 24 inches
12 for Circular Stacks over 24 inches

| Number of Traverse Points Used | | | |
|--------------------------------|----------|----------------------|----------|
| 4 | Ports by | 6 | Across |
| 24 | Pts Used | 24 | Required |
| | | Particulate Traverse | |

| Location of Traverse Points in Circular Stacks | | | | | | | | | | |
|--|--|------|------|------|------|------|------|------|------|----|
| Traverse Point Number | (Fraction of Stack Dimension from Inside Wall to Traverse Point) | | | | | | | | | |
| | Number of Traverse Points Across the Stack | | | | | | | | | |
| Number | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 |
| 1 | .146 | .067 | .044 | .032 | .026 | .021 | .018 | .016 | .014 | |
| 2 | .854 | .250 | .146 | .105 | .082 | .067 | .057 | .049 | .044 | |
| 3 | | .750 | .296 | .194 | .146 | .118 | .099 | .085 | .075 | |
| 4 | | .933 | .704 | .323 | .226 | .177 | .146 | .125 | .109 | |
| 5 | | | .854 | .677 | .342 | .250 | .201 | .169 | .146 | |
| 6 | | | .956 | .806 | .658 | .356 | .269 | .220 | .188 | |
| 7 | | | | .895 | .774 | .644 | .366 | .283 | .236 | |
| 8 | | | | .968 | .854 | .750 | .634 | .375 | .296 | |
| 9 | | | | | .918 | .823 | .731 | .625 | .382 | |
| 10 | | | | | .974 | .882 | .799 | .717 | .618 | |
| 11 | | | | | | .933 | .854 | .780 | .704 | |
| 12 | | | | | | .979 | .901 | .831 | .764 | |

| Traverse Point Locations | | | |
|--------------------------|----------------------------|---------------------------|-------------------------------------|
| Traverse Point Number | Fraction of Stack Diameter | Distance from Inside Wall | Distance Including Reference Length |
| | | in | in |
| 1 | 0.02 | 5 4/8 | 24 5/8 |
| 2 | 0.07 | 17 5/8 | 36 6/8 |
| 3 | 0.12 | 31 | 50 1/8 |
| 4 | 0.18 | 46 4/8 | 65 5/8 |
| 5 | 0.25 | 65 5/8 | 84 6/8 |
| 6 | 0.36 | 93 4/8 | 112 5/8 |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |

METHOD 3a - DETERMINATION OF DRY MOLECULAR WEIGHT BY ANALYZER

| | | | | | | |
|--------------------------|-------------------------------------|----------------------------|-------------------------------------|----------------------------|-----------------------------|--|
| Plant Name | West County Energy Center | | | Date | 11/17/09 | |
| Sampling Location | Loxahatchee, Florida | | | Project # | bv-10-westcounty.fl-comp#1 | |
| Operator | Pandu Sattvika | | | # of Ports Used | 4 | |
| Fuel Type | Gas, Natural | Minimum Fuel Factor | 1.600 | Maximum Fuel Factor | 1.836 | |
| Orsat Leak Check | <input checked="" type="checkbox"/> | PreTest | <input checked="" type="checkbox"/> | PostTest | Orsat Identification | |

| Gas Analysis Data | | | | | | | | | | |
|---------------------------------------|--|---------------------------------|-------------------------------|--|---------------------------------|---|---------------------------------------|--|---|-------------------------------------|
| Run Number | | 2C-1 | | | Run Start Time | | 8:20 | Run Stop Time | | 9:24 |
| Sample Analysis Time | Carbon Dioxide Conc. (%CO ₂) | Oxygen Conc. (%O ₂) | Carbon Monoxide Conc. (ppmCO) | Carbon Dioxide Conc. (%CO ₂) | Oxygen Conc. (%O ₂) | Carbon Monoxide Conc. (%CO) | Nitrogen Conc. (%N ₂) | Dry Molecular Weight (M _d) | Molecular Weight Deviation (ΔM _d) | |
| hh:mm | percent | percent | ppm | percent | percent | percent | percent | lb/lb-mole | lb/lb-mole | |
| 1:04 | 4.3 | 13.1 | 0.6 | 4.3 | 13.1 | 0.0 | 82.7 | 29.21 | 0.00 | |
| Results | | | Averages | 4.3 | 13.1 | 0.0 | 82.7 | 29.21 | | |
| Average Calculated Fuel Factor | | | | (F _o) _{avg} | 1.834 | Molecular Wt Deviation < 0.3? | | | <input checked="" type="checkbox"/> | |
| Average Excess Air | | | | (%EA) _{avg} | 148.7 | percent | Fuel Factor in Handbook Range? | | | <input checked="" type="checkbox"/> |

| Gas Analysis Data | | | | | | | | | | |
|---------------------------------------|--|---------------------------------|-------------------------------|--|---------------------------------|---|---------------------------------------|--|---|-------------------------------------|
| Run Number | | 2C-2 | | | Run Start Time | | 9:29 | Run Stop Time | | 10:36 |
| Sample Analysis Time | Carbon Dioxide Conc. (%CO ₂) | Oxygen Conc. (%O ₂) | Carbon Monoxide Conc. (ppmCO) | Carbon Dioxide Conc. (%CO ₂) | Oxygen Conc. (%O ₂) | Carbon Monoxide Conc. (%CO) | Nitrogen Conc. (%N ₂) | Dry Molecular Weight (M _d) | Molecular Weight Deviation (ΔM _d) | |
| hh:mm | percent | percent | ppm | percent | percent | percent | percent | lb/lb-mole | lb/lb-mole | |
| 1:07 | 4.2 | 13.0 | 0.5 | 4.2 | 13.0 | 0.0 | 82.9 | 29.19 | 0.00 | |
| Results | | | Averages | 4.2 | 13.0 | 0.0 | 82.9 | 29.19 | | |
| Average Calculated Fuel Factor | | | | (F _o) _{avg} | 1.906 | Molecular Wt Deviation < 0.3? | | | <input checked="" type="checkbox"/> | |
| Average Excess Air | | | | (%EA) _{avg} | 145.0 | percent | Fuel Factor in Handbook Range? | | | <input checked="" type="checkbox"/> |

| Gas Analysis Data | | | | | | | | | | |
|---------------------------------------|--|---------------------------------|-------------------------------|--|---------------------------------|---|---------------------------------------|--|---|-------------------------------------|
| Run Number | | 2C-3 | | | Run Start Time | | 10:42 | Run Stop Time | | 11:49 |
| Sample Analysis Time | Carbon Dioxide Conc. (%CO ₂) | Oxygen Conc. (%O ₂) | Carbon Monoxide Conc. (ppmCO) | Carbon Dioxide Conc. (%CO ₂) | Oxygen Conc. (%O ₂) | Carbon Monoxide Conc. (%CO) | Nitrogen Conc. (%N ₂) | Dry Molecular Weight (M _d) | Molecular Weight Deviation (ΔM _d) | |
| hh:mm | percent | percent | ppm | percent | percent | percent | percent | lb/lb-mole | lb/lb-mole | |
| 1:07 | 4.3 | 13.0 | 0.5 | 4.3 | 13.0 | 0.0 | 82.6 | 29.21 | 0.00 | |
| Results | | | Averages | 4.3 | 13.0 | 0.0 | 82.6 | 29.21 | | |
| Average Calculated Fuel Factor | | | | (F _o) _{avg} | 1.820 | Molecular Wt Deviation < 0.3? | | | <input checked="" type="checkbox"/> | |
| Average Excess Air | | | | (%EA) _{avg} | 148.0 | percent | Fuel Factor in Handbook Range? | | | <input checked="" type="checkbox"/> |

| Fuel Factor Fo | | |
|------------------|---------|---------|
| Fuel Type | Minimum | Maximum |
| Coal, Anthracite | 1.016 | 1.130 |
| Coal, Lignite | 1.016 | 1.130 |
| Coal, Bituminous | 1.083 | 1.230 |
| Oil, Distillate | 1.260 | 1.413 |
| Oil, Residual | 1.210 | 1.370 |
| Gas, Natural | 1.600 | 1.836 |
| Gas, Propane | 1.434 | 1.586 |
| Gas, Butane | 1.405 | 1.553 |
| Wood | 1.000 | 1.120 |
| Wood Bark | 1.003 | 1.130 |

METHOD 4 - DETERMINATION OF MOISTURE CONTENT IN STACK GASES

| | | | | | | | |
|--------------------------|-------------------------------------|----------------|-------------------------------------|-----------------|-----------------------------|----------------------------|--|
| Plant Name | West County Energy Center | | | | Date | 11/17/09 | |
| Sampling Location | Loxahatchee, Florida | | | | Project # | bv-10-westcounty.fl-comp#1 | |
| Operator | Pandu Sattvika | | | | # of Ports Used | 4 | |
| Stack Type | Circular | | | | Meter Box Number | samp-cp-0012 | |
| Train Leak Check | <input checked="" type="checkbox"/> | PreTest | <input checked="" type="checkbox"/> | PostTest | Meter Cal Factor (Y) | 0.992 | |

| Moisture Content Data | | | | | | | | |
|------------------------------|-------------------------------------|-------------------|-------------------|-------------------------------|--------------------------|-------------------|-------------------|-------------------|
| Run Number | 2C-1 | | | Run Start Time | 8:20 | Run Stop Time | 9:24 | |
| Total Meter Volume | (V _m) | 40.929 | dcf | Barometric Press. | (P _b) | 29.98 | in Hg | |
| Avg Stack Temp | (t _s) _{avg} | 200 | oF | Stack Static Press. | (P _{static}) | 0.75 | in H2O | |
| Avg Meter Temp | (t _m) _{avg} | 73 | oF | Avg Orifice Press. | (ΔH) _{avg} | 1.36 | in H2O | |
| | Impinger 1 | Impinger 2 | Impinger 3 | Impinger 4 | Impinger 5 | Impinger 6 | Impinger 7 | Impinger 8 |
| | g | g | g | g | g | g | g | g |
| Contents | H2SO4 | | H2SO4 | | Sil Gel | | | |
| Final Value | (V _f),(W _f) | 822.30 | 766.90 | 617.50 | 913.20 | | | |
| Initial Value | (V _i),(W _i) | 753.40 | 754.90 | 615.10 | 909.50 | | | |
| Net Value | (V _n),(W _n) | 68.9 | 12.0 | 2.4 | 3.7 | | | |
| Results | | | | | | | | |
| Total Weight | (W _t) | 87.00 | g | Water Vol Weighed | (V _{wsg(std)}) | 4.102 | scf | |
| Std Meter Volume | (V _{m(std)}) | 40.437 | dscf | Sat. Moisture Content | (B _{ws(svp)}) | 77.7 | % | |
| Calc Moisture Content | (B _{ws(calc)}) | 9.2 | % | Final Moisture Content | (B _{ws}) | 9.2 | % | |

| Moisture Content Data | | | | | | | | |
|------------------------------|-------------------------------------|-------------------|-------------------|-------------------------------|--------------------------|-------------------|-------------------|-------------------|
| Run Number | 2C-2 | | | Run Start Time | 9:29 | Run Stop Time | 10:36 | |
| Total Meter Volume | (V _m) | 42.980 | dcf | Barometric Press. | (P _b) | 29.99 | in Hg | |
| Avg Stack Temp | (t _s) _{avg} | 197 | oF | Stack Static Press. | (P _{static}) | 0.75 | in H2O | |
| Avg Meter Temp | (t _m) _{avg} | 78 | oF | Avg Orifice Press. | (ΔH) _{avg} | 1.42 | in H2O | |
| | Impinger 1 | Impinger 2 | Impinger 3 | Impinger 4 | Impinger 5 | Impinger 6 | Impinger 7 | Impinger 8 |
| | g | g | g | g | g | g | g | g |
| Contents | H2SO4 | | H2SO4 | | Sil Gel | | | |
| Final Value | (V _f),(W _f) | 799.70 | 694.90 | 624.70 | 918.50 | | | |
| Initial Value | (V _i),(W _i) | 727.30 | 683.50 | 621.80 | 908.10 | | | |
| Net Value | (V _n),(W _n) | 72.4 | 11.4 | 2.9 | 10.4 | | | |
| Results | | | | | | | | |
| Total Weight | (W _t) | 97.10 | g | Water Vol Weighed | (V _{wsg(std)}) | 4.578 | scf | |
| Std Meter Volume | (V _{m(std)}) | 42.093 | dscf | Sat. Moisture Content | (B _{ws(svp)}) | 72.9 | % | |
| Calc Moisture Content | (B _{ws}) | 9.8 | % | Final Moisture Content | (B _{ws}) | 9.8 | % | |

| Moisture Content Data | | | | | | | | |
|------------------------------|-------------------------------------|-------------------|-------------------|-------------------------------|--------------------------|-------------------|-------------------|-------------------|
| Run Number | 2C-3 | | | Run Start Time | 10:42 | Run Stop Time | 11:49 | |
| Total Meter Volume | (V _m) | 42.910 | dcf | Barometric Press. | (P _b) | 29.99 | in Hg | |
| Avg Stack Temp | (t _s) _{avg} | 195 | oF | Stack Static Press. | (P _{static}) | 0.75 | in H2O | |
| Avg Meter Temp | (t _m) _{avg} | 79 | oF | Avg Orifice Press. | (ΔH) _{avg} | 1.40 | in H2O | |
| | Impinger 1 | Impinger 2 | Impinger 3 | Impinger 4 | Impinger 5 | Impinger 6 | Impinger 7 | Impinger 8 |
| | g | g | g | g | g | g | g | g |
| Contents | H2SO4 | | H2SO4 | | Sil Gel | | | |
| Final Value | (V _f),(W _f) | 809.00 | 770.70 | 618.50 | 920.70 | | | |
| Initial Value | (V _i),(W _i) | 735.80 | 758.40 | 616.00 | 911.70 | | | |
| Net Value | (V _n),(W _n) | 73.2 | 12.3 | 2.5 | 9.0 | | | |
| Results | | | | | | | | |
| Total Weight | (W _t) | 97.00 | g | Water Vol Weighed | (V _{wsg(std)}) | 4.574 | scf | |
| Std Meter Volume | (V _{m(std)}) | 41.931 | dscf | Sat. Moisture Content | (B _{ws(svp)}) | 69.8 | % | |
| Calc Moisture Content | (B _{ws}) | 9.8 | % | Final Moisture Content | (B _{ws}) | 9.8 | % | |

CTM 027 (AMMONIA) ISOKINETIC SAMPLING DATA

| | | | |
|--------------------|---------------------------|-----------------|----------------------------|
| Plant Name | West County Energy Center | Date | 11/17/2009 |
| Sampling Location | Loxahatchee, Florida | Project # | bv-10-westcounty.fl-comp#1 |
| Operator | Pandu Sattvika | Run # | 2C-1 |
| # of Points Across | 6 | # of Ports Used | 4 |

| Ideal Nozzle Diameter and IsoKinetic Factor Setup | | | |
|--|-------|--|------------|
| Pitot Tube Coefficient (C _p) | 0.84 | | |
| Avg Stack Temp (t _s) | 200 | | oF |
| Avg Gas Meter Temp (t _g) | 73 | | |
| DH @ 0.75 SCFM (ΔH@) | 1.60 | | in H2O |
| Avg Pitot Tube Diff. Pressure (ΔP _{pit}) | 0.95 | | in H2O |
| Stack Moisture Content (B _w) | 9.21 | | % |
| Stack Dry Molecular Weight (M _d) | 29.21 | | lb/lb-mole |
| Estimated Orifice Flow Rate (Q _o) | 0.750 | | acfm |
| DP to DH Isokinetic Factor (K) | 1.41 | | |

| Leak Checks | | | | |
|---|---|---|--------------------------|----|
| Train | Pre | 0 | ft ³ /min @ | 15 |
| OK? <input checked="" type="checkbox"/> | Post | 0 | ft ³ /min @ | 15 |
| Pitot | Pre | 0 | in. H ₂ O for | 30 |
| OK? <input checked="" type="checkbox"/> | Post | 0 | in. H ₂ O for | 30 |
| Orsat | OK? <input checked="" type="checkbox"/> | | | |

| Sampling Equipment | |
|---|--------------|
| Meter # | samp-cp-0012 |
| Meterbox Cal. Factor (Y) | 0.992 |
| Nozzle # | |
| Average Nozzle Diameter (D _{avg}) | 0.2150 in |
| Rec. Nozzle Diameter (D _{rec}) | 0.2251 in |
| Probe # / Length | / 144 in |
| Liner Material | inconel |
| Sample Case / Oven # | |
| Impinger Case # | |

| Nozzle Measurements | | | | |
|---------------------|-------|-------|-------|------|
| Pre | 0.215 | 0.215 | 0.215 | PASS |
| Post | 0.215 | 0.215 | 0.215 | PASS |

| Pressures | | |
|--|-------|--------|
| Barometric Pressure (P _b) | 29.98 | in Hg |
| Stack Static Pressure (P _{stat}) | 0.75 | in H2O |
| Absolute Stack Pressure (P _a) | 30.04 | in Hg |
| Absolute Meter Pressure (P _m) | 30.10 | in Hg |

| Run Time | |
|----------|------|
| Start | 8:20 |
| End | 9:24 |

| Weights | Imp 1 | Imp 2 | Imp 3 | Imp 4 | Imp 5 | Imp 6 | Imp 7 | Imp 8 |
|---------|--------|--------|--------|--------|-------|-------|-------|-------|
| Pre | 753.40 | 754.90 | 615.10 | 909.50 | | | | |
| Post | 822.30 | 766.90 | 617.50 | 913.20 | | | | |

| | | | | |
|-------------|------------------|------|----|----------|
| Wash Volume | H ₂ O | 50.0 | ml | Filter # |
| | MeCl | | ml | |

| Traverse Point # | Sampling Time (θ) | Timer Time | Dry Gas Meter Reading (V _d) | Velocity Head (Δp) | Desired Orifice ΔH (ΔH _d) | Actual Orifice ΔH (ΔH _a) | Stack Temp (t _s) | Probe Temp | Filter Temp | Impinger Exit Temp | Aux Temp | Meter Inlet Temp (t _m) | Meter Outlet Temp (t _{mo}) | Pump Vacuum | Square Root ΔP (ΔP ^{1/2}) | Local Stack Velocity (V _s) | Cumulative Meter Volume (V _m) _{tot} | Cumulative Percent IsoKinetic (I) | Est-Run Meter Volume (V _m) _{est} |
|------------------|-------------------|------------|---|--------------------|---------------------------------------|--------------------------------------|------------------------------|------------|-------------|--------------------|----------|------------------------------------|--------------------------------------|-------------|-------------------------------------|--|--|-----------------------------------|---|
| | | | | | | | | | | | | | | | | | | | |
| A-1 | 0.0 | 0:00:00 | 243.501 | 0.800 | 1.127 | 1.200 | 201 | 250 | 250 | 64 | | 70 | 67 | 0.0 | 0.89 | 56.77 | 1.701 | 108.9 | 40.827 |
| A-2 | 2.5 | 0:02:30 | 245.209 | 0.840 | 1.184 | 1.200 | 200 | 250 | 250 | 64 | | 71 | 67 | 0.0 | 0.92 | 58.12 | 3.289 | 104.2 | 39.470 |
| A-3 | 5.0 | 0:05:00 | 246.805 | 0.800 | 1.127 | 1.100 | 201 | 249 | 249 | 63 | | 72 | 67 | 0.0 | 0.89 | 56.77 | 4.876 | 103.4 | 39.011 |
| A-4 | 7.5 | 0:07:30 | 248.402 | 0.700 | 0.986 | 1.000 | 201 | 250 | 249 | 61 | | 73 | 67 | 0.0 | 0.84 | 53.10 | 6.472 | 104.8 | 38.829 |
| A-5 | 10.0 | 0:10:00 | 250.009 | 0.650 | 0.916 | 1.000 | 201 | 250 | 250 | 61 | | 73 | 67 | 0.0 | 0.81 | 51.17 | 7.856 | 103.7 | 37.710 |
| A-6 | 12.5 | 0:12:30 | 251.404 | 0.600 | 0.845 | 0.900 | 200 | 254 | 248 | 61 | | 74 | 68 | 0.0 | 0.77 | 49.12 | 9.244 | 103.5 | 36.976 |
| B-1 | 15.0 | 0:15:00 | 252.805 | 0.680 | 0.958 | 1.000 | 199 | 248 | 241 | 64 | | 73 | 68 | 0.0 | 0.82 | 52.26 | 10.631 | 102.5 | 36.448 |
| B-2 | 17.5 | 0:17:30 | 254.203 | 0.820 | 1.155 | 1.100 | 196 | 247 | 245 | 62 | | 75 | 68 | 0.0 | 0.91 | 57.25 | 12.024 | 100.8 | 36.071 |
| B-3 | 20.0 | 0:20:00 | 255.610 | 0.850 | 1.198 | 1.200 | 195 | 249 | 250 | 62 | | 76 | 68 | 0.0 | 0.92 | 58.25 | 13.406 | 99.2 | 35.749 |
| B-4 | 22.5 | 0:22:30 | 257.007 | 0.820 | 1.155 | 1.200 | 195 | 248 | 256 | 63 | | 75 | 69 | 0.0 | 0.91 | 57.21 | 14.689 | 97.6 | 35.254 |
| B-5 | 25.0 | 0:25:00 | 258.304 | 0.780 | 1.099 | 1.100 | 194 | 250 | 258 | 63 | | 77 | 69 | 0.0 | 0.88 | 55.76 | 16.068 | 96.9 | 35.058 |
| B-6 | 27.5 | 0:27:30 | 259.701 | 0.700 | 0.986 | 1.000 | 193 | 256 | 248 | 64 | | 70 | 69 | 0.0 | 0.84 | 52.78 | 17.666 | 97.9 | 35.332 |
| C-1 | 30.0 | 0:30:00 | 261.309 | 0.780 | 1.099 | 1.100 | 196 | 252 | 248 | 67 | | 76 | 70 | 0.0 | 0.88 | 55.84 | 19.242 | 98.3 | 35.524 |
| C-2 | 32.5 | 0:32:30 | 262.905 | 0.960 | 1.353 | 1.400 | 199 | 253 | 247 | 64 | | 78 | 70 | 0.0 | 0.98 | 62.09 | 20.920 | 98.2 | 35.864 |
| C-3 | 35.0 | 0:35:00 | 264.607 | 1.100 | 1.550 | 1.500 | 198 | 250 | 243 | 63 | | 79 | 70 | 0.0 | 1.05 | 66.41 | 22.790 | 98.5 | 36.464 |
| C-4 | 37.5 | 0:37:30 | 266.504 | 1.200 | 1.691 | 1.700 | 197 | 251 | 243 | 63 | | 80 | 70 | 0.0 | 1.10 | 69.37 | 24.663 | 98.5 | 36.994 |
| C-5 | 40.0 | 0:40:00 | 268.405 | 1.200 | 1.691 | 1.700 | 198 | 249 | 243 | 63 | | 81 | 71 | 0.0 | 1.10 | 69.37 | 26.725 | 99.2 | 37.730 |
| C-6 | 42.5 | 0:42:30 | 270.503 | 1.200 | 1.691 | 1.700 | 197 | 249 | 244 | 64 | | 80 | 71 | 0.0 | 1.10 | 69.31 | 28.966 | 100.5 | 38.622 |
| D-1 | 45.0 | 0:45:00 | 272.780 | 0.900 | 1.268 | 1.300 | 205 | 249 | 241 | 68 | | 78 | 72 | 0.0 | 0.95 | 60.39 | 30.561 | 100.3 | 38.603 |
| D-2 | 47.5 | 0:47:30 | 274.400 | 1.300 | 1.832 | 1.800 | 208 | 254 | 246 | 65 | | 78 | 72 | 0.0 | 1.14 | 72.75 | 32.482 | 100.1 | 38.978 |
| D-3 | 50.0 | 0:50:00 | 276.350 | 1.300 | 1.832 | 1.800 | 208 | 250 | 239 | 65 | | 81 | 72 | 0.0 | 1.14 | 72.75 | 34.447 | 100.1 | 39.368 |
| D-4 | 52.5 | 0:52:30 | 278.350 | 1.400 | 1.973 | 2.000 | 206 | 250 | 241 | 65 | | 81 | 72 | 0.0 | 1.18 | 75.38 | 36.511 | 100.1 | 39.831 |
| D-5 | 55.0 | 0:55:00 | 280.450 | 1.300 | 1.832 | 1.850 | 204 | 250 | 242 | 65 | | 81 | 72 | 0.0 | 1.14 | 72.53 | 38.432 | 99.9 | 40.103 |
| D-6 | 57.5 | 0:57:30 | 282.404 | 1.200 | 1.691 | 1.800 | 203 | 248 | 243 | 65 | | 82 | 73 | 0.0 | 1.10 | 69.63 | 40.419 | 100.1 | 40.419 |
| Last Pt | 60.0 | 1:00:00 | 284.430 | | | | | | | | | | | | | | | | |
| Final Val | 60.0 | 1:00:00 | 284.430 | | | | | | | | | | | Max Vac | 0.0 | Final Values | 40.419 | 100.1 | |
| Average Values | | | | 0.95 | | 1.36 | 200 | 250 | 246 | 64 | | 76 | 70 | | 0.97 | 61.43 | | | |

CTM 027 (AMMONIA) ISOKINETIC SAMPLING DATA

| | | | |
|--------------------|---------------------------|-----------------|----------------------------|
| Plant Name | West County Energy Center | Date | 11/17/2009 |
| Sampling Location | Loxahatchee, Florida | Project # | bv-10-westcounty.fl-comp#1 |
| Operator | Pandu Sattvika | Run # | 2C-2 |
| # of Points Across | 6 | # of Ports Used | 4 |

| Ideal Nozzle Diameter and IsoKinetic Factor Setup | | | |
|---|----------------------|-------|------------|
| Pitot Tube Coefficient | (C _p) | 0.84 | |
| Avg Stack Temp | (t _s) | 197 | oF |
| Avg Gas Meter Temp | (t _m) | 78 | |
| DH @ 0.75 SCFM | (ΔH@) | 1.60 | in H2O |
| Avg Pitot Tube Diff. Pressure | (ΔP _{pit}) | 1.01 | in H2O |
| Stack Moisture Content | (B _w) | 9.81 | % |
| Stack Dry Molecular Weight | (M _d) | 29.21 | lb/lb-mole |
| Estimated Orifice Flow Rate | (Q _e) | 0.682 | acfm |
| DP to DH Isokinetic Factor | (K) | 1.41 | |

| Leak Checks | | | | | | |
|-------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|-------|-------|
| Train | Pre | 0 | R3/min @ | 15 | in Hg | |
| OK? | <input checked="" type="checkbox"/> | Post | 0 | R3/min @ | 15 | in Hg |
| Pitot | Pre | 7 | in. H ₂ O for | 30 | sec | |
| OK? | <input checked="" type="checkbox"/> | Post | 7 | in. H ₂ O for | 30 | sec |
| Orsat | OK? | <input checked="" type="checkbox"/> | | | | |

| Sampling Equipment | | | |
|-------------------------|-------------------|-----------|--|
| Meter # | samp-cp-0012 | | |
| Meterbox Cal. Factor | (γ) | 0.992 | |
| Nozzle # | | | |
| Average Nozzle Diameter | (D _a) | 0.2150 in | |
| Rec. Nozzle Diameter | (D _n) | 0.2108 in | |
| Probe # / Length | / 144 in | | |
| Liner Material | inconel | | |
| Sample Case / Oven # | | | |
| Impinger Case # | | | |

| Pressures | | | |
|-------------------------|--------------------|-------|--------|
| Barometric Pressure | (P _b) | 29.99 | in Hg |
| Stack Static Pressure | (P _{st}) | 0.75 | in H2O |
| Absolute Stack Pressure | (P _a) | 30.05 | in Hg |
| Absolute Meter Pressure | (P _m) | 30.11 | in Hg |

| Nozzle Measurements | | | | |
|---------------------|-------|-------|-------|------|
| Pre | 0.215 | 0.215 | 0.215 | PASS |
| Post | 0.215 | 0.215 | 0.215 | PASS |

| Run Time | | |
|----------|------|-----------|
| Start | 9:29 | End 10:36 |

| Weights | Imp 1 | Imp 2 | Imp 3 | Imp 4 | Imp 5 | Imp 6 | Imp 7 | Imp 8 |
|---------|--------|--------|--------|--------|-------|-------|-------|-------|
| Pre | 727.30 | 683.50 | 621.80 | 908.10 | | | | |
| Post | 799.70 | 694.90 | 624.70 | 918.50 | | | | |

| Wash Volume | H ₂ O | MeCl | 50.0 ml | Filter # |
|-------------|------------------|------|---------|----------|
| | | | | |

| Traverse Point # | Sampling Time (θ) | Timer Time | Dry Gas Meter Reading (V _m) | Velocity Head (Δp) | Desired | Actual | Stack Temp (t _s) | Probe Temp | Filter Temp | Impinger Exit Temp | Aux Temp | Meter Inlet Temp (t _m) | Meter Outlet Temp (t _m) | Pump Vacuum | Square | Local | Cumulative Meter Volume (V _m) _{tot} | Cumulative Percent IsoKinetic (%) | Est-Run Meter Volume (V _m) _{tot} |
|------------------|-------------------|------------|---|--------------------|-------------------------------|-------------------------------|------------------------------|------------|-------------|--------------------|----------|------------------------------------|-------------------------------------|-------------|------------------------------|----------------------------------|--|-----------------------------------|---|
| | | | | | Orifice ΔH (ΔH _d) | Orifice ΔH (ΔH _a) | | | | | | | | | Root ΔP (ΔP ^{1/2}) | Stack Velocity (V _s) | | | |
| | min | hh:mm:ss | ft ³ | in H2O | in H2O | in H2O | oF | oF | oF | oF | oF | oF | oF | in Hg | (in H2O) ^{1/2} | f/sec | scf | scf | scf |
| A-1 | 0.0 | 0:00:00 | 284.730 | 0.950 | 1.343 | 1.300 | 204 | 254 | 246 | 65 | | 79 | 73 | 1.0 | 0.97 | 62.06 | 1.690 | 100.0 | 40.562 |
| A-2 | 2.5 | 0:02:30 | 286.450 | 1.000 | 1.413 | 1.400 | 203 | 246 | 244 | 68 | | 82 | 73 | 1.0 | 1.00 | 63.63 | 3.454 | 100.9 | 41.451 |
| A-3 | 5.0 | 0:05:00 | 288.250 | 1.300 | 1.837 | 1.850 | 202 | 244 | 242 | 68 | | 83 | 73 | 2.0 | 1.14 | 72.49 | 5.366 | 99.4 | 42.926 |
| A-4 | 7.5 | 0:07:30 | 290.200 | 1.400 | 1.979 | 2.000 | 201 | 239 | 242 | 63 | | 83 | 73 | 2.0 | 1.18 | 75.17 | 7.425 | 99.6 | 44.550 |
| A-5 | 10.0 | 0:10:00 | 292.300 | 1.400 | 1.979 | 2.000 | 200 | 243 | 243 | 62 | | 83 | 74 | 2.0 | 1.18 | 75.12 | 9.385 | 98.7 | 45.046 |
| A-6 | 12.5 | 0:12:30 | 294.300 | 1.300 | 1.837 | 1.800 | 199 | 241 | 242 | 62 | | 83 | 74 | 2.0 | 1.14 | 72.33 | 11.451 | 99.7 | 45.803 |
| B-1 | 15.0 | 0:15:00 | 296.410 | 0.800 | 1.131 | 1.100 | 195 | 243 | 244 | 68 | | 80 | 74 | 0.0 | 0.89 | 56.57 | 13.156 | 100.9 | 45.108 |
| B-2 | 17.5 | 0:17:30 | 298.150 | 1.200 | 1.696 | 1.700 | 195 | 246 | 247 | 65 | | 83 | 74 | 2.0 | 1.10 | 69.28 | 15.017 | 100.5 | 45.050 |
| B-3 | 20.0 | 0:20:00 | 300.050 | 1.300 | 1.837 | 1.850 | 195 | 241 | 242 | 67 | | 82 | 74 | 2.0 | 1.14 | 72.11 | 16.928 | 100.0 | 45.141 |
| B-4 | 22.5 | 0:22:30 | 302.000 | 1.400 | 1.979 | 2.000 | 193 | 239 | 238 | 65 | | 83 | 74 | 2.0 | 1.18 | 74.72 | 18.936 | 99.7 | 45.447 |
| B-5 | 25.0 | 0:25:00 | 304.050 | 1.400 | 1.979 | 2.000 | 193 | 241 | 242 | 65 | | 83 | 75 | 2.0 | 1.18 | 74.72 | 20.943 | 99.4 | 45.694 |
| B-6 | 27.5 | 0:27:30 | 306.100 | 1.300 | 1.837 | 1.850 | 192 | 239 | 244 | 65 | | 83 | 75 | 2.0 | 1.14 | 71.94 | 22.919 | 99.4 | 45.839 |
| C-1 | 30.0 | 0:30:00 | 308.120 | 0.700 | 0.989 | 1.000 | 194 | 244 | 244 | 67 | | 81 | 75 | 0.0 | 0.84 | 52.87 | 24.563 | 100.3 | 45.347 |
| C-2 | 32.5 | 0:32:30 | 309.800 | 0.800 | 1.131 | 1.100 | 193 | 245 | 246 | 65 | | 83 | 75 | 0.0 | 0.89 | 56.48 | 26.126 | 100.2 | 44.787 |
| C-3 | 35.0 | 0:35:00 | 311.400 | 0.900 | 1.272 | 1.300 | 193 | 243 | 244 | 63 | | 83 | 75 | 0.0 | 0.95 | 59.91 | 27.787 | 100.2 | 44.459 |
| C-4 | 37.5 | 0:37:30 | 313.100 | 0.800 | 1.131 | 1.100 | 191 | 241 | 243 | 61 | | 83 | 75 | 0.0 | 0.89 | 56.39 | 29.154 | 99.6 | 43.731 |
| C-5 | 40.0 | 0:40:00 | 314.500 | 0.800 | 1.131 | 1.100 | 191 | 243 | 244 | 62 | | 83 | 75 | 0.0 | 0.89 | 56.39 | 31.010 | 100.8 | 43.778 |
| C-6 | 42.5 | 0:42:30 | 316.400 | 0.700 | 0.989 | 1.000 | 191 | 239 | 243 | 62 | | 82 | 75 | 0.0 | 0.84 | 52.75 | 32.671 | 101.4 | 43.561 |
| D-1 | 45.0 | 0:45:00 | 318.100 | 0.700 | 0.989 | 1.000 | 199 | 240 | 243 | 63 | | 79 | 74 | 0.0 | 0.84 | 53.07 | 34.192 | 101.5 | 43.189 |
| D-2 | 47.5 | 0:47:30 | 319.650 | 0.850 | 1.201 | 1.200 | 200 | 243 | 245 | 61 | | 80 | 74 | 0.0 | 0.92 | 58.53 | 35.760 | 101.4 | 42.912 |
| D-3 | 50.0 | 0:50:00 | 321.250 | 0.850 | 1.201 | 1.200 | 200 | 244 | 242 | 61 | | 80 | 74 | 0.0 | 0.92 | 58.53 | 37.329 | 101.2 | 42.662 |
| D-4 | 52.5 | 0:52:30 | 322.850 | 0.800 | 1.131 | 1.140 | 200 | 245 | 243 | 62 | | 80 | 74 | 0.0 | 0.89 | 56.78 | 38.967 | 101.4 | 42.509 |
| D-5 | 55.0 | 0:55:00 | 324.520 | 0.800 | 1.131 | 1.100 | 200 | 241 | 243 | 62 | | 80 | 74 | 0.0 | 0.89 | 56.78 | 40.564 | 101.5 | 42.328 |
| D-6 | 57.5 | 0:57:30 | 326.150 | 0.700 | 0.989 | 1.000 | 198 | 240 | 242 | 63 | | 80 | 74 | 0.0 | 0.84 | 53.03 | 42.093 | 101.6 | 42.093 |
| Last Pt | 60.0 | 1:00:00 | 327.710 | | | | | | | | | | | | | | | | |
| Final Val | 60.0 | 1:00:00 | 327.710 | | | | | | | | | | | Max Vac | 2.0 | Final Values | 42.093 | 101.6 | |
| Average Values | | | | 1.01 | | 1.42 | 197 | 243 | 243 | 64 | | 82 | 74 | | 0.99 | 62.99 | | | |

bv-10-westcounty.fl-comp#1-U2C NH3 NDB

CTM 027 (AMMONIA) ISOKINETIC SAMPLING DATA

| | | | |
|--------------------|---------------------------|-----------------|----------------------------|
| Plant Name | West County Energy Center | Date | 11/17/2009 |
| Sampling Location | Loxahatchee, Florida | Project # | bv-10-westcounty.fl-comp#1 |
| Operator | Pandu Satvika | Run # | 2C-3 |
| # of Points Across | 6 | # of Ports Used | 4 |

| Ideal Nozzle Diameter and IsoKinetic Factor Setup | | | |
|---|----------------------|-------|------------|
| Pitot Tube Coefficient | (C _p) | 0.84 | |
| Avg Stack Temp | (t _s) | 195 | oF |
| Avg Gas Meter Temp | (t _g) | 79 | |
| DH @ 0.75 SCFM | (ΔH _@) | 1.60 | in H2O |
| Avg Pitot Tube Diff. Pressure | (ΔP _{pit}) | 0.99 | in H2O |
| Stack Moisture Content | (B _w) | 9.83 | % |
| Stack Dry Molecular Weight | (M _d) | 29.19 | lb/lb-mole |
| Estimated Orifice Flow Rate | (Q _m) | 0.716 | acfm |
| DP to DH Isokinetic Factor | (K) | 1.42 | |

| Leak Checks | | | | | |
|-------------|------|-------------------------------------|--------------------------|----|-------|
| Train | Pre | 0 | R3/min @ | 15 | in Hg |
| OK? | Post | 0 | R3/min @ | 15 | in Hg |
| Pitot | Pre | 8 | in. H ₂ O for | 15 | sec |
| OK? | Post | 8 | in. H ₂ O for | 15 | sec |
| Orsat | OK? | <input checked="" type="checkbox"/> | | | |

| Sampling Equipment | | | |
|-------------------------|--------------------|--------|----|
| Meter # | samp-cp-0012 | | |
| Meterbox Cal. Factor | (Y) | 0.992 | |
| Nozzle # | | | |
| Average Nozzle Diameter | (D _{av}) | 0.2150 | in |
| Rec. Nozzle Diameter | (D _r) | 0.2168 | in |
| Probe # / Length | / 144 in | | |
| Liner Material | inconel | | |
| Sample Case / Oven # | | | |
| Impinger Case # | | | |

| Pressures | | | |
|-------------------------|------------------------|-------|--------|
| Barometric Pressure | (P _b) | 29.99 | in Hg |
| Stack Static Pressure | (P _{static}) | 0.75 | in H2O |
| Absolute Stack Pressure | (P _a) | 30.05 | in Hg |
| Absolute Meter Pressure | (P _m) | 30.11 | in Hg |

| Nozzle Measurements | | | | |
|---------------------|-------|-------|-------|------|
| Pre | 0.215 | 0.215 | 0.215 | PASS |
| Post | 0.215 | 0.215 | 0.215 | PASS |

| Run Time | | | |
|----------|-------|-----|-------|
| Start | 10:42 | End | 11:49 |

| Weights | Imp 1 | Imp 2 | Imp 3 | Imp 4 | Imp 5 | Imp 6 | Imp 7 | Imp 8 |
|---------|--------|--------|--------|--------|-------|-------|-------|-------|
| Pre | 735.80 | 758.40 | 616.00 | 911.70 | | | | |
| Post | 809.00 | 770.70 | 618.50 | 920.70 | | | | |

| | | | | |
|-------------|------------------|------|----|----------|
| Wash Volume | H ₂ O | 50.0 | ml | Filter # |
| | MeCl | | ml | |

| Traverse Point # | Sampling Time (e) | Timer Time | Dry Gas Meter Reading (V _m) | Velocity Head (Δp) | Desired Orifice ΔH (ΔH _d) | Actual Orifice ΔH (ΔH _a) | Stack Temp (t _s) | Probe Temp | Filter Temp | Impinger Exit Temp | Aux Temp | Meter Inlet Temp (t _m) | Meter Outlet Temp (t _{ms}) | Pump Vacuum | Square Root ΔP (ΔP ^{1/2}) | Local Stack Velocity (V _s) | Cumulative Meter Volume (V _{m,inst}) | Cumulative Percent IsoKinetic (I) | Est-Run Meter Volume (V _{m,inst}) |
|------------------|-------------------|------------|---|--------------------|---------------------------------------|--------------------------------------|------------------------------|------------|-------------|--------------------|----------|------------------------------------|--------------------------------------|-------------|-------------------------------------|--|--|-----------------------------------|---|
| | | | | | | | | | | | | | | | | | | | |
| A-1 | 0.0 | 0:00:00 | 328.000 | 0.800 | 1.136 | 1.100 | 199 | 241 | 244 | 68 | | 79 | 74 | 0.0 | 0.89 | 56.76 | 1.472 | 94.6 | 35.323 |
| A-2 | 2.5 | 0:02:30 | 329.500 | 0.850 | 1.207 | 1.200 | 200 | 241 | 245 | 67 | | 79 | 74 | 0.0 | 0.92 | 58.55 | 3.140 | 99.6 | 37.683 |
| A-3 | 5.0 | 0:05:00 | 331.200 | 0.850 | 1.207 | 1.200 | 199 | 241 | 241 | 62 | | 80 | 74 | 0.0 | 0.92 | 58.51 | 4.807 | 101.1 | 38.457 |
| A-4 | 7.5 | 0:07:30 | 332.900 | 0.800 | 1.136 | 1.100 | 199 | 243 | 244 | 61 | | 80 | 74 | 0.0 | 0.89 | 56.76 | 6.376 | 101.0 | 38.254 |
| A-5 | 10.0 | 0:10:00 | 334.500 | 0.750 | 1.065 | 1.100 | 200 | 239 | 241 | 61 | | 80 | 74 | 0.0 | 0.87 | 55.00 | 7.944 | 101.6 | 38.132 |
| A-6 | 12.5 | 0:12:30 | 336.100 | 0.700 | 0.994 | 1.000 | 198 | 239 | 242 | 61 | | 80 | 74 | 0.0 | 0.84 | 53.06 | 9.414 | 101.5 | 37.657 |
| B-1 | 15.0 | 0:15:00 | 337.600 | 0.750 | 1.065 | 1.100 | 193 | 239 | 243 | 65 | | 79 | 74 | 0.0 | 0.87 | 54.71 | 10.886 | 100.9 | 37.323 |
| B-2 | 17.5 | 0:17:30 | 339.100 | 0.850 | 1.207 | 1.200 | 190 | 240 | 244 | 64 | | 80 | 74 | 0.0 | 0.92 | 58.11 | 12.455 | 100.5 | 37.365 |
| B-3 | 20.0 | 0:20:00 | 340.700 | 0.900 | 1.278 | 1.300 | 190 | 242 | 240 | 68 | | 81 | 75 | 0.0 | 0.95 | 59.79 | 14.119 | 100.4 | 37.651 |
| B-4 | 22.5 | 0:22:30 | 342.400 | 0.900 | 1.278 | 1.300 | 189 | 238 | 242 | 67 | | 81 | 74 | 0.0 | 0.95 | 59.75 | 15.736 | 100.1 | 37.766 |
| B-5 | 25.0 | 0:25:00 | 344.050 | 0.800 | 1.136 | 1.100 | 188 | 238 | 241 | 67 | | 81 | 75 | 0.0 | 0.89 | 56.29 | 17.350 | 100.4 | 37.855 |
| B-6 | 27.5 | 0:27:30 | 345.700 | 0.800 | 1.136 | 1.100 | 188 | 237 | 243 | 67 | | 81 | 75 | 0.0 | 0.89 | 56.29 | 18.955 | 100.5 | 37.910 |
| C-1 | 30.0 | 0:30:00 | 347.340 | 0.900 | 1.278 | 1.300 | 193 | 242 | 244 | 66 | | 80 | 75 | 0.0 | 0.95 | 59.93 | 20.680 | 100.8 | 38.178 |
| C-2 | 32.5 | 0:32:30 | 349.100 | 1.200 | 1.703 | 1.700 | 192 | 241 | 240 | 66 | | 84 | 75 | 0.0 | 1.10 | 68.15 | 22.634 | 100.9 | 38.801 |
| C-3 | 35.0 | 0:35:00 | 351.100 | 1.300 | 1.845 | 1.850 | 191 | 240 | 242 | 66 | | 83 | 75 | 0.0 | 1.14 | 71.92 | 24.493 | 100.3 | 39.189 |
| C-4 | 37.5 | 0:37:30 | 353.000 | 1.300 | 1.845 | 1.850 | 191 | 240 | 242 | 68 | | 86 | 76 | 0.0 | 1.14 | 71.92 | 26.443 | 100.1 | 39.664 |
| C-5 | 40.0 | 0:40:00 | 355.000 | 1.400 | 1.987 | 2.000 | 190 | 240 | 244 | 67 | | 86 | 76 | 0.0 | 1.18 | 74.57 | 28.393 | 99.7 | 40.084 |
| C-6 | 42.5 | 0:42:30 | 357.000 | 1.200 | 1.703 | 1.700 | 190 | 240 | 243 | 67 | | 87 | 76 | 0.0 | 1.10 | 69.04 | 30.340 | 99.8 | 40.454 |
| D-1 | 45.0 | 0:45:00 | 359.000 | 0.980 | 1.391 | 1.400 | 198 | 246 | 245 | 66 | | 83 | 77 | 0.0 | 0.99 | 62.78 | 32.299 | 100.7 | 40.799 |
| D-2 | 47.5 | 0:47:30 | 361.008 | 1.100 | 1.561 | 1.500 | 200 | 245 | 247 | 65 | | 87 | 77 | 0.0 | 1.05 | 66.61 | 34.243 | 101.0 | 41.091 |
| D-3 | 50.0 | 0:50:00 | 363.007 | 1.100 | 1.561 | 1.500 | 200 | 246 | 244 | 65 | | 89 | 77 | 0.0 | 1.05 | 66.61 | 36.084 | 101.0 | 41.239 |
| D-4 | 52.5 | 0:52:30 | 364.905 | 1.200 | 1.703 | 1.700 | 200 | 245 | 244 | 64 | | 87 | 77 | 0.0 | 1.10 | 69.57 | 38.029 | 101.0 | 41.486 |
| D-5 | 55.0 | 0:55:00 | 366.904 | 1.200 | 1.703 | 1.700 | 198 | 246 | 245 | 65 | | 87 | 78 | 0.0 | 1.10 | 69.47 | 39.970 | 101.1 | 41.708 |
| D-6 | 57.5 | 0:57:30 | 368.902 | 1.100 | 1.561 | 1.500 | 197 | 247 | 245 | 66 | | 89 | 78 | 0.0 | 1.05 | 66.46 | 41.917 | 101.3 | 41.917 |
| Last Pt | 60.0 | 1:00:00 | 370.910 | | | | | | | | | | | | | | | | |
| Final Val | 60.0 | 1:00:00 | 370.910 | | | | | | | | | | | Max Vac | 0.0 | Final Values | 41.917 | 101.3 | |
| Average Values | | | | 0.989 | | 1.396 | 195 | 242 | 243 | 65 | | 83 | 75 | | 0.99 | 62.57 | | | |

CTM 027 (AMMONIA) - SAMPLE RECOVERY AND INTEGRITY DATA SHEET

| | | | |
|--------------------------|---------------------------|---------------------------|----------------------------|
| Plant Name | West County Energy Center | Date | 11/17/09 |
| Sampling Location | Loxahatchee, Florida | Project # | bv-10-westcounty.fl-comp#1 |
| Operator | Pandu Sattvika | Acetone Lot Number | N/A |

| Run History Data | | | | |
|---------------------------|------------|------------|------------|------------|
| Run Number | 2C-1 | 2C-2 | 2C-3 | |
| Run Start Time | 8:20 | 9:29 | 10:42 | (hh:mm) |
| Run Stop Time | 9:24 | 10:36 | 11:49 | (hh:mm) |
| Train Prepared By | AS | AS | AS | |
| Train Recovered By | AS | AS | AS | |
| Recovery Date | 11/17/2009 | 11/17/2009 | 11/17/2009 | (mm/dd/yy) |



| Moisture Content Data | | | | | |
|---------------------------------------|-------------------|--------|--------|--------|----|
| Impingers 1, 2, and 3 - Liquid Volume | | | | | |
| Final Volume | (V _f) | 2210.7 | 2123.1 | 2202.2 | ml |
| Initial Volume | (V _i) | 2127.2 | 2036.3 | 2114.0 | ml |
| Net Volume | (V _n) | 83.5 | 86.9 | 88.2 | ml |
| Comments | | | | | |
| Impinger 4 - Silica Gel Weight | | | | | |
| Final Weight | (W _f) | 913.2 | 918.5 | 920.7 | g |
| Initial Weight | (W _i) | 909.5 | 908.1 | 911.7 | g |
| Net Weight | (W _n) | 3.7 | 10.4 | 9.0 | g |
| Comments | | | | | |
| Total Water Collected | | | | | |
| Total Volume | (V _c) | 87.2 | 97.3 | 97.2 | ml |

Ammonia Sample Log-In Sheet

Lab Tech: Albert Septiano
 Project: bv-10-westcounty.fl-comp#1
 Collected by: Albert Septiano
 Date Received: 11/17/2009



BLANKS

Filter

| AHI Lab # | Sample ID | Sample Source Description | Run # | Contents | Sample Date | Comments | Volume (ml) |
|------------|-----------|---------------------------|-------|---|-------------|----------|-------------|
| 91117-2C-B | Blank | | | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 100 |

SAMPLES

| AHI Lab # | Sample ID | Sample Source Description | Run # | Contents | Sample Date | Comments | Volume (ml) |
|-------------|-----------|------------------------------|-------|---|-------------|----------|-------------|
| 91117-2C-1 | U2C-R1-FH | Unit 2C Run 1 Impinger 1 NDB | 1 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 250 |
| 91117-2C-2 | U2C-R1-FH | Unit 2C Run 1 Impinger 2 NDB | 1 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 240 |
| 91117-2C-3 | U2C-R2-FH | Unit 2C Run 2 Impinger 1 NDB | 2 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 250 |
| 91117-2C-4 | U2C-R2-FH | Unit 2C Run 2 Impinger 2 NDB | 2 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 200 |
| 91117-2C-5 | U2C-R3-FH | Unit 2C Run 3 Impinger 1 NDB | 3 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 230 |
| 91117-2C-6 | U2C-R3-FH | Unit 2C Run 3 Impinger 2 NDB | 3 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 220 |
| 91117-2C-7 | U2C-R1-FH | Unit 2C Run 1 Impinger 1 wDB | 1 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 220 |
| 91117-2C-8 | U2C-R1-FH | Unit 2C Run 1 Impinger 2 wDB | 1 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 200 |
| 91117-2C-9 | U2C-R2-FH | Unit 2C Run 2 Impinger 1 wDB | 2 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 250 |
| 91117-2C-10 | U2C-R2-FH | Unit 2C Run 2 Impinger 2 wDB | 2 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 220 |
| 91117-2C-11 | U2C-R3-FH | Unit 2C Run 3 Impinger 1 wDB | 3 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 220 |
| 91117-2C-12 | U2C-R3-FH | Unit 2C Run 3 Impinger 2 wDB | 3 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 220 |

bv-10-westcounty.fl-comp#1-NH3 Analysis U2C

Ammonia Sample Measurement

| | |
|-----------------|----------------------------|
| Lab Tech: | Albert Septiano |
| Project: | bv-10-westcounty.fl-comp#1 |
| Date Analyzed: | 11/17/2009 |
| Time Analyzed: | |
| Temp (°F) | |
| Humidity | |
| BP (In HG) | |
| Analysis Method | 350.3 |



| Calibration Data | | |
|---------------------|---------------|--------------|
| Concentration (ppm) | Pre-Cal (ppm) | Pre-Cal (mV) |
| 0.0 | 0.0 | 84.9 |
| 5.0 | 5.0 | -52.3 |
| 10.0 | 10.0 | -70.2 |
| 20.0 | 20.0 | -87.4 |
| Slope | | |
| Linearity | 1.0000 | N/A |

| Sample ID | Sample Amt Used (ml) | ISA/pH Volume (ml) | Meter Reading (mg/L) | Time Analyzed (hh:mm:ss) | Dilution Factor | Sample Volume | MQL (mg/L) | PQL (mg/L) | Final Conc. (mg/L) |
|-------------|----------------------|--------------------|----------------------|--------------------------|-----------------|---------------|------------|------------|--------------------|
| 91117-2C-8 | 100.0 | 1.0 | 0.0 | 12:00:00 | 1.0 | 100.0 | 0.10 | 0.1 | BPQL |
| 91117-2C-1 | 100.0 | 1.0 | 11.5 | 12:10:00 | 1.0 | 250.0 | 0.10 | 0.1 | 11.5 |
| 91117-2C-2 | 100.0 | 1.0 | 0.1 | 12:15:00 | 1.0 | 240.0 | 0.10 | 0.1 | 0.1 |
| 91117-2C-3 | 100.0 | 1.0 | 11.6 | 12:20:00 | 1.0 | 250.0 | 0.10 | 0.1 | 11.6 |
| 91117-2C-4 | 100.0 | 1.0 | 0.1 | 12:25:00 | 1.0 | 200.0 | 0.10 | 0.1 | BPQL |
| 91117-2C-5 | 100.0 | 1.0 | 11.4 | 12:28:00 | 1.0 | 230.0 | 0.10 | 0.1 | 11.4 |
| 91117-2C-6 | 100.0 | 1.0 | 0.1 | 12:33:00 | 1.0 | 220.0 | 0.10 | 0.1 | 0.1 |
| 91117-2C-7 | 100.0 | 1.0 | 12.3 | 16:45:00 | 1.0 | 220.0 | 0.10 | 0.1 | 12.3 |
| 91117-2C-8 | 100.0 | 1.0 | 0.1 | 16:50:00 | 1.0 | 200.0 | 0.10 | 0.1 | BPQL |
| 91117-2C-9 | 100.0 | 1.0 | 10.5 | 16:56:00 | 1.0 | 250.0 | 0.10 | 0.1 | 10.5 |
| 91117-2C-10 | 100.0 | 1.0 | 0.1 | 17:01:00 | 1.0 | 220.0 | 0.10 | 0.1 | BPQL |
| 91117-2C-11 | 100.0 | 1.0 | 10.3 | 17:04:00 | 1.0 | 220.0 | 0.10 | 0.1 | 10.3 |
| 91117-2C-12 | 100.0 | 1.0 | 0.0 | 17:09:00 | 1.0 | 220.0 | 0.10 | 0.1 | BPQL |

bv-10-westcounty.fl-comp#1-NH3 Analysis U2C



Ammonia Analysis

Project Name: bv-10-westcounty.fl-comp#1
Date Received: 11/17/2009

AHI Lab No.: 91117-2C-B
Sample ID: Blank
Sampling Date: 11/17/2009

| Test Requested | Method Parameter | Prep Info | Result | PQL* | Analysis Date |
|------------------|-------------------|-----------|--------|------|----------------|
| Ammonia Nitrogen | EPA 350.3 Ammonia | N/A | BPQL | 0.10 | 11/17/09 12:00 |
| Volume | Volume in ml | N/A | 100 | N/A | 11/17/09 0:00 |

AHI Lab No.: 91117-2C-1
Sample ID: U2C-R1-FH
Sampling Date: 11/17/2009

| Test Requested | Method Parameter | Prep Info | Result | PQL* | Analysis Date |
|------------------|-------------------|-----------|--------|------|----------------|
| Ammonia Nitrogen | EPA 350.3 Ammonia | N/A | 11.5 | 0.10 | 11/17/09 12:10 |
| Volume | Volume in ml | N/A | 250 | N/A | 11/17/09 0:00 |

AHI Lab No.: 91117-2C-2
Sample ID: U2C-R1-FH
Sampling Date: 11/17/2009

| Test Requested | Method Parameter | Prep Info | Result | PQL* | Analysis Date |
|------------------|-------------------|-----------|--------|------|----------------|
| Ammonia Nitrogen | EPA 350.3 Ammonia | N/A | 0.1 | 0.10 | 11/17/09 12:15 |
| Volume | Volume in ml | N/A | 240 | N/A | 11/17/09 0:00 |

AHI Lab No.: 91117-2C-3
Sample ID: U2C-R2-FH
Sampling Date: 11/17/2009

| Test Requested | Method Parameter | Prep Info | Result | PQL* | Analysis Date |
|------------------|-------------------|-----------|--------|------|----------------|
| Ammonia Nitrogen | EPA 350.3 Ammonia | N/A | 11.6 | 0.10 | 11/17/09 12:20 |
| Volume | Volume in ml | N/A | 250 | N/A | 11/17/09 0:00 |

AHI Lab No.: 91117-2C-4
Sample ID: U2C-R2-FH
Sampling Date: 11/17/2009

| Test Requested | Method Parameter | Prep Info | Result | PQL* | Analysis Date |
|------------------|-------------------|-----------|--------|------|----------------|
| Ammonia Nitrogen | EPA 350.3 Ammonia | N/A | BPQL | 0.10 | 11/17/09 12:25 |
| Volume | Volume in ml | N/A | 200 | N/A | 11/17/09 0:00 |

AHI Lab No.: 91117-2C-5
Sample ID: U2C-R3-FH
Sampling Date: 11/17/2009

| Test Requested | Method Parameter | Prep Info | Result | PQL* | Analysis Date |
|------------------|-------------------|-----------|--------|------|----------------|
| Ammonia Nitrogen | EPA 350.3 Ammonia | N/A | 11.4 | 0.10 | 11/17/09 12:28 |
| Volume | Volume in ml | N/A | 230 | N/A | 11/17/09 0:00 |

AHI Lab No.: 91117-2C-6
Sample ID: U2C-R3-FH
Sampling Date: 11/17/2009

| Test Requested | Method Parameter | Prep Info | Result | PQL* | Analysis Date |
|------------------|-------------------|-----------|--------|------|----------------|
| Ammonia Nitrogen | EPA 350.3 Ammonia | N/A | 0.11 | 0.10 | 11/17/09 12:33 |
| Volume | Volume in ml | N/A | 220 | N/A | 11/17/09 0:00 |

TEST RESULTS

**NH₃ Emissions
Base Load with Duct Burners**



Air Hygiene International, Inc.
5634 S. 122nd East Ave, Suite F
Tulsa, Oklahoma 74146
(888) 461-8778
www.airhygiene.com

AMMONIA ANALYSIS

| PARAMETER | UNITS | RUN | | | | | | BLANK |
|--|----------------------|------------|------------|------------|-------------|-------------|-------------|------------|
| | | 1 | | 2 | | 3 | | |
| | | Front (f) | Back (b) | Front (f) | Back (b) | Front (f) | Back (b) | |
| Sample Number | | U2C-R1-FH | U2C-R1-FH | U2C-R2-FH | U2C-R2-FH | U2C-R3-FH | U2C-R3-FH | Blank |
| Lab Log Number | | 91117-2C-7 | 91117-2C-8 | 91117-2C-9 | 91117-2C-10 | 91117-2C-11 | 91117-2C-12 | 91117-2C-B |
| Results (C_f or C_b) | (mg/L) | 12.3000 | 0.1000 | 10.5000 | 0.1000 | 10.3000 | 0.1000 | 0.1000 |
| Practical Quantitation Limit (PQL) | (mg/L) | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 |
| Sample Volume (V_{NH_3}) | (ml) | 220 | 200 | 250 | 220 | 220 | 220 | 100 |
| DGM Volume (V_m) _{dscf} | (dscf) | 41.40 | | 40.80 | | 40.92 | | 41.40 |
| DGM Volume (V_m) _{dstdL} | (L _{dstd}) | 1172.26 | | 1155.25 | | 1158.71 | | 1172.26 |
| Sum of NH ₃ Ion (N) | (mg/L) | 12.3000 | 0.1000 | 10.5000 | 0.1000 | 10.3000 | 0.1000 | 0.1000 |
| Total Sample Volume (S) | (ml) | 220 | 200 | 250 | 220 | 220 | 220 | 100 |
| Volume of NH ₃ (V_a) | (L) | 0.00356 | 0.00003 | 0.00345 | 0.00003 | 0.00298 | 0.00003 | 0.00001 |
| O ₂ Concentration | (%) | 12.40 | | 12.42 | | 12.48 | | N/A |
| NH ₃ Concentration (C_{NH_3}) | (ppmvd) | 3.06 | | 3.01 | | 2.60 | | 0.011 |
| C_{NH_3} @ 15% O ₂ | (ppmvd) | 2.12 | | 2.10 | | 1.82 | | N/A |

Equations & Constants:

Example Using Data from the 1st run

DGM Volume (L_{dstd})

$$(V_m)_{dstdL} (L_{dstd}) = (V_m)_{dscf} \times 28.31685$$

$$(V_m)_{dstdL} (L_{dstd}) = 41.40 \text{ dscf} \times 28.31685 \text{ L/ft}^3 = 1172.26 \text{ L}_{dstd}$$

$(V_m)_{dscf}$ = Volume of gas sample measured by the DGM, corrected to standard conditions.

C_f = Concentration of NH₃ ion in the front half of train (main catch)

C_b = Concentration of NH₃ ion in the back half of train (breakthrough)

MW = molecular weight (ref. ASTM D 3588)

Volume of NH₃ (L)

$$V_a (L) = \frac{N \times S}{MW \times 1000} \times 22.4$$

$$V_a (L) = \frac{12.3 \text{ mg}}{L} \times \frac{220 \text{ ml}}{L} \times \frac{L}{1000 \text{ ml}} \times \frac{22.4 \text{ L ideal gas}}{\text{g-mol substance}} \times \frac{\text{g-mol NH}_3}{17.03 \text{ g}} \times \frac{\text{g}}{1000 \text{ mg}} = 0.00356 \text{ L}$$

NH₃ Concentration (ppmvd)

$$C_{NH_3} (\text{ppmvd}) = \frac{V_{a(\text{front})} + V_{a(\text{back})}}{(V_m)_{dstdL}} \times 10^6$$

$$C_{NH_3} (\text{ppmvd}) = \frac{0.00356 \text{ L} + 0.00003 \text{ L}}{1172.26 \text{ L}_{dstd}} \times \frac{10^6 \text{ parts}}{1 \text{ part}} = 3.059 \text{ ppmvd}$$

22.4 = liters of ideal gas per mol of substance at 0°C and 1 atm (ref. Civil Engineering Reference Manual, 7th ed. - Michael R. Lindeburg)

CTM 027 (AMMONIA) - RESULTS

| | | | |
|--------------------------|---------------------------|-------------------|----------------------------|
| Plant Name | West County Energy Center | Date | 11/17/09 |
| Sampling Location | Loxahatchee, Florida | Project # | bv-10-westcounty.fl-comp#1 |
| Operator | Pandu Sattvika | Stack Type | Circular |

| Historical Data | | | | | | |
|-----------------------------------|-------------------------------------|-----------|-----------|-----------|-----------|-------------------------|
| Run Number | | 2C-1 | 2C-2 | 2C-3 | Average | |
| Run Start Time | | 12:56 | 14:07 | 15:19 | | hh:mm |
| Run Stop Time | | 14:01 | 15:14 | 16:24 | | hh:mm |
| Meter Calibration Factor | (Y) | 0.992 | 0.992 | 0.992 | | |
| Pitot Tube Coefficient | (C _p) | 0.840 | 0.840 | 0.840 | | |
| Average Nozzle Diameter | (D _{na}) | 0.215 | 0.215 | 0.215 | | in |
| Stack Test Data | | | | | | |
| Initial Meter Volume | (V _m) _i | 371.170 | 414.330 | 457.000 | | ft3 |
| Final Meter Volume | (V _m) _f | 414.100 | 456.750 | 499.490 | | ft3 |
| Total Meter Volume | (V _m) | 42.930 | 42.420 | 42.490 | 42.613 | ft3 |
| Total Sampling Time | (t) | 60.0 | 60.0 | 60.0 | 60.0 | min |
| Average Meter Temperature | (t _m) _{avg} | 86.0 | 86.9 | 85.7 | 86.2 | oF |
| Average Stack Temperature | (t _s) _{avg} | 194.3 | 194.2 | 195.3 | 194.6 | oF |
| Barometric Pressure | (P _b) | 29.97 | 29.94 | 29.92 | 29.94 | in Hg |
| Stack Static Pressure | (P _{static}) | 0.75 | 0.75 | 0.75 | 0.75 | in H2O |
| Absolute Stack Pressure | (P _s) | 30.03 | 30.00 | 29.98 | 30.00 | in Hg |
| Average Orifice Pressure Drop | (ΔH) _{avg} | 1.39 | 1.40 | 1.36 | 1.38 | in H2O |
| Absolute Meter Pressure | (P _m) | 30.09 | 30.06 | 30.04 | 30.06 | in Hg |
| Avg Square Root Pitot Pressure | (ΔP ^{1/2}) _{avg} | 0.99 | 0.99 | 0.97 | 0.98 | (in H2O) ^{1/2} |
| Moisture Content Data | | | | | | |
| Impingers 1-3 Water Volume Gain | (V _n) | 86.0 | 91.9 | 91.2 | 89.7 | ml |
| Impinger 4 Silica Gel Weight Gain | (W _n) | 9.3 | 8.0 | 9.5 | 8.9 | g |
| Total Water Volume Collected | (V _w) | 95.3 | 99.9 | 100.7 | 98.6 | ml |
| Standard Water Vapor Volume | (V _w) _{std} | 4.484 | 4.701 | 4.739 | 4.642 | scf |
| Standard Meter Volume | (V _m) _{std} | 41.398 | 40.797 | 40.920 | 41.038 | dscf |
| Calculated Stack Moisture | (B _{ws(calc)}) | 9.77 | 10.33 | 10.38 | 10.16 | % |
| Saturated Stack Moisture | (B _{ws(svp)}) | 69.2 | 69.2 | 70.9 | 69.7 | % |
| Reported Stack Moisture Content | (B _{ws}) | 9.77 | 10.33 | 10.38 | 10.16 | % |
| Gas Analysis Data | | | | | | |
| Carbon Dioxide Percentage | (%CO ₂) | 4.9 | 4.9 | 5.0 | 4.9 | % |
| Oxygen Percentage | (%O ₂) | 12.4 | 12.4 | 12.5 | 12.4 | % |
| Carbon Monoxide Percentage | (%CO) | 0.0 | 0.0 | 0.0 | 0.0 | % |
| Nitrogen Percentage | (%N ₂) | 82.7 | 82.7 | 82.5 | 82.7 | % |
| Dry Gas Molecular Weight | (M _d) | 29.27 | 29.28 | 29.30 | 29.28 | lb/lb-mole |
| Wet Stack Gas Molecular Weight | (M _w) | 28.17 | 28.12 | 28.12 | 28.14 | lb/lb-mole |
| Calculated Fuel Factor | (F _d) | 1.753 | 1.731 | 1.691 | 1.725 | |
| Fuel F-Factor | (F _d) | 8649 | 8649 | 8649 | 8649 | dscf/MMBtu |
| Percent Excess Air | (%EA) | 131.3 | 132.0 | 134.0 | 132.4 | % |
| Volumetric Flow Rate Data | | | | | | |
| Average Stack Gas Velocity | (V _s) | 62.44 | 62.66 | 61.72 | 62.27 | ft/sec |
| Stack Cross-Sectional Area | (A _s) | 376.17 | 376.17 | 376.17 | 376.17 | ft2 |
| Actual Stack Flow Rate | (Q _{aw}) | 1,409,307 | 1,414,222 | 1,393,081 | 1,405,537 | acfm |
| Wet Standard Stack Flow Rate | (Q _{sw}) | 68,481 | 68,660 | 67,472 | 68,205 | wkscfh |
| Dry Standard Stack Flow Rate | (Q _{sd}) | 1,029,799 | 1,026,101 | 1,007,829 | 1,021,243 | dscfm |
| Percent of Isokinetic Rate | (I) | 100.2 | 99.1 | 101.9 | 100.4 | % |
| Ammonia Rate Data | | | | | | |
| Stack Ammonia Concentration | (C _{NH3}) | 3.06 | 3.01 | 2.60 | 2.89 | ppm |
| | (C _{NH3}) | 2.12 | 2.10 | 1.82 | 2.01 | ppm@15%O ₂ |

CTM 027 (AMMONIA) SOURCE SAMPLING TITLE PAGE

ALARMS exist and have been acknowledged.

| Source Information | | | | |
|---------------------|---------------------------|------|------|--|
| Plant Name | West County Energy Center | | | |
| Sampling Location | Loxahatchee, Florida | | | |
| Fuel or Source Type | Gas, Natural | | | |
| Fuel F-Factor | 8649 | 8649 | 8649 | |

| Test Information | | | | |
|------------------------------|---------------|----------------------------|---------|--|
| Starting Test Date | | 11/17/09 | | |
| Project # | | bv-10-westcounty.fl-comp#1 | | |
| Operator | | Pandu Sattvika | | |
| Standard Temperature | | 68 | oF | |
| Standard Pressure | | 29.92 | in Hg | |
| Minimum Required Sample Vol. | indust. spec. | 35 | scf | |
| Run Duration | chk Subpart | 60 | minutes | |
| Unit Number | | 2C | | |
| Load | % or w/DB | Base with DB | | |
| Base Run Number | | 2C | | |
| Number of Ports Available | | 4 | | |
| Number of Ports Used | | 4 | | |
| Port Inside Diameter | | 5.00 | in | |
| Circular Stack | | | | |

| Test Equipment Information | | | | | |
|---------------------------------|-------------------|--------------|--------------|--------------|---------------------|
| Run | | 1 | 2 | 3 | |
| Meter Box Number | from ACS | samp-cp-0012 | samp-cp-0012 | samp-cp-0012 | |
| Meter Calibration Factor | (Y) | 0.992 | 0.992 | 0.992 | |
| Orifice Meter Coefficient | ($\Delta H @$) | 1.597 | 1.597 | 1.597 | in H ₂ O |
| Pitot Tube Coefficient | (C _p) | 0.840 | 0.840 | 0.840 | |
| Nozzle Diameter | (D _n) | 0.215 | 0.215 | 0.215 | in |
| Probe Length | | 144.00 | 144.00 | 144.00 | in |
| (SS, Glass) Liner Material | from list | inconel | inconel | inconel | |

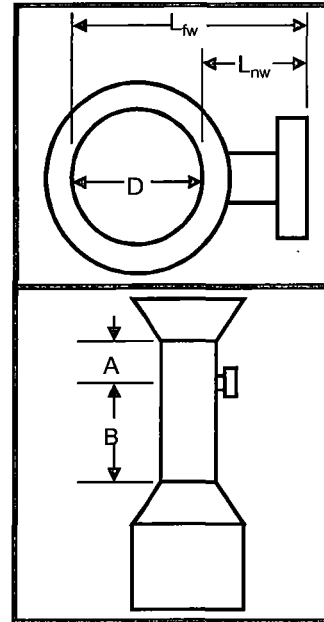
| Testing Company Information | |
|-----------------------------|---|
| Company Name | Air Hygiene International, Inc. (Tulsa, Oklahoma) |
| Address | 5634 S. 122nd East Ave., Suite F |
| City, State Country Zip | Tulsa, Oklahoma 74146 |
| Project Manager | Pandu Sattvika |
| Phone Number | (918) 307-8865 |
| Fax Number | (918) 307-9131 |

METHOD 1 - SAMPLE AND VELOCITY TRAVERSES FOR CIRCULAR SOURCES

| | | | |
|-------------------|---------------------------|----------------------|----------------------------|
| Plant Name | West County Energy Center | Date | 11/17/09 |
| Sampling Location | Loxahatchee, Florida | Project # | bv-10-westcounty.fl-comp#1 |
| Operator | Pandu Sattvika | # of Ports Available | 4 |
| Stack Type | Circular | # of Ports Used | 4 |
| Stack Size | Large | Port Inside Diameter | 5.00 |

| Circular Stack or Duct Diameter | | | |
|---------------------------------|--------------------|--------|-----------------|
| Distance to Far Wall of Stack | (L _{fw}) | 281.75 | in |
| Distance to Near Wall of Stack | (L _{nw}) | 19.13 | in |
| Diameter of Stack | (D) | 262.62 | in |
| Area of Stack | (A _s) | 376.17 | ft ² |

| Distance from Port to Disturbances | | | |
|------------------------------------|-------------------|--------|-----------|
| Distance Upstream | (A) | 144.00 | in |
| Diameters Upstream | (A _D) | 0.55 | diameters |
| Distance Downstream | (B) | 531.75 | in |
| Diameters Downstream | (B _D) | 2.02 | diameters |



| Number of Traverse Points Required | | | |
|------------------------------------|-----------|--|----------------------|
| Diameters to Flow Disturbance | | Minimum Number of ¹ Traverse Points | |
| Down Stream | Up Stream | Particulate Points | Velocity Points |
| 2.00-4.99 | 0.50-1.24 | 24 | 16 |
| 5.00-5.99 | 1.25-1.49 | 20 | 16 |
| 6.00-6.99 | 1.50-1.74 | 16 | 12 |
| 7.00-7.99 | 1.75-1.99 | 12 | 12 |
| >= 8.00 | >=2.00 | 8 or 12 ² | 8 or 12 ² |
| Upstream Spec | | 24 | 16 |
| Downstream Spec | | 24 | 16 |
| Traverse Pts Required | | 24 | 16 |

¹ Check Minimum Number of Points for the Upstream and Downstream conditions, then use the largest.

² 8 for Circular Stacks 12 to 24 inches
12 for Circular Stacks over 24 inches

| Location of Traverse Points in Circular Stacks | | | | | | | | | | | | | | |
|--|--|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Traverse Point Number | (Fraction of Stack Dimension from Inside Wall to Traverse Point) | | | | | | | | | | | | | |
| | Number of Traverse Points Across the Stack | | | | | | | | | | | | | |
| | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | | | | | |
| 1 | .146 | .067 | .044 | .032 | .026 | .021 | .018 | .016 | .014 | | | | | |
| 2 | .854 | .250 | .146 | .105 | .082 | .067 | .057 | .049 | .044 | | | | | |
| 3 | | .750 | .296 | .194 | .146 | .118 | .099 | .085 | .075 | | | | | |
| 4 | | | .933 | .704 | .323 | .226 | .177 | .146 | .125 | .109 | | | | |
| 5 | | | | .854 | .677 | .342 | .250 | .201 | .169 | .146 | | | | |
| 6 | | | | | .956 | .806 | .658 | .356 | .269 | .220 | .188 | | | |
| 7 | | | | | | .895 | .774 | .644 | .366 | .283 | .236 | | | |
| 8 | | | | | | | .968 | .854 | .750 | .634 | .375 | .296 | | |
| 9 | | | | | | | | .918 | .823 | .731 | .625 | .382 | | |
| 10 | | | | | | | | | .974 | .882 | .799 | .717 | .618 | |
| 11 | | | | | | | | | | .933 | .854 | .780 | .704 | |
| 12 | | | | | | | | | | | .979 | .901 | .831 | .764 |

| Number of Traverse Points Used | | | |
|--------------------------------|----------|----------------------|----------|
| 4 | Ports by | 6 | Across |
| 24 | Pts Used | 24 | Required |
| | | Particulate Traverse | |

| Traverse Point Locations | | | |
|--------------------------|----------------------------|---------------------------|-------------------------------------|
| Traverse Point Number | Fraction of Stack Diameter | Distance from Inside Wall | Distance Including Reference Length |
| | | in | in |
| 1 | 0.02 | 5 4/8 | 24 5/8 |
| 2 | 0.07 | 17 5/8 | 36 6/8 |
| 3 | 0.12 | 31 | 50 1/8 |
| 4 | 0.18 | 46 4/8 | 65 5/8 |
| 5 | 0.25 | 65 5/8 | 84 6/8 |
| 6 | 0.36 | 93 4/8 | 112 5/8 |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |

METHOD 2 - DETERMINATION OF STACK GAS VELOCITY AND VOLUMETRIC FLOW RATE

| | | | | | |
|--------------------------|-------------------------------------|----------------|-------------------------------------|-----------------------------|---|
| Plant Name | West County Energy Center | | | Date | 11/17/09 |
| Sampling Location | Loxahatchee, Florida | | | Project # | bv-10-westcounty.fl-comp#1 |
| Operator | Pandur Saltvika | | | # of Ports Used | 4 |
| Stack Type | Circular | | | Pitot Identification | |
| Pitot Leak Check | <input checked="" type="checkbox"/> | PreTest | <input checked="" type="checkbox"/> | PostTest | Pitot Coefficient (C_p) 0.84 |

| Stack Dimensions | | | |
|------------------------------------|-------------------|--------|-----------------|
| Diameter or Length of Stack | (D) | 262.62 | in |
| Width of Stack | (W) | | in |
| Area of Stack | (A _s) | 376.17 | ft ² |

| Velocity Traverse Data | | | | |
|------------------------|---------------------|------------------------------|------------------------------|-----------------------------------|
| Run Number | | 2C-V1 | | |
| Run Time | 7:46 | Start | 8:09 | End |
| Traverse Point | Velocity Head (Δp) | Null Angle (N _a) | Stack Temp (t _s) | Local Velocity (V _{so}) |
| | in H ₂ O | deg | oF | ft/sec |
| A-1 | 0.74 | 0 | 194 | 54.6 |
| A-2 | 0.76 | 0 | 195 | 55.4 |
| A-3 | 0.88 | 0 | 195 | 59.6 |
| A-4 | 0.96 | 0 | 196 | 62.3 |
| A-5 | 1.00 | 0 | 194 | 63.4 |
| A-6 | 1.00 | 0 | 194 | 63.4 |
| B-1 | 0.65 | 0 | 192 | 51.1 |
| B-2 | 0.68 | 0 | 190 | 52.2 |
| B-3 | 0.80 | 0 | 188 | 56.5 |
| B-4 | 0.88 | 0 | 187 | 59.2 |
| B-5 | 0.92 | 0 | 186 | 60.5 |
| B-6 | 1.00 | 0 | 187 | 63.1 |
| C-1 | 0.60 | 0 | 187 | 48.9 |
| C-2 | 0.65 | 0 | 187 | 50.9 |
| C-3 | 0.68 | 0 | 186 | 52.0 |
| C-4 | 0.65 | 0 | 186 | 50.8 |
| C-5 | 0.62 | 0 | 188 | 49.7 |
| C-6 | 0.62 | 0 | 188 | 49.7 |
| D-1 | 0.80 | 0 | 199 | 57.0 |
| D-2 | 0.80 | 0 | 200 | 57.0 |
| D-3 | 0.82 | 0 | 202 | 57.8 |
| D-4 | 0.83 | 0 | 200 | 58.1 |
| D-5 | 0.80 | 0 | 200 | 57.0 |
| D-6 | 0.78 | 0 | 200 | 56.3 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Average | 0.79 | 0 | 193 | |
| | 0.89 | = Square roots of Δp | | |

| Pressures | | | |
|--------------------------------|------------------------|-------|---------------------|
| Barometric Pressure | (P _b) | 29.59 | in Hg |
| Static Pressure | (P _{static}) | 0.75 | in H ₂ O |
| Absolute Stack Pressure | (P _s) | 29.65 | in Hg |

| Stack Gas Composition | | | |
|--------------------------------------|---------------------|-----------------------|------------|
| Composition Data: | | Estimated Composition | |
| Carbon Dioxide Concentration | (%CO ₂) | 4.9 | % |
| Oxygen Concentration | (%O ₂) | 12.4 | % |
| Carbon Monoxide Concentration | (%CO) | 0.0 | % |
| Nitrogen Concentration | (%N ₂) | 82.7 | % |
| Stack Moisture Content | (B _w) | 9.000 | % |
| Stack Dry Molecular Weight | (M _d) | 29.28 | lb/lb-mole |
| Stack Wet Molecular Weight | (M _w) | 28.26 | lb/lb-mole |

| Results | | | |
|------------------------------------|--------------------|------------|----------|
| Avg Stack Gas Velocity | (V _s) | 56.1 | ft/sec |
| Avg Stack Dry Std Flow Rate | (Q _{sd}) | 55,416,279 | dscf/hr |
| Avg Stack Dry Std Flow Rate | (Q _{sd}) | 923,605 | dscf/min |
| Avg Stack Wet Flow Rate | (Q _{sw}) | 1,265,981 | acf/min |
| Avg Stack Wet Std Flow Rate | (Q _{sw}) | 60,897,009 | ascf/hr |

| Stack Cross Section Schematic | | | |
|-------------------------------|--|--|--|
| | | | |

METHOD 3a - DETERMINATION OF DRY MOLECULAR WEIGHT BY ANALYZER

| | | | | | | | |
|--------------------------|-------------------------------------|----------------------------|-------------------------------------|----------------------------|-----------------------------|--|--|
| Plant Name | West County Energy Center | | | Date | 11/17/09 | | |
| Sampling Location | Loxahatchee, Florida | | | Project # | bv-10-westcounty.fl-comp#1 | | |
| Operator | Pandur Sattvika | | | # of Ports Used | 4 | | |
| Fuel Type | Gas, Natural | Minimum Fuel Factor | 1.600 | Maximum Fuel Factor | 1.836 | | |
| Orsat Leak Check | <input checked="" type="checkbox"/> | PreTest | <input checked="" type="checkbox"/> | PostTest | Orsat Identification | | |

| Gas Analysis Data | | | | | | | | | | |
|---------------------------------------|--|---------------------------------|-------------------------------|--|---------------------------------|---|---------------------------------------|--|---|-------------------------------------|
| Run Number | | 2C-1 | | | Run Start Time | | 12:56 | Run Stop Time | | 14:01 |
| Sample Analysis Time | Carbon Dioxide Conc. (%CO ₂) | Oxygen Conc. (%O ₂) | Carbon Monoxide Conc. (ppmCO) | Carbon Dioxide Conc. (%CO ₂) | Oxygen Conc. (%O ₂) | Carbon Monoxide Conc. (%CO) | Nitrogen Conc. (%N ₂) | Dry Molecular Weight (M _d) | Molecular Weight Deviation (ΔM _d) | |
| hh:mm | percent | percent | ppm | percent | percent | percent | percent | lb/lb-mole | lb/lb-mole | |
| 1:05 | 4.9 | 12.4 | 0.8 | 4.9 | 12.4 | 0.0 | 82.7 | 29.27 | 0.00 | |
| Results | | | Averages | 4.9 | 12.4 | 0.0 | 82.7 | 29.27 | | |
| Average Calculated Fuel Factor | | | | (F _o) _{avg} | 1.753 | Molecular Wt Deviation < 0.3? | | | <input checked="" type="checkbox"/> | |
| Average Excess Air | | | | (%EA) _{avg} | 131.3 | percent | Fuel Factor in Handbook Range? | | | <input checked="" type="checkbox"/> |

| Gas Analysis Data | | | | | | | | | | |
|---------------------------------------|--|---------------------------------|-------------------------------|--|---------------------------------|---|---------------------------------------|--|---|-------------------------------------|
| Run Number | | 2C-2 | | | Run Start Time | | 14:07 | Run Stop Time | | 15:14 |
| Sample Analysis Time | Carbon Dioxide Conc. (%CO ₂) | Oxygen Conc. (%O ₂) | Carbon Monoxide Conc. (ppmCO) | Carbon Dioxide Conc. (%CO ₂) | Oxygen Conc. (%O ₂) | Carbon Monoxide Conc. (%CO) | Nitrogen Conc. (%N ₂) | Dry Molecular Weight (M _d) | Molecular Weight Deviation (ΔM _d) | |
| hh:mm | percent | percent | ppm | percent | percent | percent | percent | lb/lb-mole | lb/lb-mole | |
| 1:07 | 4.9 | 12.4 | 0.9 | 4.9 | 12.4 | 0.0 | 82.7 | 29.28 | 0.00 | |
| Results | | | Averages | 4.9 | 12.4 | 0.0 | 82.7 | 29.28 | | |
| Average Calculated Fuel Factor | | | | (F _o) _{avg} | 1.731 | Molecular Wt Deviation < 0.3? | | | <input checked="" type="checkbox"/> | |
| Average Excess Air | | | | (%EA) _{avg} | 132.0 | percent | Fuel Factor in Handbook Range? | | | <input checked="" type="checkbox"/> |

| Gas Analysis Data | | | | | | | | | | |
|---------------------------------------|--|---------------------------------|-------------------------------|--|---------------------------------|---|---------------------------------------|--|---|-------------------------------------|
| Run Number | | 2C-3 | | | Run Start Time | | 15:19 | Run Stop Time | | 16:24 |
| Sample Analysis Time | Carbon Dioxide Conc. (%CO ₂) | Oxygen Conc. (%O ₂) | Carbon Monoxide Conc. (ppmCO) | Carbon Dioxide Conc. (%CO ₂) | Oxygen Conc. (%O ₂) | Carbon Monoxide Conc. (%CO) | Nitrogen Conc. (%N ₂) | Dry Molecular Weight (M _d) | Molecular Weight Deviation (ΔM _d) | |
| hh:mm | percent | percent | ppm | percent | percent | percent | percent | lb/lb-mole | lb/lb-mole | |
| 1:05 | 5.0 | 12.5 | 0.8 | 5.0 | 12.5 | 0.0 | 82.5 | 29.30 | 0.00 | |
| Results | | | Averages | 5.0 | 12.5 | 0.0 | 82.5 | 29.30 | | |
| Average Calculated Fuel Factor | | | | (F _o) _{avg} | 1.691 | Molecular Wt Deviation < 0.3? | | | <input checked="" type="checkbox"/> | |
| Average Excess Air | | | | (%EA) _{avg} | 134.0 | percent | Fuel Factor in Handbook Range? | | | <input checked="" type="checkbox"/> |

| Fuel Factor Fo | | |
|------------------|---------|---------|
| Fuel Type | Minimum | Maximum |
| Coal, Anthracite | 1.016 | 1.130 |
| Coal, Lignite | 1.016 | 1.130 |
| Coal, Bituminous | 1.083 | 1.230 |
| Oil, Distillate | 1.260 | 1.413 |
| Oil, Residual | 1.210 | 1.370 |
| Gas, Natural | 1.600 | 1.836 |
| Gas, Propane | 1.434 | 1.586 |
| Gas, Butane | 1.405 | 1.553 |
| Wood | 1.000 | 1.120 |
| Wood Bark | 1.003 | 1.130 |

METHOD 4 - DETERMINATION OF MOISTURE CONTENT IN STACK GASES

| | | | | | | | |
|--------------------------|-------------------------------------|----------------|-------------------------------------|-------------------------|-----------------------------|-------|--|
| Plant Name | West County Energy Center | | | Date | 11/17/09 | | |
| Sampling Location | Loxahatchee, Florida | | | Project # | bv-10-westcounty.fl-comp#1 | | |
| Operator | Pandu Sattvika | | | # of Ports Used | 4 | | |
| Stack Type | Circular | | | Meter Box Number | samp-cp-0012 | | |
| Train Leak Check | <input checked="" type="checkbox"/> | PreTest | <input checked="" type="checkbox"/> | PostTest | Meter Cal Factor (Y) | 0.992 | |

| Moisture Content Data | | | | | | | | |
|------------------------------|-------------------------------------|-------------------|-------------------|-------------------------------|--------------------------|-------------------|-------------------|-------------------|
| Run Number | 2C-1 | | | Run Start Time | 12:56 | Run Stop Time | 14:01 | |
| Total Meter Volume | (V _m) | 42.930 | dcf | Barometric Press. | (P _b) | 29.97 | in Hg | |
| Avg Stack Temp | (t _s) _{avg} | 194 | oF | Stack Static Press. | (P _{static}) | 0.75 | in H2O | |
| Avg Meter Temp | (t _m) _{avg} | 86 | oF | Avg Orifice Press. | (ΔH) _{avg} | 1.39 | in H2O | |
| | Impinger 1 | Impinger 2 | Impinger 3 | Impinger 4 | Impinger 5 | Impinger 6 | Impinger 7 | Impinger 8 |
| | g | g | g | g | g | g | g | g |
| Contents | H2SO4 | H2SO4 | | Sil Gel | | | | |
| Final Value | (V _f),(W _f) | 799.50 | 709.70 | 624.80 | 917.80 | | | |
| Initial Value | (V _i),(W _i) | 722.80 | 697.60 | 627.80 | 908.50 | | | |
| Net Value | (V _n),(W _n) | 76.7 | 12.1 | -3.0 | 9.3 | | | |
| Results | | | | | | | | |
| Total Weight | (W _t) | 95.10 | g | Water Vol Weighed | (V _{wsg(std)}) | 4.484 | scf | |
| Std Meter Volume | (V _{m(std)}) | 41.394 | dscf | Sat. Moisture Content | (B _{ws(svp)}) | 69.2 | % | |
| Calc Moisture Content | (B _{ws(calc)}) | 9.8 | % | Final Moisture Content | (B _{ws}) | 9.8 | % | |

| Moisture Content Data | | | | | | | | |
|------------------------------|-------------------------------------|-------------------|-------------------|-------------------------------|--------------------------|-------------------|-------------------|-------------------|
| Run Number | 2C-2 | | | Run Start Time | 14:07 | Run Stop Time | 15:14 | |
| Total Meter Volume | (V _m) | 42.420 | dcf | Barometric Press. | (P _b) | 29.94 | in Hg | |
| Avg Stack Temp | (t _s) _{avg} | 194 | oF | Stack Static Press. | (P _{static}) | 0.75 | in H2O | |
| Avg Meter Temp | (t _m) _{avg} | 87 | oF | Avg Orifice Press. | (ΔH) _{avg} | 1.40 | in H2O | |
| | Impinger 1 | Impinger 2 | Impinger 3 | Impinger 4 | Impinger 5 | Impinger 6 | Impinger 7 | Impinger 8 |
| | g | g | g | g | g | g | g | g |
| Contents | H2SO4 | H2SO4 | | Sil Gel | | | | |
| Final Value | (V _f),(W _f) | 821.70 | 756.90 | 618.20 | 917.70 | | | |
| Initial Value | (V _i),(W _i) | 744.50 | 745.10 | 615.50 | 909.70 | | | |
| Net Value | (V _n),(W _n) | 77.2 | 11.8 | 2.7 | 8.0 | | | |
| Results | | | | | | | | |
| Total Weight | (W _t) | 99.70 | g | Water Vol Weighed | (V _{wsg(std)}) | 4.701 | scf | |
| Std Meter Volume | (V _{m(std)}) | 40.797 | dscf | Sat. Moisture Content | (B _{ws(svp)}) | 69.2 | % | |
| Calc Moisture Content | (B _{ws}) | 10.3 | % | Final Moisture Content | (B _{ws}) | 10.3 | % | |

| Moisture Content Data | | | | | | | | |
|------------------------------|-------------------------------------|-------------------|-------------------|-------------------------------|--------------------------|-------------------|-------------------|-------------------|
| Run Number | 2C-3 | | | Run Start Time | 15:19 | Run Stop Time | 16:24 | |
| Total Meter Volume | (V _m) | 42.490 | dcf | Barometric Press. | (P _b) | 29.92 | in Hg | |
| Avg Stack Temp | (t _s) _{avg} | 195 | oF | Stack Static Press. | (P _{static}) | 0.75 | in H2O | |
| Avg Meter Temp | (t _m) _{avg} | 86 | oF | Avg Orifice Press. | (ΔH) _{avg} | 1.36 | in H2O | |
| | Impinger 1 | Impinger 2 | Impinger 3 | Impinger 4 | Impinger 5 | Impinger 6 | Impinger 7 | Impinger 8 |
| | g | g | g | g | g | g | g | g |
| Contents | H2SO4 | H2SO4 | | Sil Gel | | | | |
| Final Value | (V _f),(W _f) | 791.20 | 713.10 | 625.60 | 906.10 | | | |
| Initial Value | (V _i),(W _i) | 716.80 | 700.20 | 621.90 | 896.60 | | | |
| Net Value | (V _n),(W _n) | 74.4 | 12.9 | 3.7 | 9.5 | | | |
| Results | | | | | | | | |
| Total Weight | (W _t) | 100.50 | g | Water Vol Weighed | (V _{wsg(std)}) | 4.739 | scf | |
| Std Meter Volume | (V _{m(std)}) | 40.918 | dscf | Sat. Moisture Content | (B _{ws(svp)}) | 70.9 | % | |
| Calc Moisture Content | (B _{ws}) | 10.4 | % | Final Moisture Content | (B _{ws}) | 10.4 | % | |

CTM 027 (AMMONIA) ISOKINETIC SAMPLING DATA

| | | | |
|--------------------|---------------------------|-----------------|----------------------------|
| Plant Name | West County Energy Center | Date | 11/17/2009 |
| Sampling Location | Loxahatchee, Florida | Project # | bv-10-westcounty.fl-comp#1 |
| Operator | Pandu Sattvika | Run # | 2C-1 |
| # of Points Across | 6 | # of Ports Used | 4 |

| Ideal Nozzle Diameter and IsoKinetic Factor Setup | | | |
|---|-----------------------|-------|---------------------|
| Pitot Tube Coefficient | (C _p) | 0.84 | |
| Avg Stack Temp | (T _s) | 194 | oF |
| Avg Gas Meter Temp | (T _m) | 86 | |
| DH @ 0.75 SCFM | (ΔH _{0.75}) | 1.60 | in H ₂ O |
| Avg Pitot Tube Diff. Pressure | (ΔP _{pit}) | 0.99 | in H ₂ O |
| Stack Moisture Content | (B _w) | 9.77 | % |
| Stack Dry Molecular Weight | (M _d) | 29.27 | lb/lb-mole |
| Estimated Orifice Flow Rate | (Q _e) | 0.750 | acfm |
| DP to DH Isokinetic Factor | (K) | 1.44 | |

| Leak Checks | | | | | |
|---|------|-------------------------------------|--------------------------|----|-------|
| Train | Pre | 0.015 | ft ³ /min @ | 15 | in Hg |
| OK? <input checked="" type="checkbox"/> | Post | 0 | ft ³ /min @ | 15 | in Hg |
| Pitot | Pre | 0 | in. H ₂ O for | 30 | sec |
| OK? <input checked="" type="checkbox"/> | Post | 0 | in. H ₂ O for | 30 | sec |
| Orsat | OK? | <input checked="" type="checkbox"/> | | | |

| Sampling Equipment | | | |
|-------------------------|--------------------|--------|----|
| Meter # | samp-cp-0012 | | |
| Meterbox Cal. Factor | (Y) | 0.992 | |
| Nozzle # | | | |
| Average Nozzle Diameter | (D _{no}) | 0.2150 | in |
| Rec. Nozzle Diameter | (D _{no}) | 0.2203 | in |
| Probe # / Length | / 144 in | | |
| Liner Material | Inconel | | |
| Sample Case / Oven # | | | |
| Impinger Case # | | | |

| Nozzle Measurements | | | | |
|---------------------|-------|-------|-------|------|
| Pre | 0.215 | 0.215 | 0.215 | PASS |
| Post | 0.215 | 0.215 | 0.215 | PASS |

| Pressures | | | |
|-------------------------|----------------------|-------|---------------------|
| Barometric Pressure | (P _b) | 29.97 | in Hg |
| Stack Static Pressure | (P _{stac}) | 0.75 | in H ₂ O |
| Absolute Stack Pressure | (P _s) | 30.03 | in Hg |
| Absolute Meter Pressure | (P _m) | 30.09 | in Hg |

| Run Time | | | |
|----------|-------|-----|-------|
| Start | 12:56 | End | 14:01 |

| Weights | Imp 1 | Imp 2 | Imp 3 | Imp 4 | Imp 5 | Imp 6 | Imp 7 | Imp 8 |
|---------|--------|--------|--------|--------|-------|-------|-------|-------|
| Pre | 722.80 | 697.60 | 627.80 | 908.50 | | | | |
| Post | 799.50 | 709.70 | 624.80 | 917.80 | | | | |

| | | | | |
|-------------|------------------|------|----|----------|
| Wash Volume | H ₂ O | 50.0 | ml | Filter # |
| | MeCl | | ml | |

| Traverse Point # | Sampling Time (θ) | Timer Time | Dry Gas Meter Reading (V _m) | Velocity Head (Δp) | Desired Orifice ΔH | | Stack Temp (t _s) | Probe Temp | Filter Temp | Impinger Exit Temp | Aux Temp | Meter Inlet Temp (t _m) | Meter Outlet Temp (t _{me}) | Pump Vacuum | Square Root ΔP (ΔP ^{1/2}) | Local Stack Velocity (V _s) | Cumulative Meter Volume (V _m) _{tot} | Cumulative Percent IsoKinetic (I) | Est-Run Meter Volume (V _m) _{est} |
|------------------|-------------------|------------|---|---------------------|---------------------|---------------------|------------------------------|------------|-------------|--------------------|----------|------------------------------------|--------------------------------------|-------------|--------------------------------------|--|--|-----------------------------------|---|
| | | | | | in H ₂ O | in H ₂ O | | | | | | | | | | | | | |
| | min | hh:mm:ss | ft ³ | in H ₂ O | in H ₂ O | oF | oF | oF | oF | oF | oF | oF | oF | in Hg | (in H ₂ O) ^{1/2} | ft/sec | scf | % | scf |
| A-1 | 0.0 | 0:00:00 | 371.170 | 0.950 | 1.370 | 1.300 | 197 | 246 | 245 | 68 | | 85 | 80 | 0.0 | 0.97 | 61.69 | 1.630 | 96.1 | 39.118 |
| A-2 | 2.5 | 0:02:30 | 372.850 | 1.100 | 1.586 | 1.500 | 199 | 242 | 246 | 67 | | 89 | 80 | 1.0 | 1.05 | 66.48 | 3.371 | 95.8 | 40.448 |
| A-3 | 5.0 | 0:05:00 | 374.650 | 1.300 | 1.875 | 1.800 | 200 | 243 | 242 | 66 | | 90 | 80 | 2.0 | 1.14 | 72.33 | 5.256 | 95.6 | 42.049 |
| A-4 | 7.5 | 0:07:30 | 376.600 | 1.300 | 1.875 | 1.800 | 200 | 244 | 244 | 67 | | 90 | 81 | 2.0 | 1.14 | 72.33 | 7.188 | 96.1 | 43.129 |
| A-5 | 10.0 | 0:10:00 | 378.600 | 1.300 | 1.875 | 1.800 | 199 | 244 | 243 | 66 | | 90 | 81 | 2.0 | 1.14 | 72.27 | 9.169 | 96.9 | 44.009 |
| A-6 | 12.5 | 0:12:30 | 380.650 | 1.200 | 1.730 | 1.700 | 197 | 243 | 240 | 67 | | 90 | 81 | 2.0 | 1.10 | 69.33 | 11.071 | 97.4 | 44.285 |
| B-1 | 15.0 | 0:15:00 | 382.620 | 0.900 | 1.298 | 1.300 | 193 | 241 | 245 | 66 | | 88 | 82 | 1.0 | 0.95 | 59.86 | 12.790 | 98.3 | 43.852 |
| B-2 | 17.5 | 0:17:30 | 384.400 | 1.200 | 1.730 | 1.700 | 192 | 241 | 243 | 66 | | 90 | 82 | 2.0 | 1.10 | 69.07 | 14.672 | 98.3 | 44.015 |
| B-3 | 20.0 | 0:20:00 | 386.350 | 1.200 | 1.730 | 1.700 | 191 | 241 | 242 | 66 | | 91 | 82 | 2.0 | 1.10 | 69.01 | 16.552 | 98.3 | 44.138 |
| B-4 | 22.5 | 0:22:30 | 388.300 | 1.400 | 2.019 | 2.000 | 191 | 241 | 243 | 66 | | 92 | 82 | 2.0 | 1.18 | 74.54 | 18.527 | 98.0 | 44.466 |
| B-5 | 25.0 | 0:25:00 | 390.350 | 1.400 | 2.019 | 2.000 | 191 | 242 | 242 | 65 | | 91 | 82 | 3.0 | 1.18 | 74.54 | 20.553 | 98.0 | 44.844 |
| B-6 | 27.5 | 0:27:30 | 392.450 | 1.200 | 1.730 | 1.700 | 190 | 240 | 241 | 65 | | 91 | 82 | 2.0 | 1.10 | 68.96 | 22.462 | 98.1 | 44.924 |
| C-1 | 30.0 | 0:30:00 | 394.430 | 0.750 | 1.082 | 1.050 | 192 | 241 | 245 | 67 | | 89 | 82 | 0.0 | 0.87 | 54.60 | 24.121 | 98.9 | 44.531 |
| C-2 | 32.5 | 0:32:30 | 396.150 | 0.800 | 1.154 | 1.100 | 190 | 241 | 246 | 66 | | 90 | 83 | 0.0 | 0.89 | 56.31 | 25.709 | 99.1 | 44.073 |
| C-3 | 35.0 | 0:35:00 | 397.800 | 0.850 | 1.226 | 1.200 | 189 | 244 | 245 | 67 | | 90 | 83 | 0.0 | 0.92 | 57.99 | 27.298 | 99.0 | 43.676 |
| C-4 | 37.5 | 0:37:30 | 399.450 | 0.850 | 1.226 | 1.200 | 189 | 246 | 245 | 68 | | 90 | 83 | 0.0 | 0.92 | 57.99 | 28.935 | 99.1 | 43.402 |
| C-5 | 40.0 | 0:40:00 | 401.150 | 0.750 | 1.082 | 1.050 | 188 | 242 | 245 | 68 | | 91 | 83 | 0.0 | 0.87 | 54.43 | 30.521 | 99.4 | 43.089 |
| C-6 | 42.5 | 0:42:30 | 402.800 | 0.700 | 1.009 | 1.000 | 188 | 240 | 245 | 67 | | 90 | 83 | 0.0 | 0.84 | 52.59 | 32.061 | 99.7 | 42.748 |
| D-1 | 45.0 | 0:45:00 | 404.400 | 0.800 | 1.154 | 1.100 | 197 | 242 | 244 | 66 | | 89 | 83 | 0.0 | 0.89 | 56.61 | 33.603 | 99.7 | 42.445 |
| D-2 | 47.5 | 0:47:30 | 406.000 | 0.850 | 1.226 | 1.200 | 198 | 245 | 246 | 67 | | 90 | 83 | 0.0 | 0.92 | 58.40 | 35.047 | 99.3 | 42.056 |
| D-3 | 50.0 | 0:50:00 | 407.500 | 0.800 | 1.154 | 1.100 | 198 | 243 | 243 | 65 | | 90 | 83 | 0.0 | 0.89 | 56.65 | 36.683 | 99.5 | 41.924 |
| D-4 | 52.5 | 0:52:30 | 409.200 | 0.800 | 1.154 | 1.100 | 198 | 241 | 242 | 64 | | 90 | 83 | 0.0 | 0.89 | 56.65 | 38.224 | 99.5 | 41.698 |
| D-5 | 55.0 | 0:55:00 | 410.800 | 0.700 | 1.009 | 1.000 | 198 | 242 | 241 | 64 | | 90 | 83 | 0.0 | 0.84 | 52.99 | 39.811 | 99.9 | 41.542 |
| D-6 | 57.5 | 0:57:30 | 412.450 | 0.700 | 1.009 | 1.000 | 197 | 241 | 242 | 66 | | 91 | 83 | 0.0 | 0.84 | 52.95 | 41.398 | 100.2 | 41.398 |
| Last Pt | 60.0 | 1:00:00 | 414.100 | | | | | | | | | | | | | | | | |
| Final Val | 60.0 | 1:00:00 | 414.100 | | | | | | | | | | | Max Vac | 3.0 | Final Values | 41.398 | 100.2 | |
| Average Values | | | | 0.99 | 1.39 | 194 | 242 | 244 | 66 | | | 90 | 82 | | 0.99 | 62.44 | | | |

CTM 027 (AMMONIA) ISOKINETIC SAMPLING DATA

| | | | |
|---------------------------|---------------------------|------------------------|----------------------------|
| Plant Name | West County Energy Center | Date | 11/17/2009 |
| Sampling Location | Loxahatchee, Florida | Project # | bv-10-westcounty.fl-comp#1 |
| Operator | Pandu Sattvika | Run # | 2C-2 |
| # of Points Across | 6 | # of Ports Used | 4 |

| Ideal Nozzle Diameter and IsoKinetic Factor Setup | | | |
|--|-------|------------|--|
| Pitot Tube Coefficient (C _p) | 0.84 | | |
| Avg Stack Temp (T _s) | 194 | oF | |
| Avg Gas Meter Temp (T _m) | 87 | | |
| DH @ 0.75 SCFM (ΔH _{0.75}) | 1.60 | in H2O | |
| Avg Pitot Tube Diff. Pressure (ΔP _{avg}) | 1.00 | in H2O | |
| Stack Moisture Content (B _w) | 10.33 | % | |
| Stack Dry Molecular Weight (M _d) | 29.27 | lb/lb-mole | |
| Estimated Orifice Flow Rate (Q _o) | 0.716 | acfm | |
| DP to DH IsoKinetic Factor (K) | 1.43 | | |

| Leak Checks | | | | |
|-------------|-------------------------------------|------|---|---------------------------------|
| Train OK? | <input checked="" type="checkbox"/> | Pre | 0 | ft ³ /min @ 15 in Hg |
| | | Post | 0 | ft ³ /min @ 15 in Hg |
| Pitot OK? | <input checked="" type="checkbox"/> | Pre | 7 | in. H ₂ O for 30 sec |
| | | Post | 7 | in. H ₂ O for 30 sec |
| Orsat OK? | <input checked="" type="checkbox"/> | | | |

| Sampling Equipment | | | |
|--|--------------|----|--|
| Meter # | samp-cp-0012 | | |
| Meterbox Cal. Factor (Y) | 0.992 | | |
| Nozzle # | | | |
| Average Nozzle Diameter (D _{av}) | 0.2150 | in | |
| Rec. Nozzle Diameter (D _r) | 0.2149 | in | |
| Probe # / Length | / 144 in | | |
| Liner Material | inconel | | |
| Sample Case / Oven # | | | |
| Impinger Case # | | | |

| Nozzle Measurements | | | |
|---------------------|-------|-------|------|
| Pre | 0.215 | 0.215 | PASS |
| Post | 0.215 | 0.215 | PASS |

| Pressures | | |
|---|-------|--------|
| Barometric Pressure (P _b) | 29.94 | in Hg |
| Stack Static Pressure (P _{stc}) | 0.75 | in H2O |
| Absolute Stack Pressure (P _a) | 30.00 | in Hg |
| Absolute Meter Pressure (P _m) | 30.06 | in Hg |

| Run Time | | |
|----------|-------|-----------|
| Start | 14:07 | End 15:14 |

| Weights | Imp 1 | Imp 2 | Imp 3 | Imp 4 | Imp 5 | Imp 6 | Imp 7 | Imp 8 |
|---------|--------|--------|--------|--------|-------|-------|-------|-------|
| Pre | 744.50 | 745.10 | 615.50 | 909.70 | | | | |
| Post | 821.70 | 756.90 | 618.20 | 917.70 | | | | |

| | | | | |
|-------------|------------------|------|----|----------|
| Wash Volume | H ₂ O | 50.0 | ml | Filter # |
| | MeCl | | | |

| Traverse Point # | Sampling Time (g) | Timer Time | Dry Gas Meter Reading (V _m) | Velocity Head (Δp) | Desired Orifice ΔH (ΔH _d) | Actual Orifice ΔH (ΔH _a) | Stack Temp (t _s) | Probe Temp | Filter Temp | Impinger Exit Temp | Aux Temp | Meter Inlet Temp (t _m) | Meter Outlet Temp (t _{me}) | Pump Vacuum | Square Root ΔP (ΔP ^{1/2}) | Local Stack Velocity (V _s) | Cumulative Meter Volume (V _m) _{acc} | Cumulative Percent IsoKinetic (I) | Est-Run Meter Volume (V _m) _{acc} |
|------------------|-------------------|------------|---|--------------------|---------------------------------------|--------------------------------------|------------------------------|------------|-------------|--------------------|----------|------------------------------------|--------------------------------------|-------------|-------------------------------------|--|--|-----------------------------------|---|
| | | | | | | | | | | | | | | | | | | | |
| A-1 | 0.0 | 0:00:00 | 414.330 | 0.800 | 1.144 | 1.100 | 197 | 244 | 243 | 68 | | 88 | 82 | 0.0 | 0.89 | 56.70 | 1.610 | 104.0 | 36.649 |
| A-2 | 2.5 | 0:02:30 | 416.000 | 0.800 | 1.144 | 1.100 | 198 | 243 | 245 | 67 | | 90 | 82 | 0.0 | 0.89 | 56.74 | 3.054 | 99.0 | 36.650 |
| A-3 | 5.0 | 0:05:00 | 417.500 | 0.850 | 1.216 | 1.200 | 198 | 242 | 244 | 68 | | 91 | 82 | 0.0 | 0.92 | 58.49 | 4.603 | 98.3 | 36.822 |
| A-4 | 7.5 | 0:07:30 | 419.110 | 0.800 | 1.144 | 1.100 | 198 | 238 | 240 | 67 | | 91 | 82 | 0.0 | 0.89 | 56.74 | 6.228 | 100.1 | 37.368 |
| A-5 | 10.0 | 0:10:00 | 420.800 | 0.700 | 1.001 | 1.000 | 198 | 240 | 242 | 65 | | 91 | 83 | 0.0 | 0.84 | 53.08 | 7.669 | 100.0 | 36.810 |
| A-6 | 12.5 | 0:12:30 | 422.300 | 0.750 | 1.073 | 1.100 | 198 | 240 | 241 | 65 | | 91 | 83 | 0.0 | 0.87 | 54.94 | 9.254 | 101.0 | 37.016 |
| B-1 | 15.0 | 0:15:00 | 423.950 | 0.700 | 1.001 | 1.000 | 193 | 239 | 245 | 68 | | 88 | 83 | 0.0 | 0.84 | 52.88 | 10.747 | 101.2 | 36.847 |
| B-2 | 17.5 | 0:17:30 | 425.500 | 0.750 | 1.073 | 1.100 | 191 | 240 | 244 | 64 | | 91 | 83 | 0.0 | 0.87 | 54.65 | 12.284 | 101.3 | 36.853 |
| B-3 | 20.0 | 0:20:00 | 427.100 | 0.900 | 1.287 | 1.300 | 189 | 241 | 242 | 63 | | 91 | 83 | 0.0 | 0.95 | 59.77 | 13.726 | 99.9 | 36.603 |
| B-4 | 22.5 | 0:22:30 | 428.600 | 0.850 | 1.216 | 1.200 | 189 | 240 | 242 | 63 | | 91 | 83 | 0.0 | 0.92 | 58.09 | 15.360 | 100.1 | 36.864 |
| B-5 | 25.0 | 0:25:00 | 430.300 | 0.800 | 1.144 | 1.100 | 189 | 237 | 241 | 63 | | 92 | 83 | 0.0 | 0.89 | 56.35 | 16.944 | 100.2 | 36.968 |
| B-6 | 27.5 | 0:27:30 | 431.950 | 0.700 | 1.001 | 1.000 | 188 | 238 | 244 | 63 | | 91 | 83 | 0.0 | 0.84 | 52.67 | 18.432 | 100.4 | 36.865 |
| C-1 | 30.0 | 0:30:00 | 433.500 | 0.900 | 1.287 | 1.300 | 193 | 242 | 240 | 66 | | 89 | 83 | 0.0 | 0.95 | 59.96 | 20.021 | 100.1 | 36.963 |
| C-2 | 32.5 | 0:32:30 | 435.150 | 1.200 | 1.716 | 1.700 | 192 | 241 | 245 | 66 | | 91 | 83 | 0.0 | 1.10 | 69.18 | 21.801 | 99.5 | 37.374 |
| C-3 | 35.0 | 0:35:00 | 437.000 | 1.300 | 1.859 | 1.800 | 192 | 240 | 241 | 67 | | 90 | 83 | 0.0 | 1.14 | 72.00 | 23.728 | 99.3 | 37.965 |
| C-4 | 37.5 | 0:37:30 | 439.000 | 1.300 | 1.859 | 1.800 | 192 | 241 | 244 | 67 | | 92 | 84 | 0.0 | 1.14 | 72.00 | 25.745 | 99.5 | 38.618 |
| C-5 | 40.0 | 0:40:00 | 441.100 | 1.400 | 2.002 | 2.000 | 191 | 240 | 240 | 68 | | 93 | 82 | 0.0 | 1.18 | 74.66 | 27.766 | 99.4 | 39.199 |
| C-6 | 42.5 | 0:42:30 | 443.200 | 1.300 | 1.859 | 1.800 | 191 | 240 | 243 | 68 | | 92 | 84 | 0.0 | 1.14 | 71.95 | 29.783 | 99.6 | 39.711 |
| D-1 | 45.0 | 0:45:00 | 445.300 | 0.900 | 1.287 | 1.300 | 197 | 244 | 245 | 67 | | 89 | 83 | 0.0 | 0.95 | 60.14 | 31.468 | 99.8 | 39.749 |
| D-2 | 47.5 | 0:47:30 | 447.050 | 1.100 | 1.573 | 1.600 | 200 | 242 | 246 | 65 | | 91 | 83 | 0.0 | 1.05 | 66.64 | 33.344 | 100.0 | 40.013 |
| D-3 | 50.0 | 0:50:00 | 449.000 | 1.300 | 1.859 | 1.800 | 197 | 246 | 244 | 66 | | 92 | 83 | 0.0 | 1.14 | 72.28 | 35.171 | 99.6 | 40.195 |
| D-4 | 52.5 | 0:52:30 | 450.900 | 1.300 | 1.859 | 1.800 | 195 | 245 | 244 | 66 | | 92 | 83 | 0.0 | 1.14 | 72.17 | 36.998 | 99.2 | 40.361 |
| D-5 | 55.0 | 0:55:00 | 452.800 | 1.300 | 1.859 | 1.800 | 196 | 246 | 244 | 67 | | 91 | 83 | 0.0 | 1.14 | 72.22 | 38.923 | 99.1 | 40.615 |
| D-6 | 57.5 | 0:57:30 | 454.800 | 1.200 | 1.716 | 1.700 | 198 | 246 | 245 | 67 | | 92 | 83 | 0.0 | 1.10 | 69.50 | 40.797 | 99.1 | 40.797 |
| Last Pt | 60.0 | 1:00:00 | 456.750 | | | | | | | | | | | | | | | | |
| Final Val | 60.0 | 1:00:00 | 456.750 | | | | | | | | | | | Max Vac | 0.0 | Final Values | 40.797 | 99.1 | |
| Average Values | | | | 1.00 | 1.40 | 1.94 | 241 | 243 | 66 | | | 91 | 83 | | 0.99 | 62.66 | | | |

CTM 027 (AMMONIA) ISOKINETIC SAMPLING DATA

| | | | |
|--------------------|---------------------------|-----------------|----------------------------|
| Plant Name | West County Energy Center | Date | 11/17/2009 |
| Sampling Location | Loxahatchee, Florida | Project # | bv-10-westcounty.fl-comp#1 |
| Operator | Pandu Sattvika | Run # | 2C-3 |
| # of Points Across | 6 | # of Ports Used | 4 |

| Ideal Nozzle Diameter and IsoKinetic Factor Setup | | | |
|---|-----------------------|-------|---------------------|
| Pitot Tube Coefficient | (C _p) | 0.84 | |
| Avg Stack Temp | (T _s) | 195 | oF |
| Avg Gas Meter Temp | (T _m) | 86 | |
| DH @ 0.75 SCFM | (ΔH _{0.75}) | 1.60 | in H ₂ O |
| Avg Pitot Tube Diff. Pressure | (ΔP _{pit}) | 0.96 | in H ₂ O |
| Stack Moisture Content | (B _w) | 10.38 | % |
| Stack Dry Molecular Weight | (M _d) | 29.28 | lb/lb-mole |
| Estimated Orifice Flow Rate | (Q _e) | 0.707 | acfm |
| DP to DH IsoKinetic Factor | (K) | 1.42 | |

| Leak Checks | | | | | | |
|-------------|-------------------------------------|-------------------------------------|---|--------------------------|----|-------|
| Train | | Pre | 0 | ft ³ /min @ | 15 | in Hg |
| OK? | <input checked="" type="checkbox"/> | Post | 0 | ft ³ /min @ | 15 | in Hg |
| Pitot | | Pre | 8 | in. H ₂ O for | 15 | sec |
| OK? | <input checked="" type="checkbox"/> | Post | 8 | in. H ₂ O for | 15 | sec |
| Orsat | OK? | <input checked="" type="checkbox"/> | | | | |

| Sampling Equipment | | | |
|-------------------------|---------------------|--------|----|
| Meter # | samp-cp-0012 | | |
| Meterbox Cal. Factor | (Y) | 0.992 | |
| Nozzle # | | | |
| Average Nozzle Diameter | (D _{avg}) | 0.2150 | in |
| Rec. Nozzle Diameter | (D _{rec}) | 0.2160 | in |
| Probe # / Length | / 144 | | |
| Liner Material | inconel | | |
| Sample Case / Oven # | | | |
| Impinger Case # | | | |

| Pressures | | | |
|-------------------------|-----------------------|-------|---------------------|
| Barometric Pressure | (P _b) | 29.92 | in Hg |
| Stack Static Pressure | (P _{stack}) | 0.75 | in H ₂ O |
| Absolute Stack Pressure | (P _a) | 29.98 | in Hg |
| Absolute Meter Pressure | (P _m) | 30.04 | in Hg |

| Nozzle Measurements | | | | |
|---------------------|-------|-------|-------|------|
| Pre | 0.215 | 0.215 | 0.215 | PASS |
| Post | 0.215 | 0.215 | 0.215 | PASS |

| Run Time | | | |
|----------|-------|-----|-------|
| Start | 15:19 | End | 16:24 |

| Weights | Imp 1 | Imp 2 | Imp 3 | Imp 4 | Imp 5 | Imp 6 | Imp 7 | Imp 8 |
|---------|--------|--------|--------|--------|-------|-------|-------|-------|
| Pre | 716.80 | 700.20 | 621.90 | 896.60 | | | | |
| Post | 791.20 | 713.10 | 625.60 | 906.10 | | | | |

| | | | | | |
|-------------|------------------|------|----|----------|--|
| Wash Volume | H ₂ O | 50.0 | ml | Filter # | |
| | MeCl | | ml | | |

| Traverse Point # | Sampling Time (S) | Timer Time | Dry Gas Meter Reading (V _m) | Velocity Head (Δp) | Desired Orifice ΔH (ΔH _d) | | Actual Orifice ΔH (ΔH _a) | | Stack Temp (t _s) | Probe Temp | Filter Temp | Impinger Exit Temp | Aux Temp | Meter Inlet Temp (t _m) | Meter Outlet Temp (t _m) | Pump Vacuum | Square Root ΔP (ΔP ^{1/2}) | Local Stack Velocity (v _s) | Cumulative Meter Volume (V _m) _{tot} | Cumulative Percent IsoKinetic (I) | Est-Run Meter Volume (V _m) _{est} | |
|------------------|-------------------|------------|---|--------------------|---------------------------------------|---------------------|--------------------------------------|---------------------|------------------------------|------------|-------------|--------------------|----------|------------------------------------|-------------------------------------|-------------|-------------------------------------|--|--|-----------------------------------|---|--|
| | | | | | in H ₂ O | in H ₂ O | in H ₂ O | in H ₂ O | | | | | | | | | | | | | | |
| A-1 | 0.0 | 0:00:00 | 457.000 | 0.950 | 1.353 | 1.300 | 200 | 242 | 242 | 67 | | | | 87 | 83 | 0.0 | 0.97 | 61.95 | 1.735 | 103.2 | 41.650 | |
| A-2 | 2.5 | 0:02:30 | 458.800 | 0.900 | 1.282 | 1.300 | 201 | 243 | 244 | 66 | | | | 89 | 82 | 0.0 | 0.95 | 60.34 | 3.381 | 101.9 | 40.568 | |
| A-3 | 5.0 | 0:05:00 | 460.508 | 0.900 | 1.282 | 1.300 | 202 | 244 | 245 | 67 | | | | 90 | 83 | 0.0 | 0.95 | 60.39 | 5.008 | 101.2 | 40.067 | |
| A-4 | 7.5 | 0:07:30 | 462.201 | 1.200 | 1.709 | 1.700 | 201 | 244 | 245 | 67 | | | | 90 | 82 | 0.0 | 1.10 | 69.67 | 6.693 | 98.2 | 40.160 | |
| A-5 | 10.0 | 0:10:00 | 463.950 | 1.200 | 1.709 | 1.700 | 201 | 247 | 244 | 67 | | | | 90 | 82 | 2.0 | 1.10 | 69.67 | 8.620 | 99.0 | 41.375 | |
| A-6 | 12.5 | 0:12:30 | 465.950 | 1.300 | 1.851 | 1.800 | 200 | 246 | 245 | 67 | | | | 91 | 82 | 2.0 | 1.14 | 72.46 | 10.593 | 99.3 | 42.373 | |
| B-1 | 15.0 | 0:15:00 | 468.000 | 0.900 | 1.282 | 1.300 | 194 | 244 | 244 | 68 | | | | 88 | 82 | 1.0 | 0.95 | 60.02 | 12.329 | 100.1 | 42.270 | |
| B-2 | 17.5 | 0:17:30 | 469.800 | 1.200 | 1.709 | 1.700 | 194 | 243 | 244 | 67 | | | | 90 | 80 | 1.0 | 1.10 | 69.30 | 14.452 | 101.9 | 43.356 | |
| B-3 | 20.0 | 0:20:00 | 472.000 | 1.300 | 1.851 | 1.800 | 192 | 242 | 243 | 68 | | | | 91 | 82 | 2.0 | 1.14 | 72.02 | 15.800 | 99.0 | 42.132 | |
| B-4 | 22.5 | 0:22:30 | 473.400 | 1.200 | 1.709 | 1.700 | 192 | 245 | 245 | 67 | | | | 91 | 82 | 2.0 | 1.10 | 69.20 | 17.724 | 99.2 | 42.539 | |
| B-5 | 25.0 | 0:25:00 | 475.400 | 1.400 | 1.994 | 2.000 | 191 | 241 | 243 | 68 | | | | 91 | 82 | 3.0 | 1.18 | 74.69 | 19.747 | 99.1 | 43.084 | |
| B-6 | 27.5 | 0:27:30 | 477.500 | 1.300 | 1.851 | 1.800 | 191 | 244 | 243 | 68 | | | | 91 | 82 | 2.0 | 1.14 | 71.97 | 21.720 | 99.2 | 43.441 | |
| C-1 | 30.0 | 0:30:00 | 479.550 | 0.750 | 1.068 | 1.100 | 192 | 243 | 244 | 67 | | | | 88 | 82 | 2.0 | 0.87 | 54.71 | 23.407 | 100.1 | 43.213 | |
| C-2 | 32.5 | 0:32:30 | 481.300 | 0.800 | 1.139 | 1.100 | 191 | 241 | 244 | 66 | | | | 89 | 82 | 0.0 | 0.89 | 56.46 | 24.899 | 99.9 | 42.684 | |
| C-3 | 35.0 | 0:35:00 | 482.850 | 0.900 | 1.282 | 1.300 | 189 | 238 | 243 | 68 | | | | 89 | 82 | 0.0 | 0.95 | 59.79 | 26.604 | 100.1 | 42.567 | |
| C-4 | 37.5 | 0:37:30 | 484.620 | 0.800 | 1.139 | 1.100 | 190 | 241 | 241 | 67 | | | | 89 | 82 | 1.0 | 0.89 | 56.41 | 28.318 | 100.7 | 42.477 | |
| C-5 | 40.0 | 0:40:00 | 486.400 | 0.800 | 1.139 | 1.100 | 189 | 238 | 243 | 67 | | | | 89 | 82 | 1.0 | 0.89 | 56.37 | 30.003 | 101.1 | 42.357 | |
| C-6 | 42.5 | 0:42:30 | 488.150 | 0.700 | 0.997 | 1.000 | 188 | 239 | 242 | 68 | | | | 89 | 82 | 0.0 | 0.84 | 52.69 | 31.543 | 101.4 | 42.057 | |
| D-1 | 45.0 | 0:45:00 | 489.750 | 0.800 | 1.139 | 1.100 | 198 | 238 | 242 | 68 | | | | 88 | 82 | 0.0 | 0.89 | 56.76 | 33.036 | 101.1 | 41.730 | |
| D-2 | 47.5 | 0:47:30 | 491.300 | 0.800 | 1.139 | 1.100 | 199 | 239 | 242 | 67 | | | | 89 | 82 | 0.0 | 0.89 | 56.80 | 34.577 | 101.1 | 41.492 | |
| D-3 | 50.0 | 0:50:00 | 492.900 | 0.850 | 1.210 | 1.200 | 199 | 240 | 241 | 67 | | | | 89 | 81 | 0.0 | 0.92 | 58.55 | 36.167 | 101.0 | 41.334 | |
| D-4 | 52.5 | 0:52:30 | 494.550 | 0.750 | 1.068 | 1.100 | 199 | 237 | 239 | 67 | | | | 91 | 82 | 0.0 | 0.87 | 55.00 | 37.849 | 101.5 | 41.290 | |
| D-5 | 55.0 | 0:55:00 | 496.300 | 0.700 | 0.997 | 1.000 | 198 | 242 | 245 | 68 | | | | 89 | 82 | 1.0 | 0.84 | 53.09 | 39.889 | 101.7 | 41.102 | |
| D-6 | 57.5 | 0:57:30 | 497.900 | 0.700 | 0.997 | 1.000 | 196 | 237 | 239 | 68 | | | | 89 | 82 | 1.0 | 0.84 | 53.01 | 40.920 | 101.9 | 40.920 | |
| Last Pt | 60.0 | 1:00:00 | 499.490 | | | | | | | | | | | | | | | | | | | |
| Final Val | 60.0 | 1:00:00 | 499.490 | | | | | | | | | | | Max Vac | 3.0 | | Final Values | 40.920 | 101.9 | | | |
| Average Values | | | | 0.963 | | 1.358 | 195 | 242 | 243 | 67 | | | | 89 | 82 | | 0.97 | 61.72 | | | | |

CTM 027 (AMMONIA) - SAMPLE RECOVERY AND INTEGRITY DATA SHEET

| | | | |
|--------------------------|---------------------------|---------------------------|----------------------------|
| Plant Name | West County Energy Center | Date | 11/17/09 |
| Sampling Location | Loxahatchee, Florida | Project # | bv-10-westcounty.fl-comp#1 |
| Operator | Pandu Sattvika | Acetone Lot Number | N/A |

| Run History Data | | | | |
|---------------------------|------------|------------|------------|------------|
| Run Number | 2C-1 | 2C-2 | 2C-3 | |
| Run Start Time | 12:56 | 14:07 | 15:19 | (hh:mm) |
| Run Stop Time | 14:01 | 15:14 | 16:24 | (hh:mm) |
| Train Prepared By | AS | AS | AS | |
| Train Recovered By | AS | AS | AS | |
| Recovery Date | 11/17/2009 | 11/17/2009 | 11/17/2009 | (mm/dd/yy) |

| Moisture Content Data | | | | | |
|---------------------------------------|-------------------|--------|--------|--------|----|
| Impingers 1, 2, and 3 - Liquid Volume | | | | | |
| Final Volume | (V _f) | 2137.8 | 2200.8 | 2133.7 | ml |
| Initial Volume | (V _i) | 2051.9 | 2108.9 | 2042.6 | ml |
| Net Volume | (V _n) | 86.0 | 91.9 | 91.2 | ml |
| Comments | | | | | |
| Impinger 4 - Silica Gel Weight | | | | | |
| Final Weight | (W _f) | 917.8 | 917.7 | 906.1 | g |
| Initial Weight | (W _i) | 908.5 | 909.7 | 896.6 | g |
| Net Weight | (W _n) | 9.3 | 8.0 | 9.5 | g |
| Comments | | | | | |
| Total Water Collected | | | | | |
| Total Volume | (V _c) | 95.3 | 99.9 | 100.7 | ml |



Ammonia Sample Log-In Sheet

Lab Tech: Albert Septiano
 Project: bv-10-westcounty.fl-comp#1
 Collected by: Albert Septiano
 Date Received: 11/17/2009



BLANKS

| AHI Lab # | Sample ID | Sample Source Description | Run # | Filter | | Comments | Volume (ml) |
|------------|-----------|---------------------------|-------|---|-------------|----------|-------------|
| | | | | Contents | Sample Date | | |
| 91117-2C-B | Blank | | | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 100 |

SAMPLES

| AHI Lab # | Sample ID | Sample Source Description | Run # | Contents | Sample Date | Comments | Volume (ml) |
|-------------|-----------|------------------------------|-------|---|-------------|----------|-------------|
| 91117-2C-1 | U2C-R1-FH | Unit 2C Run 1 Impinger 1 NDB | 1 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 250 |
| 91117-2C-2 | U2C-R1-FH | Unit 2C Run 1 Impinger 2 NDB | 1 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 240 |
| 91117-2C-3 | U2C-R2-FH | Unit 2C Run 2 Impinger 1 NDB | 2 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 250 |
| 91117-2C-4 | U2C-R2-FH | Unit 2C Run 2 Impinger 2 NDB | 2 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 200 |
| 91117-2C-5 | U2C-R3-FH | Unit 2C Run 3 Impinger 1 NDB | 3 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 230 |
| 91117-2C-6 | U2C-R3-FH | Unit 2C Run 3 Impinger 2 NDB | 3 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 220 |
| 91117-2C-7 | U2C-R1-FH | Unit 2C Run 1 Impinger 1 wDB | 1 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 220 |
| 91117-2C-8 | U2C-R1-FH | Unit 2C Run 1 Impinger 2 wDB | 1 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 200 |
| 91117-2C-9 | U2C-R2-FH | Unit 2C Run 2 Impinger 1 wDB | 2 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 250 |
| 91117-2C-10 | U2C-R2-FH | Unit 2C Run 2 Impinger 2 wDB | 2 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 220 |
| 91117-2C-11 | U2C-R3-FH | Unit 2C Run 3 Impinger 1 wDB | 3 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 220 |
| 91117-2C-12 | U2C-R3-FH | Unit 2C Run 3 Impinger 2 wDB | 3 | H ₂ SO ₄ , H ₂ O | 11/17/2009 | | 220 |

bv-10-westcounty.fl-comp#1-NH3 Analysis U2C

Ammonia Sample Measurement

| | |
|-----------------|----------------------------|
| Lab Tech: | Albert Septiano |
| Project: | bv-10-westcounty.fl-comp#1 |
| Date Analyzed: | 11/17/2009 |
| Time Analyzed: | |
| Temp (°F) | |
| Humidity | |
| BP (In HG) | |
| Analysis Method | 350.3 |



| Calibration Data | | |
|---------------------|---------------|--------------|
| Concentration (ppm) | Pre-Cal (ppm) | Pre-Cal (mV) |
| 0.0 | 0.0 | 84.9 |
| 5.0 | 5.0 | -52.3 |
| 10.0 | 10.0 | -70.2 |
| 20.0 | 20.0 | -87.4 |
| Slope | | |
| Linearity | 1.0000 | N/A |

| Sample ID | Sample Amt Used (ml) | ISA/pH Volume (ml) | Meter Reading (mg/L) | Time Analyzed (hh:mm:ss) | Dilution Factor | Sample Volume | ML (mg/L) | PQL (mg/L) | Final Conc. (mg/L) |
|-------------|----------------------|--------------------|----------------------|--------------------------|-----------------|---------------|-----------|------------|--------------------|
| 91117-2C-B | 100.0 | 1.0 | 0.0 | 12:00:00 | 1.0 | 100.0 | 0.10 | 0.1 | BPQL |
| 91117-2C-1 | 100.0 | 1.0 | 11.5 | 12:10:00 | 1.0 | 250.0 | 0.10 | 0.1 | 11.5 |
| 91117-2C-2 | 100.0 | 1.0 | 0.1 | 12:15:00 | 1.0 | 240.0 | 0.10 | 0.1 | 0.1 |
| 91117-2C-3 | 100.0 | 1.0 | 11.6 | 12:20:00 | 1.0 | 250.0 | 0.10 | 0.1 | 11.6 |
| 91117-2C-4 | 100.0 | 1.0 | 0.1 | 12:25:00 | 1.0 | 200.0 | 0.10 | 0.1 | BPQL |
| 91117-2C-5 | 100.0 | 1.0 | 11.4 | 12:28:00 | 1.0 | 230.0 | 0.10 | 0.1 | 11.4 |
| 91117-2C-6 | 100.0 | 1.0 | 0.1 | 12:33:00 | 1.0 | 220.0 | 0.10 | 0.1 | 0.1 |
| 91117-2C-7 | 100.0 | 1.0 | 12.3 | 16:45:00 | 1.0 | 220.0 | 0.10 | 0.1 | 12.3 |
| 91117-2C-8 | 100.0 | 1.0 | 0.1 | 16:50:00 | 1.0 | 200.0 | 0.10 | 0.1 | BPQL |
| 91117-2C-9 | 100.0 | 1.0 | 10.5 | 16:56:00 | 1.0 | 250.0 | 0.10 | 0.1 | 10.5 |
| 91117-2C-10 | 100.0 | 1.0 | 0.1 | 17:01:00 | 1.0 | 220.0 | 0.10 | 0.1 | BPQL |
| 91117-2C-11 | 100.0 | 1.0 | 10.3 | 17:04:00 | 1.0 | 220.0 | 0.10 | 0.1 | 10.3 |
| 91117-2C-12 | 100.0 | 1.0 | 0.0 | 17:09:00 | 1.0 | 220.0 | 0.10 | 0.1 | BPQL |

bv-10-westcounty.fl-comp#1-NH3 Analysis U2C



Ammonia Analysis

AHI Lab No.: 91117-2C-7
 Sample ID: U2C-R1-FH
 Sampling Date: 11/17/2009

| Test Requested | Method Parameter | Prep Info | Result | PQL* | Analysis Date |
|------------------|-------------------|-----------|--------|------|----------------|
| Ammonia Nitrogen | EPA 350.3 Ammonia | N/A | 12.3 | 0.10 | 11/17/09 16:45 |
| Volume | Volume in ml | N/A | 220 | N/A | 11/17/09 0:00 |

AHI Lab No.: 91117-2C-8
 Sample ID: U2C-R1-FH
 Sampling Date: 11/17/2009

| Test Requested | Method Parameter | Prep Info | Result | PQL* | Analysis Date |
|------------------|-------------------|-----------|--------|------|----------------|
| Ammonia Nitrogen | EPA 350.3 Ammonia | N/A | BPQL | 0.10 | 11/17/09 16:50 |
| Volume | Volume in ml | N/A | 200 | N/A | 11/17/09 0:00 |

AHI Lab No.: 91117-2C-9
 Sample ID: U2C-R2-FH
 Sampling Date: 11/17/2009

| Test Requested | Method Parameter | Prep Info | Result | PQL* | Analysis Date |
|------------------|-------------------|-----------|--------|------|----------------|
| Ammonia Nitrogen | EPA 350.3 Ammonia | N/A | 10.5 | 0.10 | 11/17/09 16:56 |
| Volume | Volume in ml | N/A | 250 | N/A | 11/17/09 0:00 |

AHI Lab No.: 91117-2C-10
 Sample ID: U2C-R2-FH
 Sampling Date: 11/17/2009

| Test Requested | Method Parameter | Prep Info | Result | PQL* | Analysis Date |
|------------------|-------------------|-----------|--------|------|----------------|
| Ammonia Nitrogen | EPA 350.3 Ammonia | N/A | BPQL | 0.10 | 11/17/09 17:01 |
| Volume | Volume in ml | N/A | 220 | N/A | 11/17/09 0:00 |

AHI Lab No.: 91117-2C-11
 Sample ID: U2C-R3-FH
 Sampling Date: 11/17/2009

| Test Requested | Method Parameter | Prep Info | Result | PQL* | Analysis Date |
|------------------|-------------------|-----------|--------|------|----------------|
| Ammonia Nitrogen | EPA 350.3 Ammonia | N/A | 10.3 | 0.10 | 11/17/09 17:04 |
| Volume | Volume in ml | N/A | 220 | N/A | 11/17/09 0:00 |

AHI Lab No.: 91117-2C-12
 Sample ID: U2C-R3-FH
 Sampling Date: 11/17/2009

| Test Requested | Method Parameter | Prep Info | Result | PQL* | Analysis Date |
|------------------|-------------------|-----------|--------|------|----------------|
| Ammonia Nitrogen | EPA 350.3 Ammonia | N/A | BPQL | 0.10 | 11/17/09 17:09 |
| Volume | Volume in ml | N/A | 220 | N/A | 11/17/09 0:00 |

TEST RESULTS

**Opacity
Base Load**

| Company: Florida Power and Light Equipment: Mitsubishi 501G without Duct Burners Location: West County Energy Center Date: November 17, 2009 Project #: bv-10-westcounty.fl-comp#1 | | | | | | Run 1 | | | Average Opacity: 0.00 % Maximum Opacity: 0 % 6 Minute Average: 0.00 % 6 Minute Maximum: 0.00 % Max Time w/ Opacity: 0.00 minutes | | |
|---|-------------|------------|------------|-------------|------------|------------|-------------|------------|---|-------------|------------|
| TIME (min) | OPACITY (%) | 6 MIN AVG. | TIME (min) | OPACITY (%) | 6 MIN AVG. | TIME (min) | OPACITY (%) | 6 MIN AVG. | TIME (min) | OPACITY (%) | 6 MIN AVG. |
| 0.00 | 0 | N/A | 15.00 | 0 | 0.00 | 30.00 | 0 | 0.00 | 45.00 | 0 | 0.00 |
| 0.25 | 0 | N/A | 15.25 | 0 | 0.00 | 30.25 | 0 | 0.00 | 45.25 | 0 | 0.00 |
| 0.50 | 0 | N/A | 15.50 | 0 | 0.00 | 30.50 | 0 | 0.00 | 45.50 | 0 | 0.00 |
| 0.75 | 0 | N/A | 15.75 | 0 | 0.00 | 30.75 | 0 | 0.00 | 45.75 | 0 | 0.00 |
| 1.00 | 0 | N/A | 16.00 | 0 | 0.00 | 31.00 | 0 | 0.00 | 46.00 | 0 | 0.00 |
| 1.25 | 0 | N/A | 16.25 | 0 | 0.00 | 31.25 | 0 | 0.00 | 46.25 | 0 | 0.00 |
| 1.50 | 0 | N/A | 16.50 | 0 | 0.00 | 31.50 | 0 | 0.00 | 46.50 | 0 | 0.00 |
| 1.75 | 0 | N/A | 16.75 | 0 | 0.00 | 31.75 | 0 | 0.00 | 46.75 | 0 | 0.00 |
| 2.00 | 0 | N/A | 17.00 | 0 | 0.00 | 32.00 | 0 | 0.00 | 47.00 | 0 | 0.00 |
| 2.25 | 0 | N/A | 17.25 | 0 | 0.00 | 32.25 | 0 | 0.00 | 47.25 | 0 | 0.00 |
| 2.50 | 0 | N/A | 17.50 | 0 | 0.00 | 32.50 | 0 | 0.00 | 47.50 | 0 | 0.00 |
| 2.75 | 0 | N/A | 17.75 | 0 | 0.00 | 32.75 | 0 | 0.00 | 47.75 | 0 | 0.00 |
| 3.00 | 0 | N/A | 18.00 | 0 | 0.00 | 33.00 | 0 | 0.00 | 48.00 | 0 | 0.00 |
| 3.25 | 0 | N/A | 18.25 | 0 | 0.00 | 33.25 | 0 | 0.00 | 48.25 | 0 | 0.00 |
| 3.50 | 0 | N/A | 18.50 | 0 | 0.00 | 33.50 | 0 | 0.00 | 48.50 | 0 | 0.00 |
| 3.75 | 0 | N/A | 18.75 | 0 | 0.00 | 33.75 | 0 | 0.00 | 48.75 | 0 | 0.00 |
| 4.00 | 0 | N/A | 19.00 | 0 | 0.00 | 34.00 | 0 | 0.00 | 49.00 | 0 | 0.00 |
| 4.25 | 0 | N/A | 19.25 | 0 | 0.00 | 34.25 | 0 | 0.00 | 49.25 | 0 | 0.00 |
| 4.50 | 0 | N/A | 19.50 | 0 | 0.00 | 34.50 | 0 | 0.00 | 49.50 | 0 | 0.00 |
| 4.75 | 0 | N/A | 19.75 | 0 | 0.00 | 34.75 | 0 | 0.00 | 49.75 | 0 | 0.00 |
| 5.00 | 0 | N/A | 20.00 | 0 | 0.00 | 35.00 | 0 | 0.00 | 50.00 | 0 | 0.00 |
| 5.25 | 0 | N/A | 20.25 | 0 | 0.00 | 35.25 | 0 | 0.00 | 50.25 | 0 | 0.00 |
| 5.50 | 0 | N/A | 20.50 | 0 | 0.00 | 35.50 | 0 | 0.00 | 50.50 | 0 | 0.00 |
| 5.75 | 0 | 0.00 | 20.75 | 0 | 0.00 | 35.75 | 0 | 0.00 | 50.75 | 0 | 0.00 |
| 6.00 | 0 | 0.00 | 21.00 | 0 | 0.00 | 36.00 | 0 | 0.00 | 51.00 | 0 | 0.00 |
| 6.25 | 0 | 0.00 | 21.25 | 0 | 0.00 | 36.25 | 0 | 0.00 | 51.25 | 0 | 0.00 |
| 6.50 | 0 | 0.00 | 21.50 | 0 | 0.00 | 36.50 | 0 | 0.00 | 51.50 | 0 | 0.00 |
| 6.75 | 0 | 0.00 | 21.75 | 0 | 0.00 | 36.75 | 0 | 0.00 | 51.75 | 0 | 0.00 |
| 7.00 | 0 | 0.00 | 22.00 | 0 | 0.00 | 37.00 | 0 | 0.00 | 52.00 | 0 | 0.00 |
| 7.25 | 0 | 0.00 | 22.25 | 0 | 0.00 | 37.25 | 0 | 0.00 | 52.25 | 0 | 0.00 |
| 7.50 | 0 | 0.00 | 22.50 | 0 | 0.00 | 37.50 | 0 | 0.00 | 52.50 | 0 | 0.00 |
| 7.75 | 0 | 0.00 | 22.75 | 0 | 0.00 | 37.75 | 0 | 0.00 | 52.75 | 0 | 0.00 |
| 8.00 | 0 | 0.00 | 23.00 | 0 | 0.00 | 38.00 | 0 | 0.00 | 53.00 | 0 | 0.00 |
| 8.25 | 0 | 0.00 | 23.25 | 0 | 0.00 | 38.25 | 0 | 0.00 | 53.25 | 0 | 0.00 |
| 8.50 | 0 | 0.00 | 23.50 | 0 | 0.00 | 38.50 | 0 | 0.00 | 53.50 | 0 | 0.00 |
| 8.75 | 0 | 0.00 | 23.75 | 0 | 0.00 | 38.75 | 0 | 0.00 | 53.75 | 0 | 0.00 |
| 9.00 | 0 | 0.00 | 24.00 | 0 | 0.00 | 39.00 | 0 | 0.00 | 54.00 | 0 | 0.00 |
| 9.25 | 0 | 0.00 | 24.25 | 0 | 0.00 | 39.25 | 0 | 0.00 | 54.25 | 0 | 0.00 |
| 9.50 | 0 | 0.00 | 24.50 | 0 | 0.00 | 39.50 | 0 | 0.00 | 54.50 | 0 | 0.00 |
| 9.75 | 0 | 0.00 | 24.75 | 0 | 0.00 | 39.75 | 0 | 0.00 | 54.75 | 0 | 0.00 |
| 10.00 | 0 | 0.00 | 25.00 | 0 | 0.00 | 40.00 | 0 | 0.00 | 55.00 | 0 | 0.00 |
| 10.25 | 0 | 0.00 | 25.25 | 0 | 0.00 | 40.25 | 0 | 0.00 | 55.25 | 0 | 0.00 |
| 10.50 | 0 | 0.00 | 25.50 | 0 | 0.00 | 40.50 | 0 | 0.00 | 55.50 | 0 | 0.00 |
| 10.75 | 0 | 0.00 | 25.75 | 0 | 0.00 | 40.75 | 0 | 0.00 | 55.75 | 0 | 0.00 |
| 11.00 | 0 | 0.00 | 26.00 | 0 | 0.00 | 41.00 | 0 | 0.00 | 56.00 | 0 | 0.00 |
| 11.25 | 0 | 0.00 | 26.25 | 0 | 0.00 | 41.25 | 0 | 0.00 | 56.25 | 0 | 0.00 |
| 11.50 | 0 | 0.00 | 26.50 | 0 | 0.00 | 41.50 | 0 | 0.00 | 56.50 | 0 | 0.00 |
| 11.75 | 0 | 0.00 | 26.75 | 0 | 0.00 | 41.75 | 0 | 0.00 | 56.75 | 0 | 0.00 |
| 12.00 | 0 | 0.00 | 27.00 | 0 | 0.00 | 42.00 | 0 | 0.00 | 57.00 | 0 | 0.00 |
| 12.25 | 0 | 0.00 | 27.25 | 0 | 0.00 | 42.25 | 0 | 0.00 | 57.25 | 0 | 0.00 |
| 12.50 | 0 | 0.00 | 27.50 | 0 | 0.00 | 42.50 | 0 | 0.00 | 57.50 | 0 | 0.00 |
| 12.75 | 0 | 0.00 | 27.75 | 0 | 0.00 | 42.75 | 0 | 0.00 | 57.75 | 0 | 0.00 |
| 13.00 | 0 | 0.00 | 28.00 | 0 | 0.00 | 43.00 | 0 | 0.00 | 58.00 | 0 | 0.00 |
| 13.25 | 0 | 0.00 | 28.25 | 0 | 0.00 | 43.25 | 0 | 0.00 | 58.25 | 0 | 0.00 |
| 13.50 | 0 | 0.00 | 28.50 | 0 | 0.00 | 43.50 | 0 | 0.00 | 58.50 | 0 | 0.00 |
| 13.75 | 0 | 0.00 | 28.75 | 0 | 0.00 | 43.75 | 0 | 0.00 | 58.75 | 0 | 0.00 |
| 14.00 | 0 | 0.00 | 29.00 | 0 | 0.00 | 44.00 | 0 | 0.00 | 59.00 | 0 | 0.00 |
| 14.25 | 0 | 0.00 | 29.25 | 0 | 0.00 | 44.25 | 0 | 0.00 | 59.25 | 0 | 0.00 |
| 14.50 | 0 | 0.00 | 29.50 | 0 | 0.00 | 44.50 | 0 | 0.00 | 59.50 | 0 | 0.00 |
| 14.75 | 0 | 0.00 | 29.75 | 0 | 0.00 | 44.75 | 0 | 0.00 | 59.75 | 0 | 0.00 |

Company: Florida Power and Light
Equipment: Mitsubishi 501G without Duct Burners
Location: West County Energy Center
Date: November 17, 2009
Project #: bv-10-westcounty.fl-comp#1

Run 2

Average Opacity: 0.00 %
Maximum Opacity: 0 %
6 Minute Average: 0.00 %
6 Minute Maximum: 0.00 %
Max Time w/ Opacity: 0.00 minutes

| TIME (min) | OPACITY (%) | 6 MIN AVG. | TIME (min) | OPACITY (%) | 6 MIN AVG. | TIME (min) | OPACITY (%) | 6 MIN AVG. | TIME (min) | OPACITY (%) | 6 MIN AVG. |
|------------|-------------|------------|------------|-------------|------------|------------|-------------|------------|------------|-------------|------------|
| 0.00 | 0 | N/A | 15.00 | 0 | 0.00 | 30.00 | 0 | 0.00 | 45.00 | 0 | 0.00 |
| 0.25 | 0 | N/A | 15.25 | 0 | 0.00 | 30.25 | 0 | 0.00 | 45.25 | 0 | 0.00 |
| 0.50 | 0 | N/A | 15.50 | 0 | 0.00 | 30.50 | 0 | 0.00 | 45.50 | 0 | 0.00 |
| 0.75 | 0 | N/A | 15.75 | 0 | 0.00 | 30.75 | 0 | 0.00 | 45.75 | 0 | 0.00 |
| 1.00 | 0 | N/A | 16.00 | 0 | 0.00 | 31.00 | 0 | 0.00 | 46.00 | 0 | 0.00 |
| 1.25 | 0 | N/A | 16.25 | 0 | 0.00 | 31.25 | 0 | 0.00 | 46.25 | 0 | 0.00 |
| 1.50 | 0 | N/A | 16.50 | 0 | 0.00 | 31.50 | 0 | 0.00 | 46.50 | 0 | 0.00 |
| 1.75 | 0 | N/A | 16.75 | 0 | 0.00 | 31.75 | 0 | 0.00 | 46.75 | 0 | 0.00 |
| 2.00 | 0 | N/A | 17.00 | 0 | 0.00 | 32.00 | 0 | 0.00 | 47.00 | 0 | 0.00 |
| 2.25 | 0 | N/A | 17.25 | 0 | 0.00 | 32.25 | 0 | 0.00 | 47.25 | 0 | 0.00 |
| 2.50 | 0 | N/A | 17.50 | 0 | 0.00 | 32.50 | 0 | 0.00 | 47.50 | 0 | 0.00 |
| 2.75 | 0 | N/A | 17.75 | 0 | 0.00 | 32.75 | 0 | 0.00 | 47.75 | 0 | 0.00 |
| 3.00 | 0 | N/A | 18.00 | 0 | 0.00 | 33.00 | 0 | 0.00 | 48.00 | 0 | 0.00 |
| 3.25 | 0 | N/A | 18.25 | 0 | 0.00 | 33.25 | 0 | 0.00 | 48.25 | 0 | 0.00 |
| 3.50 | 0 | N/A | 18.50 | 0 | 0.00 | 33.50 | 0 | 0.00 | 48.50 | 0 | 0.00 |
| 3.75 | 0 | N/A | 18.75 | 0 | 0.00 | 33.75 | 0 | 0.00 | 48.75 | 0 | 0.00 |
| 4.00 | 0 | N/A | 19.00 | 0 | 0.00 | 34.00 | 0 | 0.00 | 49.00 | 0 | 0.00 |
| 4.25 | 0 | N/A | 19.25 | 0 | 0.00 | 34.25 | 0 | 0.00 | 49.25 | 0 | 0.00 |
| 4.50 | 0 | N/A | 19.50 | 0 | 0.00 | 34.50 | 0 | 0.00 | 49.50 | 0 | 0.00 |
| 4.75 | 0 | N/A | 19.75 | 0 | 0.00 | 34.75 | 0 | 0.00 | 49.75 | 0 | 0.00 |
| 5.00 | 0 | N/A | 20.00 | 0 | 0.00 | 35.00 | 0 | 0.00 | 50.00 | 0 | 0.00 |
| 5.25 | 0 | N/A | 20.25 | 0 | 0.00 | 35.25 | 0 | 0.00 | 50.25 | 0 | 0.00 |
| 5.50 | 0 | N/A | 20.50 | 0 | 0.00 | 35.50 | 0 | 0.00 | 50.50 | 0 | 0.00 |
| 5.75 | 0 | 0.00 | 20.75 | 0 | 0.00 | 35.75 | 0 | 0.00 | 50.75 | 0 | 0.00 |
| 6.00 | 0 | 0.00 | 21.00 | 0 | 0.00 | 36.00 | 0 | 0.00 | 51.00 | 0 | 0.00 |
| 6.25 | 0 | 0.00 | 21.25 | 0 | 0.00 | 36.25 | 0 | 0.00 | 51.25 | 0 | 0.00 |
| 6.50 | 0 | 0.00 | 21.50 | 0 | 0.00 | 36.50 | 0 | 0.00 | 51.50 | 0 | 0.00 |
| 6.75 | 0 | 0.00 | 21.75 | 0 | 0.00 | 36.75 | 0 | 0.00 | 51.75 | 0 | 0.00 |
| 7.00 | 0 | 0.00 | 22.00 | 0 | 0.00 | 37.00 | 0 | 0.00 | 52.00 | 0 | 0.00 |
| 7.25 | 0 | 0.00 | 22.25 | 0 | 0.00 | 37.25 | 0 | 0.00 | 52.25 | 0 | 0.00 |
| 7.50 | 0 | 0.00 | 22.50 | 0 | 0.00 | 37.50 | 0 | 0.00 | 52.50 | 0 | 0.00 |
| 7.75 | 0 | 0.00 | 22.75 | 0 | 0.00 | 37.75 | 0 | 0.00 | 52.75 | 0 | 0.00 |
| 8.00 | 0 | 0.00 | 23.00 | 0 | 0.00 | 38.00 | 0 | 0.00 | 53.00 | 0 | 0.00 |
| 8.25 | 0 | 0.00 | 23.25 | 0 | 0.00 | 38.25 | 0 | 0.00 | 53.25 | 0 | 0.00 |
| 8.50 | 0 | 0.00 | 23.50 | 0 | 0.00 | 38.50 | 0 | 0.00 | 53.50 | 0 | 0.00 |
| 8.75 | 0 | 0.00 | 23.75 | 0 | 0.00 | 38.75 | 0 | 0.00 | 53.75 | 0 | 0.00 |
| 9.00 | 0 | 0.00 | 24.00 | 0 | 0.00 | 39.00 | 0 | 0.00 | 54.00 | 0 | 0.00 |
| 9.25 | 0 | 0.00 | 24.25 | 0 | 0.00 | 39.25 | 0 | 0.00 | 54.25 | 0 | 0.00 |
| 9.50 | 0 | 0.00 | 24.50 | 0 | 0.00 | 39.50 | 0 | 0.00 | 54.50 | 0 | 0.00 |
| 9.75 | 0 | 0.00 | 24.75 | 0 | 0.00 | 39.75 | 0 | 0.00 | 54.75 | 0 | 0.00 |
| 10.00 | 0 | 0.00 | 25.00 | 0 | 0.00 | 40.00 | 0 | 0.00 | 55.00 | 0 | 0.00 |
| 10.25 | 0 | 0.00 | 25.25 | 0 | 0.00 | 40.25 | 0 | 0.00 | 55.25 | 0 | 0.00 |
| 10.50 | 0 | 0.00 | 25.50 | 0 | 0.00 | 40.50 | 0 | 0.00 | 55.50 | 0 | 0.00 |
| 10.75 | 0 | 0.00 | 25.75 | 0 | 0.00 | 40.75 | 0 | 0.00 | 55.75 | 0 | 0.00 |
| 11.00 | 0 | 0.00 | 26.00 | 0 | 0.00 | 41.00 | 0 | 0.00 | 56.00 | 0 | 0.00 |
| 11.25 | 0 | 0.00 | 26.25 | 0 | 0.00 | 41.25 | 0 | 0.00 | 56.25 | 0 | 0.00 |
| 11.50 | 0 | 0.00 | 26.50 | 0 | 0.00 | 41.50 | 0 | 0.00 | 56.50 | 0 | 0.00 |
| 11.75 | 0 | 0.00 | 26.75 | 0 | 0.00 | 41.75 | 0 | 0.00 | 56.75 | 0 | 0.00 |
| 12.00 | 0 | 0.00 | 27.00 | 0 | 0.00 | 42.00 | 0 | 0.00 | 57.00 | 0 | 0.00 |
| 12.25 | 0 | 0.00 | 27.25 | 0 | 0.00 | 42.25 | 0 | 0.00 | 57.25 | 0 | 0.00 |
| 12.50 | 0 | 0.00 | 27.50 | 0 | 0.00 | 42.50 | 0 | 0.00 | 57.50 | 0 | 0.00 |
| 12.75 | 0 | 0.00 | 27.75 | 0 | 0.00 | 42.75 | 0 | 0.00 | 57.75 | 0 | 0.00 |
| 13.00 | 0 | 0.00 | 28.00 | 0 | 0.00 | 43.00 | 0 | 0.00 | 58.00 | 0 | 0.00 |
| 13.25 | 0 | 0.00 | 28.25 | 0 | 0.00 | 43.25 | 0 | 0.00 | 58.25 | 0 | 0.00 |
| 13.50 | 0 | 0.00 | 28.50 | 0 | 0.00 | 43.50 | 0 | 0.00 | 58.50 | 0 | 0.00 |
| 13.75 | 0 | 0.00 | 28.75 | 0 | 0.00 | 43.75 | 0 | 0.00 | 58.75 | 0 | 0.00 |
| 14.00 | 0 | 0.00 | 29.00 | 0 | 0.00 | 44.00 | 0 | 0.00 | 59.00 | 0 | 0.00 |
| 14.25 | 0 | 0.00 | 29.25 | 0 | 0.00 | 44.25 | 0 | 0.00 | 59.25 | 0 | 0.00 |
| 14.50 | 0 | 0.00 | 29.50 | 0 | 0.00 | 44.50 | 0 | 0.00 | 59.50 | 0 | 0.00 |
| 14.75 | 0 | 0.00 | 29.75 | 0 | 0.00 | 44.75 | 0 | 0.00 | 59.75 | 0 | 0.00 |

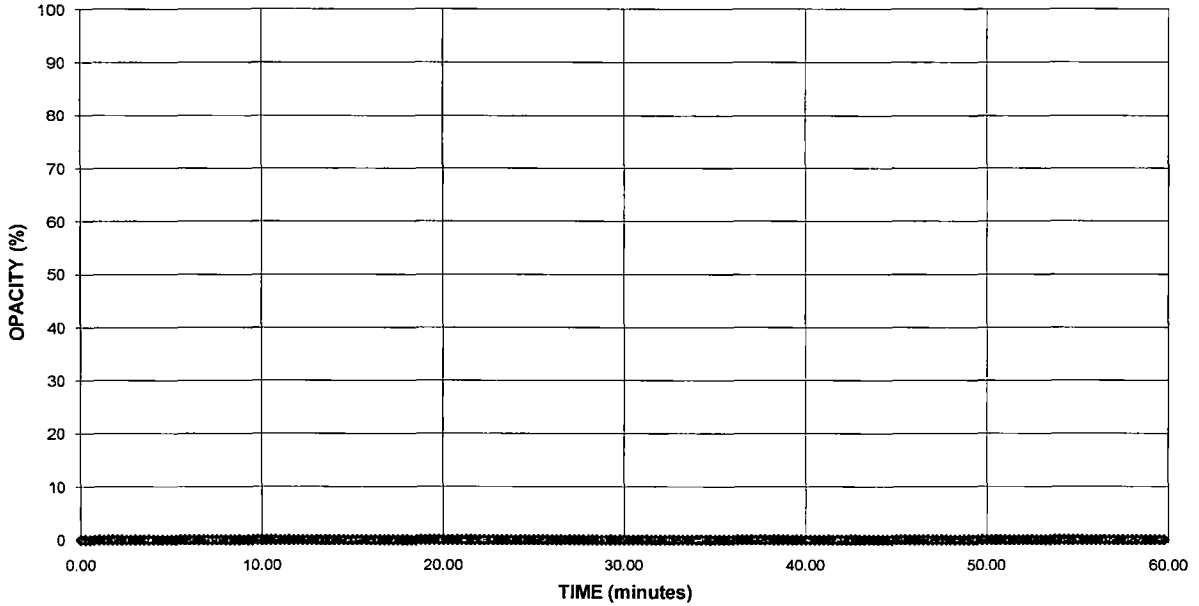
| Company: Florida Power and Light Equipment: Mitsubishi 501G without Duct Burners Location: West County Energy Center Date: November 17, 2009 Project #: bv-10-westcounty.fl-comp#1 | | | | | | Run 3 | | | Average Opacity: 0.00 % Maximum Opacity: 0 % 6 Minute Average: 0.00 % 6 Minute Maximum: 0.00 % Max Time w/ Opacity: 0.00 minutes | | |
|---|-------------|------------|------------|-------------|------------|------------|-------------|------------|---|-------------|------------|
| TIME (min) | OPACITY (%) | 6 MIN AVG. | TIME (min) | OPACITY (%) | 6 MIN AVG. | TIME (min) | OPACITY (%) | 6 MIN AVG. | TIME (min) | OPACITY (%) | 6 MIN AVG. |
| 0.00 | 0 | N/A | 15.00 | 0 | 0.00 | 30.00 | 0 | 0.00 | 45.00 | 0 | 0.00 |
| 0.25 | 0 | N/A | 15.25 | 0 | 0.00 | 30.25 | 0 | 0.00 | 45.25 | 0 | 0.00 |
| 0.50 | 0 | N/A | 15.50 | 0 | 0.00 | 30.50 | 0 | 0.00 | 45.50 | 0 | 0.00 |
| 0.75 | 0 | N/A | 15.75 | 0 | 0.00 | 30.75 | 0 | 0.00 | 45.75 | 0 | 0.00 |
| 1.00 | 0 | N/A | 16.00 | 0 | 0.00 | 31.00 | 0 | 0.00 | 46.00 | 0 | 0.00 |
| 1.25 | 0 | N/A | 16.25 | 0 | 0.00 | 31.25 | 0 | 0.00 | 46.25 | 0 | 0.00 |
| 1.50 | 0 | N/A | 16.50 | 0 | 0.00 | 31.50 | 0 | 0.00 | 46.50 | 0 | 0.00 |
| 1.75 | 0 | N/A | 16.75 | 0 | 0.00 | 31.75 | 0 | 0.00 | 46.75 | 0 | 0.00 |
| 2.00 | 0 | N/A | 17.00 | 0 | 0.00 | 32.00 | 0 | 0.00 | 47.00 | 0 | 0.00 |
| 2.25 | 0 | N/A | 17.25 | 0 | 0.00 | 32.25 | 0 | 0.00 | 47.25 | 0 | 0.00 |
| 2.50 | 0 | N/A | 17.50 | 0 | 0.00 | 32.50 | 0 | 0.00 | 47.50 | 0 | 0.00 |
| 2.75 | 0 | N/A | 17.75 | 0 | 0.00 | 32.75 | 0 | 0.00 | 47.75 | 0 | 0.00 |
| 3.00 | 0 | N/A | 18.00 | 0 | 0.00 | 33.00 | 0 | 0.00 | 48.00 | 0 | 0.00 |
| 3.25 | 0 | N/A | 18.25 | 0 | 0.00 | 33.25 | 0 | 0.00 | 48.25 | 0 | 0.00 |
| 3.50 | 0 | N/A | 18.50 | 0 | 0.00 | 33.50 | 0 | 0.00 | 48.50 | 0 | 0.00 |
| 3.75 | 0 | N/A | 18.75 | 0 | 0.00 | 33.75 | 0 | 0.00 | 48.75 | 0 | 0.00 |
| 4.00 | 0 | N/A | 19.00 | 0 | 0.00 | 34.00 | 0 | 0.00 | 49.00 | 0 | 0.00 |
| 4.25 | 0 | N/A | 19.25 | 0 | 0.00 | 34.25 | 0 | 0.00 | 49.25 | 0 | 0.00 |
| 4.50 | 0 | N/A | 19.50 | 0 | 0.00 | 34.50 | 0 | 0.00 | 49.50 | 0 | 0.00 |
| 4.75 | 0 | N/A | 19.75 | 0 | 0.00 | 34.75 | 0 | 0.00 | 49.75 | 0 | 0.00 |
| 5.00 | 0 | N/A | 20.00 | 0 | 0.00 | 35.00 | 0 | 0.00 | 50.00 | 0 | 0.00 |
| 5.25 | 0 | N/A | 20.25 | 0 | 0.00 | 35.25 | 0 | 0.00 | 50.25 | 0 | 0.00 |
| 5.50 | 0 | N/A | 20.50 | 0 | 0.00 | 35.50 | 0 | 0.00 | 50.50 | 0 | 0.00 |
| 5.75 | 0 | 0.00 | 20.75 | 0 | 0.00 | 35.75 | 0 | 0.00 | 50.75 | 0 | 0.00 |
| 6.00 | 0 | 0.00 | 21.00 | 0 | 0.00 | 36.00 | 0 | 0.00 | 51.00 | 0 | 0.00 |
| 6.25 | 0 | 0.00 | 21.25 | 0 | 0.00 | 36.25 | 0 | 0.00 | 51.25 | 0 | 0.00 |
| 6.50 | 0 | 0.00 | 21.50 | 0 | 0.00 | 36.50 | 0 | 0.00 | 51.50 | 0 | 0.00 |
| 6.75 | 0 | 0.00 | 21.75 | 0 | 0.00 | 36.75 | 0 | 0.00 | 51.75 | 0 | 0.00 |
| 7.00 | 0 | 0.00 | 22.00 | 0 | 0.00 | 37.00 | 0 | 0.00 | 52.00 | 0 | 0.00 |
| 7.25 | 0 | 0.00 | 22.25 | 0 | 0.00 | 37.25 | 0 | 0.00 | 52.25 | 0 | 0.00 |
| 7.50 | 0 | 0.00 | 22.50 | 0 | 0.00 | 37.50 | 0 | 0.00 | 52.50 | 0 | 0.00 |
| 7.75 | 0 | 0.00 | 22.75 | 0 | 0.00 | 37.75 | 0 | 0.00 | 52.75 | 0 | 0.00 |
| 8.00 | 0 | 0.00 | 23.00 | 0 | 0.00 | 38.00 | 0 | 0.00 | 53.00 | 0 | 0.00 |
| 8.25 | 0 | 0.00 | 23.25 | 0 | 0.00 | 38.25 | 0 | 0.00 | 53.25 | 0 | 0.00 |
| 8.50 | 0 | 0.00 | 23.50 | 0 | 0.00 | 38.50 | 0 | 0.00 | 53.50 | 0 | 0.00 |
| 8.75 | 0 | 0.00 | 23.75 | 0 | 0.00 | 38.75 | 0 | 0.00 | 53.75 | 0 | 0.00 |
| 9.00 | 0 | 0.00 | 24.00 | 0 | 0.00 | 39.00 | 0 | 0.00 | 54.00 | 0 | 0.00 |
| 9.25 | 0 | 0.00 | 24.25 | 0 | 0.00 | 39.25 | 0 | 0.00 | 54.25 | 0 | 0.00 |
| 9.50 | 0 | 0.00 | 24.50 | 0 | 0.00 | 39.50 | 0 | 0.00 | 54.50 | 0 | 0.00 |
| 9.75 | 0 | 0.00 | 24.75 | 0 | 0.00 | 39.75 | 0 | 0.00 | 54.75 | 0 | 0.00 |
| 10.00 | 0 | 0.00 | 25.00 | 0 | 0.00 | 40.00 | 0 | 0.00 | 55.00 | 0 | 0.00 |
| 10.25 | 0 | 0.00 | 25.25 | 0 | 0.00 | 40.25 | 0 | 0.00 | 55.25 | 0 | 0.00 |
| 10.50 | 0 | 0.00 | 25.50 | 0 | 0.00 | 40.50 | 0 | 0.00 | 55.50 | 0 | 0.00 |
| 10.75 | 0 | 0.00 | 25.75 | 0 | 0.00 | 40.75 | 0 | 0.00 | 55.75 | 0 | 0.00 |
| 11.00 | 0 | 0.00 | 26.00 | 0 | 0.00 | 41.00 | 0 | 0.00 | 56.00 | 0 | 0.00 |
| 11.25 | 0 | 0.00 | 26.25 | 0 | 0.00 | 41.25 | 0 | 0.00 | 56.25 | 0 | 0.00 |
| 11.50 | 0 | 0.00 | 26.50 | 0 | 0.00 | 41.50 | 0 | 0.00 | 56.50 | 0 | 0.00 |
| 11.75 | 0 | 0.00 | 26.75 | 0 | 0.00 | 41.75 | 0 | 0.00 | 56.75 | 0 | 0.00 |
| 12.00 | 0 | 0.00 | 27.00 | 0 | 0.00 | 42.00 | 0 | 0.00 | 57.00 | 0 | 0.00 |
| 12.25 | 0 | 0.00 | 27.25 | 0 | 0.00 | 42.25 | 0 | 0.00 | 57.25 | 0 | 0.00 |
| 12.50 | 0 | 0.00 | 27.50 | 0 | 0.00 | 42.50 | 0 | 0.00 | 57.50 | 0 | 0.00 |
| 12.75 | 0 | 0.00 | 27.75 | 0 | 0.00 | 42.75 | 0 | 0.00 | 57.75 | 0 | 0.00 |
| 13.00 | 0 | 0.00 | 28.00 | 0 | 0.00 | 43.00 | 0 | 0.00 | 58.00 | 0 | 0.00 |
| 13.25 | 0 | 0.00 | 28.25 | 0 | 0.00 | 43.25 | 0 | 0.00 | 58.25 | 0 | 0.00 |
| 13.50 | 0 | 0.00 | 28.50 | 0 | 0.00 | 43.50 | 0 | 0.00 | 58.50 | 0 | 0.00 |
| 13.75 | 0 | 0.00 | 28.75 | 0 | 0.00 | 43.75 | 0 | 0.00 | 58.75 | 0 | 0.00 |
| 14.00 | 0 | 0.00 | 29.00 | 0 | 0.00 | 44.00 | 0 | 0.00 | 59.00 | 0 | 0.00 |
| 14.25 | 0 | 0.00 | 29.25 | 0 | 0.00 | 44.25 | 0 | 0.00 | 59.25 | 0 | 0.00 |
| 14.50 | 0 | 0.00 | 29.50 | 0 | 0.00 | 44.50 | 0 | 0.00 | 59.50 | 0 | 0.00 |
| 14.75 | 0 | 0.00 | 29.75 | 0 | 0.00 | 44.75 | 0 | 0.00 | 59.75 | 0 | 0.00 |

Company: Florida Power and Light
Equipment: Mitsubishi 501G without Duct Burners
Location: West County Energy Center
Date: November 17, 2009
Project #: bv-10-westcounty.fl-comp#1

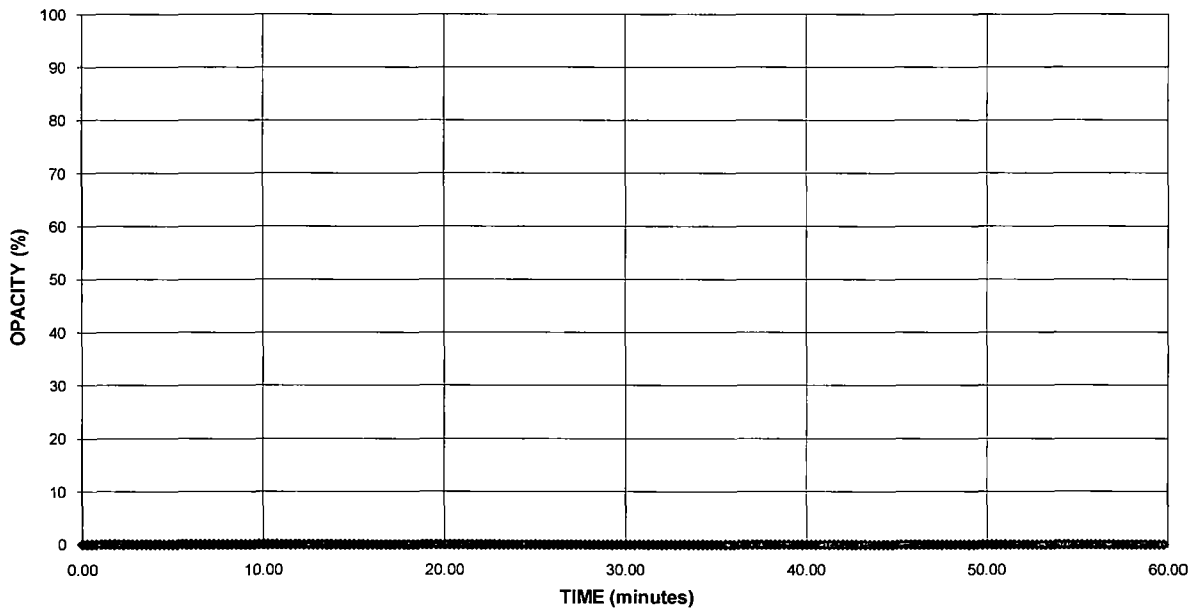
Run 1

Average Opacity: 0.00 %
Maximum Opacity: 0 %
6 Minute Average: 0.00 %
6 Minute Maximum: 0.00 %
Max Time w/ Opacity: 0.00 minutes

OPACITY READINGS (15 second intervals)



OPACITY RESULTS (6 minute averages)

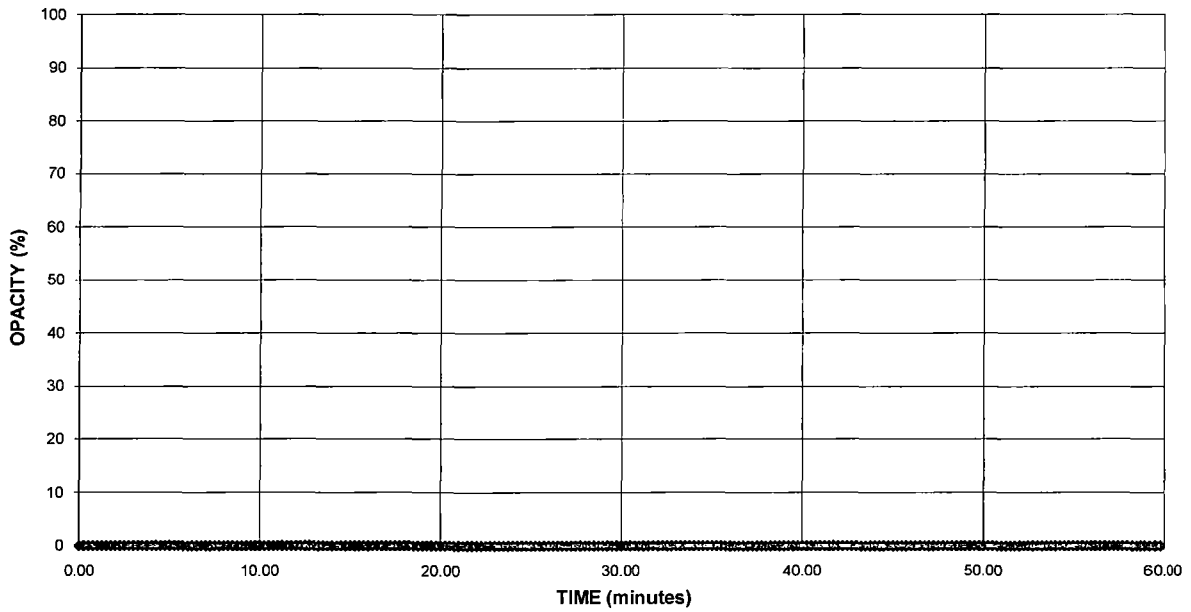


Company: Florida Power and Light
Equipment: Mitsubishi 501G without Duct Burners
Location: West County Energy Center
Date: November 17, 2009
Project #: bv-10-westcounty.fl-comp#1

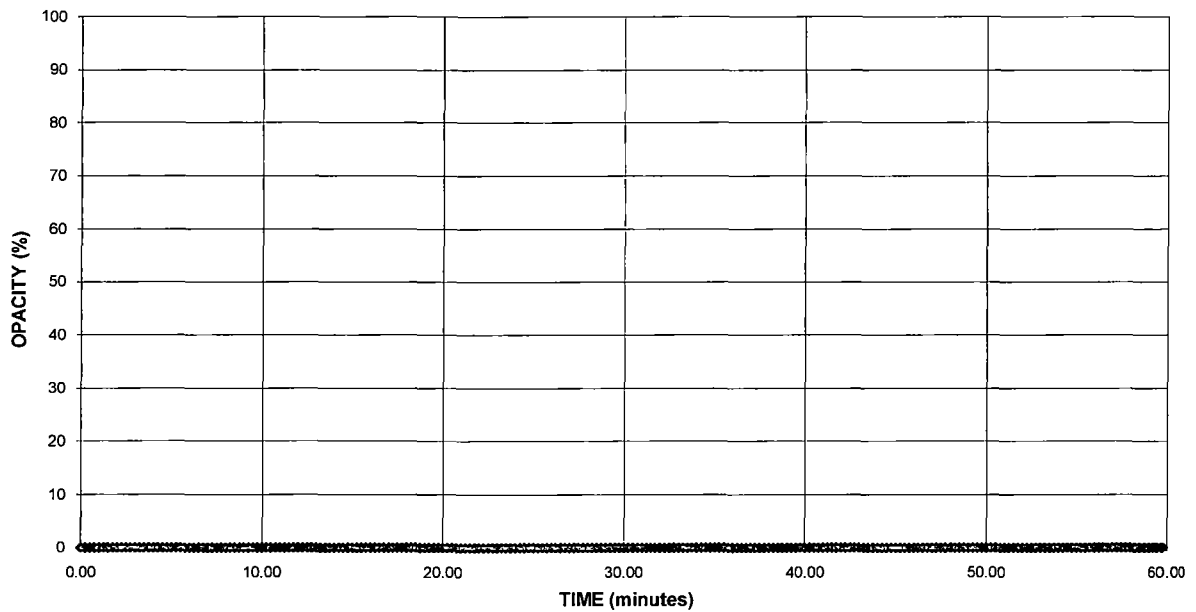
Run 2

Average Opacity: 0.00 %
Maximum Opacity: 0 %
6 Minute Average: 0.00 %
6 Minute Maximum: 0.00 %
Max Time w/ Opacity: 0.00 minutes

OPACITY READINGS (15 second intervals)



OPACITY RESULTS (6 minute averages)

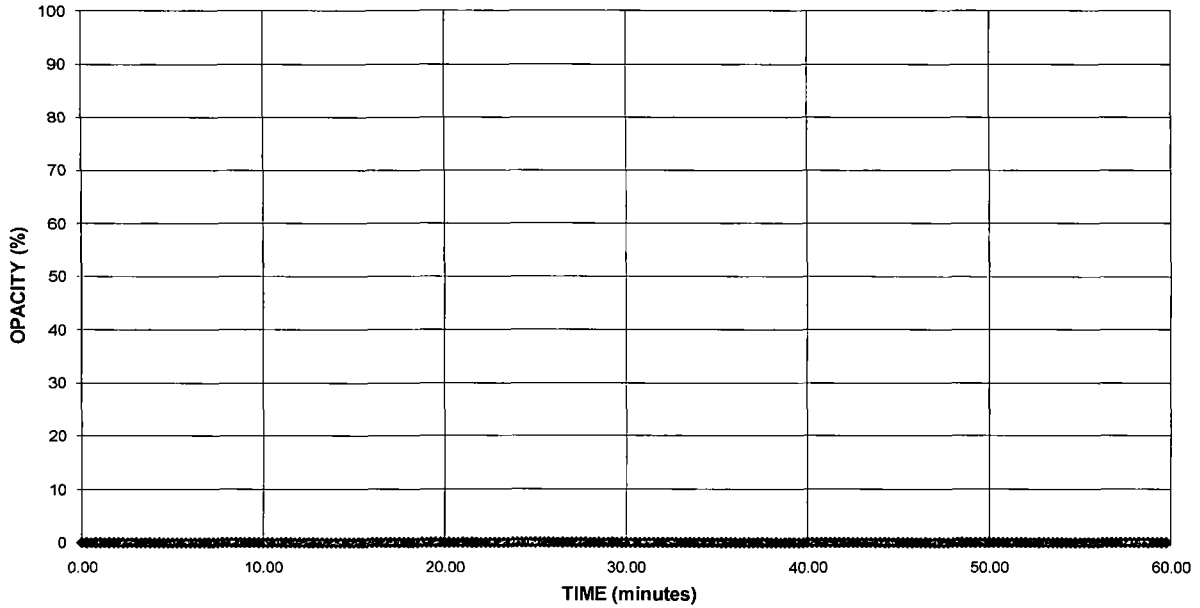


Company: Florida Power and Light
Equipment: Mitsubishi 501G without Duct Burners
Location: West County Energy Center
Date: November 17, 2009
Project #: bv-10-westcounty.fl-comp#1

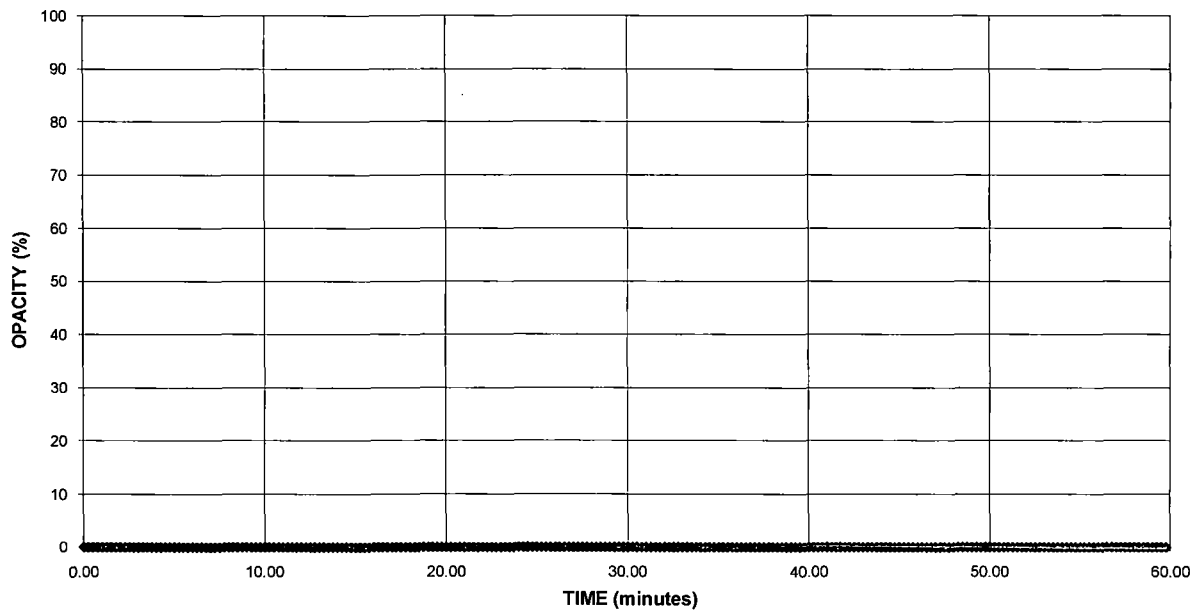
Run 3

Average Opacity: 0.00 %
Maximum Opacity: 0 %
6 Minute Average: 0.00 %
6 Minute Maximum: 0.00 %
Max Time w/ Opacity: 0.00 minutes

OPACITY READINGS (15 second intervals)



OPACITY RESULTS (6 minute averages)



Method Used (Circle One)
 Method B 203A 203B Other: _____

VISUAL EMISSIONS OBSERVATION FORM

Company Name: West County Florida Power & Light
 Facility Name: West County Energy Center
 Street Address: 20505 State Rd 80
 City: Loxahatchee State: FL Zip: 32716

Form Number _____ Page 1 of 6
 Continued on Form Number _____

Process: Natural Gas Unit #: 2c Operating Mode: Base w/ DB
 Control Equipment: HRSG Operating Mode: Base

Observation Date: 11-17-09 Time Zone: Eastern Start Time: 10:15:15 End Time: 11:49:14

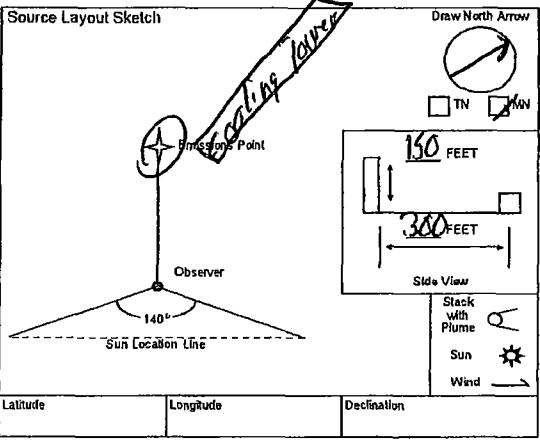
Describe Emissions Point
 Height of Emiss. Pt. Start: 150 ft End: 150 Height of Emiss. Pt. Rel. to Observer Start: 145 ft End: 145
 Distance to Emiss. Pt. Start: 800 ft End: 800 Direction to Emiss. Pt. (Degrees) Start: 225 End: 225

| Min | Sec | 0 | 15 | 30 | 45 | Comments |
|-----|-----|---|----|----|----|----------|
| 1 | | 0 | 0 | 0 | 0 | |
| 2 | | 0 | 0 | 0 | 0 | |
| 3 | | 0 | 0 | 0 | 0 | |
| 4 | | 0 | 0 | 0 | 0 | |
| 5 | | 0 | 0 | 0 | 0 | |
| 6 | | 0 | 0 | 0 | 0 | |
| 7 | | 0 | 0 | 0 | 0 | |
| 8 | | 0 | 0 | 0 | 0 | |
| 9 | | 0 | 0 | 0 | 0 | |
| 10 | | 0 | 0 | 0 | 0 | |
| 11 | | 0 | 0 | 0 | 0 | |
| 12 | | 0 | 0 | 0 | 0 | |
| 13 | | 0 | 0 | 0 | 0 | |
| 14 | | 0 | 0 | 0 | 0 | |
| 15 | | 0 | 0 | 0 | 0 | |
| 16 | | 0 | 0 | 0 | 0 | |
| 17 | | 0 | 0 | 0 | 0 | |
| 18 | | 0 | 0 | 0 | 0 | |
| 19 | | 0 | 0 | 0 | 0 | |
| 20 | | 0 | 0 | 0 | 0 | |
| 21 | | 0 | 0 | 0 | 0 | |
| 22 | | 0 | 0 | 0 | 0 | |
| 23 | | 0 | 0 | 0 | 0 | |
| 24 | | 0 | 0 | 0 | 0 | |
| 25 | | 0 | 0 | 0 | 0 | |
| 26 | | 0 | 0 | 0 | 0 | |
| 27 | | 0 | 0 | 0 | 0 | |
| 28 | | 0 | 0 | 0 | 0 | |
| 29 | | 0 | 0 | 0 | 0 | |
| 30 | | 0 | 0 | 0 | 0 | |

Vertical Angle to Obs. Pt. Direction to Obs. Pt. (Degrees) Start: _____ End: _____ Start: 105 End: 105
 Distance and Direction to Observation Point from Emission Point Start: _____ End: _____

Describe Emissions. Start: not visible End: not visible
 Emission Color Start: clear End: clear Water Droplet Plume Start: none End: none

Describe Plume Background Start: sky End: sky
 Background Color Start: blue/gray End: blue/gray Sky Conditions Start: partly cloudy End: partly cloudy
 Wind Speed Start: 3-5 End: 3-5 Wind Direction Start: sw End: sw
 Ambient Temp. Start: 76 End: 78 Wet Bulb Temp. _____ RH Percent _____



Observer's Name (Print): Rob White
 Observer's Signature: _____ Date: 11-17-09
 Organization: AHE
 Certified By: EIA Date: 10-21-09

Additional Information

Method Used (Circle One)
 Method 9 203A 203B Other: _____

VISUAL EMISSIONS OBSERVATION FORM

Company Name: Florida Power & Light
 Facility Name: West County Energy Center
 Street Address: 20505 State Rd 80
 City: Lakeland State: FL Zip: 37740

Form Number _____ Page 2 of 6
 Continued on Form Number _____

Process: Natural Gas Unit #: 20 Operating Mode: Base w/ DTS
 Control Equipment: APC Operating Mode: 130% C

Observation Date: 11-17-09 Time Zone: Eastern Start Time: 0813 End Time: 0914

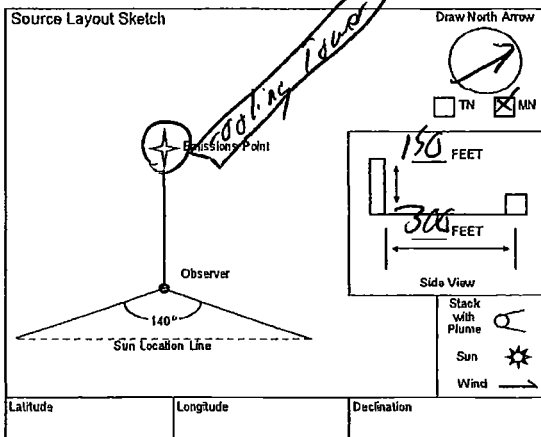
Describe Emissions Point
 Height of Emiss. Pt. Start: 130 End: 150 Height of Emiss. Pt. Rel. to Observer Start: 175 End: 145
 Distance to Emiss. Pt. Start: 800 ft End: 500 ft Direction to Emiss. Pt. (Degrees) Start: 285 End: 285

| Min | Sec. | | | | Comments |
|-----|------|----|----|----|----------|
| | 0 | 15 | 30 | 45 | |
| 1 | 0 | 0 | 0 | 0 | |
| 2 | 0 | 0 | 0 | 0 | |
| 3 | 0 | 0 | 0 | 0 | |
| 4 | 0 | 0 | 0 | 0 | |
| 5 | 0 | 0 | 0 | 0 | |
| 6 | 0 | 0 | 0 | 0 | |
| 7 | 0 | 0 | 0 | 0 | |
| 8 | 0 | 0 | 0 | 0 | |
| 9 | 0 | 0 | 0 | 0 | |
| 10 | 0 | 0 | 0 | 0 | |
| 11 | 0 | 0 | 0 | 0 | |
| 12 | 0 | 0 | 0 | 0 | |
| 13 | 0 | 0 | 0 | 0 | |
| 14 | 0 | 0 | 0 | 0 | |
| 15 | 0 | 0 | 0 | 0 | |
| 16 | 0 | 0 | 0 | 0 | |
| 17 | 0 | 0 | 0 | 0 | |
| 18 | 0 | 0 | 0 | 0 | |
| 19 | 0 | 0 | 0 | 0 | |
| 20 | 0 | 0 | 0 | 0 | |
| 21 | 0 | 0 | 0 | 0 | |
| 22 | 0 | 0 | 0 | 0 | |
| 23 | 0 | 0 | 0 | 0 | |
| 24 | 0 | 0 | 0 | 0 | |
| 25 | 0 | 0 | 0 | 0 | |
| 26 | 0 | 0 | 0 | 0 | |
| 27 | 0 | 0 | 0 | 0 | |
| 28 | 0 | 0 | 0 | 0 | |
| 29 | 0 | 0 | 0 | 0 | |
| 30 | 0 | 0 | 0 | 0 | |

Vertical Angle to Obs. Pt. Start: _____ End: _____ Direction to Obs. Pt. (Degrees) Start: 105 End: 105
 Distance and Direction to Observation Point from Emission Point Start: _____ End: _____

Describe Emissions
 Start: Not visible End: not visible
 Emission Color: _____ Water Droplet Plume: _____
 Start: None End: None

Describe Plume Background
 Start: 5 by End: 5 by
 Background Color: _____ Sky Conditions: _____
 Start: Blue End: Blue Start: Cloudy End: Cloudy
 Wind Speed: _____ Wind Direction: _____
 Start: 3-5 End: 3-5 Start: W End: W
 Ambient Temp.: _____ Wet Bulb Temp.: _____ RH Percent: _____
 Start: 76 End: 78 Start: NA



Observer's Name (Print): Rob White
 Observer's Signature: _____ Date: 11-17-09
 Organization: API
 Certified By: EIA Date: 10-21-09

Additional Information

Method Used (Circle One)
 Method B 203A 203B Other: _____

VISUAL EMISSIONS OBSERVATION FORM

Form Number _____ Page 3 of 6

Company Name Florida Power & Light
 Facility Name West County Energy Center
 Street Address 20505 State Rd 80
 City Loxahatchee State FL Zip 33440

Continued on Form Number _____

Process Natural Gas Unit # 2c Operating Mode Base Load DB
 Control Equipment HRSG Operating Mode 136 SC

Observation Date 11-17-09 Time Zone Eastern Start Time 0916 End Time 1015

Describe Emissions Point
 Height of Emiss. Pt. Start 150ft End 150 Height of Emiss. Pt. Rel. to Observer Start 145ft End 145
 Distance to Emiss. Pt. Start 800ft End 800 Direction to Emiss. Pt. (Degrees) Start 285 End 285

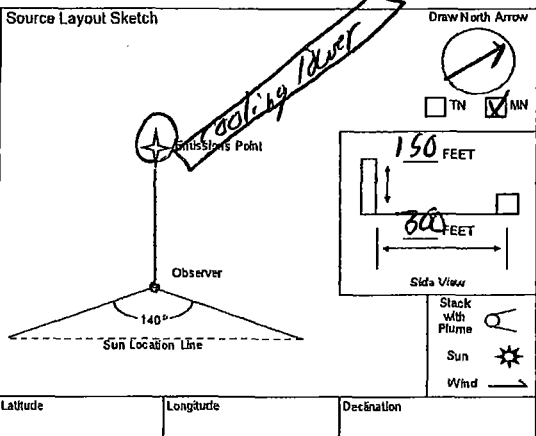
| Min | Sec | Time | | | | Comments |
|-----|-----|------|----|----|----|----------|
| | | 0 | 15 | 30 | 45 | |

Vertical Angle to Obs. Pt. Start _____ End _____ Direction to Obs. Pt. (Degrees) Start 185 End 105
 Distance and Direction to Observation Point from Emission Point Start _____ End _____

| | | | | | |
|----|---|---|---|---|--|
| 1 | 0 | 0 | 0 | 0 | |
| 2 | 0 | 0 | 0 | 0 | |
| 3 | 0 | 0 | 0 | 0 | |
| 4 | 0 | 0 | 0 | 0 | |
| 5 | 0 | 0 | 0 | 0 | |
| 6 | 0 | 0 | 0 | 0 | |
| 7 | 0 | 0 | 0 | 0 | |
| 8 | 0 | 0 | 0 | 0 | |
| 9 | 0 | 0 | 0 | 0 | |
| 10 | 0 | 0 | 0 | 0 | |
| 11 | 0 | 0 | 0 | 0 | |
| 12 | 0 | 0 | 0 | 0 | |
| 13 | 0 | 0 | 0 | 0 | |
| 14 | 0 | 0 | 0 | 0 | |
| 15 | 0 | 0 | 0 | 0 | |
| 16 | 0 | 0 | 0 | 0 | |
| 17 | 0 | 0 | 0 | 0 | |
| 18 | 0 | 0 | 0 | 0 | |
| 19 | 0 | 0 | 0 | 0 | |
| 20 | 0 | 0 | 0 | 0 | |
| 21 | 0 | 0 | 0 | 0 | |
| 22 | 0 | 0 | 0 | 0 | |
| 23 | 0 | 0 | 0 | 0 | |
| 24 | 0 | 0 | 0 | 0 | |
| 25 | 0 | 0 | 0 | 0 | |
| 26 | 0 | 0 | 0 | 0 | |
| 27 | 0 | 0 | 0 | 0 | |
| 28 | 0 | 0 | 0 | 0 | |
| 29 | 0 | 0 | 0 | 0 | |
| 30 | 0 | 0 | 0 | 0 | |

Describe Emissions Start not visible End not visible
 Emission Color Start clear End clear Water Droplet Plume Start none End none

Describe Plume Background Start sky End sky
 Background Color Start blue End blue Sky Conditions Start partly cloudy End partly cloudy
 Wind Speed Start 3-5 End 3-5 Wind Direction Start sw End sw
 Ambient Temp. Start 78 End 81 Wet Bulb Temp. NA RH Percent _____



Observer's Name (Print) Rob White
 Observer's Signature _____ Date 11-17-09
 Organization AHS
 Certified By EIA Date 10-21-09

Additional Information

Method Used (Circle One)
 Method A 203A 203B Other: _____

VISUAL EMISSIONS OBSERVATION FORM

Company Name Florida Power & Light
 Facility Name West County Energy Center
 Street Address 20505 State Rd 80
 City Loxahatchee State FL Zip 33440

Form Number _____ Page 4 of 6
 Continued on Form Number _____

Process Natural Gas Unit # 2c Operating Mode Base w/o DB
 Control Equipment HRSG Operating Mode Base

Observation Date 11-17-09 Time Zone EST/ET Start Time 0916 End Time 1015

Describe Emissions Point
 Height of Emiss. Pt. Start 150ft End 150 Height of Emiss. Pt. Ret. to Observer Start 145ft End 145
 Distance to Emiss. Pt. Start 300ft End 300 Direction to Emiss. Pt. (Degrees) Start 285 End 285

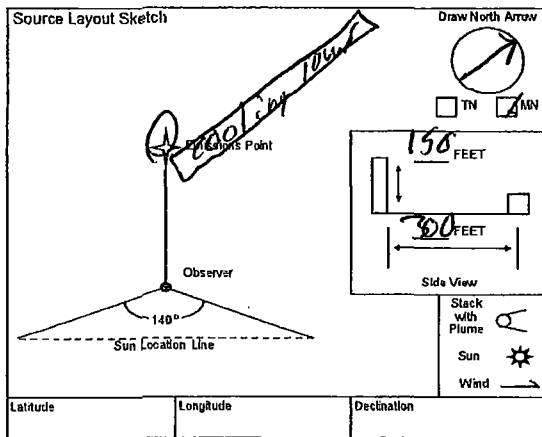
| Min | Sec | 0 | 15 | 30 | 45 | Comments |
|-----|-----|---|----|----|----|----------|
|-----|-----|---|----|----|----|----------|

Vertical Angle to Obs. Pt. Start _____ End _____ Direction to Obs. Pt. (Degrees) Start 105 End 105
 Distance and Direction to Observation Point from Emission Point
 Start _____ End _____

| | | | | | |
|----|---|---|---|---|--|
| 1 | 0 | 0 | 0 | 0 | |
| 2 | 0 | 0 | 0 | 0 | |
| 3 | 0 | 0 | 0 | 0 | |
| 4 | 0 | 0 | 0 | 0 | |
| 5 | 0 | 0 | 0 | 0 | |
| 6 | 0 | 0 | 0 | 0 | |
| 7 | 0 | 0 | 0 | 0 | |
| 8 | 0 | 0 | 0 | 0 | |
| 9 | 0 | 0 | 0 | 0 | |
| 10 | 0 | 0 | 0 | 0 | |
| 11 | 0 | 0 | 0 | 0 | |
| 12 | 0 | 0 | 0 | 0 | |
| 13 | 0 | 0 | 0 | 0 | |
| 14 | 0 | 0 | 0 | 0 | |
| 15 | 0 | 0 | 0 | 0 | |
| 16 | 0 | 0 | 0 | 0 | |
| 17 | 0 | 0 | 0 | 0 | |
| 18 | 0 | 0 | 0 | 0 | |
| 19 | 0 | 0 | 0 | 0 | |
| 20 | 0 | 0 | 0 | 0 | |
| 21 | 0 | 0 | 0 | 0 | |
| 22 | 0 | 0 | 0 | 0 | |
| 23 | 0 | 0 | 0 | 0 | |
| 24 | 0 | 0 | 0 | 0 | |
| 25 | 0 | 0 | 0 | 0 | |
| 26 | 0 | 0 | 0 | 0 | |
| 27 | 0 | 0 | 0 | 0 | |
| 28 | 0 | 0 | 0 | 0 | |
| 29 | 0 | 0 | 0 | 0 | |
| 30 | 0 | 0 | 0 | 0 | |

Describe Emissions Start Not visible End not visible
 Emission Color Start Clear End clear Water Droplet Plume Start NONE End NONE

Describe Plume Background Start sky End sky
 Background Color Start Blue End Blue Sky Conditions Start PT Cloudy End PT Cloudy
 Wind Speed Start 3-5 End 3-5 Wind Direction Start NW End NW
 Ambient Temp. Start 78 End 81 Wet Bulb Temp. NA RH Percent _____



Observer's Name (Print) Rob White
 Observer's Signature _____ Date 11-17-09
 Organization AHI
 Certified By ETA Date 10-21-09

Additional Information

Method Used (Circle One) Method 9 203A 203B Other: _____

VISUAL EMISSIONS OBSERVATION FORM

Form Number _____ Page 5 of 6

Company Name Florida Power & Light
 Facility Name West County Energy Center
 Street Address 20505 State Rd 80
 City Loxahatchee State FL Zip 33748

Continued on Form Number _____

Process Natural Gas Unit # 2c Operating Mode Base Load D13
 Control Equipment HRS Operating Mode Base

Observation Date 11-17-09 Time Zone Eastern Start Time 1816 End Time 1815

Describe Emissions Point
 Height of Emiss. Pt. Start 150ft End 150 Height of Emiss. Pt. Rel. to Observer Start 145ft End 145
 Distance to Emiss. Pt. Start 360ft End 365 Direction to Emiss. Pt. (Degrees) Start 25 End 25

| Min. | Sec. | | | | Comments |
|------|------|----|----|----|----------|
| | 0 | 15 | 30 | 45 | |

Vertical Angle to Obs. Pt. Direction to Obs. Pt. (Degrees) Start 105 End 105
 Distance and Direction to Observation Point from Emission Point Start _____ End _____

1 0 0 0 0

Describe Emissions Start Not Visible End Not Visible
 Emission Color Start clear End clear Water Droplet Plume Start NONE End NONE

2 0 0 0 0

Describe Plume Background Start SK End SK
 Background Color Start Blue End Blue Sky Conditions Start PT Cloudy End PT Cloudy
 Wind Speed Start 2-5 End 3-5 Wind Direction Start NW End NW
 Ambient Temp. Start 20 End 25 Wet Bulb Temp. NA RH Percent _____

3 0 0 0 0

4 0 0 0 0

5 0 0 0 0

6 0 0 0 0

7 0 0 0 0

8 0 0 0 0

9 0 0 0 0

10 0 0 0 0

11 0 0 0 0

12 0 0 0 0

13 0 0 0 0

14 0 0 0 0

15 0 0 0 0

16 0 0 0 0

17 0 0 0 0

18 0 0 0 0

19 0 0 0 0

20 0 0 0 0

21 0 0 0 0

22 0 0 0 0

23 0 0 0 0

24 0 0 0 0

25 0 0 0 0

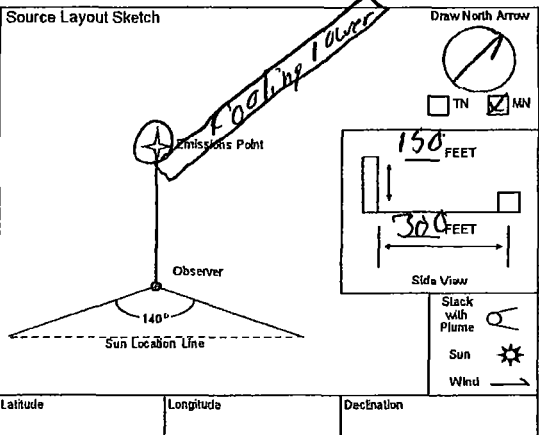
26 0 0 0 0

27 0 0 0 0

28 0 0 0 0

29 0 0 0 0

30 0 0 0 0



Observer's Name (Print) Rob White

Observer's Signature _____ Date 11-17-09

Additional Information _____

Organization ALH

Certified By ETA Date 10-21-09

Method Used (Circle One)
 Method 9 203A 203B Other: _____

VISUAL EMISSIONS OBSERVATION FORM

Company Name
Florida Power & Light

Facility Name
West County Energy Center

Street Address
2050 S State Rd 80

City
Loxahatchee State
FL Zip
32746

Form Number _____ Page 6 of 6

Continued on Form Number _____

Process
Natural Gas Unit #
26 Operating Mode
Base w/ DFB

Control Equipment
HRS6 Operating Mode
Base

Observation Date
11-17-09 Time Zone
Eastern Start Time
1816 End Time
1115

Describe Emissions Point

Height of Emiss. Pt. Start 150ft End 150 Height of Emiss. Pt. Rel. to Observer Start 145ft End 145

Distance to Emiss. Pt. Start 300ft End 300 Direction to Emiss. Pt. (Degrees) Start 275° End 275°

| Min. | Sec. | | | | Comments |
|------|------|----|----|----|----------|
| | 0 | 15 | 30 | 45 | |

Vertical Angle to Obs. Pt. Start _____ End _____ Direction to Obs. Pt. (Degrees) Start 105° End 105°

Distance and Direction to Observation Point from Emission Point Start _____ End _____

| | | | | | |
|----|---|---|---|---|--|
| 1 | 0 | 0 | 0 | 0 | |
| 2 | 0 | 0 | 0 | 0 | |
| 3 | 0 | 0 | 0 | 0 | |
| 4 | 0 | 0 | 0 | 0 | |
| 5 | 0 | 0 | 0 | 0 | |
| 6 | 0 | 0 | 0 | 0 | |
| 7 | 0 | 0 | 0 | 0 | |
| 8 | 0 | 0 | 0 | 0 | |
| 9 | 0 | 0 | 0 | 0 | |
| 10 | 0 | 0 | 0 | 0 | |
| 11 | 0 | 0 | 0 | 0 | |
| 12 | 0 | 0 | 0 | 0 | |
| 13 | 0 | 0 | 0 | 0 | |
| 14 | 0 | 0 | 0 | 0 | |
| 15 | 0 | 0 | 0 | 0 | |
| 16 | 0 | 0 | 0 | 0 | |
| 17 | 0 | 0 | 0 | 0 | |
| 18 | 0 | 0 | 0 | 0 | |
| 19 | 0 | 0 | 0 | 0 | |
| 20 | 0 | 0 | 0 | 0 | |
| 21 | 0 | 0 | 0 | 0 | |
| 22 | 0 | 0 | 0 | 0 | |
| 23 | 0 | 0 | 0 | 0 | |
| 24 | 0 | 0 | 0 | 0 | |
| 25 | 0 | 0 | 0 | 0 | |
| 26 | 0 | 0 | 0 | 0 | |
| 27 | 0 | 0 | 0 | 0 | |
| 28 | 0 | 0 | 0 | 0 | |
| 29 | 0 | 0 | 0 | 0 | |
| 30 | 0 | 0 | 0 | 0 | |

Describe Emissions Start not vis. ble End not visible

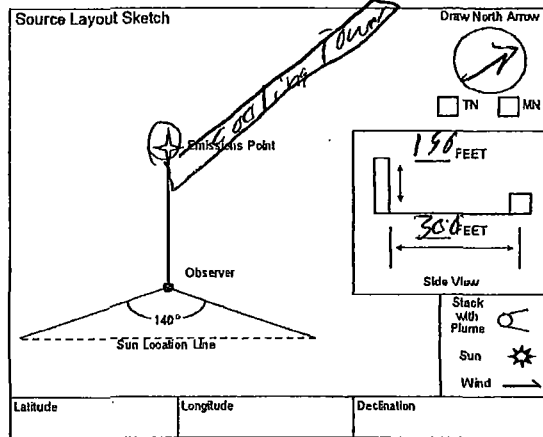
Emission Color Start clear End clear Water Droplet Plume Start none End none

Describe Plume Background Start sky End sky

Background Color Start blue End blue Sky Conditions Start pt cloudy End pt cloudy

Wind Speed Start 2-4 End 3-5 Wind Direction Start nw End nw

Ambient Temp. Start 80 End 86 Wet Bulb Temp. Start _____ End _____ RH Percent Start _____ End _____



Observer's Name (Print) Rob White

Observer's Signature _____ Date 11-17-09

Organization AHI

Certified By FIA Date 10-21-09

Additional Information

TEST RESULTS

**Opacity
Base Load with Duct Burners**

| Company: Florida Power and Light Equipment: Mitsubishi 501G with Duct Burners Location: West County Energy Center Date: November 17, 2009 Project #: bv-10-westcounty.fl-comp#1 | | | | | | Run 1 | Average Opacity: 0.00 % Maximum Opacity: 0 % 6 Minute Average: 0.00 % 6 Minute Maximum: 0.00 % Max Time w/ Opacity: 0.00 minutes | | | | |
|--|-------------|------------|------------|-------------|------------|------------|---|------------|------------|-------------|------------|
| TIME (min) | OPACITY (%) | 6 MIN AVG. | TIME (min) | OPACITY (%) | 6 MIN AVG. | TIME (min) | OPACITY (%) | 6 MIN AVG. | TIME (min) | OPACITY (%) | 6 MIN AVG. |
| 0.00 | 0 | N/A | 15.00 | 0 | 0.00 | 30.00 | 0 | 0.00 | 45.00 | 0 | 0.00 |
| 0.25 | 0 | N/A | 15.25 | 0 | 0.00 | 30.25 | 0 | 0.00 | 45.25 | 0 | 0.00 |
| 0.50 | 0 | N/A | 15.50 | 0 | 0.00 | 30.50 | 0 | 0.00 | 45.50 | 0 | 0.00 |
| 0.75 | 0 | N/A | 15.75 | 0 | 0.00 | 30.75 | 0 | 0.00 | 45.75 | 0 | 0.00 |
| 1.00 | 0 | N/A | 16.00 | 0 | 0.00 | 31.00 | 0 | 0.00 | 46.00 | 0 | 0.00 |
| 1.25 | 0 | N/A | 16.25 | 0 | 0.00 | 31.25 | 0 | 0.00 | 46.25 | 0 | 0.00 |
| 1.50 | 0 | N/A | 16.50 | 0 | 0.00 | 31.50 | 0 | 0.00 | 46.50 | 0 | 0.00 |
| 1.75 | 0 | N/A | 16.75 | 0 | 0.00 | 31.75 | 0 | 0.00 | 46.75 | 0 | 0.00 |
| 2.00 | 0 | N/A | 17.00 | 0 | 0.00 | 32.00 | 0 | 0.00 | 47.00 | 0 | 0.00 |
| 2.25 | 0 | N/A | 17.25 | 0 | 0.00 | 32.25 | 0 | 0.00 | 47.25 | 0 | 0.00 |
| 2.50 | 0 | N/A | 17.50 | 0 | 0.00 | 32.50 | 0 | 0.00 | 47.50 | 0 | 0.00 |
| 2.75 | 0 | N/A | 17.75 | 0 | 0.00 | 32.75 | 0 | 0.00 | 47.75 | 0 | 0.00 |
| 3.00 | 0 | N/A | 18.00 | 0 | 0.00 | 33.00 | 0 | 0.00 | 48.00 | 0 | 0.00 |
| 3.25 | 0 | N/A | 18.25 | 0 | 0.00 | 33.25 | 0 | 0.00 | 48.25 | 0 | 0.00 |
| 3.50 | 0 | N/A | 18.50 | 0 | 0.00 | 33.50 | 0 | 0.00 | 48.50 | 0 | 0.00 |
| 3.75 | 0 | N/A | 18.75 | 0 | 0.00 | 33.75 | 0 | 0.00 | 48.75 | 0 | 0.00 |
| 4.00 | 0 | N/A | 19.00 | 0 | 0.00 | 34.00 | 0 | 0.00 | 49.00 | 0 | 0.00 |
| 4.25 | 0 | N/A | 19.25 | 0 | 0.00 | 34.25 | 0 | 0.00 | 49.25 | 0 | 0.00 |
| 4.50 | 0 | N/A | 19.50 | 0 | 0.00 | 34.50 | 0 | 0.00 | 49.50 | 0 | 0.00 |
| 4.75 | 0 | N/A | 19.75 | 0 | 0.00 | 34.75 | 0 | 0.00 | 49.75 | 0 | 0.00 |
| 5.00 | 0 | N/A | 20.00 | 0 | 0.00 | 35.00 | 0 | 0.00 | 50.00 | 0 | 0.00 |
| 5.25 | 0 | N/A | 20.25 | 0 | 0.00 | 35.25 | 0 | 0.00 | 50.25 | 0 | 0.00 |
| 5.50 | 0 | N/A | 20.50 | 0 | 0.00 | 35.50 | 0 | 0.00 | 50.50 | 0 | 0.00 |
| 5.75 | 0 | 0.00 | 20.75 | 0 | 0.00 | 35.75 | 0 | 0.00 | 50.75 | 0 | 0.00 |
| 6.00 | 0 | 0.00 | 21.00 | 0 | 0.00 | 36.00 | 0 | 0.00 | 51.00 | 0 | 0.00 |
| 6.25 | 0 | 0.00 | 21.25 | 0 | 0.00 | 36.25 | 0 | 0.00 | 51.25 | 0 | 0.00 |
| 6.50 | 0 | 0.00 | 21.50 | 0 | 0.00 | 36.50 | 0 | 0.00 | 51.50 | 0 | 0.00 |
| 6.75 | 0 | 0.00 | 21.75 | 0 | 0.00 | 36.75 | 0 | 0.00 | 51.75 | 0 | 0.00 |
| 7.00 | 0 | 0.00 | 22.00 | 0 | 0.00 | 37.00 | 0 | 0.00 | 52.00 | 0 | 0.00 |
| 7.25 | 0 | 0.00 | 22.25 | 0 | 0.00 | 37.25 | 0 | 0.00 | 52.25 | 0 | 0.00 |
| 7.50 | 0 | 0.00 | 22.50 | 0 | 0.00 | 37.50 | 0 | 0.00 | 52.50 | 0 | 0.00 |
| 7.75 | 0 | 0.00 | 22.75 | 0 | 0.00 | 37.75 | 0 | 0.00 | 52.75 | 0 | 0.00 |
| 8.00 | 0 | 0.00 | 23.00 | 0 | 0.00 | 38.00 | 0 | 0.00 | 53.00 | 0 | 0.00 |
| 8.25 | 0 | 0.00 | 23.25 | 0 | 0.00 | 38.25 | 0 | 0.00 | 53.25 | 0 | 0.00 |
| 8.50 | 0 | 0.00 | 23.50 | 0 | 0.00 | 38.50 | 0 | 0.00 | 53.50 | 0 | 0.00 |
| 8.75 | 0 | 0.00 | 23.75 | 0 | 0.00 | 38.75 | 0 | 0.00 | 53.75 | 0 | 0.00 |
| 9.00 | 0 | 0.00 | 24.00 | 0 | 0.00 | 39.00 | 0 | 0.00 | 54.00 | 0 | 0.00 |
| 9.25 | 0 | 0.00 | 24.25 | 0 | 0.00 | 39.25 | 0 | 0.00 | 54.25 | 0 | 0.00 |
| 9.50 | 0 | 0.00 | 24.50 | 0 | 0.00 | 39.50 | 0 | 0.00 | 54.50 | 0 | 0.00 |
| 9.75 | 0 | 0.00 | 24.75 | 0 | 0.00 | 39.75 | 0 | 0.00 | 54.75 | 0 | 0.00 |
| 10.00 | 0 | 0.00 | 25.00 | 0 | 0.00 | 40.00 | 0 | 0.00 | 55.00 | 0 | 0.00 |
| 10.25 | 0 | 0.00 | 25.25 | 0 | 0.00 | 40.25 | 0 | 0.00 | 55.25 | 0 | 0.00 |
| 10.50 | 0 | 0.00 | 25.50 | 0 | 0.00 | 40.50 | 0 | 0.00 | 55.50 | 0 | 0.00 |
| 10.75 | 0 | 0.00 | 25.75 | 0 | 0.00 | 40.75 | 0 | 0.00 | 55.75 | 0 | 0.00 |
| 11.00 | 0 | 0.00 | 26.00 | 0 | 0.00 | 41.00 | 0 | 0.00 | 56.00 | 0 | 0.00 |
| 11.25 | 0 | 0.00 | 26.25 | 0 | 0.00 | 41.25 | 0 | 0.00 | 56.25 | 0 | 0.00 |
| 11.50 | 0 | 0.00 | 26.50 | 0 | 0.00 | 41.50 | 0 | 0.00 | 56.50 | 0 | 0.00 |
| 11.75 | 0 | 0.00 | 26.75 | 0 | 0.00 | 41.75 | 0 | 0.00 | 56.75 | 0 | 0.00 |
| 12.00 | 0 | 0.00 | 27.00 | 0 | 0.00 | 42.00 | 0 | 0.00 | 57.00 | 0 | 0.00 |
| 12.25 | 0 | 0.00 | 27.25 | 0 | 0.00 | 42.25 | 0 | 0.00 | 57.25 | 0 | 0.00 |
| 12.50 | 0 | 0.00 | 27.50 | 0 | 0.00 | 42.50 | 0 | 0.00 | 57.50 | 0 | 0.00 |
| 12.75 | 0 | 0.00 | 27.75 | 0 | 0.00 | 42.75 | 0 | 0.00 | 57.75 | 0 | 0.00 |
| 13.00 | 0 | 0.00 | 28.00 | 0 | 0.00 | 43.00 | 0 | 0.00 | 58.00 | 0 | 0.00 |
| 13.25 | 0 | 0.00 | 28.25 | 0 | 0.00 | 43.25 | 0 | 0.00 | 58.25 | 0 | 0.00 |
| 13.50 | 0 | 0.00 | 28.50 | 0 | 0.00 | 43.50 | 0 | 0.00 | 58.50 | 0 | 0.00 |
| 13.75 | 0 | 0.00 | 28.75 | 0 | 0.00 | 43.75 | 0 | 0.00 | 58.75 | 0 | 0.00 |
| 14.00 | 0 | 0.00 | 29.00 | 0 | 0.00 | 44.00 | 0 | 0.00 | 59.00 | 0 | 0.00 |
| 14.25 | 0 | 0.00 | 29.25 | 0 | 0.00 | 44.25 | 0 | 0.00 | 59.25 | 0 | 0.00 |
| 14.50 | 0 | 0.00 | 29.50 | 0 | 0.00 | 44.50 | 0 | 0.00 | 59.50 | 0 | 0.00 |
| 14.75 | 0 | 0.00 | 29.75 | 0 | 0.00 | 44.75 | 0 | 0.00 | 59.75 | 0 | 0.00 |

| Company: Florida Power and Light Equipment: Mitsubishi 501G with Duct Burners Location: West County Energy Center Date: November 17, 2009 Project #: bv-10-westcounty.fl-comp#1 | | | | | | Run 2 | | | Average Opacity: 0.00 % Maximum Opacity: 0 % 6 Minute Average: 0.00 % 6 Minute Maximum: 0.00 % Max Time w/ Opacity: 0.00 minutes | | |
|--|-------------|------------|------------|-------------|------------|------------|-------------|------------|---|-------------|------------|
| TIME (min) | OPACITY (%) | 6 MIN AVG. | TIME (min) | OPACITY (%) | 6 MIN AVG. | TIME (min) | OPACITY (%) | 6 MIN AVG. | TIME (min) | OPACITY (%) | 6 MIN AVG. |
| 0.00 | 0 | N/A | 15.00 | 0 | 0.00 | 30.00 | 0 | 0.00 | 45.00 | 0 | 0.00 |
| 0.25 | 0 | N/A | 15.25 | 0 | 0.00 | 30.25 | 0 | 0.00 | 45.25 | 0 | 0.00 |
| 0.50 | 0 | N/A | 15.50 | 0 | 0.00 | 30.50 | 0 | 0.00 | 45.50 | 0 | 0.00 |
| 0.75 | 0 | N/A | 15.75 | 0 | 0.00 | 30.75 | 0 | 0.00 | 45.75 | 0 | 0.00 |
| 1.00 | 0 | N/A | 16.00 | 0 | 0.00 | 31.00 | 0 | 0.00 | 46.00 | 0 | 0.00 |
| 1.25 | 0 | N/A | 16.25 | 0 | 0.00 | 31.25 | 0 | 0.00 | 46.25 | 0 | 0.00 |
| 1.50 | 0 | N/A | 16.50 | 0 | 0.00 | 31.50 | 0 | 0.00 | 46.50 | 0 | 0.00 |
| 1.75 | 0 | N/A | 16.75 | 0 | 0.00 | 31.75 | 0 | 0.00 | 46.75 | 0 | 0.00 |
| 2.00 | 0 | N/A | 17.00 | 0 | 0.00 | 32.00 | 0 | 0.00 | 47.00 | 0 | 0.00 |
| 2.25 | 0 | N/A | 17.25 | 0 | 0.00 | 32.25 | 0 | 0.00 | 47.25 | 0 | 0.00 |
| 2.50 | 0 | N/A | 17.50 | 0 | 0.00 | 32.50 | 0 | 0.00 | 47.50 | 0 | 0.00 |
| 2.75 | 0 | N/A | 17.75 | 0 | 0.00 | 32.75 | 0 | 0.00 | 47.75 | 0 | 0.00 |
| 3.00 | 0 | N/A | 18.00 | 0 | 0.00 | 33.00 | 0 | 0.00 | 48.00 | 0 | 0.00 |
| 3.25 | 0 | N/A | 18.25 | 0 | 0.00 | 33.25 | 0 | 0.00 | 48.25 | 0 | 0.00 |
| 3.50 | 0 | N/A | 18.50 | 0 | 0.00 | 33.50 | 0 | 0.00 | 48.50 | 0 | 0.00 |
| 3.75 | 0 | N/A | 18.75 | 0 | 0.00 | 33.75 | 0 | 0.00 | 48.75 | 0 | 0.00 |
| 4.00 | 0 | N/A | 19.00 | 0 | 0.00 | 34.00 | 0 | 0.00 | 49.00 | 0 | 0.00 |
| 4.25 | 0 | N/A | 19.25 | 0 | 0.00 | 34.25 | 0 | 0.00 | 49.25 | 0 | 0.00 |
| 4.50 | 0 | N/A | 19.50 | 0 | 0.00 | 34.50 | 0 | 0.00 | 49.50 | 0 | 0.00 |
| 4.75 | 0 | N/A | 19.75 | 0 | 0.00 | 34.75 | 0 | 0.00 | 49.75 | 0 | 0.00 |
| 5.00 | 0 | N/A | 20.00 | 0 | 0.00 | 35.00 | 0 | 0.00 | 50.00 | 0 | 0.00 |
| 5.25 | 0 | N/A | 20.25 | 0 | 0.00 | 35.25 | 0 | 0.00 | 50.25 | 0 | 0.00 |
| 5.50 | 0 | N/A | 20.50 | 0 | 0.00 | 35.50 | 0 | 0.00 | 50.50 | 0 | 0.00 |
| 5.75 | 0 | 0.00 | 20.75 | 0 | 0.00 | 35.75 | 0 | 0.00 | 50.75 | 0 | 0.00 |
| 6.00 | 0 | 0.00 | 21.00 | 0 | 0.00 | 36.00 | 0 | 0.00 | 51.00 | 0 | 0.00 |
| 6.25 | 0 | 0.00 | 21.25 | 0 | 0.00 | 36.25 | 0 | 0.00 | 51.25 | 0 | 0.00 |
| 6.50 | 0 | 0.00 | 21.50 | 0 | 0.00 | 36.50 | 0 | 0.00 | 51.50 | 0 | 0.00 |
| 6.75 | 0 | 0.00 | 21.75 | 0 | 0.00 | 36.75 | 0 | 0.00 | 51.75 | 0 | 0.00 |
| 7.00 | 0 | 0.00 | 22.00 | 0 | 0.00 | 37.00 | 0 | 0.00 | 52.00 | 0 | 0.00 |
| 7.25 | 0 | 0.00 | 22.25 | 0 | 0.00 | 37.25 | 0 | 0.00 | 52.25 | 0 | 0.00 |
| 7.50 | 0 | 0.00 | 22.50 | 0 | 0.00 | 37.50 | 0 | 0.00 | 52.50 | 0 | 0.00 |
| 7.75 | 0 | 0.00 | 22.75 | 0 | 0.00 | 37.75 | 0 | 0.00 | 52.75 | 0 | 0.00 |
| 8.00 | 0 | 0.00 | 23.00 | 0 | 0.00 | 38.00 | 0 | 0.00 | 53.00 | 0 | 0.00 |
| 8.25 | 0 | 0.00 | 23.25 | 0 | 0.00 | 38.25 | 0 | 0.00 | 53.25 | 0 | 0.00 |
| 8.50 | 0 | 0.00 | 23.50 | 0 | 0.00 | 38.50 | 0 | 0.00 | 53.50 | 0 | 0.00 |
| 8.75 | 0 | 0.00 | 23.75 | 0 | 0.00 | 38.75 | 0 | 0.00 | 53.75 | 0 | 0.00 |
| 9.00 | 0 | 0.00 | 24.00 | 0 | 0.00 | 39.00 | 0 | 0.00 | 54.00 | 0 | 0.00 |
| 9.25 | 0 | 0.00 | 24.25 | 0 | 0.00 | 39.25 | 0 | 0.00 | 54.25 | 0 | 0.00 |
| 9.50 | 0 | 0.00 | 24.50 | 0 | 0.00 | 39.50 | 0 | 0.00 | 54.50 | 0 | 0.00 |
| 9.75 | 0 | 0.00 | 24.75 | 0 | 0.00 | 39.75 | 0 | 0.00 | 54.75 | 0 | 0.00 |
| 10.00 | 0 | 0.00 | 25.00 | 0 | 0.00 | 40.00 | 0 | 0.00 | 55.00 | 0 | 0.00 |
| 10.25 | 0 | 0.00 | 25.25 | 0 | 0.00 | 40.25 | 0 | 0.00 | 55.25 | 0 | 0.00 |
| 10.50 | 0 | 0.00 | 25.50 | 0 | 0.00 | 40.50 | 0 | 0.00 | 55.50 | 0 | 0.00 |
| 10.75 | 0 | 0.00 | 25.75 | 0 | 0.00 | 40.75 | 0 | 0.00 | 55.75 | 0 | 0.00 |
| 11.00 | 0 | 0.00 | 26.00 | 0 | 0.00 | 41.00 | 0 | 0.00 | 56.00 | 0 | 0.00 |
| 11.25 | 0 | 0.00 | 26.25 | 0 | 0.00 | 41.25 | 0 | 0.00 | 56.25 | 0 | 0.00 |
| 11.50 | 0 | 0.00 | 26.50 | 0 | 0.00 | 41.50 | 0 | 0.00 | 56.50 | 0 | 0.00 |
| 11.75 | 0 | 0.00 | 26.75 | 0 | 0.00 | 41.75 | 0 | 0.00 | 56.75 | 0 | 0.00 |
| 12.00 | 0 | 0.00 | 27.00 | 0 | 0.00 | 42.00 | 0 | 0.00 | 57.00 | 0 | 0.00 |
| 12.25 | 0 | 0.00 | 27.25 | 0 | 0.00 | 42.25 | 0 | 0.00 | 57.25 | 0 | 0.00 |
| 12.50 | 0 | 0.00 | 27.50 | 0 | 0.00 | 42.50 | 0 | 0.00 | 57.50 | 0 | 0.00 |
| 12.75 | 0 | 0.00 | 27.75 | 0 | 0.00 | 42.75 | 0 | 0.00 | 57.75 | 0 | 0.00 |
| 13.00 | 0 | 0.00 | 28.00 | 0 | 0.00 | 43.00 | 0 | 0.00 | 58.00 | 0 | 0.00 |
| 13.25 | 0 | 0.00 | 28.25 | 0 | 0.00 | 43.25 | 0 | 0.00 | 58.25 | 0 | 0.00 |
| 13.50 | 0 | 0.00 | 28.50 | 0 | 0.00 | 43.50 | 0 | 0.00 | 58.50 | 0 | 0.00 |
| 13.75 | 0 | 0.00 | 28.75 | 0 | 0.00 | 43.75 | 0 | 0.00 | 58.75 | 0 | 0.00 |
| 14.00 | 0 | 0.00 | 29.00 | 0 | 0.00 | 44.00 | 0 | 0.00 | 59.00 | 0 | 0.00 |
| 14.25 | 0 | 0.00 | 29.25 | 0 | 0.00 | 44.25 | 0 | 0.00 | 59.25 | 0 | 0.00 |
| 14.50 | 0 | 0.00 | 29.50 | 0 | 0.00 | 44.50 | 0 | 0.00 | 59.50 | 0 | 0.00 |
| 14.75 | 0 | 0.00 | 29.75 | 0 | 0.00 | 44.75 | 0 | 0.00 | 59.75 | 0 | 0.00 |

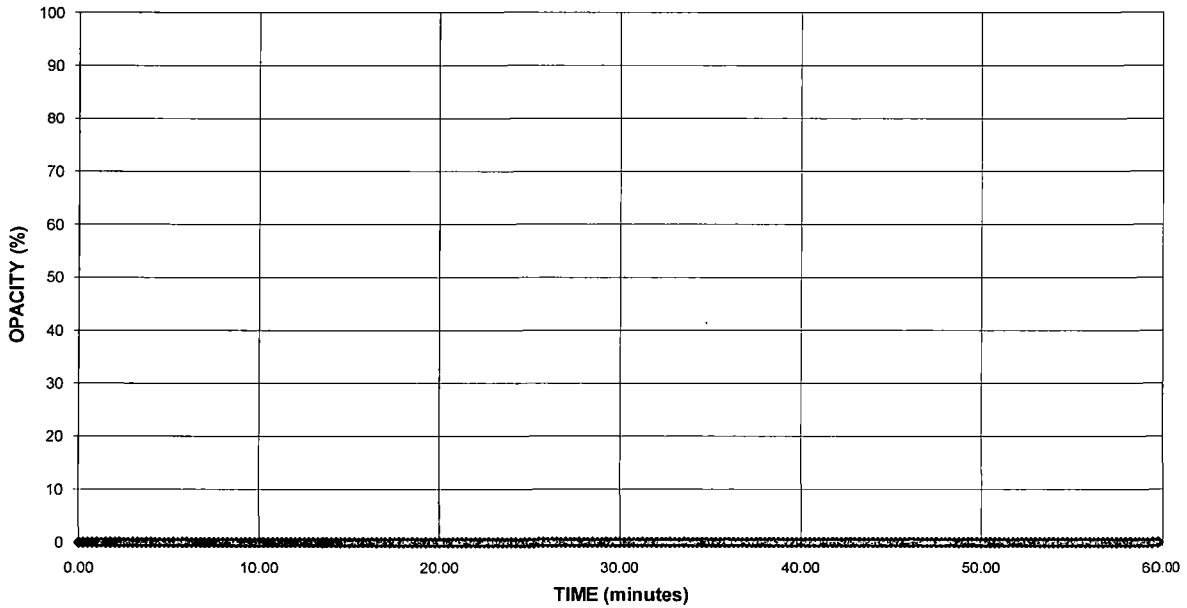
| Company: Florida Power and Light Equipment: Mitsubishi 501G with Duct Burners Location: West County Energy Center Date: November 17, 2009 Project #: bv-10-westcounty.fl-comp#1 | | | | | | Run 3 | Average Opacity: 0.00 % Maximum Opacity: 0 % 6 Minute Average: 0.00 % 6 Minute Maximum: 0.00 % Max Time w/ Opacity: 0.00 minutes | | | | |
|--|-------------|------------|------------|-------------|------------|------------|---|------------|------------|-------------|------------|
| TIME (min) | OPACITY (%) | 6 MIN AVG. | TIME (min) | OPACITY (%) | 6 MIN AVG. | TIME (min) | OPACITY (%) | 6 MIN AVG. | TIME (min) | OPACITY (%) | 6 MIN AVG. |
| 0.00 | 0 | N/A | 15.00 | 0 | 0.00 | 30.00 | 0 | 0.00 | 45.00 | 0 | 0.00 |
| 0.25 | 0 | N/A | 15.25 | 0 | 0.00 | 30.25 | 0 | 0.00 | 45.25 | 0 | 0.00 |
| 0.50 | 0 | N/A | 15.50 | 0 | 0.00 | 30.50 | 0 | 0.00 | 45.50 | 0 | 0.00 |
| 0.75 | 0 | N/A | 15.75 | 0 | 0.00 | 30.75 | 0 | 0.00 | 45.75 | 0 | 0.00 |
| 1.00 | 0 | N/A | 16.00 | 0 | 0.00 | 31.00 | 0 | 0.00 | 46.00 | 0 | 0.00 |
| 1.25 | 0 | N/A | 16.25 | 0 | 0.00 | 31.25 | 0 | 0.00 | 46.25 | 0 | 0.00 |
| 1.50 | 0 | N/A | 16.50 | 0 | 0.00 | 31.50 | 0 | 0.00 | 46.50 | 0 | 0.00 |
| 1.75 | 0 | N/A | 16.75 | 0 | 0.00 | 31.75 | 0 | 0.00 | 46.75 | 0 | 0.00 |
| 2.00 | 0 | N/A | 17.00 | 0 | 0.00 | 32.00 | 0 | 0.00 | 47.00 | 0 | 0.00 |
| 2.25 | 0 | N/A | 17.25 | 0 | 0.00 | 32.25 | 0 | 0.00 | 47.25 | 0 | 0.00 |
| 2.50 | 0 | N/A | 17.50 | 0 | 0.00 | 32.50 | 0 | 0.00 | 47.50 | 0 | 0.00 |
| 2.75 | 0 | N/A | 17.75 | 0 | 0.00 | 32.75 | 0 | 0.00 | 47.75 | 0 | 0.00 |
| 3.00 | 0 | N/A | 18.00 | 0 | 0.00 | 33.00 | 0 | 0.00 | 48.00 | 0 | 0.00 |
| 3.25 | 0 | N/A | 18.25 | 0 | 0.00 | 33.25 | 0 | 0.00 | 48.25 | 0 | 0.00 |
| 3.50 | 0 | N/A | 18.50 | 0 | 0.00 | 33.50 | 0 | 0.00 | 48.50 | 0 | 0.00 |
| 3.75 | 0 | N/A | 18.75 | 0 | 0.00 | 33.75 | 0 | 0.00 | 48.75 | 0 | 0.00 |
| 4.00 | 0 | N/A | 19.00 | 0 | 0.00 | 34.00 | 0 | 0.00 | 49.00 | 0 | 0.00 |
| 4.25 | 0 | N/A | 19.25 | 0 | 0.00 | 34.25 | 0 | 0.00 | 49.25 | 0 | 0.00 |
| 4.50 | 0 | N/A | 19.50 | 0 | 0.00 | 34.50 | 0 | 0.00 | 49.50 | 0 | 0.00 |
| 4.75 | 0 | N/A | 19.75 | 0 | 0.00 | 34.75 | 0 | 0.00 | 49.75 | 0 | 0.00 |
| 5.00 | 0 | N/A | 20.00 | 0 | 0.00 | 35.00 | 0 | 0.00 | 50.00 | 0 | 0.00 |
| 5.25 | 0 | N/A | 20.25 | 0 | 0.00 | 35.25 | 0 | 0.00 | 50.25 | 0 | 0.00 |
| 5.50 | 0 | N/A | 20.50 | 0 | 0.00 | 35.50 | 0 | 0.00 | 50.50 | 0 | 0.00 |
| 5.75 | 0 | 0.00 | 20.75 | 0 | 0.00 | 35.75 | 0 | 0.00 | 50.75 | 0 | 0.00 |
| 6.00 | 0 | 0.00 | 21.00 | 0 | 0.00 | 36.00 | 0 | 0.00 | 51.00 | 0 | 0.00 |
| 6.25 | 0 | 0.00 | 21.25 | 0 | 0.00 | 36.25 | 0 | 0.00 | 51.25 | 0 | 0.00 |
| 6.50 | 0 | 0.00 | 21.50 | 0 | 0.00 | 36.50 | 0 | 0.00 | 51.50 | 0 | 0.00 |
| 6.75 | 0 | 0.00 | 21.75 | 0 | 0.00 | 36.75 | 0 | 0.00 | 51.75 | 0 | 0.00 |
| 7.00 | 0 | 0.00 | 22.00 | 0 | 0.00 | 37.00 | 0 | 0.00 | 52.00 | 0 | 0.00 |
| 7.25 | 0 | 0.00 | 22.25 | 0 | 0.00 | 37.25 | 0 | 0.00 | 52.25 | 0 | 0.00 |
| 7.50 | 0 | 0.00 | 22.50 | 0 | 0.00 | 37.50 | 0 | 0.00 | 52.50 | 0 | 0.00 |
| 7.75 | 0 | 0.00 | 22.75 | 0 | 0.00 | 37.75 | 0 | 0.00 | 52.75 | 0 | 0.00 |
| 8.00 | 0 | 0.00 | 23.00 | 0 | 0.00 | 38.00 | 0 | 0.00 | 53.00 | 0 | 0.00 |
| 8.25 | 0 | 0.00 | 23.25 | 0 | 0.00 | 38.25 | 0 | 0.00 | 53.25 | 0 | 0.00 |
| 8.50 | 0 | 0.00 | 23.50 | 0 | 0.00 | 38.50 | 0 | 0.00 | 53.50 | 0 | 0.00 |
| 8.75 | 0 | 0.00 | 23.75 | 0 | 0.00 | 38.75 | 0 | 0.00 | 53.75 | 0 | 0.00 |
| 9.00 | 0 | 0.00 | 24.00 | 0 | 0.00 | 39.00 | 0 | 0.00 | 54.00 | 0 | 0.00 |
| 9.25 | 0 | 0.00 | 24.25 | 0 | 0.00 | 39.25 | 0 | 0.00 | 54.25 | 0 | 0.00 |
| 9.50 | 0 | 0.00 | 24.50 | 0 | 0.00 | 39.50 | 0 | 0.00 | 54.50 | 0 | 0.00 |
| 9.75 | 0 | 0.00 | 24.75 | 0 | 0.00 | 39.75 | 0 | 0.00 | 54.75 | 0 | 0.00 |
| 10.00 | 0 | 0.00 | 25.00 | 0 | 0.00 | 40.00 | 0 | 0.00 | 55.00 | 0 | 0.00 |
| 10.25 | 0 | 0.00 | 25.25 | 0 | 0.00 | 40.25 | 0 | 0.00 | 55.25 | 0 | 0.00 |
| 10.50 | 0 | 0.00 | 25.50 | 0 | 0.00 | 40.50 | 0 | 0.00 | 55.50 | 0 | 0.00 |
| 10.75 | 0 | 0.00 | 25.75 | 0 | 0.00 | 40.75 | 0 | 0.00 | 55.75 | 0 | 0.00 |
| 11.00 | 0 | 0.00 | 26.00 | 0 | 0.00 | 41.00 | 0 | 0.00 | 56.00 | 0 | 0.00 |
| 11.25 | 0 | 0.00 | 26.25 | 0 | 0.00 | 41.25 | 0 | 0.00 | 56.25 | 0 | 0.00 |
| 11.50 | 0 | 0.00 | 26.50 | 0 | 0.00 | 41.50 | 0 | 0.00 | 56.50 | 0 | 0.00 |
| 11.75 | 0 | 0.00 | 26.75 | 0 | 0.00 | 41.75 | 0 | 0.00 | 56.75 | 0 | 0.00 |
| 12.00 | 0 | 0.00 | 27.00 | 0 | 0.00 | 42.00 | 0 | 0.00 | 57.00 | 0 | 0.00 |
| 12.25 | 0 | 0.00 | 27.25 | 0 | 0.00 | 42.25 | 0 | 0.00 | 57.25 | 0 | 0.00 |
| 12.50 | 0 | 0.00 | 27.50 | 0 | 0.00 | 42.50 | 0 | 0.00 | 57.50 | 0 | 0.00 |
| 12.75 | 0 | 0.00 | 27.75 | 0 | 0.00 | 42.75 | 0 | 0.00 | 57.75 | 0 | 0.00 |
| 13.00 | 0 | 0.00 | 28.00 | 0 | 0.00 | 43.00 | 0 | 0.00 | 58.00 | 0 | 0.00 |
| 13.25 | 0 | 0.00 | 28.25 | 0 | 0.00 | 43.25 | 0 | 0.00 | 58.25 | 0 | 0.00 |
| 13.50 | 0 | 0.00 | 28.50 | 0 | 0.00 | 43.50 | 0 | 0.00 | 58.50 | 0 | 0.00 |
| 13.75 | 0 | 0.00 | 28.75 | 0 | 0.00 | 43.75 | 0 | 0.00 | 58.75 | 0 | 0.00 |
| 14.00 | 0 | 0.00 | 29.00 | 0 | 0.00 | 44.00 | 0 | 0.00 | 59.00 | 0 | 0.00 |
| 14.25 | 0 | 0.00 | 29.25 | 0 | 0.00 | 44.25 | 0 | 0.00 | 59.25 | 0 | 0.00 |
| 14.50 | 0 | 0.00 | 29.50 | 0 | 0.00 | 44.50 | 0 | 0.00 | 59.50 | 0 | 0.00 |
| 14.75 | 0 | 0.00 | 29.75 | 0 | 0.00 | 44.75 | 0 | 0.00 | 59.75 | 0 | 0.00 |

Company: Florida Power and Light
Equipment: Mitsubishi 501G with Duct Burners
Location: West County Energy Center
Date: November 17, 2009
Project #: bv-10-westcounty.fl-comp#1

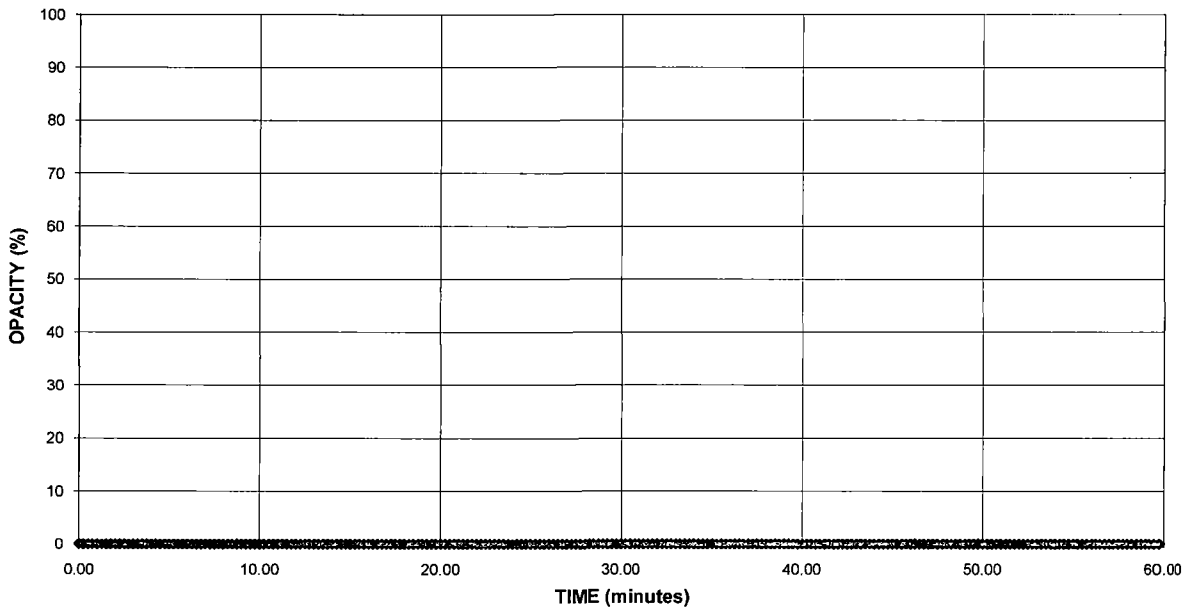
Run 1

Average Opacity: 0.00 %
Maximum Opacity: 0 %
6 Minute Average: 0.00 %
6 Minute Maximum: 0.00 %
Max Time w/ Opacity: 0.00 minutes

OPACITY READINGS (15 second intervals)



OPACITY RESULTS (6 minute averages)

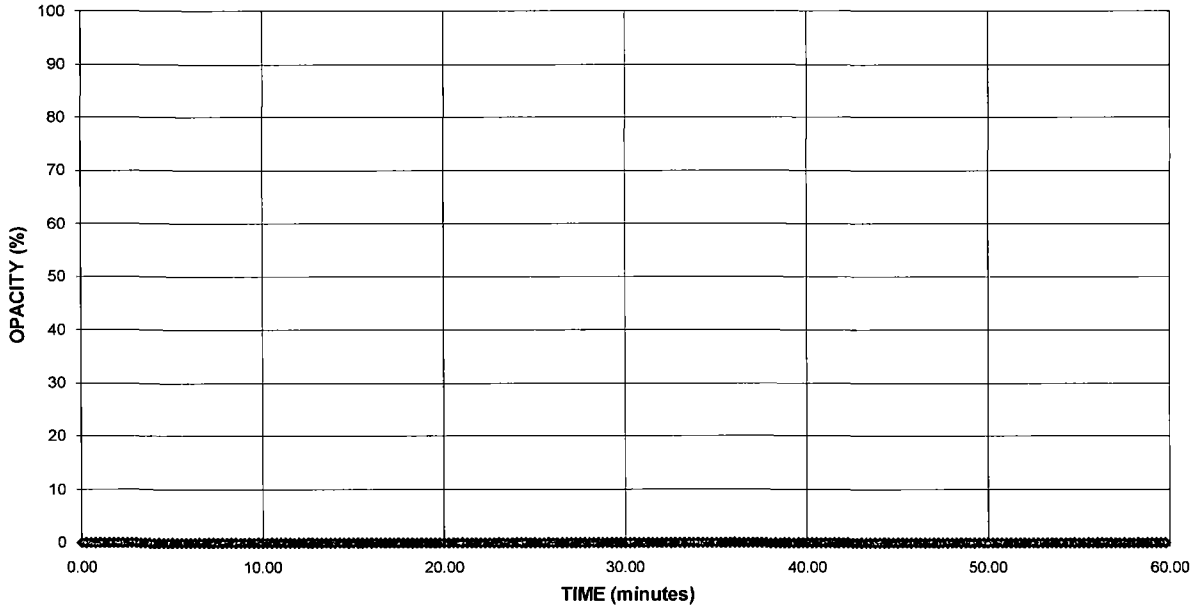


Company: Florida Power and Light
Equipment: Mitsubishi 501G with Duct Burners
Location: West County Energy Center
Date: November 17, 2009
Project #: bv-10-westcounty.fl-comp#1

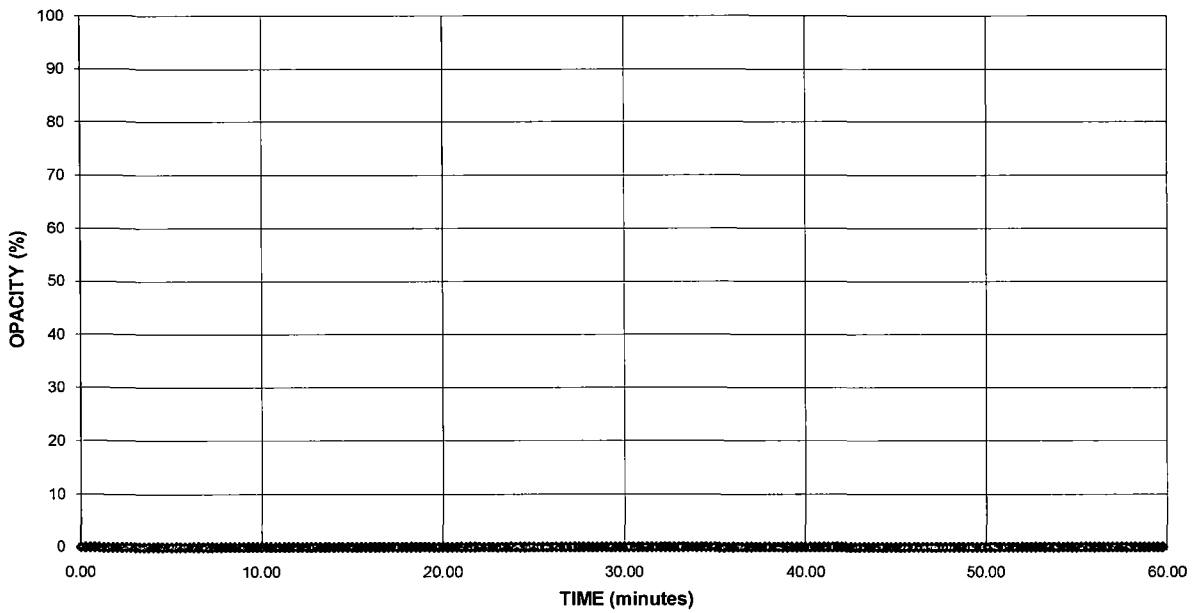
Run 2

Average Opacity: 0.00 %
Maximum Opacity: 0 %
6 Minute Average: 0.00 %
6 Minute Maximum: 0.00 %
Max Time w/ Opacity: 0.00 minutes

**OPACITY READINGS
(15 second intervals)**



**OPACITY RESULTS
(6 minute averages)**

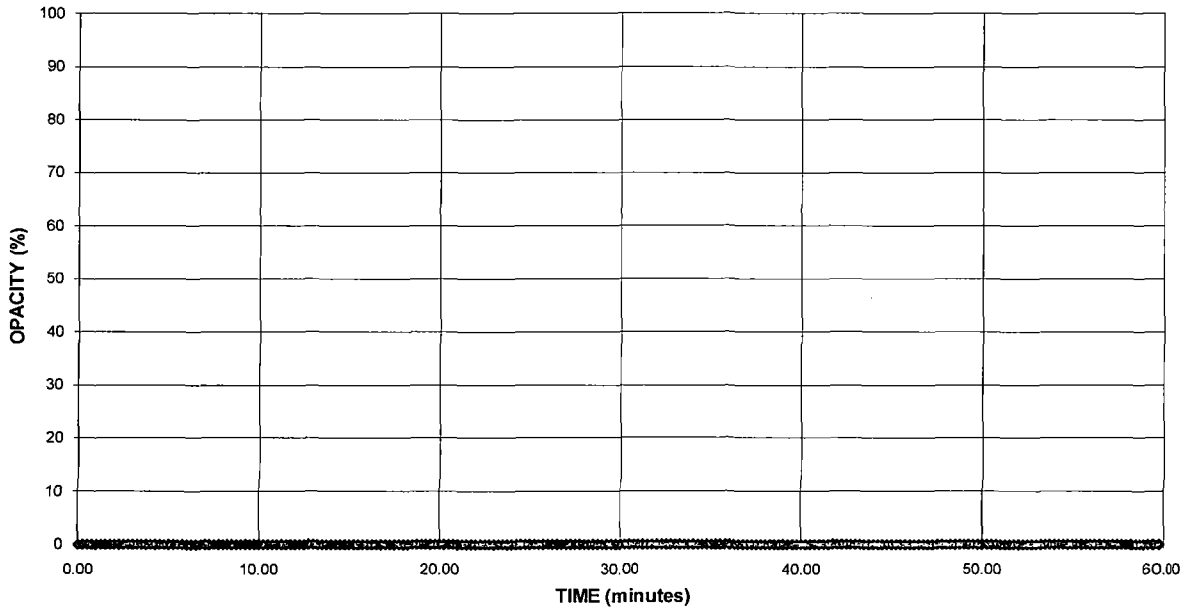


Company: Florida Power and Light
Equipment: Mitsubishi 501G with Duct Burners
Location: West County Energy Center
Date: November 17, 2009
Project #: bv-10-westcounty.fl-comp#1

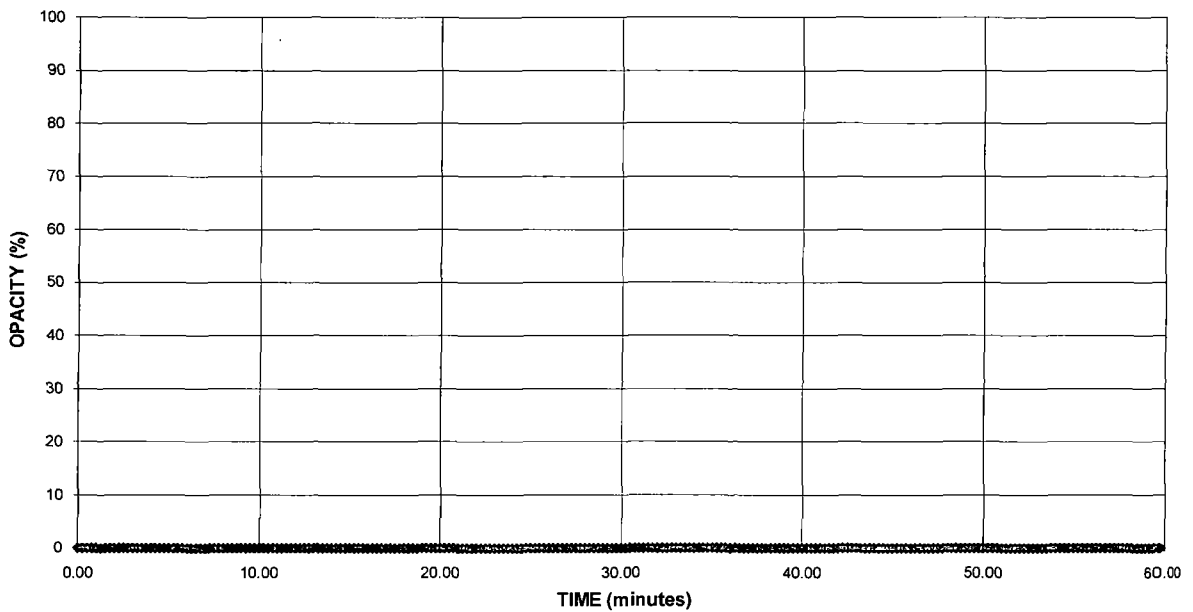
Run 3

Average Opacity: 0.00 %
Maximum Opacity: 0 %
6 Minute Average: 0.00 %
6 Minute Maximum: 0.00 %
Max Time w/ Opacity: 0.00 minutes

OPACITY READINGS (15 second intervals)



OPACITY RESULTS (6 minute averages)



Method Used (Circle One)
 Method A 203A 203B Other: _____

VISUAL EMISSIONS OBSERVATION FORM

Form Number _____ Page 1 of 6

Company Name Florida Power & Light
 Facility Name West County Energy Center
 Street Address 20505 State Rd 80
 City Loxahatchee State FL Zip 32740

Continued on Form Number _____

Process Natural Gas Unit # 2C Operating Mode Base w/DB
 Control Equipment HRSG Operating Mode Base

Observation Date 11-17-09 Time-Zone Eastern Start Time 1247 End Time 1346

Describe Emissions Point

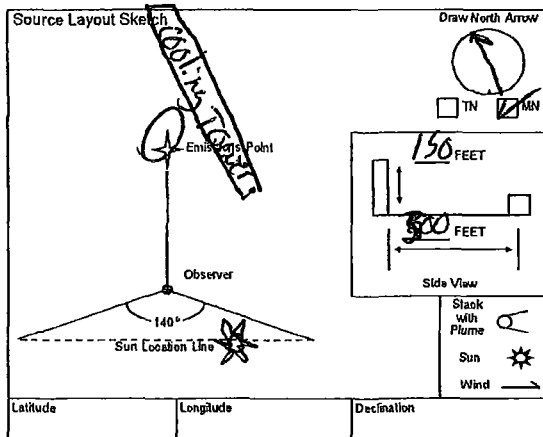
Height of Emiss. Pt. Start 150ft End 150ft Height of Emiss. Pt. Rel. to Observer Start 145ft End 145ft
 Distance to Emiss. Pt. Start 500ft End 500ft Direction to Emiss. Pt. (Degrees) Start 48 End 45

| Min. | Sec. | | | | Comments |
|------|------|----|----|----|----------|
| | 0 | 15 | 30 | 45 | |
| 1 | 0 | 0 | 0 | 0 | |
| 2 | 0 | 0 | 0 | 0 | |
| 3 | 0 | 0 | 0 | 0 | |
| 4 | 0 | 0 | 0 | 0 | |
| 5 | 0 | 0 | 0 | 0 | |
| 6 | 0 | 0 | 0 | 0 | |
| 7 | 0 | 0 | 0 | 0 | |
| 8 | 0 | 0 | 0 | 0 | |
| 9 | 0 | 0 | 0 | 0 | |
| 10 | 0 | 0 | 0 | 0 | |
| 11 | 0 | 0 | 0 | 0 | |
| 12 | 0 | 0 | 0 | 0 | |
| 13 | 0 | 0 | 0 | 0 | |
| 14 | 0 | 0 | 0 | 0 | |
| 15 | 0 | 0 | 0 | 0 | |
| 16 | 0 | 0 | 0 | 0 | |
| 17 | 0 | 0 | 0 | 0 | |
| 18 | 0 | 0 | 0 | 0 | |
| 19 | 0 | 0 | 0 | 0 | |
| 20 | 0 | 0 | 0 | 0 | |
| 21 | 0 | 0 | 0 | 0 | |
| 22 | 0 | 0 | 0 | 0 | |
| 23 | 0 | 0 | 0 | 0 | |
| 24 | 0 | 0 | 0 | 0 | |
| 25 | 0 | 0 | 0 | 0 | |
| 26 | 0 | 0 | 0 | 0 | |
| 27 | 0 | 0 | 0 | 0 | |
| 28 | 0 | 0 | 0 | 0 | |
| 29 | 0 | 0 | 0 | 0 | |
| 30 | 0 | 0 | 0 | 0 | |

Vertical Angle to Obs. Pt. Start 7° End 7° Direction to Obs. Pt. (Degrees) Start 225 End 225
 Distance and Direction to Observation Point from Emission Point Start _____ End _____

Describe Emissions Start Not Visible End Not Visible
 Emission Color Start clear End clear Water Droplet Plume Start NONE End NONE

Describe Plume Background Start Sky End sky
 Background Color Start Gray End Gray Sky Conditions Start Partly Cloudy End Partly Cloudy
 Wind Speed Start 5 mph End 5 mph Wind Direction Start N End N
 Ambient Temp. Start 83 End 84 Wet Bulb Temp. NA RH Percent _____



Observer's Name (Print) Rob White
 Observer's Signature _____ Date 11-17-09
 Organization AHI
 Certified By ETA Date 10-21-09

Additional Information

Method Used (Circle One)
 Method D 203A 203B Other: _____

VISUAL EMISSIONS OBSERVATION FORM

Form Number _____ Page 2 of 6
 Continued on Form Number _____

Company Name Florida Power & Light
 Facility Name West County Energy Center
 Street Address 20505 Stat Rd 80
 City Loxahatchee State FL Zip 32740

Process Natural Gas Unit # LC Operating Mode Base w/DB
 Control Equipment HRSG Operating Mode Base

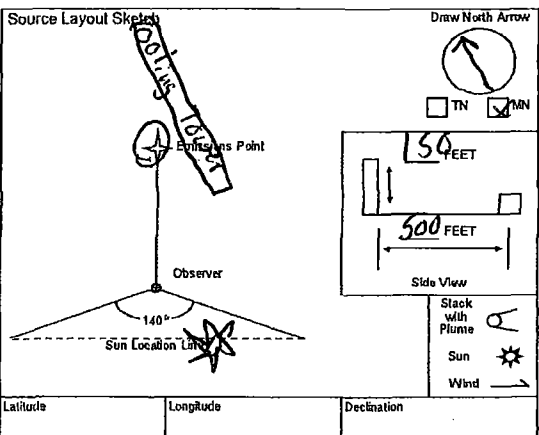
Describe Emissions Point

Height of Emiss. Pt. Start 150ft End 150ft Height of Emiss. Pt. Rel. to Observer Start 145 End 145
 Distance to Emiss. Pt. Start 500ft End 500ft Direction to Emiss. Pt. (Degrees) Start 45° End 45°

Vertical Angle to Obs. Pt. Start _____ End _____ Direction to Obs. Pt. (Degrees) Start 225° End 225°
 Distance and Direction to Observation Point from Emission Point Start _____ End _____

Describe Emissions Start Not visible End Not visible
 Emission Color Start Clear End Clear Water Droplet Plume Start None End None

Describe Sky Background Start Sky End Sky
 Background Color Start Grey End Grey Sky Conditions Start Partly cloudy End Partly cloudy
 Wind Speed Start 3 End 5 Wind Direction Start N End N
 Ambient Temp. Start 83 End 84 Wet Bulb Temp. _____ RH Percent _____



Additional Information

| Observation Date | Time Zone | Start Time | End Time | Comments | | |
|------------------|----------------|-------------|-------------|----------|----|----------|
| <u>11-17-09</u> | <u>Eastern</u> | <u>1247</u> | <u>1346</u> | | | |
| 1st | Sec | 0 | 15 | 30 | 45 | Comments |
| 1 | 0 | 0 | 0 | 0 | | |
| 2 | 0 | 0 | 0 | 0 | | |
| 3 | 0 | 0 | 0 | 0 | | |
| 4 | 0 | 0 | 0 | 0 | | |
| 5 | 0 | 0 | 0 | 0 | | |
| 6 | 0 | 0 | 0 | 0 | | |
| 7 | 0 | 0 | 0 | 0 | | |
| 8 | 0 | 0 | 0 | 0 | | |
| 9 | 0 | 0 | 0 | 0 | | |
| 10 | 0 | 0 | 0 | 0 | | |
| 11 | 0 | 0 | 0 | 0 | | |
| 12 | 0 | 0 | 0 | 0 | | |
| 13 | 0 | 0 | 0 | 0 | | |
| 14 | 0 | 0 | 0 | 0 | | |
| 15 | 0 | 0 | 0 | 0 | | |
| 16 | 0 | 0 | 0 | 0 | | |
| 17 | 0 | 0 | 0 | 0 | | |
| 18 | 0 | 0 | 0 | 0 | | |
| 19 | 0 | 0 | 0 | 0 | | |
| 20 | 0 | 0 | 0 | 0 | | |
| 21 | 0 | 0 | 0 | 0 | | |
| 22 | 0 | 0 | 0 | 0 | | |
| 23 | 0 | 0 | 0 | 0 | | |
| 24 | 0 | 0 | 0 | 0 | | |
| 25 | 0 | 0 | 0 | 0 | | |
| 26 | 0 | 0 | 0 | 0 | | |
| 27 | 0 | 0 | 0 | 0 | | |
| 28 | 0 | 0 | 0 | 0 | | |
| 29 | 0 | 0 | 0 | 0 | | |
| 30 | 0 | 0 | 0 | 0 | | |

Observer's Name (Print) Rob White
 Observer's Signature _____ Date 11-17-09
 Organization AMI
 Certified By ETA Date 10-21-09

Method Used (Circle One)
 Method A 203A 203B Other: _____

VISUAL EMISSIONS OBSERVATION FORM

Form Number _____ Page 3 of 6

Company Name Florida Power & Light
 Facility Name West County Energy Center
 Street Address 20505 State Rd 80
 City Loxahatchee State FL Zip 32740

Continued on Form Number _____

Process Natural Gas Unit # 7C Operating Mode Base load
 Control Equipment HRSG Operating Mode Base

Observation Date 11-17-09 Time Zone Eastern Start Time 12:17 End Time 14:46

Describe Emissions Point
 Height of Emiss. Pt. Start 150ft End 150 Height of Emiss. Pt. Rel. to Observer Start 145ft End 145
 Distance to Emiss. Pt. Start 500ft End 500 Direction to Emiss. Pt. (Degrees) Start 45° End 45

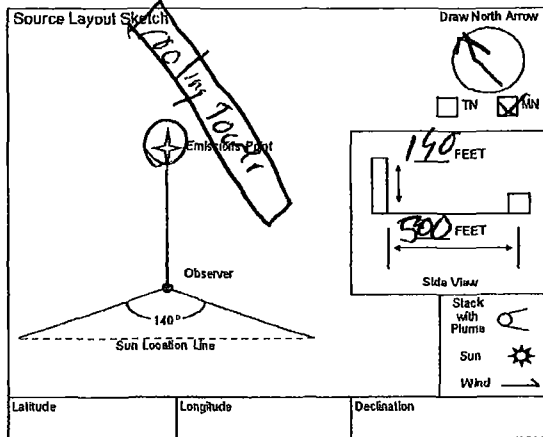
| Min | Sec | 0 | 15 | 30 | 45 | Comments |
|-----|-----|---|----|----|----|----------|
|-----|-----|---|----|----|----|----------|

Vertical Angle to Obs. Pt. Start _____ End _____ Direction to Obs. Pt. (Degrees) Start 0-25° End 225°
 Distance and Direction to Observation Point from Emission Point
 Start _____ End _____

| | | | | | |
|----|---|---|---|---|--|
| 1 | 0 | 0 | 0 | 0 | |
| 2 | 0 | 0 | 0 | 0 | |
| 3 | 0 | 0 | 0 | 0 | |
| 4 | 0 | 0 | 0 | 0 | |
| 5 | 0 | 0 | 0 | 0 | |
| 6 | 0 | 0 | 0 | 0 | |
| 7 | 0 | 0 | 0 | 0 | |
| 8 | 0 | 0 | 0 | 0 | |
| 9 | 0 | 0 | 0 | 0 | |
| 10 | 0 | 0 | 0 | 0 | |
| 11 | 0 | 0 | 0 | 0 | |
| 12 | 0 | 0 | 0 | 0 | |
| 13 | 0 | 0 | 0 | 0 | |
| 14 | 0 | 0 | 0 | 0 | |
| 15 | 0 | 0 | 0 | 0 | |
| 16 | 0 | 0 | 0 | 0 | |
| 17 | 0 | 0 | 0 | 0 | |
| 18 | 0 | 0 | 0 | 0 | |
| 19 | 0 | 0 | 0 | 0 | |
| 20 | 0 | 0 | 0 | 0 | |
| 21 | 0 | 0 | 0 | 0 | |
| 22 | 0 | 0 | 0 | 0 | |
| 23 | 0 | 0 | 0 | 0 | |
| 24 | 0 | 0 | 0 | 0 | |
| 25 | 0 | 0 | 0 | 0 | |
| 26 | 0 | 0 | 0 | 0 | |
| 27 | 0 | 0 | 0 | 0 | |
| 28 | 0 | 0 | 0 | 0 | |
| 29 | 0 | 0 | 0 | 0 | |
| 30 | 0 | 0 | 0 | 0 | |

Describe Emissions Start Not visible End not visible
 Emission Color Start clear End clear Water Droplet Plume Start none End none

Describe Plume Background: Start sky End sky
 Background Color Start gray End gray Sky Conditions Start Pt cloudy End Pt cloudy
 Wind Speed Start 5 End 5 Wind Direction Start NW End NW
 Ambient Temp Start 64 End _____ Wet Bulb Temp. NA RH Percent _____



Latitude _____ Longitude _____ Declination _____
 Additional Information _____

Observer's Name (Print) Rob White
 Observer's Signature _____ Date 11-17-09
 Organization AHE
 Certified By ETA Date 10-21-09

Method Used (Circle One)
 Method A 203A 203B Other: _____

VISUAL EMISSIONS OBSERVATION FORM

Company Name
Florida Power & Light
 Facility Name
West County Energy Center
 Street Address
20505 State Rd 80
 City State Zip
Loxahatchee FL 33740

Form Number _____ Page **4** of **6**
 Continued on Form Number _____

Process Unit # Operating Mode
Natural Gas 2c 1654 W/D13
 Control Equipment Operating Mode
17856 1525C

Observation Date **11-17-09** Time Zone **Eastern** Start Time **1347** End Time **1446**

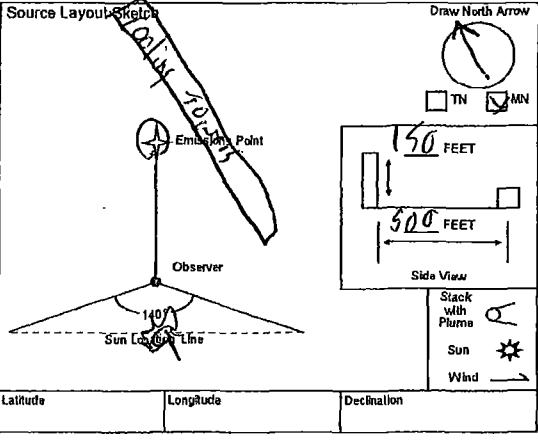
Describe Emissions Point
 Height of Emiss. Pt. Start **150** End **150** Height of Emiss. Pt. Rel. to Observer Start **145** End **145**
 Distance to Emiss. Pt. Start **500** End **500** Direction to Emiss. Pt. (Degrees) Start **225** End **225**

| Min | Sec | 0 | 15 | 30 | 45 | Comments |
|-----|-----|---|----|----|----|----------|
| 1 | 0 | 0 | 0 | 0 | 0 | |
| 2 | 0 | 0 | 0 | 0 | 0 | |
| 3 | 0 | 0 | 0 | 0 | 0 | |
| 4 | 0 | 0 | 0 | 0 | 0 | |
| 5 | 0 | 0 | 0 | 0 | 0 | |
| 6 | 0 | 0 | 0 | 0 | 0 | |
| 7 | 0 | 0 | 0 | 0 | 0 | |
| 8 | 0 | 0 | 0 | 0 | 0 | |
| 9 | 0 | 0 | 0 | 0 | 0 | |
| 10 | 0 | 0 | 0 | 0 | 0 | |
| 11 | 0 | 0 | 0 | 0 | 0 | |
| 12 | 0 | 0 | 0 | 0 | 0 | |
| 13 | 0 | 0 | 0 | 0 | 0 | |
| 14 | 0 | 0 | 0 | 0 | 0 | |
| 15 | 0 | 0 | 0 | 0 | 0 | |
| 16 | 0 | 0 | 0 | 0 | 0 | |
| 17 | 0 | 0 | 0 | 0 | 0 | |
| 18 | 0 | 0 | 0 | 0 | 0 | |
| 19 | 0 | 0 | 0 | 0 | 0 | |
| 20 | 0 | 0 | 0 | 0 | 0 | |
| 21 | 0 | 0 | 0 | 0 | 0 | |
| 22 | 0 | 0 | 0 | 0 | 0 | |
| 23 | 0 | 0 | 0 | 0 | 0 | |
| 24 | 0 | 0 | 0 | 0 | 0 | |
| 25 | 0 | 0 | 0 | 0 | 0 | |
| 26 | 0 | 0 | 0 | 0 | 0 | |
| 27 | 0 | 0 | 0 | 0 | 0 | |
| 28 | 0 | 0 | 0 | 0 | 0 | |
| 29 | 0 | 0 | 0 | 0 | 0 | |
| 30 | 0 | 0 | 0 | 0 | 0 | |

Vertical Angle to Obs. Pt. Direction to Obs. Pt. (Degrees) Start **225** End **225**
 Distance and Direction to Observation Point from Emission Point Start _____ End _____

Describe Emissions Start **Not Visible** End **Not Visible**
 Emission Color Start **Clear** End **Clear** Water Droplet Plume Start **NONE** End **NONE**

Describe Plume Background Start **sky** End **sky**
 Background Color Start **gray** End **gray** Sky Conditions Start **Partly** End **Partly**
 Wind Speed Start **5** End **5** Wind Direction Start **N** End **N**
 Ambient Temp. Start **84** End _____ Wet Bulb Temp. _____ RH Percent _____



Observer's Name (Print) **Rob White**
 Observer's Signature _____ Date **11-17-09**
 Organization **AHI**
 Certified By **ETA** Date **10-21-09**

Additional Information _____

Method Used (Circle One) Method 9 203A 203B Other: _____

VISUAL EMISSIONS OBSERVATION FORM

Company Name Florida Power & Light
 Facility Name West County Energy Center
 Street Address 20505 Skate Rd 80
 City Loxahatchee State FL Zip 32740

Form Number _____ Page 5 of 6

Continued on Form Number 442-09

Process Natural Gas Unit # 2c Operating Mode Base w/DB
 Control Equipment AHJ Operating Mode ISC 2c

Observation Date 11-17-09 Time Zone Eastern Start Time 1547 End Time 1546

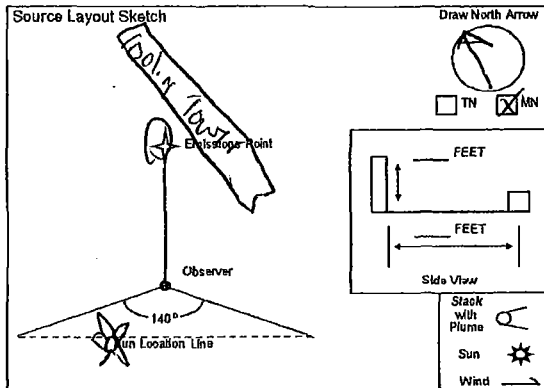
Describe Emissions Point
 Height of Emiss. Pt. Start 150ft End 150ft Height of Emiss. Pt. Rel. to Observer Start 150ft End 145
 Distance to Emiss. Pt. Start 500ft End 500 Direction to Emiss. Pt. (Degrees) Start 45 End 45

| Min | Sec | Time Zone | | | | Comments |
|-----|-----|-----------|----|----|----|----------|
| | | 0 | 15 | 30 | 45 | |
| 1 | 0 | 0 | 0 | 0 | 0 | |
| 2 | 0 | 0 | 0 | 0 | 0 | |
| 3 | 0 | 0 | 0 | 0 | 0 | |
| 4 | 0 | 0 | 0 | 0 | 0 | |
| 5 | 0 | 0 | 0 | 0 | 0 | |
| 6 | 0 | 0 | 0 | 0 | 0 | |
| 7 | 0 | 0 | 0 | 0 | 0 | |
| 8 | 0 | 0 | 0 | 0 | 0 | |
| 9 | 0 | 0 | 0 | 0 | 0 | |
| 10 | 0 | 0 | 0 | 0 | 0 | |
| 11 | 0 | 0 | 0 | 0 | 0 | |
| 12 | 0 | 0 | 0 | 0 | 0 | |
| 13 | 0 | 0 | 0 | 0 | 0 | |
| 14 | 0 | 0 | 0 | 0 | 0 | |
| 15 | 0 | 0 | 0 | 0 | 0 | |
| 16 | 0 | 0 | 0 | 0 | 0 | |
| 17 | 0 | 0 | 0 | 0 | 0 | |
| 18 | 0 | 0 | 0 | 0 | 0 | |
| 19 | 0 | 0 | 0 | 0 | 0 | |
| 20 | 0 | 0 | 0 | 0 | 0 | |
| 21 | 0 | 0 | 0 | 0 | 0 | |
| 22 | 0 | 0 | 0 | 0 | 0 | |
| 23 | 0 | 0 | 0 | 0 | 0 | |
| 24 | 0 | 0 | 0 | 0 | 0 | |
| 25 | 0 | 0 | 0 | 0 | 0 | |
| 26 | 0 | 0 | 0 | 0 | 0 | |
| 27 | 0 | 0 | 0 | 0 | 0 | |
| 28 | 0 | 0 | 0 | 0 | 0 | |
| 29 | 0 | 0 | 0 | 0 | 0 | |
| 30 | 0 | 0 | 0 | 0 | 0 | |

Vertical Angle to Obs. Pt. Start 25 End 25 Direction to Obs. Pt. (Degrees) Start 45 End 45
 Distance and Direction to Observation Point from Emission Point Start _____ End _____

Describe Emissions Start Not visible End not visible
 Emission Color Start Clear End Clear Water Droplet Plume Start NONE End NONE

Describe Plume Background Start sky End sky
 Background Color Start gray End gray Sky Conditions Start cloudy End cloudy
 Wind Speed Start 5mph End 5 Wind Direction Start NW End NW
 Ambient Temp. Start 83 End _____ Wet Bulb Temp. _____ RH Percent _____



Latitude _____ Longitude _____ Declination _____

Observer's Name (Print) Rob White

Additional Information _____

Observer's Signature [Signature] Date 11-17-09

Organization AHJ

Certified By ETA Date 11-21-09

Method Used (Circle One)
 Method 9 203A 203B Other: _____

VISUAL EMISSIONS OBSERVATION FORM

Form Number _____ Page 6 of 6

Company Name Florida Power & Light
 Facility Name West County Energy Center
 Street Address 60505 State Rd 80
 City Loxahatchee State FL Zip 33440

Continued on Form Number _____

Process Natural Gas GC Unit # 1568 W/113 Operating Mode
 Control Equipment HRS6 Operating Mode Base

Observation Date 11-17-09 Time Zone Eastern Start Time 1447 End Time 1546

Describe Emissions Point

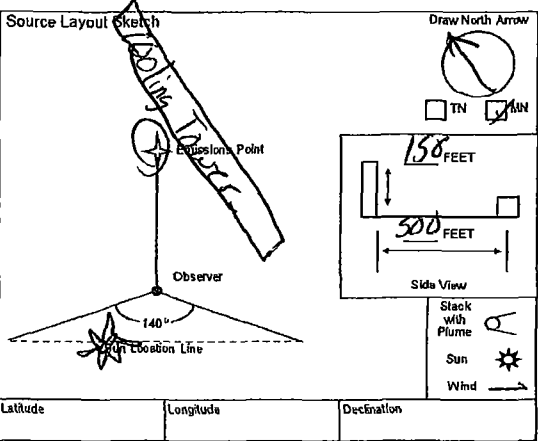
Height of Emiss. Pt. Start 150ft End 150 Height of Emiss. Pt. Rel. to Observer Start 45ft End 145
 Distance to Emiss. Pt. Start 500ft End 500 Direction to Emiss. Pt. (Degrees) Start 45° End 45°

| Obs. No. | Time | | | | Comments |
|----------|------|----|----|----|----------|
| | 0 | 15 | 30 | 45 | |
| 1 | 0 | 0 | 0 | 0 | |
| 2 | 0 | 0 | 0 | 0 | |
| 3 | 0 | 0 | 0 | 0 | |
| 4 | 0 | 0 | 0 | 0 | |
| 5 | 0 | 0 | 0 | 0 | |
| 6 | 0 | 0 | 0 | 0 | |
| 7 | 0 | 0 | 0 | 0 | |
| 8 | 0 | 0 | 0 | 0 | |
| 9 | 0 | 0 | 0 | 0 | |
| 10 | 0 | 0 | 0 | 0 | |
| 11 | 0 | 0 | 0 | 0 | |
| 12 | 0 | 0 | 0 | 0 | |
| 13 | 0 | 0 | 0 | 0 | |
| 14 | 0 | 0 | 0 | 0 | |
| 15 | 0 | 0 | 0 | 0 | |
| 16 | 0 | 0 | 0 | 0 | |
| 17 | 0 | 0 | 0 | 0 | |
| 18 | 0 | 0 | 0 | 0 | |
| 19 | 0 | 0 | 0 | 0 | |
| 20 | 0 | 0 | 0 | 0 | |
| 21 | 0 | 0 | 0 | 0 | |
| 22 | 0 | 0 | 0 | 0 | |
| 23 | 0 | 0 | 0 | 0 | |
| 24 | 0 | 0 | 0 | 0 | |
| 25 | 0 | 0 | 0 | 0 | |
| 26 | 0 | 0 | 0 | 0 | |
| 27 | 0 | 0 | 0 | 0 | |
| 28 | 0 | 0 | 0 | 0 | |
| 29 | 0 | 0 | 0 | 0 | |
| 30 | 0 | 0 | 0 | 0 | |

Vertical Angle to Obs. Pt. Start _____ End _____ Direction to Obs. Pt. (Degrees) Start 225° End 225°
 Distance and Direction to Observation Point from Emission Point Start _____ End _____

Describe Emissions Start not visible End not visible
 Emission Color Start clear End clear Water Droplet Plume Start NONE End NONE

Describe Plume Background Start sky End sky
 Background Color Start gray End gray Sky Conditions Start BT Cloudy End BT Cloudy
 Wind Speed Start 5 mph End 5 Wind Direction Start NW End NW
 Ambient Temp. Start 87 End _____ Wet Bulb Temp. _____ RH Percent _____



Observer's Name (Print) Rob White
 Observer's Signature _____ Date 11-17-09
 Organization AHL
 Certified By EIA Date 10-21-09

Additional Information

CALCULATIONS

EXAMPLE CALCULATIONS (FFACTOR)

RM 19, (07-19-06),
2.0 Summary of Method,
2.1 Emission Rates. Oxygen (O₂) or carbon dioxide (CO₂) concentrations and appropriate F factors (ratios of combustion gas volumes to heat inputs) are used to calculate pollutant emission rates from pollutant concentrations.

Mark's Std Hdbk, 10th ed., pg 4-26
High Heat Value Dry (HHV_{dry}), calc for Methane (single component for the fuel gas)

$$HHV_{dry} (Btu / SCF) = \left[\left(\frac{M\%}{100} \right) \times GCM \right] \quad HHV_{dry} = \frac{96.01\%}{100.00} \times \frac{994.85 \text{ Btu}}{SCF} = \frac{955.12 \text{ Btu}}{SCF}$$

Mark's Std Hdbk, 10th ed., pg 4-26
Low Heat Value Dry (LHV_{dry}), calc for Methane (single component for the fuel gas)

$$LHV_{dry} (Btu / SCF) = \left[\left(\frac{M\%}{100} \right) \times NCM \right] \quad LHV_{dry} = \frac{96.01\%}{100.00} \times \frac{895.75 \text{ Btu}}{SCF} = \frac{859.99 \text{ Btu}}{SCF}$$

RM 19, (07-19-06),
12.2 Emission Rates of PM, SO₂, and NOx. Select from the following sections the applicable procedure to compute the PM, SO₂, or NOx emission rate (E) in lb/MMBtu. The pollutant concentration must be in lb/scf and the F factor must be in scf/MMBtu. If the pollutant concentration (C) is not in the appropriate units, use Table 19-1 in Section 17.0 to make the proper conversion. An F factor is the ratio of the gas volume of the products of combustion to the heat content of the fuel. The dry F factor (F_d) includes all components of combustion less water, the wet F factor (F_w) includes all components of combustion, and the carbon F factor (F_c) includes only carbon dioxide.

Civil Eng. Ref. Man., 7th Ed., pg 14-9/GPA Ref. Bulletin 181-86, App. C
High Heat Value Wet (HHV_{wet}), calc for entire sample (all components of the fuel gas)

$$HHV_{wet} (Btu / SCF) = \frac{HHV_{dry}}{W / D. factor} \quad HHV_{wet} = \frac{1,001.96 \text{ Btu/SCF}}{1.0236} = 978.86 \text{ Btu/SCF}$$

Civil Eng. Ref. Man., 7th Ed., pg 14-9/GPA Ref. Bulletin 181-86, App. C
Low Heat Value Wet (LHV_{wet}), calc for entire sample (all components of the fuel gas)

$$LHV_{wet} (Btu / SCF) = \frac{LHV_{dry}}{W / D. factor} \quad LHV_{wet} = \frac{902.92 \text{ Btu/SCF}}{1.0236} = 882.10 \text{ Btu/SCF}$$

Lbs Component per Lb-Mol of Gas (CM), calc for Methane (single component for the fuel gas)

$$CM (lb / lb - mol) = \left[\left(\frac{M\%}{100} \right) \times MW \right] \quad CM = \frac{96.01\%}{100.00} \times \frac{16.04 \text{ lb}}{\text{lb-mol}} = 15.40 \text{ lb/lb-mol}$$

ASTM D 3588
Fuel Molecular Weight (MW_{Fuel})

$$MW_{Fuel} (lb / lb \cdot mol) = \left[\sum (CM) \right] \quad MW_{Fuel} = 15.40 \text{ lb/lb-mol} + 0.57 \text{ lb/lb-mol} + \text{etc.} = 16.846 \text{ lb/lb-mol}$$

Btu per Lb of Gas Gross (GCV)

$$GCV (Btu / lb) = \left[\frac{HHV_{dry} \times G}{MW_{Fuel}} \right] \quad GCV = \frac{1,001.96 \text{ Btu/SCF} \times 385.23 \text{ ft}^3/\text{lbmol}}{16.846 \text{ lb/lb-mol}} = 22,912.04 \text{ Btu/lb}$$

ASTM D 3588 (SG)
Specific Gravity

$$SG = \left[\frac{MW_{Fuel}}{MW_{AIR}} \right] \quad SG = \frac{16.85 \text{ lb/lb-mol}}{28.96 \text{ lb/lb-mol}} = 0.5817$$

Btu per Lb of Gas Net (NCV)

$$NCV (Btu / lb) = \left[\frac{LHV_{dry} \times G}{MW_{Fuel}} \right] \quad NCV = \frac{902.92 \text{ Btu/SCF} \times 385.23 \text{ ft}^3/\text{lbmol}}{16.846 \text{ lb/lb-mol}} = 20,647.40 \text{ Btu/lb}$$

Weight Percent of Component (C%), methane

$$C_{\%} (\%) = \left[\left(\frac{CM}{MW_{Fuel}} \right) \times 100 \right] \quad C_{\%} = \frac{15.40 \text{ lb/lb-mol}}{16.85 \text{ lb/lb-mol}} \times 100 = 91.43 \%$$

RM 19, (07-19-06), **Weight Percent of Volatile Organic Compounds (VOC%)**

$$VOC_{\%} (\%) = \left[\sum_{C_3H_8} M_{\%} \right] \quad VOC_{\%} = 0.88\% + 0.22\% + 0.19\% + \text{etc.} = 1.50\%$$

RM 19, (07-19-06), 12.3.2 **Determined F Factors**. If the fuel burned is not listed in Table 19-2 or if the owner or operator chooses to determine an F factor rather than use the values in Table 19-2, use the procedure below: 12.3.2.1 Equations. Use the eq

RM 19, (07-19-06),
12.1 Nomenclature

K (scf/lb)%

H 3.64
C 1.53
S 0.57
N₂ 0.14
O₂ 0.46

$$F_d = \frac{K(K_{hd} \%H + K_c \%C + K_s \%S + K_n \%N - K_o \%O)}{GCV} \quad \text{Eq. 19-13}$$

$$F_d = \frac{10^6 \text{ Btu}}{\text{MMBtu}} \times \left[\frac{3.64 \text{ SCF}}{\text{lb} \cdot \%} \times 23.92\% + \frac{1.53 \text{ SCF}}{\text{lb} \cdot \%} \times 73.14\% + \frac{0.57 \text{ SCF}}{\text{lb} \cdot \%} \times 0.00\% + \frac{0.14 \text{ SCF}}{\text{lb} \cdot \%} \times 0.88\% - \frac{0.46 \text{ SCF}}{\text{lb} \cdot \%} \times 2.06\% \right] \times \frac{\text{lb}}{22,912.04 \text{ Btu}} = \frac{8,648.03 \text{ SCF}}{\text{MMBtu}}$$

Note: Lack of significant figures may cause rounding errors between actual calculations and example calculations.

EXAMPLE CALCULATIONS (INFORMATION)

Specific Humidity (RH_{sp})

Note: RH_{sp} (gr/lb) calculated using temperature, relative humidity, and barometric pressure with psychrometric chart, psychrometric calculator, or built in psychrometric algorithm.

$$RH_{sp} (lb/lb) = \left[\left(\frac{gr}{lb} \right) \times \frac{lb}{7000gr} \right]$$

$$RH_{sp} = \frac{90.06 \text{ gr}}{lb} \times \frac{1 \text{ lb}}{7000 \text{ gr}} = 0.012865 \frac{\text{lb H}_2\text{O}}{\text{lb Air}}$$

Fuel Flow Conversion (Q_f)

Note: Q_f(lb/min) is a value uptained from the source operator.

$$Q_f = \left[Q_f \times G \times \left(\frac{1}{MW_{Fuel}} \right) \right]$$

$$Q_f = \frac{1,839.50 \text{ lb}}{\text{min}} \times \frac{60 \text{ min}}{\text{hr}} \times \frac{385.23 \text{ ft}^3}{\text{lb-mol}} \times \frac{\text{lb-mol}}{16.85 \text{ lb}} = 2,523,864 \text{ SCFH}$$

Combustor Inlet Pressure / Compressor Discharge Pressure (CIP / CDP)
(corrected from gauge to atmospheric pres. and conv. to mm Hg.)

Note: CIP / CDP (psig) is a value obtained from the source operator.

$$CIP / CDP = \left[(psig + P) \times \frac{51.71493 \text{ mmHg}}{1 \text{ psi}} \right]$$

$$CIP / CDP = \left[271.1 \text{ psig} + 14.7248 \right] \times \frac{51.71493 \text{ mmHg}}{1 \text{ psia}} = 14,780 \text{ mmHg (abs)}$$

EXAMPLE CALCULATIONS (CALIBRATION)

Analyzer Calibration Error

RM 7E, (08-15-06), 12.2 Analyzer Calibration Error. For non-dilution systems, use Equation 7E-1 to calculate the analyzer calibration error for the low-, mid-, and high-level calibration gases. (calc for NOx analyzer mid gas, if applicable)

$$ACE = \left(\frac{C_{Dir} - C_V}{CS} \right) \times 100 \quad \text{Eq. 7E-1}$$

$$ACE = \frac{5.27 \text{ ppm} - 4.99 \text{ ppm}}{9.11 \text{ ppm}} \times 100 = 3.07 \%$$

Calibration Error and Estimated Point, RM 25A, THC Analyzer

RM 25A, (07-19-06), 8.4 Calibration Error Test. Immediately prior to the test series (within 2 hours of the start of the test), introduce zero gas and high-level calibration gas at the calibration valve assembly. Adjust the analyzer output to the appropriate levels, if necessary. Calculate the predicted response for the low-level and mid-level gases based on a linear response line between the zero and high-level response. Then introduce low-level and mid-level calibration gases successively to the measurement system. ... These differences must be less than 5 percent of the respective calibration gas value. (calc for THC analyzer mid gas, if applicable)

$$E_p = \frac{C_{Dir(H)} - C_{Dir(Z)}}{C_{V(H)} - C_{V(Z)}} \times C_{Dir(M)} + C_{Dir(Z)} \quad \text{Eq. of a line } y=mx+b$$

$$E_p = \frac{8.60 \text{ ppm} - -0.01 \text{ ppm}}{8.40 \text{ ppm} - 0.00 \text{ ppm}} \times 4.94 \text{ ppm} + -0.01 = 5.05 \text{ ppm}$$

$$ACE = \left(\frac{C_{Dir} - C_V}{CS} \right) \times 100 \quad \text{Eq. 7E-1}$$

$$ACE_{THC} = \frac{4.89 \text{ ppm} - 5.05 \text{ ppm}}{4.94 \text{ ppm}} \times 100 = -3.31 \%$$

Note: Lack of significant figures may cause rounding errors between actual calculations and example calculations.

EXAMPLE CALCULATIONS (BIAS, DRIFT, AND CORRECTED RAW AVERAGE)

System Bias

RM 7E, (08-15-06), 12.3 System Bias. For non-dilution systems, use Equation 7E-2 to calculate the system bias separately for the low-level and upscale calibration gases. (calc for NOx analyzer upscale gas, Run 1 initial bias, if applicable)

$$SB = \left(\frac{C_S - C_{Dir}}{CS} \right) \times 100 \quad \text{Eq. 7E-2} \quad SB = \frac{5.05 \text{ ppm} - 5.27 \text{ ppm}}{9.11 \text{ ppm}} \times 100 = -2.41 \%$$

Drift Assessment

RM 7E, (08-15-06), 12.5 Drift Assessment. Use Equation 7E-4 to separately calculate the low-level and upscale drift over each test run. (calc for NOx analyzer upscale drift, Run 1, if applicable)

$$D = |SB_{final} - SB_i| \quad \text{Eq. 7E-4} \quad D = | -2.96 \% - -2.41 \% | = 0.55 \%$$

Alternative Drift and Bias

RM 7E, (08-15-06), 13.2 / 13.3 System Bias and Drift. Alternatively, the results are acceptable if $|C_s - C_{dir}| \leq 0.5 \text{ ppmv}$ or if $|C_s - C_v| \leq 0.5 \text{ ppmv}$ (as applicable). (calc for NOx analyzer initial upscale, Run 1, if applicable)

$$SB / D_{Alt} = |C_S - C_{Dir}| \quad \text{Eq. Section 13.2 and 13.3} \quad SB / D_{Alt} = | 5.05 \text{ ppm} - 5.27 \text{ ppm} | = 0.22 \text{ ppm}$$

Bias Adjusted Average

RM 7E, (08-15-06), 12.6 Effluent Gas Concentration. For each test run, calculate C_{avg} , the arithmetic average of all valid NOx concentration values (e.g., 1-minute averages). Then adjust the value of C_{avg} for bias, using Equation 7E-5. (calc for NOx analyzer, Run 1, if applicable)

$$C_{Gas} = (C_{Avg} - C_O) \times \left(\frac{C_{MA}}{C_M - C_O} \right) \quad \text{Eq. 7E-5} \quad C_{Gas} = \left(2.01 \text{ ppm} - 0.09 \text{ ppm} \right) \times \left(\frac{4.99 \text{ ppm}}{5.03 \text{ ppm} - 0.09 \text{ ppm}} \right) = 1.94 \text{ ppm}$$

Note: Lack of significant figures may cause rounding errors between actual calculations and example calculations.

EXAMPLE CALCULATIONS (RUNS)

Stack Exhaust Flow (Q_s) - RM19

$$Q_s = \left(\frac{FFactor \times Q_f \times HHV}{1,000,000} \right) \times \left(\frac{20.9\%}{20.9\% - C_{Gas(O_2)}} \right)$$

$$Q_s = \frac{8,648.03 \text{ SCF}}{\text{MMBtu}} \times \frac{2,523,864.36 \text{ SCF}}{\text{hr}} \times \frac{1,001.96 \text{ Btu}}{\text{SCF}} \times \frac{\text{MMBtu}}{10^6 \text{ Btu}} \times \left(\frac{20.90\%}{20.9\% - 13.1\%} \right) = 58,245,589.82 \text{ SCFH}$$

Diluent-Corrected Pollutant Concentration, O₂ Based

RM 20, (11-26-02), 7.3.1 Correction of Pollutant Concentration Using O₂ Concentration. Calculate the O₂ corrected pollutant concentration, as follows: (calc for NOx gas, Run 1, if applicable)

$$C_{adj} = C_{Gas(T_{arg})} \times \left(\frac{20.9\% - AdjFactor}{20.9\% - C_{Gas(O_2)}} \right) \quad \text{Eq. 20-4} \quad C_{adj} = 1.94 \text{ ppm} \times \left(\frac{20.9\% - 15.00\%}{20.9\% - 13.05\%} \right) = 1.46 \text{ ppm@15\%O}_2$$

Diluent-Corrected Pollutant Concentration Corrected to ISO Conditions

40CFR60.335(b)(1), Conversion for conc. at ISO Conditions (68°F, 1 atm). Calculate, as follows: (calc for NOx@15% with Run 1 data, if applicable)

$$C_{ISO} = C_{Adj} \times \sqrt{\frac{P_r}{P_o}} \times e^{(19 \times (T_o - 0.00633))} \times \left(\frac{288}{T_a} \right)^{1.53}$$

$$C_{ISO} = 1.46 \text{ ppm@15\%O}_2 \times \left(\sqrt{\frac{271.1 \text{ psig} + 14.69232 \text{ psi}}{0.01933677 \text{ psi/mm Hg.}}} \times e^{(19 \times (0.012865 \text{ lb/lb} - 0.00633))} \right) \times \left(\frac{288 \text{ K}}{294 \text{ K}} \right)^{1.53} = 1.60 \text{ ppm@15\% and ISO}$$

EXAMPLE CALCULATIONS (RUNS)

Emissions Rate (lb/hr)

Calculation for pound per hour emission rate. Calculate, as follows: (calc for NOx gas Run 1, if applicable)

$$E_{lb/hr} = \frac{C_{Gas}}{10^6} \times \frac{Q_s \times MW}{G}$$

$$E_{lb/hr} = \frac{1.94 \text{ ppm}}{10^6 \text{ ppm/part}} \times \frac{58,245,590 \text{ SCFH} \times 46.01 \text{ lb/lb-mol}}{385.23 \text{ SCF/lb-mol}} = \frac{13.49 \text{ lb}}{\text{hr}}$$

Emissions Rate (ton/year)

Calculation for tons per year emission rate based on 8760 hours per year. Calculate, as follows: (calc for NOx gas Run 1, if applicable)

$$E_{ton/yr} = \frac{E_{lb/hr} \times \text{hr}_{year}}{2000}$$

$$E_{ton/yr} = \frac{13.49 \text{ lb}}{\text{hr}} \times \frac{8,760 \text{ hr}}{\text{year}} \times \frac{\text{ton}}{2000 \text{ lb}} = \frac{59.10 \text{ ton}}{\text{year}}$$

Emissions Rate (lb/MMBtu)

RM 19, (07-19-06), 12.2 Emission Rates of PM, SO₂, and NOx. Select from the following sections the applicable procedure to compute the PM, SO₂, or NOx emission rate (E) in ng/J (lb/million Btu). (calc for NOx gas Run 1, if applicable)

Oxygen Based

12.2.1 Oxygen-Based F Factor, Dry Basis. When measurements are on a dry basis for both O₂ (%O₂d) and pollutant (Cd) concentrations, use the following equation:

$$E_{lb/MMBtu} = \frac{C_{Gas} \times F_d \text{ Factor} \times Conv_c \times 20.9\%}{20.9\% - C_{Gas(O_2)}} \quad \text{Eq. 19-1}$$

$$E_{lb/MMBtu} = \frac{1.94 \text{ ppm} \times 8,648.03 \text{ SCF/MMBtu} \times 0.0000001194 \text{ lb/ppm} \cdot \text{ft}^3 \times 20.9\%}{20.9\% - 13.05\%} = \frac{0.005 \text{ lb}}{\text{MMBtu}}$$

Conversion Constant
Conv_c for NOx

$$Conv_c (\text{lb} / \text{ppm} \cdot \text{ft}^3) = \frac{MW}{10^6}$$

$$Conv_c = \frac{46.01 \text{ lb}}{\text{lb} \cdot \text{mole}} \times \frac{\text{lb} \cdot \text{mole}}{385.23 \text{ SCF}} = \frac{0.0000001194 \text{ lb}}{\text{ppm} \cdot \text{ft}^3}$$

Note: Lack of significant figures may cause rounding errors between actual calculations and example calculations.

RM 7E, (08-15-06), 12.1 Nomenclature. The terms used in the equations are defined as follows:

ACE = Analyzer calibration error, percent of calibration span.
B_{MS} = Moisture content of sample gas as measured by Method 4 or other approved method, percent/100.
C_{AVg} = Average unadjusted gas concentration indicated by data recorder for the test run.
C_D = Pollutant concentration adjusted to dry conditions.
C_{DH} = Measured concentration of a calibration gas (low, mid, or high) when introduced in direct calibration mode.
C_{Gas} = Average effluent gas concentration adjusted for bias.
C_M = Average of initial and final system calibration bias (or 2-point system calibration error) check responses for the upscale calibration gas.
C_{MA} = Actual concentration of the upscale calibration gas, ppmv.
C_O = Average of the initial and final system calibration bias (or 2-point system calibration error) check responses from the low-level (or zero) calibration gas.
C_S = Measured concentration of a calibration gas (low, mid, or high) when introduced in system calibration mode.
C_{GS} = Concentration of NOx measured in the spiked sample.
C_{Spike} = Concentration of NOx in the undiluted spike gas.
C_{Calc} = Calculated concentration of NOx in the spike gas diluted in the sample.
C_V = Manufacturer certified concentration of a calibration gas (low, mid, or high).
C_W = Pollutant concentration measured under moist sample conditions, wet basis.
CS = Calibration span.
D = Drift assessment, percent of calibration span.
E_p = The predicted response for the low-level and mid-level gases based on a linear response line between the zero and high-level response.
Eff_{NO2} = NO₂ to NO converter efficiency, percent.
H = High calibration gas, designator.
L = Low calibration gas, designator.
M = Mid calibration gas, designator.
NOFinal = The average NO concentration observed with the analyzer in the NO mode during the converter efficiency test in Section 16.2.2.
NOxCorr = The NOx concentration corrected for the converter efficiency.
NOxFinal = The final NOx concentration observed during the converter efficiency test in Section 16.2.2.
NOxPeak = The highest NOx concentration observed during the converter efficiency test in Section 16.2.2.
Q_{Spike} = Flow rate of spike gas introduced in system calibration mode, L/min.
Q_{Total} = Total sample flow rate during the spike test, L/min.
R = Spike recovery, percent.
SB = System bias, percent of calibration span.
SB_p = Pre-run system bias, percent of calibration span.
SB_r = Post-run system bias, percent of calibration span.
SB / D_{Alt} = Alternative absolute difference criteria to pass bias and/or drift checks.
SCE = System calibration error, percent of calibration span.
SCE_p = Pre-run system calibration error, percent of calibration span.
SCE_r = Post-run system calibration error, percent of calibration span.
Z = Zero calibration gas, designator.

40CFR60.355(b)(1), (09-20-06), Nomenclature. The terms used in the equations are defined as follows:

P_r = reference combustor inlet absolute pressure at 101.3 kilopascals ambient pressure, mm Hg
P_o = observed combustor inlet absolute pressure at test, mm Hg
H_o = observed humidity of ambient air, g H₂O/g air
e = transcendental constant, 2.718
T_a = ambient temperature, K

RM 19, (07-29-06), 12.1 Nomenclature. The terms used in the equations are defined as follows:

AdjFactor = Percent oxygen or carbon dioxide adjustment applied to a target pollutant
 $E_{a,w}$ = Moisture fraction of ambient air, percent.
 Btu = British thermal unit
 $\%C$ = Concentration of carbon from an ultimate analysis of fuel, weight percent.
 $\%CO_{2d}, \%CO_{2w}$ = Concentration of carbon dioxide on a dry and wet basis, respectively, percent.
 CIP / CDP = Combustor inlet pressure / compressor discharge pressure (mm Hg); note, some manufactures reference as PCD.
 E = Pollutant emission rate, ng/J (lb/million Btu).
 E_a = Average pollutant rate for the specified performance test period, ng/J (lb/million Btu).
 $E_{a,i}, E_{a,o}$ = Average pollutant rate of the control device, outlet and inlet, respectively, for the performance test period, ng/J (lb/million Btu).
 E_{sg} = Pollutant rate from the steam generating unit, ng/J (lb/million Btu).
 E_{sg} = Pollutant emission rate from the steam generating unit, ng/J (lb/million Btu).
 E_{ci} = Pollutant rate in combined effluent, ng/J (lb/million Btu).
 E_{co} = Pollutant emission rate in combined effluent, ng/J (lb/million Btu).
 E_d = Average pollutant rate for each sampling period (e.g., 24-hr Method 6B sample or 24-hr fuel sample) or for each fuel lot (e.g., amount of fuel bunkered), ng/J (lb/million Btu).
 E_{di} = Average inlet SO₂ rate for each sampling period d, ng/J (lb/million Btu).
 E_g = Pollutant rate from gas turbine, ng/J (lb/million Btu).
 E_{ga} = Daily geometric average pollutant rate, ng/J (lb/million Btu) or ppm corrected to 7 percent O₂.
 $E_{ga,i}, E_{ga,o}$ = Matched pair hourly arithmetic average pollutant rate, outlet and inlet, respectively, ng/J (lb/million Btu) or ppm corrected to 7 percent O₂.
 E_h = Hourly average pollutant, ng/J (lb/million Btu).
 E_{hj} = Hourly arithmetic average pollutant rate for hour "j," ng/J (lb/million Btu) or ppm corrected to 7 percent O₂.
 EXP = Natural logarithmic base (2.718) raised to the value enclosed by brackets.
 Fc = Ratio of the volume of carbon dioxide produced to the gross calorific value of the fuel from Method 19
 F_g, F_w, F_c = Volumes of combustion components per unit of heat content, scm/J (scf/million Btu).
 ft^3 = cubic feet
 G = ideal gas conversion factor
 (385.23 SCF/lb-mol at 68 deg F & 14.696 psia)
 GCM = gross Btu per SCF (constant, compound based)
 GCV = Gross calorific value of the fuel consistent with the ultimate analysis, kJ/kg (Btu/lb).
 GCV_p, GCV_r = Gross calorific value for the product and raw fuel lots, respectively, dry basis, kJ/kg (Btu/lb).
 $\%H$ = Concentration of hydrogen from an ultimate analysis of fuel, weight percent.
 H_g = Heat input rate to the steam generating unit from fuels fired in the steam generating unit, J/hr (million Btu/hr).
 H_t = Heat input rate to gas turbine from all fuels fired in the gas turbine, J/hr (million Btu/hr).
 $\%H_2O$ = Concentration of water from an ultimate analysis of fuel, weight percent.
 H_t = Total numbers of hours in the performance test period (e.g., 720 hours for 30-day performance test period).
 K = volume of combustion component per pound of component (constant)
 K = Conversion factor, 10⁻⁵ (kJ/J)/(%) [10⁶ Btu/million Btu].
 $K_c = (9.57 \text{ scm/kg})/\%$ [(1.53 scf/lb)/%].
 $K_{co} = (2.0 \text{ scm/kg})/\%$ [(0.321 scf/lb)/%].
 $K_{hd} = (22.7 \text{ scm/kg})/\%$ [(3.64 scf/lb)/%].
 $K_{hw} = (34.74 \text{ scm/kg})/\%$ [(5.57 scf/lb)/%].
 $K_n = (0.86 \text{ scm/kg})/\%$ [(0.14 scf/lb)/%].
 $K_o = (2.85 \text{ scm/kg})/\%$ [(0.46 scf/lb)/%].
 $K_s = (3.54 \text{ scm/kg})/\%$ [(0.57 scf/lb)/%].
 $K_{sulfur} = 2 \times 10^4 \text{ Btu/wt\% - MMBtu}$
 $K_w = (1.30 \text{ scm/kg})/\%$ [(0.21 scf/lb)/%].
 lb = pound
 ln = Natural log of indicated value.
 L_p, L_r = Weight of the product and raw fuel lots, respectively, metric ton (ton).
 $\%N$ = Concentration of nitrogen from an ultimate analysis of fuel, weight percent.
 $M\%$ = mole percent
 mol = mole
 MW = molecular weight (lb/lb-mol)
 $MW_{AIR} = \text{molecular weight of air (28.9625 lb/lb-mole)}^1$
 NCM = net Btu per SCF (constant based on compound)
 $\%O$ = Concentration of oxygen from an ultimate analysis of fuel, weight percent.
 $\%O_{2d}, \%O_{2w}$ = Concentration of oxygen on a dry and wet basis, respectively, percent.
 P_a = barometric pressure, in Hg
 P_s = Potential SO₂ emissions, percent.
 $\%S$ = Sulfur content of as-fired fuel lot, dry basis, weight percent.
 S_a = Standard deviation of the hourly average pollutant rates for each performance test period, ng/J (lb/million Btu).
 $\%S_f$ = Concentration of sulfur from an ultimate analysis of fuel, weight percent.
 $S(w\%)$ = weight percent of sulfur, per lab analysis by appropriate ASTM standard
 S_i = Standard deviation of the hourly average inlet pollutant rates for each performance test period, ng/J (lb/million Btu).
 S_o = Standard deviation of the hourly average emission rates for each performance test period, ng/J (lb/million Btu).
 $\%S_p, \%S_r$ = Sulfur content of the product and raw fuel lots respectively, dry basis, weight percent.
 SCF = standard cubic feet
 SH = specific humidity, pounds of water per pound of air
 $t_{0.05}$ = Values shown in Table 19-3 for the indicated number of data points n.
 T_{amb} = ambient temperature, °F
 W/D Factor = 1.0236 = conv. at 14.696 psia and
 68 deg F (ref. Civil Eng. Ref. Manual, 7th Ed.)
 X_{CO_2} = CO₂ Correction factor, percent.
 X_k = Fraction of total heat input from each type of fuel k.

Calculations, Formulas, and Constants

The following information supports the spreadsheets for this testing project.

Given Data:

Ideal Gas Conversion Factor = 385.23 SCF/lb-mol at 68 deg F & 14.696 psia

Fuel Heating Value is based upon Air Hygiene's fuel gas calculation sheet. All calculations are based upon a correction to 68 deg F & 14.696 psia

High Heating Values (HHV) are used for the Fuel Heating Value, F-Factor, and Fuel Flow Data per EPA requirements.

80.06

0.0000002078239

ASTM D 3588

Molecular Weight of NO_x (lb/lb-mole) = 46.01
 Molecular Weight of CO (lb/lb-mole) = 28.00
 Molecular Weight of SO₂ (lb/lb-mole) = 64.00
 Molecular Weight of THC (propane) (lb/lb-mole) = 44.00
 Molecular Weight of VOC (methane) (lb/lb-mole) = 16.00
 Molecular Weight of NH₃ (lb/lb-mole) = 17.03
 Molecular Weight of HCHO (lb/lb-mole) = 30.03

40CFR60, App. A, RM 19, Table 19-1

Conversion Constant for NO_x = 0.0000001194351
 Conversion Constant for CO = 0.0000000726839
 Conversion Constant for SO₂ = 0.0000001661345
 Conversion Constant for THC = 0.0000001142175
 Conversion Constant for VOC (methane) = 0.0000000415336
 Conversion Constant for NH₃ = 0.0000000442074
 Conversion Constant for HCHO = 0.0000000779534

NOTE: units are lb/ppm*ft³

Formulas:

1. Corrected Raw Average (C_{Gas}), 40CFR60, App. A, RM 7E, Eq. 7E-5 (08/15/06)

$$C_{Gas} = (C_{Avg} - C_O) \times \left(\frac{C_{MA}}{C_M - C_O} \right)$$

2. Correction to % O₂, 40CFR60, App. A, RM 20, Eq. 20-5 (11/26/02)

$$C_{adj} = C_{Gas(T\ arg\ et)} \times \left(\frac{20.9\% - AdjFactor}{20.9\% - C_{Gas(O_2)}} \right)$$

3. Correction to % O₂ and ISO Conditions

$$C_{ISO} = C_{adj} \times \sqrt{\frac{P_r}{P_o}} \times e^{(19 \times (H_o - 0.00633))} \times \left(\frac{288}{T_a} \right)^{1.53}$$

4. Method 19 stack exhaust flow (scfh)

$$Q_s = \left(\frac{FFactor \times Q_f \times HHV}{1,000,000} \right) \times \left(\frac{20.9\%}{20.9\% - C_{Gas(O_2)}} \right)$$

5. Emission Rate in lb/hr

$$E_{lb/hr} = \frac{C_{Gas} \times Q_s \times MW}{10^6 \times G}$$

6. Emission Rate in tons per year

$$E_{ton/yr} = \frac{E_{lb/hr} \times hr_{year}}{2000}$$

7. Emission Concentration in lb/MMBtu (O₂ based)

$$E_{lb/MMBtu} = \frac{C_{Gas} \times F_d Factor \times Conv_C \times 20.9\%}{20.9\% - C_{Gas(O_2)}}$$

8. Emission Concentration in g/hp*hr

$$E_{g/hp-hr} = \frac{E_{lb/hr} \times 453.6}{mw \times 1314.022} \text{ or } \frac{E_{lb/hr} \times 453.6}{hp}$$

APPENDIX B
UNIT OPERATION PARAMETERS

Florida Power and Light

| | |
|--------------------------------------|------------------------------------|
| Air Permit # : | PSD-FL-354 |
| Plant Name or Location: | West County Energy Center |
| Date: | November 17, 2009 |
| Project Number: | bv-10-westcounty.fl-comp#1 |
| Manufacturer & Equipment: | Mitsubishi |
| Model: | 501G |
| Serial Number: | |
| Unit Number: | 2C |
| Test Load: | Base with and without Duct Burners |
| Tester(s) / Test Unit(s): | PS/SB/KM/RW/AS/206 |

| | | RUN | | | | | |
|------------------------------|-------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| | UNITS | 1-1 | 1-2 | 1-3 | 2-1 | 2-2 | 2-3 |
| Start Time | hh:mm:ss | 08:17:19 | 09:29:19 | 10:43:19 | 12:54:19 | 14:04:00 | 15:17:19 |
| End Time | hh:mm:ss | 09:16:49 | 10:28:49 | 11:42:49 | 13:53:49 | 15:03:30 | 16:16:49 |
| Bar. Pressure | in. Hg | 29.98 | 29.99 | 29.99 | 29.97 | 29.94 | 29.92 |
| Amb. Temp. | °F | 69 | 72 | 75 | 78 | 79 | 79 |
| Rel. Humidity | % | 85 | 75 | 72 | 60 | 58 | 58 |
| Spec. Humidity | lb water / lb air | 0.012865 | 0.012562 | 0.013356 | 0.012283 | 0.012283 | 0.012291 |
| Comb. Inlet Pres. | psig | 271.1 | 269.0 | 266.4 | 264.3 | 264.0 | 264.4 |
| Turbine Fuel Flow | lb/min | 1,840 | 1,831 | 1,810 | 1,643 | 1,642 | 1,664 |
| Duct Burner Fuel Flow | lb/min | 0 | 0 | 0 | 151 | 151 | 138 |
| Total Fuel Flow | SCFH | 2,523,864 | 2,511,973 | 2,483,161 | 2,460,979 | 2,459,836 | 2,472,413 |
| Stack Moisture | % Method 4 | 9.2 | 9.8 | 9.8 | 9.8 | 10.3 | 10.4 |
| Power Output | megawatts | 253.9 | 251.7 | 247.8 | 244.7 | 244.4 | 245.1 |

UNIT OPERATION PARAMETERS

Base Load

| | Combustor Inlet Pressure C psig | CT C FG Flow KPPH | DB C FG Flow KPPH | CT C Load MW |
|--------------------|---------------------------------------|----------------------------|-------------------------|--------------------|
| 17-Nov-09 08:17:19 | 271.72 | 110.21 | 0.00 | 254.07 |
| 17-Nov-09 08:18:19 | 271.76 | 110.55 | 0.00 | 254.37 |
| 17-Nov-09 08:19:19 | 271.65 | 110.32 | 0.00 | 253.89 |
| 17-Nov-09 08:20:19 | 271.50 | 109.90 | 0.00 | 253.77 |
| 17-Nov-09 08:21:19 | 271.47 | 110.03 | 0.00 | 253.28 |
| 17-Nov-09 08:22:19 | 271.74 | 110.71 | 0.00 | 254.33 |
| 17-Nov-09 08:23:19 | 271.62 | 110.20 | 0.00 | 253.90 |
| 17-Nov-09 08:24:19 | 271.66 | 110.07 | 0.00 | 253.79 |
| 17-Nov-09 08:25:19 | 271.50 | 110.25 | 0.00 | 253.79 |
| 17-Nov-09 08:26:19 | 271.64 | 110.19 | 0.00 | 253.76 |
| 17-Nov-09 08:27:19 | 271.49 | 110.04 | 0.00 | 253.88 |
| 17-Nov-09 08:28:19 | 271.59 | 110.37 | 0.00 | 254.01 |
| 17-Nov-09 08:29:19 | 271.50 | 110.21 | 0.00 | 253.96 |
| 17-Nov-09 08:30:19 | 271.59 | 110.35 | 0.00 | 254.23 |
| 17-Nov-09 08:31:19 | 271.46 | 110.07 | 0.00 | 254.00 |
| 17-Nov-09 08:32:19 | 271.64 | 110.58 | 0.00 | 254.01 |
| 17-Nov-09 08:33:19 | 271.45 | 110.10 | 0.00 | 253.83 |
| 17-Nov-09 08:34:19 | 271.56 | 110.56 | 0.00 | 253.86 |
| 17-Nov-09 08:35:19 | 271.45 | 109.96 | 0.00 | 253.83 |
| 17-Nov-09 08:36:19 | 271.27 | 110.53 | 0.00 | 253.83 |
| 17-Nov-09 08:37:19 | 271.30 | 110.00 | 0.00 | 254.16 |
| 17-Nov-09 08:38:19 | 271.26 | 110.27 | 0.00 | 254.14 |
| 17-Nov-09 08:39:19 | 271.27 | 110.22 | 0.00 | 253.53 |
| 17-Nov-09 08:40:19 | 271.44 | 110.52 | 0.00 | 253.79 |
| 17-Nov-09 08:41:19 | 271.24 | 110.14 | 0.00 | 253.90 |
| 17-Nov-09 08:42:19 | 271.26 | 110.58 | 0.00 | 253.96 |
| 17-Nov-09 08:43:19 | 271.20 | 110.49 | 0.00 | 254.03 |
| 17-Nov-09 08:44:19 | 271.24 | 110.60 | 0.00 | 254.29 |
| 17-Nov-09 08:45:19 | 271.19 | 110.25 | 0.00 | 253.89 |
| 17-Nov-09 08:46:19 | 271.20 | 110.51 | 0.00 | 254.09 |
| 17-Nov-09 08:47:19 | 271.11 | 110.48 | 0.00 | 254.17 |
| 17-Nov-09 08:48:19 | 271.11 | 110.06 | 0.00 | 253.95 |
| 17-Nov-09 08:49:19 | 270.95 | 110.62 | 0.00 | 253.90 |
| 17-Nov-09 08:50:19 | 270.80 | 110.40 | 0.00 | 253.96 |
| 17-Nov-09 08:51:19 | 270.61 | 110.26 | 0.00 | 253.67 |
| 17-Nov-09 08:52:19 | 270.63 | 110.77 | 0.00 | 254.03 |
| 17-Nov-09 08:53:19 | 270.90 | 110.39 | 0.00 | 253.76 |
| 17-Nov-09 08:54:19 | 270.97 | 110.56 | 0.00 | 253.94 |
| 17-Nov-09 08:55:19 | 270.93 | 110.54 | 0.00 | 253.81 |
| 17-Nov-09 08:56:19 | 270.92 | 110.38 | 0.00 | 253.87 |
| 17-Nov-09 08:57:19 | 270.82 | 110.51 | 0.00 | 253.94 |
| 17-Nov-09 08:58:19 | 270.71 | 110.39 | 0.00 | 254.09 |
| 17-Nov-09 08:59:19 | 270.88 | 110.44 | 0.00 | 254.20 |
| 17-Nov-09 09:00:19 | 270.73 | 110.07 | 0.00 | 253.62 |
| 17-Nov-09 09:01:19 | 270.54 | 110.22 | 0.00 | 254.00 |
| 17-Nov-09 09:02:19 | 270.53 | 110.68 | 0.00 | 253.84 |
| 17-Nov-09 09:03:19 | 270.58 | 110.55 | 0.00 | 253.76 |
| 17-Nov-09 09:04:19 | 270.64 | 110.62 | 0.00 | 253.97 |
| 17-Nov-09 09:05:19 | 270.78 | 110.35 | 0.00 | 253.85 |
| 17-Nov-09 09:06:19 | 270.83 | 110.36 | 0.00 | 253.90 |
| 17-Nov-09 09:07:19 | 270.68 | 110.52 | 0.00 | 253.92 |
| 17-Nov-09 09:08:19 | 270.50 | 110.63 | 0.00 | 253.74 |
| 17-Nov-09 09:09:19 | 270.55 | 110.47 | 0.00 | 253.72 |
| 17-Nov-09 09:10:19 | 270.48 | 110.41 | 0.00 | 253.87 |
| 17-Nov-09 09:11:19 | 270.71 | 110.56 | 0.00 | 254.09 |
| 17-Nov-09 09:12:19 | 270.49 | 110.67 | 0.00 | 253.87 |
| 17-Nov-09 09:13:19 | 270.51 | 110.58 | 0.00 | 254.16 |
| 17-Nov-09 09:14:19 | 270.58 | 110.36 | 0.00 | 253.96 |
| 17-Nov-09 09:15:19 | 270.41 | 110.31 | 0.00 | 253.99 |
| 17-Nov-09 09:16:19 | 270.31 | 110.14 | 0.00 | 253.52 |
| Average | 271.08 | 110.37 | 0.00 | 253.92 |

| | Combustor Inlet Pressure C psig | CT C FG Flow KPPH | DB C FG Flow KPPH | CT C Load MW |
|--------------------|---------------------------------------|----------------------------|-------------------------|--------------------|
| 17-Nov-09 09:29:13 | 270.02 | 110.38 | 0.00 | 253.09 |
| 17-Nov-09 09:30:13 | 270.26 | 110.50 | 0.00 | 253.36 |
| 17-Nov-09 09:31:13 | 269.95 | 110.15 | 0.00 | 252.90 |
| 17-Nov-09 09:32:13 | 269.99 | 110.23 | 0.00 | 253.06 |
| 17-Nov-09 09:33:13 | 270.05 | 110.31 | 0.00 | 252.69 |
| 17-Nov-09 09:34:13 | 270.02 | 110.00 | 0.00 | 253.28 |
| 17-Nov-09 09:35:13 | 269.89 | 110.43 | 0.00 | 253.09 |
| 17-Nov-09 09:36:13 | 269.84 | 110.35 | 0.00 | 253.02 |
| 17-Nov-09 09:37:13 | 269.89 | 110.22 | 0.00 | 252.78 |
| 17-Nov-09 09:38:13 | 269.86 | 110.27 | 0.00 | 253.10 |
| 17-Nov-09 09:39:13 | 269.76 | 110.25 | 0.00 | 253.00 |
| 17-Nov-09 09:40:13 | 269.63 | 110.06 | 0.00 | 252.68 |
| 17-Nov-09 09:41:13 | 269.69 | 110.10 | 0.00 | 252.66 |
| 17-Nov-09 09:42:13 | 269.68 | 110.15 | 0.00 | 252.75 |
| 17-Nov-09 09:43:13 | 269.63 | 110.09 | 0.00 | 252.52 |
| 17-Nov-09 09:44:13 | 269.76 | 110.01 | 0.00 | 252.59 |
| 17-Nov-09 09:45:13 | 269.63 | 110.15 | 0.00 | 252.30 |
| 17-Nov-09 09:46:13 | 269.48 | 110.24 | 0.00 | 252.14 |
| 17-Nov-09 09:47:13 | 269.49 | 109.96 | 0.00 | 252.10 |
| 17-Nov-09 09:48:13 | 269.42 | 110.19 | 0.00 | 252.71 |
| 17-Nov-09 09:49:13 | 269.16 | 109.91 | 0.00 | 251.94 |
| 17-Nov-09 09:50:13 | 269.26 | 109.80 | 0.00 | 251.84 |
| 17-Nov-09 09:51:13 | 269.46 | 109.95 | 0.00 | 252.23 |
| 17-Nov-09 09:52:13 | 269.27 | 110.07 | 0.00 | 252.57 |
| 17-Nov-09 09:53:13 | 269.32 | 109.96 | 0.00 | 252.17 |
| 17-Nov-09 09:54:13 | 269.34 | 110.26 | 0.00 | 252.40 |
| 17-Nov-09 09:55:13 | 269.30 | 109.92 | 0.00 | 252.23 |
| 17-Nov-09 09:56:13 | 269.32 | 109.85 | 0.00 | 252.20 |
| 17-Nov-09 09:57:13 | 269.09 | 109.92 | 0.00 | 251.82 |
| 17-Nov-09 09:58:13 | 269.12 | 109.74 | 0.00 | 251.72 |
| 17-Nov-09 09:59:13 | 269.11 | 109.86 | 0.00 | 251.56 |
| 17-Nov-09 10:00:13 | 269.02 | 109.98 | 0.00 | 251.84 |
| 17-Nov-09 10:01:13 | 268.81 | 109.60 | 0.00 | 250.98 |
| 17-Nov-09 10:02:13 | 268.63 | 109.66 | 0.00 | 251.32 |
| 17-Nov-09 10:03:13 | 268.77 | 109.79 | 0.00 | 251.24 |
| 17-Nov-09 10:04:13 | 268.60 | 109.94 | 0.00 | 251.29 |
| 17-Nov-09 10:05:13 | 268.43 | 109.50 | 0.00 | 250.72 |
| 17-Nov-09 10:06:13 | 268.56 | 109.45 | 0.00 | 250.63 |
| 17-Nov-09 10:07:13 | 268.67 | 109.73 | 0.00 | 251.12 |
| 17-Nov-09 10:08:13 | 268.35 | 109.59 | 0.00 | 250.96 |
| 17-Nov-09 10:09:13 | 268.15 | 109.74 | 0.00 | 250.60 |
| 17-Nov-09 10:10:13 | 268.37 | 109.47 | 0.00 | 250.47 |
| 17-Nov-09 10:11:13 | 268.68 | 109.31 | 0.00 | 251.00 |
| 17-Nov-09 10:12:13 | 268.71 | 109.90 | 0.00 | 251.15 |
| 17-Nov-09 10:13:13 | 268.73 | 109.58 | 0.00 | 251.04 |
| 17-Nov-09 10:14:13 | 268.71 | 109.64 | 0.00 | 251.18 |
| 17-Nov-09 10:15:13 | 268.18 | 109.89 | 0.00 | 250.76 |
| 17-Nov-09 10:16:13 | 267.96 | 109.50 | 0.00 | 250.49 |
| 17-Nov-09 10:17:13 | 267.57 | 109.46 | 0.00 | 250.34 |
| 17-Nov-09 10:18:13 | 268.09 | 108.80 | 0.00 | 249.33 |
| 17-Nov-09 10:19:13 | 268.47 | 109.70 | 0.00 | 250.70 |
| 17-Nov-09 10:20:13 | 268.42 | 109.71 | 0.00 | 251.02 |
| 17-Nov-09 10:21:13 | 268.27 | 109.45 | 0.00 | 249.89 |
| 17-Nov-09 10:22:13 | 268.30 | 109.28 | 0.00 | 250.65 |
| 17-Nov-09 10:23:13 | 268.22 | 109.75 | 0.00 | 250.73 |
| 17-Nov-09 10:24:13 | 268.14 | 109.63 | 0.00 | 250.52 |
| 17-Nov-09 10:25:13 | 268.08 | 109.64 | 0.00 | 250.41 |
| 17-Nov-09 10:26:13 | 268.07 | 109.68 | 0.00 | 250.53 |
| 17-Nov-09 10:27:13 | 267.99 | 109.16 | 0.00 | 250.17 |
| 17-Nov-09 10:28:13 | 267.86 | 109.31 | 0.00 | 249.90 |
| Average | 269.01 | 109.85 | 0.00 | 251.66 |

| | Combustor Inlet Pressure C psig | CT C FG Flow KPPH | DB C FG Flow KPPH | CT C Load MW |
|--------------------|---------------------------------------|----------------------------|-------------------------|--------------------|
| 17-Nov-09 10:43:19 | 267.79 | 109.31 | 0.00 | 249.94 |
| 17-Nov-09 10:44:19 | 267.90 | 109.05 | 0.00 | 249.73 |
| 17-Nov-09 10:45:19 | 267.88 | 109.50 | 0.00 | 249.98 |
| 17-Nov-09 10:46:19 | 267.77 | 109.82 | 0.00 | 249.73 |
| 17-Nov-09 10:47:19 | 267.60 | 109.12 | 0.00 | 249.39 |
| 17-Nov-09 10:48:19 | 267.75 | 108.90 | 0.00 | 249.91 |
| 17-Nov-09 10:49:19 | 267.54 | 109.42 | 0.00 | 249.57 |
| 17-Nov-09 10:50:19 | 267.54 | 108.98 | 0.00 | 249.38 |
| 17-Nov-09 10:51:19 | 267.43 | 109.13 | 0.00 | 248.78 |
| 17-Nov-09 10:52:19 | 267.34 | 108.95 | 0.00 | 249.09 |
| 17-Nov-09 10:53:19 | 267.38 | 108.69 | 0.00 | 249.15 |
| 17-Nov-09 10:54:19 | 267.51 | 108.96 | 0.00 | 249.49 |
| 17-Nov-09 10:55:19 | 267.52 | 109.02 | 0.00 | 249.31 |
| 17-Nov-09 10:56:19 | 267.34 | 108.92 | 0.00 | 249.45 |
| 17-Nov-09 10:57:19 | 267.29 | 108.28 | 0.00 | 249.17 |
| 17-Nov-09 10:58:19 | 267.15 | 108.40 | 0.00 | 249.03 |
| 17-Nov-09 10:59:19 | 267.02 | 107.96 | 0.00 | 249.01 |
| 17-Nov-09 11:00:19 | 266.72 | 107.98 | 0.00 | 248.57 |
| 17-Nov-09 11:01:19 | 266.19 | 108.78 | 0.00 | 248.04 |
| 17-Nov-09 11:02:19 | 266.18 | 108.23 | 0.00 | 247.04 |
| 17-Nov-09 11:03:19 | 266.49 | 108.75 | 0.00 | 247.68 |
| 17-Nov-09 11:04:19 | 266.73 | 108.66 | 0.00 | 248.23 |
| 17-Nov-09 11:05:19 | 266.82 | 109.17 | 0.00 | 248.67 |
| 17-Nov-09 11:06:19 | 266.56 | 109.83 | 0.00 | 247.87 |
| 17-Nov-09 11:07:19 | 266.27 | 108.56 | 0.00 | 247.74 |
| 17-Nov-09 11:08:19 | 266.28 | 108.65 | 0.00 | 247.32 |
| 17-Nov-09 11:09:19 | 266.21 | 108.49 | 0.00 | 247.81 |
| 17-Nov-09 11:10:19 | 266.09 | 109.19 | 0.00 | 247.25 |
| 17-Nov-09 11:11:19 | 266.16 | 108.59 | 0.00 | 247.06 |
| 17-Nov-09 11:12:19 | 266.34 | 108.72 | 0.00 | 247.43 |
| 17-Nov-09 11:13:19 | 266.17 | 108.45 | 0.00 | 247.66 |
| 17-Nov-09 11:14:19 | 265.89 | 108.42 | 0.00 | 247.05 |
| 17-Nov-09 11:15:19 | 265.97 | 108.02 | 0.00 | 246.32 |
| 17-Nov-09 11:16:19 | 266.10 | 108.57 | 0.00 | 247.41 |
| 17-Nov-09 11:17:19 | 265.23 | 108.64 | 0.00 | 247.50 |
| 17-Nov-09 11:18:19 | 264.90 | 107.87 | 0.00 | 245.72 |
| 17-Nov-09 11:19:19 | 265.00 | 108.03 | 0.00 | 245.88 |
| 17-Nov-09 11:20:19 | 265.02 | 108.27 | 0.00 | 246.40 |
| 17-Nov-09 11:21:19 | 264.70 | 107.79 | 0.00 | 246.08 |
| 17-Nov-09 11:22:19 | 264.96 | 108.00 | 0.00 | 245.88 |
| 17-Nov-09 11:23:19 | 265.42 | 107.92 | 0.00 | 245.99 |
| 17-Nov-09 11:24:19 | 265.14 | 108.72 | 0.00 | 246.68 |
| 17-Nov-09 11:25:19 | 265.72 | 108.02 | 0.00 | 245.77 |
| 17-Nov-09 11:26:19 | 265.99 | 108.13 | 0.00 | 246.67 |
| 17-Nov-09 11:27:19 | 266.68 | 108.54 | 0.00 | 247.58 |
| 17-Nov-09 11:28:19 | 266.71 | 108.78 | 0.00 | 248.37 |
| 17-Nov-09 11:29:19 | 266.22 | 108.78 | 0.00 | 248.19 |
| 17-Nov-09 11:30:19 | 265.76 | 108.71 | 0.00 | 247.72 |
| 17-Nov-09 11:31:19 | 265.73 | 108.12 | 0.00 | 246.63 |
| 17-Nov-09 11:32:19 | 265.61 | 108.20 | 0.00 | 246.84 |
| 17-Nov-09 11:33:19 | 266.41 | 108.01 | 0.00 | 246.52 |
| 17-Nov-09 11:34:19 | 266.62 | 108.22 | 0.00 | 247.70 |
| 17-Nov-09 11:35:19 | 267.07 | 108.78 | 0.00 | 248.59 |
| 17-Nov-09 11:36:19 | 266.88 | 108.80 | 0.00 | 248.84 |
| 17-Nov-09 11:37:19 | 265.95 | 108.75 | 0.00 | 247.34 |
| 17-Nov-09 11:38:19 | 266.25 | 108.09 | 0.00 | 246.64 |
| 17-Nov-09 11:39:19 | 266.16 | 108.55 | 0.00 | 247.76 |
| 17-Nov-09 11:40:19 | 265.27 | 108.48 | 0.00 | 247.08 |
| 17-Nov-09 11:41:19 | 265.18 | 107.76 | 0.00 | 245.48 |
| 17-Nov-09 11:42:19 | 265.37 | 108.24 | 0.00 | 246.59 |
| Average | 266.41 | 108.59 | 0.00 | 247.83 |

| | Combustor Inlet Pressure C psig | CT C FG Flow KPPH | DB C FG Flow KPPH | CT C Load MW |
|--------------------|---------------------------------------|----------------------------|-------------------------|--------------------|
| 17-Nov-09 12:54:19 | 265.48 | 98.74 | 9.34 | 246.77 |
| 17-Nov-09 12:55:19 | 265.27 | 98.91 | 9.19 | 245.86 |
| 17-Nov-09 12:56:19 | 265.41 | 99.02 | 9.10 | 245.82 |
| 17-Nov-09 12:57:19 | 265.59 | 98.80 | 9.11 | 246.22 |
| 17-Nov-09 12:58:19 | 264.91 | 99.22 | 9.07 | 246.33 |
| 17-Nov-09 12:59:19 | 265.21 | 98.57 | 9.05 | 245.27 |
| 17-Nov-09 13:00:19 | 264.86 | 99.07 | 9.06 | 245.98 |
| 17-Nov-09 13:01:19 | 264.09 | 99.24 | 9.07 | 245.59 |
| 17-Nov-09 13:02:19 | 264.41 | 98.24 | 9.07 | 244.32 |
| 17-Nov-09 13:03:19 | 263.61 | 98.87 | 9.06 | 244.66 |
| 17-Nov-09 13:04:19 | 263.32 | 98.73 | 9.07 | 244.43 |
| 17-Nov-09 13:05:19 | 264.58 | 97.79 | 9.06 | 243.43 |
| 17-Nov-09 13:06:19 | 264.49 | 98.21 | 9.06 | 244.19 |
| 17-Nov-09 13:07:19 | 264.11 | 98.93 | 9.07 | 244.70 |
| 17-Nov-09 13:08:19 | 264.30 | 98.96 | 9.07 | 245.07 |
| 17-Nov-09 13:09:19 | 263.88 | 99.18 | 9.05 | 245.08 |
| 17-Nov-09 13:10:19 | 264.02 | 97.90 | 9.07 | 244.35 |
| 17-Nov-09 13:11:19 | 263.78 | 98.45 | 9.07 | 244.85 |
| 17-Nov-09 13:12:19 | 263.55 | 98.16 | 9.08 | 243.66 |
| 17-Nov-09 13:13:19 | 264.21 | 97.57 | 9.07 | 243.38 |
| 17-Nov-09 13:14:19 | 263.24 | 98.05 | 9.06 | 243.43 |
| 17-Nov-09 13:15:19 | 263.58 | 98.37 | 9.08 | 243.90 |
| 17-Nov-09 13:16:19 | 263.73 | 98.36 | 9.08 | 244.50 |
| 17-Nov-09 13:17:19 | 263.39 | 98.15 | 9.07 | 244.06 |
| 17-Nov-09 13:18:19 | 263.38 | 98.48 | 9.07 | 244.38 |
| 17-Nov-09 13:19:19 | 262.96 | 98.42 | 9.06 | 242.92 |
| 17-Nov-09 13:20:19 | 263.41 | 98.79 | 9.06 | 243.99 |
| 17-Nov-09 13:21:19 | 264.30 | 98.89 | 9.05 | 244.30 |
| 17-Nov-09 13:22:19 | 264.67 | 98.14 | 9.06 | 244.97 |
| 17-Nov-09 13:23:19 | 264.83 | 98.94 | 9.07 | 245.32 |
| 17-Nov-09 13:24:19 | 264.46 | 98.83 | 9.07 | 245.21 |
| 17-Nov-09 13:25:19 | 263.47 | 98.23 | 9.07 | 244.04 |
| 17-Nov-09 13:26:19 | 263.91 | 98.37 | 9.04 | 243.32 |
| 17-Nov-09 13:27:19 | 263.21 | 98.69 | 9.06 | 243.93 |
| 17-Nov-09 13:28:19 | 263.36 | 97.44 | 9.05 | 243.01 |
| 17-Nov-09 13:29:19 | 263.54 | 98.58 | 9.05 | 243.39 |
| 17-Nov-09 13:30:19 | 264.03 | 98.85 | 9.03 | 244.59 |
| 17-Nov-09 13:31:19 | 263.55 | 99.08 | 9.04 | 244.79 |
| 17-Nov-09 13:32:19 | 263.74 | 98.49 | 9.06 | 243.68 |
| 17-Nov-09 13:33:19 | 264.34 | 97.94 | 9.05 | 244.25 |
| 17-Nov-09 13:34:19 | 264.02 | 98.71 | 9.05 | 244.86 |
| 17-Nov-09 13:35:19 | 264.18 | 99.09 | 9.05 | 244.63 |
| 17-Nov-09 13:36:19 | 264.42 | 98.57 | 9.06 | 244.67 |
| 17-Nov-09 13:37:19 | 264.94 | 98.79 | 9.06 | 245.27 |
| 17-Nov-09 13:38:19 | 264.79 | 98.32 | 9.06 | 245.96 |
| 17-Nov-09 13:39:19 | 264.93 | 98.49 | 9.08 | 245.16 |
| 17-Nov-09 13:40:19 | 264.96 | 98.74 | 9.06 | 245.52 |
| 17-Nov-09 13:41:19 | 264.52 | 98.86 | 9.04 | 245.28 |
| 17-Nov-09 13:42:19 | 264.51 | 98.41 | 9.07 | 243.69 |
| 17-Nov-09 13:43:19 | 265.10 | 97.84 | 9.05 | 244.35 |
| 17-Nov-09 13:44:19 | 265.32 | 98.99 | 9.02 | 245.36 |
| 17-Nov-09 13:45:19 | 264.69 | 98.87 | 9.07 | 245.43 |
| 17-Nov-09 13:46:19 | 264.36 | 98.29 | 9.07 | 245.10 |
| 17-Nov-09 13:47:19 | 265.31 | 98.91 | 9.05 | 245.33 |
| 17-Nov-09 13:48:19 | 264.45 | 99.02 | 9.04 | 245.59 |
| 17-Nov-09 13:49:19 | 264.09 | 98.72 | 9.05 | 244.85 |
| 17-Nov-09 13:50:19 | 263.92 | 98.16 | 9.06 | 243.94 |
| 17-Nov-09 13:51:19 | 264.39 | 97.94 | 9.05 | 243.89 |
| 17-Nov-09 13:52:19 | 264.27 | 98.52 | 9.04 | 244.83 |
| 17-Nov-09 13:53:19 | 264.62 | 98.43 | 9.06 | 244.63 |
| Average | 264.27 | 98.55 | 9.07 | 244.67 |

UNIT OPERATION PARAMETERS

Base Load with Duct Burners

| | Combustor Inlet Pressure C psig | CT C FG Flow KPPH | DB C FG Flow KPPH | CT C Load MW |
|--------------------|---------------------------------------|----------------------------|-------------------------|--------------------|
| 17-Nov-09 14:04:19 | 264.96 | 98.72 | 9.06 | 245.54 |
| 17-Nov-09 14:05:19 | 265.14 | 98.85 | 9.05 | 245.75 |
| 17-Nov-09 14:06:19 | 264.98 | 98.64 | 9.06 | 245.46 |
| 17-Nov-09 14:07:19 | 264.88 | 98.71 | 9.07 | 245.73 |
| 17-Nov-09 14:08:19 | 264.35 | 98.95 | 9.07 | 244.84 |
| 17-Nov-09 14:09:19 | 263.14 | 98.70 | 9.04 | 244.70 |
| 17-Nov-09 14:10:19 | 263.24 | 98.68 | 9.05 | 243.21 |
| 17-Nov-09 14:11:19 | 264.51 | 98.69 | 9.05 | 244.38 |
| 17-Nov-09 14:12:19 | 263.35 | 98.21 | 9.06 | 244.47 |
| 17-Nov-09 14:13:19 | 263.17 | 97.88 | 9.05 | 243.92 |
| 17-Nov-09 14:14:19 | 263.84 | 98.02 | 9.06 | 242.95 |
| 17-Nov-09 14:15:19 | 263.70 | 98.20 | 9.06 | 244.06 |
| 17-Nov-09 14:16:19 | 263.84 | 98.35 | 9.06 | 244.18 |
| 17-Nov-09 14:17:19 | 263.55 | 98.52 | 9.05 | 243.75 |
| 17-Nov-09 14:18:19 | 263.49 | 99.04 | 9.05 | 243.83 |
| 17-Nov-09 14:19:19 | 263.69 | 98.29 | 9.07 | 243.92 |
| 17-Nov-09 14:20:19 | 264.45 | 98.42 | 9.04 | 245.21 |
| 17-Nov-09 14:21:19 | 264.80 | 99.11 | 9.04 | 245.10 |
| 17-Nov-09 14:22:19 | 264.22 | 98.55 | 9.05 | 244.63 |
| 17-Nov-09 14:23:19 | 263.77 | 98.79 | 9.03 | 244.92 |
| 17-Nov-09 14:24:19 | 263.54 | 98.66 | 9.04 | 243.94 |
| 17-Nov-09 14:25:19 | 263.49 | 98.25 | 9.04 | 243.65 |
| 17-Nov-09 14:26:19 | 263.17 | 98.71 | 9.06 | 244.41 |
| 17-Nov-09 14:27:19 | 262.68 | 98.09 | 9.05 | 243.35 |
| 17-Nov-09 14:28:19 | 262.88 | 98.53 | 9.05 | 242.78 |
| 17-Nov-09 14:29:19 | 262.82 | 98.52 | 9.04 | 243.27 |
| 17-Nov-09 14:30:19 | 263.24 | 97.68 | 9.05 | 243.05 |
| 17-Nov-09 14:31:19 | 263.54 | 98.74 | 9.06 | 243.90 |
| 17-Nov-09 14:32:19 | 263.58 | 98.17 | 9.07 | 243.58 |
| 17-Nov-09 14:33:19 | 263.57 | 98.10 | 9.06 | 243.43 |
| 17-Nov-09 14:34:19 | 263.88 | 98.19 | 9.03 | 243.74 |
| 17-Nov-09 14:35:19 | 264.35 | 98.11 | 9.06 | 243.75 |
| 17-Nov-09 14:36:19 | 264.15 | 98.09 | 9.07 | 244.30 |
| 17-Nov-09 14:37:19 | 263.68 | 98.33 | 9.07 | 243.55 |
| 17-Nov-09 14:38:19 | 263.67 | 98.00 | 9.07 | 243.92 |
| 17-Nov-09 14:39:19 | 263.75 | 98.52 | 9.07 | 243.95 |
| 17-Nov-09 14:40:19 | 263.60 | 98.77 | 9.06 | 244.64 |
| 17-Nov-09 14:41:19 | 263.58 | 98.44 | 9.06 | 243.86 |
| 17-Nov-09 14:42:19 | 262.95 | 98.77 | 9.04 | 243.58 |
| 17-Nov-09 14:43:19 | 263.18 | 99.08 | 9.05 | 244.40 |
| 17-Nov-09 14:44:19 | 263.92 | 98.14 | 9.05 | 243.50 |
| 17-Nov-09 14:45:19 | 264.42 | 98.71 | 9.05 | 244.40 |
| 17-Nov-09 14:46:19 | 264.22 | 98.78 | 9.05 | 244.77 |
| 17-Nov-09 14:47:19 | 263.97 | 98.47 | 9.05 | 244.48 |
| 17-Nov-09 14:48:19 | 264.34 | 98.58 | 9.06 | 244.45 |
| 17-Nov-09 14:49:19 | 264.79 | 98.83 | 9.06 | 245.21 |
| 17-Nov-09 14:50:19 | 264.32 | 99.07 | 9.05 | 245.78 |
| 17-Nov-09 14:51:19 | 264.52 | 98.54 | 9.05 | 244.52 |
| 17-Nov-09 14:52:19 | 264.37 | 98.69 | 9.04 | 245.11 |
| 17-Nov-09 14:53:19 | 264.94 | 98.69 | 9.04 | 244.14 |
| 17-Nov-09 14:54:19 | 264.60 | 98.72 | 9.04 | 245.61 |
| 17-Nov-09 14:55:19 | 264.73 | 98.49 | 9.03 | 244.75 |
| 17-Nov-09 14:56:19 | 264.12 | 98.49 | 9.03 | 244.87 |
| 17-Nov-09 14:57:19 | 264.66 | 98.70 | 9.03 | 245.57 |
| 17-Nov-09 14:58:19 | 264.67 | 98.89 | 9.04 | 245.01 |
| 17-Nov-09 14:59:19 | 264.10 | 98.66 | 9.02 | 245.16 |
| 17-Nov-09 15:00:19 | 263.95 | 98.49 | 9.03 | 244.40 |
| 17-Nov-09 15:01:19 | 264.23 | 98.66 | 9.03 | 244.97 |
| 17-Nov-09 15:02:19 | 264.51 | 98.19 | 9.04 | 244.33 |
| 17-Nov-09 15:03:19 | 264.31 | 98.53 | 9.05 | 244.79 |
| Average | 263.97 | 98.52 | 9.05 | 244.36 |

| | Combustor Inlet Pressure C psig | CT C FG Flow KPPH | DB C FG Flow KPPH | CT C Load MW |
|--------------------|---------------------------------------|----------------------------|-------------------------|--------------------|
| 17-Nov-09 15:17:19 | 264.57 | 98.15 | 8.94 | 243.87 |
| 17-Nov-09 15:18:19 | 262.95 | 98.24 | 8.86 | 244.06 |
| 17-Nov-09 15:19:19 | 264.59 | 98.07 | 8.80 | 243.42 |
| 17-Nov-09 15:20:19 | 264.21 | 98.75 | 8.71 | 244.50 |
| 17-Nov-09 15:21:19 | 264.08 | 98.89 | 8.65 | 245.14 |
| 17-Nov-09 15:22:19 | 263.61 | 98.89 | 8.58 | 244.11 |
| 17-Nov-09 15:23:19 | 263.07 | 98.79 | 8.53 | 243.73 |
| 17-Nov-09 15:24:19 | 263.47 | 99.17 | 8.45 | 244.48 |
| 17-Nov-09 15:25:19 | 263.93 | 98.87 | 8.40 | 243.78 |
| 17-Nov-09 15:26:19 | 264.13 | 99.06 | 8.37 | 244.48 |
| 17-Nov-09 15:27:19 | 263.67 | 99.47 | 8.33 | 244.59 |
| 17-Nov-09 15:28:19 | 264.36 | 98.73 | 8.33 | 244.13 |
| 17-Nov-09 15:29:19 | 265.49 | 99.42 | 8.29 | 245.37 |
| 17-Nov-09 15:30:19 | 265.58 | 99.59 | 8.29 | 246.28 |
| 17-Nov-09 15:31:19 | 265.55 | 100.16 | 8.28 | 246.70 |
| 17-Nov-09 15:32:19 | 265.60 | 99.61 | 8.28 | 245.92 |
| 17-Nov-09 15:33:19 | 265.23 | 100.09 | 8.27 | 246.80 |
| 17-Nov-09 15:34:19 | 265.20 | 99.37 | 8.26 | 245.58 |
| 17-Nov-09 15:35:19 | 265.13 | 99.71 | 8.22 | 245.67 |
| 17-Nov-09 15:36:19 | 264.94 | 100.02 | 8.22 | 246.55 |
| 17-Nov-09 15:37:19 | 264.13 | 99.60 | 8.22 | 245.05 |
| 17-Nov-09 15:38:19 | 264.17 | 99.60 | 8.21 | 245.07 |
| 17-Nov-09 15:39:19 | 264.71 | 99.49 | 8.22 | 245.14 |
| 17-Nov-09 15:40:19 | 264.78 | 99.74 | 8.21 | 245.43 |
| 17-Nov-09 15:41:19 | 264.79 | 99.28 | 8.22 | 245.47 |
| 17-Nov-09 15:42:19 | 265.27 | 99.45 | 8.21 | 244.95 |
| 17-Nov-09 15:43:19 | 265.71 | 99.79 | 8.21 | 246.42 |
| 17-Nov-09 15:44:19 | 265.74 | 100.19 | 8.21 | 247.25 |
| 17-Nov-09 15:45:19 | 265.85 | 100.26 | 8.21 | 246.93 |
| 17-Nov-09 15:46:19 | 264.81 | 99.86 | 8.22 | 245.95 |
| 17-Nov-09 15:47:19 | 264.88 | 99.14 | 8.22 | 244.79 |
| 17-Nov-09 15:48:19 | 265.04 | 99.33 | 8.21 | 245.48 |
| 17-Nov-09 15:49:19 | 264.89 | 99.93 | 8.21 | 246.48 |
| 17-Nov-09 15:50:19 | 264.55 | 99.62 | 8.21 | 245.86 |
| 17-Nov-09 15:51:19 | 264.34 | 99.00 | 8.21 | 243.98 |
| 17-Nov-09 15:52:19 | 264.46 | 99.22 | 8.21 | 244.00 |
| 17-Nov-09 15:53:19 | 264.95 | 99.30 | 8.21 | 244.91 |
| 17-Nov-09 15:54:19 | 264.98 | 99.72 | 8.22 | 245.81 |
| 17-Nov-09 15:55:19 | 264.97 | 100.17 | 8.22 | 246.50 |
| 17-Nov-09 15:56:19 | 264.37 | 99.87 | 8.21 | 245.41 |
| 17-Nov-09 15:57:19 | 264.68 | 99.49 | 8.20 | 244.31 |
| 17-Nov-09 15:58:19 | 264.35 | 99.59 | 8.20 | 245.34 |
| 17-Nov-09 15:59:19 | 264.02 | 99.74 | 8.20 | 245.25 |
| 17-Nov-09 16:00:19 | 263.89 | 99.56 | 8.20 | 244.97 |
| 17-Nov-09 16:01:19 | 263.55 | 99.18 | 8.20 | 244.13 |
| 17-Nov-09 16:02:19 | 263.39 | 99.60 | 8.20 | 244.69 |
| 17-Nov-09 16:03:19 | 263.35 | 98.92 | 8.20 | 243.51 |
| 17-Nov-09 16:04:19 | 263.51 | 99.27 | 8.20 | 244.15 |
| 17-Nov-09 16:05:19 | 263.57 | 99.41 | 8.20 | 244.25 |
| 17-Nov-09 16:06:19 | 263.94 | 99.43 | 8.20 | 244.26 |
| 17-Nov-09 16:07:19 | 263.80 | 99.26 | 8.20 | 244.80 |
| 17-Nov-09 16:08:19 | 263.86 | 99.14 | 8.20 | 244.15 |
| 17-Nov-09 16:09:19 | 264.07 | 99.64 | 8.19 | 244.57 |
| 17-Nov-09 16:10:19 | 263.93 | 99.89 | 8.19 | 244.78 |
| 17-Nov-09 16:11:19 | 263.56 | 99.68 | 8.19 | 244.88 |
| 17-Nov-09 16:12:19 | 264.16 | 99.36 | 8.19 | 244.38 |
| 17-Nov-09 16:13:19 | 264.82 | 99.64 | 8.19 | 245.75 |
| 17-Nov-09 16:14:19 | 263.90 | 108.31 | 8.19 | 245.87 |
| 17-Nov-09 16:15:19 | 263.83 | 107.31 | 8.20 | 243.83 |
| 17-Nov-09 16:16:19 | 264.10 | 107.65 | 8.20 | 244.82 |
| Average | 264.42 | 99.83 | 8.29 | 245.05 |

APPENDIX C
CALIBRATION GAS CERTIFICATIONS



Air Liquide America
Specialty Gases LLC



RATA CLASS

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083

Phone: 248-589-2950

Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
1290 COMBERMERE STREET
TROY, MI 48083

P.O. No.: 9081310

Project No.: 05-79607-011

Customer

AIR LIQUIDE AMERICA L.P.
AIR HYGIENE
1319 NORTH PEORIA AVE
TULSA OK 74106

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM010501 Certification Date: 09Sep2009 Exp. Date: 08Sep2012
Cylinder Pressure***: 2000 PSIG

COMPONENT

CARBON DIOXIDE
OXYGEN
NITROGEN

CERTIFIED CONCENTRATION (Moles)

8.83 %
12.1 %
BALANCE

ANALYTICAL

ACCURACY**

+/- 1%
+/- 1%

TRACEABILITY

Direct NIST and VSL
Direct NIST and VSL

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

| TYPE/SRM NO. | EXPIRATION DATE | CYLINDER NUMBER | CONCENTRATION | COMPONENT |
|--------------|-----------------|-----------------|---------------|----------------|
| NTRM 1674 | 01May2010 | K003066 | 7.016 % | CARBON DIOXIDE |
| NTRM 2658 | 01Jan2010 | K001290 | 10.03 % | OXYGEN |

INSTRUMENTATION

| INSTRUMENT/MODEL/SERIAL# | DATE LAST CALIBRATED | ANALYTICAL PRINCIPLE |
|--------------------------|----------------------|----------------------|
| PIR/2000/609015 | 26Aug2009 | NDIR |
| CAI/110P/V03018 | 04Sep2009 | PARAMAGNETIC |

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

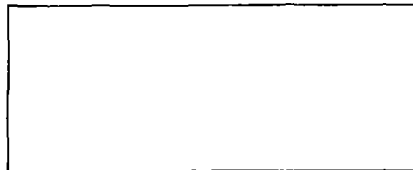
First Triad Analysis

Second Triad Analysis

Calibration Curve

CARBON DIOXIDE

Date: 09Sep2009 Response Unit:%
 Z1=0.00000 R1=49.22000 T1=58.34000
 R2=49.22000 Z2=0.00000 T2=58.34000
 Z3=0.00000 T3=58.34000 R3=49.22000
 Avg. Concentration: 8.832 %



Concentration = A + Bx + Cx² + Dx³ + Ex⁴
 r = 0.999997
 Constants: A = 0.00330273
 B = 0.109712583 C = 0.0003454
 D = 0.000599 E =

OXYGEN

Date: 08Sep2009 Response Unit:09080
 Z1=0.00000 R1=10.07000 T1=12.08000
 R2=10.07000 Z2=0.00000 T2=12.08000
 Z3=0.00000 T3=12.08000 R3=10.07000
 Avg. Concentration: 12.06 %



Concentration = A + Bx + Cx² + Dx³ + Ex⁴
 r = 0.9999980
 Constants: A = -0.02226588
 B = 1.000347036 C =
 D = E =

APPROVED BY: adrci



Air Liquide America
Specialty Gases LLC



RATA CLASS

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083

Phone: 248-589-2950

Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
1290 COMBERMERE STREET
TROY, MI 48083

P.O. No.: 9091310

Project No.: 05-80447-011

Customer

AIR LIQUIDE AMERICA L.P.

801 W NORTH CARRIER PKWY
GRAND PRAIRIE TX 75050-1003

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM014788 Certification Date: 05Oct2009 Exp. Date: 04Oct2012
Cylinder Pressure***: 1950 PSIG

COMPONENT

CERTIFIED CONCENTRATION (Moles)

ANALYTICAL ACCURACY**

TRACEABILITY

| COMPONENT | CERTIFIED CONCENTRATION (Moles) | ANALYTICAL ACCURACY** | TRACEABILITY |
|----------------|---------------------------------|-----------------------|---------------------|
| CARBON DIOXIDE | 19.2 % | +/- 1% | Direct NIST and VSL |
| OXYGEN | 21.1 % | +/- 1% | Direct NIST and VSL |
| NITROGEN | BALANCE | | |

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

| TYPE/SRM NO. | EXPIRATION DATE | CYLINDER NUMBER | CONCENTRATION | COMPONENT |
|--------------|-----------------|-----------------|---------------|----------------|
| NTRM 2300 | 01Nov2010 | 1D002807 | 23.04 % | CARBON DIOXIDE |
| NTRM 2350 | 01Dec2011 | K016398 | 23.20 % | OXYGEN |

INSTRUMENTATION

| INSTRUMENT/MODEL/SERIAL# | DATE LAST CALIBRATED | ANALYTICAL PRINCIPLE |
|--------------------------|----------------------|----------------------|
| VARIAN/3700/10880-13 | 30Sep2009 | THERMAL CONDUCTIVITY |
| CAI/110P/V03018 | 01Oct2009 | PARAMAGNETIC |

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

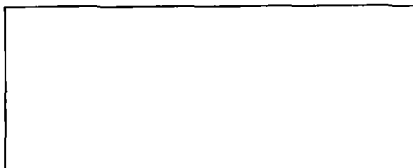
First Triad Analysis

Second Triad Analysis

Calibration Curve

CARBON DIOXIDE

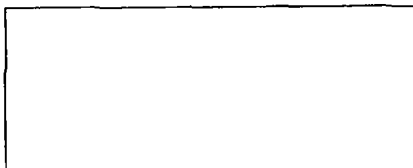
| | | |
|-----------------------------|-------------------|---------------|
| Date: 05Oct2009 | Response Unit: MV | |
| Z1 = 0.00000 | R1 = 121825.0 | T1 = 101395.0 |
| R2 = 121842.0 | Z2 = 0.00000 | T2 = 101331.0 |
| Z3 = 0.00000 | T3 = 101045.0 | R3 = 121788.0 |
| Avg. Concentration: 19.24 % | | |



| | |
|--|----------------|
| Concentration = A + Bx + Cx ² + Dx ³ + Ex ⁴ | |
| r = 0.9999 | |
| Constants: | A = -0.3033388 |
| B = 0.0001956 | C = 0 |
| D = 0 | E = 0 |

OXYGEN

| | | |
|-----------------------------|-------------------|---------------|
| Date: 05Oct2009 | Response Unit: MV | |
| Z1 = 0.00000 | R1 = 23.20000 | T1 = 21.13000 |
| R2 = 23.20000 | Z2 = 0.00000 | T2 = 21.10000 |
| Z3 = 0.00000 | T3 = 21.10000 | R3 = 23.20000 |
| Avg. Concentration: 21.10 % | | |



| | |
|--|-----------------|
| Concentration = A + Bx + Cx ² + Dx ³ + Ex ⁴ | |
| r = 0.9999 | |
| Constants: | A = -0.02466393 |
| B = 1.000647921 | C = 0 |
| D = 0 | E = 0 |

APPROVED BY:

HILARY THATCHER



CERTIFICATION OF ANALYSIS

Interference Free Multi-Component EPA Protocol Gases

Note: Analytical uncertainty and NIST traceability are in compliance with EPA-600/R-97/121
Section 2.2, Procedure G-1

Cylinder S/N: EB0011495

Customer: AIR HYGIENE
Location: TULSA, OK

Shipping Order Number: 30277953
Transfer Number: 30277953
Lot Number: SFS123410
Valve: CGA 660
Cylinder Pressure*: 2000 PSIG
*Cylinder should not be used when
gas pressure is below 150 psig

P.O. Number: 8071601
Item Number: SGZCAH071

Assay Date: 10-Aug-2008

Expiration Date: 10-Aug-2010

| Components | Requested Concentration | Assay Concentration |
|-----------------|-------------------------|---------------------|
| Nitrogen | Balance | Balance |
| Carbon Monoxide | 9 ppm | 9.05 ± 0.16 ppm |
| Nitric Oxide | 9 ppm | 9.11 ± 0.13 ppm |
| NOx | | 9.11 ppm |

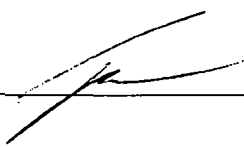
Reference Standard(s) Employed For Analysis

| Certified Concentration and Uncertainty | Component | Balance | Cyl. No. | SRM/PRM/Mix No. | Exp. Date | Sample No. | Type |
|---|-----------------|----------|----------|-----------------|-------------|------------|------|
| 2.52 ± 0.03 ppm | Carbon Monoxide | Nitrogen | CC109330 | SFS97696 | 18-Oct-2008 | XZ | GMIS |
| 10.03 ± 0.10 ppm | Nitric Oxide | Nitrogen | CC171193 | SFS109913 | 31-Jan-2010 | ZV | GMIS |

Analytical Data

| Component: Carbon Monoxide | | FIRST TRIAD ANALYSIS 3-Aug-2008 | | | | | SECOND TRIAD ANALYSIS 10-Aug-2008 | | | | |
|----------------------------|----------------------|-----------------------------------|---------|---------|---------|-------|-----------------------------------|---------|---------|---------|-------|
| Analyzer Information | | Zero | Trial 1 | Trial 2 | Trial 3 | Units | Zero | Trial 1 | Trial 2 | Trial 3 | Units |
| Analyzer Type: | Fourier Transform IR | Zero | 0.0045 | -0.0026 | -0.0028 | ppm | Zero | -0.0032 | -0.0051 | -0.0139 | ppm |
| Manufacturer: | MKS Instruments | Reference | 2.5073 | 2.5003 | 2.4988 | ppm | Reference | 2.4734 | 2.4845 | 2.4772 | ppm |
| Model Number: | 2031 | Candidate | 8.9613 | 8.9602 | 8.9588 | ppm | Candidate | 8.9533 | 8.9518 | 8.9491 | ppm |
| Serial Number: | 10387278 | Result | 9.018 | 9.024 | 9.033 | ppm | Result | 9.113 | 9.066 | 9.067 | ppm |
| MPR Last Calibrated: | 30-Jul-2008 | Evaluation | Valid | Valid | Valid | | Evaluation | Valid | Valid | Valid | |
| Analytical Principle: | FTIR | Mean Analytical Result: 9.025 ppm | | | | | Mean Analytical Result: 9.082 ppm | | | | |

| Component: Nitric Oxide | | FIRST TRIAD ANALYSIS 3-Aug-2008 | | | | | SECOND TRIAD ANALYSIS 10-Aug-2008 | | | | |
|-------------------------|----------------------|-----------------------------------|---------|---------|---------|-------|-----------------------------------|---------|---------|---------|-------|
| Analyzer Information | | Zero | Trial 1 | Trial 2 | Trial 3 | Units | Zero | Trial 1 | Trial 2 | Trial 3 | Units |
| Analyzer Type: | Fourier Transform IR | Zero | 0.0153 | 0.0086 | 0.0181 | ppm | Zero | -0.0141 | 0.0095 | 0.0012 | ppm |
| Manufacturer: | MKS Instruments | Reference | 9.7835 | 9.7858 | 9.7865 | ppm | Reference | 9.7635 | 9.7726 | 9.7698 | ppm |
| Model Number: | 2031 | Candidate | 8.8950 | 8.8960 | 8.8748 | ppm | Candidate | 8.8575 | 8.8552 | 8.8984 | ppm |
| Serial Number: | 10387278 | Result | 9.118 | 9.117 | 9.094 | ppm | Result | 9.101 | 9.088 | 9.135 | ppm |
| MPR Last Calibrated: | 21-Jul-2008 | Evaluation | Valid | Valid | Valid | | Evaluation | Valid | Valid | Valid | |
| Analytical Principle: | FTIR | Mean Analytical Result: 9.110 ppm | | | | | Mean Analytical Result: 9.108 ppm | | | | |

Analyst:  Tan Ngo

Approved by:  Thuan Tran



AIR LIQUIDE

Air Liquide America
Specialty Gases LLC



Scott

RATA CLASS

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083

Phone: 248-589-2950

Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
1290 COMBERMERE STREET
TROY, MI 48083

P.O. No.: 9062801 AIR HYGIENE
Project No.: 05-78099-007

Customer

AIR HYGIENE

JOHN FALLS
1319 N. PEORIA AVENUE
TULSA OK 74106

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: **CC66639** Certification Date: **29Jul2009** Exp. Date: **27Jan2010**
Cylinder Pressure***: **2000 PSIG**

| COMPONENT | CERTIFIED CONCENTRATION (Moles) | ACCURACY** | TRACEABILITY |
|--------------------------|---------------------------------|------------|----------------------|
| CARBON MONOXIDE | 4.95 PPM | +/- 1% | Direct NIST and NMI |
| NITRIC OXIDE | 4.95 PPM | +/- 1% | Direct NIST and NMI |
| NITROGEN - OXYGEN FREE | BALANCE | | |
| TOTAL OXIDES OF NITROGEN | 4.99 PPM | | Reference Value Only |

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

| TYPE/SRM NO. | EXPIRATION DATE | CYLINDER NUMBER | CONCENTRATION | COMPONENT |
|--------------|-----------------|-----------------|---------------|-----------------|
| NTRM 1677 | 01Jun2012 | KAL003969 | 9.855 PPM | CARBON MONOXIDE |
| NTRM 2629 | 15Aug2013 | KAL003016 | 19.83 PPM | NITRIC OXIDE |

INSTRUMENTATION

| INSTRUMENT/MODEL/SERIAL# | DATE LAST CALIBRATED | ANALYTICAL PRINCIPLE |
|-----------------------------|----------------------|----------------------|
| HORIBA/APMA-360/42244670011 | 28Jul2009 | NDIR |
| ECO PHYSICS/CLD 84M/84M0359 | 13Jul2009 | CHEMI |

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis

CARBON MONOXIDE

Date: 21Jul2009 Response Unit: PPM
Z1=0.00000 R1=9.85500 T1=4.95500
R2=9.83700 Z2=0.00000 T2=4.98600
Z3=0.00000 T3=4.96800 R3=9.84400
Avg. Concentration: 4.927 PPM

Second Triad Analysis

Date: 29Jul2009 Response Unit: PPM
Z1=0.00000 R1=9.84000 T1=5.01500
R2=9.84000 Z2=0.00000 T2=5.01500
Z3=0.00000 T3=5.01500 R3=9.84000
Avg. Concentration: 4.977 PPM

Calibration Curve

Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = 0.999999
Constants: A = -0.00161482
B = 1.00404143 C = -0.004485
D = 0.000426615 E = 0

NITRIC OXIDE

Date: 21Jul2009 Response Unit: MV
Z1=0.00000 R1=19.76000 T1=4.93000
R2=19.86000 Z2=0.00000 T2=4.92900
Z3=0.00000 T3=4.93500 R3=19.86000
Avg. Concentration: 4.940 PPM

Date: 28Jul2009 Response Unit: MV
Z1=0.00000 R1=19.84000 T1=4.95400
R2=19.83000 Z2=0.00000 T2=4.95300
Z3=0.00000 T3=4.95000 R3=19.86000
Avg. Concentration: 4.960 PPM

Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = 0.999998
Constants: A = 0.0151146
B = 0.999480696 C = 0
D = 0 E = 0

APPROVED BY:


JEFF CROTEAU



AIR LIQUIDE

CERTIFICATION OF ANALYSIS

Interference Free Multi-Component EPA Protocol Gases

Note: Analytical uncertainty and NIST traceability are in compliance with EPA-600/R-97/121
Section 2.2, Procedure G-1

Cylinder S/N: CC150921

Customer: AIR HYGIENE
Location: TULSA, OK

Shipping Order Number: 30555150
Transfer Number: 30555150
Lot Number: SFS124130
Valve: CGA 350
Cylinder Pressure*: 2000 PSIG
*Cylinder should not be used when
gas pressure is below 150 psig

P.O. Number: 8080801
Item Number: SGZCAH001

Assay Date: 25-Aug-2008

Expiration Date: 25-Aug-2011

| Components | Requested Concentration | Assay Concentration |
|------------|-------------------------|---------------------|
| Nitrogen | Balance | Balance |
| Methane | 3 ppm | 3.00 ± 0.03 ppm |

Reference Standard(s) Employed For Analysis

| Certified Concentration and Uncertainty | Component | Balance | Cyl. No. | SRM/PRM/Mix No. | Exp. Date | Sample No. | Type |
|---|-----------|---------|----------|-----------------|-------------|------------|------|
| 9.863 ± 0.030 ppm | Methane | Air | FF28576 | 1659a | 25-Apr-2012 | 11-G-24 | SRM |

Analytical Data

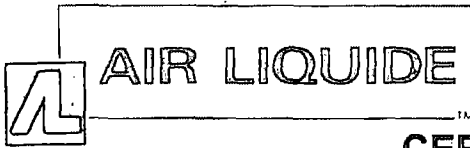
| Component: | Methane | FIRST TRIAD ANALYSIS 25-Aug-2008 | | | Units |
|-----------------------|-------------------|----------------------------------|---------|---------|-------|
| | | Zero | Trial 1 | Trial 2 | |
| Analyzer Information | Gas Chromatograph | 0.058 | 0.0000 | 0.161 | Area |
| Manufacturer: | Hewlett Packard | Reference 87.038 | 87.257 | 87.485 | Area |
| Model Number: | G1540A | Candidate 28.557 | 28.535 | 28.651 | Area |
| Serial Number: | US00003390/Meth | Result 3.005 | 2.999 | 2.992 | ppm |
| MPR Last Calibrated: | 12-Aug-2008 | Evaluation Valid | Valid | Valid | |
| Analytical Principle: | FID & TCD | Mean Analytical Result: 2.999 | | | ppm |

Analyst: _____

Tan Ngo

Approved by: _____

Truan Tran



CERTIFICATION OF ANALYSIS

Interference Free Multi-Component EPA Protocol Gases

Note: Analytical uncertainty and NIST traceability are in compliance with EPA-600/R-97/121
Section 2.2, Procedure G-1

Customer: AIR HYGIENE
Location: TULSA, OK

Cylinder S/N: CC150841

Shipping Order Number: 30336104
Transfer Number: 30336104
Lot Number: SFS123631
Valve: CGA 350
Cylinder Pressure: 2000 PSIG
*Cylinder should not be used when
gas pressure is below 150 psig

P.O. Number: 8071801
Item Number: SGZCAH002

Assay Date: 4-Aug-2008

Expiration Date: 4-Aug-2011

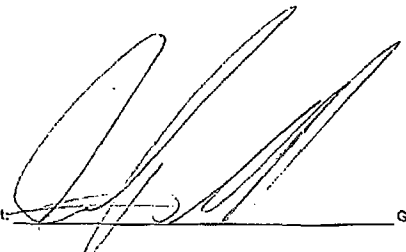
| Components | Requested Concentration | Assay Concentration |
|------------|-------------------------|---------------------|
| Nitrogen | Balance | Balance |
| Methane | 5 ppm | 4.94 ± 0.06 ppm |

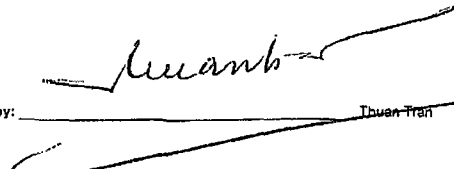
Reference Standard(s) Employed For Analysis

| Certified Concentration and Uncertainty | Component | Balance | Cyl. No. | SRM/PRM/Mix No. | Exp. Date | Sample No. | Type |
|---|-----------|---------|----------|-----------------|-------------|------------|------|
| 9.863 ± 0.030 ppm | Methane | Air | FF28576 | 1659a | 25-Apr-2012 | 11-G-24 | SRM |

Analytical Data

| Component: Methane | | FIRST TRIAD ANALYSIS 4-Aug-2008 | | | Units | |
|-----------------------|-------------------|---------------------------------|---------|---------|--------|------|
| Analyzer Information | | Trial 1 | Trial 2 | Trial 3 | | |
| Analyzer Type: | Gas Chromatograph | Zero | 0.114 | 0.073 | 0.022 | Area |
| Manufacturer: | Hewlett Packard | Reference | 91.233 | 91.401 | 91.269 | Area |
| Model Number: | G1540A | Candidate | 45.834 | 45.729 | 45.799 | Area |
| Serial Number: | US00003390/Meth | Result | 4.949 | 4.931 | 4.948 | ppm |
| MPR Last Calibrated: | 11-Jul-2008 | Evaluation | Valid | Valid | Valid | |
| Analytical Principle: | FID & TCD | Mean Analytical Result: | | | 4.943 | ppm |

Analyst:  Gary Williams

Approved by:  Thuan Tran



CERTIFICATION OF ANALYSIS

Interference Free Multi-Component EPA Protocol Gases

Note: Analytical uncertainty and NIST traceability are in compliance with EPA-600/R-97/121
Section 2.2, Procedure G-1

Customer: AIR HYGIENE
Location: TULSA, OK

Cylinder S/N: CC53032

Shipping Order Number: 30736937
Transfer Number: 30736937
Lot Number: SFS125022
Valve: CGA 350
Cylinder Pressure*: 2000 PSIG
*Cylinder should not be used when
gas pressure is below 150 psig

P.O. Number: 8082701
Item Number: SGZCAH006

Assay Date: 25-Sep-2008

Expiration Date: 25-Sep-2011

| Components | Requested Concentration | Assay Concentration |
|------------|-------------------------|---------------------|
| Nitrogen | Balance | Balance |
| Methano | 8.5 ppm | 8.40 ± 0.10 ppm |

Reference Standard(s) Employed For Analysis

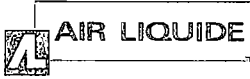
| Certified Concentration and Uncertainty | Component | Balance | Cyl. No. | SRM/PRM/Mix No. | Exp. Date | Sample No. | Type |
|---|-----------|---------|----------|-----------------|-------------|------------|------|
| 10.08 ± 0.04 ppm | Methane | Air | CC52347 | SFS103877 | 18-Mar-2010 | NK | GMIS |

Analytical Data

| Component: | Methane | FIRST TRIAD ANALYSIS 25-Sep-2008 | | | Units | |
|-----------------------|-------------------|----------------------------------|---------|---------|--------|-----------|
| | | Zero | Trial 1 | Trial 2 | | Trial 3 |
| Analyzer Information | Gas Chromatograph | Reference | 95.357 | 95.042 | 95.188 | Area |
| Manufacturer: | Hewlett Packard | Candidate | 79.484 | 79.558 | 79.410 | Area |
| Model Number: | G1540A | Result | 8.385 | 8.421 | 8.392 | ppm |
| Serial Number: | US00003390/Meth | Evaluation | Valid | Valid | Valid | |
| MPR Last Calibrated: | 24-Sep-2008 | Mean Analytical Result: | | | | 8.399 ppm |
| Analytical Principle: | FID & TCD | | | | | |

Analyst: Tan Ngo

Approved by: Thuan Tran



Air Liquide America
Specialty Gases LLC



COMPLIANCE CLASS

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083

Phone: 248-589-2950

Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

P.O. No.: 9092010
AIR LIQUIDE AMERICA SPECIALTY GASES LLC Project No.: 05-80747-012
1290 COMBERMERE STREET
TROY, MI 48083

Customer

AIR LIQUIDE AMERICA L.P.
801 W NORTH CARRIER PKWY
GRAND PRAIRIE TX 75050-1003

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM010682 Certification Date: 13Oct2009 Exp. Date: 13Apr2010
Cylinder Pressure***: 1950 PSIG

| <u>COMPONENT</u> | <u>CERTIFIED CONCENTRATION (Moles)</u> | <u>ANALYTICAL ACCURACY**</u> | <u>TRACEABILITY</u> |
|------------------|--|------------------------------|---------------------|
| NITROGEN DIOXIDE | 48.1 PPM | +/- 2% | NIST and VSL |
| NITROGEN | BALANCE | | |

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol procedures, September 1997.

REFERENCE STANDARD

| <u>TYPE/SRM NO.</u> | <u>EXPIRATION DATE</u> | <u>CYLINDER NUMBER</u> | <u>CONCENTRATION</u> | <u>COMPONENT</u> |
|---------------------|------------------------|------------------------|----------------------|------------------|
| GMIS NO2/AIR | 03Dec2010 | ALM058077 | 107.0 PPM | NITROGEN DIOXIDE |

INSTRUMENTATION

| <u>INSTRUMENT/MODEL/SERIAL#</u> | <u>DATE LAST CALIBRATED</u> | <u>ANALYTICAL PRINCIPLE</u> |
|-----------------------------------|-----------------------------|-----------------------------|
| AMETEK 921/921 CE NO2/AW-921-S281 | 18Sep2009 | UV |

APPROVED BY:

HILARY THATCHER

APPENDIX D

QUALITY ASSURANCE AND QUALITY CONTROL DATA

QA/QC PROGRAM

Air Hygiene ensures the quality and validity of its emission measurement and reporting procedures through a rigorous quality assurance (QA) program. The program is developed and administered by an internal QA team and encompasses five major areas:

1. QA reviews of reports, laboratory work, and field testing
2. Equipment calibration and maintenance
3. Chain-of-custody
4. Training
5. Knowledge of current test methods

Each of these areas is discussed individually below.

QA Reviews

Air Hygiene's review procedure includes review of each source test report, along with laboratory and fieldwork, by the QA Team. The most important review is the one that takes place before a test program begins. The QA Team works closely with technical division personnel to prepare and review test protocols. Test protocol review includes selection of appropriate test procedures, evaluation of interferences or other restrictions that might preclude use of standard test procedures, and evaluation and/or development of alternate procedures.

Equipment Calibration and Maintenance

The equipment used to conduct the emission measurements is maintained according to the manufacturer's instructions to ensure proper operation. In addition to the maintenance program, calibrations are carried out on each measurement device according to the schedule outlined by the Environmental Protection Agency. Quality control checks are also conducted in the field for each test program.

Chain-of-Custody

Air Hygiene maintains full chain-of-custody documentation on all samples and data sheets. In addition to normal documentation of changes between field sample custodians, laboratory personnel, and field test personnel, Air Hygiene documents every individual who handles any test component in the field (e.g., probe wash, impinger loading and recovery, filter loading and recovery, etc.). Samples are stored in a locked area to which only Air Hygiene personnel have access. Field data sheets are secured at Air Hygiene's offices upon return from the field.

Training

Personnel's training is essential to ensure quality testing. Air Hygiene has formal and informal training programs, which include:

1. Attendance at EPA-sponsored training courses
2. Enrollment in EPA correspondence courses
3. A requirement for all technicians to read and understand Air Hygiene's QA manual
4. In-house training and QA meetings on a regular basis
5. Maintenance of training records

Knowledge of Current Test Methods

With the constant updating of standard test methods and the wide variety of emerging test procedures, it is essential that any qualified source tester keep abreast of new developments. Air Hygiene subscribes to services, which provide updates on EPA reference methods, rules, and regulations. Additionally, source test personnel regularly attend and present papers at testing and emission-related seminars and conferences. Air Hygiene personnel maintain membership in the Air and Waste Management Association and the American Industrial Hygiene Association.

COMBUSTION TESTING QUALITY ASSURANCE ACTIVITIES

A number of quality assurance activities were undertaken before, during, and after this testing project. This section of the report combined with the documentation in Appendix C describes each of those activities.

Each instrument's response was checked and adjusted in the field prior to the collection of data via multi-point calibration. The instrument's linearity was checked by adjusting its zero and span responses to zero nitrogen and an upscale calibration gas in the range of the expected concentrations. The instrument response was then challenged with other calibration gases of known concentration and accepted as being linear if the response of the other calibration gases agreed within plus or minus two percent of the range of predicted values. NO₂ to NO conversion was checked via direct connect with an EPA Protocol certified concentration of NO₂ in a balance of nitrogen. Conversion was verified to be between 90 and 110 percent.

After each test run, the analyzers were checked for zero and span drift. This allowed each test run to be bracketed by calibrations and documents the precision of the data just collected. The criterion for acceptable data is that the instrument drift is no more than three percent of the full-scale response. The quality assurance worksheets in the following pages summarize all multipoint calibration checks and zero to span checks performed during the tests. These worksheets (as prepared from the data records of Appendix A) show that no drifts in excess of three percent occurred in the zero to span checks following each test run.

The sampling systems were leak checked by demonstrating that a vacuum greater than 10 in Hg could be held for at least one minute with a decline of less than one inch of Hg. A leak test was conducted after the sample system was set up and before the system was dismantled. This test was conducted to ensure that ambient air had not diluted the sample. Any leakage detected prior to the tests would be repaired and another leak check conducted before testing commenced. No leaks were found during the pre or post-test leak checks.

The absence of leaks in the sampling system was also verified by a sampling system bias check. The sampling system's integrity was tested by comparing the responses of the analyzers to the calibration gases introduced via two paths. The first path was directly into the analyzer and the second path via the sample system at the sample probe. Any difference in the instrument responses by these two methods was attributed to sampling system bias or leakage. The criterion for acceptance is agreement within five percent of the span of the analyzer.

The control gases used to calibrate the instruments were analyzed and certified by the compressed gas vendors to plus or minus one percent accuracy for all gases. EPA Protocol No. 1 was used, where applicable to assign the concentration values traceable to the National Institute of Standards and Technology (NIST), Standard Reference Materials (SRM's). The gas calibration sheets as prepared by the vendor are contained in Appendix C.

Air Hygiene collected and reported the enclosed test data in accordance with the procedures and quality assurance activities described in this test report. Air Hygiene makes no warranty as to the suitability of the test methods. Air Hygiene also assumes no liability relating to the interpretation and use of the test data.

INSTRUMENTAL ANALYSIS QUALITY ASSURANCE DATA

Date: November 10 and 17, 2009
Company: Florida Power and Light
Location: Loxahatchee, Florida
Techs: PS/SB

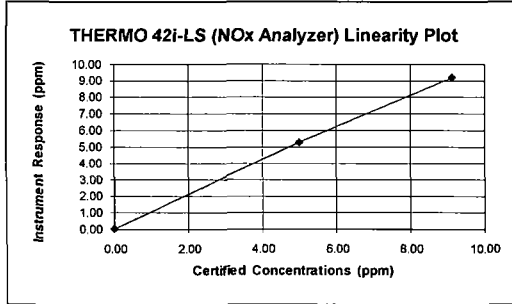
Sample System Leak Check

| Date | Sample System | Leak Rate (l/min) |
|--------------------------|---------------|----------------------|
| November 10 and 17, 2009 | 1 | 0 |

Calibration Date: November 17, 2009
 Client: Florida Power and Light

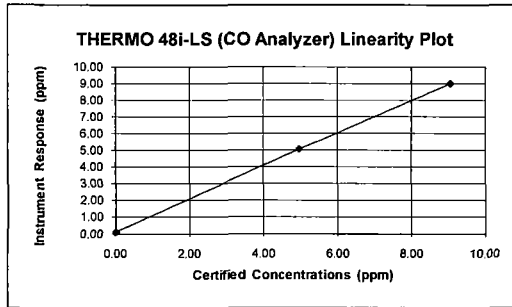
NOx Span (ppm) = 9.11

| THERMO 42i-LS (NOx Analyzer) | | | | |
|-------------------------------|---------------------------|-----------------------|----------------------|----------------------------|
| Certified Concentration (ppm) | Instrument Response (ppm) | Calibration Error (%) | Absolute Conc. (ppm) | Pass or Fail (±2% ≤0.5ppm) |
| 0.00 | 0.04 | 0.44 | 0.04 | YES (%) |
| 4.99 | 5.27 | 3.07 | 0.28 | YES (abs) |
| 9.11 | 9.19 | 0.88 | 0.08 | YES (%) |
| Linearity = 0.993 | | | | |



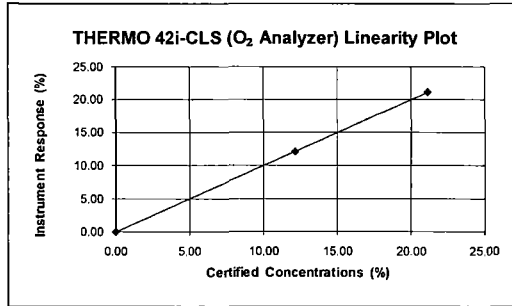
CO Span (ppm) = 9.05

| THERMO 48i-LS (CO Analyzer) | | | | |
|-------------------------------|---------------------------|-----------------------|----------------------|----------------------------|
| Certified Concentration (ppm) | Instrument Response (ppm) | Calibration Error (%) | Absolute Conc. (ppm) | Pass or Fail (±2% ≤0.5ppm) |
| 0.00 | 0.10 | 1.10 | 0.10 | YES (%) |
| 4.95 | 5.06 | 1.22 | 0.11 | YES (%) |
| 9.05 | 9.01 | -0.44 | 0.04 | YES (%) |
| Linearity = 1.015 | | | | |



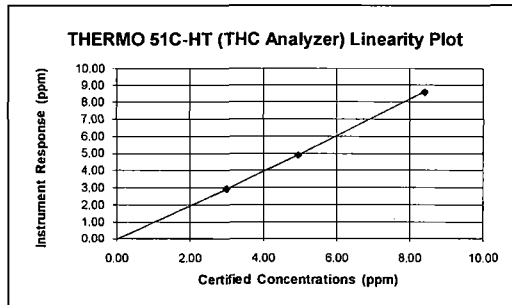
O₂ Span (%) = 21.10

| THERMO 42i-CLS (O ₂ Analyzer) | | | | |
|--|-------------------------|-----------------------|--------------------|--------------------------|
| Certified Concentration (%) | Instrument Response (%) | Calibration Error (%) | Absolute Conc. (%) | Pass or Fail (±2% ≤0.5%) |
| 0.00 | 0.02 | 0.09 | 0.02 | YES (%) |
| 12.10 | 12.07 | -0.14 | 0.03 | YES (%) |
| 21.10 | 21.12 | 0.09 | 0.02 | YES (%) |
| Linearity = 1.000 | | | | |



THC Range (ppm) = 10

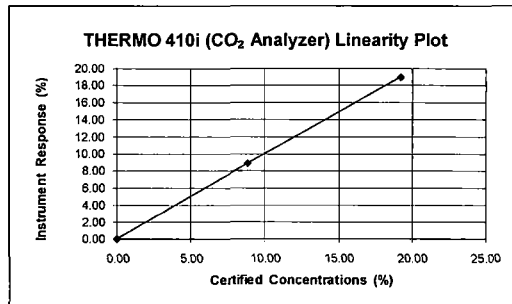
| THERMO 51C-HT (THC Analyzer) | | | | |
|-------------------------------|---------------------------|-----------------------|-----------------------|------------------------------------|
| Certified Concentration (ppm) | Instrument Response (ppm) | Calibration Error (%) | Estimated Point (ppm) | Pass or Fail (±2.5% ¹) |
| 0.00 | -0.01 | -0.10 | N/A | YES |
| 3.00 | 2.92 | -4.83 | 3.07 | YES |
| 4.94 | 4.89 | -3.31 | 5.05 | YES |
| 8.40 | 8.60 | 2.00 | N/A | YES |
| Linearity = 0.948 | | | | |



¹zero/high based on 2% of span, low/mid based on 5% of concentration

CO₂ Span (%) = 19.20

| THERMO 410i (CO ₂ Analyzer) | | | | |
|--|-------------------------|-----------------------|--------------------|--------------------------|
| Certified Concentration (%) | Instrument Response (%) | Calibration Error (%) | Absolute Conc. (%) | Pass or Fail (±2% ≤0.5%) |
| 0.00 | 0.03 | 0.16 | 0.03 | YES (%) |
| 8.83 | 8.92 | 0.47 | 0.09 | YES (%) |
| 19.20 | 19.00 | -1.04 | 0.20 | YES (%) |
| Linearity = 1.012 | | | | |



NOx Converter Efficiency

Date: November 17, 2009

Analyzer: INST-N2-0001

RM 7E, (08-15-06), 8.2.4.1 Introduce a concentration of 40 to 60 ppmv NO₂ to the analyzer in direct calibration mode and record the NOx concentration displayed by the analyzer. ... Calculate the converter efficiency using Equation 7E-7 in Section 12.7. The specification for converter efficiency in Section 13.5 must be met. ... The NO₂ must be prepared according to the EPA Traceability Protocol and have an accuracy within 2.0 percent.

| | | |
|---|---|--------------|
| Audit Gas: | NO ₂ Concentration (C _v), ppmvd | 48.10 |
| Converter Efficiency Calculations: | | |
| | Analyzer Reading, NO Channel, ppmvd | 1.96 |
| | Analyzer Reading, NOx Channel, ppmvd | 48.31 |
| | Analyzer Reading, NO ₂ Channel (C _{Dir(NO2)}), ppmvd | 46.35 |
| | Converter Efficiency, % | 96.36 |

RM 7E, (08-15-06), 13.5 NO₂ to NO Conversion Efficiency Test (as applicable). The NO₂ to NO conversion efficiency, calculated according to Equation 7E-7 or Equation 7E-9, must be greater than or equal to 90 percent.

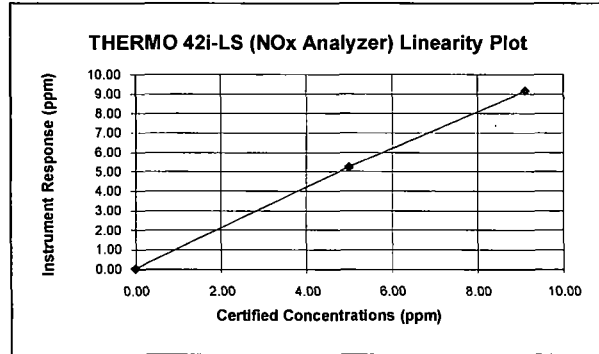
$$Eff_{NO_2} = \left(\frac{C_{Dir}}{C_V} \right) \times 100 \quad \text{Eq. 7E-7} = \frac{46.35 \text{ ppmvd}}{48.10 \text{ ppmvd}} \times 100 = 96.36\%$$

| Date/Time | Elapsed Time | NOx | NO |
|-------------------|--------------|-------|-------|
| mm/dd/yy hh:mm:ss | Seconds | ppmvd | ppmvd |
| 11/17/09 07:11:59 | 1180 | 5.35 | 5.14 |
| 11/17/09 07:12:09 | 1190 | 5.45 | 4.90 |
| 11/17/09 07:12:19 | 1200 | 3.32 | 4.67 |
| 11/17/09 07:12:29 | 1210 | 1.07 | 2.86 |
| 11/17/09 07:12:39 | 1220 | 18.69 | 0.89 |
| 11/17/09 07:12:49 | 1230 | 38.28 | 1.40 |
| 11/17/09 07:12:59 | 1240 | 42.57 | 2.17 |
| 11/17/09 07:13:09 | 1250 | 45.28 | 2.24 |
| 11/17/09 07:13:19 | 1260 | 46.09 | 2.21 |
| 11/17/09 07:13:29 | 1270 | 46.67 | 2.17 |
| 11/17/09 07:13:39 | 1280 | 47.05 | 2.12 |
| 11/17/09 07:13:49 | 1290 | 47.43 | 2.09 |
| 11/17/09 07:13:59 | 1300 | 47.75 | 2.05 |
| 11/17/09 07:14:09 | 1310 | 48.06 | 2.00 |
| 11/17/09 07:14:19 | 1320 | 48.31 | 1.96 |
| 11/17/09 07:14:29 | 1330 | 48.52 | 2.14 |

Calibration Date: November 10, 2009
 Client: Florida Power and Light

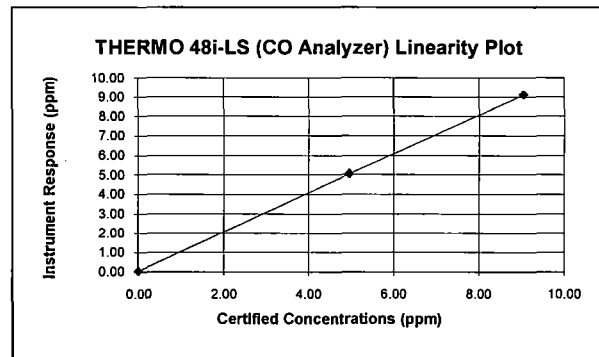
NOx Span (ppm) = 9.11

| THERMO 42i-LS (NOx Analyzer) | | | | |
|-------------------------------|---------------------------|-----------------------|----------------------|-----------------------------|
| Certified Concentration (ppm) | Instrument Response (ppm) | Calibration Error (%) | Absolute Conc. (ppm) | Pass or Fail (±2%, ≤0.5ppm) |
| 0.00 | 0.04 | 0.44 | 0.04 | YES (%) |
| 4.99 | 5.24 | 2.74 | 0.25 | YES (abs) |
| 9.11 | 9.16 | 0.55 | 0.05 | YES (%) |
| Linearity = 0.997 | | | | |



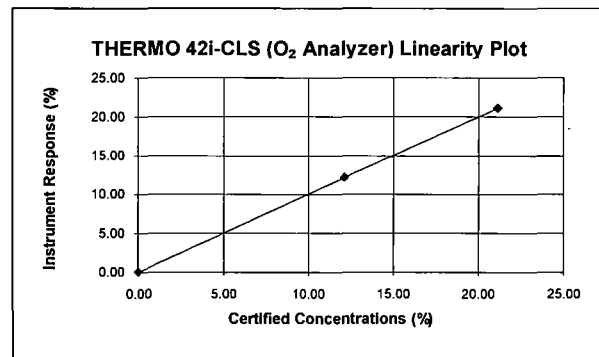
CO Span (ppm) = 9.05

| THERMO 48i-LS (CO Analyzer) | | | | |
|-------------------------------|---------------------------|-----------------------|----------------------|-----------------------------|
| Certified Concentration (ppm) | Instrument Response (ppm) | Calibration Error (%) | Absolute Conc. (ppm) | Pass or Fail (±2%, ≤0.5ppm) |
| 0.00 | 0.05 | 0.55 | 0.05 | YES (%) |
| 4.95 | 5.05 | 1.10 | 0.10 | YES (%) |
| 9.05 | 9.10 | 0.55 | 0.05 | YES (%) |
| Linearity = 1.000 | | | | |



O2 Span (%) = 21.10

| THERMO 42i-CLS (O2 Analyzer) | | | | |
|------------------------------|-------------------------|-----------------------|--------------------|---------------------------|
| Certified Concentration (%) | Instrument Response (%) | Calibration Error (%) | Absolute Conc. (%) | Pass or Fail (±2%, ≤0.5%) |
| 0.00 | 0.04 | 0.19 | 0.04 | YES (%) |
| 12.10 | 12.17 | 0.33 | 0.07 | YES (%) |
| 21.10 | 21.09 | -0.05 | 0.01 | YES (%) |
| Linearity = 1.002 | | | | |



NOx Converter Efficiency

Date: November 10, 2009

Analyzer: INST-N2-0001

RM 7E, (08-15-06), 8.2.4.1 Introduce a concentration of 40 to 60 ppmv NO₂ to the analyzer in direct calibration mode and record the NOx concentration displayed by the analyzer. ... Calculate the converter efficiency using Equation 7E-7 in Section 12.7. The specification for converter efficiency in Section 13.5 must be met. ... The NO₂ must be prepared according to the EPA Traceability Protocol and have an accuracy within 2.0 percent.

| | | |
|---|---|--------------|
| Audit Gas: | NO ₂ Concentration (C _v), ppmvd | 48.10 |
| Converter Efficiency Calculations: | | |
| | Analyzer Reading, NO Channel, ppmvd | 2.13 |
| | Analyzer Reading, NOx Channel, ppmvd | 47.04 |
| | Analyzer Reading, NO ₂ Channel (C _{Dir(NO2)}), ppmvd | 44.91 |
| | Converter Efficiency, % | 93.37 |

RM 7E, (08-15-06), 13.5 NO₂ to NO Conversion Efficiency Test (as applicable). The NO₂ to NO conversion efficiency, calculated according to Equation 7E-7 or Equation 7E-9, must be greater than or equal to 90 percent.

$$Eff_{NO_2} = \left(\frac{C_{Dir}}{C_v} \right) \times 100 \quad \text{Eq. 7E-7} = \frac{44.91 \text{ ppmvd}}{48.10 \text{ ppmvd}} \times 100 = 93.37\%$$

| Date/Time | Elapsed Time | NOx | NO |
|-------------------|--------------|-------|-------|
| mm/dd/yy hh:mm:ss | Seconds | ppmvd | ppmvd |
| 11/10/09 09:22:06 | 1620 | 5.97 | 1.94 |
| 11/10/09 09:22:36 | 1650 | 29.98 | 2.24 |
| 11/10/09 09:23:06 | 1680 | 38.59 | 3.35 |
| 11/10/09 09:23:36 | 1710 | 40.64 | 3.28 |
| 11/10/09 09:24:06 | 1740 | 42.45 | 3.01 |
| 11/10/09 09:24:36 | 1770 | 43.76 | 2.76 |
| 11/10/09 09:25:06 | 1800 | 44.81 | 2.58 |
| 11/10/09 09:25:36 | 1830 | 45.61 | 2.46 |
| 11/10/09 09:26:06 | 1860 | 46.21 | 2.34 |
| 11/10/09 09:26:36 | 1890 | 46.66 | 2.20 |
| 11/10/09 09:27:06 | 1920 | 47.04 | 2.13 |

| DRIFT AND BIAS CHECK | | |
|-------------------------------------|-----------------|--------|
| Strat Test Pre and Post QA/QC Check | O2 | NOx |
| Initial Zero | 0.32 | 0.13 |
| Final Zero | 0.36 | 0.11 |
| Avg. Zero | 0.34 | 0.12 |
| Initial UpScale | 11.75 | 5.11 |
| Final UpScale | 11.70 | 5.09 |
| Avg. UpScale | 11.73 | 5.10 |
| Sys Resp (Zero) | 0.04 | 0.04 |
| Sys Resp (Upscale) | 12.17 | 5.24 |
| Upscale Cal Gas | 12.10 | 4.99 |
| Initial Zero Bias | 1.33% | 0.99% |
| Final Zero Bias | 1.52% | 0.77% |
| Zero Drift | 0.19% | 0.22% |
| Initial Upscale Bias | -1.99% | -1.43% |
| Final Upscale Bias | -2.23% | -1.65% |
| Upscale Drift | 0.24% | 0.22% |
| Alternative Specification Abs Diff | Initial Zero | 0.28 |
| | Final Zero | 0.32 |
| | Initial Upscale | 0.42 |
| | Final Upscale | 0.47 |
| Calibration Span | 21.10 | 9.11 |
| 3% of Range (drift) | 0.63 | 0.27 |
| 5% of Range (bias) | 1.06 | 0.46 |

| | | |
|---------------------|-----|-----|
| Response Time (min) | 0.8 | 1.5 |
| Sys. Response (min) | 1.5 | |

INJECTIONS

| Date/Time mm/dd/yy hh:mm:ss | z | O ₂ | s z | NOx | s |
|--------------------------------|---|----------------|-----|------|---|
| 11/10/09 09:32:06 | | 0.28 | | 0.20 | |
| 11/10/09 09:32:16 | | 0.28 | | 0.19 | |
| 11/10/09 09:32:26 | x | 0.29 | | 0.19 | x |
| 11/10/09 09:32:36 | | 0.28 | | 0.18 | |
| 11/10/09 09:32:46 | | 0.28 | | 0.19 | |
| 11/10/09 09:32:56 | | 0.84 | | 0.18 | |
| 11/10/09 09:33:06 | | 9.70 | | 0.16 | |
| 11/10/09 09:33:16 | | 12.25 | x | 0.22 | |
| 11/10/09 09:33:26 | | 12.15 | | 0.31 | |
| 11/10/09 09:33:36 | | 12.14 | | 0.30 | |
| 11/10/09 09:33:46 | | 12.16 | | 0.22 | |
| 11/10/09 09:33:56 | | 12.17 | | 0.18 | |
| 11/10/09 09:35:56 | | 12.20 | | 0.15 | |
| 11/10/09 09:36:06 | | 12.19 | | 0.15 | |
| 11/10/09 09:36:16 | | 12.20 | x | 0.13 | x |
| 11/10/09 09:36:26 | | 12.19 | | 0.13 | |
| 11/10/09 09:36:36 | | 20.64 | | 0.13 | |
| 11/10/09 09:36:46 | | 13.80 | | 0.12 | |
| 11/10/09 09:36:56 | | 2.25 | | 0.16 | |
| 11/10/09 09:37:06 | | 0.53 | | 0.18 | |
| 11/10/09 09:37:16 | | 0.41 | | 1.19 | |
| 11/10/09 09:37:26 | | 0.38 | | 3.32 | |
| 11/10/09 09:37:36 | | 0.35 | | 4.56 | |
| 11/10/09 09:37:46 | | 0.34 | | 4.87 | x |
| 11/10/09 09:37:56 | | 0.33 | | 5.06 | |
| 11/10/09 09:38:06 | | 0.32 | | 5.07 | |
| 11/10/09 09:38:16 | | 0.32 | | 5.11 | |
| 11/10/09 09:38:26 | | 0.32 | | 5.12 | |

| DRIFT AND BIAS CHECK | | | | | | |
|--|-----------------|--------|--------|--------|-----------------|------|
| Base W/O Db Load, Run - 1-1 | O ₂ | NOx | CO | VOC | CO ₂ | |
| Raw Average | 13.03 | 2.01 | 0.67 | 0.40 | 4.42 | |
| Corrected Average | 13.05 | 1.94 | 0.61 | 0.44 | 4.28 | |
| Initial Zero | 0.17 | 0.09 | 0.12 | 0.03 | 0.01 | |
| Final Zero | 0.30 | 0.09 | 0.01 | 0.01 | 0.39 | |
| Avg. Zero | 0.24 | 0.09 | 0.07 | 0.02 | 0.20 | |
| Initial UpScale | 12.00 | 5.05 | 4.99 | 2.92 | 8.60 | |
| Final UpScale | 12.20 | 5.00 | 4.94 | 2.86 | 9.20 | |
| Avg. UpScale | 12.10 | 5.03 | 4.97 | 2.89 | 8.90 | |
| Sys Resp (Zero) | 0.02 | 0.04 | 0.10 | -0.01 | 0.03 | |
| Sys Resp (Upscale) | 12.07 | 5.27 | 5.06 | 2.92 | 8.92 | |
| Upscale Cal Gas | 12.10 | 4.99 | 4.95 | 3.00 | 8.83 | |
| Initial Zero Bias | 0.71% | 0.55% | 0.22% | 0.40% | -0.10% | |
| Final Zero Bias | 1.33% | 0.55% | -0.99% | 0.20% | 1.88% | |
| Zero Drift | 0.62% | 0.00% | 1.22% | 0.20% | 1.98% | |
| Initial Upscale Bias | -0.33% | -2.41% | -0.77% | 0.00% | -1.67% | |
| Final Upscale Bias | 0.62% | -2.96% | -1.33% | -0.60% | 1.46% | |
| Upscale Drift | 0.95% | 0.55% | 0.55% | 0.60% | 3.13% | |
| Alternative Specification Abs Diff | Initial Zero | 0.15 | 0.05 | 0.02 | -- | 0.02 |
| | Final Zero | 0.28 | 0.05 | 0.09 | -- | 0.36 |
| | Initial Upscale | 0.07 | 0.22 | 0.07 | -- | 0.32 |
| | Final Upscale | 0.13 | 0.27 | 0.12 | -- | 0.28 |
| Calibration Span | 21.10 | 9.11 | 9.05 | 10.00 | 19.20 | |
| 3% of Cal. Span (drift) | 0.63 | 0.27 | 0.27 | 0.30 | 0.58 | |
| 5% of Cal. Span (bias) | 1.06 | 0.46 | 0.45 | 0.50 | 0.96 | |

| DRIFT AND BIAS CHECK | | | | | | |
|--|-----------------|--------|--------|--------|-----------------|------|
| Base W/O Db Load, Run - 1-2 | O ₂ | NOx | CO | VOC | CO ₂ | |
| Raw Average | 13.04 | 2.03 | 0.50 | 0.27 | 4.55 | |
| Corrected Average | 12.95 | 1.97 | 0.49 | 0.31 | 4.17 | |
| Initial Zero | 0.30 | 0.09 | 0.01 | 0.01 | 0.39 | |
| Final Zero | 0.30 | 0.09 | 0.01 | 0.01 | 0.39 | |
| Avg. Zero | 0.30 | 0.09 | 0.01 | 0.01 | 0.39 | |
| Initial UpScale | 12.20 | 5.00 | 4.94 | 2.86 | 9.20 | |
| Final UpScale | 12.20 | 5.00 | 4.94 | 2.86 | 9.20 | |
| Avg. UpScale | 12.20 | 5.00 | 4.94 | 2.86 | 9.20 | |
| Sys Resp (Zero) | 0.02 | 0.04 | 0.10 | -0.01 | 0.03 | |
| Sys Resp (Upscale) | 12.07 | 5.27 | 5.06 | 2.92 | 8.92 | |
| Upscale Cal Gas | 12.10 | 4.99 | 4.95 | 3.00 | 8.83 | |
| Initial Zero Bias | 1.33% | 0.55% | -0.99% | 0.20% | 1.88% | |
| Final Zero Bias | 1.33% | 0.55% | -0.99% | 0.20% | 1.88% | |
| Zero Drift | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | |
| Initial Upscale Bias | 0.62% | -2.96% | -1.33% | -0.60% | 1.46% | |
| Final Upscale Bias | 0.62% | -2.96% | -1.33% | -0.60% | 1.46% | |
| Upscale Drift | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | |
| Alternative Specification Abs Diff | Initial Zero | 0.28 | 0.05 | 0.09 | -- | 0.36 |
| | Final Zero | 0.28 | 0.05 | 0.09 | -- | 0.36 |
| | Initial Upscale | 0.13 | 0.27 | 0.12 | -- | 0.28 |
| | Final Upscale | 0.13 | 0.27 | 0.12 | -- | 0.28 |
| Calibration Span | 21.10 | 9.11 | 9.05 | 10.00 | 19.20 | |
| 3% of Cal. Span (drift) | 0.63 | 0.27 | 0.27 | 0.30 | 0.58 | |
| 5% of Cal. Span (bias) | 1.06 | 0.46 | 0.45 | 0.50 | 0.96 | |

| DRIFT AND BIAS CHECK | | | | | | |
|--|-----------------|--------|--------|--------|-----------------|------|
| Base W/O Db Load, Run - 1-3 | O ₂ | NOx | CO | VOC | CO ₂ | |
| Raw Average | 13.11 | 1.96 | 0.49 | 0.21 | 4.71 | |
| Corrected Average | 13.02 | 1.90 | 0.48 | 0.23 | 4.33 | |
| Initial Zero | 0.30 | 0.09 | 0.01 | 0.01 | 0.39 | |
| Final Zero | 0.30 | 0.09 | 0.01 | 0.01 | 0.39 | |
| Avg. Zero | 0.30 | 0.09 | 0.01 | 0.01 | 0.39 | |
| Initial UpScale | 12.20 | 5.00 | 4.94 | 2.86 | 9.20 | |
| Final UpScale | 12.20 | 5.00 | 4.94 | 2.86 | 9.20 | |
| Avg. UpScale | 12.20 | 5.00 | 4.94 | 2.86 | 9.20 | |
| Sys Resp (Zero) | 0.02 | 0.04 | 0.10 | -0.01 | 0.03 | |
| Sys Resp (Upscale) | 12.07 | 5.27 | 5.06 | 2.92 | 8.92 | |
| Upscale Cal Gas | 12.10 | 4.99 | 4.95 | 3.00 | 8.83 | |
| Initial Zero Bias | 1.33% | 0.55% | -0.99% | 0.20% | 1.88% | |
| Final Zero Bias | 1.33% | 0.55% | -0.99% | 0.20% | 1.88% | |
| Zero Drift | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | |
| Initial Upscale Bias | 0.62% | -2.96% | -1.33% | -0.60% | 1.46% | |
| Final Upscale Bias | 0.62% | -2.96% | -1.33% | -0.60% | 1.46% | |
| Upscale Drift | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | |
| Alternative Specification Abs Diff | Initial Zero | 0.28 | 0.05 | 0.09 | -- | 0.36 |
| | Final Zero | 0.28 | 0.05 | 0.09 | -- | 0.36 |
| | Initial Upscale | 0.13 | 0.27 | 0.12 | -- | 0.28 |
| | Final Upscale | 0.13 | 0.27 | 0.12 | -- | 0.28 |
| Calibration Span | 21.10 | 9.11 | 9.05 | 10.00 | 19.20 | |
| 3% of Cal. Span (drift) | 0.63 | 0.27 | 0.27 | 0.30 | 0.58 | |
| 5% of Cal. Span (bias) | 1.06 | 0.46 | 0.45 | 0.50 | 0.96 | |

| DRIFT AND BIAS CHECK | | | | | | |
|--|-----------------|--------|--------|--------|-----------------|------|
| Base W/Db Load, Run - 2-1 | O ₂ | NOx | CO | VOC | CO ₂ | |
| Raw Average | 12.46 | 2.42 | 0.82 | 0.21 | 5.31 | |
| Corrected Average | 12.40 | 2.38 | 0.82 | 0.20 | 4.85 | |
| Initial Zero | 0.30 | 0.07 | 0.01 | 0.01 | 0.39 | |
| Final Zero | 0.35 | 0.07 | 0.01 | 0.06 | 0.47 | |
| Avg. Zero | 0.33 | 0.07 | 0.01 | 0.04 | 0.43 | |
| Initial UpScale | 12.20 | 5.00 | 4.94 | 2.86 | 9.20 | |
| Final UpScale | 12.14 | 5.01 | 4.87 | 3.14 | 9.42 | |
| Avg. UpScale | 12.17 | 5.01 | 4.91 | 3.00 | 9.31 | |
| Sys Resp (Zero) | 0.02 | 0.04 | 0.10 | -0.01 | 0.03 | |
| Sys Resp (Upscale) | 12.07 | 5.27 | 5.06 | 2.92 | 8.92 | |
| Upscale Cal Gas | 12.10 | 4.99 | 4.95 | 3.00 | 8.83 | |
| Initial Zero Bias | 1.33% | 0.33% | -0.99% | 0.20% | 1.88% | |
| Final Zero Bias | 1.56% | 0.33% | -0.99% | 0.70% | 2.29% | |
| Zero Drift | 0.24% | 0.00% | 0.00% | 0.50% | 0.42% | |
| Initial Upscale Bias | 0.62% | -2.96% | -1.33% | -0.60% | 1.46% | |
| Final Upscale Bias | 0.33% | -2.85% | -2.10% | 2.20% | 2.60% | |
| Upscale Drift | 0.28% | 0.11% | 0.77% | 2.80% | 1.15% | |
| Alternative Specification Abs Diff | Initial Zero | 0.28 | 0.03 | 0.09 | -- | 0.36 |
| | Final Zero | 0.33 | 0.03 | 0.09 | -- | 0.44 |
| | Initial Upscale | 0.13 | 0.27 | 0.12 | -- | 0.28 |
| | Final Upscale | 0.07 | 0.26 | 0.19 | -- | 0.50 |
| Calibration Span | 21.10 | 9.11 | 9.05 | 10.00 | 19.20 | |
| 3% of Cal. Span (drift) | 0.63 | 0.27 | 0.27 | 0.30 | 0.58 | |
| 5% of Cal. Span (bias) | 1.06 | 0.46 | 0.45 | 0.50 | 0.96 | |

| DRIFT AND BIAS CHECK | | | | | | |
|--|-----------------|--------|--------|-------|-----------------|------|
| Base W/Db Load, Run - 2-2 | O ₂ | NOx | CO | VOC | CO ₂ | |
| Raw Average | 12.45 | 2.52 | 0.87 | 0.16 | 5.44 | |
| Corrected Average | 12.42 | 2.48 | 0.87 | 0.12 | 4.90 | |
| Initial Zero | 0.35 | 0.07 | 0.01 | 0.06 | 0.47 | |
| Final Zero | 0.35 | 0.07 | 0.01 | 0.06 | 0.47 | |
| Avg. Zero | 0.35 | 0.07 | 0.01 | 0.06 | 0.47 | |
| Initial UpScale | 12.14 | 5.01 | 4.87 | 3.14 | 9.42 | |
| Final UpScale | 12.14 | 5.01 | 4.87 | 3.14 | 9.42 | |
| Avg. UpScale | 12.14 | 5.01 | 4.87 | 3.14 | 9.42 | |
| Sys Resp (Zero) | 0.02 | 0.04 | 0.10 | -0.01 | 0.03 | |
| Sys Resp (Upscale) | 12.07 | 5.27 | 5.06 | 2.92 | 8.92 | |
| Upscale Cal Gas | 12.10 | 4.99 | 4.95 | 3.00 | 8.83 | |
| Initial Zero Bias | 1.56% | 0.33% | -0.99% | 0.70% | 2.29% | |
| Final Zero Bias | 1.56% | 0.33% | -0.99% | 0.70% | 2.29% | |
| Zero Drift | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | |
| Initial Upscale Bias | 0.33% | -2.85% | -2.10% | 2.20% | 2.60% | |
| Final Upscale Bias | 0.33% | -2.85% | -2.10% | 2.20% | 2.60% | |
| Upscale Drift | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | |
| Alternative Specification Abs Diff | Initial Zero | 0.33 | 0.03 | 0.09 | -- | 0.44 |
| | Final Zero | 0.33 | 0.03 | 0.09 | -- | 0.44 |
| | Initial Upscale | 0.07 | 0.26 | 0.19 | -- | 0.50 |
| | Final Upscale | 0.07 | 0.26 | 0.19 | -- | 0.50 |
| Calibration Span | 21.10 | 9.11 | 9.05 | 10.00 | 19.20 | |
| 3% of Cal. Span (drift) | 0.63 | 0.27 | 0.27 | 0.30 | 0.58 | |
| 5% of Cal. Span (bias) | 1.06 | 0.46 | 0.45 | 0.50 | 0.96 | |

| DRIFT AND BIAS CHECK | | | | | | |
|--|-----------------|--------|--------|-------|-----------------|------|
| Base W/Db Load, Run - 2-3 | O ₂ | NOx | CO | VOC | CO ₂ | |
| Raw Average | 12.51 | 2.46 | 0.77 | 0.53 | 5.52 | |
| Corrected Average | 12.48 | 2.42 | 0.77 | 0.52 | 4.98 | |
| Initial Zero | 0.35 | 0.07 | 0.01 | 0.06 | 0.47 | |
| Final Zero | 0.35 | 0.07 | 0.01 | 0.06 | 0.47 | |
| Avg. Zero | 0.35 | 0.07 | 0.01 | 0.06 | 0.47 | |
| Initial UpScale | 12.14 | 5.01 | 4.87 | 3.14 | 9.42 | |
| Final UpScale | 12.14 | 5.01 | 4.87 | 3.14 | 9.42 | |
| Avg. UpScale | 12.14 | 5.01 | 4.87 | 3.14 | 9.42 | |
| Sys Resp (Zero) | 0.02 | 0.04 | 0.10 | -0.01 | 0.03 | |
| Sys Resp (Upscale) | 12.07 | 5.27 | 5.06 | 2.92 | 8.92 | |
| Upscale Cal Gas | 12.10 | 4.99 | 4.95 | 3.00 | 8.83 | |
| Initial Zero Bias | 1.56% | 0.33% | -0.99% | 0.70% | 2.29% | |
| Final Zero Bias | 1.56% | 0.33% | -0.99% | 0.70% | 2.29% | |
| Zero Drift | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | |
| Initial Upscale Bias | 0.33% | -2.85% | -2.10% | 2.20% | 2.60% | |
| Final Upscale Bias | 0.33% | -2.85% | -2.10% | 2.20% | 2.60% | |
| Upscale Drift | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | |
| Alternative Specification Abs Diff | Initial Zero | 0.33 | 0.03 | 0.09 | -- | 0.44 |
| | Final Zero | 0.33 | 0.03 | 0.09 | -- | 0.44 |
| | Initial Upscale | 0.07 | 0.26 | 0.19 | -- | 0.50 |
| | Final Upscale | 0.07 | 0.26 | 0.19 | -- | 0.50 |
| Calibration Span | 21.10 | 9.11 | 9.05 | 10.00 | 19.20 | |
| 3% of Cal. Span (drift) | 0.63 | 0.27 | 0.27 | 0.30 | 0.58 | |
| 5% of Cal. Span (bias) | 1.06 | 0.46 | 0.45 | 0.50 | 0.96 | |

METERING SYSTEM CALIBRATION SHEET
EPA Reference Method 5
Metering System Pre-Test Calibration
Air Hygiene Asset ID: samp-cp-0012

Filename: \\SERVER2\public\Shared\QAQC\Calibrations\PM-Equipment\M-5 Consoles\Calibration Sheet v4.0\Current\{SAMP-CP-0012 Calibraton 9-30-09.xls}Original (5 point)

Make: Thermo Environmental Date: 09/30/09
 Model #: MST-C1 Barometric Pressure: 29.00 (in. Hg)
 Serial #: 90699 Theoretical Critical Vacuum: 13.68 (in. Hg)

| DRY GAS METER READINGS | | | | | | |
|-----------------------------|---------------|--------------------|------------------|------------------|------------------|-------------------|
| ΔH (in H ₂ O) | Time (min) | Volume | | | Initial Temps. | |
| | | Initial (cu ft) | Final (cu ft) | Total (cu ft) | Inlet (deg F) | Outlet (deg F) |
| 0.24 | 17.00 | 142.640 | 147.900 | 5.260 | 71.0 | 70.0 |
| 0.55 | 12.00 | 147.900 | 153.420 | 5.520 | 74.0 | 71.0 |
| 0.97 | 10.00 | 153.420 | 159.420 | 6.000 | 76.0 | 72.0 |
| 1.70 | 10.00 | 159.420 | 167.170 | 7.750 | 77.0 | 73.0 |
| 3.00 | 10.00 | 167.170 | 177.630 | 10.460 | 79.0 | 74.0 |

| Final Temps. | | Orifice Serial# (number) | K' Orifice Coefficient (see above) | Actual Vacuum (in Hg) | Ambient Temperature | | |
|------------------|-------------------|--------------------------------|--|-----------------------------|---------------------|------------------|--------------------|
| Inlet (deg F) | Outlet (deg F) | | | | Initial (deg F) | Final (deg F) | Average (deg F) |
| 74.0 | 71.0 | 40 | 0.2354 | 16.0 | 71.2 | 72.1 | 71.7 |
| 77.0 | 72.0 | 48 | 0.3491 | 16.0 | 72.3 | 72.7 | 72.5 |
| 80.0 | 73.0 | 55 | 0.4530 | 16.0 | 72.9 | 73.0 | 73.0 |
| 81.0 | 74.0 | 63 | 0.5840 | 16.0 | 73.2 | 73.6 | 73.4 |
| 83.0 | 75.0 | 73 | 0.7945 | 15.0 | 73.6 | 73.8 | 73.7 |

| RESULTS | | | | |
|---------------------|---------------------|---------------------|----------------------|-------------------|
| DRY GAS METER | | ORIFICE | | |
| VOLUME CORRECTED | VOLUME CORRECTED | VOLUME CORRECTED | VOLUME CORRECTED | VOLUME NOMINAL |
| Vm(std) (cu ft) | Vm(std) (liters) | Vcr(std) (cu ft) | Vcr(std) (liters) | Vcr (cu ft) |
| 5.066 | 143.46 | 5.033 | 142.5 | 5.231 |
| 5.300 | 150.11 | 5.265 | 149.1 | 5.480 |
| 5.749 | 162.80 | 5.691 | 161.2 | 5.928 |
| 7.425 | 210.28 | 7.333 | 207.7 | 7.646 |
| 10.026 | 283.94 | 9.973 | 282.4 | 10.405 |

| DRY GAS METER CALIBRATION FACTOR Y | | ORIFICE CALIBRATION FACTOR ΔH@ | | |
|--|-------------------|--------------------------------------|--------------------------------|------------------------------------|
| Variation (number) | Value (number) | Value (in H ₂ O) | Value (mm H ₂ O) | Variation (in H ₂ O) |
| 0.002 | 0.994 | 1.486 | 37.74 | -0.111 |
| 0.001 | 0.993 | 1.548 | 39.31 | -0.049 |
| -0.002 | 0.990 | 1.619 | 41.13 | 0.023 |
| -0.004 | 0.988 | 1.706 | 43.33 | 0.109 |
| 0.003 | 0.995 | 1.624 | 41.26 | 0.028 |
| AVERAGE: | 0.992 | 1.597 | 40.55 | PASSED |

Notes: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +/- 0.02. For Orifice Calibration Factor ΔH@, the orifice differential pressure in inches of H₂O that equates to 0.75 cfm of air at 68 °F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +/- 0.2. For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above. The Critical Orifice Coefficient, K', must be entered in English units, (ft)³*(deg R)^{0.5}/((in.Hg)*(min)).

SIGNATURE: Craig M. Carthy

DATE: 09/30/09

METERING SYSTEM CALIBRATION SHEET

EPA Reference Method 5

Metering System Post-Test Calibration

Air Hygiene Asset ID: samp-cp-0012

Filename: \\SERVER2\public\Shared\QAQC\Calibrations\PM-Equipment\M-5 Consoles\Calibration Sheet v4.0\Current\{SAMP-CP-0012 Calibraton 9-30-09.xls}11-25-09 (3 point)

Make: Thermo Environmental

Date: 11/25/09

Model #: MST-C1

Barometric Pressure: 29.06 (in. Hg)

Serial #: 90699

Theoretical Critical Vacuum: 13.71 (in. Hg)

| DRY GAS METER READINGS | | | | | | | |
|------------------------|---------------|--------------------|------------------|------------------|------------------|-------------------|--|
| -H (in H2O) | Time (min) | Volume | | | Initial Temps. | | |
| | | Initial (cu ft) | Final (cu ft) | Total (cu ft) | Inlet (deg F) | Outlet (deg F) | |
| 1.70 | 10.00 | 792.260 | 800.230 | 7.970 | 72.0 | 72.0 | |
| 1.70 | 10.00 | 800.230 | 808.160 | 7.930 | 69.0 | 71.0 | |
| 1.70 | 10.00 | 808.160 | 816.070 | 7.910 | 70.0 | 70.0 | |

| Final Temps. | | Orifice Serial# (number) | K' Orifice Coefficient (see above) | Actual Vacuum (in Hg) | Ambient Temperature | | |
|------------------|-------------------|--------------------------------|--|-----------------------------|---------------------|------------------|--------------------|
| Inlet (deg F) | Outlet (deg F) | | | | Initial (deg F) | Final (deg F) | Average (deg F) |
| 68.0 | 72.0 | 63 | 0.584 | 16.0 | 60.4 | 60.8 | 60.6 |
| 70.0 | 70.0 | 63 | 0.584 | 16.0 | 60.8 | 60.8 | 60.8 |
| 70.0 | 69.0 | 63 | 0.584 | 16.0 | 60.8 | 61.0 | 60.9 |

| RESULTS | | | | |
|---------------------|---------------------|---------------------|----------------------|-------------------|
| DRY GAS METER | | ORIFICE | | |
| VOLUME CORRECTED | VOLUME CORRECTED | VOLUME CORRECTED | VOLUME CORRECTED | VOLUME NOMINAL |
| Vm(std) (cu ft) | Vm(std) (liters) | Vcr(std) (cu ft) | Vcr(std) (liters) | Vcr (cu ft) |
| 7.727 | 218.83 | 7.438 | 210.6 | 7.554 |
| 7.703 | 218.15 | 7.437 | 210.6 | 7.555 |
| 7.687 | 217.70 | 7.436 | 210.6 | 7.556 |

| DRY GAS METER CALIBRATION FACTOR Y | | ORIFICE CALIBRATION FACTOR -H@ | | |
|--|-------------------|--------------------------------------|-------------------|-----------------------|
| Variation (number) | Value (number) | Value (in H2O) | Value (mm H2O) | Variation (in H2O) |
| -0.003 | 0.963 | 1.666 | 42.32 | -0.005 |
| 0.000 | 0.965 | 1.671 | 42.46 | 0.001 |
| 0.002 | 0.967 | 1.675 | 42.54 | 0.004 |
| AVERAGE: | 0.965 | 1.671 | 42.44 | PASSED |

| | | | | |
|-------------------|--------------|--------------|---------------|------------|
| LAST 5-PT: | 0.992 | 1.597 | PASSED | 5-PT Date: |
| % DIFF: | 2.8% | 4.7% | | 09/30/09 |

40 CFR - CHAPTER I - PART 60

Appendix A, Method 5

10.3.2 Calibration After Use

After each field use, the calibration of the metering system shall be checked by performing three calibration runs at a single, intermediate orifice setting (based on the previous field test)....Calculate the average value of the DGM calibration factor. If the value has changed by more than 5 percent, recalibrate the meter over the full range of orifice settings, as detailed in Section 10.3.1.

10.3.3 Acceptable Variation in Calibration

If the DGM coefficient values obtained before and after a test series differ by more than 5 percent, the test series shall either be voided, or calculations for the test series shall be performed using whichever meter coefficient value (i.e., before or after) gives the lower value of total sample volume.

Notes: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +/- 0.02. For Orifice Calibration Factor dH@, the orifice differential pressure in inches of H₂O that equates to 0.75 cfm of air at 68 °F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +/- 0.2. For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above. The Critical Orifice Coefficient, K', must be entered in English units, (ft)³*(deg R)^{0.5}/((in.Hg)*(min)).

SIGNATURE: _____

Craig McCarty

DATE: 11/25/09

VISIBLE EMISSIONS EVALUATOR

This is to certify that

ROB WHITE

met the specifications of Federal Reference Method 9 and qualifies as a visible emissions evaluator. Maximum deviation on white and black smoke did not exceed 7.5% opacity and no single error exceeding 15% opacity was incurred during the certification test conducted by Eastern Technical Associates of Raleigh, NC. This certificate is valid for six months from date of issue.

379435

CERT NUMBER

10/21/2009

DATE OF SCHOOL

TULSA, OK

SCHOOL LOCATION

4/22/2010

CERTIFICATION EXP DATE

WHI886376

IDENT ID NUMBER

Michael W. Jorgensen

MANAGER OF TRAINING SERVICES

EASTERN TECHNICAL ASSOCIATES

ROB WHITE

WHI886376 STUDENT ID NUMBER

met the specifications of Federal Reference Method 9 and qualifies as a visible emissions evaluator. Maximum deviation on white and black smoke did not exceed 7.5% opacity and no single error exceeding 15% opacity was incurred during the certification test conducted by Eastern Technical Associates of Raleigh, NC. This certificate is valid for six months from date of issue and expires on the date below.

Customer Support

Debbie or Sheila

919-878-3188

www.eta-is-opacity.com

| | | |
|------------------|------------------------|---------------|
| TULSA, OK | 10/21/2009 | 379435 |
| SCHOOL LOCATION | DATE OF SCHOOL | CERT NUMBER |
| TULF06 | 4/22/2010 | |
| LAST LECTURE | CERTIFICATION EXP DATE | BEARER |

APPENDIX E
FUEL ANALYSIS RECORDS

Client: Florida Power and Light
 Location: West County Energy Center
 Date: November 17, 2009
 Project #: bv-10-westcounty.fl-comp#1

Natural Gas - Fuel Analysis

Standardized to 68 deg F and 14.696 psia - EPA Standards

| Gas Component | | Mole (%) | Molecular ¹ Weight (lb/lb-mole) | Lbs Component per Lb-Mole of Gas | Wt. % of Component | Ideal Gross ^{1,3} Heating Value (Btu/ft ³) | Fuel Heat Value [HHV] (Btu/SCF) | Ideal Net ^{1,3} Heating Value (Btu/ft ³) | Fuel Heat Value [LHV] (Btu/SCF) |
|------------------|---------------------------------|----------|--|---|-----------------------|---|---------------------------------------|---|---------------------------------------|
| Methane | CH ₄ | 96.007 | 16.0430 | 15.40 | 91.43 | 994.85 | 955.12 | 895.75 | 859.99 |
| Ethane | C ₂ H ₆ | 1.879 | 30.0700 | 0.57 | 3.35 | 1,743.15 | 32.75 | 1,594.41 | 29.96 |
| Propane | C ₃ H ₈ | 0.335 | 44.0970 | 0.15 | 0.88 | 2,478.35 | 8.30 | 2,280.17 | 7.64 |
| iso-Butane | iC ₄ H ₁₀ | 0.065 | 58.1230 | 0.04 | 0.22 | 3,203.11 | 2.08 | 2,955.38 | 1.92 |
| n-Butane | nC ₄ H ₁₀ | 0.054 | 58.1230 | 0.03 | 0.19 | 3,213.35 | 1.74 | 2,965.62 | 1.60 |
| Iso-Pentane | iC ₅ H ₁₂ | 0.017 | 72.1500 | 0.01 | 0.07 | 3,940.87 | 0.67 | 3,643.50 | 0.62 |
| n-Pentane | nC ₅ H ₁₂ | 0.009 | 72.1500 | 0.01 | 0.04 | 3,948.75 | 0.36 | 3,648.32 | 0.33 |
| Hexanes | C ₆ H ₁₄ | 0.020 | 86.1770 | 0.02 | 0.10 | 4,684.54 | 0.94 | 4,337.82 | 0.87 |
| Heptanes | C ₇ H ₁₆ | 0.000 | 100.2040 | 0.00 | 0.00 | 5,419.94 | 0.00 | 5,023.77 | 0.00 |
| Octanes | C ₈ H ₁₈ | 0.000 | 114.2310 | 0.00 | 0.00 | 6,155.14 | 0.00 | 5,709.23 | 0.00 |
| Carbon Dioxide | CO ₂ | 1.087 | 44.0100 | 0.48 | 2.84 | 0.00 | 0.00 | 0.00 | 0.00 |
| Nitrogen | N ₂ | 0.527 | 28.0134 | 0.15 | 0.88 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hydrogen Sulfide | H ₂ S | 0.000 | 34.0800 | 0.00 | 0.00 | 627.54 | 0.00 | 578.00 | 0.00 |
| Oxygen | O ₂ | 0.000 | 31.9988 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Helium | He | 0.000 | 4.0026 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hydrogen | H ₂ | 0.000 | 2.0159 | 0.00 | 0.00 | 319.34 | 0.00 | 269.82 | 0.00 |
| Totals | | 100.000 | | 16.85 | 100.00 | dry | 1,001.96 | dry | 902.92 |
| | | | | | | wet ^{2,6} | 978.86 | wet ^{2,5} | 882.10 |

| Characteristics of Fuel Gas | |
|------------------------------------|------------------------|
| Molecular Weight of gas = | 16.846 lb/lb-mole |
| Btu per lb. of gas ⁴ = | 22,912.044 gross (HHV) |
| Btu per lb. of gas ¹ = | 20,647.399 net (LHV) |
| Density of fuel gas ² = | 0.0437 lb/cu. ft |
| Wt % VOC in fuel gas = | 1.50 % |
| Specific Gravity ¹ = | 0.5817 |

| Component | Wt% |
|-----------|--------|
| carbon | 73.14 |
| oxygen | 2.06 |
| hydrogen | 23.92 |
| nitrogen | 0.88 |
| helium | 0.00 |
| sulfur | 0.00 |
| Total | 100.00 |

F-Factor (SCF dry exhaust per MMBtu [HHV]) = 8,648.03
 (Based on EPA RM-19) at 68 deg F and 14.696 psia

F-Factor Calculation:

$$F\text{-Factor} = 1,000,000 * ((3.64 * \%H) + (1.53 * \%C) + (0.57 * \%S) + (0.14 * \%N) - (0.46 * \%O)) / GCV$$

GCV = Gross Btu per lb. of gas (HHV)

%H, %C, %S, %N, & %O are percent weight values calculated from fuel analysis and have units of (scf/lb)/%

Density of natural gas based on specific gravity multiplied by density of air at 68 deg F and 14.696 psia.

References:

- ¹ ASTM D 3588
- ² Civil Engineering Reference Manual, 7th ed. - Michael R. Lindeburg
- ³ Mark's Standard Handbook for Mechanical Engineers, 10th ed. - Eugene A. Avallone, Theodore Baumeister III
- ⁴ Introduction to Fluid Mechanics, 3rd ed. - William S. Janna
- ⁵ GPA Reference Bulletin 181-86, revised 1986, reprinted 1995



HOUSTON LABORATORIES
 8820 INTERCHANGE DRIVE
 HOUSTON, TEXAS 77054
 PHONE (713) 660-0901

Certificate of Analysis

Number: 1030-2009110393-005A

Albert Septlano
 Air Hygiene
 5634 S. 122nd East Ave.
 Suite F
 Tulsa OK 74146

November 24, 2009

| | | | |
|--------------------|-------------------|--------------------|-------------------------|
| Sample ID: | | Sampled By: | PS |
| Station Name : | Unit 2C NG w/o DB | Sample Of: | Gas Spot |
| Station Number : | | Sample Date: | 11/17/2009 09:00 |
| Station Location : | Tulsa, Oklahoma | Sample Conditions: | N.G. Pres. , N.G. Temp. |
| Sample Point: | Bleed Valve | PO / Ref. No: | |
| | | COC. No: | |

ANALYTICAL DATA

| Components | Mol % | Wt % | GPM at 14.696 psia | Method | Lab Tech. | Date Analyzed |
|--|-----------------|----------------|-----------------------|------------|--------------|--------------------|
| | | | | GPA-2261 M | PW | 11/23/2009 2:16:11 |
| Nitrogen | 0.527 | 0.876 | | | | |
| Carbon Dioxide | 1.087 | 2.840 | | | | |
| Methane | 96.007 | 91.420 | | | | |
| Ethane | 1.879 | 3.354 | 0.501 | | | |
| Propane | 0.335 | 0.877 | 0.092 | | | |
| Iso Butane | 0.065 | 0.224 | 0.021 | | | |
| n-Butane | 0.054 | 0.186 | 0.017 | | | |
| Iso Pentane | 0.017 | 0.073 | 0.006 | | | |
| n-Pentane | 0.009 | 0.039 | 0.003 | | | |
| Hexanes Plus | 0.020 | 0.111 | 0.009 | | | |
| | <u>100.000</u> | <u>100.000</u> | <u>0.649</u> | | | |
| | C2 + | C3 + | IC5 + | | | |
| GPM TOTAL : | 0.649 | 0.148 | 0.018 | | | |
| Relative Density | Real Gas | | | 0.5827 | | |
| Calculated Molecular Weight | | | | 16.85 | | |
| Compressibility Factor | | | | 0.9979 | | |
| Calculated Gross BTU per ft ³ @14.696 psia & 60°F | | | | | | |
| Real Gas | Dry Basis | 1019 | | | | |
| | Saturated Basis | 1002 | | | | |

Comments :

Cylinder Number 377

Hydrocarbon Laboratory Manager

Quality Assurance:

The above analyses are performed in accordance with ASTM, UOP or GPA guidelines for quality assurance, unless otherwise stated



HOUSTON LABORATORIES
 8820 INTERCHANGE DRIVE
 HOUSTON, TEXAS 77054
 PHONE (713) 660-0901

Certificate of Analysis

Number: 1030-2009110393-005A

Albert Septiano
 Air Hygiene
 5634 S. 122nd East Ave.
 Suite F
 Tulsa OK 74146

November 24, 2009

| | | | |
|------------------|-------------------|-------------------|------------------|
| Sample ID: | | Sampled By: | PS |
| Station Name: | Unit 2C NG w/o DB | Sample Of: | Gas |
| Station Number : | | Sample Date: | 11/17/2009 09:00 |
| Location: | Tulsa, Oklahoma | Sample Condition: | |
| Sample Point: | Bleed Valve | PO / Ref. No: | |

ANALYTICAL DATA

| Test | Method | Result | Unit | Detection Limit | Lab Tech. | Date Analyzed |
|--------------------|-------------|---------|---------------|-----------------|-----------|---------------|
| Total Sulfur By UV | ASTM-D-6667 | <1.0 | PPMW | 1.0 | EM | 11/24/09 |
| Total Sulfur By UV | ASTM-D-6667 | <0.0001 | Wt%. | | EM | 11/24/09 |
| Total Sulfur By UV | ASTM-D-6667 | <0.032 | gr/100 cu.ft. | | EM | 11/24/09 |

Comments: Cylinder Number: 377

Sample On: 11/17/2009 09:00

Hydrocarbon Laboratory Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP or GPA guidelines for quality assurance, unless otherwise stated.

Client: Florida Power and Light
 Location: West County Energy Center
 Date: November 17, 2009
 Project #: bv-10-westcounty.fl-comp#1

Natural Gas - Fuel Analysis

Standardized to 68 deg F and 14.696 psia - EPA Standards

| Gas Component | | Mole (%) | Molecular ¹ Weight (lb/lb-mole) | Lbs Component per Lb-Mole of Gas | Wt. % of Component | Ideal Gross ^{1,3} Heating Value (Btu/ft ³) | Fuel Heat Value [HHV] (Btu/SCF) | Ideal Net ^{1,3} Heating Value (Btu/ft ³) | Fuel Heat Value [LHV] (Btu/SCF) |
|------------------|---------------------------------|----------------|--|---|-----------------------|---|---------------------------------------|---|---------------------------------------|
| Methane | CH ₄ | 95.946 | 16.0430 | 15.39 | 91.37 | 994.85 | 954.51 | 895.75 | 859.44 |
| Ethane | C ₂ H ₆ | 1.877 | 30.0700 | 0.56 | 3.35 | 1,743.15 | 32.72 | 1,594.41 | 29.93 |
| Propane | C ₃ H ₈ | 0.331 | 44.0970 | 0.15 | 0.87 | 2,478.35 | 8.20 | 2,280.17 | 7.55 |
| iso-Butane | iC ₄ H ₁₀ | 0.059 | 58.1230 | 0.03 | 0.20 | 3,203.11 | 1.89 | 2,955.38 | 1.74 |
| n-Butane | nC ₄ H ₁₀ | 0.055 | 58.1230 | 0.03 | 0.19 | 3,213.35 | 1.77 | 2,965.62 | 1.63 |
| Iso-Pentane | iC ₅ H ₁₂ | 0.013 | 72.1500 | 0.01 | 0.06 | 3,940.87 | 0.51 | 3,643.50 | 0.47 |
| n-Pentane | nC ₅ H ₁₂ | 0.005 | 72.1500 | 0.00 | 0.02 | 3,948.75 | 0.20 | 3,648.32 | 0.18 |
| Hexanes | C ₆ H ₁₄ | 0.024 | 86.1770 | 0.02 | 0.12 | 4,684.54 | 1.12 | 4,337.82 | 1.04 |
| Heptanes | C ₇ H ₁₆ | 0.000 | 100.2040 | 0.00 | 0.00 | 5,419.94 | 0.00 | 5,023.77 | 0.00 |
| Octanes | C ₈ H ₁₈ | 0.000 | 114.2310 | 0.00 | 0.00 | 6,155.14 | 0.00 | 5,709.23 | 0.00 |
| Carbon Dioxide | CO ₂ | 1.060 | 44.0100 | 0.47 | 2.77 | 0.00 | 0.00 | 0.00 | 0.00 |
| Nitrogen | N ₂ | 0.630 | 28.0134 | 0.18 | 1.05 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hydrogen Sulfide | H ₂ S | 0.000 | 34.0800 | 0.00 | 0.00 | 627.54 | 0.00 | 578.00 | 0.00 |
| Oxygen | O ₂ | 0.000 | 31.9988 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Helium | He | 0.000 | 4.0026 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hydrogen | H ₂ | 0.000 | 2.0159 | 0.00 | 0.00 | 319.34 | 0.00 | 269.82 | 0.00 |
| Totals | | 100.000 | | 16.85 | 100.00 | dry | 1,000.93 | dry | 901.99 |
| | | | | | | wet^{2,5} | 977.85 | wet^{2,5} | 881.19 |

| Characteristics of Fuel Gas | |
|------------------------------------|------------------------|
| Molecular Weight of gas = | 16.846 lb/lb-mole |
| Btu per lb. of gas ⁴ = | 22,889.070 gross (HHV) |
| Btu per lb. of gas ⁴ = | 20,626.515 net (LHV) |
| Density of fuel gas ² = | 0.0437 lb/cu. ft |
| Wt % VOC in fuel gas = | 1.46 % |
| Specific Gravity ¹ = | 0.5816 |

| Component | Wt% |
|--------------|---------------|
| carbon | 73.04 |
| oxygen | 2.01 |
| hydrogen | 23.90 |
| nitrogen | 1.05 |
| helium | 0.00 |
| sulfur | 0.00 |
| Total | 100.00 |

F-Factor (SCF dry exhaust per MMBtu [HHV]) = 8,648.73
 (Based on EPA RM-19) at 68 deg F and 14.696 psia

F-Factor Calculation:

$$F\text{-Factor} = 1,000,000 * ((3.64 * \%H) + (1.53 * \%C) + (0.57 * \%S) + (0.14 * \%N) - (0.46 * \%O)) / GCV$$

GCV = Gross Btu per lb. of gas (HHV)

%H, %C, %S, %N, & %O are percent weight values calculated from fuel analysis and have units of (scf/lb)/%

Density of natural gas based on specific gravity multiplied by density of air at 68 deg F and 14.696 psia.

References:

- ¹ ASTM D 3588
- ² Civil Engineering Reference Manual, 7th ed. - Michael R. Lindeburg
- ³ Mark's Standard Handbook for Mechanical Engineers, 10th ed. - Eugene A. Avallone, Theodore Baumeister III
- ⁴ Introduction to Fluid Mechanics, 3rd ed. - William S. Janna
- ⁵ GPA Reference Bulletin 181-86, revised 1986, reprinted 1995



HOUSTON LABORATORIES
 8820 INTERCHANGE DRIVE
 HOUSTON, TEXAS 77054
 PHONE (713) 660-0901

Certificate of Analysis

Number: 1030-2009110393-006A

Albert Septiano
 Air Hygiene
 5634 S. 122nd East Ave.
 Suite F
 Tulsa OK 74146

November 24, 2009

Sample ID:
 Station Name : Unit 2C NG with DB
 Station Number :
 Station Location : Tulsa, Oklahoma
 Sample Point: Bleed Valve

Sampled By: PS
 Sample Of: Gas Spot
 Sample Date: 11/17/2009 14:00
 Sample Conditions: N.G. Pres., N.G. Temp.
 PO / Ref. No:
 COC. No:

ANALYTICAL DATA

| Components | Mol % | Wt % | GPM at 14.696 psia | Method | Lab Tech. | Date Analyzed |
|--|-----------------|----------------|-----------------------|------------|--------------|--------------------|
| | | | | GPA-2261 M | PW | 11/23/2009 2:34:28 |
| Nitrogen | 0.630 | 1.048 | | | | |
| Carbon Dioxide | 1.060 | 2.769 | | | | |
| Methane | 95.946 | 91.363 | | | | |
| Ethane | 1.877 | 3.350 | 0.501 | | | |
| Propane | 0.331 | 0.866 | 0.091 | | | |
| Iso Butane | 0.059 | 0.204 | 0.019 | | | |
| n-Butane | 0.055 | 0.190 | 0.017 | | | |
| Iso Pentane | 0.013 | 0.056 | 0.005 | | | |
| n-Pentane | 0.005 | 0.021 | 0.002 | | | |
| Hexanes Plus | 0.024 | 0.133 | 0.011 | | | |
| | <u>100.000</u> | <u>100.000</u> | <u>0.646</u> | | | |
| | C2 + | C3 + | IC5 + | | | |
| GPM TOTAL : | 0.646 | 0.145 | 0.018 | | | |
| Relative Density | Real Gas | | | 0.5827 | | |
| Calculated Molecular Weight | | | | 16.85 | | |
| Compressibility Factor | | | | 0.9979 | | |
| Calculated Gross BTU per ft ³ @14.696 psia & 60°F | | | | | | |
| Real Gas | Dry Basis | 1018 | | | | |
| | Saturated Basis | 1001 | | | | |

Comments :

Cylinder Number 3061

Hydrocarbon Laboratory Manager

Quality Assurance:

The above analyses are performed in accordance with ASTM, UOP or GPA guidelines for quality assurance, unless otherwise stated



HOUSTON LABORATORIES

8820 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis

Number: 1030-2009110393-006A

Albert Septiano
Air Hygiene
5634 S. 122nd East Ave.
Suite F
Tulsa OK 74146

November 24, 2009

| | | | |
|------------------|--------------------|-------------------|------------------|
| Sample ID: | | Sampled By: | PS |
| Station Name: | Unit 2C NG with DB | Sample Of: | Gas |
| Station Number : | | Sample Date: | 11/17/2009 14:00 |
| Location: | Tulsa, Oklahoma | Sample Condition: | |
| Sample Point: | Bleed Valve | PO / Ref. No: | |

ANALYTICAL DATA

| Test | Method | Result | Unit | Detection Limit | Lab Tech. | Date Analyzed |
|--------------------|-------------|---------|---------------|-----------------|-----------|---------------|
| Total Sulfur By UV | ASTM-D-6667 | <1.0 | PPMW | 1.0 | EM | 11/24/09 |
| Total Sulfur By UV | ASTM-D-6667 | <0.0001 | Wt%. | | EM | 11/24/09 |
| Total Sulfur By UV | ASTM-D-6667 | <0.032 | gr/100 cu.ft. | | EM | 11/24/09 |

Comments: Cylinder Number: 3061

Sample On: 11/17/2009 14:00

Hydrocarbon Laboratory Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP or GPA guidelines for quality assurance, unless otherwise stated.

**SAMPLE DESCRIPTION AND
CHAIN OF CUSTODY RECORD**



Air Hygiene International, Inc.
5634 S. 122nd East Ave, Suite F
Tulsa, Oklahoma 74146
(888) 461-8778
www.airhygiene.com

| Project Number: | | bv-10-westcounty.fl-comp#1 | | Laboratory Analysis Requested: | | | |
|---|---------------------------------|----------------------------|---------------|---|---------------------------------|----------------|-------------|
| Person Taking Samples: | | | Pandu Satvika | | C1 - C6 mol wt%, Sulfur Content | | |
| Cylinder Tag | Location | Date | Pressure | Analysis Method | | | |
| | | | | GPA-2261 | ASTM-D-2267 | | |
| 002882 | Unit 2B NG w/o DB, Bleed Valve | 11/13/2009 | | X | X | | |
| 002653 | Unit 2B NG with DB, Bleed Valve | 11/13/2009 | | X | X | | |
| 001191 | Unit 2A NG w/o DB, Bleed Valve | 11/15/2009 | | X | X | | |
| 000165 | Unit 2A NG with DB, Bleed Valve | 11/16/2009 | | X | X | | |
| 000377 | Unit 2C NG w/o DB, Bleed Valve | 11/17/2009 | | X | X | | |
| 003061 | Unit 2C NG with DB, Bleed Valve | 11/17/2009 | | X | X | | |
| | | | | Email results to: psattvika@airhygiene.com, jake@airhygiene.com, aseptiano@airhygiene.com Any questions, comments, concerns, please call Pandu (832-368-9297) | | | |
| Relinquished by: (Signature) <i>Pandu Satvika</i> | | Date: 11/17/09 | Time: 16:00 | Received by: (Signature) <i>Martin Cisneros</i> | | Date: 11/23/09 | Time: 12:05 |
| Relinquished by: (Signature) _____ | | Date: _____ | Time: _____ | Received by: (Signature) _____ | | Date: _____ | Time: _____ |

bv-10-westcounty.fl-comp#1-Unit2A-NH3_with_DB

APPENDIX F
STRATIFICATION TEST DATA

| Source Information | |
|--------------------|---------------------------|
| Company | Florida Power and Light |
| Plant Name | West County Energy Center |
| Equipment | Mitsubishi 501G |
| Location | Loxahatchee, Florida |

| Test Information | |
|----------------------------------|----------------------------|
| Date | 11/10/09 |
| Project # | bv-10-westcounty.fl-comp#1 |
| Unit Number | 2C |
| Load | Normal |
| Number of Ports Available | 4 |
| Number of Ports Used | 4 |

| Stack and Test Type | |
|---|---------------------------|
| <input type="radio"/> Isokinetic Traverse (Wet Chemistry Testing) <input type="radio"/> Velocity Traverse (Flow and Flow RATA Test) <input type="radio"/> Stratification Traverse (Compliance Test) <input type="checkbox"/> RM 20 <input checked="" type="radio"/> Stratification Traverse (RATA) <input type="checkbox"/> Part 60 <input checked="" type="checkbox"/> Part 75 | Circular Stack |

METHOD 1 - STRATIFICATION TEST FOR A CIRCULAR SOURCE

| | | | |
|-------------------|---------------------------|-----------------------------|----------------------------|
| Company | Florida Power and Light | Date | 11/10/09 |
| Plant Name | West County Energy Center | Project # | bv-10-westcounty.fl-comp#1 |
| Equipment | Mitsubishi 501G | # of Ports Available | 4 |
| Location | Loxahatchee, Florida | # of Ports Used | 4 |

| Circular Stack or Duct Diameter | | | |
|---------------------------------|--------------------|--------|-----------------|
| Distance to Far Wall of Stack | (L _{FW}) | 281.75 | in. |
| Distance to Near Wall of Stack | (L _{NW}) | 19.13 | in. |
| Diameter of Stack | (D) | 262.63 | in. |
| Area of Stack | (A _S) | 376.18 | ft ² |

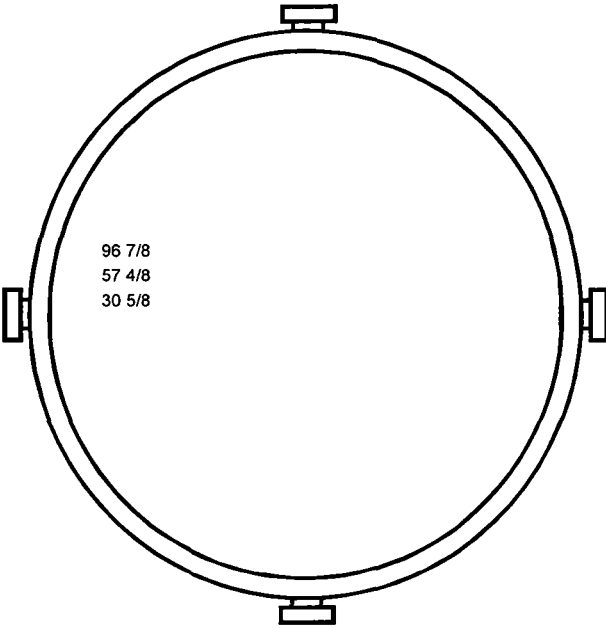
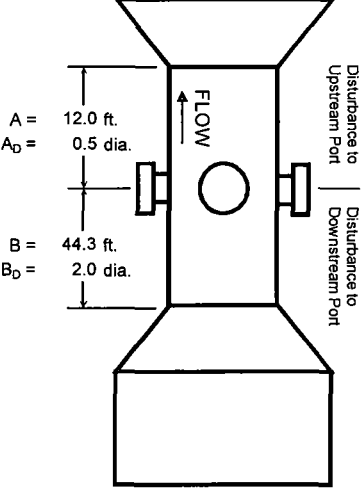
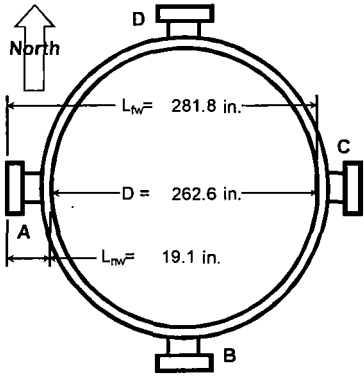
| Distance from Disturbances to Port | | | |
|------------------------------------|-------------------|--------|-----------|
| Distance Upstream | (A) | 144.00 | in. |
| Diameters Upstream | (A _D) | 0.55 | diameters |
| Distance Downstream | (B) | 531.75 | in. |
| Diameters Downstream | (B _D) | 2.02 | diameters |

| Number of Traverse Points Required | | | | | |
|------------------------------------|----------------------|--|----------------------|--|---------------|
| Diameters to Flow Disturbance | | Minimum Number of ¹ Traverse Points | | Minimum Number of Traverse Points | |
| Down (B _D) | Up (A _D) | Particulate | Velocity | Criteria | Points |
| 2.00-4.99 | 0.50-1.24 | 24 | 16 | RM 7E 8.1.2 | 12 RM1 pts |
| 5.00-5.99 | 1.25-1.49 | 20 | 16 | AK 7E 8.1.2 | 3 points |
| 6.00-6.99 | 1.50-1.74 | 16 | 12 | | |
| 7.00-7.99 | 1.75-1.99 | 12 | 12 | | |
| >= 8.00 | >= 2.00 | 8 or 12 ² | 8 or 12 ² | Minimum Number of Traverse Points | |
| Upstream Spec | | 24 | 16 | RATA Stratification | |
| Downstream Spec | | 24 | 16 | Criteria | Points |
| Traverse Pts Required | | 24 | 16 | Part75/60 | 12 RM1 pts |
| | | | | 75 abrv (a) | 3 points |
| | | | | 75 abrv (b) | 6 points |
| | | | | | 12 points |

¹ Check Minimum Number of Points for the Upstream and Downstream conditions, then use the largest.
² 8 for Circular Stacks 12 to 24 inches
 12 for Circular Stacks over 24 inches

| Number of Traverse Points Used | | | | |
|--------------------------------|----------|----|------------|-------------------------|
| 4 | Ports by | 3 | Pts / port | Stratification Traverse |
| 12 | Pts Used | 12 | Required | (RATA) |

| Traverse Point Locations | | | |
|--------------------------|---------------------------|---------------------------|-------------------------------------|
| Traverse Point Number | Percent of Stack Diameter | Distance from Inside Wall | Distance Including Reference Length |
| | % | in. | in. |
| 1 | 4.4% | 11 4/8 | 30 5/8 |
| 2 | 14.6% | 38 3/8 | 57 4/8 |
| 3 | 29.6% | 77 6/8 | 96 7/8 |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |
| 16 | | | |
| 17 | | | |
| 18 | | | |
| 19 | | | |
| 20 | | | |
| 21 | | | |
| 22 | | | |
| 23 | | | |
| 24 | | | |



STRATIFICATION TRAVERSE (RATA) RESULTS

| | | | |
|-------------------|---------------------------|-----------------------------|----------------------------|
| Company | Florida Power and Light | Date | 11/10/09 |
| Plant Name | West County Energy Center | Project # | bv-10-westcounty.fl-comp#1 |
| Equipment | Mitsubishi 501G | # of Ports Available | 4 |
| Location | Loxahatchee, Florida | # of Ports Used | 4 |

| Stack Dimensions | | | | Traverse Data | | | |
|------------------------------------|-------------------|--------|-----------------|------------------|-----------------|----------------|-------------------|
| Diameter or Length of Stack | (D) | 262.63 | in. | 4 | Ports by | 3 | Pts / port |
| Width of Stack | (W) | | in. | 12 | Pts Used | 12 | Required |
| Area of Stack | (A _s) | 376.18 | ft ² | Run Start | 10:39:06 | Run End | 11:18:06 |

| Traverse Point | Time Per Point | Point Start Time | Point Stop Time (Reading) | O ₂ | Percent Difference | NOx | Percent Difference |
|----------------|----------------|------------------|---------------------------|----------------|--------------------|------|--------------------|
| | min. | hh:mm:ss | hh:mm:ss | % | % | ppm | % |
| D-3 | 3.00 | 10:39:06 | 10:42:06 | 12.63 | 0.08% | 2.16 | 2.65% |
| D-2 | 3.00 | 10:42:06 | 10:45:06 | 12.60 | 0.16% | 2.17 | 3.13% |
| D-1 | 3.00 | 10:45:06 | 10:48:06 | 12.59 | 0.24% | 2.07 | 1.62% |
| C-3 | 4.00 | 10:48:06 | 10:52:06 | 12.61 | 0.08% | 2.14 | 1.70% |
| C-2 | 3.00 | 10:52:06 | 10:55:06 | 12.60 | 0.16% | 1.97 | 6.38% |
| C-1 | 3.00 | 10:55:06 | 10:58:06 | 12.71 | 0.71% | 1.99 | 5.43% |
| B-3 | 4.00 | 10:58:06 | 11:02:06 | 12.62 | 0.00% | 2.03 | 3.52% |
| B-2 | 3.00 | 11:02:06 | 11:05:06 | 12.63 | 0.08% | 1.90 | 9.70% |
| B-1 | 3.00 | 11:05:06 | 11:08:06 | 12.61 | 0.08% | 1.94 | 7.80% |
| A-3 | 4.00 | 11:08:06 | 11:12:06 | 12.63 | 0.08% | 2.31 | 9.78% |
| A-2 | 3.00 | 11:12:06 | 11:15:06 | 12.61 | 0.08% | 2.30 | 9.31% |
| A-1 | 3.00 | 11:15:06 | 11:18:06 | 12.60 | 0.16% | 2.27 | 7.88% |
| Average | | | | 12.62 | | 2.10 | |

RATA SAMPLE POINTS FOR CIRCULAR STACK

| | | | |
|-------------------|---------------------------|-----------------------------|----------------------------|
| Company | Florida Power and Light | Date | 11/10/09 |
| Plant Name | West County Energy Center | Project # | bv-10-westcounty.fl-comp#1 |
| Equipment | Mitsubishi 501G | # of Ports Available | 4 |
| Location | Loxahatchee, Florida | # of Ports Used | 4 |

| Stack Dimensions | | | | Traverse Data | | | |
|-----------------------------|-------------------|--------|-----------------|---------------|----------|---------|------------|
| Diameter or Length of Stack | (D) | 262.63 | in. | 4 | Ports by | 3 | Pts / port |
| Width of Stack | (W) | | in. | 12 | Pts Used | 12 | Required |
| Area of Stack | (A _s) | 376.18 | ft ² | Run Start | 10:39:06 | Run End | 11:18:06 |

| 40 CFR 75 Criteria | | | | | | | | | | | | | | |
|--|---|---|---------------------------|---------------------------|-------------------------------------|-----------|---|---|--|---|--|--|---|--|
| Stratification Results | | Traverse Point Number | Percent of Stack Diameter | Distance from Inside Wall | Distance Including Reference Length | | | | | | | | | |
| Maximum Percent Difference | 9.78 % for NOx | | | | | | | | | | | | | |
| Maximum Pollutant Conc. Diff. | 0.21 ppm for NOx | | | | | | | | | | | | | |
| Maximum Diluent Conc. Diff. | 0.09 % for O2 | | | | | | | | | | | | | |
| Stack Diameter | 262.63 in. | | % | in. | in. | | | | | | | | | |
| Stratification Conclusions | | 1 | >14.99% | >39.37 | >58.495 | | | | | | | | | |
| Maximum % Diff. | Percent Diff. ≤10% Passed 6.5.6.3(a) Criteria | 2 | | | | | | | | | | | | |
| Maximum Conc. Diff. | Conc. Diff. ≤ 0.3% Passed 6.5.6.3(b) Criteria | 3 | | | | | | | | | | | | |
| Stack Diameter | D > 93.6 in. | | | | | | | | | | | | | |
| Passed Strat. Test Under 6.5.6.3(b) Criteria | | <table border="0"> <tr> <td>Test Type</td> <td><input type="checkbox"/> Moisture, for MW</td> <td><input type="checkbox"/> Use 6.5.6.3(a) points?</td> </tr> <tr> <td></td> <td><input type="checkbox"/> Moisture, for wet-to-dry</td> <td><input type="checkbox"/> 6.5.6(b)(2) alt. points could apply</td> </tr> <tr> <td></td> <td><input checked="" type="checkbox"/> Gas</td> <td></td> </tr> </table> | | | | Test Type | <input type="checkbox"/> Moisture, for MW | <input type="checkbox"/> Use 6.5.6.3(a) points? | | <input type="checkbox"/> Moisture, for wet-to-dry | <input type="checkbox"/> 6.5.6(b)(2) alt. points could apply | | <input checked="" type="checkbox"/> Gas | |
| Test Type | <input type="checkbox"/> Moisture, for MW | <input type="checkbox"/> Use 6.5.6.3(a) points? | | | | | | | | | | | | |
| | <input type="checkbox"/> Moisture, for wet-to-dry | <input type="checkbox"/> 6.5.6(b)(2) alt. points could apply | | | | | | | | | | | | |
| | <input checked="" type="checkbox"/> Gas | | | | | | | | | | | | | |

