Response to Letter of Deficiency-DE 13-265

Request for Documentation: Please provide detail on the sources of fuel, including corresponding percentages, utilized by the Pinetree Power – Fitchburg(PPF) facility.

Response: Attachment 1 is the fuel tracking spread sheet that is used at PPF. You can see that in September of 2012, PPF ceased using paper fuel cubes as a fuel source. Prior to eliminating paper fuel, it constituted 22% to 25% of PPF's total fuel. Subsequently, the paper fuel equipment and associated fuel delivery system has been removed from the facility. Also attached is the 2013 compliance and RATA tests.

In October of 2012, PPF's contract with Waste Management to purchase landfill gas(LFG) expired. Waste Management chose not to renew the contract and the LFG compressors and associated delivery piping has been removed. PPF currently does not have the capability to burn LFG. LFG constituted 2% to 3% of the total fuel.

You can see that 2013 indicates no LFG or paper fuel usage. It is PPF's intention to not use these fuels in the future.

PPF's current fuel source is and will remain 100% sustainable Biomass wood fuel excluding start ups, shut downs and rare occasions when natural gas is needed for boiler and emissions stabilization. Expectations will be that natural gas will constitute less that 1% of total fuel.

PPF has employed North Country Procurement since 1994 to ensure fuel quality consistent with clean biomass standards. Fuel quality is monitored at the plant as well as periodic inspections at various sites.

Two facts that support that PPF's wood supply is harvested in a sustainable manner:

1) In Massachusetts, where 95% of PPF's supply comes from, the Commonwealth as a whole is harvesting 25% of what is grown in any given year. With growth exceeding removals by a factor of 4, the overall harvest in the State could be doubled or tripled and still be considered sustainable.

2) Greater than 80% of PPF's wood supply comes from forestry operations (the remainder is land clearing wood or tree surgeon wood). A forester employed by the State of Massachusetts must approve a "Chapter 132 Cutting Plan" before any harvest of wood on a forestry job in the Commonwealth. Thus the State must approve a plan on how the wood is to be cut, ensuring that harvests are dealt with in a sustainable manner.

As part of MassDEP ACOP-CE-13-7002-NT, Pinetree Power Fitchburg will be reviewing and submitting an application for a revised Operating Permit. The submittal is due June 30th, 2014. A draft OP has already been issued and is being reviewed by MassDEP and PPF. The new permit will include changes to the fuel used, indicative of quality requirements associated with sustainable biomass fuel.

Attachment 1 – Fuel tracking spreadsheet –see below

Attachment 2 – Fitchburg Compliance Emissions Test Program 2013 Fitchburg Compliance 2013 rev1 RM073013

Attachment 3 – Emissions Spreadsheet Emissions Spreadsheet example

Attachment 4 - Fitchburg Diagnostic Emissions Test Report Fitchburg Dia June 2013 rev1 RM073013

Attachment 5 – DEP 2013 3rd Quarter Emissions Report DEP 3rd 2013 qtr emission report.pdf

Attachment 1 – PPF Fuel Tracking Spreadsheet

2012	wood	gas	paper	total	daily avg.
	Real Tons	*Equivalent Tons*	*Equivalent Tons*	*Fuel as Tons of Wood*	*eq. Tons*
January	16,064	726	4,969	21,759	701.90
February	13,544	558	4,050	18,152	625.93
March	15,317	584	4,871	20,773	670.08
April	14,050	521	4,372	18,944	632.34
May	13,447	479	3,682	17,607	567.98
June	14,709	588	4,620	19,918	663.93
July	12,825	586	4,071	17,482	563.93
August	15,152	626	4,960	20,737	668.95
September	16,174	600	433	17,206	573.54
October	10,615	399	0	11,014	354.80
November	0	0	0	0	0.00
December	2,068	0	0	2,068	66.70
Totals	143,964	5,668	36,027	185,660	507.51

2013	wood	gas	paper	total	daily avg.
	Real Tons	*Equivalent Tons*	*Equivalent Tons*	*Fuel as Tons of Wood*	*eq. Tons*
January	5,730	0	0	5,730	184.83
February	10,418	0	0	10,418	359.24
March	11,420	0	0	11,420	368.39
April	1,508	0	0	1,508	50.32
May	1,042	0	0	1,042	33.61
June	3,975	0	0	3,975	132.51
July	16,174	0	0	16,174	521.75
August	18,847	0	0	18,847	607.96
September	17,838	0	0	17,838	594.61
October	20,095	0	0	20,095	647.36
November	11,496	0	0	11,496	383.20
December	0	0	0	0	0.00
Totals	118,543	0	0	118,543	323.65

AFFIDAVIT

STATE OF CONNECTICUT) ss. Glastonbury

COUNTY OF HARTFORD

Eric A. DeBarba, being duly sworn, deposes and states that:

1. I am over the age of eighteen and understand the obligation of making a statement under oath.

2. I am Director of New England Origination for Pinetree Power-Fitchburg, Inc.

3. I am familiar with the supplemental information that Pinetree Power-Fitchburg, Inc. is filing with the State of New Hampshire Public Utilities Commission ("NHPUC") in response to the NHPUC's Letter of Deficiency dated November 6, 2013 with respect to Docket no. DE 13-265 in connection with its Application for Renewable Energy Source Eligibility for its facility located in Westminster, Massachusetts (the "Supplemental Information").

4. I hereby attest to the accuracy of the Supplemental Information submitted by me as preparer on behalf of Pinetree Power-Fitchburg, Inc.

IN WITNESS THEREOF, the undersigned has executed and delivered this affidavit as of the date written below.

Date: November 25, 2013

Eric DeBarba

Eric A. DeBarba
Director—New England Origination
Pinetree Power-Fitchburg, Inc.

Subscribed and sworn to before me
this 25th day of November, 2013.

Susan B. White

Susan B. White
Notary Public
My commission expires: August 31, 2016

CEMServices

360 Old Colony Road, Suite 1
Norton, MA 02766
508-226-6700

PINETREE POWER FITCHBURG, LP
WESTMINSTER, MASSACHUSETTS
COMPLIANCE EMISSIONS TEST PROGRAM

JUNE 2013

Source Designation:
Pinetree Power Fitchburg LP
Wood Fired Boiler
2 Rowtier Dr.
Westminster, Massachusetts 01473

Concerning:
Emission Testing for
Particulate Matter and VOC's

Prepared for:
Pinetree Power Fitchburg LP
Wood Fired Boiler
2 Rowtier Dr.
Westminster, Massachusetts 01473

Prepared by:
CEMServices Inc.
360 Old Colony Road
Norton, Massachusetts 02766

All information contained in this report is true and accurate to the best of my knowledge.

Robert Arnold
Sr. Project Director, QSTI

8/1/2013
Date

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I. Laboratory Analysis
J. Fuel Analysis
K. Field Data Sheets
L. Calibration Gas Certificates of Analysis
M. Facility Data Sheet
N. Reference Method Equipment Calibration Sheets
O. Definition of Abbreviations

1. INTRODUCTION

CEMServices of Norton, Massachusetts was retained by Pinetree Power Fitchburg, LP (Pinetree) to conduct a Particulate Emission Test Program at their power station located in Westminster, Massachusetts. The objective of the testing was to demonstrate the status of the wood fired boiler's with respect to their Air Quality Operating Permit. The boiler currently is only firing wood chips. The emission testing program was performed in accordance with the Test Protocol dated May 13, 2013 and approved by the Department on June 18, 2013.

Table 1-1 indicates the air constituents / pollutants tested, and the test methodologies used during the emissions test program, and the emission limits for any applicable pollutants.

TABLE 1-1
POLLUTANTS, TEST METHODOLOGIES, AND EMISSION LIMITS

CONSTITUENTS	TEST METHODS	EMISSION LIMIT
Volumetric Flow	EPA Method 1 & 2	N/A
Oxygen\Carbon Dioxide	EPA Method 3A	N/A
Moisture	EPA Method 4	N/A
Filterable Particulate Matter	EPA Method 5	0.016 #/MMBtu 4.16 #/hr
Total Hydrocarbons/Non-Methane	EPA Method 25A/18	0.03 #/MMBtu 7.8 #/hr
PM 2.5/10	EPA Method 201A/202	N/A

Three runs were performed for compliance determination. One of the three test runs for filterable particulate matter compliance run was conducted during a soot blow cycle and the average was prorated average based on soot blow run times. All Reference Method LB/MMBtu emission rates were calculated using the actual fuel factor (Fd) derived from the laboratory analysis from a composite wood sample taken from grab samples collected during the each testing.

Operations test data collected included: Fuel input rate, furnace temperature, baghouse inlet temperature, baghouse pressure drop, opacity, facility CEM Data, heat input and megawatts. Additionally, the DCS performance log was printed out for each run.

The test program took place June 24-27, 2013. Robert Arnold of CEMServices was the Project Director for this test Program. Jim Jardin, Chris Parrot, and Mike Dadmun also of CEMServices assisted him. Mr. Michael Buckman was responsible for process operations during testing. Mr. Buckman is also the facility contact and can be reached at:

Mr. Michael Buckman
Pinetree Power Fitchburg LP
2 Rowtier Dr
Westminster, Massachusetts 01473
(508) 874-2966 x2

2. SUMMARY OF RESULTS

TABLE 2-1
COMPLIANCE TEST RESULTS

Run		1	2	3	Average	Permit Limit	Result
PM 2.5 Filterable	LB/MMBtu	0.0056	0.0068	0.0051	**0.0058**	N/A	N/A
	LB/HR	1.28	1.49	1.08	**1.28**	N/A	N/A
PM10 Filterable	LB/MMBtu	0.0056	0.0063	0.0047	**0.0055**	N/A	N/A
	LB/HR	1.26	1.37	0.99	**1.21**	N/A	N/A
PM 2.5/10 Total Filterable	LB/MMBtu	0.0112	0.0131	0.0098	**0.0114**	N/A	N/A
	LB/HR	2.54	2.86	2.07	**2.49**	N/A	N/A
Condensable PM (CPM)	LB/MMBtu	0.0052	0.0047	0.0046	**0.0048**	N/A	N/A
	LB/HR	1.17	1.02	0.97	**1.05**	N/A	N/A
PM 2.5/10/CPM Total	LB/MMBtu	0.0164	0.0178	0.0144	**0.00162**	N/A	N/A
	LB/HR	3.71	3.88	3.04	**3.54**	N/A	N/A
Non Methane VOC	PPM	13.46	4.02	5.61	**7.70**	N/A	N/A
	LB/MMBtu	0.009	0.003	0.004	**0.005**	0.03	**PASS**
	LB/HR	2.10	0.63	0.87	**1.20**	7.8	**PASS**

TABLE 2-2
COMPLIANCE TEST RESULTS - PM FILTERABLE

Run		1	2	3SB*	Average	Permit Limit	Result
PM Filterable	LB/MMBtu	0.010	0.012	0.013	**0.012**	0.016	**PASS**
	LB/HR	3.50	4.17	4.45	**4.04**	4.16	**PASS**

*-Run 3 was a soot-blow run.

3. FACILITY DESCRIPTION

3.1 General

Pinetree Power Fitchburg LP, located in Westminster, Massachusetts consists of a wood fired boiler with a maximum design capacity of 260 MMBTU/hour which uses wood chips as its primary fuel. The boiler drives a steam turbine generator with a nominal output of approximately 16 megawatts net electricity. At this time the boiler is only firing wood chips (and natural gas for startup).

Wood fuel is introduced into the boiler through three pneumatic wood fuel distributors. The wood is partially burned in suspension on a Harrington grate provided by Detroit Stoker. Multiple levels of overfire air are injected into the combustion section to ensure the complete burn.

Particulate emissions generated from the source are controlled by a dry mechanical dust collector and a positive pressure air filter system (baghouse). NOx is controlled by the use of Selective Non-catalytic Reduction technology with urea injection. Although rarely used, SO2 can be controlled by a manually operated sodium bicarbonate injection that is located upstream of the baghouse.

Exhaust gases exiting the boiler are directed through a 75-inch inside diameter exhaust stack standing 180 feet above grade. The CEM probes and EPA RM test ports are located approximately 130 feet above grade

3.2 Test Location

The stack that services the wood-fired boiler at Pinetree has an internal diameter of 6.25 feet at the port height (130 feet). There are two sampling ports, 6 inches in diameter and ninety degrees apart. The distance from the nearest downstream disturbance (taper) to the sampling ports is 20 feet. The distance from the ports to the nearest upstream disturbance (stack exit) is 50 feet. Figure 3-1 is a schematic of the sampling location.

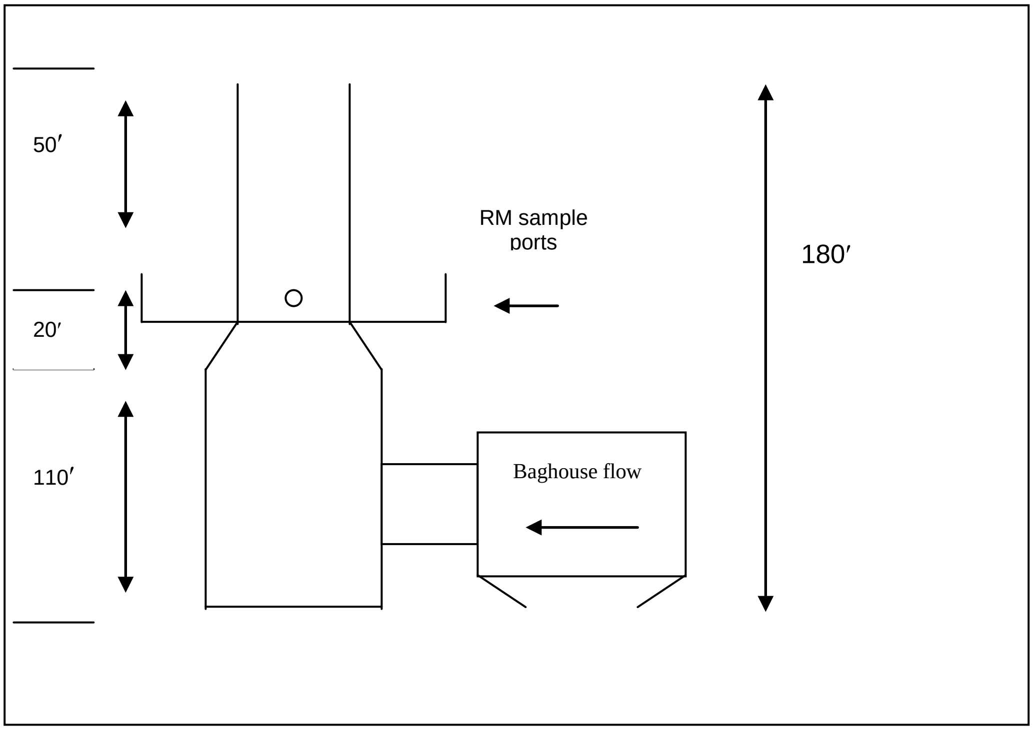

Figure not drawn to scale

FIGURE 3-1
TEST LOCATION

3.3 Plant Entry and Safety Policies

Pinetree requires all visitors to check in with the control room before walking about the plant. Most areas of the plant require a hard hat. Safety glasses and steel toe boots are also encouraged.

4. REFERENCE METHOD TEST PROCEDURES

4.1 Velocity Traverse - EPA Test Method 1

Method 1 procedures delineate velocity traverses for stationary sources. As described in Section 3, the stack internal diameter at the port location is 6.25 feet. The ports are 20 feet or 3.2 diameters from the nearest downstream disturbance, and 50 feet or 8 diameters from the nearest upstream disturbance.

Based upon EPA Method 1 criteria, a total of twenty four (24) traverse points (12 per port) were used for volumetric flowrate determinations and isokenectic sampling traverses for PM determination. The probe was marked according to the measurements in Table 4-1. For PM 10/2.5 testing, the probe was placed at a total of twelve (12) traverse points, 6 per port, during the constant rate sampling. This probe was marked according to the measurements in Tables 4-2.

TABLE 4-1
PARTICULATE AND VELOCITY TRAVERSE POINT LOCATIONS

Traverse Point	Distance (% Diameter)	Distance from Wall (inches)
1	2.1	1.6
2	6.7	5.0
3	11.8	8.9
4	17.7	13.3
5	25.0	18.8
6	35.6	26.7
7	64.4	48.3
8	75.0	56.3
9	82.3	61.7
10	88.2	66.2
11	93.3	70.0
12	97.9	73.4

TABLE 4-2
PM2.5/PM10 TRAVERSE POINT LOCATIONS

Traverse Point #	Distance (% Diameter)	Distance from Wall (inches)
1	4.4	3.3
2	14.6	11.0
3	29.6	22.2
4	70.4	52.8
5	85.4	64.1
6	95.6	71.7

4.2 Volumetric Flow Rate - EPA Test Method 2

Method 2 was used for the determination of stack gas velocity and volumetric flow rate. Before the velocity traverse was started, a leak check was conducted on the pitots, and the manometer was leveled. The pitots were connected to a manometer using 1/8 inch ID Tygon tubing. These connections were checked for leaks prior to the initiation of testing, and at the conclusion of the day. The velocity head and stack gas temperatures were recorded for each of the required sampling points. Simultaneous gas density (Method 3A) and stack gas moisture content (Method 4) testing was conducted during every test run.

4.3 Moisture Content - EPA Test Method 4

Method 4 is used for the determination of moisture content in stack gas. This method consists of extracting a known volume of gas sample and quantifying the removed moisture portion of this sample. Moisture content was determined from each corresponding test run.

Before each test run the impingers used to remove condensate from the gas were prepared according to each specific method. Impingers were loaded according to each method. The sampling train was then assembled and the sampling probe heated. The train was checked for leaks by plugging the sample inlet and challenging the train with a vacuum of 15 inches of Hg. All leak rates were below 0.02 CFM. The initial meter volume was recorded and the probe was positioned at the first traverse point. Sampling was conducted isokinetically for each run when required. At the completion of each test run the final meter volume was recorded and another leak check was conducted. The impingers were recovered and their final volumes recorded.

4.4 Particulate Matter - EPA Test Method 5

This method is used for the determination of particulate emissions from stationary sources. It is used in conjunction with Methods 1,2, and 4. Particulate matter is drawn isokinetically from the source and collected onto a glass fiber filter.

Before each test run the impingers used to remove condensate from the gas were prepared. A total of four impingers were loaded according to the method. The remainder of the sample train is assembled by inserting a desiccated tared filter into the glass filter holder. The filter holder is then placed into the hot box and the sample probe and nozzle are attached. The hot box and sample probe were heated to approximately 250 °F. Prior the start of each run a leak check was performed from the end of the nozzle at a vacuum of 15 inches of mercury.

The run was then initiated and isokinetic sampling took place. The entire stack was traversed according to the sample points specified in Method 1. 2.5 minute readings were taken during the one-hour test run for the 24 traverse points that were required. At the conclusion of the test a post leak check was conducted at the highest vacuum obtained during the run and the sample train was move to the cleanup site where it was recovered in strict accordance with Method 5 Sample Recovery Procedures as follows:

Container #1. The filter was carefully removed from the filter holder and placed in its identified petri dish container.

Container #2. Taking care to see that dust on the outside of the probe or other exterior surfaces did not get into the sample, particulate matter from the nozzle, probe liner and front half of the filter holder were quantitatively recovered by washing these components with acetone into a glass or Nalgene container. The inside of each component was brushed and rinsed until the acetone rinse showed no visible particles, after which a final rinse of the inside surface was performed.

4.5 PM2.5 / PM10 / CPM – EPA Method 201A / 202

This method is used for the determination of PM10 and condensable particulate emissions from stationary sources. Particulate matter is drawn isokinetically from the source and collected through a cyclone onto a glass fiber filter. Particulate that makes it to the filter is considered the PM10 portion of the total sample. Sample rates and dwell times were calculated using PM10 / PM2.5 Software for Windows obtained from Apex Instruments. The test series consisted of three (3) – two (2) hour test runs.

The condensable particulate matter (CPM) is collected in a Method 23 type condenser, dry impingers and a CPM filter between the second and third impingers after the filterable PM has been collected. Before each test run the impingers used to remove condensate from the gas were prepared. A total of four impingers were used according to the method. Two cyclone sizing devices were placed in series (PM2.5 first then PM10) onto an in stack filter holder containing a desiccated tared filter. Prior the start of each run a leak check was performed from the end of the nozzle at a vacuum of 15 inches of mercury.

The run was then initiated and isokinetic sampling at a constant rate took place. The entire stack was traversed according to the sample points specified in Method 201A. Dwell time was established for each point during the two-hour test run. At the conclusion of the test, the sizing devices were removed and a post leak check was conducted at the highest vacuum obtained during the run. If no water was collected before the CPM filter then the purge was skipped. Otherwise the impinger train was purged with zero-grade nitrogen gas for 1 hour following the leak check as described in Section 8.5.3 of U.S. EPA Method 202, to purge dissolved SO2 gas from the impinger solutions. The purge was started within 10 minutes of completing the run, typically at the recovery lab. The nitrogen purge line was connected to a clean particle and activated carbon filters attached to the impinger train inlet to minimize potential particle or vapor contamination.

The sample train was then moved to the cleanup site where it was recovered in strict accordance with Method 201A Sample Recovery Procedures as follows:

Container #1. The filter was carefully removed from the filter holder and placed in it's identified petri dish container.

Container #2 and #3. Taking care to see that dust on the outside of the cyclone heads or other exterior surfaces did not get into the sample, particulate matter from the heads (PM2.5 & PM10) was quantitatively recovered by rinsing these components with acetone into a separate glass or Nalgene container. The inside of each component was brushed and rinsed until the acetone rinse showed no visible particles, after which a final rinse of the inside surface was performed. All gravimetric analysis was conducted in accordance with Test Method 201A.

Container #4 (CPM container #1): The contents of the dropout and backup impingers prior to the CPM filter were quantitatively recovered into this container. All sampling train components including the back half of the filterable PM filter holder, the probe extension, condenser, each impinger and the connecting glassware, and the front half of the CPM filter housing was rinsed twice with water. This was added to CPM Container #1.

Container #5 (CPM container #2, organic rinse): Following the water rinse, all sampling train components including the back half of the filterable PM filter holder, the probe extension, condenser, each impinger and the connecting glassware, and the front half of the CPM filter housing were rinsed with acetone and placed in CPM container #2. This was followed by two rinses of hexane into the same container (CPM #2).

Container #6 (CPM container #3 filter).
Container #7 (CPM container #4 cold impinger water).
Container #8 (CPM container #5 sigel)
Container #9 (CPM container #6 acetone field blank)
Container #10 (CPM container #7 water field blank)
Container #11 (CPM container #8 hexane field blank)
Container #12 (CPM container #9 field train proof blank inorganic)
Container #13 (CPM container #10 field train proof blank inorganic)

4.6 Nitrogen Oxides and CEMS Calibration Procedures - EPA Test Method 7E

Method 7E is used for the determination of Nitrogen Oxides emissions from stationary sources using instrumental analyzer procedures. In addition, all calibration procedures and requirements for the other instrumentation methods used (Method 3A) are specified in this method.

Before any testing was conducted, the calibration span of all test analyzers was set up so that expected source emissions were at least twenty (20) percent of this span and would not exceed this span. Once this span was determined, calibration gases were chosen within this span. Only gases prepared according to EPA Protocol G1/G2 were used. Certificates of analysis for all gases were provided on-site at the time of testing. Analyzer calibration error checks were then conducted by challenging each analyzer with a zero, mid, and high gas.

The actual value of the high gas used was the calibration span of each analyzer. Analyzer responses to these gases were within two (2) percent of the instrument's span or within 0.5 PPM of the gas value. Before and after each test run a sampling system bias check was conducted on each monitor.

This check consisted of introducing the calibration gases at the sampling probe thus allowing the gases to travel through the entire sampling system including any filters. The analyzer responses to this check were then recorded by the data acquisition system. All system bias check responses were within five (5) percent of the instruments span or within 0.5 PPM, when compared to the analyzer calibration error check conducted initially.

The sampling system bias check conducted prior to each test run was compared to the sampling system bias check conducted at the completion of that same run.

Differences between the two bias checks constitute the upscale and zero calibration drifts. All calculated calibration drifts were below three (3) percent of the span of the analyzer or within 0.5 PPM.

Once the initial system bias check was conducted the system was put into the sample mode and data acquisition was initiated. The probe was positioned at the first traverse point. The heated probe was 5/8" stainless steel tube that was traversed at 16.7%, 50.0%, and 83.3% of the stack diameter (6.5 ft). Table 4-3 shows the CEM traverse point locations.

TABLE 4-3
PS 2 CEM TRAVERSE POINT LOCATIONS

Traverse Point	Distance (% Diameter)	Distance from Wall
1	16.7	12.5 "
2	50.0	37.5 "
3	83.3	62.5 "

A STRATA data shuttle documented voltage output from each monitor. This instrument sends all signals via a RS-232 cable to a computer for data archiving. Data points were logged every two (2) seconds during each test run. At the test run completion, data was transferred to a spreadsheet for determination of the raw run average. This data is included in the appendices. Results from the initial and final system bias checks were used to adjust the raw run average to correct it for any deviations due to the system bias.

4.7 Oxygen and Carbon Dioxide - EPA Test Method 3A

Method 3A is used for the determination of Oxygen and Carbon Dioxide emissions from stationary sources using instrumental analyzer procedures. All calibration procedures and requirements for this instrumentation method are identical to those found in EPA Test Method 7E.

O2 and CO2 content in the effluent was determined by a California Analytical Instruments monitor. For the O2, the instrument utilizes a micro-fuel cell that consumes O2 from the atmosphere surrounding the measurement probe. The consumption of O2 generates a proportional electrical current. This current is then amplified and provides a signal output of 0-1 V DC which corresponds to a full-scale range of 0-25 % O2.

For the CO2, a non-dispersive infrared detector is used to continuously measure the concentration in the effluent. The theory of operation for this portion of the analyzer is based on the principle that CO2 has a unique absorption line spectrum in the infrared region.

The instrument consists of an infrared light source, a chopper, a measurement cell, and a detector. The infrared light beam emitted by the source passes through the measuring cell, which is filled with a continuously flowing gas sample. The light beam is partially absorbed or attenuated by the gas species of interest in this cell before reaching the front chamber of the detector.

Both the front and rear chambers of the sealed detector are filled with a reference gas. The difference in the amount of light absorbed between the front and rear chambers are dependent of the concentration of the gas species of interest within the sample measurement cell. A pressure differential is thus created between the two chambers. This pressure difference is then observed as gas flow by the micro-flow sensor located in a channel connecting the two chambers.

The resulting AC signal from the micro-flow sensor is rectified, amplified, and linearized into a DC voltage signal for output. An interference response check was conducted on the O2 and CO2 analyzers prior to testing.

4.8 Volatile Organic Compounds (VOC) Total –EPA Test Method 25A

Method 25A is used for the measurement of volatile organic compounds (VOC) concentrations using flame ionization detection (FID). A Vig Industries FID is the analyzer that was used for compliance determinations of VOC's. For this method a gas sample is continuously extracted from the source through a heated (approx. 250o F) Teflon sample line to the FID. During each Method 25A test run an integrated bag sample was taken from the bypass of the FID. This sample was analyzed for Methane within 48 hours if the total VOC is over the emission limit.

During FID sampling, CH molecules in the sample are introduced in the burner socket through the burner tip and into a hydrogen flame. The thermal energy (caused by combustion of hydrogen) cracks the CH molecules into C and H atoms. In the hot zone the C atoms loose a certain number of electrons and now become C ions with a positive charge.

The negative electrical field created by a negative charge imposed on the collector (which supplies an excess of negative electrons) influences the positive charged C ions which are drifting towards the collector and absorb a number of electrons thus neutralizing the positive C ions.

This neutralization causes a change in the current between the electrodes and is directed through a high impedance amplifier which is connected to a meter type readout. The neutralized C atoms combine with the O2 (from the combustion source) to form CO2. The hydrogen introduced to form the flame combusts into water vapor. Prior to testing the sample train was assembled by connecting one end of the probe to the sample line and the other to the FID. The train will then be leak checked.

The FID was calibrated and the responses to a zero and three other methane calibration gases within the range of the instrument are recorded onto a data sheet. A sampling system bias check was required and was conducted by introducing the bias check standard directly into the flame ionization analyzer (FIA) and then through the entire sampling system, excluding the probe. If the results agree within 5%, the bias check is acceptable; otherwise the test data (since the last valid bias check) is invalid. Once sampling is initiated, the signal from the FID is sent to the data logger and computer. Data was archived at 2-second intervals during each test run.

5. REFERENCE METHOD TEST EQUIPMENT

5.1 Modified Method 5 Sampling Trains

All modified Method 5 testing, described in Section 4 was conducted using a sample trains manufactured by Nutech.

Meter Boxes - The meter boxes used in this program were the Nutech Model 2010 - Isokinetic Stack Samplers. These boxes consist of a leak-free sample pump, a dry gas meter, a vacuum gauge, and a temperature readout. Thermocouples are mounted on the inlet and outlet of the dry gas meter to provide meter temperatures during testing.

Umbilicals - The umbilicals used in this program consisted of a sample line, pitot lines, and thermocouple lines. These lines transported sample from the impingers to the meter box, indicated pressure difference at the pitots to the meter box, and carried temperature signals from the stack to the temperature readout in the meter box.

Condenser System - This system consisted of glass or Teflon impingers placed in series and in an ice bath. The number of impingers, impinger content, and impinger type varied depending on which test method was being performed.

Probe - The probe assembly consisted of a set of "S" type pitots, a stack thermocouple, and a stainless steel sheath with a heated stainless steel liner.

Particulate Filter - This in-stack filter is a Labyrinth Systems 5 micron sintered stainless steel design.

5.2 Mobile CEM Laboratory

All reference test methods described in Section 4 were conducted using the CEMServices mobile CEM laboratory. This laboratory consists of all analyzers and support equipment used to conduct the CEM sampling during this test program. The following is a description of each item that makes up the entire system:

Sample Probe - A seven foot heated stainless steel probe was used for this test program. The probe has a filter at the end of it to remove particulate matter. The other end contains a heated three-way "flood chamber" allowing either sample or calibration gas to flow to the sample line.

Particulate Filter - This in-stack filter is a Labyrinth Systems 5 micron sintered stainless steel design.

Calibration Valve Assembly - This assembly consists of a Hoke three-way stainless steel valve mounted inside the mobile test lab. The assembly is capable of blocking sample flow and introducing calibration gas into the system. This assembly along with the “flood chamber” ensures that calibrations are performed under the same conditions as sampling.

Heated Sample Line - The heated sample line is two hundred (200) feet long and transports the gas sample from the CEM probe to the moisture removal system and FID in the Mobile Lab. A resistor box that allows you to set the temperature can control the heater in this line. This line was set to 250 degrees F. A heater jumper in the Mobile Lab transported a slip stream sample form the heated line to the FID prior to the moisture removal system.

Moisture Removal System - This system continuously removes moisture from the sample gas while maintaining minimal contact between the condensate and the sample gas. CEMServices uses an electronically cooled condenser consisting of two (2) Teflon heat exchangers which are continuously drained of condensate by two (2) peristaltic pumps. The inlet to the system is connected to the heated sample line and the outlet was connected to the sample pump.

Sample Pump - A dual headed diaphragm pump was used to transport the gas sample through the system to the sample gas manifold. Air Dimension manufactures this pump and all parts coming into contact with the gas stream are either Teflon or stainless steel.

Sample Gas Manifold - This manifold consists of a series of valves and adjustable rotameters capable of setting and maintaining the desired backpressure and flow rate to the analyzers during both sampling and calibration.

Sample Gas Analyzers - CEMServices used the following analyzers to complete this test program:

TABLE 5-1
REFERENCE METHOD ANALYZERS

Gas	Manufacturer	Model	Span
O_2	California Analytical	100	0-22.8%
CO_2	California Analytical	100	0-19.85 %
VOC	Vig Industries	55	0-110 PPM as Methane

Data Recorder - All voltage outputs from the analyzers are sent to a Strawberry Tree Data Shuttle. This shuttle logged data at two-second intervals. Data from the shuttle is sent to a computer where a Strawberry Tree data acquisition program lists instantaneous concentration values for each parameter. At the conclusion of each run, one-minute averages are printed out and a calibration is initiated through the program. The calibration data is used to correct the raw averages for system bias and drift.

5.3 Calibration Gases

All calibration gases used in this test program were prepared according to EPA Protocol G1/G2. As per EPA Test Method 7E for all O2 and CO2 testing, the high level calibration gas was the span of the analyzer. All mid calibration gas values were between 40-60 % of the span of the analyzer (or value of the high level gas), and all low (or zero) calibration gas values were between 0-20 % of the span of the analyzer (or value of the high level gas) using pre-purified nitrogen.

Below is a list of the gases to be used in this test program:

TABLE 5-2
REFERENCE METHOD CALIBRATION GASES

MONITOR SPAN	ALLOWABLE GAS VALUES	CAL POINT	ACTUAL VALUE	CYLINDER #	EXPIRATION DATE
O2 0-22.8%	0.0-4.6 9.1-13.7 22.8	Low Mid High	0.0 11.45 22.8	C118864 CC110145 CC84988	- 5-29-2021 9-19-2020
CO2 0-19.85 %	0.0-4.0 7.9-11.9 19.85	Low Mid High	0.0 9.91 19.85	C118864 CC110145 CC84988	- 5-29-2021 9-19-2020
VOC 0-110 PPM	0 27.5-38.5 49.5-60.5 88-99	Zero Low Mid High	0.0 29.6 55.2 91.3	CC118864 CC134734 SG9153990 CC20164	- 5-31-2015 9-28-2014 10-27-2013

6. QUALITY CONTROL PROCEDURES

6.1 General

Throughout all phases of this test program strict attention was given to all testing to provide the highest quality of results possible. All of CEMServices test equipment is of the highest quality available and undergoes routine maintenance to ensure top operating condition. This includes meter boxes, thermocouples, barometers, pitot tubes and sampling nozzles.

Meter boxes are calibrated over a full range of flow rates against certified orifices every six months. After each field use the meter box is given a calibration check against an orifice at the average flow rates and highest vacuums experienced in the field. Thermocouples are calibrated as specified in the EPA Handbook against NBS traceable mercury in glass thermometer. Pitot tubes are visually inspected for conformance to the dimensional specified in EPA Method 2.

Sampling was conducted by trained personnel with extensive experience in CEM sampling. All analyzers are tested for interference of other gas compounds at least once every six months. In addition, a converter efficiency check is performed on the NOx analyzer to ensure the proper conversion of NO2 to NO.

All sampling and analysis was conducted in strict accordance with EPA test procedures (where available). The quality control procedures found in the EPA Quality Assurance Handbook for Air Pollution Measurement Systems was adhered to as well.

Analyzer calibrations were performed at the beginning of each test day. System calibrations were performed before and after each test run through the entire sampling system. All calculations were conducted in strict accordance with the equations found in the individual Methods. Calculations were conducted on a computer and the input data was checked by a person other than the original calculator to ensure that it is correct.

The entire staff of CEMServices is thoroughly familiar with all test methods used in this program and has extensive experience in source emission monitoring.

Appendix A

THC EMISSION RATE CALCULATION

FACILTY:	Pinetree Fitchburg		RUN ID#:	VOC 1
UNIT:	Stack		START:	08:20
DATE:	6-27-13		END:	09:20

Cgas PPMwv	=	10.69	Cgas % CO_2	=	13.00
Cgas PPMdv	=	13.46	Cgas % O_2	=	7.05
M.W. CH_4	=	16.04	FUEL FACTOR(Fd)	=	11022
BWO %	=	20.6%	Qs DSCFH	=	3755628

Cd = Cgas X (M.W. / 385.6) / 1000000	=	5.60E-07	LBS/SCF
E = Cd X FUEL FACTOR X(20.9/(20.9-%O2))	=	0.009	LBS/MMBTU
PMR = CD X QS DSCFH	=	2.10	LBS/HR

THC EMISSION RATE CALCULATION

FACILTY:	Pinetree Fitchburg	RUN ID#:	VOC 2
UNIT:	Stack	START:	09:26
DATE:	6-27-13	END:	10:26

Cgas PPMwv	=	3.19	Cgas % CO2	=	12.24
Cgas PPMdv	=	4.02	Cgas % O2	=	7.91
M.W. CH4	=	16.04	FUEL FACTOR(Fd)	=	11022
BWO %	=	20.6%	Qs DSCFH	=	3755628

Cd = Cgas X (M.W. / 385.6) / 1000000	=	1.67E-07	LBS/SCF
E = Cd X FUEL FACTOR X(20.9/(20.9-%O2))	=	0.003	LBS/MMBTU
PMR = CD X QS DSCFH	=	0.63	LBS/HR

THC EMISSION RATE CALCULATION

FACILTY:	Pinetree Fitchburg	RUN ID#:	VOC 3
UNIT:	Stack	START:	09:48
DATE:	6-27-13	END:	10:48

Cgas PPMwv	=	4.47	Cgas % CO2	=	12.19
Cgas PPMdv	=	5.61	Cgas % O2	=	7.97
M.W. CH4	=	16.04	FUEL FACTOR(Fd)	=	11022
BWO %	=	20.3%	Qs DSCFH	=	3744749

Cd = Cgas X (M.W. / 385.6) / 1000000	=	2.33E-07	LBS/SCF
E = Cd X FUEL FACTOR X(20.9/(20.9-%O2))	=	0.004	LBS/MMBTU
PMR = CD X QS DSCFH	=	0.87	LBS/HR

Appendix B

VELOCITY TRAVERSE DATA AND PARTICULATE EMISSION CALCULATIONS

FACILITY:	PINETREE FITCHBURG							RUN ID# :	Run 1
UNIT :	WOOD FIRED BOILER							START TIME:	08:25
								END TIME:	09:35
DATE :	6-26-13	TRAV PT	DELTA P	SQ ROOT	DELTA H	DGM IN		DGM OUT	STACK TEMP
Ds (FT)	6.25	B1	0.90	0.95	1.80	93		93	362
As (SQFT)	30.68	2	0.94	0.97	1.88	94		94	366
Y =	1.0171	3	1.00	1.00	2.00	94		94	368
PIT COEFF	0.84	4	1.00	1.00	2.00	94		94	368
Dn (IN)	0.250	5	1.00	1.00	2.00	94		94	369
An (SQFT)	0.00034	6	0.95	0.97	1.90	94		94	369
IMP-1 (INT)	100	7	0.84	0.92	1.68	94		94	370
IMP-2 (INT)	100	8	0.95	0.97	1.90	95		95	369
IMP-3 (INT)	0	9	0.93	0.96	1.86	96		96	368
IMP-4 (INT)	550	10	0.83	0.91	1.66	96		96	367
IMP-1 (FIN)	254	11	0.73	0.85	1.46	96		96	360
IMP-2 (FIN)	159	12	0.70	0.84	1.40	96		96	354
IMP-3 (FIN)	11	A1	0.78	0.88	1.56	96		96	347
IMP-4 (FIN)	561.0	2	0.82	0.91	1.64	97		97	358
% CO2 (OUT)	12.80	3	1.05	1.02	2.10	97		97	365
% O2 (OUT)	7.27	4	1.05	1.02	2.10	97		97	370
% CO (OUT)	0.02	5	1.00	1.00	2.00	97		97	370
% N2 (OUT)	79.91	6	0.90	0.95	1.80	97		97	371
		7	0.92	0.96	1.84	97		97	371
		8	0.96	0.98	1.92	97		97	370
P BAR	29.78	9	0.95	0.97	1.90	96		96	369
PSTK	-0.67	10	0.92	0.96	1.84	96		96	369
FINAL METER	470.048	11	0.88	0.94	1.76	97		97	366
INT METER	424.583	12	0.65	0.81	1.30	97		97	361
MID CHECK	0.000	AVG:	0.90	0.95	1.80	95.7		95.7	365.7
VM (CF)	45.465	TS ('R)=		825.7	DELTA H (ABS)		=		29.91
RUN TIME	60	TM ('F)=		95.7	PS (ABS)		=		29.73
F-FACTOR	11022	TM ('R)=		555.7	VI (TOT)		=		235.0

SAMPLE	FILTER	BEAKER	SAMPLE	FILTER	BEAKER
NUMBER	3590	21	NUMBER	3593	30
FINAL WT.	0.3545	49.6213	FINAL WT.	0.3376	66.8444
TARE WT.	0.3429	49.6145	TARE WT.	0.3377	66.8442
NET WT.	0.0116	0.0068	NET WT.	-0.0001	0.0002

SAMPLE BEAKER VOLUME 60 ml — BLANK BEAKER VOLUME 100 ml
TOTAL SAMPLE GAIN 18.40 mg — ACETONE RESIDUE 0.12 mg
TOTAL SAMPLE GAIN LESS ACETONE RESIDUE (Mn) = 18.28 mg

VM STD	=	17.64 (VM) (Y) (DELTA H ABS) / (TM)	=	43.91	DSCF
VW STD	=	.04707 (VI TOT)	=	11.06	CF
BWO	=	(VW STD)/(VW STD)+(VM STD)	=	0.201	
Md (DRY)	=	.44(%CO2)+.32(%O2)+.28(%CO)+.28(%N2)	=	30.34	LBS/MOLE
Ms (WET)	=	Md(1-BWO)+18(BWO)	=	27.86	LBS/MOLE
G	=	SQRT (TS / PS / MS)	=	1.00	
VS	=	85.49(CP)(G)(SQRT DELTA P)	=	67.98	FPS
H	=	0.002669 (VI TOT)	=	0.63	
J	=	(DELTA H ABS) (VM) (Y) / (TM)	=	2.49	
K	=	(H) + (J)	=	3.12	
% ISO	=	((TS)(K)(1.667))/ ((TIME)(VS)(PS)(AN))	=	103.8	%
Qs	=	3600(1-BWO)(VS)(AS)(17.64)(PS)/(TS)	=	3809386	DSCFH
CS	=	(2.205x10-6) (MN) / (VM STD)	=	9.18E-07	LBS/SCF
CS'	=	.0154 (MN) / (VM STD)	=	0.00641	GRAINS/SCF
CS'@7%O2	=	CS' * (20.9-7) / (20.9 - O2)	=	0.00654	GRAINS/SCF
CS'@12%CO2	=	CS' * (12 / % CO2)	=	0.00601	GRAINS/SCF
PMR	=	CS X Qs	=	3.50	LBS/HR
E	=	CS x FUEL FACTOR X(20.9/(20.9-%O2))	=	0.010	LBS/MMBTU

VELOCITY TRAVERSE DATA AND PARTICULATE EMISSION CALCULATIONS

FACILITY:	PINETREE FITCHBURG	RUN ID# :	Run 2
UNIT :	WOOD FIRED BOILER	START TIME:	09:55
		END TIME:	10:57

DATE :	6-26-13	TRAV PT	DELTA P	SQ ROOT	DELTA H	DGM IN	DGM OUT	STACK TEMP
Ds (FT)	6.25	A1	0.92	0.96	1.84	96	96	373
As (SQFT)	30.68	2	0.95	0.97	1.90	97	97	374
Y =	1.0171	3	1.00	1.00	2.00	97	97	376
PIT COEFF	0.84	4	1.05	1.02	2.10	98	98	377
Dn (IN)	0.250	5	1.05	1.02	2.10	98	98	377
An (SQFT)	0.00034	6	0.80	0.89	1.60	98	98	377
IMP-1 (INT)	100	7	0.75	0.87	1.50	97	97	377
IMP-2 (INT)	100	8	1.10	1.05	2.20	97	97	377
IMP-3 (INT)	0	9	1.00	1.00	2.00	97	97	375
IMP-4 (INT)	550	10	0.92	0.96	1.84	98	98	375
IMP-1 (FIN)	264	11	0.95	0.97	1.90	98	98	375
IMP-2 (FIN)	167	12	0.83	0.91	1.66	98	98	371
IMP-3 (FIN)	16	B1	0.93	0.96	1.86	97	97	370
IMP-4 (FIN)	565.8	2	0.94	0.97	1.88	97	97	371
% CO2 (OUT)	13.48	3	0.98	0.99	1.96	98	98	375
% O2 (OUT)	6.63	4	1.05	1.02	2.10	97	97	377
% CO (OUT)	0.04	5	1.00	1.00	2.00	97	97	378
% N2 (OUT)	79.85	6	1.00	1.00	2.00	97	97	378
		7	0.91	0.95	1.82	97	97	378
		8	0.90	0.95	1.80	97	97	378
P BAR	29.78	9	0.94	0.97	1.88	97	97	379
PSTK	-0.65	10	0.93	0.96	1.86	97	97	373
FINAL METER	519.358	11	0.88	0.94	1.76	97	97	374
INT METER	471.500	12	0.81	0.90	1.62	97	97	370
MID CHECK	0.000	AVG:	0.94	0.97	1.88	97.3	97.3	375.2
VM (CF)	47.858	TS ('R)=		835.2	DELTA H (ABS)	=		29.92
RUN TIME	60	TM ('F)=		97.3	PS (ABS)	=		29.73
F-FACTOR	11022	TM ('R)=		557.3	VI (TOT)	=		262.8

SAMPLE	FILTER	BEAKER	SAMPLE	FILTER	BEAKER
NUMBER	3591	22	NUMBER	3593	30
FINAL WT.	0.3571	60.2763	FINAL WT.	0.3376	66.8444
TARE WT.	0.3432	60.2673	TARE WT.	0.3377	66.8442
NET WT.	0.0139	0.0090	NET WT.	-0.0001	0.0002

SAMPLE BEAKER VOLUME	60 ml	BLANK BEAKER VOLUME	100 ml
TOTAL SAMPLE GAIN	22.90 mg	ACETONE RESIDUE	0.12 mg
TOTAL SAMPLE GAIN LESS ACETONE RESIDUE (Mn)		=	22.78 mg

VM STD	=	17.64 (VM) (Y) (DELTA H ABS) / (TM)	=	46.10	DSCF
VW STD	=	.04707 (VI TOT)	=	12.37	CF
BWO	=	(VW STD)/(VW STD)+(VM STD)	=	0.212	
Md (DRY)	=	.44(%CO2)+.32(%O2)+.28(%CO)+.28(%N2)	=	30.42	LBS/MOLE
Ms (WET)	=	Md(1-BWO)+18(BWO)	=	27.79	LBS/MOLE
G	=	SQRT (TS / PS / MS)	=	1.01	
VS	=	85.49(CP)(G)(SQRT DELTA P)	=	69.97	FPS
H	=	0.002669 (VI TOT)	=	0.70	
J	=	(DELTA H ABS) (VM) (Y) / (TM)	=	2.61	
K	=	(H) + (J)	=	3.31	
% ISO	=	((TS)(K)(1.667))/ ((TIME)(VS)(PS)(AN))	=	108.5	%
Qs	=	3600(1-BWO)(VS)(AS)(17.64)(PS)/(TS)	=	3826163	DSCFH
CS	=	(2.205x10-6) (MN) / (VM STD)	=	1.09E-06	LBS/SCF
CS'	=	.0154 (MN) / (VM STD)	=	0.00761	GRAINS/SCF
CS'@7%O2	=	CS' * (20.9-7) / (20.9 - O2)	=	0.00741	GRAINS/SCF
CS'@12%CO2	=	CS' * (12 / % CO2)	=	0.00677	GRAINS/SCF
PMR	=	CS X Qs	=	4.17	LBS/HR
E	=	CS x FUEL FACTOR X(20.9/(20.9-%O2))	=	0.012	LBS/MMBTU

VELOCITY TRAVERSE DATA AND PARTICULATE EMISSION CALCULATIONS

FACILITY:	PINETREE FITCHBURG	RUN ID# :	Run 3 SB
UNIT :	WOOD FIRED BOILER	START TIME:	11:20
		END TIME:	11:22

DATE :	6-26-13	TRAV PT	DELTA P	SQ ROOT	DELTA H	DGM IN	DGM OUT	STACK TEMP
Ds (FT)	6.25	A1	0.92	0.96	1.84	95	95	370
As (SQFT)	30.68	2	0.95	0.97	1.90	96	96	373
Y =	1.0171	3	0.98	0.99	1.96	97	97	382
PIT COEFF	0.84	4	0.95	0.97	1.90	98	98	383
Dn (IN)	0.250	5	0.93	0.96	1.86	98	98	383
An (SQFT)	0.00034	6	0.94	0.97	1.88	99	99	385
IMP-1 (INT)	100	7	0.80	0.89	1.60	99	99	386
IMP-2 (INT)	100	8	0.88	0.94	1.76	100	100	385
IMP-3 (INT)	0	9	0.93	0.96	1.86	100	100	384
IMP-4 (INT)	550	10	0.90	0.95	1.80	99	99	384
IMP-1 (FIN)	278	11	0.84	0.92	1.68	99	99	382
IMP-2 (FIN)	163	12	0.70	0.84	1.40	99	99	376
IMP-3 (FIN)	13	B1	0.97	0.98	1.94	99	99	382
IMP-4 (FIN)	565.3	2	0.97	0.98	1.94	99	99	380
% CO2 (OUT)	14.03	3	0.95	0.97	1.90	99	99	385
% O2 (OUT)	6.14	4	1.00	1.00	2.00	99	99	383
% CO (OUT)	0.08	5	1.05	1.02	2.10	99	99	369
% N2 (OUT)	79.75	6	1.05	1.02	2.10	99	99	368
		7	1.00	1.00	2.00	98	98	368
		8	1.05	1.02	2.10	97	97	365
P BAR	29.78	9	1.00	1.00	2.00	97	97	366
PSTK	-0.69	10	0.96	0.98	1.92	97	97	367
FINAL METER	568.422	11	0.92	0.96	1.84	97	97	367
INT METER	520.700	12	0.82	0.91	1.64	97	97	365
MID CHECK	0.000	AVG:	0.94	0.97	1.87	98.2	98.2	376.6
VM (CF)	47.722	TS ('R)=		836.6	DELTA H (ABS) =			29.92
RUN TIME	60	TM ('F)=		98.2	PS (ABS) =			29.73
F-FACTOR	11022	TM ('R)=		558.2	VI (TOT) =			269.3

SAMPLE	FILTER	BEAKER	SAMPLE	FILTER	BEAKER	
NUMBER	3592	23	NUMBER	3593	30	
FINAL WT.	0.3629	64.4695	FINAL WT.	0.3376	66.8444	
TARE WT.	0.3419	64.4558	TARE WT.	0.3377	66.8442	
NET WT.	0.0210	0.0137	NET WT.	-0.0001	0.0002	
SAMPLE BEAKER VOLUME		70 ml	BLANK BEAKER VOLUME		100	ml
TOTAL SAMPLE GAIN		34.70 mg	ACETONE RESIDUE		0.14	mg
TOTAL SAMPLE GAIN LESS ACETONE RESIDUE (Mn)				=	34.56	mg

VM STD	=	17.64 (VM) (Y) (DELTA H ABS) / (TM)	=	45.89	DSCF
VW STD	=	.04707 (VI TOT)	=	12.68	CF
BWO	=	(VW STD)/(VW STD)+(VM STD)	=	0.216	
Md (DRY)	=	.44(%CO2)+.32(%O2)+.28(%CO)+.28(%N2)	=	30.49	LBS/MOLE
Ms (WET)	=	Md(1-BWO)+18(BWO)	=	27.79	LBS/MOLE
G	=	SQRT (TS / PS / MS)	=	1.01	
VS	=	85.49(CP)(G)(SQRT DELTA P)	=	69.84	FPS
H	=	0.002669 (VI TOT)	=	0.72	
J	=	(DELTA H ABS) (VM) (Y) / (TM)	=	2.60	
K	=	(H) + (J)	=	3.32	
% ISO	=	((TS)(K)(1.667))/ ((TIME)(VS)(PS)(AN))	=	109.0	%
Qs	=	3600(1-BWO)(VS)(AS)(17.64)(PS)/(TS)	=	3788846	DSCFH
CS	=	(2.205x10-6) (MN) / (VM STD)	=	1.66E-06	LBS/SCF
CS'	=	.0154 (MN) / (VM STD)	=	0.01160	GRAINS/SCF
CS'@7%O2	=	CS' * (20.9-7) / (20.9 - O2)	=	0.01092	GRAINS/SCF
CS'@12%CO2	=	CS' * (12 / % CO2)	=	0.00992	GRAINS/SCF
PMR	=	CS X Qs	=	6.29	LBS/HR
E	=	CS x FUEL FACTOR X(20.9/(20.9-%O2))	=	0.018	LBS/MMBTU

Pinetree Power Fitchburg

PRORATED SOOT BLOW PARTICULATE RESULTS

LB/MMBTU

SOOTBLOW CALCULATION:

E = (E(SB) X ((A+B)XS) / AXR)) + (E(NOSB) X ((R-S/R) - (BXS/AXR)))

E = LB/MMBTU of particulate	
E(SB) = average E of sample(s) containing blowing	0.018
E(NOSB) = average E of sample(s)with no sootblowing	0.011
A = hours sootblowing during sample(s) containing sootblowing	0.42
B = hours not sootblowing during sample(s) containing sootblowing	1.58
R = average hours of operation per 24 hours	24
S = average hours of soot blowing per 24 hours	1.26
E = (overall sootblow prorated average for all runs)	**0.013**

RYEGATE POWER STATION
PRORATED SOOT BLOW PARTICULATE RESULTS
LB/HR

SOOTBLOW CALCULATION:

E = (E(SB) X ((A+B)XS) / AXR)) + (E(NOSB) X ((R-S/R) - (BXS/AXR)))

E = LB/HR of particulate	
E(SB) = average E of sample(s) containing blowing	6.29
E(NOSB) = average E of sample(s)with no sootblowing	3.83
A = hours sootblowing during sample(s) containing sootblowing	0.42
B = hours not sootblowing during sample(s) containing sootblowing	1.58
R = average hours of operation per 24 hours	24
S = average hours of soot blowing per 24 hours	1.26
E = (overall sootblow prorated average for all runs)	**4.45**

Appendix C

VELOCITY TRAVERSE DATA AND PM2.5 EMISSION CALCULATIONS

FACILITY: Pinetree Fitchburg
UNIT : Wood Fired Boiler
DATE : 6/26/2013

RUN ID# : 1
START TIME: 13:30
END TIME: 15:36

		TRAV PT	DELTA P	SQ ROOT	DELTA H	DGM IN	DGM OUT	STACK TEMP
Ds (FT)	6.25							
As (SQFT)	30.68							
Y =	1.017	A1	1.10	1.05	0.34	96	96	371
PIT COEFF	0.77	2	1.15	1.07	0.34	96	96	370
Dn (IN)	0.166	3	1.15	1.07	0.34	98	98	376
An (SQFT)	0.00015	4	1.00	1.00	0.34	98	98	376
IMP-1 (INT)	0	5	1.00	1.00	0.34	98	98	377
IMP-2 (INT)	0	6	0.90	0.95	0.34	99	99	376
IMP-3 (INT)	100	B1	1.00	1.00	0.34	99	99	374
IMP-4 (INT)	550	2	1.10	1.05	0.34	98	98	373
IMP-1 (FIN)	185	3	1.50	1.22	0.34	99	99	372
IMP-2 (FIN)	1	4	1.10	1.05	0.34	99	99	367
IMP-3 (FIN)	113	5	1.00	1.00	0.34	98	98	365
IMP-4 (FIN)	565.0	6	0.95	0.97	0.34	98	98	364
% CO2 (OUT)	13.01							
% O2 (OUT)	7.02							
% CO (OUT)	0.04							
% N2 (OUT)	79.93							
F-FACTOR	11022							
P BAR	29.78							
PSTK	-0.68							
FINAL METER	607.770							
INT METER	568.700	AVG:	1.08	1.04	0.34	98.00	98.00	371.75
MID LEAK CK	0.000	TS ('R)=		831.8	DELTA H (ABS) =			29.81
VM (CF)	39.070	TM ('F)=		98.0	PS (ABS) =			29.73
RUN TIME	120.00	TM ('R)=		558.0	VI (TOT) =			214.0

SAMPLE PARTICULATE WEIGHT (mg)	FILTER	BEAKER	BLANK RESIDUE	VOL SAMPLE (ml)	VOL BLANK (ml)	VOL CORR. RESIDUE
	4.2	1.7	0.20	60	100	0.12

TOTAL SAMPLE GAIN LESS ACETONE RESIDUE (Mn)			=	5.78	mg
VM STD	=	17.64 (VM) (Y) (DELTA H ABS) / (TM)	=	37.44	DSCF
VW STD	=		=	10.07	CF
BWO	=		=	0.212	
Md (DRY)	=	.44(%CO2)+.32(%O2)+.28(%CO)+.28(%N2)	=	30.36	LBS/MOLE
Ms (WET)	=		=	27.74	LBS/MOLE
G	=		=	1.00	
VS	=		=	68.53	FPS
H	=		=	0.57	
J	=	(DELTA H ABS) (VM) (Y) / (TM)	=	2.12	
K	=		=	2.69	
% ISO	=	((TS)(K)(1.667))/ ((TIME)(VS)(PS)(AN))	=	101.6	%
Qs	=	3600(1-BWO)(VS)(AS)(17.64)(PS)/(TS)	=	3760348	DSCFH
CS	=	(2.205x10-6) (MN) / (VM STD)	=	3.40E-07	LBS/SCF
CS'	=	.0154 (MN) / (VM STD)	=	0.00238	GRAINS/SCF
CS'@7%O2	=	CS' * (20.9-7) / (20.9 - O2)	=	0.00238	GRAINS/SCF
CS'@12%CO2	=	CS' * (12 / % CO2)	=	0.00219	GRAINS/SCF
PMR	=	CS X Qs	=	1.28	LBS/HR
E	=	CS x FUEL FACTOR X(20.9/(20.9-%O2))	=	0.0056	LBS/MMBTU

VELOCITY TRAVERSE DATA AND PM2.5 EMISSION CALCULATIONS

FACILITY:	Pinetree Fitchburg	RUN ID# :	2
UNIT :	Wood Fired Boiler	START TIME:	08:20
DATE :	6/27/2013	END TIME:	10:24

Ds (FT)	6.25
As (SQFT)	30.68
Y =	1.017
PIT COEFF	0.77
Dn (IN)	0.166
An (SQFT)	0.00015
IMP-1 (INT)	0
IMP-2 (INT)	0
IMP-3 (INT)	100
IMP-4 (INT)	550
IMP-1 (FIN)	194
IMP-2 (FIN)	0
IMP-3 (FIN)	102
IMP-4 (FIN)	559.9
% CO2 (OUT)	12.62
% O2 (OUT)	7.48
% CO (OUT)	0.00
% N2 (OUT)	79.90
F-FACTOR	11022
P BAR	29.80
PSTK	-0.72

TRAV PT	DELTA P	SQ ROOT	DELTA H	DGM IN	DGM OUT	STACK TEMP
A1	1.10	1.05	0.35	91	91	355
2	1.15	1.07	0.35	95	95	366
3	1.15	1.07	0.35	98	98	369
4	1.00	1.00	0.35	101	101	370
5	1.00	1.00	0.35	102	102	370
6	1.00	1.00	0.35	104	104	366
B1	0.95	0.97	0.35	107	107	365
2	0.95	0.97	0.35	108	108	366
3	1.10	1.05	0.35	109	109	366
4	1.15	1.07	0.35	110	110	365
5	1.10	1.05	0.35	112	112	365
6	0.95	0.97	0.35	113	113	362
AVG:	1.05	1.02	0.35	104.17	104.17	365.42

FINAL METER	647.790				
INT METER	608.400				
MID LEAK CK	0.000	TS ('R)=	825.4	DELTA H (ABS) =	29.83
VM (CF)	39.390	TM ('F)=	104.2	PS (ABS) =	29.75
RUN TIME	120.00	TM ('R)=	564.2	VI (TOT) =	205.9

SAMPLE PARTICULATE WEIGHT (mg)	FILTER	BEAKER	BLANK RESIDUE	VOL SAMPLE (ml)	VOL BLANK (ml)	VOL CORR. RESIDUE
	4.3	2.6	0.30	60	100	0.18

TOTAL SAMPLE GAIN LESS ACETONE RESIDUE (Mn)			=	6.72	mg
VM STD	=	17.64 (VM) (Y) (DELTA H ABS) / (TM)	=	37.36	DSCF
VW STD	=		=	9.69	CF
BWO	=		=	0.206	
Md (DRY)	=	.44(%CO2)+.32(%O2)+.28(%CO)+.28(%N2)	=	30.32	LBS/MOLE
Ms (WET)	=		=	27.78	LBS/MOLE
G	=		=	1.00	
VS	=		=	67.36	FPS
H	=		=	0.55	
J	=	(DELTA H ABS) (VM) (Y) / (TM)	=	2.12	
K	=		=	2.67	
% ISO	=	((TS)(K)(1.667))/ ((TIME)(VS)(PS)(AN))	=	101.6	%
Qs	=	3600(1-BWO)(VS)(AS)(17.64)(PS)/(TS)	=	3755628	DSCFH
CS	=	(2.205x10-6) (MN) / (VM STD)	=	3.97E-07	LBS/SCF
CS'	=	.0154 (MN) / (VM STD)	=	0.00277	GRAINS/SCF
CS'@7%O2	=	CS' * (20.9-7) / (20.9 - O2)	=	0.00287	GRAINS/SCF
CS'@12%CO2	=	CS' * (12 / % CO2)	=	0.00263	GRAINS/SCF
PMR	=	CS X Qs	=	1.49	LBS/HR
E	=	CS x FUEL FACTOR X(20.9/(20.9-%O2))	=	0.0068	LBS/MMBTU

VELOCITY TRAVERSE DATA AND PM2.5 EMISSION CALCULATIONS

FACILITY:	Pinetree Fitchburg	RUN ID# :	3
UNIT :	Wood Fired Boiler	START TIME:	10:50
DATE :	6/27/2013	END TIME:	12:52

		TRAV PT	DELTA P	SQ ROOT	DELTA H	DGM IN	DGM OUT	STACK TEMP
Ds (FT)	6.25							
As (SQFT)	30.68							
Y =	1.017	B1	0.90	0.95	0.35	112	112	360
PIT COEFF	0.77	2	1.00	1.00	0.35	112	112	360
Dn (IN)	0.166	3	1.15	1.07	0.35	111	111	358
An (SQFT)	0.00015	4	1.15	1.07	0.35	112	112	358
IMP-1 (INT)	0	5	1.00	1.00	0.35	112	112	358
IMP-2 (INT)	0	6	0.95	0.97	0.35	113	113	358
IMP-3 (INT)	100	A1	0.95	0.97	0.35	113	113	355
IMP-4 (INT)	550	2	1.05	1.02	0.35	114	114	357
IMP-1 (FIN)	177	3	1.15	1.07	0.35	114	114	358
IMP-2 (FIN)	2	4	1.15	1.07	0.35	115	115	356
IMP-3 (FIN)	108	5	1.00	1.00	0.35	117	117	355
IMP-4 (FIN)	561.9	6	0.95	0.97	0.35	117	117	354
% CO2 (OUT)	12.25							
% O2 (OUT)	7.91							
% CO (OUT)	0.00							
% N2 (OUT)	79.84							
F-FACTOR	11022							
P BAR	29.60							
PSTK	-0.65							

FINAL METER	687.650	AVG:	1.03	1.02	0.35	113.50	113.50	357.25
INT METER	648.000	TS ('R)=		817.3	DELTA H (ABS) =			29.63
MID LEAK CK	0.000	TM ('F)=		113.5	PS (ABS) =			29.55
VM (CF)	39.650	TM ('R)=		573.5	VI (TOT) =			198.9
RUN TIME	119.50							

SAMPLE PARTICULATE WEIGHT (mg)	FILTER	BEAKER	BLANK RESIDUE	VOL SAMPLE (ml)	VOL BLANK (ml)	VOL CORR. RESIDUE
	4.0	1.0	0.30	60	100	0.18

TOTAL SAMPLE GAIN LESS ACETONE RESIDUE (Mn)			=	4.82	mg
VM STD	=	17.64 (VM) (Y) (DELTA H ABS) / (TM)	=	36.75	DSCF
VW STD	=		=	9.36	CF
BWO	=		=	0.203	
Md (DRY)	=	.44(%CO2)+.32(%O2)+.28(%CO)+.28(%N2)	=	30.28	LBS/MOLE
Ms (WET)	=		=	27.78	LBS/MOLE
G	=		=	1.00	
VS	=		=	66.70	FPS
H	=		=	0.53	
J	=	(DELTA H ABS) (VM) (Y) / (TM)	=	2.08	
K	=		=	2.61	
% ISO	=	((TS)(K)(1.667))/ ((TIME)(VS)(PS)(AN))	=	100.6	%
Qs	=	3600(1-BWO)(VS)(AS)(17.64)(PS)/(TS)	=	3744749	DSCFH
CS	=	(2.205x10-6) (MN) / (VM STD)	=	2.89E-07	LBS/SCF
CS'	=	.0154 (MN) / (VM STD)	=	0.00202	GRAINS/SCF
CS'@7%O2	=	CS' * (20.9-7) / (20.9 - O2)	=	0.00216	GRAINS/SCF
CS'@12%CO2	=	CS' * (12 / % CO2)	=	0.00198	GRAINS/SCF
PMR	=	CS X Qs	=	1.08	LBS/HR
E	=	CS x FUEL FACTOR X(20.9/(20.9-%O2))	=	0.0051	LBS/MMBTU

Appendix D

VELOCITY TRAVERSE DATA AND PM10 EMISSION CALCULATIONS

FACILITY:	Pinetree Fitchburg	RUN ID# :	1
UNIT :	Wood Fired Boiler	START TIME:	13:30
DATE :	6/26/2013	END TIME:	15:36

Ds (FT)	6.25
As (SQFT)	30.68
Y =	1.017
PIT COEFF	0.77
Dn (IN)	0.166
An (SQFT)	0.00015
IMP-1 (INT)	0
IMP-2 (INT)	0
IMP-3 (INT)	100
IMP-4 (INT)	550
IMP-1 (FIN)	185
IMP-2 (FIN)	1
IMP-3 (FIN)	113
IMP-4 (FIN)	565
% CO2 (OUT)	13.01
% O2 (OUT)	7.02
% CO (OUT)	0.04
% N2 (OUT)	79.93
F-FACTOR	11022
P BAR	29.78
PSTK	-0.68
FINAL METER	607.770
INT METER	568.700
MID LEAK CK	0.000
VM (CF)	39.070
RUN TIME	120.00

TRAV PT	DELTA P	SQ ROOT	DELTA H	DGM IN	DGM OUT	STACK TEMP
A1	1.10	1.05	0.34	96	96	371
2	1.15	1.07	0.34	96	96	370
3	1.15	1.07	0.34	98	98	376
4	1.00	1.00	0.34	98	98	376
5	1.00	1.00	0.34	98	98	377
6	0.90	0.95	0.34	99	99	376
B1	1.00	1.00	0.34	99	99	374
2	1.10	1.05	0.34	98	98	373
3	1.50	1.22	0.34	99	99	372
4	1.10	1.05	0.34	99	99	367
5	1.00	1.00	0.34	98	98	365
6	0.95	0.97	0.34	98	98	364
AVG:	1.08	1.04	0.34	98.00	98.00	371.75

TS ('R)=	831.8	DELTA H (ABS) =	29.81
TM ('F)=	98.0	PS (ABS) =	29.73
TM ('R)=	558.0	VI (TOT) =	214.0

SAMPLE PARTICULATE	FILTER	BEAKER	BLANK RESIDUE	VOL SAMPLE (ml)	VOL BLANK (ml)	VOL CORR. RESIDUE
WEIGHT (mg)	0.0	5.8	0.20	60	100	0.12

TOTAL SAMPLE GAIN LESS ACETONE RESIDUE (Mn)			=	5.68	mg
VM STD	=	17.64 (VM) (Y) (DELTA H ABS) / (TM)	=	37.44	DSCF
VW STD	=		=	10.07	CF
BWO	=		=	0.212	
Md (DRY)	=	.44(%CO2)+.32(%O2)+.28(%CO)+.28(%N2)	=	30.36	LBS/MOLE
Ms (WET)	=		=	27.74	LBS/MOLE
G	=		=	1.00	
VS	=		=	68.53	FPS
H	=		=	0.57	
J	=	(DELTA H ABS) (VM) (Y) / (TM)	=	2.12	
K	=		=	2.69	
% ISO	=	((TS)(K)(1.667))/ ((TIME)(VS)(PS)(AN))	=	101.6	%
Qs	=	3600(1-BWO)(VS)(AS)(17.64)(PS)/(TS)	=	3760348	DSCFH
CS	=	(2.205x10-6) (MN) / (VM STD)	=	3.35E-07	LBS/SCF
CS'	=	.0154 (MN) / (VM STD)	=	0.00234	GRAINS/SCF
CS'@7%O2	=	CS' * (20.9-7) / (20.9 - O2)	=	0.00234	GRAINS/SCF
CS'@12%CO2	=	CS' * (12 / % CO2)	=	0.00216	GRAINS/SCF
PMR	=	CS X Qs	=	1.26	LBS/HR
E	=	CS x FUEL FACTOR X(20.9/(20.9-%O2))	=	0.0056	LBS/MMBTU

VELOCITY TRAVERSE DATA AND PM10 EMISSION CALCULATIONS

FACILITY:	Pinetree Fitchburg	RUN ID# :	2
UNIT :	Wood Fired Boiler	START TIME:	08:20
DATE :	6/27/2013	END TIME:	10:24

		TRAV PT	DELTA P	SQ ROOT	DELTA H	DGM IN	DGM OUT	STACK TEMP
Ds (FT)	6.25							
As (SQFT)	30.68							
Y =	1.017	A1	1.10	1.05	0.35	91	91	355
PIT COEFF	0.77	2	1.15	1.07	0.35	95	95	366
Dn (IN)	0.166	3	1.15	1.07	0.35	98	98	369
An (SQFT)	0.00015	4	1.00	1.00	0.35	101	101	370
IMP-1 (INT)	0	5	1.00	1.00	0.35	102	102	370
IMP-2 (INT)	0	6	1.00	1.00	0.35	104	104	366
IMP-3 (INT)	100	B1	0.95	0.97	0.35	107	107	365
IMP-4 (INT)	550	2	0.95	0.97	0.35	108	108	366
IMP-1 (FIN)	194	3	1.10	1.05	0.35	109	109	366
IMP-2 (FIN)	0	4	1.15	1.07	0.35	110	110	365
IMP-3 (FIN)	102	5	1.10	1.05	0.35	112	112	365
IMP-4 (FIN)	560	6	0.95	0.97	0.35	113	113	362
% CO2 (OUT)	12.62							
% O2 (OUT)	7.48							
% CO (OUT)	0.00							
% N2 (OUT)	79.90							
F-FACTOR	11022							
P BAR	29.80							
PSTK	-0.72							
FINAL METER	647.790							
INT METER	608.400	AVG:	1.05	1.02	0.35	104.17	104.17	365.42
MID LEAK CK	0.000	TS ('R)=		825.4	DELTA H (ABS) =			29.83
VM (CF)	39.390	TM ('F)=		104.2	PS (ABS) =			29.75
RUN TIME	120.00	TM ('R)=		564.2	VI (TOT) =			205.9

SAMPLE PARTICULATE WEIGHT (mg)	FILTER	BEAKER	BLANK RESIDUE	VOL SAMPLE (ml)	VOL BLANK (ml)	VOL CORR. RESIDUE
	0.0	6.4	0.30	70	100	0.21

TOTAL SAMPLE GAIN LESS ACETONE RESIDUE (Mn)			=	6.19	mg
VM STD	=	17.64 (VM) (Y) (DELTA H ABS) / (TM)	=	37.36	DSCF
VW STD	=		=	9.69	CF
BWO	=		=	0.206	
Md (DRY)	=	.44(%CO2)+.32(%O2)+.28(%CO)+.28(%N2)	=	30.32	LBS/MOLE
Ms (WET)	=		=	27.78	LBS/MOLE
G	=		=	1.00	
VS	=		=	67.36	FPS
H	=		=	0.55	
J	=	(DELTA H ABS) (VM) (Y) / (TM)	=	2.12	
K	=		=	2.67	
% ISO	=	((TS)(K)(1.667))/ ((TIME)(VS)(PS)(AN))	=	101.6	%
Qs	=	3600(1-BWO)(VS)(AS)(17.64)(PS)/(TS)	=	3755628	DSCFH
CS	=	(2.205x10-6) (MN) / (VM STD)	=	3.65E-07	LBS/SCF
CS'	=	.0154 (MN) / (VM STD)	=	0.00255	GRAINS/SCF
CS'@7%O2	=	CS' * (20.9-7) / (20.9 - O2)	=	0.00264	GRAINS/SCF
CS'@12%CO2	=	CS' * (12 / % CO2)	=	0.00243	GRAINS/SCF
PMR	=	CS X Qs	=	1.37	LBS/HR
E	=	CS x FUEL FACTOR X(20.9/(20.9-%O2))	=	0.0063	LBS/MMBTU

VELOCITY TRAVERSE DATA AND PM10 EMISSION CALCULATIONS

FACILITY:	Pinetree Fitchburg	RUN ID# :	3
UNIT :	Wood Fired Boiler	START TIME:	10:50
DATE :	6/27/2013	END TIME:	12:52

		TRAV PT	DELTA P	SQ ROOT	DELTA H	DGM IN	DGM OUT	STACK TEMP
Ds (FT)	6.25							
As (SQFT)	30.68							
Y =	1.017	B1	0.90	0.95	0.35	112	112	360
PIT COEFF	0.77	2	1.00	1.00	0.35	112	112	360
Dn (IN)	0.166	3	1.15	1.07	0.35	111	111	358
An (SQFT)	0.00015	4	1.15	1.07	0.35	112	112	358
IMP-1 (INT)	0	5	1.00	1.00	0.35	112	112	358
IMP-2 (INT)	0	6	0.95	0.97	0.35	113	113	358
IMP-3 (INT)	100	A1	0.95	0.97	0.35	113	113	355
IMP-4 (INT)	550	2	1.05	1.02	0.35	114	114	357
IMP-1 (FIN)	177	3	1.15	1.07	0.35	114	114	358
IMP-2 (FIN)	2	4	1.15	1.07	0.35	115	115	356
IMP-3 (FIN)	108	5	1.00	1.00	0.35	117	117	355
IMP-4 (FIN)	561.9	6	0.95	0.97	0.35	117	117	354
% CO2 (OUT)	12.25							
% O2 (OUT)	7.91							
% CO (OUT)	0.00							
% N2 (OUT)	79.84							
F-FACTOR	11022							
P BAR	29.60							
PSTK	-0.65							

FINAL METER	687.650	AVG:	1.03	1.02	0.35	113.50	113.50	357.25
INT METER	648.000	TS ('R)=		817.3	DELTA H (ABS) =			29.63
MID LEAK CK	0.000	TM ('F)=		113.5	PS (ABS) =			29.55
VM (CF)	39.650	TM ('R)=		573.5	VI (TOT) =			198.9
RUN TIME	119.50							

SAMPLE PARTICULATE WEIGHT (mg)	FILTER	BEAKER	BLANK RESIDUE	VOL SAMPLE (ml)	VOL BLANK (ml)	VOL CORR. RESIDUE
	0.0	4.6	0.30	70	100	0.21

TOTAL SAMPLE GAIN LESS ACETONE RESIDUE (Mn)			=	4.39	mg
VM STD	=	17.64 (VM) (Y) (DELTA H ABS) / (TM)	=	36.75	DSCF
VW STD	=		=	9.36	CF
BWO	=		=	0.203	
Md (DRY)	=	.44(%CO2)+.32(%O2)+.28(%CO)+.28(%N2)	=	30.28	LBS/MOLE
Ms (WET)	=		=	27.78	LBS/MOLE
G	=		=	1.00	
VS	=		=	66.70	FPS
H	=		=	0.53	
J	=	(DELTA H ABS) (VM) (Y) / (TM)	=	2.08	
K	=		=	2.61	
% ISO	=	((TS)(K)(1.667))/ ((TIME)(VS)(PS)(AN))	=	100.6	%
Qs	=	3600(1-BWO)(VS)(AS)(17.64)(PS)/(TS)	=	3744749	DSCFH
CS	=	(2.205x10-6) (MN) / (VM STD)	=	2.63E-07	LBS/SCF
CS'	=	.0154 (MN) / (VM STD)	=	0.00184	GRAINS/SCF
CS'@7%O2	=	CS' * (20.9-7) / (20.9 - O2)	=	0.00197	GRAINS/SCF
CS'@12%CO2	=	CS' * (12 / % CO2)	=	0.00180	GRAINS/SCF
PMR	=	CS X Qs	=	0.99	LBS/HR
E	=	CS x FUEL FACTOR X(20.9/(20.9-%O2))	=	0.0047	LBS/MMBTU

Appendix E

Spreadsheet for U.S. EPA Method 201A - Determination of Filterable PM10 and PM2.5 Emissions

TEST DATA SHEET

Location:	Pinetree Fitchburg	Start Time:	13:30:00	RUN No.	1
Date:	26-Jun-2013	End Time:	15:36:00	JOB No.	

STACK DATA			EQUIPMENT			ESTIMATES				+/- 50°F ΔH			
% Moisture:	21.2	% est.	METER BOX:	1		Ts (°F):	371.8	Tm (°F):	98	Ts-50°	316.9167	Ts+50°	416.9167
Barometric:	29.78	in Hg	Y:	1.017		Est. Qs:	0.6152	cfm		Est. Qs:	0.6386	Est. Qs:	0.6618
Static Press:	-0.68	in H_2O	ΔH@:	1.660	in H_2O	Est. μ_s:	229.45	mpoise		Est. μ_s:	214.787	Est. μ_s:	237.3313
Stack Press:	29.73	in Hg	Cp': 0.770	S/N	-	Est. ΔH:	0.321	in H_2O		Est. ΔH:	0.364	Est. ΔH:	0.286
$\%CO_2$:	13.01	%	Cp: 0.770	S/N	-								
$\%O_2$:	7.70	%	Nozzle Dia:	0.1660	inches								
$\%N_2/CO$:	79.93	%	Stack Area:	30.7	ft^2								
M_d:	30.36	lb/lb-mole	# of Points:	12	points								
Est. M_w:	27.89	lb/lb-mole	Run Time:	120.00	min								
T_{std}:	528	°R	P_{std}:	29.92	in Hg								

LEAK CHECKS

DGM initial	0	0	cf
DGM final	0	0	cf
Time	1	1	min.
Leak Rate	0.0000	0.0000	cfm
Vacuum	15	5	in. Hg

Sample Point	Clock Time (min)	Dry Gas Meter Reading (ft^3)	Pitot ΔP ("H_2O)	Gas Temperatures (°F) DGM Inlet	DGM Outlet	Stack	Orifice Press. ΔH (in H_2O) Ideal	Actual	Pump Vac. (in Hg)	Gas Temps (°F) Probe	Filter	Imp. Exit	Qs (acfm)	D_{50} [10 µm]	D_{50} [2.5 µm]
1	10.25	568.7000	1.100	96.0	96.0	371	0.316	0.340	1	250	249	66	0.6133	10.47	2.53
2	20.75	572.0000	1.150	96.0	96.0	370	0.317	0.340	1	250	246	65	0.6342	10.21	2.42
3	31.25	575.5000	1.150	98.0	98.0	376	0.313	0.340	1	250	230	64	0.6365	10.24	2.44
4	41.00	579.0000	1.000	98.0	98.0	376	0.313	0.340	1	250	249	62	0.6267	10.36	2.48
5	50.75	582.2000	1.000	98.0	98.0	377	0.313	0.340	1	250	246	61	0.6274	10.36	2.48
6	60.00	585.4000	0.900	99.0	99.0	376	0.314	0.340	1	250	248	61	0.5976	10.71	2.63
7	69.75	588.3000	1.000	99.0	99.0	374	0.315	0.340	1	250	250	64	0.6241	10.37	2.49
8	80.00	591.5000	1.100	98.0	98.0	373	0.316	0.340	1	250	251	65	0.6125	10.50	2.54
9	90.50	594.8000	1.500	99.0	99.0	372	0.317	0.340	1	250	251	65	0.6142	10.46	2.53
10	100.75	598.2000	1.100	99.0	99.0	367	0.321	0.340	1	250	248	65	0.6070	10.50	2.54
11	110.50	601.5000	1.000	98.0	98.0	365	0.322	0.340	1	250	242	66	0.6184	10.35	2.47
12	120.00	604.7000	0.950	98.0	98.0	364	0.322	0.340	1	250	246	67	0.6082	10.46	2.52
13	-	607.7700					-						-	-	-
14	-						-						-	-	-
15	-						-						-	-	-
16	-						-						-	-	-
17	-						-						-	-	-
18	-						-						-	-	-
19	-						-						-	-	-
20	-						-						-	-	-
21	-						-						-	-	-
22	-						-						-	-	-
23	-						-						-	-	-
24	-						-						-	-	-

Actual Run Time	V_m	ΔP (avg)	$T_{m\,(avg)}$	$T_{s\,(avg)}$	Max Vac.	ΔH (avg)	$V_{s\,(avg)}$
			557.7 °R	831.4 °R			
120.00 min	39.070 cf	1.079 in H_2O	98.0 °F	371.8 °F	1	0.340 in H_2O	68.330 fps

Test Personnel (signature/date)

Project Leader (signature/date)

Spreadsheet for U.S. EPA Method 201A - Determination of Filterable PM10 and PM2.5 Emissions

TEST DATA SHEET

Location:	Pinetree Fitchburg	Start Time:	8:20:00	RUN No.	2
Date:	27-Jun-2013	End Time:	10:24:00	JOB No.	

STACK DATA			EQUIPMENT			ESTIMATES				+/- 50°F ΔH			
% Moisture:	20.6	% est.	METER BOX:	1		Ts (°F):	365	Tm (°F):	104	Ts-50°	321.42	Ts+50°	421.42
Barometric:	29.80	in Hg	Y:	1.017		Est. Qs:	0.6152	cfm		Est. Qs:	0.6396	Est. Qs:	0.6627
Static Press:	-0.72	in H_2O	ΔH@:	1.660	in H_2O	Est. μ_s:	229.45	mpoise		Est. μ_s:	215.82	Est. μ_s:	238.33
Stack Press:	29.75	in Hg	Cp': 0.770	S/N	-	Est. ΔH:	0.321	in H_2O		Est. ΔH:	0.360	Est. ΔH:	0.283
$\%CO_2$:	12.62	%	Cp: 0.770	S/N	-	LEAK CHECKS							
$\%O_2$:	7.48	%	Nozzle Dia:	0.1660	inches	DGM initial	0	0	cf				
$\%N_2$/CO:	79.90	%	Stack Area:	30.7	ft^2	DGM final	0	0	cf				
M_d:	30.32	lb/lb-mole	# of Points:	12	points	Time	1	1	min.				
Est. M_w:	27.78	lb/lb-mole	Run Time:	120.00	min	Leak Rate	0.0000	0.0000	cfm				
T_{std}:	528	°R	P_{std}:	29.92	in Hg	Vacuum	15	5	in. Hg				

Sample Point	Clock Time (min)	Dry Gas Meter Reading (ft^3)	Pitot ΔP ("H_2O)	Gas Temperatures (°F) DGM Inlet	DGM Outlet	Stack	Orifice Press. ΔH (in H_2O) Ideal	Actual	Pump Vac. (in Hg)	Gas Temps (°F) Probe	Filter	Imp. Exit	Qs (acfm)	D_{50} [10 μm]	D_{50} [2.5 μm]
1	10.25	608.4000	1.100	91.0	91.0	355	0.326	0.340	2	250	250	65	0.6254	10.16	2.39
2	20.75	611.8000	1.150	95.0	95.0	366	0.319	0.340	2	250	251	62	0.6142	10.40	2.49
3	31.25	615.2000	1.150	98.0	98.0	369	0.319	0.340	2	250	248	63	0.6132	10.45	2.52
4	41.00	618.6000	1.000	101.0	101.0	370	0.320	0.340	3	250	247	64	0.6189	10.39	2.49
5	50.75	621.8000	1.000	102.0	102.0	370	0.320	0.340	3	250	249	64	0.6178	10.40	2.50
6	60.50	625.0000	1.000	104.0	104.0	366	0.325	0.340	3	250	250	64	0.6127	10.42	2.50
7	70.00	628.2000	0.950	107.0	107.0	365	0.327	0.340	3	250	251	62	0.6052	10.50	2.54
8	79.50	631.3000	0.950	108.0	108.0	366	0.327	0.340	3	250	251	60	0.6048	10.52	2.54
9	89.75	634.4000	1.100	109.0	109.0	366	0.327	0.340	4	250	250	60	0.5957	10.63	2.59
10	100.25	637.7000	1.150	110.0	110.0	365	0.329	0.350	4	250	251	65	0.5974	10.60	2.58
11	110.50	641.1000	1.100	112.0	112.0	365	0.330	0.360	4	250	248	66	0.6278	10.23	2.42
12	120.00	644.6000	0.950	113.0	113.0	362	0.333	0.360	4	250	248	66	0.6140	10.37	2.48
13	-	647.7900					-						-	-	-
14	-						-						-	-	-
15	-						-						-	-	-
16	-						-						-	-	-
17	-						-						-	-	-
18	-						-						-	-	-
19	-						-						-	-	-
20	-						-						-	-	-
21	-						-						-	-	-
22	-						-						-	-	-
23	-						-						-	-	-
24	-						-						-	-	-

Actual Run Time	V_m	ΔP (avg)	$T_{m\,(avg)}$ 563.8 °R	$T_{s\,(avg)}$ 825.1 °R	Max Vac.	ΔH (avg)	$V_{s\,(avg)}$
120.00 min	39.390 cf	1.050 in H_2O	104.2 °F	365.4 °F	4	0.344 in H_2O	67.220 fps

Test Personnel (signature/date)

Project Leader (signature/date)

Spreadsheet for U.S. EPA Method 201A - Determination of Filterable PM10 and PM2.5 Emissions

TEST DATA SHEET

Location:	Pinetree Fitchburg	Start Time:	16:02:00	RUN No.	3
Date:	27-Jun-2013	End Time:	18:12:00	JOB No.	

STACK DATA			EQUIPMENT		
% Moisture:	20.3	% est.	METER BOX:	1	
Barometric:	29.60	in Hg	Y:	1.017	
Static Press:	-0.65	in H_2O	ΔH@:	1.660	in H_2O
Stack Press:	29.55	in Hg	Cp': 0.770	S/N	-
$\%CO_2$:	12.25	%	Cp: 0.770	S/N	-
$\%O_2$:	7.91	%	Nozzle Dia:	0.1660	inches
$\%N_2/CO$:	79.84	%	Stack Area:	30.7	ft^2
M_d:	30.28	lb/lb-mole	# of Points:	12	points
Est. M_w:	27.78	lb/lb-mole	Run Time:	119.50	min
T_{std}:	528	°R	P_{std}:	29.92	in Hg

ESTIMATES				+/- 50°F ΔH			
Ts (°F): 357.3	Tm (°F):	114		Ts-50°	315.09	Ts+50°	415.09
Est. Qs:	0.6152	cfm		Est. Qs:	0.6393	Est. Qs:	0.6626
Est. μ_s:	229.45	mpoise		Est. μ_s:	214.37	Est. μ_s:	236.93
Est. ΔH:	0.321	in H_2O		Est. ΔH:	0.364	Est. ΔH:	0.285

LEAK CHECKS			
DGM initial	0	0	cf
DGM final	0	0	cf
Time	1	1	min.
Leak Rate	0.0000	0.0000	cfm
Vacuum	15	5	in. Hg

Sample Point	Clock Time (min)	Dry Gas Meter Reading (ft^3)	Pitot ΔP ("H_2O)	Gas Temperatures (°F) DGM Inlet	DGM Outlet	Stack	Orifice Press. ΔH (in H_2O) Ideal	Actual	Pump Vac. (in Hg)	Gas Temps (°F) Probe	Filter	Imp. Exit	Qs (acfm)	D_{50} [10 µm]	D_{50} [2.5 µm]
1	9.25	648.0000	0.900	112.0	112.0	360	0.332	0.350	2	250	247	67	0.6123	10.38	2.49
2	19.00	651.1000	1.000	112.0	112.0	360	0.332	0.350	2	250	248	62	0.6184	10.31	2.46
3	29.50	654.4000	1.150	111.0	111.0	358	0.333	0.350	2	250	249	60	0.6086	10.41	2.49
4	40.00	657.9000	1.150	112.0	112.0	358	0.333	0.350	2	250	248	62	0.6075	10.42	2.50
5	50.25	661.4000	1.100	112.0	112.0	358	0.333	0.350	2	250	249	62	0.6046	10.46	2.51
6	59.75	664.8000	0.950	113.0	113.0	358	0.334	0.350	3	250	250	64	0.5937	10.59	2.57
7	69.25	667.9000	0.950	113.0	113.0	355	0.336	0.360	3	250	248	67	0.5916	10.59	2.57
8	79.75	671.0000	1.050	114.0	114.0	357	0.335	0.360	3	250	248	62	0.5701	10.89	2.70
9	89.75	674.3000	1.150	114.0	114.0	358	0.335	0.360	3	250	250	61	0.6357	10.09	2.36
10	100.25	677.8000	1.150	115.0	115.0	356	0.337	0.360	3	250	250	60	0.5857	10.67	2.60
11	110.00	681.2000	1.000	117.0	117.0	355	0.339	0.360	3	250	248	61	0.6093	10.37	2.48
12	119.50	684.5000	0.950	117.0	117.0	354	0.340	0.360	3	250	247	65	0.5962	10.52	2.54
13	-	687.6500					-						-	-	-
14	-						-						-	-	-
15	-						-						-	-	-
16	-						-						-	-	-
17	-						-						-	-	-
18	-						-						-	-	-
19	-						-						-	-	-
20	-						-						-	-	-
21	-						-						-	-	-
22	-						-						-	-	-
23	-						-						-	-	-
24	-						-						-	-	-

Actual Run Time	V_m	ΔP (avg)	$T_{m\ (avg)}$ 573.2 °R	$T_{s\ (avg)}$ 816.9 °R	Max Vac.	ΔH (avg)	$V_{s\ (avg)}$
119.50 min	39.650 cf	1.042 in H_2O	113.5 °F	357.3 °F	3	0.355 in H_2O	fps

Test Personnel (signature/date)

Project Leader (signature/date)

Appendix F

CONDENSIBLE PARTICULATE EMISSION CALCULATION SHEET

FACILITY:	Pinetree Fitchburg	RUN ID# :	1
UNIT :	Wood Fired Boiler	START TIME:	13:30
DATE :	6/26/2013	END TIME:	15:36

		TRAV PT	DELTA P	SQ ROOT	DELTA H	DGM IN	DGM OUT	STACK TEMP
Ds (FT)	6.25							
As (SQFT)	30.68							
Y =	1.017	A1	1.10	1.05	0.35	96	96	371
PIT COEFF	0.839	2	1.15	1.07	0.35	96	96	370
Dn (IN)	0.166	3	1.15	1.07	0.35	98	98	376
An (SQFT)	0.00015	4	1.00	1.00	0.35	98	98	376
IMP-1 (INT)	0	5	1.00	1.00	0.35	98	98	377
IMP-2 (INT)	0	6	0.90	0.95	0.35	99	99	376
IMP-3 (INT)	100	B1	1.00	1.00	0.35	99	99	374
IMP-4 (INT)	550	2	1.10	1.05	0.35	98	98	373
IMP-1 (FIN)	185	3	1.50	1.22	0.35	99	99	372
IMP-2 (FIN)	1	4	1.10	1.05	0.35	99	99	367
IMP-3 (FIN)	113	5	1.00	1.00	0.35	98	98	365
IMP-4 (FIN)	565.0	6	0.95	0.97	0.35	98	98	364
% CO2 (OUT)	13.01							
% O2 (OUT)	7.02							
% CO (OUT)	0.04							
% N2 (OUT)	79.93							
F-FACTOR	11022							
P BAR	29.78							
PSTK	-0.68							
FINAL METER	607.770							
INT METER	568.700	AVG:	1.08	1.04	0.35	98.00	98.00	371.75
MID LEAK CK	0.000	TS ('R)=		831.8	DELTA H (ABS) =			29.81
VM (CF)	39.070	TM ('F)=		98.0	PS (ABS) =			29.73
RUN TIME	120.000	TM ('R)=		558.0	VI (TOT) =			214.0

SAMPLE CATCH (mg)	ORGANIC		INORGANIC		BLANK	
	1.1	mg	5.2	mg	1.0	mg

MN	=	Total Condensible Particulate (Blank Corrected)	=	5.30	mg
VM STD	=	17.64 (VM) (Y) (DELTA H ABS) / (TM)	=	37.44	DSCF
VW STD	=		=	10.07	CF
BWO	=	(VW STD)/(VW STD)+(VM STD)	=	0.212	
Md (DRY)	=	.44(%CO2)+.32(%O2)+.28(%CO)+.28(%N2)	=	30.36	LBS/MOLE
Ms (WET)	=	Md(1-BWO)+18(BWO)	=	27.74	LBS/MOLE
G	=	SQRT (TS / PS / MS)	=	1.00	
VS	=	85.49(CP)(G)(SQRT DELTA P)	=	68.53	FPS
H	=	0.002669 (VI TOT)	=	0.57	
J	=	(DELTA H ABS) (VM) (Y) / (TM)	=	2.12	
K	=	(H) + (J)	=	2.69	
% ISO	=	((TS)(K)(1.667))/ ((TIME)(VS)(PS)(AN))	=	101.6	%
Qs	=	3600(1-BWO)(VS)(AS)(17.64)(PS)/(TS)	=	3760354	DSCFH
CS	=	(2.205x10-6) (MN) / (VM STD)	=	3.12E-07	LBS/SCF
CS'	=	.0154 (MN) / (VM STD)	=	0.00218	GRAINS/SCF
CS'@7%O2	=	CS' * (20.9-7) / (20.9 - O2)	=	0.00218	GRAINS/SCF
CS'@12%CO2	=	CS' * (12 / % CO2)	=	0.00201	GRAINS/SCF
PMR	=	CS X Qs	=	1.17	LBS/HR
E	=	CS x FUEL FACTOR X(20.9/(20.9-%O2))	=	0.0052	LBS/MMBTU

CONDENSIBLE PARTICULATE EMISSION CALCULATION SHEET

FACILITY:	Pinetree Fitchburg	RUN ID# :	2
UNIT :	Wood Fired Boiler	START TIME:	08:20
DATE :	6/27/2013	END TIME:	10:24

		TRAV PT	DELTA P	SQ ROOT	DELTA H	DGM IN	DGM OUT	STACK TEMP
Ds (FT)	6.25							
As (SQFT)	30.68							
Y =	1.017	A1	1.10	1.05	0.35	91	91	355
PIT COEFF	0.77	2	1.15	1.07	0.35	95	95	366
Dn (IN)	0.166	3	1.15	1.07	0.35	98	98	369
An (SQFT)	0.00015	4	1.00	1.00	0.35	101	101	370
IMP-1 (INT)	0	5	1.00	1.00	0.35	102	102	370
IMP-2 (INT)	0	6	1.00	1.00	0.35	104	104	366
IMP-3 (INT)	100	B1	0.95	0.97	0.35	107	107	365
IMP-4 (INT)	550	2	0.95	0.97	0.35	108	108	366
IMP-1 (FIN)	194	3	1.10	1.05	0.35	109	109	366
IMP-2 (FIN)	0	4	1.15	1.07	0.35	110	110	365
IMP-3 (FIN)	102	5	1.10	1.05	0.35	112	112	365
IMP-4 (FIN)	559.9	6	0.95	0.97	0.35	113	113	362
% CO2 (OUT)	12.62							
% O2 (OUT)	7.48							
% CO (OUT)	0.00							
% N2 (OUT)	79.90							
F-FACTOR	11022							
P BAR	29.80							
PSTK	-0.72							
FINAL METER	647.790							
INT METER	608.400	AVG:	1.05	1.02	0.35	104.17	104.17	365.42
MID LEAK CK	0.000	TS ('R)=		825.4	DELTA H (ABS) =			29.83
VM (CF)	39.390	TM ('F)=		104.2	PS (ABS) =			29.75
RUN TIME	120.000	TM ('R)=		564.2	VI (TOT) =			205.9

SAMPLE CATCH (mg)	ORGANIC		INORGANIC		BLANK	
	1.0	mg	4.6	mg	1.0	mg

MN =	Total Condensible Particulate (Blank Corrected)	=	4.60	mg
VM STD	=	17.64 (VM) (Y) (DELTA H ABS) / (TM)	=	37.36	DSCF
VW STD	=		=	9.69	CF
BWO	=	(VW STD)/(VW STD)+(VM STD)	=	0.206	
Md (DRY)	=	.44(%CO2)+.32(%O2)+.28(%CO)+.28(%N2)	=	30.32	LBS/MOLE
Ms (WET)	=	Md(1-BWO)+18(BWO)	=	27.78	LBS/MOLE
G	=	SQRT (TS / PS / MS)	=	1.00	
VS	=	85.49(CP)(G)(SQRT DELTA P)	=	67.36	FPS
H	=	0.002669 (VI TOT)	=	0.55	
J	=	(DELTA H ABS) (VM) (Y) / (TM)	=	2.12	
K	=	(H) + (J)	=	2.67	
% ISO	=	((TS)(K)(1.667))/ ((TIME)(VS)(PS)(AN))	=	101.6	%
Qs	=	3600(1-BWO)(VS)(AS)(17.64)(PS)/(TS)	=	3755628	DSCFH
CS	=	(2.205x10-6) (MN) / (VM STD)	=	2.715E-07	LBS/SCF
CS'	=	.0154 (MN) / (VM STD)	=	0.00190	GRAINS/SCF
CS'@7%O2	=	CS' * (20.9-7) / (20.9 - O2)	=	0.00196	GRAINS/SCF
CS'@12%CO2	=	CS' * (12 / % CO2)	=	0.00180	GRAINS/SCF
PMR	=	CS X Qs	=	1.02	LBS/HR
E	=	CS x FUEL FACTOR X(20.9/(20.9-%O2))	=	0.0047	LBS/MMBTU

CONDENSIBLE PARTICULATE EMISSION CALCULATION SHEET

FACILITY:	Pinetree Fitchburg	RUN ID# :	3
UNIT :	Wood Fired Boiler	START TIME:	10:50
DATE :	6/27/2013	END TIME:	12:52

		TRAV PT	DELTA P	SQ ROOT	DELTA H	DGM IN	DGM OUT	STACK TEMP
Ds (FT)	6.25							
As (SQFT)	30.68							
Y =	1.017	B1	0.90	0.95	0.35	112	112	360
PIT COEFF	0.77	2	1.00	1.00	0.35	112	112	360
Dn (IN)	0.166	3	1.15	1.07	0.35	111	111	358
An (SQFT)	0.00015	4	1.15	1.07	0.35	112	112	358
IMP-1 (INT)	0	5	1.00	1.00	0.35	112	112	358
IMP-2 (INT)	0	6	0.95	0.97	0.35	113	113	358
IMP-3 (INT)	100	A1	0.95	0.97	0.35	113	113	355
IMP-4 (INT)	550	2	1.05	1.02	0.35	114	114	357
IMP-1 (FIN)	177	3	1.15	1.07	0.35	114	114	358
IMP-2 (FIN)	2	4	1.15	1.07	0.35	115	115	356
IMP-3 (FIN)	108	5	1.00	1.00	0.35	117	117	355
IMP-4 (FIN)	561.9	6	0.95	0.97	0.35	117	117	354
% CO2 (OUT)	12.25							
% O2 (OUT)	7.91							
% CO (OUT)	0.00							
% N2 (OUT)	79.84							
F-FACTOR	11022							
P BAR	29.60							
PSTK	-0.65							

FINAL METER	687.650	AVG:	1.03	1.02	0.35	113.50	113.50	357.25
INT METER	648.000	TS ('R)=		817.3	DELTA H (ABS)	=		29.63
MID LEAK CK	0.000	TM ('F)=		113.5	PS (ABS)	=		29.55
VM (CF)	39.650	TM ('R)=		573.5	VI (TOT)	=		198.9
RUN TIME	119.500							

SAMPLE CATCH (mg)	ORGANIC		INORGANIC		BLANK	
	1.0	mg	4.3	mg	1.0	mg

MN	=	Total Condensible Particulate (Blank Corrected)	=	4.30	mg
VM STD	=	17.64 (VM) (Y) (DELTA H ABS) / (TM)	=	36.75	DSCF
VW STD	=		=	9.36	CF
BWO	=	(VW STD)/(VW STD)+(VM STD)	=	0.203	
Md (DRY)	=	.44(%CO2)+.32(%O2)+.28(%CO)+.28(%N2)	=	30.28	LBS/MOLE
Ms (WET)	=	Md(1-BWO)+18(BWO)	=	27.78	LBS/MOLE
G	=	SQRT (TS / PS / MS)	=	1.00	
VS	=	85.49(CP)(G)(SQRT DELTA P)	=	66.70	FPS
H	=	0.002669 (VI TOT)	=	0.53	
J	=	(DELTA H ABS) (VM) (Y) / (TM)	=	2.08	
K	=	(H) + (J)	=	2.61	
% ISO	=	((TS)(K)(1.667))/ ((TIME)(VS)(PS)(AN))	=	100.6	%
Qs	=	3600(1-BWO)(VS)(AS)(17.64)(PS)/(TS)	=	3744749	DSCFH
CS	=	(2.205x10-6) (MN) / (VM STD)	=	2.58E-07	LBS/SCF
CS'	=	.0154 (MN) / (VM STD)	=	0.00180	GRAINS/SCF
CS'@7%O2	=	CS' * (20.9-7) / (20.9 - O2)	=	0.00193	GRAINS/SCF
CS'@12%CO2	=	CS' * (12 / % CO2)	=	0.00177	GRAINS/SCF
PMR	=	CS X Qs	=	0.97	LBS/HR
E	=	CS x FUEL FACTOR X(20.9/(20.9-%O2))	=	0.0046	LBS/MMBTU

Appendix G

Calibration Error Test, Run 2 STRATA Version 3.2

Operator: Robert Arnold

Plant Name: Fitchburg

Location: Stack

Reference Cylinder Numbers	Zero	Low-range	Mid-range	High-range
O2				
CO2				
CO				
NOx				
SO2				

Date/Time	06-26-2013		07:24:58		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Avg	0.083	0.003	-0.27	0.07	-0.28
Zero Error%	0.4%	0.0%	0.0%	0.0%	0.2%
Low Ref Cyl					
Low Avg					
Low Error%					
Mid Ref Cyl	11.450	9.910	476.00	94.40	50.90
Mid Avg	11.352	9.899	471.25	94.14	50.70
Mid Error%	0.4%	0.1%	0.5%	0.1%	0.2%
High Ref Cyl	22.800	19.850	947.00	192.30	122.00
High Avg	22.588	19.804	941.37	191.87	120.58
High Error%	0.9%	0.2%	0.6%	0.2%	1.2%

Calibration Error Test End

T. Wheeler
MassDEP
6/26/13

I-A RATA 1

Initial System Bias Check, Run 2 STRATA Version 3.2

Operator: Robert Arnold

Plant Name: Fitchburg

Location: Stack

	Reference Cylinder Numbers	
	Zero	Span
O2		
CO2		
CO		
NOx		
SO2		

Date/Time	06-26-2013		07:34:34		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.083	0.003	-0.27	0.07	-0.28
Zero Avg	0.076	0.019	2.75	1.13	0.64
Zero Bias%	0.0%	0.1%	0.3%	0.5%	0.8%
Zero Drift%					
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.352	9.899	471.25	191.87	50.70
Span Avg	11.230	9.903	470.21	190.88	50.51
Span Bias%	0.5%	0.0%	0.1%	0.5%	0.2%
Span Drift%					

System Bias Check End

T. Wheeler
MassDEP
6/26/13

RATA 1

M5-1A

Final System Bias Check, Run 2 STRATA Version 3.2
Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack

Reference Cylinder Numbers

	Zero	Span
O2		
CO2		
CO		
NOx		
SO2		

Date/Time	06-26-2013		08:51:04		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.083	0.003	-0.27	0.07	-0.28
Zero Avg	0.114	0.035	-0.24	0.27	-0.01
Zero Bias%	0.1%	0.2%	0.0%	0.1%	0.2%
Zero Drift%	0.2%	0.1%	-0.3%	-0.4%	-0.5%
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.352	9.899	471.25	191.87	50.70
Span Avg	11.294	9.937	469.22	190.87	50.79
Span Bias%	0.3%	0.2%	0.2%	0.5%	0.1%
Span Drift%	0.3%	0.2%	-0.1%	0.0%	0.2%
Ini Zero Avg	0.076	0.019	2.75	1.13	0.64
Ini Span Avg	11.230	9.903	470.21	190.88	50.51
Run Avg	7.288	12.745	166.31	29.67	0.06
Co	0.095	0.027	1.25	0.70	0.31
Cm	11.262	9.920	469.72	190.88	50.65
Correct Avg	7.375	12.740	167.71	29.30	-0.26

System Bias Check End

T. Wheeler
MassDEP
6/26/13

RATA 2

M5.13

Final System Bias Check, Run 3 STRATA Version 3.2
Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack

	Reference Cylinder Numbers	
	Zero	Span
O2		
CO2		
CO		
NOx		
SO2		

Date/Time	06-26-2013		09:19:41		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.083	0.003	-0.27	0.07	-0.28
Zero Avg	0.123	0.048	0.17	0.28	0.32
Zero Bias%	0.2%	0.2%	0.0%	0.1%	0.5%
Zero Drift%	0.0%	0.1%	0.0%	0.0%	0.3%
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.352	9.899	471.25	191.87	50.70
Span Avg	11.296	9.941	470.11	191.68	50.21
Span Bias%	0.2%	0.2%	0.1%	0.1%	0.4%
Span Drift%	0.0%	0.0%	0.1%	0.4%	-0.5%
Ini Zero Avg	0.114	0.035	-0.24	0.27	-0.01
Ini Span Avg	11.294	9.937	469.22	190.87	50.79
Run Avg	7.350	12.733	139.11	36.54	1.41
Co	0.119	0.041	-0.03	0.28	0.15
Cm	11.295	9.939	469.67	191.28	50.50
Correct Avg	7.408	12.708	141.01	36.51	1.27

System Bias Check End

T. Wheeler
MassDEP
6/24/13

RATA 3

Final System Bias Check, Run 4 STRATA Version 3.2
Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack

MS n 1 G

Reference Cylinder Numbers

	Zero	Span
O2		
CO2		
CO		
NOx		
SO2		

Date/Time	06-26-2013		09:50:46		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.083	0.003	-0.27	0.07	-0.28
Zero Avg	0.131	0.060	-2.40	0.06	-0.17
Zero Bias%	0.2%	0.3%	0.2%	0.0%	0.1%
Zero Drift%	0.0%	0.1%	-0.3%	-0.1%	-0.4%
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.352	9.899	471.25	191.87	50.70
Span Avg	11.376	10.005	470.11	191.41	50.52
Span Bias%	0.1%	0.5%	0.1%	0.2%	0.1%
Span Drift%	0.3%	0.3%	0.0%	-0.1%	0.3%
Ini Zero Avg	0.123	0.048	0.17	0.28	0.32
Ini Span Avg	11.296	9.941	470.11	191.68	50.21
Run Avg	7.004	13.021	209.37	29.51	-0.56
Co	0.127	0.054	-1.11	0.17	0.07
Cm	11.336	9.973	470.11	191.54	50.36
Correct Avg	7.025	12.955	212.62	29.48	-0.64

System Bias Check End

T. Wheeler
MassDEP
6/20/13

1SP1M 2

MS-2 A

Final System Bias Check, Run 5 STRATA Version 3.2
Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack

Reference Cylinder Numbers

	Zero	Span
O2		
CO2		
CO		
NOx		
SO2		

Date/Time	06-26-2013		10:20:25		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.083	0.003	-0.27	0.07	-0.28
Zero Avg	0.131	0.053	-0.27	0.05	-0.17
Zero Bias%	0.2%	0.3%	0.0%	0.0%	0.1%
Zero Drift%	0.0%	0.0%	0.2%	0.0%	0.0%
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.352	9.899	471.25	191.87	50.70
Span Avg	11.336	10.020	470.82	193.08	49.97
Span Bias%	0.1%	0.6%	0.0%	0.6%	0.6%
Span Drift%	-0.2%	0.1%	0.1%	0.9%	-0.4%
Ini Zero Avg	0.131	0.060	-2.40	0.06	-0.17
Ini Span Avg	11.376	10.005	470.11	191.41	50.52
Run Avg	6.462	13.669	466.23	28.15	-0.29
Co	0.131	0.057	-1.33	0.06	-0.17
Cm	11.356	10.013	470.46	192.24	50.24
Correct Avg	6.458	13.550	471.73	28.11	-0.12

System Bias Check End

T. Wheeler
MassDEP
6/24/13

KH LH 5

Final System Bias Check, Run 6 STRATA Version 3.2

Operator: Robert Arnold

Plant Name: Fitchburg

Location: Stack

MS-2 B

Reference Cylinder Numbers

	Zero	Span
O2		
CO2		
CO		
NOx		
SO2		

Date/Time	06-26-2013		10:47:45		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.083	0.003	-0.27	0.07	-0.28
Zero Avg	0.138	0.054	-0.29	0.06	-0.60
Zero Bias%	0.2%	0.3%	0.0%	0.0%	0.3%
Zero Drift%	0.0%	0.0%	0.0%	0.0%	-0.4%
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.352	9.899	471.25	191.87	50.70
Span Avg	11.334	10.033	469.58	192.66	49.62
Span Bias%	0.1%	0.7%	0.2%	0.4%	0.9%
Span Drift%	0.0%	0.1%	-0.1%	-0.2%	-0.3%
Ini Zero Avg	0.131	0.053	-0.27	0.05	-0.17
Ini Span Avg	11.336	10.020	470.82	193.08	49.97
Run Avg	6.617	13.504	336.57	34.48	-0.46
Co	0.135	0.054	-0.28	0.06	-0.38
Cm	11.335	10.027	470.20	192.87	49.79
Correct Avg	6.627	13.365	340.80	34.33	-0.08

System Bias Check End

T. Wheeler
MassDEP
6/26/13

RATA

Final System Bias Check, Run 7 STRATA Version 3.2
Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack

MS-2C

	Reference Cylinder Numbers	
	Zero	Span
O2		
CO2		
CO		
NOx		
SO2		

Date/Time	06-26-2013		11:17:19		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.083	0.003	-0.27	0.07	-0.28
Zero Avg	0.155	0.056	-1.35	0.07	-0.51
Zero Bias%	0.3%	0.3%	0.1%	0.0%	0.2%
Zero Drift%	0.1%	0.0%	-0.1%	0.0%	0.1%
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.352	9.899	471.25	191.87	50.70
Span Avg	11.343	10.022	469.21	191.60	49.54
Span Bias%	0.0%	0.6%	0.2%	0.1%	1.0%
Span Drift%	0.0%	-0.1%	0.0%	-0.6%	-0.1%
Ini Zero Avg	0.138	0.054	-0.29	0.06	-0.60
Ini Span Avg	11.334	10.033	469.58	192.66	49.62
Run Avg	6.794	13.356	410.29	39.08	0.07
Co	0.147	0.055	-0.82	0.06	-0.55
Cm	11.338	10.028	469.39	192.13	49.58
Correct Avg	6.801	13.217	416.17	39.07	0.64

System Bias Check End

T. Wheeler
MassDEP 6/26/13

Final System Bias Check, Run 8 STRATA Version 3.2

RATA 7 O_2/CO_2 only N/G SD

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack

MS-3A SD

Reference Cylinder Numbers

	Zero	Span
O2		
CO2		
CO		
NOx		
SO2		

Date/Time	06-26-2013		11:46:13		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.083	0.003	-0.27	0.07	-0.28
Zero Avg	0.139	0.054	0.68	0.29	-0.84
Zero Bias%	0.2%	0.3%	0.1%	0.1%	0.5%
Zero Drift%	-0.1%	0.0%	0.2%	0.1%	-0.3%
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.352	9.899	471.25	191.87	50.70
Span Avg	11.336	10.044	469.19	191.92	49.44
Span Bias%	0.1%	0.7%	0.2%	0.0%	1.0%
Span Drift%	0.0%	0.1%	0.0%	0.2%	-0.1%
Ini Zero Avg	0.155	0.056	-1.35	0.07	-0.51
Ini Span Avg	11.343	10.022	469.21	191.60	49.54
Run Avg	5.681	14.828	715.99	99.73	-0.72
Co	0.147	0.055	-0.33	0.18	-0.67
Cm	11.339	10.033	469.20	191.76	49.49
Correct Avg	5.661	14.672	726.19	99.93	-0.05

System Bias Check End

T. Wheeler
MassDEP
6/26/13

RATA @ 416 SU
O_2/CO_2 only

MS-3B SD

Final System Bias Check, Run 9 STRATA Version 3.2
Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack

	Reference Cylinder Numbers	
	Zero	Span
O2		
CO2		
CO		
NOx		
SO2		

Date/Time	06-26-2013		12:14:21		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.083	0.003	-0.27	0.07	-0.28
Zero Avg	0.148	0.067	-2.26	0.06	-1.13
Zero Bias%	0.3%	0.3%	0.2%	0.0%	0.7%
Zero Drift%	0.0%	0.1%	-0.3%	-0.1%	-0.2%
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.352	9.899	471.25	191.87	50.70
Span Avg	11.396	10.086	470.07	192.68	49.95
Span Bias%	0.2%	0.9%	0.1%	0.4%	0.6%
Span Drift%	0.3%	0.2%	0.1%	0.4%	0.4%
Ini Zero Avg	0.139	0.054	0.68	0.29	-0.84
Ini Span Avg	11.336	10.044	469.19	191.92	49.44
Run Avg	5.743	14.737	963.92	73.27	-0.92
Co	0.144	0.060	-0.79	0.18	-0.98
Cm	11.366	10.065	469.63	192.30	49.70
Correct Avg	5.713	14.537	976.16	73.16	0.06

System Bias Check End

RATA 7 A

Final System Bias Check, Run 10 STRATA Version 3.2
Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack

MS-3 C SB

	Reference Cylinder Numbers	
	Zero	Span
O2		
CO2		
CO		
NOx		
SO2		

Date/Time	06-26-2013		12:49:10		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.083	0.003	-0.27	0.07	-0.28
Zero Avg	0.171	0.189	-2.40	0.07	-1.03
Zero Bias%	0.4%	0.9%	0.2%	0.0%	0.6%
Zero Drift%	0.1%	0.6%	0.0%	0.0%	0.1%
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.352	9.899	471.25	191.87	50.70
Span Avg	11.416	10.040	466.19	188.90	49.67
Span Bias%	0.3%	0.7%	0.5%	1.5%	0.8%
Span Drift%	0.1%	-0.2%	-0.4%	-2.0%	-0.2%
Ini Zero Avg	0.148	0.067	-2.26	0.06	-1.13
Ini Span Avg	11.396	10.086	470.07	192.68	49.95
Run Avg	7.097	13.044	673.30	30.78	-1.00
Co	0.160	0.128	-2.33	0.06	-1.08
Cm	11.406	10.063	468.13	190.79	49.81
Correct Avg	7.063	12.884	683.58	30.97	0.08

System Bias Check End

RATA 8

Final System Bias Check, Run 11 STRATA Version 3.2

Operator: Robert Arnold

Plant Name: Fitchburg

Location: Stack

	Reference Cylinder Numbers	
	Zero	Span
O2		
CO2		
CO		
NOx		
SO2		

Date/Time	06-26-2013		13:24:26		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.083	0.003	-0.27	0.07	-0.28
Zero Avg	0.131	0.067	-2.33	0.07	-1.38
Zero Bias%	0.2%	0.3%	0.2%	0.0%	0.9%
Zero Drift%	-0.2%	-0.6%	0.0%	0.0%	-0.3%
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.352	9.899	471.25	191.87	50.70
Span Avg	11.336	10.064	468.25	194.30	48.49
Span Bias%	0.1%	0.8%	0.3%	1.3%	1.8%
Span Drift%	-0.4%	0.1%	0.2%	2.8%	-1.0%
Ini Zero Avg	0.171	0.189	-2.40	0.07	-1.03
Ini Span Avg	11.416	10.040	466.19	188.90	49.67
Run Avg	7.594	12.661	257.76	29.41	-1.34
Co	0.151	0.128	-2.36	0.07	-1.21
Cm	11.376	10.052	467.22	191.60	49.08
Correct Avg	7.592	12.516	263.68	29.46	-0.14

System Bias Check End

Final System Bias Check, Run 12 STRATA Version 3.2

9

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack

Reference Cylinder Numbers

Zero Span

O2
CO2
CO
NOx
SO2

201A/202 -1 A

Date/Time	06-26-2013		13:52:21		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.083	0.003	-0.27	0.07	-0.28
Zero Avg	0.115	0.054	-1.32	0.07	-1.55
Zero Bias%	0.1%	0.3%	0.1%	0.0%	1.0%
Zero Drift%	-0.1%	-0.1%	0.1%	0.0%	-0.1%
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.352	9.899	471.25	191.87	50.70
Span Avg	11.320	10.083	469.37	194.05	49.88
Span Bias%	0.1%	0.9%	0.2%	1.1%	0.7%
Span Drift%	-0.1%	0.1%	0.1%	-0.1%	1.1%
Ini Zero Avg	0.131	0.067	-2.33	0.07	-1.38
Ini Span Avg	11.336	10.064	468.25	194.30	48.49
Run Avg	7.086	13.025	293.33	37.93	-1.36
Co	0.123	0.060	-1.82	0.07	-1.47
Cm	11.328	10.073	468.81	194.17	49.18
Correct Avg	7.115	12.831	298.52	37.51	0.10

System Bias Check End

10

Final System Bias Check, Run 13 STRATA Version 3.2
Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack

201A/202 - 1 B

Reference Cylinder Numbers

	Zero	Span
O2		
CO2		
CO		
NOx		
SO2		

Date/Time	06-26-2013		14:20:03		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.083	0.003	-0.27	0.07	-0.28
Zero Avg	0.123	0.073	-0.46	0.30	-1.35
Zero Bias%	0.2%	0.4%	0.0%	0.1%	0.9%
Zero Drift%	0.0%	0.1%	0.1%	0.1%	0.2%
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.352	9.899	471.25	191.87	50.70
Span Avg	11.312	10.062	468.08	193.47	48.40
Span Bias%	0.2%	0.8%	0.3%	0.8%	1.9%
Span Drift%	0.0%	-0.1%	-0.1%	-0.3%	-1.2%
Ini Zero Avg	0.115	0.054	-1.32	0.07	-1.55
Ini Span Avg	11.320	10.083	469.37	194.05	49.88
Run Avg	7.161	12.944	249.64	41.43	-1.38
Co	0.119	0.064	-0.89	0.18	-1.45
Cm	11.316	10.072	468.72	193.76	49.14
Correct Avg	7.201	12.754	253.94	40.98	0.07

System Bias Check End

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M

201A/202 1-C

Final System Bias Check, Run 14 STRATA Version 3.2

Operator: Robert Arnold

Plant Name: Fitchburg

Location: Stack

	Reference Cylinder Numbers	
	Zero	Span
O2		
CO2		
CO		
NOx		
SO2		

Date/Time	06-26-2013		14:49:14		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.083	0.003	-0.27	0.07	-0.28
Zero Avg	0.115	0.095	-1.29	0.07	-1.46
Zero Bias%	0.1%	0.5%	0.1%	0.0%	1.0%
Zero Drift%	0.0%	0.1%	-0.1%	-0.1%	-0.1%
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.352	9.899	471.25	191.87	50.70
Span Avg	11.320	10.083	466.06	192.13	48.72
Span Bias%	0.1%	0.9%	0.5%	0.1%	1.6%
Span Drift%	0.0%	0.1%	-0.2%	-0.7%	0.3%
Ini Zero Avg	0.123	0.073	-0.46	0.30	-1.35
Ini Span Avg	11.312	10.062	468.08	193.47	48.40
Run Avg	6.733	13.435	569.62	36.18	-1.43
Co	0.119	0.084	-0.87	0.18	-1.40
Cm	11.316	10.073	467.07	192.80	48.56
Correct Avg	6.763	13.246	580.32	35.93	-0.03

System Bias Check End

Final System Bias Check, Run 15 STRATA Version 3.2
Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack

	Reference Cylinder Numbers	
	Zero	Span
O2		
CO2		
CO		
NOx		
SO2		

Date/Time	06-26-2013		15:51:11		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.083	0.003	-0.27	0.07	-0.28
Zero Avg	0.115	0.092	-0.82	0.07	-1.50
Zero Bias%	0.1%	0.4%	0.1%	0.0%	1.0%
Zero Drift%	0.0%	0.0%	0.0%	0.0%	0.0%
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.352	9.899	471.25	191.87	50.70
Span Avg	11.331	10.051	468.26	191.09	48.48
Span Bias%	0.1%	0.8%	0.3%	0.4%	1.8%
Span Drift%	-0.3%	0.9%	0.2%	-0.5%	-0.2%
Ini Zero Avg	0.107	0.099	-1.29	0.07	-1.46
Ini Span Avg	11.399	9.863	466.06	192.13	48.72
Run Avg	7.272	12.878	342.32	27.89	-1.50
Co	0.111	0.095	-1.05	0.07	-1.48
Cm	11.365	9.957	467.16	191.61	48.60
Correct Avg	7.286	12.846	349.08	27.92	-0.02

System Bias Check End

Analyzer / System

Calibration Error Test, Run 2 STRATA Version 3.2

Operator: Robert Arnold

Plant Name: Fitchburg

Location: Stack

Reference Cylinder Numbers

	Zero	Low-range	Mid-range	High-range
O2				
CO2				
THC				

Date/Time	06-27-2013		08:06:37	PASSED
Analyte	O2	CO2	THC	
Units	%	%	ppm	
Zero Ref Cyl	0.000	0.000	0.00	
Zero Avg	0.036	0.139	0.29	
Zero Error%	0.2%	0.7%	0.3%	
Low Ref Cyl			29.60	
Low Avg			29.66	
Low Error%			0.1%	
Mid Ref Cyl	11.450	9.910	55.20	
Mid Avg	11.344	9.933	55.20	
Mid Error%	0.5%	0.1%	0.0%	
High Ref Cyl	22.800	19.850	91.30	
High Avg	22.586	19.686	91.66	
High Error%	0.9%	0.8%	0.4%	

Calibration Error Test End

Int system

Initial System Bias Check, Run 2 STRATA Version 3.2

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack

	Reference Cylinder Numbers	
	Zero	Span
O2		
CO2		
THC		

Date/Time	06-27-2013		08:14:17	PASSED
Analyte	O2	CO2	THC	
Units	%	%	ppm	
Zero Ref Cyl	0.000	0.000	0.00	
Zero Cal	0.036	0.139	0.29	
Zero Avg	0.108	0.225	0.11	
Zero Bias%	0.3%	0.4%	0.2%	
Zero Drift%				
Span Ref Cyl	11.450	9.910	55.20	
Span Cal	11.344	9.933	55.20	
Span Avg	11.312	9.838	55.54	
Span Bias%	0.1%	0.5%	0.3%	
Span Drift%				

System Bias Check End

Final System Bias Check, Run 2 STRATA Version 3.2

RM10-2A
VOL-1

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack

	Reference Cylinder Numbers	
	Zero	Span
O2		
CO2		
THC		

0820-0920

Date/Time	06-27-2013		09:25:12	PASSED
Analyte	O2	CO2	THC	
Units	%	%	ppm	
Zero Ref Cyl	0.000	0.000	0.00	
Zero Cal	0.036	0.139	0.29	
Zero Avg	0.107	0.250	0.22	
Zero Bias%	0.3%	0.6%	0.1%	
Zero Drift%	0.0%	0.1%	0.1%	
Span Ref Cyl	11.450	9.910	55.20	
Span Cal	11.344	9.933	55.20	
Span Avg	11.291	9.899	55.00	
Span Bias%	0.2%	0.2%	0.2%	
Span Drift%	-0.1%	0.3%	-0.5%	
Ini Zero Avg	0.108	0.225	0.11	
Ini Span Avg	11.312	9.838	55.54	
Run Avg	6.998	12.868	10.84	
Co	0.108	0.237	0.17	
Cm	11.302	9.868	55.27	
Correct Avg	7.048	12.997	10.69	

System Bias Check End

Final System Bias Check, Run 3 STRATA Version 3.2

2 B

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack

0922 - 1022

	Reference Cylinder Numbers	
	Zero	Span
O2		
CO2		
THC		

Date/Time	06-27-2013		10:31:40	PASSED
Analyte	O2	CO2	THC	
Units	%	%	ppm	
Zero Ref Cyl	0.000	0.000	0.00	
Zero Cal	0.036	0.139	0.29	
Zero Avg	0.135	0.269	-0.56	
Zero Bias%	0.4%	0.7%	0.8%	
Zero Drift%	0.1%	0.1%	-0.8%	
Span Ref Cyl	11.450	9.910	55.20	
Span Cal	11.344	9.933	55.20	
Span Avg	11.320	9.938	55.37	
Span Bias%	0.1%	0.0%	0.2%	
Span Drift%	0.1%	0.2%	0.4%	
Ini Zero Avg	0.107	0.250	0.22	
Ini Span Avg	11.291	9.899	55.00	
Run Avg	7.845	12.189	3.04	
Co	0.121	0.259	-0.17	
Cm	11.306	9.918	55.18	
Correct Avg	7.907	12.240	3.19	

System Bias Check End

XM10 SM
VOC-3

Final System Bias Check, Run 4 STRATA Version 3.2

Operator: Robert Arnold

Plant Name: Fitchburg

Location: Stack

Reference Cylinder Numbers

	Zero	Span
O2		
CO2		
THC		

3A

Date/Time	06-27-2013		10:52:27	PASSED
Analyte	O2	CO2	THC	
Units	%	%	ppm	
Zero Ref Cyl	0.000	0.000	0.00	
Zero Cal	0.083	0.003	0.29	
Zero Avg	0.131	0.263	0.87	
Zero Bias%	0.2%	1.3%	0.6%	
Zero Drift%	0.0%	0.0%	1.4%	
Span Ref Cyl	11.450	9.910	55.20	
Span Cal	11.352	9.899	55.20	
Span Avg	11.322	9.933	55.31	
Span Bias%	0.1%	0.2%	0.1%	
Span Drift%	0.0%	0.0%	-0.1%	
Ini Zero Avg	0.135	0.269	-0.56	
Ini Span Avg	11.320	9.938	55.37	
Run Avg	7.921	12.164	4.63	
Co	0.133	0.266	0.16	
Cm	11.321	9.936	55.34	
Correct Avg	7.970	12.194	4.47	

System Bias Check End

CONFIDENTIAL BUSINESS INFORMATION

DM1038

EFFLUENT GAS CALIBRATION CORRECTION

FACILITY:	Pinetree Fitchburg	RUN ID#:	Comp 3 B
UNIT:	Stack	START:	10:55
DATE:	6-26-13	END:	11:55

			O2	CO2	RESP	
		RANGE	20.80	19.85		
Cma	=	ACTUAL CAL GAS	11.45	9.91		
		ACAL ZERO	0.04	0.14	0.7%	ACAL BIAS
		INIT ZERO	0.14	0.27	0.7%	BIAS
		FINAL ZERO	0.15	0.31	0.9%	BIAS
Co	=	AVG ZERO	0.14	0.29	0.2%	DRIFT
		ACAL RESP	11.34	9.93	0.1%	ACAL BIAS
		INIT UPSCALE	11.32	9.94	0.0%	BIAS
		FINAL UPSCALE	11.33	9.92	-0.1%	BIAS
Cm	=	AVG UPSCALE	11.33	9.93	-0.1%	DRIFT
Craw	=	RAW RM DATA	7.80	12.26		
Cgas	=	ADJ RM DATA	7.84	12.31		

Appendix H

RATA 1

Test Run 2 STRATA Version 3.2

	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
Begin calculating run averages					
06-26-2013 08:26:05	7.030	12.913	199.61	26.16	0.07
06-26-2013 08:27:04	7.015	12.907	193.87	26.24	-0.02
06-26-2013 08:28:04	7.148	12.830	168.39	27.22	-0.13
06-26-2013 08:29:04	7.074	12.879	154.78	28.21	0.09
06-26-2013 08:30:04	7.299	12.737	141.44	27.25	-0.02
06-26-2013 08:31:04	7.153	12.826	148.01	27.35	0.04
06-26-2013 08:32:04	7.162	12.819	221.05	26.41	-0.02
06-26-2013 08:33:04	6.993	12.941	227.32	26.96	-0.04
06-26-2013 08:34:04	7.008	12.914	182.70	28.09	0.09
06-26-2013 08:35:04	7.213	12.810	184.81	28.64	0.03
06-26-2013 08:36:05	7.469	12.633	142.65	29.43	0.12
06-26-2013 08:37:05	7.521	12.625	148.77	29.75	0.17
06-26-2013 08:38:05	7.719	12.420	142.84	29.00	-0.02
06-26-2013 08:39:05	7.347	12.705	120.80	29.98	0.15
06-26-2013 08:40:05	7.411	12.668	123.25	30.61	0.15
06-26-2013 08:41:05	7.420	12.663	126.22	31.75	0.06
06-26-2013 08:42:05	7.111	12.844	155.15	32.76	0.14
06-26-2013 08:43:05	7.216	12.824	261.51	33.08	0.09
06-26-2013 08:44:05	7.475	12.645	177.05	34.45	0.11
06-26-2013 08:45:05	7.487	12.617	144.58	35.14	0.03
06-26-2013 08:46:05	7.769	12.431	127.63	34.66	0.11
Run Averages	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
06-26-2013 08:46:05	7.288	12.745	166.31	29.67	0.06

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 2 End

T. Wheeler
MassDEP
6/26/13

RATH 2

Test Run 3 STRATA Version 3.2

	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
Begin calculating run averages					
06-26-2013 08:54:01	7.629	12.525	159.74	34.63	4.33
06-26-2013 08:55:01	7.561	12.560	140.82	34.68	3.76
06-26-2013 08:56:01	7.664	12.499	127.00	34.49	3.12
06-26-2013 08:57:01	7.745	12.451	115.11	33.59	2.54
06-26-2013 08:58:01	7.654	12.482	111.78	33.52	2.05
06-26-2013 08:59:01	7.316	12.752	136.49	35.40	1.71
06-26-2013 09:00:01	7.454	12.677	179.73	34.42	1.53
06-26-2013 09:01:02	7.247	12.801	134.00	36.33	1.32
06-26-2013 09:02:02	7.146	12.873	127.23	36.90	1.25
06-26-2013 09:03:02	7.407	12.717	115.74	35.71	1.05
06-26-2013 09:04:02	7.253	12.785	117.84	35.09	0.95
06-26-2013 09:05:02	7.007	12.973	217.29	36.19	0.88
06-26-2013 09:06:02	7.103	12.907	174.14	37.84	0.84
06-26-2013 09:07:02	7.143	12.888	150.17	37.91	0.72
06-26-2013 09:08:02	7.327	12.768	125.93	37.84	0.67
06-26-2013 09:09:02	7.178	12.856	118.29	38.11	0.66
06-26-2013 09:10:02	7.162	12.867	114.07	39.67	0.42
06-26-2013 09:11:02	7.458	12.661	160.39	37.19	0.59
06-26-2013 09:12:02	7.192	12.848	134.35	38.65	0.39
06-26-2013 09:13:02	7.294	12.790	133.15	39.83	0.37
06-26-2013 09:14:02	7.400	12.715	128.04	39.38	0.36
Run Averages	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
06-26-2013 09:14:02	7.350	12.733	139.11	36.54	1.41

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 3 End

T. Wheeler
MassDEP
6/26/13

Test Run 4 STRATA Version 3.2

	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
Begin calculating run averages					
06-26-2013 09:25:02	7.349	12.764	161.16	35.07	-0.32
06-26-2013 09:26:02	7.533	12.633	153.39	33.20	-0.80
06-26-2013 09:27:02	7.582	12.595	147.29	30.85	-1.24
06-26-2013 09:28:02	7.576	12.586	144.07	28.84	-1.53
06-26-2013 09:29:02	7.546	12.606	113.30	28.92	-0.50
06-26-2013 09:30:02	7.195	12.828	130.97	29.67	-0.60
06-26-2013 09:31:02	6.726	13.211	223.07	30.63	-0.65
06-26-2013 09:32:02	6.837	13.097	213.05	30.90	-0.49
06-26-2013 09:33:02	7.148	12.900	219.04	27.77	-0.37
06-26-2013 09:34:02	7.002	12.972	185.79	27.95	-0.45
06-26-2013 09:35:02	6.850	13.081	182.54	28.11	-0.28
06-26-2013 09:36:02	6.766	13.170	180.71	28.38	-0.42
06-26-2013 09:37:03	6.765	13.186	210.48	27.83	-0.47
06-26-2013 09:38:03	6.737	13.265	317.10	28.52	-0.61
06-26-2013 09:39:03	6.742	13.233	308.57	28.86	-0.61
06-26-2013 09:40:03	6.661	13.364	270.26	29.26	-0.65
06-26-2013 09:41:03	6.584	13.447	284.02	30.47	-0.65
06-26-2013 09:42:03	6.609	13.408	298.39	30.36	-0.31
06-26-2013 09:43:03	6.856	13.129	227.12	30.19	-0.25
06-26-2013 09:44:03	7.092	12.937	235.49	26.86	-0.33
06-26-2013 09:45:03	6.920	13.029	191.03	27.08	-0.20
Run Averages	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
06-26-2013 09:45:03	7.004	13.021	209.37	29.51	-0.56

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 4 End

T. Wheeler
MassDEP
6/26/13

RATA 4

Test Run 5 STRATA Version 3.2

	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
Begin calculating run averages					
06-26-2013 09:53:14	6.537	13.511	425.46	27.18	-0.14
06-26-2013 09:54:14	6.818	13.189	269.23	27.37	-0.10
06-26-2013 09:55:14	6.909	13.066	263.95	25.58	-0.13
06-26-2013 09:56:14	6.330	13.787	425.18	27.27	-0.22
06-26-2013 09:57:14	6.279	13.895	564.01	27.77	-0.29
06-26-2013 09:58:14	6.379	13.792	534.25	27.82	-0.24
06-26-2013 09:59:14	6.771	13.281	265.36	27.90	-0.33
06-26-2013 10:00:14	7.047	12.980	234.82	26.18	-0.35
06-26-2013 10:01:14	6.585	13.427	360.28	26.03	-0.31
06-26-2013 10:02:14	6.132	14.094	789.79	27.08	-0.24
06-26-2013 10:03:14	6.132	14.093	831.56	27.96	-0.29
06-26-2013 10:04:14	6.199	14.050	576.77	29.20	-0.29
06-26-2013 10:05:14	6.530	13.621	340.56	29.49	-0.24
06-26-2013 10:06:14	6.722	13.298	288.70	27.54	-0.35
06-26-2013 10:07:14	6.388	13.768	343.78	28.84	-0.37
06-26-2013 10:08:14	6.451	13.702	320.98	29.04	-0.35
06-26-2013 10:09:14	6.614	13.480	262.59	28.78	-0.34
06-26-2013 10:10:14	6.549	13.542	249.94	28.75	-0.39
06-26-2013 10:11:14	6.137	14.083	690.66*	29.22	-0.33
06-26-2013 10:12:14	6.029	14.263	977.46*	30.26	-0.41
06-26-2013 10:13:14	6.156	14.126	775.50*	31.98	-0.40
Run Averages	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
06-26-2013 10:13:15	6.462	13.669	466.23*	28.15	-0.29

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 5 End

T. Wheeler
MassDEP
6/26/13

RATA 5

Test Run 6 STRATA Version 3.2

	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
Begin calculating run averages					
06-26-2013 10:22:22	6.439	13.617	466.78	33.37	0.04
06-26-2013 10:23:22	6.569	13.550	374.36	33.46	-0.23
06-26-2013 10:24:22	7.017	13.025	191.77	33.11	-0.32
06-26-2013 10:25:23	7.001	13.004	163.31	32.57	-0.38
06-26-2013 10:26:23	6.641	13.383	235.52	32.55	-0.32
06-26-2013 10:27:23	6.562	13.533	302.04	32.63	-0.42
06-26-2013 10:28:23	6.762	13.281	335.13	31.60	-0.45
06-26-2013 10:29:23	6.597	13.517	246.92	33.17	-0.52
06-26-2013 10:30:23	6.618	13.491	260.80	34.03	-0.47
06-26-2013 10:31:23	6.326	13.852	445.83	35.03	-0.47
06-26-2013 10:32:23	6.249	14.015	644.09	35.71	-0.47
06-26-2013 10:33:23	6.719	13.427	419.11	34.40	-0.62
06-26-2013 10:34:23	6.704	13.376	295.18	34.29	-0.53
06-26-2013 10:35:23	6.632	13.472	283.36	34.35	-0.60
06-26-2013 10:36:23	6.320	13.908	498.37	35.34	-0.48
06-26-2013 10:37:23	6.434	13.803	407.29	36.63	-0.53
06-26-2013 10:38:23	6.579	13.600	312.77	37.08	-0.62
06-26-2013 10:39:23	6.865	13.241	349.75	34.76	-0.55
06-26-2013 10:40:23	6.765	13.313	254.20	35.85	-0.57
06-26-2013 10:41:23	6.563	13.599	292.34	36.83	-0.52
06-26-2013 10:42:23	6.592	13.571	289.02	37.38	-0.62
Run Averages	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
06-26-2013 10:42:23	6.617	13.504	336.57	34.48	-0.46

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 6 End

T. Wheeler
MassDEP
6/26/13

RATA 8

Test Run 7 STRATA Version 3.2

	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
Begin calculating run averages					
06-26-2013 10:51:16	6.710	13.372	288.11	38.43	1.98
06-26-2013 10:52:16	6.698	13.372	424.64	38.21	1.72
06-26-2013 10:53:16	6.432	13.766	545.78	39.66	1.29
06-26-2013 10:54:16	6.438	13.767	611.32	40.03	0.89
06-26-2013 10:55:16	6.491	13.721	593.61	39.49	0.56
06-26-2013 10:56:16	6.644	13.510	558.90	38.35	0.47
06-26-2013 10:57:16	6.654	13.488	442.16	39.05	0.19
06-26-2013 10:58:16	6.682	13.466	382.59	40.11	0.10
06-26-2013 10:59:16	6.719	13.425	310.78	40.56	-0.06
06-26-2013 11:00:16	6.776	13.323	420.35	38.87	-0.13
06-26-2013 11:01:16	6.377	13.836	491.60	40.59	-0.26
06-26-2013 11:02:16	6.370	13.901	561.54	42.20	-0.29
06-26-2013 11:03:16	6.592	13.610	464.71	41.57	-0.42
06-26-2013 11:04:16	6.984	13.098	372.35	39.51	-0.49
06-26-2013 11:05:16	7.639	12.672	292.72	39.97	-0.54
06-26-2013 11:06:16	7.747	12.477	316.26	31.99	-0.46
06-26-2013 11:07:16	6.904	13.153	323.36	36.90	-0.56
06-26-2013 11:08:16	7.003	13.054	299.86	37.20	-0.61
06-26-2013 11:09:16	6.800	13.260	287.44	39.52	-0.63
06-26-2013 11:10:16	6.840	13.252	303.18	40.56	-0.54
06-26-2013 11:11:16	7.177	12.957	324.74	37.97	-0.69
Run Averages	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
06-26-2013 11:11:16	6.794	13.356	410.29	39.08	0.07

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 7 End

T. Wheeler
MassDEP 6/26/13

RATA 7 N/G SB
O_2/CO_2 only

Test Run 8 STRATA Version 3.2

	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
Begin calculating run averages					
06-26-2013 11:20:05	7.435	12.738	318.82	33.93	-0.44
06-26-2013 11:21:05	6.997	13.030	356.71	35.08	-0.49
06-26-2013 11:22:05	6.596	13.532	383.46	45.15	-0.64
06-26-2013 11:23:05	6.246	14.013	542.27	71.52	-0.64
06-26-2013 11:24:04	5.754	14.741	612.73	84.49	-0.56
06-26-2013 11:25:04	5.581	14.957	553.37	117.13	-0.67
06-26-2013 11:26:04	5.495	15.131	633.28	118.57	-0.68
06-26-2013 11:27:04	5.917	14.605	516.41	114.79	-0.74
06-26-2013 11:28:04	5.859	14.636	428.21	116.97	-0.68
06-26-2013 11:29:04	5.821	14.684	488.99	116.08	-0.70
06-26-2013 11:30:04	5.803	14.685	604.48	114.71	-0.74
06-26-2013 11:31:04	5.661	14.882	706.29	114.00	-0.76
06-26-2013 11:32:04	5.377	15.193	924.47*	112.83	-0.73
06-26-2013 11:33:04	5.095	15.544	1000.26*	114.19	-0.80
06-26-2013 11:34:04	4.743	15.968	1000.25*	111.05	-0.72
06-26-2013 11:35:05	5.100	15.611	1000.25*	113.02	-0.81
06-26-2013 11:36:05	5.068	15.602	1000.25*	115.44	-0.91
06-26-2013 11:37:05	5.136	15.582	1000.25*	114.46	-0.87
06-26-2013 11:38:05	5.588	15.004	976.38*	113.88	-0.92
06-26-2013 11:39:05	5.129	15.459	993.32*	110.68	-0.87
06-26-2013 11:40:05	4.863	15.834	1000.21*	107.29	-0.87
Run Averages	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
06-26-2013 11:40:05	5.681	14.828	715.99*	99.73	-0.72

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 8 End

*N/G

T. Wheeler
MassDEP
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RATA 9 N/G STB
O_2/CO_2 only

Test Run 9 STRATA Version 3.2

	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
Begin calculating run averages					
06-26-2013 11:49:14	4.966	15.689	1000.22*	111.26	-0.68
06-26-2013 11:50:14	5.094	15.577	1000.20*	112.80	-0.64
06-26-2013 11:51:14	5.079	15.622	1000.20*	114.34	-0.68
06-26-2013 11:52:14	4.876	15.848	1000.08*	115.59	-0.83
06-26-2013 11:53:14	4.983	15.742	1000.19*	115.06	-0.87
06-26-2013 11:54:14	5.363	15.351	957.22*	115.92	-0.96
06-26-2013 11:55:14	5.234	15.362	1000.18*	113.48	-0.87
06-26-2013 11:56:14	5.298	15.396	962.64*	113.78	-0.91
06-26-2013 11:57:14	5.617	14.975	752.64	109.16	-0.96
06-26-2013 11:58:14	5.756	14.948	899.26*	107.58	-0.95
06-26-2013 11:59:14	5.552	14.777	1000.20*	81.53	-1.00
06-26-2013 12:00:14	6.128	14.343	991.53*	37.79	-0.86
06-26-2013 12:01:15	6.218	14.070	1000.20*	14.18	-1.01
06-26-2013 12:02:15	6.183	14.104	1000.19*	19.18	-0.97
06-26-2013 12:03:15	6.319	13.936	1000.20*	25.85	-0.94
06-26-2013 12:04:15	6.370	13.857	1000.18*	31.07	-1.06
06-26-2013 12:05:15	6.142	14.157	1000.18*	35.19	-1.04
06-26-2013 12:06:15	6.242	14.085	1000.17*	38.69	-1.00
06-26-2013 12:07:15	6.305	13.985	1000.18*	40.13	-1.01
06-26-2013 12:08:15	6.333	13.961	969.94*	41.43	-1.08
06-26-2013 12:09:15	6.539	13.693	705.59	45.23	-1.03
Run Averages	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
06-26-2013 12:09:15	5.743	14.737	963.92*	73.27	-0.92

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 9 End

Test Run 10 STRATA Version 3.2

	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
Begin calculating run averages					
06-26-2013 12:18:07	6.736	13.372	822.06*	36.36	-0.80
06-26-2013 12:19:07	6.843	13.261	566.18	36.78	-0.84
06-26-2013 12:20:07	7.306	12.857	486.73	34.10	-0.90
06-26-2013 12:21:07	7.218	12.903	934.04*	30.25	-0.94
06-26-2013 12:22:07	7.373	12.798	645.62	30.11	-0.88
06-26-2013 12:23:07	6.752	13.255	939.23*	31.36	-0.98
06-26-2013 12:24:08	6.580	13.595	1000.22*	33.27	-1.10
06-26-2013 12:25:07	6.832	13.237	976.42*	33.12	-1.01
06-26-2013 12:26:07	7.193	12.955	682.86	32.75	-1.07
06-26-2013 12:27:07	7.243	12.880	656.51	31.26	-0.89
06-26-2013 12:28:07	6.956	13.098	958.88*	29.77	-1.05
06-26-2013 12:29:07	7.225	12.943	649.12	30.49	-1.07
06-26-2013 12:30:07	7.203	12.904	499.12	30.19	-1.05
06-26-2013 12:31:07	6.765	13.317	842.72*	29.79	-1.09
06-26-2013 12:32:07	6.752	13.388	620.34	31.12	-1.09
06-26-2013 12:33:07	6.880	13.201	566.44	30.75	-1.00
06-26-2013 12:34:07	6.925	13.186	621.69	30.05	-1.05
06-26-2013 12:35:08	7.358	12.854	607.06	27.67	-1.01
06-26-2013 12:36:07	7.704	12.608	306.58	26.90	-1.02
06-26-2013 12:37:07	7.642	12.611	318.08	25.97	-1.06
06-26-2013 12:38:07	7.567	12.705	438.27	24.30	-1.07
Run Averages	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
06-26-2013 12:38:07	7.097	13.044	673.30*	30.78	-1.00

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 10 End

RATA 8

Test Run 11   STRATA Version 3.2

	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
Begin calculating run averages					
06-26-2013 12:55:18	7.235	12.913	409.95	28.28	-1.17
06-26-2013 12:56:18	7.583	12.689	397.09	26.41	-2.35
06-26-2013 12:57:18	8.007	12.383	244.85	26.07	-0.79
06-26-2013 12:58:18	8.007	12.337	193.17	26.40	-1.60
06-26-2013 12:59:18	7.541	12.685	209.71	28.90	-2.09
06-26-2013 13:00:18	7.606	12.648	211.17	29.26	-2.29
06-26-2013 13:01:18	7.422	12.761	274.06	28.41	-2.02
06-26-2013 13:02:18	7.290	12.876	249.30	30.21	-0.55
06-26-2013 13:03:18	7.456	12.774	245.56	30.53	-0.77
06-26-2013 13:04:18	7.660	12.634	235.46	30.03	-0.87
06-26-2013 13:05:18	7.599	12.649	216.72	30.69	-0.97
06-26-2013 13:06:18	7.730	12.576	259.54	29.67	-1.04
06-26-2013 13:07:18	7.743	12.562	259.14	28.54	-1.26
06-26-2013 13:08:18	7.244	12.873	268.82	30.45	-1.22
06-26-2013 13:09:18	7.098	12.996	306.03	32.12	-1.28
06-26-2013 13:10:18	7.374	12.846	260.55	32.26	-1.24
06-26-2013 13:11:18	7.632	12.657	240.52	31.53	-1.31
06-26-2013 13:12:18	8.105	12.317	276.80	27.52	-1.40
06-26-2013 13:13:18	7.829	12.480	218.85	29.16	-1.36
06-26-2013 13:14:18	7.687	12.594	220.11	30.19	-1.40
06-26-2013 13:15:18	7.626	12.644	215.49	30.93	-1.27
Run Averages	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
06-26-2013 13:15:18	7.594	12.661	257.76	29.41	-1.34

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 11   End

9

Test Run 12 STRATA Version 3.2

	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
Begin calculating run averages					
06-26-2013 13:26:06	7.708	12.485	191.41	33.26	-0.35
06-26-2013 13:27:06	7.525	12.694	163.98	35.62	-1.16
06-26-2013 13:28:06	7.148	12.940	219.81	36.34	-1.24
06-26-2013 13:29:06	7.230	12.905	259.77	36.01	-1.30
06-26-2013 13:30:06	7.084	12.996	254.19	37.39	-1.39
06-26-2013 13:31:06	6.903	13.138	284.71	39.15	-1.43
06-26-2013 13:32:06	7.034	13.040	249.17	39.84	-1.39
06-26-2013 13:33:06	7.146	12.971	238.41	39.56	-1.39
06-26-2013 13:34:06	7.305	12.841	254.98	36.73	-1.44
06-26-2013 13:35:05	6.891	13.136	302.57	38.46	-1.43
06-26-2013 13:36:05	6.914	13.134	300.44	39.08	-1.47
06-26-2013 13:37:05	6.756	13.346	336.14	39.76	-1.48
06-26-2013 13:38:06	6.646	13.497	484.10	39.76	-1.41
06-26-2013 13:39:06	6.813	13.295	425.08	39.27	-1.40
06-26-2013 13:40:06	6.951	13.097	401.62	37.32	-1.49
06-26-2013 13:41:06	6.771	13.332	375.75	39.63	-1.51
06-26-2013 13:42:06	6.962	13.101	311.11	39.89	-1.47
06-26-2013 13:43:06	7.112	12.996	273.15	39.12	-1.42
06-26-2013 13:44:06	7.294	12.870	251.56	38.58	-1.53
06-26-2013 13:45:06	7.344	12.836	321.85	35.73	-1.50
06-26-2013 13:46:06	7.260	12.878	261.94	36.13	-1.48
Run Averages	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
06-26-2013 13:46:06	7.086	13.025	293.33	37.93	-1.36

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 12 End

13

Test Run 13 STRATA Version 3.2

	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
Begin calculating run averages					
06-26-2013 13:55:20	7.348	12.807	205.01	36.86	-1.11
06-26-2013 13:56:20	7.376	12.802	277.22	33.88	-1.25
06-26-2013 13:57:20	7.185	12.908	194.80	34.86	-1.26
06-26-2013 13:58:20	6.936	13.095	205.76	37.78	-1.28
06-26-2013 13:59:20	6.886	13.144	232.10	39.99	-1.37
06-26-2013 14:00:20	6.991	13.067	267.84	39.19	-1.30
06-26-2013 14:01:20	7.028	13.042	306.12	39.34	-1.40
06-26-2013 14:02:20	7.150	12.944	266.84	41.06	-1.39
06-26-2013 14:03:20	7.145	12.958	240.80	41.50	-1.47
06-26-2013 14:04:20	7.610	12.628	412.05	34.37	-1.42
06-26-2013 14:05:20	7.156	12.942	244.36	39.53	-1.45
06-26-2013 14:06:20	7.170	12.935	209.20	42.66	-1.45
06-26-2013 14:07:20	7.328	12.838	276.15	40.88	-1.39
06-26-2013 14:08:20	7.139	12.941	214.45	45.00	-1.35
06-26-2013 14:09:20	7.192	12.938	223.50	47.78	-1.51
06-26-2013 14:10:20	7.280	12.859	195.77	46.65	-1.45
06-26-2013 14:11:20	7.199	12.922	202.90	46.90	-1.44
06-26-2013 14:12:20	7.104	12.984	259.69	45.14	-1.39
06-26-2013 14:13:20	7.026	13.030	269.88	45.48	-1.52
06-26-2013 14:14:20	6.957	13.099	275.06	46.46	-1.43
06-26-2013 14:15:20	7.186	12.950	262.97	44.76	-1.45
Run Averages	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
06-26-2013 14:15:20	7.161	12.944	249.64	41.43	-1.38

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 13 End

11

Test Run 14 STRATA Version 3.2

	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
Begin calculating run averages					
06-26-2013 14:23:04	7.031	13.002	319.50	46.19	-1.22
06-26-2013 14:24:04	7.159	12.956	328.11	44.58	-1.24
06-26-2013 14:25:04	7.180	12.934	256.33	44.70	-1.46
06-26-2013 14:26:04	7.026	13.042	266.77	43.34	-1.33
06-26-2013 14:27:04	6.866	13.182	350.00	41.89	-1.39
06-26-2013 14:28:04	6.619	13.534	456.48	41.34	-1.37
06-26-2013 14:29:04	6.574	13.613	692.99	38.22	-1.41
06-26-2013 14:30:04	6.432	13.774	792.35	37.72	-1.45
06-26-2013 14:31:04	6.254	14.024	985.12*	36.75	-1.57
06-26-2013 14:32:04	6.339	13.924	1000.30*	35.03	-1.46
06-26-2013 14:33:04	6.419	13.836	976.21*	34.35	-1.52
06-26-2013 14:34:04	6.426	13.793	844.24*	34.02	-1.38
06-26-2013 14:35:04	6.447	13.789	670.83	32.76	-1.53
06-26-2013 14:36:04	6.570	13.631	495.91	33.04	-1.41
06-26-2013 14:37:04	6.374	13.878	635.62*	33.56	-1.50
06-26-2013 14:38:04	6.591	13.638	713.05*	32.56	-1.64
06-26-2013 14:39:04	6.579	13.628	534.57	33.14	-1.36
06-26-2013 14:40:04	7.267	12.925	482.31	27.96	-1.46
06-26-2013 14:41:04	7.052	13.010	392.67	29.27	-1.44
06-26-2013 14:42:04	7.097	13.016	369.63	29.73	-1.41
06-26-2013 14:43:05	7.086	13.003	399.05	29.55	-1.45
Run Averages	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
06-26-2013 14:43:05	6.733	13.435	569.62*	36.18	-1.43

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 14 End

12

Test Run 15 STRATA Version 3.2

	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
Begin calculating run averages					
06-26-2013 15:26:30	7.334	12.835	335.70	27.52	-1.42
06-26-2013 15:27:30	7.230	12.904	324.47	27.76	-1.42
06-26-2013 15:28:30	7.123	12.964	352.24	27.64	-1.53
06-26-2013 15:29:30	7.084	13.007	581.83	25.84	-1.53
06-26-2013 15:30:30	7.050	13.018	311.07	26.30	-1.57
06-26-2013 15:31:30	7.038	13.048	413.89	27.30	-1.43
06-26-2013 15:32:30	7.185	12.942	356.06	27.05	-1.48
06-26-2013 15:33:30	7.205	12.918	362.59	27.41	-1.42
06-26-2013 15:34:31	7.284	12.876	389.42	26.35	-1.52
06-26-2013 15:35:31	7.504	12.721	364.20	24.99	-1.37
06-26-2013 15:36:31	7.392	12.803	273.96	27.12	-1.55
06-26-2013 15:37:31	7.296	12.862	293.32	27.74	-1.58
06-26-2013 15:38:31	7.219	12.912	293.80	28.39	-1.50
06-26-2013 15:39:31	7.394	12.805	279.26	28.07	-1.53
06-26-2013 15:40:31	7.419	12.768	337.18	26.88	-1.47
06-26-2013 15:41:31	7.283	12.874	280.75	28.81	-1.61
06-26-2013 15:42:31	7.169	12.935	307.17	29.92	-1.63
06-26-2013 15:43:31	7.210	12.919	316.71	30.90	-1.45
06-26-2013 15:44:31	7.256	12.899	297.85	31.33	-1.49
06-26-2013 15:45:31	7.535	12.729	356.75	29.32	-1.46
06-26-2013 15:46:31	7.508	12.705	360.45	28.95	-1.45
Run Averages	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
06-26-2013 15:46:31	7.272	12.878	342.32	27.89	-1.50

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 15 End

PM10 - 2 A

VOC - 1

Test Run 2 STRATA Version 3.2

	O2	CO2	THC
	%	%	ppm
Begin calculating run averages			
06-27-2013 08:21:01	7.286	12.526	11.69
06-27-2013 08:22:01	7.347	12.448	9.18
06-27-2013 08:23:01	6.785	13.023	10.79
06-27-2013 08:24:01	6.845	12.972	11.47
06-27-2013 08:25:01	6.858	12.879	7.88
06-27-2013 08:26:01	6.706	13.169	7.61
06-27-2013 08:27:01	6.749	13.102	7.03
06-27-2013 08:28:01	6.829	12.978	9.08
06-27-2013 08:29:01	6.596	13.250	12.36
06-27-2013 08:30:01	6.493	13.448	19.91
06-27-2013 08:31:01	6.535	13.388	16.00
06-27-2013 08:32:01	6.565	13.329	33.71
06-27-2013 08:33:02	6.507	13.407	25.27
06-27-2013 08:34:02	6.457	13.467	24.50
06-27-2013 08:35:02	6.572	13.351	14.81
06-27-2013 08:36:02	6.777	13.093	15.30
06-27-2013 08:37:02	6.670	13.246	10.12
06-27-2013 08:38:02	6.619	13.312	8.89
06-27-2013 08:39:02	6.551	13.381	15.25
06-27-2013 08:40:02	6.586	13.324	23.28
06-27-2013 08:41:02	6.440	13.548	15.85
06-27-2013 08:42:02	6.456	13.499	22.17
06-27-2013 08:43:02	6.413	13.549	23.01
06-27-2013 08:44:02	6.687	13.201	16.89
06-27-2013 08:45:02	6.466	13.475	21.47
06-27-2013 08:46:02	6.722	13.156	13.67
06-27-2013 08:47:02	6.490	13.430	32.50
06-27-2013 08:48:02	6.814	13.040	15.45
06-27-2013 08:49:02	6.796	13.057	9.57
06-27-2013 08:50:01	7.107	12.711	7.53
06-27-2013 08:51:01	7.372	12.484	7.30
06-27-2013 08:52:02	7.530	12.363	6.56
06-27-2013 08:53:02	7.317	12.492	5.42
06-27-2013 08:54:02	7.275	12.546	5.22
06-27-2013 08:55:02	7.294	12.521	9.37
06-27-2013 08:56:02	7.301	12.520	7.62
06-27-2013 08:57:02	7.399	12.463	5.49
06-27-2013 08:58:02	7.263	12.527	7.18
06-27-2013 08:59:02	7.178	12.624	6.80
06-27-2013 09:00:02	7.057	12.691	5.25
06-27-2013 09:01:02	6.820	13.043	6.20
06-27-2013 09:02:02	6.758	13.124	5.37
06-27-2013 09:03:02	6.835	13.026	9.34
06-27-2013 09:04:02	6.935	12.874	6.77
06-27-2013 09:05:02	7.067	12.693	7.17
06-27-2013 09:06:02	7.164	12.611	6.05
06-27-2013 09:07:02	7.320	12.527	8.07
06-27-2013 09:08:02	7.090	12.652	5.94
06-27-2013 09:09:02	7.164	12.619	5.37
06-27-2013 09:10:02	7.371	12.474	5.40
06-27-2013 09:11:02	7.453	12.428	5.89
06-27-2013 09:12:02	7.503	12.387	4.95
06-27-2013 09:13:02	7.426	12.440	4.54
06-27-2013 09:14:02	7.425	12.434	4.44
06-27-2013 09:15:02	7.456	12.426	4.94
06-27-2013 09:16:01	7.501	12.400	3.83
06-27-2013 09:17:01	7.656	12.282	3.72
06-27-2013 09:18:01	7.646	12.294	5.63
06-27-2013 09:19:02	7.919	12.115	4.06
06-27-2013 09:20:02	7.689	12.261	3.87
Run Averages	O2	CO2	THC
	%	%	ppm
06-27-2013 09:20:02	6.998	12.868	10.84

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 2 End

TM 10-26

VOC - 2

Test Run 3 STRATA Version 3.2

	O2	CO2	THC
	%	%	ppm
Begin calculating run averages			
06-27-2013 09:27:16	8.391	11.616	2.81
06-27-2013 09:28:15	8.123	11.921	2.81
06-27-2013 09:29:15	7.917	12.111	2.65
06-27-2013 09:30:15	8.116	11.979	3.73
06-27-2013 09:31:16	8.057	12.025	2.76
06-27-2013 09:32:16	8.332	11.849	2.45
06-27-2013 09:33:16	8.530	11.691	2.10
06-27-2013 09:34:16	8.599	11.642	1.86
06-27-2013 09:35:16	8.419	11.761	2.10
06-27-2013 09:36:16	8.385	11.788	2.20
06-27-2013 09:37:16	8.083	12.013	1.52
06-27-2013 09:38:16	7.801	12.192	1.47
06-27-2013 09:39:16	7.755	12.244	1.39
06-27-2013 09:40:16	7.885	12.165	1.24
06-27-2013 09:41:16	7.811	12.199	1.92
06-27-2013 09:42:16	7.503	12.406	1.50
06-27-2013 09:43:16	7.462	12.449	1.53
06-27-2013 09:44:15	7.393	12.491	1.81
06-27-2013 09:45:15	7.471	12.439	1.82
06-27-2013 09:46:15	7.607	12.364	2.20
06-27-2013 09:47:15	7.784	12.223	2.39
06-27-2013 09:48:15	7.391	12.494	2.05
06-27-2013 09:49:15	7.515	12.414	2.50
06-27-2013 09:50:15	7.436	12.469	3.03
06-27-2013 09:51:15	7.405	12.489	4.16
06-27-2013 09:52:15	7.646	12.342	5.76
06-27-2013 09:53:15	7.578	12.372	4.60
06-27-2013 09:54:15	7.647	12.338	4.09
06-27-2013 09:55:15	7.676	12.314	3.99
06-27-2013 09:56:15	7.674	12.311	3.85
06-27-2013 09:57:15	7.473	12.445	4.20
06-27-2013 09:58:15	7.621	12.358	4.83
06-27-2013 09:59:15	7.572	12.379	4.43
06-27-2013 10:00:15	7.499	12.435	3.83
06-27-2013 10:01:15	7.668	12.329	3.79
06-27-2013 10:02:15	7.756	12.269	3.56
06-27-2013 10:03:15	7.801	12.249	4.66
06-27-2013 10:04:16	7.572	12.359	4.85
06-27-2013 10:05:16	7.423	12.479	4.27
06-27-2013 10:06:16	7.461	12.464	3.64
06-27-2013 10:07:16	7.714	12.306	3.04
06-27-2013 10:08:16	7.860	12.197	3.30
06-27-2013 10:09:16	7.842	12.196	4.31
06-27-2013 10:10:16	7.584	12.379	4.13
06-27-2013 10:11:16	7.550	12.389	4.05
06-27-2013 10:12:15	7.623	12.357	3.66
06-27-2013 10:13:15	8.004	12.137	3.32
06-27-2013 10:14:15	8.495	11.782	4.98
06-27-2013 10:15:15	8.465	11.731	2.98
06-27-2013 10:16:15	7.984	12.108	2.61
06-27-2013 10:17:15	8.032	12.093	2.47
06-27-2013 10:18:15	8.043	12.072	2.19
06-27-2013 10:19:15	7.798	12.238	2.67
06-27-2013 10:20:15	8.090	12.064	3.52
06-27-2013 10:21:15	8.021	12.094	2.36
06-27-2013 10:22:15	8.135	12.025	2.35
06-27-2013 10:23:16	7.983	12.127	2.52
06-27-2013 10:24:16	8.120	12.051	2.32
06-27-2013 10:25:16	8.011	12.120	2.73
06-27-2013 10:26:16	8.100	12.039	2.33
Run Averages	O2	CO2	THC
	%	%	ppm
06-27-2013 10:26:16	7.845	12.189	3.04

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 3 End

PMIO 3A
VOC - 3

Test Run 4 STRATA Version 3.2

	O2	CO2	THC
	%	%	ppm
Begin calculating run averages			
06-27-2013 09:49:01	7.980	12.133	2.23
06-27-2013 09:50:01	7.914	12.160	1.92
06-27-2013 09:51:01	7.747	12.284	2.48
06-27-2013 09:52:01	7.879	12.177	2.60
06-27-2013 09:53:01	7.709	12.314	2.38
06-27-2013 09:54:01	7.913	12.180	2.00
06-27-2013 09:55:01	8.091	12.062	1.82
06-27-2013 09:56:01	8.104	12.037	1.73
06-27-2013 09:57:01	8.058	12.068	2.80
06-27-2013 09:58:01	7.809	12.224	2.08
06-27-2013 09:59:01	7.560	12.381	2.40
06-27-2013 10:00:01	7.298	12.581	3.12
06-27-2013 10:01:01	7.598	12.403	3.19
06-27-2013 10:02:01	7.946	12.146	3.67
06-27-2013 10:03:01	8.115	12.028	3.21
06-27-2013 10:04:01	7.997	12.104	2.81
06-27-2013 10:05:01	8.072	12.060	2.54
06-27-2013 10:06:01	7.814	12.209	2.48
06-27-2013 10:07:01	7.459	12.464	2.85
06-27-2013 10:08:01	7.758	12.281	3.39
06-27-2013 10:09:01	7.707	12.298	3.38
06-27-2013 10:10:01	7.595	12.372	4.14
06-27-2013 10:11:01	7.819	12.241	4.96
06-27-2013 10:12:01	7.926	12.153	5.29
06-27-2013 10:13:01	7.740	12.273	5.96
06-27-2013 10:14:01	7.907	12.174	6.16
06-27-2013 10:15:02	7.973	12.131	5.81
06-27-2013 10:16:01	7.960	12.119	5.79
06-27-2013 10:17:01	7.819	12.218	5.84
06-27-2013 10:18:01	7.885	12.191	6.57
06-27-2013 10:19:01	8.185	11.985	8.36
06-27-2013 10:20:01	7.902	12.142	7.23
06-27-2013 10:21:02	7.785	12.252	7.47
06-27-2013 10:22:02	7.790	12.242	6.87
06-27-2013 10:23:02	7.794	12.250	6.65
06-27-2013 10:24:02	7.948	12.150	6.57
06-27-2013 10:25:02	8.302	11.920	6.89
06-27-2013 10:26:02	8.072	12.034	6.45
06-27-2013 10:27:02	7.609	12.370	6.17
06-27-2013 10:28:01	7.700	12.320	5.90
06-27-2013 10:29:01	7.661	12.339	6.13
06-27-2013 10:30:01	7.978	12.160	6.69
06-27-2013 10:31:01	8.334	11.871	6.51
06-27-2013 10:32:01	8.274	11.922	5.83
06-27-2013 10:33:01	8.050	12.073	5.46
06-27-2013 10:34:01	8.091	12.065	5.26
06-27-2013 10:35:01	8.156	12.010	5.04
06-27-2013 10:36:01	7.992	12.123	5.97
06-27-2013 10:37:02	7.929	12.169	5.46
06-27-2013 10:38:02	8.049	12.095	5.36
06-27-2013 10:39:02	8.060	12.091	5.06
06-27-2013 10:40:02	8.027	12.107	4.88
06-27-2013 10:41:02	8.274	11.957	5.43
06-27-2013 10:42:02	8.178	11.970	4.93
06-27-2013 10:43:02	7.900	12.187	4.62
06-27-2013 10:44:01	8.019	12.109	4.38
06-27-2013 10:45:01	8.125	12.052	4.24
06-27-2013 10:46:01	7.924	12.166	4.22
06-27-2013 10:47:01	8.060	12.091	4.70
06-27-2013 10:48:01	7.912	12.173	3.55
Run Averages	O2	CO2	THC
	%	%	ppm
06-27-2013 10:48:01	7.921	12.164	4.63

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 4 End

Test Run 5 STRATA Version 3.2

PM10 3B

	O2	CO2
	%	%
Begin calculating run averages		
06-27-2013 10:55:57	7.809	12.227
06-27-2013 10:56:57	7.826	12.231
06-27-2013 10:57:57	7.819	12.248
06-27-2013 10:58:57	7.638	12.360
06-27-2013 10:59:57	7.629	12.381
06-27-2013 11:00:57	7.833	12.259
06-27-2013 11:01:57	8.017	12.111
06-27-2013 11:02:57	8.043	12.101
06-27-2013 11:03:57	8.445	11.816
06-27-2013 11:04:57	7.970	12.127
06-27-2013 11:05:57	8.067	12.094
06-27-2013 11:06:57	8.113	12.065
06-27-2013 11:07:57	8.053	12.088
06-27-2013 11:08:57	8.058	12.092
06-27-2013 11:09:57	8.099	12.061
06-27-2013 11:10:57	8.156	12.010
06-27-2013 11:11:57	7.910	12.191
06-27-2013 11:12:57	8.110	12.073
06-27-2013 11:13:57	8.356	11.879
06-27-2013 11:14:57	8.516	11.767
06-27-2013 11:15:57	8.198	11.981
06-27-2013 11:16:57	8.147	12.034
06-27-2013 11:17:57	8.167	12.016
06-27-2013 11:18:57	8.023	12.104
06-27-2013 11:19:57	8.103	12.071
06-27-2013 11:20:57	8.141	12.026
06-27-2013 11:21:57	8.035	12.097
06-27-2013 11:22:57	8.307	11.920
06-27-2013 11:23:57	8.507	11.765
06-27-2013 11:24:57	8.214	11.941
06-27-2013 11:25:57	8.356	11.865
06-27-2013 11:26:57	8.021	12.089
06-27-2013 11:27:57	7.939	12.151
06-27-2013 11:28:57	7.760	12.260
06-27-2013 11:29:57	7.839	12.219
06-27-2013 11:30:57	8.026	12.107
06-27-2013 11:31:57	7.745	12.255
06-27-2013 11:32:57	7.664	12.331
06-27-2013 11:33:57	7.688	12.318
06-27-2013 11:34:57	7.848	12.221
06-27-2013 11:35:57	7.512	12.419
06-27-2013 11:36:57	7.698	12.328
06-27-2013 11:37:57	7.451	12.467
06-27-2013 11:38:57	8.065	12.194
06-27-2013 11:39:57	7.296	12.300
06-27-2013 11:40:57	7.274	12.595
06-27-2013 11:41:57	7.240	12.682
06-27-2013 11:42:57	7.424	12.491
06-27-2013 11:43:56	7.392	12.521
06-27-2013 11:44:57	7.487	12.465
06-27-2013 11:45:57	7.348	12.546
06-27-2013 11:46:57	7.344	12.552
06-27-2013 11:47:57	7.295	12.584
06-27-2013 11:48:57	7.034	12.867
06-27-2013 11:49:57	7.066	12.818
06-27-2013 11:50:57	7.185	12.679
06-27-2013 11:51:57	7.180	12.697
06-27-2013 11:52:57	7.123	12.792
06-27-2013 11:53:57	7.208	12.637
06-27-2013 11:54:57	6.942	12.953
Run Averages	O2	CO2
	%	%
06-27-2013 11:54:57	7.796	12.259

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 5 End

Appendix I

FIELD ANALYSIS job: Pinetree Fitchburg

test date(s): 6-26-13 ; 6-27-13

CALIBRATION

DATE	TIME	TEMP	OHAUS	SCALE
7-10-13	1130	77	1.0000	1.0000
7-11-13	1200	77	1.0000	1.0001
7-11-13	1200	77	50.0000	50.0007
7-12-13	1000	76	50.0000	50.0007

SAMPLE FILTER RESULTS

FILTER#/ RUN#	weight 1	weight 2	weight 3	weight 4	weight 5	final	tare
DATE: / TIME:	7-10-13 1130	7-11-13 1200					
3590 TSP-1	0.3545	0.3544				0.3545	0.3429
3591 TSP-2	0.3570	0.3571				0.3571	0.3432
3592 TSP-3	0.3629	0.3628				0.3629	0.3419
3593 TSP blank	0.3375	0.3377				0.3376	0.3377
372 PM2.5-1	0.1206	0.1208				0.1207	0.1165
373 PM2.5-2	0.1200	0.1202				0.1201	0.1158
374 PM2.5-3	0.1203	0.1203				0.1203	0.1163
375 PM2.5 blank	0.1158	0.1159				0.1159	0.1159

SAMPLE BEAKER RESULTS

BEAKER#/ RUN#	weight 1	weight 2	weight 3	weight 4	weight 5	final	tare	vol (ml)
DATE: / TIME:	7-11-13 1200	7-12-13 1000						
21 TSP-1	49.6213	49.6213				49.6213	49.6145	60
22 TSP-2	60.2762	60.2764				60.2763	60.2673	60
23 TSP-3	64.4696	64.4693				64.4695	64.4558	70
24 PM10-1	62.2603	62.2603				62.2603	62.2545	60
25 PM10-2	61.1679	61.1682				61.1681	61.1617	70
26 PM10-3	65.5854	65.5858				65.5856	65.5810	70
27 PM2.5-1	61.4327	61.4327				61.4327	61.4310	60
28 PM2.5-2	65.5620	65.5622				65.5621	65.5595	60
29 PM2.5-3	63.3908	63.3910				63.3909	63.3899	60
30 blank	66.8445	66.8443				66.8444	66.8442	100

Maxxam

Your P.O. #: 754857
Site Location: PINETREE FITCHBURG

Attention: Bob Arnold
CEM Services Inc
360 Old Colony Rd
Suite 1
Norton, MA
USA 02766

Report Date: 2013/07/15

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3A4670
Received: 2013/07/02, 12:45

Sample Matrix: Stack Sampling Train
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Extractable Condensables (M202)	6	2013/07/10	2013/07/10	BRL SOP-00118	EPA 202
Non Extractable Condensibles (M202)	5	2013/07/12	2013/07/12	BRL SOP-00118 / BRL SOP-00109	EPA 202
Weight of Solvent from Impingers	6	N/A	2013/07/10		
Weight of Water from Impingers	5	N/A	2013/07/10		

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Clayton Johnson
15 Jul 2013 16:08:44 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Clayton Johnson, Project Manager - Air Toxics, Source Evaluation
Email: CJohnson@maxxam.ca
Phone# (905) 817-5769

==
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

EPA M202 CONDENSIBLE PM (STACK SAMPLING TRAIN)

Maxxam ID		SC3094	SC3095	SC3103	SC3104	SC3105		
Sampling Date		2013/06/26 00:01	2013/06/26 00:01	2013/06/26 00:01	2013/06/27 00:01	2013/06/26 00:01		
	Units	RB-H2O-M202	RB-ACE-M202	RB-HEX-M202	REC BL-M202	R1-M202	RDL	QC Batch
Weight	g	200	N/A	N/A	180	310	0.1	3272813
Weight of Solvent	g	N/A	160	130	71	110	0.1	3272811
Inorganic Condensibles	mg	0.9	N/A	N/A	2.6	5.2	0.5	3277249
Organic Condensibles	mg	N/A	<1.0	<1.0	<1.0	1.1	1.0	3272805

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		SC3106	SC3107		
Sampling Date		2013/06/27 00:01	2013/06/27 00:01		
	Units	R2-M202	R3-M202	RDL	QC Batch
Weight	g	340	280	0.1	3272813
Weight of Solvent	g	130	99	0.1	3272811
Inorganic Condensibles	mg	4.6	4.3	0.5	3277249
Organic Condensibles	mg	1.0	<1.0	1.0	3272805

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam

Success Through Science®

Maxxam Job #: B3A4670
Report Date: 2013/07/15

CEM Services Inc

Site Location: PINETREE FITCHBURG
Your P.O. #: 754857

Test Summary

Maxxam ID SC3094
Sample ID RB-H2O-M202
Matrix Stack Sampling Train

Collected 2013/06/26
Shipped
Received 2013/07/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Non Extractable Condensibles (M202)	BAL	3277249	2013/07/12	2013/07/12	Frank Mo
Weight of Water from Impingers		3272813	N/A	2013/07/10	Frank Mo

Maxxam ID SC3095
Sample ID RB-ACE-M202
Matrix Stack Sampling Train

Collected 2013/06/26
Shipped
Received 2013/07/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Extractable Condensables (M202)	BAL	3272805	2013/07/10	2013/07/10	Manoj Gera
Weight of Solvent from Impingers		3272811	N/A	2013/07/10	Brenda Moore

Maxxam ID SC3103
Sample ID RB-HEX-M202
Matrix Stack Sampling Train

Collected 2013/06/26
Shipped
Received 2013/07/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Extractable Condensables (M202)	BAL	3272805	2013/07/10	2013/07/10	Manoj Gera
Weight of Solvent from Impingers		3272811	N/A	2013/07/10	Brenda Moore

Maxxam ID SC3104
Sample ID REC BL-M202
Matrix Stack Sampling Train

Collected 2013/06/27
Shipped
Received 2013/07/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Extractable Condensables (M202)	BAL	3272805	2013/07/10	2013/07/10	Manoj Gera
Non Extractable Condensibles (M202)	BAL	3277249	2013/07/12	2013/07/12	Frank Mo
Weight of Solvent from Impingers		3272811	N/A	2013/07/10	Brenda Moore
Weight of Water from Impingers		3272813	N/A	2013/07/10	Frank Mo

Maxxam ID SC3105
Sample ID R1-M202
Matrix Stack Sampling Train

Collected 2013/06/26
Shipped
Received 2013/07/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Extractable Condensables (M202)	BAL	3272805	2013/07/10	2013/07/10	Manoj Gera
Non Extractable Condensibles (M202)	BAL	3277249	2013/07/12	2013/07/12	Frank Mo
Weight of Solvent from Impingers		3272811	N/A	2013/07/10	Brenda Moore
Weight of Water from Impingers		3272813	N/A	2013/07/10	Frank Mo

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B3A4670
Report Date: 2013/07/15

CEM Services Inc

Site Location: PINETREE FITCHBURG
Your P.O. #: 754857

Test Summary

Maxxam ID SC3106
Sample ID R2-M202
Matrix Stack Sampling Train

Collected 2013/06/27
Shipped
Received 2013/07/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Extractable Condensables (M202)	BAL	3272805	2013/07/10	2013/07/10	Manoj Gera
Non Extractable Condensibles (M202)	BAL	3277249	2013/07/12	2013/07/12	Frank Mo
Weight of Solvent from Impingers		3272811	N/A	2013/07/10	Brenda Moore
Weight of Water from Impingers		3272813	N/A	2013/07/10	Frank Mo

Maxxam ID SC3107
Sample ID R3-M202
Matrix Stack Sampling Train

Collected 2013/06/27
Shipped
Received 2013/07/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Extractable Condensables (M202)	BAL	3272805	2013/07/10	2013/07/10	Manoj Gera
Non Extractable Condensibles (M202)	BAL	3277249	2013/07/12	2013/07/12	Frank Mo
Weight of Solvent from Impingers		3272811	N/A	2013/07/10	Brenda Moore
Weight of Water from Impingers		3272813	N/A	2013/07/10	Frank Mo

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GENERAL COMMENTS

FILTERS : Untared filters were received.

Sample SC3094-01: REAGENT BLANK : Reagent blank result reported as per in 150 ml according to M-202.
REAGENT BLANK : Whitish residue found in Teflon Dish.

Sample SC3095-01: REAGENT BLANK : Reagent blank result reported as per in 150 ml according to M-202.
REAGENT BLANK : Whitish residue found in vial.

Sample SC3103-01: REAGENT BLANK : Reagent blank result reported as per in 150 ml according to M-202.

Sample SC3104-01: ORGANIC EXTRACTION : Whitish residue found in vial.
INORGANIC EXTRACTION : Whitish residue found in Teflon dish.

Sample SC3105-01: ORGANIC EXTRACTION : Whitish residue found in vial.
INORGANIC EXTRACTION : Whitish residue found in Teflon dish.

Sample SC3106-01: ORGANIC EXTRACTION : Whitish residue found in vial.
INORGANIC EXTRACTION : Whitish residue found in Teflon dish.

Sample SC3107-01: ORGANIC EXTRACTION : Whitish residue found in vial.
INORGANIC EXTRACTION : Whitish residue found in Teflon dish.

Results relate only to the items tested.

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Maxxam

CEM Services Inc
Attention: Bob Arnold
Client Project #:
P.O. #: 754857
Site Location: PINETREE FITCHBURG

Quality Assurance Report

Maxxam Job Number: GB3A4670

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3272805 MGE	Spiked Blank	Organic Condensibles	2013/07/10		95	%	70 - 130
	Spiked Blank DUP	Organic Condensibles	2013/07/10		92	%	70 - 130
	RPD	Organic Condensibles	2013/07/10	2.5		%	20
	Method Blank	Organic Condensibles	2013/07/10	<1.0		mg	
3277249 MGE	Method Blank	Inorganic Condensibles	2013/07/12	<0.5		mg	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Validation Signature Page

Maxxam Job #: B3A4670

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Frank Mo, B.Sc., Inorganic Lab. Manager

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Appendix J

FUEL FACTOR CALCULATION SHEET

PLANT : Pinetree Fitchburg

LOCATION : Wood Fired Boiler

DATE : 06/26/13

$$\text{Fd FACTOR} = \frac{1000000\ (3.64\%H+1.53\%C+0.57\%S+0.14\%N-0.46\%O)}{GCV}$$

$$\text{Fc FACTOR} = \frac{1000000\ (0.321\ SCF/LB * \%\ C)}{GCV}$$

FUEL : Wood Chips

% HYDROGEN	=	8.63
% CARBON	=	52.07
% SULFUR	=	0.13
% NITROGEN	=	0.49
% OXYGEN	=	38.13
GCV (Btu/lb)	=	8500

CALCULATED Fd - FACTOR = 11022

CALCULATED Fc - FACTOR = 1966

Sterling Analytical, Inc.
West Springfield, MA 01089
Phone (413) 214-6541 Fax (413) 214-6842
email-madhu@sterlinganalytical.com

Analysis Report

Sample Number	39005
Station	Combustion Comp.Asso.Inc.
Contact	
Date Received	7/2/13
As Fired	7/1/13
Air Dried Moisture	30.71%

Report Date	7/12/13
Work Order	13-0935
Source Identification	Pine-Fitchburg-13-1 Wood

Proximate/Ultimate Analysis

Parameter	Date Analyzed		As Received	Dry	Air Dried	Method
Moisture			44.77%		20.29%	
Ash,%	7/11/13		0.35	0.63	0.5	ASTM D-3174
BTU/Lb	7/11/13		4711	8500	6800	ASTM D-5865
Sulfur, %	7/11/13	Less Than	0.07	0.13	0.1	ASTM D-4239
Carbon,%	7/11/13		28.75	52.07	41.5	**ASTM D-5373**
Hydrogen,%	7/11/13		4.77	8.63	6.88	**ASTM D-5373**
Nitrogen,%	7/11/13		0.27	0.49	0.39	**ASTM D-5373**
Oxygen,%	7/9/13		21.08	38.18	30.43	ASTM D-3176

Comments

Madhu Shah, Laboratory Supervisor

Date

Mass Certification - MA-00071
Conn Certification - PH-0520

Appendix K

METHOD 5 SAMPLING DATA SHEET

Facility: Pinetree Fitchburg

Unit : Stack

Date : 6/26/13

Run Time : 0825-0930

Run : MS-1

Filter No. : 3590 TARE 0.3428

Nozzle No.: 0.250

Leak Test Data

Initial Rate:
Probe: 0.0615 "Hg
Pitots: 0.3 "H_2O

Final Rate:
Probe: 0.068 "Hg
Pitots: 0.3 "H_2O

Initial Meter Reading: 424.583

Final Meter Reading: 470.048

Time Hr	Time Min	Trav. Point	Delta P	Delta H	Meter Vol.	DGM IN	DGM Out	Imp Temp	Stack Temp	Hot Temp	Pump Vac
	2.5	A1	0.90	1.80	426.6	N/A	93	67	362	250	4
	5	2	0.94	1.88	428.5		94	66	366	252	5
	7.5	3	1.00	2.00	430.6		94	66	368	253	5
	10	4	1.00	2.00	432.5		94	65	368	250	5
	12.5	5	1.00	2.00	434.9		94	65	369	249	5
	15	6	0.95	1.90	437.0		94	66	369	243	5
	17.5	7	0.84	1.68	439.0		94	66	370	248	5
	20	8	0.95	1.90	440.6		95	64	369	248	5
	22.5	9	0.93	1.86	442.5		96	64	368	246	5
	25	10	0.83	1.66	444.5		96	65	367	250	5
	27.5	11	0.73	1.46	446.2		96	65	360	251	5
	30	12	0.70	1.40	447.9		96	66	354	248	4
	32.5	B1	0.78	1.56	449.8		96	64	347	250	4
	35	2	0.82	1.64	451.2		97	65	358	251	4
	37.5	3	1.05	2.10	453.5		97	66	365	253	5
	40	4	1.05	2.10	455.6		97	66	370	249	5
	42.5	5	1.00	2.00	457.6		97	67	370	259	5
	45	6	0.90	1.80	459.6		97	67	371	255	5
	47.5	7	0.92	1.84	461.6		97	66	371	256	5
	50	8	0.96	1.92	463.5		97	66	370	250	5
	52.5	9	0.95	1.90	465.6		96	66	369	253	5
	55	10	0.92	1.84	467.8		96	65	369	254	5
	57.5	11	0.88	1.76	469.5		97	66	366	252	5
	60	12	0.65	1.30	470.0		97	67	361	250	5

General:
Box No : MB2
Delta H@: 1.66
Gamma Y: 1.0171

Operators:
Box : CP
Probe: MD
CEMS: BA

Conditions:
Ambient Temp:
Pbar :
Static P : -0.67

Moisture Data:

Gross	Tare	Net
254	100	ml
159	100	ml
11	0	ml
561	550	g

RATA 1, 2, 3

O_2	CO_2	CO
7.38	12.74	0.2
7.40	12.71	0.1
7.03	12.96	0.2
7.27	12.80	0.02

CEMServices 360 Old Colony Road, Suite 1, Norton, MA 02766

METHOD 5 SAMPLING DATA SHEET

Facility: Pinetree Fitchburg

Unit : Stack

Date : 6/26/2013

Run Time : 0955-1057

Run : 2

Filter No. :

Nozzle No.:

Leak Test Data

Initial Rate:	Final Rate:
Probe: 0.0615 "Hg	Probe: 0.068 "Hg
Pitots: Ø a 3 "H_2O	Pitots: Ø a 3 "H_2O

Initial Meter Reading: 471.500

Final Meter Reading: 519.358

Time Hr	Time Min	Trav. Point	Delta P	Delta H	Meter Vol.	DGM IN	DGM Out	Imp Temp	Stack Temp	Hot Temp	Pump Vac
	2.5	A1	0.92	1.84	473.6	N/A	96	67	373	229	4
	5	2	0.95	1.90	475.5		97	65	374	232	4
	7.5	3	1.00	2.00	477.5		97	64	376	238	5
	10	4	1.05	2.10	479.5		98	64	377	249	5
	12.5	5	1.05	2.10	481.6		98	65	377	249	5
	15	6	0.80	1.60	483.4		98	65	377	250	5
	17.5	7	0.75	1.50	485.3		97	65	377	251	4
	20	8	1.10	2.20	487.4		97	66	377	248	6
	22.5	9	1.00	2.00	489.5		97	66	375	249	6
	25	10	0.92	1.84	491.5		98	67	375	246	5
	27.5	11	0.95	1.90	493.4		98	65	376	247	5
	30	12	0.83	1.66	495.5		98	66	371	246	5
	32.5	B1	0.93	1.86	497.4		97	63	370	250	5
	35	2	0.94	1.88	499.3		97	63	371	249	5
	37.5	3	0.98	1.96	501.3		98	64	375	250	5
	40	4	1.05	2.10	503.4		97	65	377	249	5
	42.5	5	1.00	2.00	505.6		97	66	378	251	5
	45	6	1.00	2.00	507.5		97	65	378	250	5
	47.5	7	0.91	1.82	509.7		97	66	378	249	5
	50	8	0.90	1.80	511.6		97	67	376	248	5
	52.5	9	0.94	1.88	513.6		97	64	375	250	5
	55	10	0.93	1.86	515.6		97	64	373	250	5
	57.5	11	0.88	1.76	517.7		97	65	374	251	5
	60	12	0.81	1.62	519.3		97	66	370	249	5

General:

Box No :MB2

Delta H@: 1.66

Gamma Y: 1.0171

Operators:

Box : CP

Probe: MD

CEMS: BA

Conditions:

Ambient Temp:

Pbar : 29.78

Static P : -0.65

Moisture Data:

Gross	Tare	Net
264		ml
167		ml
16		ml
565.8		g

O_2	CO_2	CO
6.46	13.55	.0.5
6.63	13.67	0.3
6.80	13.22	0.4
6.63	13.48	.0.4

METHOD 5 SAMPLING DATA SHEET

Page 1 of 1

Facility: Pinetree Fitchburg | Unit : Stack

Date : 6/26/13 | Run Time : 1120 – 1222

Run : 3 | Filter No. : ______

Nozzle No.: ______

Leak Test Data

Initial Rate: Probe: 0.0615 "Hg; Pitots: ø 3 "H_2O

Final Rate: Probe: 0.068 "Hg; Pitots: ø 3 "H_2O

Initial Meter Reading: 520.700 | Final Meter Reading: 568.422

Time Hr	Time Min	Trav. Point	Delta P	Delta H	Meter Vol.	DGM IN	DGM Out	Imp Temp	Stack Temp	Hot Temp	Pump Vac
	2.5	A1	0.92	1.84	522.8	N/A	95	67	370	230	4
	5	2	0.95	1.90	524.7		96	66	373	236	5
	7.5	3	0.98	1.96	526.6		97	65	382	240	5
	10	4	0.96	1.96	528.6		98	64	383	248	5
	12.5	5	0.93	1.86	530.6		98	64	383	250	5
	15	6	0.94	1.88	532.6		99	64	385	251	5
	17.5	7	0.80	1.60	534.6		99	63	386	254	4
	20	8	0.88	1.76	536.3		100	64	385	250	4
	22.5	9	0.93	1.86	538.4		100	65	384	251	5
	25	10	0.90	1.80	540.5		99	67	384	250	5
	27.5	11	0.84	1.68	542.3		99	67	382	251	5
	30	12	0.70	1.40	544.1		99	66	376	250	4
	32.5	B1	0.97	1.94	545.8		99	64	382	252	5
	35	2	0.97	1.94	547.9		99	64	380	251	5
	37.5	3	0.95	1.90	549.9		99	64	385	254	5
	40	4	1.00	2.00	551.9		99	65	383	253	5
	42.5	5	1.05	2.10	553.9		99	65	369	251	6
	45	6	1.05	2.10	556.1		99	65	368	248	6
	47.5	7	1.00	2.00	558.3		98	63	365	250	5
	50	8	1.05	2.10	560.3		97	63	365	251	5
	52.5	9	1.00	2.00	562.5		97	63	366	252	5
	55	10	0.96	1.96	564.5		97	64	367	252	5
	57.5	11	0.92	1.94	566.5		97	65	367	253	5
	60	12	0.82	1.64	568.4		97	66	365	250	4

General:
Box No :MB2
Delta H@: 1.66
Gamma Y: 1.0171

Operators:
Box : CP
Probe: MD
CEMS: BA

Conditions:
Ambient Temp: ______
Pbar : ______
Static P : -0.69

Moisture Data:

Gross	Tare	Net
278		ml
183		ml
23		ml
565.3		g

O_2	CO_2	CO
5.66	14.62	0.7
5.71	14.59	1.0
7.06	12.88	0.6
6.14	14.03	0.08

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METHOD 201A/202 SAMPLING DATA SHEET

Page 1 of 1

Facility: _Pinetree Fitchburg_ Unit :_______Stack___

Date : 6/26/13 Run Time : 1330 – 1536

Run : 1 Filter No. :________________

Pt Coeff 0.77

Nozzle No.:________________

Leak Test Data

Initial Rate:
Probe: 0.0615 "Hg
Pitots: Ø@3 "H_2O

Final Rate:
Probe: 0.067 "Hg
Pitots: Ø@3 "H_2O

Initial Meter Reading: 568.700					Final Meter Reading: 607.770						
Time Hr	Time Min	Trav. Point	Delta P	Delta H	Meter Vol.	DGM Temp	CPM Temp	Imp Temp	Stack Temp	Hot Temp	Pump Vac
18	15	A1	1.10	0.34	572.0	96	83	66	371	249	2
20	45	2	1.15	0.34	575.5	96	84	65	370	246	2
21	15	3	1.15	0.34	579.0	98	83	64	376	250	2
41	00	4	1.00	0.34	582.2	98	83	62	376	249	2
50	45	5	1.00	0.34	585.4	98	79	61	377	246	2
1 00	00	6	0.90	0.34	588.3	99	80	61	376	248	3
1 09	45	B1	1.00	0.34	591.5	99	81	64	374	250	2
1 20	00	2	1.10	0.34	594.8	98	80	65	373	251	2
1 30	30	3	1.50	0.34	598.3	99	80	65	372	251	2
1 40	45	4	1.10	0.34	601.5	99	82	65	367	248	2
1 50	30	5	1.00	0.34	604.7	98	83	66	365	242	3
2 00	00	6	0.95	0.34	607.7	98	84	67	364	246	3

General:
Box No :MB2__
Delta H@:_1..66 __
Gamma Y:_1.0170__

Operators:
Box :_CP
Probe:__MD _
CEMS:_BA___

Conditions:
Ambient Temp:_____
Pbar :_____
Static P : -0.68

Moisture Data:

Gross	Tare	Net
185	0	ml
1	0	ml
113	100	ml
565.0	550	g

	O_2	CO_2	CO
Avg	7.02	13.01	0.04

O_2	CO_2	CO
7.12	12.83	0.3
7.20	12.75	0.3
6.76	13.45	0.6

METHOD 201A/202 SAMPLING DATA SHEET

Facility: _Pinetree Fitchburg_ Unit : 1 Stack 1

Date : 6/27/13 Run Time : 0820-1024

Run : 2 Filter No. : ______

Nozzle No.: ______

Leak Test Data

Initial Rate: Probe: 0.0615 "Hg Pitots: 0.03 "H_2O

Final Rate: Probe: 0.068 "Hg Pitots: 0.03 "H_2O

Initial Meter Reading: 608.400 Final Meter Reading: 647.790

Time Hr	Time Min	Trav. Point	Delta P	Delta H	Meter Vol.	DGM Temp	CPM Temp	Imp Temp	Stack Temp	Hot Temp	Pump Vac
10	15	A1	1.10	0.34	608.4	91	68	65	355	250	2
20	45	2	1.15	0.34	611.8	95	67	62	366	251	2
31	15	3	1.15	0.34	615.2	98	67	63	369	248	2
41	00	4	1.00	0.34	618.6	101	69	64	370	247	3
50	45	5	1.00	0.34	621.8	102	70	64	370	249	3
1 00	30	6	1.00	0.34	625.0	104	72	64	366	250	3
1 10	00	B1	0.95	0.34	628.2	107	73	62	365	251	3
1 19	30	2	0.95	0.34	631.3	108	69	68	366	251	3
1 29	45	3	1.10	0.34	634.4	109	69	68	366	256	4
1 40	15	4	1.15	0.35	637.7	110	69	65	365	251	4
1 50	30	5	1.10	0.36	641.1	112	71	66	365	248	4
2 00	00	6	0.95	0.36	644.6	113	72	66	362	248	4
					647.7						

General:
Box No :MB2__
Delta H@:_1..66 __
Gamma Y:_1.0170__

Operators:
Box : _CP
Probe:__MD _
CEMS:_BA___

Conditions:
Ambient Temp:_____
Pbar : 29.80
Static P : -.072

Moisture Data:

Gross	Tare	Net
194		ml
0		ml
102		ml
539.9		g

O_2	CO_2	CO
7.48	12.62	

METHOD 201A/202 SAMPLING DATA SHEET

Page 1 of 1

Facility: _Pinetree Fitchburg_ Unit : 1 Stack 1

Date : 6/27/13 Run Time : 1050-1252

Run : 3 Filter No. : ____

Nozzle No.: ____

Leak Test Data

Initial Rate: Probe: 0.0615 "Hg Pitots: 0.03 "H_2O

Final Rate: Probe: 0.068 "Hg Pitots: 0.03 "H_2O

Initial Meter Reading: 648.000 Final Meter Reading: 687.650

Time Hr	Time Min	Trav. Point	Delta P	Delta H	Meter Vol.	DGM Temp	CPM Temp	Imp Temp	Stack Temp	Hot Temp	Pump Vac
9	15	A1	0.90	0.35	651.1	112	78	67	360	247	2
19	00	2	1.00	0.35	654.4	113	73	62	360	248	2
29	30	3	1.15	0.35	657.9	114	73	60	358	249	2
40	00	4	1.15	0.35	661.4	112	73	62	358	248	2
50	15	5	1.10	0.35	664.8	113	73	62	358	249	2
59	45	6	0.95	0.35	667.9	113	79	64	358	250	3
09	15	B1	0.95	0.36	671.0	113	84	67	355	246	3
19	45	2	1.05	0.36	674.3	114	76	62	357	248	3
29	45	3	1.15	0.36	677.8	114	75	61	358	250	3
40	15	4	1.15	0.36	681.2	115	74	60	356	250	3
52	00	5	1.00	0.36	684.5	117	74	61	355	248	3
59	30	6	0.95	0.36	687.6	117	73	65	354	247	3

General:
Box No :MB2
Delta H@:_1..66
Gamma Y:_1.0170

Operators:
Box :_CP
Probe:__MD_
CEMS:_BA

Conditions:
Ambient Temp:____
Pbar :____
Static P : -0.71

O_2 7.91 CO_2 12.25

Moisture Data:

Gross	Tare	Net
177	0	ml
2	0	ml
108	100	ml
561.9	550	g

360 Old Colony Road, Suite 1, Norton, MA 02766

CYCLONIC FLOW TRAVERSE DATA

1/2

FACILITY: Pinetree-Fitchburg DATE: 6.25.13

UNIT#: Stack RUN TIME: 1315

RUN#: 1 STATIC P: -0.47

PITOT LEAK-TEST DATA

MB2
1.26
1.0171

INITIAL RATE PITOTS: Ø@3 FINAL RATE PITOTS: Ø@3

TRAVERSE POINT	VELOCITY HEAD	ROTATION ANGLE	STACK TEMP F
A1	0.36	0°	326
2	0.38	0°	328
3	0.42	2° cw	330
4	0.43	9° cw	330
5	0.40	10° cw	330
6	0.46	2° cw	332
7	0.41	0°	334
8	0.37	0°	332
9	0.35	0°	330
10	0.35	1° ccw	330
11	0.33	1° ccw	329
12	0.25	1° ccw	322

360 Old Colony Road, Suite 1, Norton, MA 02766

T. Wheeler
MassDEP
6/26/13

CYCLONIC FLOW TRAVERSE DATA

2/2

FACILITY: Pinetree - Fitchburg

DATE: 6-25-13

UNIT#: stack

RUN TIME: 1315

RUN#: cyc

STATIC P: -0.47

PITOT LEAK-TEST DATA

INITIAL RATE PITOTS: Ø @ 3

FINAL RATE PITOTS: Ø @ 3

TRAVERSE POINT	VELOCITY HEAD	ROTATION ANGLE	STACK TEMP F
B1	0.32	0°	324
2	0.40	0°	329
3	0.36	0°	334
4	0.36	6° ccw	334
5	0.39	6° ccw	335
6	0.44	7° ccw	335
7	0.38	1° cw	335
8	0.35	1° cw	334
9	0.35	1° cw	334
10	0.36	2° cw	330
11	0.32	0°	328
12	0.27	0°	321

SERVICES 360 Old Colony Road, Suite 1, Norton, MA 02766

T. Wheeler
Mass DEP
6/26/13

Appendix L

THE LINDE GROUP Linde

SHIPPED TO: CEM Services
360 Old Colony Rd Ste 1
Norton, MA 02766

CERTIFICATE OF ANALYSIS

Sales#:	110374941	**Cylinder Size:**	2A (8" X 47.5")
Production#:	1257682	**Cylinder # :**	CC-118864
Certification Date:	May-24-2013	**Cylinder Pressure:**	2000 psig
P.O.# :	050813KM	**Cylinder Valve:**	CGA 580 / Brass
Blend Type:	ZERO NITROGEN	**Cylinder Volume:**	29.5 Liter
Material#:	24086370	**Cylinder Material:**	Aluminum
		Gas Volume:	4000 Liter

Do NOT use under: 150 psig

COMPONENT	REQUESTED GAS GRADE
NITROGEN	99.998 %

THC < 0.2 ppm

ANALYST: Justin Kutz

DATE: May-24-2013

Linde Gas North America LLC (908) 329-9700 Main (908) 329-9740 Fax
www.Lindeus.com

THE LINDE GROUP

CERTIFICATE OF ANALYSIS

EPA PROTOCOL MIXTURE

PROCEDURE # : G1

PGVP ID#: I12013
CUSTOMER: Cem Services
SALES#: 110374941
PROD#: 1257673
P.O.# : 050813KM
MATERIAL#: 24086339
CERTIFICATION DATE: 28-May-2013
EXPIRATION DATE: 29-May-2021
(Using the May 2012 Revision of the EPA Protocol)

GAS CODE: OC2
CYLINDER # : CC-110145
CYLINDER PRES: 2000 PSIG
CYLINDER VALVE: CGA 590
CYLINDER SIZE: 2A
CYLINDER MATERIAL: Aluminum
GAS VOLUME: 4000 Liter
BLEND TOLERANCE: 5% Relative
PAGE: 1 of 1

CERTIFICATION HISTORY

COMPONENT	DATE OF ASSAY	MEAN CONCENTRATION	CERTIFIED CONCENTRATION	ANALYTICAL ACCURACY
Carbon Dioxide	28-May-2013	9.91 %	9.91 %	+/- 1%
Oxygen	28-May-2013	11.45 %	11.45 %	+/- 1%

BALANCE Nitrogen
PREVIOUS CERTIFICATION DATES: None

REFERENCE STANDARDS

COMPONENT	SRM/NTRM#	CYLINDER#	CONCENTRATION
Carbon Dioxide	NTRM-82745x	SG-9609736	19.98 %
Oxygen	NTRM-82659Y	cc-237244	24.52 %

INSTRUMENTATION

COMPONENT	MAKE/MODEL	SERIAL #	DETECTOR	CALIBRATION DATE(S)
Carbon Dioxide	CAI-300	S03001	NDIR	10-May-2013
Oxygen	CAI-300	S03001	PM	24-May-2013

THIS STANDARD IS NIST TRACEABLE. IT WAS CERTIFIED ACCORDING TO THE 1997 EPA PROTOCOL PROCEDURES. DO NOT USE THIS STANDARD IF THE CYLINDER PRESSURE IS LESS THAN 100 PSIG.

ANALYST: ____________________
MATTHEW JACKSON

DATE: 28-May-2013

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www.Lindeus.com

THE LINDE GROUP Linde

CERTIFICATE OF ANALYSIS

EPA PROTOCOL MIXTURE

PROCEDURE # : G1

PGVP ID#: I12012
CUSTOMER: CEM SERVICES
SALES#: 109475072
PROD#: 1231604
P.O.# : 090612KM
MATERIAL#: 24086339
CERTIFICATION DATE: 18-Sep-2012
EXPIRATION DATE: 19-Sep-2020

GAS CODE: OC2
CYLINDER # : CC-84988
CYLINDER PRES: 2000 PSIG
CYLINDER VALVE: CGA 590
CYLINDER SIZE: 2A
CYLINDER MATERIAL: Aluminum
GAS VOLUME: 4000 Liter
BLEND TOLERANCE: 5% Relative
PAGE: 1 of 1

CERTIFICATION HISTORY

COMPONENT	DATE OF ASSAY	MEAN CONCENTRATION	CERTIFIED CONCENTRATION	ANALYTICAL ACCURACY
Carbon Dioxide	18-Sep-2012	19.85 %	19.85 %	+/- 1%
Oxygen	18-Sep-2012	22.8 %	22.8 %	+/- 1%

BALANCE Nitrogen
PREVIOUS CERTIFICATION DATES: None

REFERENCE STANDARDS

COMPONENT	SRM/NTRM#	CYLINDER#	CONCENTRATION
Carbon Dioxide	NTRM-82745x	SG-9609736	19.98 %
Oxygen	NTRM-82659Y	cc-237244	24.52 %

INSTRUMENTATION

COMPONENT	MAKE/MODEL	SERIAL #	DETECTOR	CALIBRATION DATE(S)
Carbon Dioxide	CAI-300	S03001	NDIR	31-Aug-2012
Oxygen	CAI-300	S03001	PM	31-Aug-2012

THIS STANDARD IS NIST TRACEABLE. IT WAS CERTIFIED ACCORDING TO THE EPA PROTOCOL PROCEDURES.
DO NOT USE THIS STANDARD IF THE CYLINDER PRESSURE IS LESS THAN 100 PSIG.

ANALYST: ____________________
MATTHEW JACKSON

DATE: 18-Sep-2012

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CERTIFICATE OF ANALYSIS

EPA PROTOCOL MIXTURE

PROCEDURE # : G1

PGVP ID#:	I12012	GAS CODE:	APPVD
CUSTOMER:	CEM SERVICES	CYLINDER # :	CC-134734
SALES#:	109018301	CYLINDER PRES:	2000 PSIG
PROD#:	1218405	CYLINDER VALVE:	CGA 590
P.O.# :	050912KM	CYLINDER SIZE:	2A
MATERIAL#:	24086346	CYLINDER MATERIAL:	Aluminum
CERTIFICATION DATE:	31-May-2012	GAS VOLUME:	4000 Liter
EXPIRATION DATE:	31-May-2015	BLEND TOLERANCE:	5% Relative
		PAGE:	1 of 1

CERTIFICATION HISTORY

COMPONENT	DATE OF ASSAY	MEAN CONCENTRATION	CERTIFIED CONCENTRATION	ANALYTICAL ACCURACY
Methane	31-May-2012	29.6 ppm	29.6 ppm	+/- 1%

BALANCE Air

PREVIOUS CERTIFICATION DATES: None

REFERENCE STANDARDS

COMPONENT	SRM/NTRM#	CYLINDER#	CONCENTRATION
Methane	GMIS-1	cc-128487	101.1 ppm

INSTRUMENTATION

COMPONENT	MAKE/MODEL	SERIAL #	DETECTOR	CALIBRATION DATE(S)
Methane	Horiba VIA-510	57141706	NDIR	08-May-2012

THIS STANDARD IS NIST TRACEABLE. IT WAS CERTIFIED ACCORDING TO THE EPA PROTOCOL PROCEDURES.
DO NOT USE THIS STANDARD IF THE CYLINDER PRESSURE IS LESS THAN 150 PSIG.

ANALYST: ______________________ DATE: 31-May-2012

MATTHEW JACKSON

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THE LINDE GROUP Linde

CERTIFICATE OF ANALYSIS

EPA PROTOCOL MIXTURE

PROCEDURE # : G1

PGVP ID#:	I12011	GAS CODE:	APPVD
CUSTOMER:	CEM Services	CYLINDER # :	SG-9153990
SALES#:	108412285	CYLINDER PRES:	2000 PSIG
PROD#:	1192620	CYLINDER VALVE:	CGA 590
P.O.# :	090811KM	CYLINDER SIZE:	2A
MATERIAL#:	24086346	CYLINDER MATERIAL:	Aluminum
CERTIFICATION DATE:	28-Sep-2011	GAS VOLUME:	4000 Liter
EXPIRATION DATE:	28-Sep-2014	BLEND TOLERANCE:	5% Relative
		PAGE:	1 of 1

CERTIFICATION HISTORY

COMPONENT	DATE OF ASSAY	MEAN CONCENTRATION	CERTIFIED CONCENTRATION	ANALYTICAL ACCURACY
Methane	28-Sep-2011	55.2 ppm	55.2 ppm	+/- 1%

BALANCE Air

PREVIOUS CERTIFICATION DATES: None

REFERENCE STANDARDS

COMPONENT	SRM/NTRM#	CYLINDER#	CONCENTRATION
Methane	GMIS-1	cc-53279	99.2 ppm

INSTRUMENTATION

COMPONENT	MAKE/MODEL	SERIAL #	DETECTOR	CALIBRATION DATE(S)
Methane	Horiba VIA- 510	57141706	NDIR	15-Sep-2011

THIS STANDARD IS NIST TRACEABLE. IT WAS CERTIFIED ACCORDING TO THE EPA PROTOCOL PROCEDURES.
DO NOT USE THIS STANDARD IF THE CYLINDER PRESSURE IS LESS THAN 150 PSIG.

ANALYST: MATTHEW JACKSON

DATE: 28-Sep-2011

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THE LINDE GROUP

Linde

CERTIFICATE OF ANALYSIS

EPA PROTOCOL MIXTURE

PROCEDURE # : G1

CUSTOMER: CEM SERVICES
SALES#:
PROD#: 1157043
P.O.# : 100610KM

CYLINDER # : CC-20164
CYLINDER PRES: 2000 PSIG
CGA OUTLET: 590

CERTIFICATION DATE: 10/27/2010
EXPIRATION DATE: 10/27/2013

CERTIFICATION HISTORY

COMPONENT	DATE OF ASSAY	MEAN CONCENTRATION	CERTIFIED CONCENTRATION	ANALYTICAL ACCURACY
Methane	10/27/2010	91.3 ppm	91.3 ppm	+/- 1%

BALANCE Air
PREVIOUS CERTIFICATION DATES: None

REFERENCE STANDARDS

COMPONENT	SRM/NTRM#	CYLINDER#	CONCENTRATION
Methane	GMIS-1	CC-53279	99.2 ppm

INSTRUMENTATION

COMPONENT	MAKE/MODEL	SERIAL #	DETECTOR	CALIBRATION DATE(S)
Methane	H. Packard 6890	US00001434	GC - FID	10/4/2010

THIS STANDARD IS NIST TRACEABLE. IT WAS CERTIFIED ACCORDING TO THE EPA PROTOCOL PROCEDURES.
DO NOT USE THIS STANDARD IF THE CYLINDER PRESSURE IS LESS THAN 150 PSIG.

ANALYST: FRED PIKULA

DATE: 10/27/2010

Linde Gas North America LLC

(908) 329-9700 Main (908) 329-9740 Fax
www.Lindeus.com

Linde **SPECTRA** Environmental Gases, 80 Industrial Drive, Alpha, NJ 08865

THE LINDE GROUP

SHIPPED TO: CEM Services
360 Old Colony Rd Ste 1
Norton, MA 02766

CERTIFICATE OF ANALYSIS

Sales#:	110068834	**Cylinder Size:**	2A (8" X 47.5")
Production#:	1248766	**Cylinder # :**	XC-000295B
Certification Date:	Feb-28-2013	**Cylinder Pressure:**	2000 psig
P.O.# :	VERBAL-LINDEN COGEN	**Cylinder Valve:**	CGA 350 / Brass
Blend Type:	UHP HYDROGEN	**Cylinder Volume:**	29.5 Liter
Material#:	24087959	**Cylinder Material:**	Aluminum
		Gas Volume:	4000 Liter

Do NOT use under: 150 psig

COMPONENT	REQUESTED GAS GRADE
HYDROGEN	99.999 %

Ar	$\leq$ 1.0 ppm
CO_2	$\leq$ 1.0 ppm
CO	$\leq$ 1.0 ppm
N_2	$\leq$ 3.0 ppm
O_2	$\leq$ 2.0 ppm
THC	$\leq$ 1.0 ppm
H_2O	$\leq$ 3.0 ppm

ANALYST: ______________________
Matthew Jackson

DATE: Feb-28-2013

THE LINDE GROUP Linde

SHIPPED TO: CEM Services
360 old Colony Rd Ste1
Norton, MA 02766

CERTIFICATE OF ANALYSIS

Sales#:	110374941	**Cylinder Size:**	2A (8" X 47.5")
Production#:	1257686	**Cylinder # :**	CC-133731
Certification Date:	May-28-2013	**Cylinder Pressure:**	2000 psig
P.O.# :	050813KM	**Cylinder Valve:**	CGA 590 / Brass
Blend Type:	VOC ZERO AIR	**Cylinder Volume:**	29.5 Liter
Material#:	24088830	**Cylinder Material:**	Aluminum
		Gas Volume:	4000 Liter

Do NOT use under: 150 psig

COMPONENT	REQUESTED GAS GRADE
AIR	VOC ZERO

O_2	Between 20 and 21%
CO	≤ 0.05ppm
CO_2	≤ 0.3 ppm
H_2O	≤ 1.0 ppm
THC	≤ 0.05 ppm

ANALYST: Matthew Jackson

DATE: May-28-2013

Appendix M

LOG : 26-JUN-13 08:24:46 LCP-47 LOG REQUESTED

PERFORMANCE

start MS-1

"PINETREE POWER-FITCHBURG PERFORMANCE LOG"

FI-03019	STEAM FLOW	136.52	KPPH	AMBIENT	OUTSIDE AIR TEMP	77	DEGF
TI-03013	MAIN STEAM TEMP	948	DEGF				
PI-03016	MAIN STEAM PRESS	1244	PSIG	TI-02004	FD OUT AIR HTR IN	87	DEGF
				TI-02039	AH AIR OUT TEMP	442	DEGF
FI-05012	ATTEMP SPRAY FLOW	15.48	KLB/H	TI-02035	ECON GAS IN	723	DEGF
TI-03007	ATTEMP INLET TEMP	953	DEGF	TI-02036	AH GAS IN TEMP	545	DEGF
TIC-03010	ATTEMP OUT TEMP	725	DEGF	TI-02042	AH GAS OUT TEMP	305	DEGF
FI-10012	BLOWDOWN FLOW	0.4	KLB/H	TI-02B51	BH INLET TEMP	434	DEGF
TI-03A05	DRUM TEMP	583	DEGF	TI-02C51	BH OUTLET TEMP	422	DEGF
PI-05022	DRUM PRESSURE	1287	PSIG	PDI-02A51	BH DIFF PRESS	5.2	"H2O
LI-05018	DRUM LEVEL	0.2	"NWL	JI-03020	GENERATOR GROSS	16.4	MW
PI-05013	FEEDWATER PRESS	1341	PSIG	JI-03022	STATION SERVICE	2.5	MW
FI-05011	FEEDWATER FLOW	129.23	KLB/H	CALC	STATION NET PWR	13.9	MW
TI-05051	BFP SUCTION TEMP	304	DEGF	JIC-03020	GROSS MW PROD	7704.04	MWHRS
TI-05023	FW TEMP ECON IN	405	DEGF	JI-03022	STA.SERVICE	13.35	MWHRS
PI-06012	DEAERATOR PRESS	55.9	PSIG	JQI-03024	NET MHR PROD	9080.69	MWHRS
TI-06006	COND DISCH TEMP	135	DEGF	FI-30170	FIRING RATE	49.0	PCNT
TI-09001	COND RCVR TEMP	138	DEGF	DB-00106	CEM NH3	3.8	PPM
TI-09023	COND LEG A	73.7	DEGF	DB-00109	STACK OPACITY	1.2	%
TI-09024	COND LEG B	73.7	DEGF	AI-02030	BOILER EXIT O2	2.8	%O2
TI-09021	EXHAUST TEMP	105	DEGF	DB-00108	CEM FLUE GAS O2	5.5	%O2
PI-09004	TURBINE EXH PRESS	4.20	"HGA	DB-00107	CEM CO	183	PPM
LI-09030	DEMIN TANK LEVEL	89.0	"LVL	DB-00105	CEM NOX	21	PPM
				SO2	CEM SO2	0	PPM
PIC-02020	ID FAN INLET	94	%OPEN	UREA FLOW	RATE %	0.0	%
PI-02020	FURNACE PRESSURE	-0.19	"H2O	% CH4	% METHANE	-0.15	% CH4
PIC-02003	FD FAN INLET	54	%OPEN	FLOW CH4	LFG GAS FLOW	-750.9	CFM
PIC-02003	FD DUCT PRESSURE	13.2	"WC	LFG METER	LFG MASS FLOW	965.9	MSCF
FI-02001	FD AIR FLOW	210.69	KLB/H	LFG METER	LFG HEAT FLOW	6007.3	MMBTU
				LFG SUC	LFG SUCTION	-0.34	"H2O
FI-02001B	UGA FLOW(CALC)	152.60	KLB/H	WT-1000	BLR WOOD FEED	8630.2	TONS
FIC-02001C	OFA FAN INLET	47	%OPEN	WT-2000	WOOD RETURN	3005.2	TONS
PI-02007	OFA DISCHG PRESS	-12	"WC				
FI-02007	OVERFIRE AIR FLOW	57.96	KLB/H	DDU1	DDU1 START STOP	STOP	
FI-14003	GAS BURNER FLOW	5.0	KLB/H	SPEED DDU1	PAPER FEED 1	0.0	
				DDU2	DDU2 START STOP	STOP	
				SPEED DDU2	PAPER FEED 2	0.0	

LOG : 26-JUN-13 09:35:31 LCP-47 LOG REQUESTED

PERFORMANCE

"PINETREE POWER-FITCHBURG PERFORMANCE LOG"

FI-03019	STEAM FLOW	140.18	KPPH	AMBIENT	OUTSIDE AIR TEMP	80	DEGF
TI-03013	MAIN STEAM TEMP	959	DEGF				
PI-03016	MAIN STEAM PRESS	1255	PSIG	TI-02004	FD OUT AIR HTR IN	90	DEGF
				TI-02039	AH AIR OUT TEMP	439	DEGF
FI-05012	ATTEMP SPRAY FLOW	15.48	KLB/H	TI-02035	ECON GAS IN	725	DEGF
TI-03007	ATTEMP INLET TEMP	935	DEGF	TI-02036	AH GAS IN TEMP	548	DEGF
TIC-03010	ATTEMP OUT TEMP	739	DEGF	TI-02042	AH GAS OUT TEMP	303	DEGF
FI-10012	BLOWDOWN FLOW	0.3	KLB/H	TI-02B51	BH INLET TEMP	435	DEGF
TI-03A05	DRUM TEMP	584	DEGF	TI-02C51	BH OUTLET TEMP	424	DEGF
PI-05022	DRUM PRESSURE	1303	PSIG	PDI-02A51	BH DIFF PRESS	5.1	"H2O
LI-05018	DRUM LEVEL	-0.9	"NWL	JI-03020	GENERATOR GROSS	16.7	MW
PI-05013	FEEDWATER PRESS	1366	PSIG	JI-03022	STATION SERVICE	2.6	MW
FI-05011	FEEDWATER FLOW	150.17	KLB/H	CALC	STATION NET PWR	14.2	MW
TI-05051	BFP SUCTION TEMP	306	DEGF	JIC-03020	GROSS MW PROD	7722.36	MWHRS
TI-05023	FW TEMP ECON IN	407	DEGF	JI-03022	STA.SERVICE	16.31	MWHRS
PI-06012	DEAERATOR PRESS	57.9	PSIG	JQI-03024	NET MHR PROD	9082.95	MWHRS
TI-06006	COND DISCH TEMP	140	DEGF	FI-30170	FIRING RATE	53.0	PCNT
TI-09001	COND RCVR TEMP	142	DEGF	DB-00106	CEM NH3	3.8	PPM

TI-09023	COND LEG A	73.7	DEGF	DB-00109	STACK OPACITY	1.2	%
TI-09024	COND LEG B	73.7	DEGF	AI-02030	BOILER EXIT O2	3.3	%O2
TI-09021	EXHAUST TEMP	105	DEGF	DB-00108	CEM FLUE GAS O2	5.3	%O2
PI-09004	TURBINE EXH PRESS	4.69	"HGA	DB-00107	CEM CO	151	PPM
LI-09030	DEMIN TANK LEVEL	82.9	"LVL	DB-00105	CEM NOX	22	PPM
				SO2	CEM SO2	-0	PPM
PIC-02020	ID FAN INLET	96	%OPEN	UREA FLOW	RATE %	0.0	%
PI-02020	FURNACE PRESSURE	-0.16	"H2O	% CH4	% METHANE	-0.15	% CH4
PIC-02003	FD FAN INLET	56	%OPEN	FLOW CH4	LFG GAS FLOW	-750.9	CFM
PIC-02003	FD DUCT PRESSURE	13.4	"WC	LFG METER	LFG MASS FLOW	965.9	MSCF
FI-02001	FD AIR FLOW	220.82	KLB/H	LFG METER	LFG HEAT FLOW	6016.1	MMBTU
				LFG SUC	LFG SUCTION	-0.34	"H2O
FI-02001B	UGA FLOW(CALC)	156.97	KLB/H	WT-1000	BLR WOOD FEED	8669.9	TONS
FIC-02001C	OFA FAN INLET	53	%OPEN	WT-2000	WOOD RETURN	3012.4	TONS
PI-02007	OFA DISCHG PRESS	-12	"WC				
FI-02007	OVERFIRE AIR FLOW	63.82	KLB/H	DDU1	DDU1 START STOP	STOP	
FI-14003	GAS BURNER FLOW	6.4	KLB/H	SPEED DDU1	PAPER FEED 1	0.0	
				DDU2	DDU2 START STOP	STOP	
				SPEED DDU2	PAPER FEED 2	0.0	

End MS-1

LOG : 26-JUN-13 09:55:03 LCP-47 LOG REQUESTED

PERFORMANCE

start MS-2

"PINETREE POWER-FITCHBURG PERFORMANCE LOG"

FI-03019	STEAM FLOW	140.53	KPPH	AMBIENT	OUTSIDE AIR TEMP	81	DEGF
TI-03013	MAIN STEAM TEMP	950	DEGF				
PI-03016	MAIN STEAM PRESS	1257	PSIG	TI-02004	FD OUT AIR HTR IN	91	DEGF
				TI-02039	AH AIR OUT TEMP	443	DEGF
FI-05012	ATTEMP SPRAY FLOW	15.47	KLB/H	TI-02035	ECON GAS IN	728	DEGF
TI-03007	ATTEMP INLET TEMP	941	DEGF	TI-02036	AH GAS IN TEMP	551	DEGF
TIC-03010	ATTEMP OUT TEMP	724	DEGF	TI-02042	AH GAS OUT TEMP	307	DEGF
FI-10012	BLOWDOWN FLOW	0.4	KLB/H	TI-02B51	BH INLET TEMP	438	DEGF
TI-03A05	DRUM TEMP	584	DEGF	TI-02C51	BH OUTLET TEMP	426	DEGF
PI-05022	DRUM PRESSURE	1304	PSIG	PDI-02A51	BH DIFF PRESS	4.7	"H2O
LI-05018	DRUM LEVEL	0.4	"NWL	JI-03020	GENERATOR GROSS	16.7	MW
PI-05013	FEEDWATER PRESS	1359	PSIG	JI-03022	STATION SERVICE	2.5	MW
FI-05011	FEEDWATER FLOW	132.16	KLB/H	CALC	STATION NET PWR	14.2	MW
TI-05051	BFP SUCTION TEMP	306	DEGF	JIC-03020	GROSS MW PROD	7727.86	MWHRS
TI-05023	FW TEMP ECON IN	408	DEGF	JI-03022	STA.SERVICE	17.15	MWHRS
PI-06012	DEAERATOR PRESS	57.2	PSIG	JQI-03024	NET MHR PROD	9083.70	MWHRS
TI-06006	COND DISCH TEMP	143	DEGF	FI-30170	FIRING RATE	52.0	PCNT
TI-09001	COND RCVR TEMP	144	DEGF	DB-00106	CEM NH3	2.6	PPM
TI-09023	COND LEG A	73.7	DEGF	DB-00109	STACK OPACITY	1.2	%
TI-09024	COND LEG B	73.7	DEGF	AI-02030	BOILER EXIT O2	2.9	%O2
TI-09021	EXHAUST TEMP	105	DEGF	DB-00108	CEM FLUE GAS O2	4.9	%O2
PI-09004	TURBINE EXH PRESS	4.82	"HGA	DB-00107	CEM CO	224	PPM
LI-09030	DEMIN TANK LEVEL	82.4	"LVL	DB-00105	CEM NOX	21	PPM
				SO2	CEM SO2	-0	PPM
PIC-02020	ID FAN INLET	96	%OPEN	UREA FLOW	RATE %	0.0	%
PI-02020	FURNACE PRESSURE	-0.16	"H2O	% CH4	% METHANE	-0.15	% CH4
PIC-02003	FD FAN INLET	56	%OPEN	FLOW CH4	LFG GAS FLOW	-751.9	CFM
PIC-02003	FD DUCT PRESSURE	13.2	"WC	LFG METER	LFG MASS FLOW	965.9	MSCF
FI-02001	FD AIR FLOW	221.47	KLB/H	LFG METER	LFG HEAT FLOW	6018.5	MMBTU
				LFG SUC	LFG SUCTION	-0.34	"H2O
FI-02001B	UGA FLOW(CALC)	158.04	KLB/H	WT-1000	BLR WOOD FEED	8680.0	TONS
FIC-02001C	OFA FAN INLET	54	%OPEN	WT-2000	WOOD RETURN	3012.8	TONS
PI-02007	OFA DISCHG PRESS	-12	"WC				
FI-02007	OVERFIRE AIR FLOW	63.65	KLB/H	DDU1	DDU1 START STOP	STOP	
FI-14003	GAS BURNER FLOW	5.0	KLB/H	SPEED DDU1	PAPER FEED 1	0.0	
				DDU2	DDU2 START STOP	STOP	
				SPEED DDU2	PAPER FEED 2	0.0	

LOG : 26-JUN-13 10:57:22 LCP-47 LOG REQUESTED

PERFORMANCE

"PINETREE POWER-FITCHBURG PERFORMANCE LOG"

FI-03019	STEAM FLOW	141.46	KPPH	AMBIENT	OUTSIDE AIR TEMP	80	DEGF
TI-03013	MAIN STEAM TEMP	951	DEGF				
PI-03016	MAIN STEAM PRESS	1255	PSIG	TI-02004	FD OUT AIR HTR IN	91	DEGF
				TI-02039	AH AIR OUT TEMP	448	DEGF
FI-05012	ATTEMP SPRAY FLOW	15.47	KLB/H	TI-02035	ECON GAS IN	730	DEGF
TI-03007	ATTEMP INLET TEMP	944	DEGF	TI-02036	AH GAS IN TEMP	555	DEGF
TIC-03010	ATTEMP OUT TEMP	728	DEGF	TI-02042	AH GAS OUT TEMP	309	DEGF
FI-10012	BLOWDOWN FLOW	0.3	KLB/H	TI-02B51	BH INLET TEMP	436	DEGF
TI-03A05	DRUM TEMP	583	DEGF	TI-02C51	BH OUTLET TEMP	428	DEGF
PI-05022	DRUM PRESSURE	1302	PSIG	PDI-02A51	BH DIFF PRESS	5.1	"H2O
LI-05018	DRUM LEVEL	-0.1	"NWL	JI-03020	GENERATOR GROSS	16.9	MW
PI-05013	FEEDWATER PRESS	1362	PSIG	JI-03022	STATION SERVICE	2.6	MW
FI-05011	FEEDWATER FLOW	143.38	KLB/H	CALC	STATION NET PWR	14.3	MW
TI-05051	BFP SUCTION TEMP	307	DEGF	JIC-03020	GROSS MW PROD	7745.38	MWHRS
TI-05023	FW TEMP ECON IN	408	DEGF	JI-03022	STA.SERVICE	19.84	MWHRS
PI-06012	DEAERATOR PRESS	58.3	PSIG	JQI-03024	NET MHR PROD	9086.00	MWHRS
TI-06006	COND DISCH TEMP	144	DEGF	FI-30170	FIRING RATE	52.0	PCNT
TI-09001	COND RCVR TEMP	145	DEGF	DB-00106	CEM NH3	0.5	PPM
TI-09023	COND LEG A	73.7	DEGF	DB-00109	STACK OPACITY	0.9	%
TI-09024	COND LEG B	73.7	DEGF	AI-02030	BOILER EXIT O2	3.1	%O2
TI-09021	EXHAUST TEMP	105	DEGF	DB-00108	CEM FLUE GAS O2	5.0	%O2
PI-09004	TURBINE EXH PRESS	5.10	"HGA	DB-00107	CEM CO	334	PPM
LI-09030	DEMIN TANK LEVEL	77.2	"LVL	DB-00105	CEM NOX	31	PPM
				SO2	CEM SO2	0	PPM
PIC-02020	ID FAN INLET	96	%OPEN	UREA FLOW	RATE %	0.0	%
PI-02020	FURNACE PRESSURE	-0.19	"H2O	% CH4	% METHANE	-0.15	% CH4
PIC-02003	FD FAN INLET	56	%OPEN	FLOW CH4	LFG GAS FLOW	-751.9	CFM
PIC-02003	FD DUCT PRESSURE	13.5	"WC	LFG METER	LFG MASS FLOW	965.9	MSCF
FI-02001	FD AIR FLOW	220.08	KLB/H	LFG METER	LFG HEAT FLOW	6026.3	MMBTU
				LFG SUC	LFG SUCTION	-0.34	"H2O
FI-02001B	UGA FLOW(CALC)	160.49	KLB/H	WT-1000	BLR WOOD FEED	8715.4	TONS
FIC-02001C	OFA FAN INLET	50	%OPEN	WT-2000	WOOD RETURN	3016.6	TONS
PI-02007	OFA DISCHG PRESS	-12	"WC				
FI-02007	OVERFIRE AIR FLOW	59.58	KLB/H	DDU1	DDU1 START STOP	STOP	
FI-14003	GAS BURNER FLOW	7.0	KLB/H	SPEED DDU1	PAPER FEED 1	0.0	
				DDU2	DDU2 START STOP	STOP	
				SPEED DDU2	PAPER FEED 2	0.0	

End MS-2

LOG : 26-JUN-13 11:20:16 LCP-47 LOG REQUESTED

PERFORMANCE

START MS-3

"PINETREE POWER-FITCHBURG PERFORMANCE LOG"

FI-03019	STEAM FLOW	133.02	KPPH	AMBIENT	OUTSIDE AIR TEMP	80	DEGF
TI-03013	MAIN STEAM TEMP	952	DEGF				
PI-03016	MAIN STEAM PRESS	1238	PSIG	TI-02004	FD OUT AIR HTR IN	91	DEGF
				TI-02039	AH AIR OUT TEMP	451	DEGF
FI-05012	ATTEMP SPRAY FLOW	15.48	KLB/H	TI-02035	ECON GAS IN	721	DEGF
TI-03007	ATTEMP INLET TEMP	926	DEGF	TI-02036	AH GAS IN TEMP	554	DEGF
TIC-03010	ATTEMP OUT TEMP	732	DEGF	TI-02042	AH GAS OUT TEMP	315	DEGF
FI-10012	BLOWDOWN FLOW	0.4	KLB/H	TI-02B51	BH INLET TEMP	428	DEGF
TI-03A05	DRUM TEMP	583	DEGF	TI-02C51	BH OUTLET TEMP	422	DEGF
PI-05022	DRUM PRESSURE	1278	PSIG	PDI-02A51	BH DIFF PRESS	5.0	"H2O
LI-05018	DRUM LEVEL	0.2	"NWL	JI-03020	GENERATOR GROSS	16.0	MW
PI-05013	FEEDWATER PRESS	1332	PSIG	JI-03022	STATION SERVICE	2.6	MW
FI-05011	FEEDWATER FLOW	133.70	KLB/H	CALC	STATION NET PWR	13.4	MW
TI-05051	BFP SUCTION TEMP	303	DEGF	JIC-03020	GROSS MW PROD	7751.74	MWHRS
TI-05023	FW TEMP ECON IN	405	DEGF	JI-03022	STA.SERVICE	20.84	MWHRS
PI-06012	DEAERATOR PRESS	54.7	PSIG	JQI-03024	NET MHR PROD	9087.08	MWHRS
TI-06006	COND DISCH TEMP	139	DEGF	FI-30170	FIRING RATE	51.0	PCNT
TI-09001	COND RCVR TEMP	140	DEGF	DB-00106	CEM NH3	0.5	PPM
TI-09023	COND LEG A	73.7	DEGF	DB-00109	STACK OPACITY	0.8	%

TI-09024	COND LEG B	73.7	DEGF	AI-02030	BOILER EXIT O2	3.5	%O2
TI-09021	EXHAUST TEMP	105	DEGF	DB-00108	CEM FLUE GAS O2	5.3	%O2
PI-09004	TURBINE EXH PRESS	4.94	"HGA	DB-00107	CEM CO	270	PPM
LI-09030	DEMIN TANK LEVEL	75.6	"LVL	DB-00105	CEM NOX	29	PPM
				SO2	CEM SO2	-0	PPM
PIC-02020	ID FAN INLET	96	%OPEN	UREA FLOW	RATE %	0.0	%
PI-02020	FURNACE PRESSURE	-0.20	"H2O	% CH4	% METHANE	-0.15	% CH4
PIC-02003	FD FAN INLET	56	%OPEN	FLOW CH4	LFG GAS FLOW	-750.0	CFM
PIC-02003	FD DUCT PRESSURE	13.5	"WC	LFG METER	LFG MASS FLOW	965.9	MSCF
FI-02001	FD AIR FLOW	219.94	KLB/H	LFG METER	LFG HEAT FLOW	6029.2	MMBTU
				LFG SUC	LFG SUCTION	-0.34	"H2O
FI-02001B	UGA FLOW(CALC)	154.57	KLB/H	WT-1000	BLR WOOD FEED	8729.2	TONS
FIC-02001C	OFA FAN INLET	56	%OPEN	WT-2000	WOOD RETURN	3018.9	TONS
PI-02007	OFA DISCHG PRESS	-12	"WC				
FI-02007	OVERFIRE AIR FLOW	65.53	KLB/H	DDU1	DDU1 START STOP	STOP	
FI-14003	GAS BURNER FLOW	4.8	KLB/H	SPEED DDU1	PAPER FEED 1	0.0	
				DDU2	DDU2 START STOP	STOP	
				SPEED DDU2	PAPER FEED 2	0.0	

LOG : 26-JUN-13 12:22:54 LCP-47 LOG REQUESTED

PERFORMANCE

"PINETREE POWER-FITCHBURG PERFORMANCE LOG"

FI-03019	STEAM FLOW	133.08	KPPH	AMBIENT	OUTSIDE AIR TEMP	75	DEGF
TI-03013	MAIN STEAM TEMP	930	DEGF				
PI-03016	MAIN STEAM PRESS	1245	PSIG	TI-02004	FD OUT AIR HTR IN	90	DEGF
				TI-02039	AH AIR OUT TEMP	457	DEGF
FI-05012	ATTEMP SPRAY FLOW	15.49	KLB/H	TI-02035	ECON GAS IN	712	DEGF
TI-03007	ATTEMP INLET TEMP	934	DEGF	TI-02036	AH GAS IN TEMP	546	DEGF
TIC-03010	ATTEMP OUT TEMP	694	DEGF	TI-02042	AH GAS OUT TEMP	319	DEGF
FI-10012	BLOWDOWN FLOW	0.4	KLB/H	TI-02B51	BH INLET TEMP	424	DEGF
TI-03A05	DRUM TEMP	583	DEGF	TI-02C51	BH OUTLET TEMP	417	DEGF
PI-05022	DRUM PRESSURE	1285	PSIG	PDI-02A51	BH DIFF PRESS	4.8	"H2O
LI-05018	DRUM LEVEL	0.5	"NWL	JI-03020	GENERATOR GROSS	16.1	MW
PI-05013	FEEDWATER PRESS	1333	PSIG	JI-03022	STATION SERVICE	2.7	MW
FI-05011	FEEDWATER FLOW	124.05	KLB/H	CALC	STATION NET PWR	13.4	MW
TI-05051	BFP SUCTION TEMP	304	DEGF	JIC-03020	GROSS MW PROD	7768.80	MWHRS
TI-05023	FW TEMP ECON IN	404	DEGF	JI-03022	STA.SERVICE	23.49	MWHRS
PI-06012	DEAERATOR PRESS	54.3	PSIG	JQI-03024	NET MHR PROD	9089.75	MWHRS
TI-06006	COND DISCH TEMP	136	DEGF	FI-30170	FIRING RATE	51.0	PCNT
TI-09001	COND RCVR TEMP	137	DEGF	DB-00106	CEM NH3	-0.1	PPM
TI-09023	COND LEG A	73.7	DEGF	DB-00109	STACK OPACITY	0.5	%
TI-09024	COND LEG B	73.7	DEGF	AI-02030	BOILER EXIT O2	2.2	%O2
TI-09021	EXHAUST TEMP	105	DEGF	DB-00108	CEM FLUE GAS O2	4.7	%O2
PI-09004	TURBINE EXH PRESS	4.60	"HGA	DB-00107	CEM CO	480	PPM
LI-09030	DEMIN TANK LEVEL	69.8	"LVL	DB-00105	CEM NOX	26	PPM
				SO2	CEM SO2	-0	PPM
PIC-02020	ID FAN INLET	96	%OPEN	UREA FLOW	RATE %	0.0	%
PI-02020	FURNACE PRESSURE	-0.14	"H2O	% CH4	% METHANE	-0.15	% CH4
PIC-02003	FD FAN INLET	56	%OPEN	FLOW CH4	LFG GAS FLOW	-750.9	CFM
PIC-02003	FD DUCT PRESSURE	12.8	"WC	LFG METER	LFG MASS FLOW	965.9	MSCF
FI-02001	FD AIR FLOW	222.11	KLB/H	LFG METER	LFG HEAT FLOW	6037.0	MMBTU
				LFG SUC	LFG SUCTION	-0.34	"H2O
FI-02001B	UGA FLOW(CALC)	149.31	KLB/H	WT-1000	BLR WOOD FEED	8768.0	TONS
FIC-02001C	OFA FAN INLET	65	%OPEN	WT-2000	WOOD RETURN	3026.3	TONS
PI-02007	OFA DISCHG PRESS	-12	"WC				
FI-02007	OVERFIRE AIR FLOW	72.81	KLB/H	DDU1	DDU1 START STOP	STOP	
FI-14003	GAS BURNER FLOW	4.7	KLB/H	SPEED DDU1	PAPER FEED 1	0.0	
				DDU2	DDU2 START STOP	STOP	
				SPEED DDU2	PAPER FEED 2	0.0	

End ns.3

CEM testing 6-26-13 PM 2.5/10 -2

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LOG : 27-JUN-13 08:20:17 LCP-47 LOG REQUESTED

PERFORMANCE

"PINETREE POWER-FITCHBURG PERFORMANCE LOG"

FI-03019	STEAM FLOW	140.95	KPPH	AMBIENT	OUTSIDE AIR TEMP	66	DEGF
TI-03013	MAIN STEAM TEMP	940	DEGF				
PI-03016	MAIN STEAM PRESS	1250	PSIG	TI-02004	FD OUT AIR HTR IN	81	DEGF
				TI-02039	AH AIR OUT TEMP	439	DEGF
FI-05012	ATTEMP SPRAY FLOW	15.47	KLB/H	TI-02035	ECON GAS IN	732	DEGF
TI-03007	ATTEMP INLET TEMP	940	DEGF	TI-02036	AH GAS IN TEMP	553	DEGF
TIC-03010	ATTEMP OUT TEMP	719	DEGF	TI-02042	AH GAS OUT TEMP	301	DEGF
FI-10012	BLOWDOWN FLOW	0.4	KLB/H	TI-02B51	BH INLET TEMP	434	DEGF
TI-03A05	DRUM TEMP	584	DEGF	TI-02C51	BH OUTLET TEMP	420	DEGF
PI-05022	DRUM PRESSURE	1294	PSIG	PDI-02A51	BH DIFF PRESS	5.1	"H2O
LI-05018	DRUM LEVEL	-0.4	"NWL	JI-03020	GENERATOR GROSS	17.3	MW
PI-05013	FEEDWATER PRESS	1355	PSIG	JI-03022	STATION SERVICE	2.6	MW
FI-05011	FEEDWATER FLOW	145.98	KLB/H	CALC	STATION NET PWR	14.7	MW
TI-05051	BFP SUCTION TEMP	307	DEGF	JIC-03020	GROSS MW PROD	8010.45	MWHRS
TI-05023	FW TEMP ECON IN	408	DEGF	JI-03022	STA.SERVICE	67.21	MWHRS
PI-06012	DEAERATOR PRESS	57.7	PSIG	JQI-03024	NET MHR PROD	9118.48	MWHRS
TI-06006	COND DISCH TEMP	130	DEGF	FI-30170	FIRING RATE	50.0	PCNT
TI-09001	COND RCVR TEMP	131	DEGF	DB-00106	CEM NH3	5.4	PPM
TI-09023	COND LEG A	73.7	DEGF	DB-00109	STACK OPACITY	1.9	%
TI-09024	COND LEG B	73.7	DEGF	AI-02030	BOILER EXIT O2	2.8	%O2
TI-09021	EXHAUST TEMP	105	DEGF	DB-00108	CEM FLUE GAS O2	5.6	%O2
PI-09004	TURBINE EXH PRESS	3.82	"HGA	DB-00107	CEM CO	301	PPM
LI-09030	DEMIN TANK LEVEL	82.4	"LVL	DB-00105	CEM NOX	43	PPM
				SO2	CEM SO2	-0	PPM
PIC-02020	ID FAN INLET	96	%OPEN	UREA FLOW	RATE %	0.0	%
PI-02020	FURNACE PRESSURE	-0.14	"H2O	% CH4	% METHANE	-0.15	% CH4
PIC-02003	FD FAN INLET	56	%OPEN	FLOW CH4	LFG GAS FLOW	-750.9	CFM
PIC-02003	FD DUCT PRESSURE	13.0	"WC	LFG METER	LFG MASS FLOW	965.9	MSCF
FI-02001	FD AIR FLOW	223.72	KLB/H	LFG METER	LFG HEAT FLOW	6186.7	MMBTU
				LFG SUC	LFG SUCTION	-0.34	"H2O
FI-02001B	UGA FLOW(CALC)	162.81	KLB/H	WT-1000	BLR WOOD FEED	9291.1	TONS
FIC-02001C	OFA FAN INLET	50	%OPEN	WT-2000	WOOD RETURN	3116.5	TONS
PI-02007	OFA DISCHG PRESS	-12	"WC				
FI-02007	OVERFIRE AIR FLOW	60.55	KLB/H	DDU1	DDU1 START STOP	STOP	
FI-14003	GAS BURNER FLOW	5.9	KLB/H	SPEED DDU1	PAPER FEED 1	0.0	
				DDU2	DDU2 START STOP	STOP	
				SPEED DDU2	PAPER FEED 2	0.0	

LOG : 27-JUN-13 10:25:15 LCP-47 LOG REQUESTED

-2

PERFORMANCE

"PINETREE POWER-FITCHBURG PERFORMANCE LOG"

FI-03019	STEAM FLOW	120.41	KPPH	AMBIENT	OUTSIDE AIR TEMP	67	DEGF
TI-03013	MAIN STEAM TEMP	946	DEGF				
PI-03016	MAIN STEAM PRESS	1239	PSIG	TI-02004	FD OUT AIR HTR IN	83	DEGF
				TI-02039	AH AIR OUT TEMP	440	DEGF
FI-05012	ATTEMP SPRAY FLOW	15.52	KLB/H	TI-02035	ECON GAS IN	715	DEGF
TI-03007	ATTEMP INLET TEMP	925	DEGF	TI-02036	AH GAS IN TEMP	544	DEGF
TIC-03010	ATTEMP OUT TEMP	735	DEGF	TI-02042	AH GAS OUT TEMP	303	DEGF
FI-10012	BLOWDOWN FLOW	0.3	KLB/H	TI-02B51	BH INLET TEMP	422	DEGF
TI-03A05	DRUM TEMP	583	DEGF	TI-02C51	BH OUTLET TEMP	414	DEGF
PI-05022	DRUM PRESSURE	1270	PSIG	PDI-02A51	BH DIFF PRESS	5.0	"H2O
LI-05018	DRUM LEVEL	0.3	"NWL	JI-03020	GENERATOR GROSS	14.9	MW
PI-05013	FEEDWATER PRESS	1315	PSIG	JI-03022	STATION SERVICE	2.5	MW
FI-05011	FEEDWATER FLOW	118.00	KLB/H	CALC	STATION NET PWR	12.4	MW
TI-05051	BFP SUCTION TEMP	298	DEGF	JIC-03020	GROSS MW PROD	8043.08	MWHRS

TI-05023	FW TEMP ECON IN	397	DEGF	JI-03022	STA.SERVICE	72.53	MWHRS
PI-06012	DEAERATOR PRESS	48.7	PSIG	JQI-03024	NET MHR PROD	9122.03	MWHRS
TI-06006	COND DISCH TEMP	123	DEGF	FI-30170	FIRING RATE	47.0	PCNT
TI-09001	COND RCVR TEMP	128	DEGF	DB-00106	CEM NH3	1.4	PPM
TI-09023	COND LEG A	73.7	DEGF	DB-00109	STACK OPACITY	1.0	%
TI-09024	COND LEG B	73.7	DEGF	AI-02030	BOILER EXIT O2	3.3	%O2
TI-09021	EXHAUST TEMP	105	DEGF	DB-00108	CEM FLUE GAS O2	6.4	%O2
PI-09004	TURBINE EXH PRESS	3.83	"HGA	DB-00107	CEM CO	167	PPM
LI-09030	DEMIN TANK LEVEL	73.7	"LVL	DB-00105	CEM NOX	53	PPM
				SO2	CEM SO2	-0	PPM
PIC-02020	ID FAN INLET	94	%OPEN	UREA FLOW	RATE %	0.0	%
PI-02020	FURNACE PRESSURE	-0.18	"H2O	% CH4	% METHANE	-0.15	% CH4
PIC-02003	FD FAN INLET	54	%OPEN	FLOW CH4	LFG GAS FLOW	-750.0	CFM
PIC-02003	FD DUCT PRESSURE	13.1	"WC	LFG METER	LFG MASS FLOW	965.9	MSCF
FI-02001	FD AIR FLOW	213.39	KLB/H	LFG METER	LFG HEAT FLOW	6202.3	MMBTU
				LFG SUC	LFG SUCTION	-0.34	"H2O
FI-02001B	UGA FLOW(CALC)	158.56	KLB/H	WT-1000	BLR WOOD FEED	9361.0	TONS
FIC-02001C	OFA FAN INLET	44	%OPEN	WT-2000	WOOD RETURN	3128.6	TONS
PI-02007	OFA DISCHG PRESS	-12	"WC				
FI-02007	OVERFIRE AIR FLOW	54.36	KLB/H	DDU1	DDU1 START STOP	STOP	
FI-14003	GAS BURNER FLOW	6.1	KLB/H	SPEED DDU1	PAPER FEED 1	0.0	
				DDU2	DDU2 START STOP	STOP	
				SPEED DDU2	PAPER FEED 2	0.0	

End RM2-5/10-2

LOG : 27-JUN-13 10:46:33 LCP-47 LOG REQUESTED

PERFORMANCE

START RM 2.5/10 -3

"PINETREE POWER-FITCHBURG PERFORMANCE LOG"

FI-03019	STEAM FLOW	118.35	KPPH	AMBIENT	OUTSIDE AIR TEMP	69	DEGF
TI-03013	MAIN STEAM TEMP	957	DEGF				
PI-03016	MAIN STEAM PRESS	1244	PSIG	TI-02004	FD OUT AIR HTR IN	83	DEGF
				TI-02039	AH AIR OUT TEMP	440	DEGF
FI-05012	ATTEMP SPRAY FLOW	15.53	KLB/H	TI-02035	ECON GAS IN	713	DEGF
TI-03007	ATTEMP INLET TEMP	925	DEGF	TI-02036	AH GAS IN TEMP	542	DEGF
TIC-03010	ATTEMP OUT TEMP	730	DEGF	TI-02042	AH GAS OUT TEMP	305	DEGF
FI-10012	BLOWDOWN FLOW	0.4	KLB/H	TI-02B51	BH INLET TEMP	418	DEGF
TI-03A05	DRUM TEMP	580	DEGF	TI-02C51	BH OUTLET TEMP	410	DEGF
PI-05022	DRUM PRESSURE	1273	PSIG	PDI-02A51	BH DIFF PRESS	5.0	"H2O
LI-05018	DRUM LEVEL	-0.1	"NWL	JI-03020	GENERATOR GROSS	14.8	MW
PI-05013	FEEDWATER PRESS	1322	PSIG	JI-03022	STATION SERVICE	2.4	MW
FI-05011	FEEDWATER FLOW	125.47	KLB/H	CALC	STATION NET PWR	12.4	MW
TI-05051	BFP SUCTION TEMP	297	DEGF	JIC-03020	GROSS MW PROD	8048.41	MWHRS
TI-05023	FW TEMP ECON IN	396	DEGF	JI-03022	STA.SERVICE	73.41	MWHRS
PI-06012	DEAERATOR PRESS	47.8	PSIG	JQI-03024	NET MHR PROD	9122.53	MWHRS
TI-06006	COND DISCH TEMP	125	DEGF	FI-30170	FIRING RATE	47.0	PCNT
TI-09001	COND RCVR TEMP	127	DEGF	DB-00106	CEM NH3	9.4	PPM
TI-09023	COND LEG A	73.7	DEGF	DB-00109	STACK OPACITY	1.1	%
TI-09024	COND LEG B	73.7	DEGF	AI-02030	BOILER EXIT O2	3.5	%O2
TI-09021	EXHAUST TEMP	105	DEGF	DB-00108	CEM FLUE GAS O2	6.2	%O2
PI-09004	TURBINE EXH PRESS	3.83	"HGA	DB-00107	CEM CO	131	PPM
LI-09030	DEMIN TANK LEVEL	72.5	"LVL	DB-00105	CEM NOX	55	PPM
				SO2	CEM SO2	-0	PPM
PIC-02020	ID FAN INLET	93	%OPEN	UREA FLOW	RATE %	0.0	%
PI-02020	FURNACE PRESSURE	-0.22	"H2O	% CH4	% METHANE	-0.15	% CH4
PIC-02003	FD FAN INLET	53	%OPEN	FLOW CH4	LFG GAS FLOW	-750.9	CFM
PIC-02003	FD DUCT PRESSURE	13.4	"WC	LFG METER	LFG MASS FLOW	965.9	MSCF
FI-02001	FD AIR FLOW	205.98	KLB/H	LFG METER	LFG HEAT FLOW	6205.0	MMBTU
				LFG SUC	LFG SUCTION	-0.34	"H2O
FI-02001B	UGA FLOW(CALC)	152.48	KLB/H	WT-1000	BLR WOOD FEED	9372.9	TONS
FIC-02001C	OFA FAN INLET	43	%OPEN	WT-2000	WOOD RETURN	3130.9	TONS
PI-02007	OFA DISCHG PRESS	-12	"WC				
FI-02007	OVERFIRE AIR FLOW	53.54	KLB/H	DDU1	DDU1 START STOP	STOP	
FI-14003	GAS BURNER FLOW	5.2	KLB/H	SPEED DDU1	PAPER FEED 1	0.0	

DDU2	DDU2 START STOP	STOP
SPEED DDU2	PAPER FEED 2	0.0

LOG : 27-JUN-13 12:54:07 LCP-47 LOG REQUESTED

PERFORMANCE

"PINETREE POWER-FITCHBURG PERFORMANCE LOG"

FI-03019	STEAM FLOW	129.40	KPPH	AMBIENT	OUTSIDE AIR TEMP	72	DEGF
TI-03013	MAIN STEAM TEMP	950	DEGF				
PI-03016	MAIN STEAM PRESS	1265	PSIG	TI-02004	FD OUT AIR HTR IN	86	DEGF
				TI-02039	AH AIR OUT TEMP	439	DEGF
FI-05012	ATTEMP SPRAY FLOW	15.50	KLB/H	TI-02035	ECON GAS IN	718	DEGF
TI-03007	ATTEMP INLET TEMP	932	DEGF	TI-02036	AH GAS IN TEMP	543	DEGF
TIC-03010	ATTEMP OUT TEMP	734	DEGF	TI-02042	AH GAS OUT TEMP	303	DEGF
FI-10012	BLOWDOWN FLOW	0.4	KLB/H	TI-02B51	BH INLET TEMP	423	DEGF
TI-03A05	DRUM TEMP	582	DEGF	TI-02C51	BH OUTLET TEMP	412	DEGF
PI-05022	DRUM PRESSURE	1301	PSIG	PDI-02A51	BH DIFF PRESS	5.2	"H2O
LI-05018	DRUM LEVEL	-0.2	"NWL	JI-03020	GENERATOR GROSS	16.0	MW
PI-05013	FEEDWATER PRESS	1354	PSIG	JI-03022	STATION SERVICE	2.5	MW
FI-05011	FEEDWATER FLOW	132.55	KLB/H	CALC	STATION NET PWR	13.4	MW
TI-05051	BFP SUCTION TEMP	302	DEGF	JIC-03020	GROSS MW PROD	8080.49	MWHRS
TI-05023	FW TEMP ECON IN	403	DEGF	JI-03022	STA.SERVICE	78.68	MWHRS
PI-06012	DEAERATOR PRESS	52.5	PSIG	JQI-03024	NET MHR PROD	9126.63	MWHRS
TI-06006	COND DISCH TEMP	129	DEGF	FI-30170	FIRING RATE	47.0	PCNT
TI-09001	COND RCVR TEMP	131	DEGF	DB-00106	CEM NH3	6.2	PPM
TI-09023	COND LEG A	73.7	DEGF	DB-00109	STACK OPACITY	1.1	%
TI-09024	COND LEG B	73.7	DEGF	AI-02030	BOILER EXIT O2	2.7	%O2
TI-09021	EXHAUST TEMP	105	DEGF	DB-00108	CEM FLUE GAS O2	5.7	%O2
PI-09004	TURBINE EXH PRESS	4.05	"HGA	DB-00107	CEM CO	105	PPM
LI-09030	DEMIN TANK LEVEL	67.6	"LVL	DB-00105	CEM NOX	61	PPM
				SO2	CEM SO2	-0	PPM
PIC-02020	ID FAN INLET	93	%OPEN	UREA FLOW	RATE %	0.0	%
PI-02020	FURNACE PRESSURE	-0.18	"H2O	% CH4	% METHANE	-0.15	% CH4
PIC-02003	FD FAN INLET	53	%OPEN	FLOW CH4	LFG GAS FLOW	-750.0	CFM
PIC-02003	FD DUCT PRESSURE	13.5	"WC	LFG METER	LFG MASS FLOW	965.9	MSCF
FI-02001	FD AIR FLOW	207.22	KLB/H	LFG METER	LFG HEAT FLOW	6220.9	MMBTU
				LFG SUC	LFG SUCTION	-0.34	"H2O
FI-02001B	UGA FLOW(CALC)	152.74	KLB/H	WT-1000	BLR WOOD FEED	9437.4	TONS
FIC-02001C	OFA FAN INLET	43	%OPEN	WT-2000	WOOD RETURN	3139.5	TONS
PI-02007	OFA DISCHG PRESS	-12	"WC				
FI-02007	OVERFIRE AIR FLOW	54.57	KLB/H	DDU1	DDU1 START STOP	STOP	
FI-14003	GAS BURNER FLOW	5.6	KLB/H	SPEED DDU1	PAPER FEED 1	0.0	
				DDU2	DDU2 START STOP	STOP	
				SPEED DDU2	PAPER FEED 2	0.0	

End

RATA Report
For 6/26/2013, Hour 08:00

Time	O2 %	NOX PPM	NH3 PPM	CO PPM	SO2 PPM	NOX lb/MBtu	NH3 lb/MBtu
06/26/2013 08:25	5.5	21.8	3.4	153.8	0.0	0.045	0.003
06/26/2013 08:26	5.5	22.2	1.9	171.8	0.0	0.045	0.001
06/26/2013 08:27	5.5	22.0	2.3	145.1	0.0	0.045	0.002
06/26/2013 08:28	5.6	21.1	4.2	131.2	0.0	0.044	0.003
06/26/2013 08:29	5.7	21.9	3.5	121.9	0.0	0.046	0.003
06/26/2013 08:30	5.6	23.0	1.8	119.0	0.0	0.048	0.001
06/26/2013 08:31	5.5	22.9	1.0	171.0	0.0	0.047	0.001
06/26/2013 08:32	5.5	22.3	2.0	191.7	0.0	0.046	0.002
06/26/2013 08:33	5.5	21.8	3.0	154.7	0.0	0.045	0.002
06/26/2013 08:34	5.8	21.7	4.2	156.5	0.0	0.046	0.003
06/26/2013 08:35	5.9	22.3	4.2	127.7	0.0	0.047	0.003
06/26/2013 08:36	6.1	22.9	4.4	114.0	0.0	0.050	0.004
06/26/2013 08:37	6.0	24.0	2.0	136.7	0.0	0.051	0.002
06/26/2013 08:38	5.8	24.7	1.9	100.7	0.0	0.052	0.001
06/26/2013 08:39	5.9	23.8	3.4	104.7	0.0	0.051	0.003
06/26/2013 08:40	5.8	24.5	3.8	106.4	0.0	0.052	0.003
06/26/2013 08:41	5.5	24.8	3.9	115.9	0.0	0.051	0.003
06/26/2013 08:42	5.8	25.7	3.6	208.8	0.0	0.054	0.003
06/26/2013 08:43	5.9	26.0	3.9	159.7	0.0	0.055	0.003
06/26/2013 08:44	6.0	27.0	3.8	127.9	0.0	0.058	0.003
06/26/2013 08:45	6.1	27.8	2.9	111.3	0.0	0.060	0.002
06/26/2013 08:46	6.3	28.4	1.6	92.9	0.0	0.063	0.001
06/26/2013 08:47	6.2	28.5	0.8	91.8	0.0	0.062	0.001
06/26/2013 08:48	6.1	27.9	0.4	132.0	0.0	0.060	0.000
06/26/2013 08:49	5.8	27.2	1.4	105.2	0.0	0.057	0.001
06/26/2013 08:50	5.8	25.9	5.8	107.5	0.0	0.054	0.004
06/26/2013 08:51	5.8	27.6	4.9	124.8	0.0	0.058	0.004
06/26/2013 08:52	5.9	29.1	3.2	112.7	0.0	0.062	0.003
06/26/2013 08:53	6.0	29.8	1.3	128.2	0.0	0.064	0.001
06/26/2013 08:54	6.0	29.9	0.0	122.7	0.0	0.064	0.000
06/26/2013 08:55	6.0	29.3	0.3	106.6	0.1	0.063	0.000
06/26/2013 08:56	6.1	27.6	1.3	99.2	0.0	0.060	0.001
06/26/2013 08:57	5.8	27.6	0.7	94.0	0.0	0.058	0.001
06/26/2013 08:58	5.8	27.4	2.1	106.3	0.0	0.058	0.002
06/26/2013 08:59	5.7	26.9	2.5	148.5	0.0	0.056	0.002
06/26/2013 09:00	5.6	28.0	3.0	117.8	0.1	0.058	0.002
06/26/2013 09:01	5.6	27.6	3.8	106.7	0.1	0.057	0.003
06/26/2013 09:02	5.8	28.4	2.8	99.2	0.1	0.060	0.002
06/26/2013 09:03	5.4	29.2	0.6	97.9	0.1	0.059	0.000
06/26/2013 09:04	5.4	29.3	1.1	152.8	0.0	0.059	0.001
06/26/2013 09:05	5.5	27.8	4.0	161.5	0.0	0.057	0.003
06/26/2013 09:06	5.6	28.3	4.4	127.9	0.0	0.058	0.003
06/26/2013 09:07	5.6	29.1	3.5	109.9	0.0	0.060	0.003
06/26/2013 09:08	5.5	30.0	2.3	101.2	0.1	0.061	0.002
06/26/2013 09:09	5.7	30.2	2.9	94.6	0.1	0.063	0.002
06/26/2013 09:10	5.7	29.5	2.2	128.4	0.1	0.061	0.002
06/26/2013 09:11	5.6	31.6	0.5	113.9	0.1	0.065	0.000
06/26/2013 09:12	5.7	29.9	3.4	111.4	0.1	0.062	0.003
06/26/2013 09:13	5.7	30.4	3.1	106.4	0.1	0.063	0.002
06/26/2013 09:14	5.6	31.3	2.3	124.3	0.1	0.065	0.002
06/26/2013 09:15	5.7	31.5	2.7	158.0	0.1	0.066	0.002
06/26/2013 09:16	5.7	31.8	2.9	156.5	0.1	0.066	0.002
06/26/2013 09:17	5.7	32.9	2.1	119.6	0.1	0.069	0.002
06/26/2013 09:18	5.7	33.1	1.2	103.9	0.1	0.069	0.001
06/26/2013 09:19	5.4	33.2	0.1	106.3	0.1	0.067	0.000
06/26/2013 09:20	5.6	32.5	0.5	109.7	0.1	0.067	0.000
06/26/2013 09:21	5.8	31.9	0.2	147.3	0.1	0.067	0.000
06/26/2013 09:22	5.7	32.5	0.0	122.6	0.0	0.068	0.000
06/26/2013 09:23	5.6	29.1	1.0	115.9	0.0	0.060	0.001
06/26/2013 09:24	5.8	28.5	2.1	134.5	0.0	0.060	0.002
06/26/2013 09:25	5.9	28.9	0.3	130.4	0.1	0.061	0.000
06/26/2013 09:26	5.9	28.6	0.0	119.4	0.0	0.061	0.000
06/26/2013 09:27	5.9	27.2	0.0	130.8	0.0	0.058	0.000
06/26/2013 09:28	5.8	26.5	0.0	98.2	0.0	0.056	0.000

RATA Run # 1

Verified By: ______________________

RATA Report
For 6/26/2013, Hour 08:00

Time	O2 %	NOX PPM	NH3 PPM	CO PPM	SO2 PPM	NOX lb/MBtu	NH3 lb/MBtu
06/26/2013 09:29	5.4	23.8	1.7	99.6	0.0	0.048	0.001
06/26/2013 09:30	5.2	23.4	3.3	168.1	0.0	0.047	0.002
06/26/2013 09:31	5.3	23.5	3.9	179.5	0.0	0.047	0.003
06/26/2013 09:32	5.6	24.2	2.1	179.7	0.0	0.050	0.002
06/26/2013 09:33	5.4	25.1	0.0	161.1	0.0	0.051	0.000
06/26/2013 09:34	5.2	24.0	0.6	153.0	0.0	0.048	0.000
06/26/2013 09:35	5.3	22.4	2.6	149.2	0.0	0.045	0.002
Average Value	5.7	27.1	2.2	128.2	0.0	0.057	0.002

RATA Run # 1

Verified By: ______________________

RATA Report
For 6/26/2013, Hour 08:00

Time	CO lb/MBtu	SO2 lb/MBtu	NOX lb/hr	NH3 lb/hr	CO lb/hr	SO2 lb/hr
06/26/2013 08:25	0.192	0.000	10.6	0.6	45.3	0.0
06/26/2013 08:26	0.214	0.000	10.7	0.3	50.6	0.0
06/26/2013 08:27	0.181	0.000	10.6	0.4	42.7	0.0
06/26/2013 08:28	0.165	0.000	10.2	0.7	38.6	0.0
06/26/2013 08:29	0.155	0.000	10.6	0.6	35.8	0.0
06/26/2013 08:30	0.150	0.000	11.1	0.3	34.9	0.0
06/26/2013 08:31	0.213	0.000	11.1	0.2	50.4	0.0
06/26/2013 08:32	0.239	0.000	10.8	0.4	56.5	0.0
06/26/2013 08:33	0.193	0.000	10.5	0.5	45.5	0.0
06/26/2013 08:34	0.200	0.000	10.5	0.7	45.9	0.0
06/26/2013 08:35	0.165	0.000	10.8	0.7	37.5	0.0
06/26/2013 08:36	0.150	0.000	11.1	0.8	33.5	0.0
06/26/2013 08:37	0.178	0.000	11.6	0.4	40.1	0.0
06/26/2013 08:38	0.129	0.000	11.9	0.3	29.6	0.0
06/26/2013 08:39	0.135	0.000	11.5	0.6	30.8	0.0
06/26/2013 08:40	0.136	0.000	11.8	0.7	31.3	0.0
06/26/2013 08:41	0.144	0.000	12.0	0.7	34.2	0.0
06/26/2013 08:42	0.267	0.000	12.5	0.6	61.6	0.0
06/26/2013 08:43	0.206	0.000	12.6	0.7	47.1	0.0
06/26/2013 08:44	0.167	0.000	13.1	0.7	37.6	0.0
06/26/2013 08:45	0.147	0.000	13.4	0.5	32.7	0.0
06/26/2013 08:46	0.125	0.000	13.7	0.3	27.2	0.0
06/26/2013 08:47	0.122	0.000	13.8	0.1	27.0	0.0
06/26/2013 08:48	0.174	0.000	13.5	0.1	38.9	0.0
06/26/2013 08:49	0.135	0.000	13.2	0.3	31.0	0.0
06/26/2013 08:50	0.138	0.000	12.5	1.0	31.7	0.0
06/26/2013 08:51	0.160	0.000	13.3	0.9	36.5	0.0
06/26/2013 08:52	0.146	0.000	14.1	0.6	33.1	0.0
06/26/2013 08:53	0.167	0.000	14.4	0.2	37.7	0.0
06/26/2013 08:54	0.160	0.000	14.5	0.0	36.1	0.0
06/26/2013 08:55	0.139	0.000	14.1	0.1	31.3	0.1
06/26/2013 08:56	0.131	0.000	13.3	0.2	29.2	0.0
06/26/2013 08:57	0.120	0.000	13.3	0.1	27.7	0.0
06/26/2013 08:58	0.136	0.000	13.2	0.4	31.2	0.0
06/26/2013 08:59	0.188	0.000	13.0	0.4	43.8	0.0
06/26/2013 09:00	0.148	0.000	13.5	0.5	34.7	0.1
06/26/2013 09:01	0.134	0.000	13.3	0.7	31.3	0.1
06/26/2013 09:02	0.127	0.000	13.7	0.5	29.2	0.1
06/26/2013 09:03	0.121	0.000	14.1	0.1	28.8	0.1
06/26/2013 09:04	0.189	0.000	14.2	0.2	45.0	0.0
06/26/2013 09:05	0.201	0.000	13.5	0.7	47.6	0.0
06/26/2013 09:06	0.161	0.000	13.7	0.8	37.8	0.0
06/26/2013 09:07	0.138	0.000	14.1	0.6	32.3	0.0
06/26/2013 09:08	0.126	0.000	14.5	0.4	29.7	0.1
06/26/2013 09:09	0.120	0.000	14.6	0.5	27.8	0.1
06/26/2013 09:10	0.163	0.000	14.3	0.4	37.8	0.1
06/26/2013 09:11	0.143	0.000	15.3	0.1	33.6	0.1
06/26/2013 09:12	0.141	0.000	14.5	0.6	32.8	0.1
06/26/2013 09:13	0.135	0.000	14.7	0.6	31.4	0.1
06/26/2013 09:14	0.156	0.000	15.2	0.4	36.7	0.1
06/26/2013 09:15	0.200	0.000	15.3	0.5	46.6	0.1
06/26/2013 09:16	0.199	0.000	15.4	0.5	46.2	0.1
06/26/2013 09:17	0.152	0.000	15.9	0.4	35.2	0.1
06/26/2013 09:18	0.132	0.000	16.0	0.2	30.6	0.1
06/26/2013 09:19	0.131	0.000	16.1	0.0	31.3	0.1
06/26/2013 09:20	0.138	0.000	15.7	0.1	32.3	0.1
06/26/2013 09:21	0.189	0.000	15.5	0.0	43.5	0.1
06/26/2013 09:22	0.156	0.000	15.8	0.0	36.2	0.0
06/26/2013 09:23	0.146	0.000	14.1	0.2	34.3	0.0
06/26/2013 09:24	0.172	0.000	13.8	0.4	39.6	0.0
06/26/2013 09:25	0.168	0.000	14.0	0.1	38.4	0.1
06/26/2013 09:26	0.154	0.000	13.8	0.0	35.1	0.0
06/26/2013 09:27	0.169	0.000	13.1	0.0	38.4	0.0

RATA Run # 1

Verified By: ______________________________

RATA Report
For 6/26/2013, Hour 08:00

Time	CO lb/MBtu	SO2 lb/MBtu	NOX lb/hr	NH3 lb/hr	CO lb/hr	SO2 lb/hr
06/26/2013 09:28	0.126	0.000	12.8	0.0	28.9	0.0
06/26/2013 09:29	0.123	0.000	11.5	0.3	29.4	0.0
06/26/2013 09:30	0.204	0.000	11.4	0.6	49.7	0.0
06/26/2013 09:31	0.220	0.000	11.4	0.7	53.0	0.0
06/26/2013 09:32	0.226	0.000	11.7	0.4	53.0	0.0
06/26/2013 09:33	0.199	0.000	12.2	0.0	47.5	0.0
06/26/2013 09:34	0.186	0.000	11.6	0.1	45.2	0.0
06/26/2013 09:35	0.183	0.000	10.8	0.5	44.0	0.0
Average Value	0.163	0.000	13.1	0.4	37.7	0.0

RATA Run # 1

Verified By: ______________________

RATA Report
For 6/26/2013, Hour 09:00

Time	O2 %	NOX PPM	NH3 PPM	CO PPM	SO2 PPM	NOX lb/MBtu	NH3 lb/MBtu
06/26/2013 09:55	4.8	21.8	2.4	259.3	0.0	0.042	0.002
06/26/2013 09:56	4.8	20.7	3.9	419.5	0.0	0.040	0.003
06/26/2013 09:57	4.9	20.8	4.6	431.0	0.0	0.040	0.003
06/26/2013 09:58	5.2	21.6	3.7	310.8	0.0	0.043	0.003
06/26/2013 09:59	5.4	21.8	3.1	174.4	0.0	0.044	0.002
06/26/2013 10:00	4.9	21.8	1.3	234.4	0.0	0.042	0.001
06/26/2013 10:01	4.6	22.0	1.2	375.4	0.0	0.042	0.001
06/26/2013 10:02	4.6	20.5	3.8	511.8	0.0	0.039	0.003
06/26/2013 10:03	4.7	20.7	4.7	465.7	0.0	0.040	0.003
06/26/2013 10:04	5.0	21.5	4.8	354.2	0.0	0.042	0.003
06/26/2013 10:05	5.1	22.2	3.4	243.6	0.0	0.044	0.002
06/26/2013 10:06	4.9	23.0	1.4	247.9	0.0	0.045	0.001
06/26/2013 10:07	4.9	22.9	2.2	284.0	0.0	0.045	0.002
06/26/2013 10:08	5.1	22.4	3.1	234.7	0.0	0.044	0.002
06/26/2013 10:09	4.9	22.7	2.8	197.4	0.0	0.044	0.002
06/26/2013 10:10	4.6	22.6	2.5	282.7	0.0	0.043	0.002
06/26/2013 10:11	4.5	23.0	2.6	511.8	0.0	0.043	0.002
06/26/2013 10:12	4.7	22.6	4.4	511.8	0.0	0.043	0.003
06/26/2013 10:13	5.0	22.7	5.7	363.3	0.0	0.044	0.004
06/26/2013 10:14	5.1	24.0	4.6	216.1	0.0	0.047	0.003
06/26/2013 10:15	5.1	25.2	2.9	182.2	0.0	0.050	0.002
06/26/2013 10:16	5.0	25.6	1.8	230.1	0.0	0.050	0.001
06/26/2013 10:17	5.0	25.4	0.9	309.9	0.0	0.050	0.001
06/26/2013 10:18	5.3	24.4	2.1	225.5	0.0	0.049	0.002
06/26/2013 10:19	5.3	23.3	4.4	145.2	0.0	0.047	0.003
06/26/2013 10:20	4.9	24.5	4.1	160.1	0.0	0.048	0.003
06/26/2013 10:21	4.9	25.3	4.3	237.0	0.0	0.049	0.003
06/26/2013 10:22	5.0	25.6	2.6	401.1	0.0	0.050	0.002
06/26/2013 10:23	5.4	27.1	1.4	237.4	0.0	0.055	0.001
06/26/2013 10:24	5.4	25.9	2.1	144.7	0.0	0.053	0.002
06/26/2013 10:25	5.1	26.3	2.1	148.8	0.0	0.052	0.002
06/26/2013 10:26	5.0	25.9	1.9	233.7	0.0	0.051	0.001
06/26/2013 10:27	5.2	25.8	1.9	267.9	0.0	0.051	0.001
06/26/2013 10:28	5.1	25.3	2.8	228.0	0.0	0.050	0.002
06/26/2013 10:29	5.1	25.1	3.9	196.2	0.0	0.050	0.003
06/26/2013 10:30	4.8	25.4	4.2	264.0	0.1	0.049	0.003
06/26/2013 10:31	4.7	25.9	4.0	404.5	0.1	0.049	0.003
06/26/2013 10:32	5.1	26.7	3.6	411.6	0.0	0.053	0.003
06/26/2013 10:33	5.1	27.7	0.9	279.5	0.0	0.055	0.001
06/26/2013 10:34	5.0	27.9	1.1	224.6	0.0	0.055	0.001
06/26/2013 10:35	4.8	26.9	2.3	288.0	0.0	0.052	0.002
06/26/2013 10:36	4.9	27.2	2.8	399.0	0.0	0.053	0.002
06/26/2013 10:37	5.0	27.0	4.1	286.3	0.0	0.053	0.003
06/26/2013 10:38	5.3	28.2	2.8	289.0	0.0	0.057	0.002
06/26/2013 10:39	5.2	28.8	0.8	236.8	0.0	0.057	0.001
06/26/2013 10:40	5.0	29.0	0.9	222.9	0.1	0.057	0.001
06/26/2013 10:41	5.1	27.9	3.3	241.7	0.1	0.055	0.002
06/26/2013 10:42	5.2	28.3	3.3	218.9	0.1	0.056	0.002
06/26/2013 10:43	5.4	28.9	4.8	178.0	0.0	0.059	0.004
06/26/2013 10:44	5.6	29.5	2.8	204.1	0.0	0.061	0.002
06/26/2013 10:45	5.3	31.4	0.3	249.8	0.0	0.063	0.000
06/26/2013 10:46	5.2	29.8	1.0	244.3	0.0	0.059	0.001
06/26/2013 10:47	5.5	28.3	3.6	194.6	0.0	0.058	0.003
06/26/2013 10:48	5.5	29.6	1.1	178.6	0.0	0.061	0.001
06/26/2013 10:49	5.2	30.0	0.7	184.5	0.0	0.060	0.001
06/26/2013 10:50	5.1	28.8	2.6	226.7	0.0	0.057	0.002
06/26/2013 10:51	5.1	29.1	3.5	259.5	0.0	0.058	0.003
06/26/2013 10:52	4.9	29.6	2.8	394.6	0.0	0.058	0.002
06/26/2013 10:53	4.9	30.1	3.0	462.0	0.0	0.058	0.002
06/26/2013 10:54	4.9	30.2	3.6	459.3	0.0	0.059	0.003
06/26/2013 10:55	5.0	31.0	2.2	461.8	0.0	0.061	0.002
06/26/2013 10:56	5.1	31.5	0.6	384.3	0.0	0.062	0.000
06/26/2013 10:57	5.1	30.6	1.8	310.8	0.0	0.060	0.001

RATA Run # 2

Verified By: ______________________

RATA Report
For 6/26/2013, Hour 09:00

Time	O2 %	NOX PPM	NH3 PPM	CO PPM	SO2 PPM	NOX lb/MBtu	NH3 lb/MBtu
Average Value	5.0	25.8	2.8	287.9	0.0	0.051	0.002

RATA Run # 2

Verified By: ______________________________

RATA Report
For 6/26/2013, Hour 09:00

Time	CO lb/MBtu	SO2 lb/MBtu	NOX lb/hr	NH3 lb/hr	CO lb/hr	SO2 lb/hr
06/26/2013 09:55	0.304	0.000	10.6	0.4	76.5	0.0
06/26/2013 09:56	0.492	0.000	10.1	0.7	124.2	0.0
06/26/2013 09:57	0.510	0.000	10.1	0.8	126.8	0.0
06/26/2013 09:58	0.377	0.000	10.4	0.7	91.5	0.0
06/26/2013 09:59	0.215	0.000	10.6	0.6	51.4	0.0
06/26/2013 10:00	0.277	0.000	10.5	0.2	68.9	0.0
06/26/2013 10:01	0.433	0.000	10.6	0.2	110.3	0.0
06/26/2013 10:02	0.590	0.000	9.9	0.7	150.6	0.0
06/26/2013 10:03	0.542	0.000	10.0	0.8	137.1	0.0
06/26/2013 10:04	0.423	0.000	10.4	0.9	103.9	0.0
06/26/2013 10:05	0.293	0.000	10.8	0.6	71.8	0.0
06/26/2013 10:06	0.293	0.000	11.2	0.3	73.2	0.0
06/26/2013 10:07	0.336	0.000	12.3	0.4	93.1	0.0
06/26/2013 10:08	0.282	0.000	12.3	0.6	78.3	0.0
06/26/2013 10:09	0.233	0.000	12.5	0.6	66.4	0.0
06/26/2013 10:10	0.326	0.000	12.7	0.5	96.9	0.0
06/26/2013 10:11	0.586	0.000	13.0	0.5	175.6	0.0
06/26/2013 10:12	0.595	0.000	12.8	0.9	176.3	0.0
06/26/2013 10:13	0.433	0.000	12.7	1.2	124.2	0.0
06/26/2013 10:14	0.260	0.000	13.4	0.9	73.6	0.0
06/26/2013 10:15	0.219	0.000	13.9	0.6	61.3	0.0
06/26/2013 10:16	0.274	0.000	14.2	0.4	77.7	0.0
06/26/2013 10:17	0.370	0.000	14.1	0.2	104.4	0.0
06/26/2013 10:18	0.276	0.000	13.6	0.4	76.6	0.0
06/26/2013 10:19	0.178	0.000	13.1	0.9	49.6	0.0
06/26/2013 10:20	0.189	0.000	13.8	0.9	54.9	0.0
06/26/2013 10:21	0.280	0.000	14.3	0.9	81.3	0.0
06/26/2013 10:22	0.478	0.000	14.2	0.5	135.7	0.0
06/26/2013 10:23	0.293	0.000	14.9	0.3	79.4	0.0
06/26/2013 10:24	0.179	0.000	14.3	0.4	48.5	0.0
06/26/2013 10:25	0.179	0.000	14.4	0.4	49.6	0.0
06/26/2013 10:26	0.279	0.000	14.0	0.4	76.9	0.0
06/26/2013 10:27	0.325	0.000	14.1	0.4	89.0	0.0
06/26/2013 10:28	0.274	0.000	13.8	0.6	75.9	0.0
06/26/2013 10:29	0.236	0.000	13.8	0.8	65.4	0.0
06/26/2013 10:30	0.310	0.000	14.2	0.9	89.7	0.1
06/26/2013 10:31	0.470	0.000	14.2	0.8	135.3	0.1
06/26/2013 10:32	0.495	0.000	14.7	0.7	137.5	0.0
06/26/2013 10:33	0.336	0.000	15.2	0.2	93.6	0.0
06/26/2013 10:34	0.268	0.000	15.3	0.2	75.1	0.0
06/26/2013 10:35	0.338	0.000	14.9	0.5	97.2	0.0
06/26/2013 10:36	0.472	0.000	15.1	0.6	134.8	0.0
06/26/2013 10:37	0.342	0.000	14.8	0.8	95.7	0.0
06/26/2013 10:38	0.354	0.000	15.6	0.6	97.0	0.0
06/26/2013 10:39	0.287	0.000	15.9	0.2	79.7	0.0
06/26/2013 10:40	0.266	0.000	16.0	0.2	74.9	0.1
06/26/2013 10:41	0.291	0.000	15.5	0.7	81.8	0.1
06/26/2013 10:42	0.266	0.000	15.9	0.7	74.8	0.1
06/26/2013 10:43	0.220	0.000	16.4	1.0	61.4	0.0
06/26/2013 10:44	0.257	0.000	16.8	0.6	70.7	0.0
06/26/2013 10:45	0.306	0.000	17.8	0.1	86.0	0.0
06/26/2013 10:46	0.296	0.000	16.8	0.2	83.6	0.0
06/26/2013 10:47	0.242	0.000	15.9	0.7	66.4	0.0
06/26/2013 10:48	0.223	0.000	16.5	0.2	60.7	0.0
06/26/2013 10:49	0.224	0.000	16.8	0.1	62.9	0.0
06/26/2013 10:50	0.273	0.000	16.2	0.5	77.6	0.0
06/26/2013 10:51	0.312	0.000	16.4	0.7	89.2	0.0
06/26/2013 10:52	0.467	0.000	16.9	0.6	137.3	0.0
06/26/2013 10:53	0.546	0.000	17.1	0.6	159.9	0.0
06/26/2013 10:54	0.543	0.000	17.1	0.8	158.4	0.0
06/26/2013 10:55	0.551	0.000	17.5	0.5	158.3	0.0
06/26/2013 10:56	0.462	0.000	17.6	0.1	130.5	0.0
06/26/2013 10:57	0.374	0.000	17.1	0.4	105.8	0.0

RATA Run # 2

Verified By: ______________________

RATA Report
For 6/26/2013, Hour 09:00

Time	CO lb/MBtu	SO2 lb/MBtu	NOX lb/hr	NH3 lb/hr	CO lb/hr	SO2 lb/hr
Average Value	0.343	0.000	14.1	0.6	94.8	0.0

RATA Run # 2

Verified By: ______________________

RATA Report
For 6/26/2013, Hour 11:00

Time	O2 %	NOX PPM	NH3 PPM	CO PPM	SO2 PPM	NOX lb/MBtu	NH3 lb/MBtu
06/26/2013 11:20	5.3	27.7	1.4	275.3	0.0	0.056	0.001
06/26/2013 11:21	4.8	26.8	6.9	305.2	0.0	0.052	0.005
06/26/2013 11:22	4.5	27.1	26.7	385.9	0.0	0.051	0.019
06/26/2013 11:23	4.2	31.0	41.4	447.8	0.1	0.057	0.028
06/26/2013 11:24	4.0	50.9	46.2	431.6	0.3	0.092	0.031
06/26/2013 11:25	4.1	60.0	44.0	457.3	0.4	0.109	0.030
06/26/2013 11:26	4.3	84.7	16.1	422.5	0.5	0.157	0.011
06/26/2013 11:27	4.3	91.3	4.3	320.4	0.6	0.169	0.003
06/26/2013 11:28	4.3	86.4	9.0	361.6	0.8	0.160	0.006
06/26/2013 11:29	4.2	90.6	5.4	419.4	0.8	0.166	0.004
06/26/2013 11:30	4.0	90.7	3.0	488.0	0.8	0.164	0.002
06/26/2013 11:31	3.6	90.5	3.8	511.8	0.6	0.158	0.002
06/26/2013 11:32	3.2	88.9	4.1	511.8	0.6	0.151	0.003
06/26/2013 11:33	3.1	87.6	2.4	511.8	0.6	0.148	0.001
06/26/2013 11:34	3.4	86.2	10.5	511.8	0.6	0.149	0.007
06/26/2013 11:35	3.3	82.7	14.4	511.8	0.6	0.142	0.009
06/26/2013 11:36	3.7	84.5	12.2	511.8	0.6	0.149	0.008
06/26/2013 11:37	3.9	84.0	14.6	511.8	0.6	0.151	0.010
06/26/2013 11:38	3.3	85.8	9.9	511.8	0.6	0.147	0.006
06/26/2013 11:39	3.2	88.8	1.6	511.8	0.6	0.151	0.001
06/26/2013 11:40	3.1	88.3	3.2	511.8	0.6	0.149	0.002
06/26/2013 11:41	2.8	81.1	10.9	511.8	0.5	0.134	0.007
06/26/2013 11:42	3.2	83.2	14.8	511.8	0.5	0.141	0.009
06/26/2013 11:43	3.7	83.1	19.3	511.8	0.5	0.147	0.013
06/26/2013 11:44	3.3	82.7	17.6	511.8	0.6	0.142	0.011
06/26/2013 11:45	3.5	88.5	5.5	511.8	0.6	0.154	0.004
06/26/2013 11:46	3.3	90.8	0.6	511.8	0.6	0.155	0.000
06/26/2013 11:47	3.3	83.3	2.6	511.8	0.5	0.143	0.002
06/26/2013 11:48	3.3	78.4	13.6	511.8	0.5	0.134	0.009
06/26/2013 11:49	3.6	73.7	25.6	511.8	0.5	0.129	0.017
06/26/2013 11:50	3.5	80.9	20.5	511.8	0.6	0.141	0.013
06/26/2013 11:51	3.4	85.6	13.6	511.8	0.5	0.148	0.009
06/26/2013 11:52	3.5	86.7	12.9	511.8	0.5	0.151	0.008
06/26/2013 11:53	3.8	89.3	8.9	511.8	0.5	0.159	0.006
06/26/2013 11:54	3.7	89.2	7.7	511.8	0.6	0.157	0.005
06/26/2013 11:55	3.8	87.2	9.7	511.8	0.6	0.155	0.006
06/26/2013 11:56	4.0	88.3	6.2	511.8	0.6	0.159	0.004
06/26/2013 11:57	4.3	87.8	3.7	511.8	0.6	0.162	0.003
06/26/2013 11:58	3.9	90.0	1.8	511.8	0.6	0.161	0.001
06/26/2013 11:59	4.5	86.9	0.0	511.8	0.6	0.163	0.000
06/26/2013 12:00	4.4	73.8	0.0	511.8	0.4	0.138	0.000
06/26/2013 12:01	4.5	56.8	0.0	511.8	0.2	0.107	0.000
06/26/2013 12:02	4.5	16.4	5.6	511.8	0.0	0.031	0.004
06/26/2013 12:03	4.6	14.4	15.4	511.8	0.0	0.027	0.011
06/26/2013 12:04	4.4	16.8	15.0	511.8	0.0	0.031	0.010
06/26/2013 12:05	4.6	23.4	11.7	511.8	0.0	0.044	0.008
06/26/2013 12:06	4.6	26.6	10.0	511.8	0.0	0.050	0.007
06/26/2013 12:07	4.7	28.6	7.0	511.8	0.0	0.055	0.005
06/26/2013 12:08	4.9	31.2	5.9	511.8	0.0	0.061	0.004
06/26/2013 12:09	5.1	31.5	7.4	466.5	0.1	0.062	0.005
06/26/2013 12:10	5.1	33.2	5.4	400.4	0.1	0.066	0.004
06/26/2013 12:11	5.4	36.7	0.9	422.3	0.1	0.074	0.001
06/26/2013 12:12	5.3	34.8	0.4	312.8	0.1	0.070	0.000
06/26/2013 12:13	5.0	33.6	0.3	403.4	0.1	0.066	0.000
06/26/2013 12:14	5.0	32.8	0.4	511.8	0.1	0.064	0.000
06/26/2013 12:15	5.1	31.7	1.5	444.5	0.1	0.063	0.001
06/26/2013 12:16	4.9	31.5	1.6	462.1	0.1	0.061	0.001
06/26/2013 12:17	5.0	31.7	0.3	511.8	0.0	0.062	0.000
06/26/2013 12:18	5.2	30.9	0.0	470.7	0.0	0.062	0.000
06/26/2013 12:19	5.4	28.8	1.6	369.9	0.0	0.058	0.001
06/26/2013 12:20	5.5	29.4	0.4	437.8	0.0	0.060	0.000
06/26/2013 12:21	5.5	28.7	0.0	484.1	0.0	0.059	0.000
06/26/2013 12:22	4.9	26.1	0.0	481.8	0.0	0.051	0.000

RATA Run # 3

Verified By: ____________________

RATA Report
For 6/26/2013, Hour 11:00

Time	O2 %	NOX PPM	NH3 PPM	CO PPM	SO2 PPM	NOX lb/MBtu	NH3 lb/MBtu
Average Value	4.2	61.6	9.0	475.3	0.4	0.111	0.006

RATA Run # 3

Verified By: ____________________

RATA Report
For 6/26/2013, Hour 11:00

Time	CO lb/MBtu	SO2 lb/MBtu	NOX lb/hr	NH3 lb/hr	CO lb/hr	SO2 lb/hr
06/26/2013 11:20	0.337	0.000	15.2	0.3	92.2	0.0
06/26/2013 11:21	0.358	0.000	14.0	1.3	97.1	0.0
06/26/2013 11:22	0.441	0.000	14.0	5.1	121.7	0.0
06/26/2013 11:23	0.500	0.000	16.1	7.9	141.8	0.1
06/26/2013 11:24	0.474	0.001	26.5	8.9	137.0	0.2
06/26/2013 11:25	0.507	0.001	31.3	8.5	145.4	0.3
06/26/2013 11:26	0.476	0.001	43.7	3.1	132.8	0.4
06/26/2013 11:27	0.361	0.002	47.0	0.8	100.3	0.4
06/26/2013 11:28	0.407	0.002	43.8	1.7	111.5	0.6
06/26/2013 11:29	0.468	0.002	45.8	1.0	128.9	0.6
06/26/2013 11:30	0.536	0.002	46.2	0.6	151.3	0.6
06/26/2013 11:31	0.545	0.001	46.5	0.7	160.0	0.4
06/26/2013 11:32	0.529	0.001	46.7	0.8	163.8	0.4
06/26/2013 11:33	0.525	0.001	45.8	0.5	162.9	0.4
06/26/2013 11:34	0.537	0.001	45.3	2.0	163.6	0.4
06/26/2013 11:35	0.533	0.001	43.6	2.8	164.2	0.4
06/26/2013 11:36	0.550	0.001	43.4	2.3	160.0	0.4
06/26/2013 11:37	0.558	0.001	43.2	2.8	160.2	0.4
06/26/2013 11:38	0.533	0.001	44.7	1.9	162.2	0.4
06/26/2013 11:39	0.529	0.001	46.1	0.3	161.8	0.4
06/26/2013 11:40	0.525	0.001	46.5	0.6	164.0	0.4
06/26/2013 11:41	0.514	0.001	42.9	2.1	164.7	0.4
06/26/2013 11:42	0.529	0.001	43.3	2.8	162.0	0.4
06/26/2013 11:43	0.550	0.001	43.2	3.7	162.0	0.4
06/26/2013 11:44	0.533	0.001	43.1	3.4	162.5	0.4
06/26/2013 11:45	0.541	0.001	45.9	1.1	161.6	0.4
06/26/2013 11:46	0.533	0.001	47.1	0.1	161.6	0.4
06/26/2013 11:47	0.533	0.001	43.6	0.5	163.1	0.4
06/26/2013 11:48	0.533	0.001	40.8	2.6	162.2	0.4
06/26/2013 11:49	0.545	0.001	37.9	4.8	160.0	0.4
06/26/2013 11:50	0.541	0.001	42.1	3.9	162.0	0.4
06/26/2013 11:51	0.537	0.001	44.3	2.6	161.1	0.4
06/26/2013 11:52	0.541	0.001	44.1	2.4	158.4	0.4
06/26/2013 11:53	0.554	0.001	46.1	1.7	160.7	0.4
06/26/2013 11:54	0.550	0.001	45.5	1.4	158.9	0.4
06/26/2013 11:55	0.554	0.001	44.4	1.8	158.4	0.4
06/26/2013 11:56	0.563	0.002	45.1	1.2	159.1	0.4
06/26/2013 11:57	0.576	0.002	45.3	0.7	160.7	0.4
06/26/2013 11:58	0.558	0.001	46.9	0.3	162.5	0.4
06/26/2013 11:59	0.586	0.002	46.9	0.0	168.0	0.4
06/26/2013 12:00	0.581	0.001	40.3	0.0	170.3	0.3
06/26/2013 12:01	0.586	0.001	31.1	0.0	170.5	0.2
06/26/2013 12:02	0.586	0.000	9.0	1.1	170.3	0.0
06/26/2013 12:03	0.590	0.000	7.9	3.1	171.8	0.0
06/26/2013 12:04	0.581	0.000	9.3	3.0	171.6	0.0
06/26/2013 12:05	0.590	0.000	13.0	2.4	172.9	0.0
06/26/2013 12:06	0.590	0.000	14.9	2.1	174.3	0.0
06/26/2013 12:07	0.595	0.000	16.1	1.5	175.4	0.0
06/26/2013 12:08	0.605	0.000	17.6	1.2	176.1	0.0
06/26/2013 12:09	0.561	0.000	17.7	1.5	159.7	0.1
06/26/2013 12:10	0.482	0.000	18.5	1.1	135.8	0.1
06/26/2013 12:11	0.522	0.000	20.2	0.2	141.8	0.1
06/26/2013 12:12	0.383	0.000	19.3	0.1	105.4	0.1
06/26/2013 12:13	0.481	0.000	18.7	0.1	136.3	0.1
06/26/2013 12:14	0.611	0.000	18.2	0.1	173.2	0.1
06/26/2013 12:15	0.535	0.000	17.8	0.3	151.6	0.1
06/26/2013 12:16	0.547	0.000	17.6	0.3	156.8	0.1
06/26/2013 12:17	0.611	0.000	17.7	0.1	173.8	0.0
06/26/2013 12:18	0.571	0.000	17.2	0.0	159.1	0.0
06/26/2013 12:19	0.457	0.000	16.0	0.3	125.0	0.0
06/26/2013 12:20	0.546	0.000	16.2	0.1	146.4	0.0
06/26/2013 12:21	0.603	0.000	16.0	0.0	164.4	0.0
06/26/2013 12:22	0.570	0.000	14.8	0.0	166.4	0.0

RATA Run # 3

Verified By: ______________________________

RATA Report
For 6/26/2013, Hour 11:00

Time	CO lb/MBtu	SO2 lb/MBtu	NOX lb/hr	NH3 lb/hr	CO lb/hr	SO2 lb/hr
Average Value	0.530	0.001	32.4	1.7	154.0	0.3

RATA Run # 3

Verified By: ____________________

RATA Report
For 6/26/2013, Hour 13:00

Time	O2 %	NOX PPM	NH3 PPM	CO PPM	SO2 PPM	NOX lb/MBtu	NH3 lb/MBtu
06/26/2013 13:30	5.4	28.1	4.7	223.5	0.0	0.057	0.004
06/26/2013 13:31	5.5	28.6	5.3	216.7	0.0	0.059	0.004
06/26/2013 13:32	5.6	29.9	4.1	198.7	0.0	0.062	0.003
06/26/2013 13:33	5.6	30.7	2.2	197.3	0.0	0.063	0.002
06/26/2013 13:34	5.3	31.2	0.5	235.0	0.0	0.063	0.000
06/26/2013 13:35	5.3	29.4	2.8	246.6	0.0	0.059	0.002
06/26/2013 13:36	5.2	29.1	4.9	252.5	0.0	0.058	0.004
06/26/2013 13:37	5.1	30.0	3.7	354.8	0.0	0.059	0.003
06/26/2013 13:38	5.3	30.8	2.8	337.3	0.0	0.062	0.002
06/26/2013 13:39	5.3	31.0	0.8	345.5	0.0	0.062	0.001
06/26/2013 13:40	5.2	31.3	0.9	298.6	0.0	0.062	0.001
06/26/2013 13:41	5.4	29.9	4.0	275.9	0.0	0.061	0.003
06/26/2013 13:42	5.5	30.4	4.1	226.7	0.0	0.062	0.003
06/26/2013 13:43	5.6	31.3	2.3	212.2	0.0	0.065	0.002
06/26/2013 13:44	5.7	31.0	1.2	234.3	0.0	0.065	0.001
06/26/2013 13:45	5.5	30.8	0.2	243.7	0.0	0.063	0.000
06/26/2013 13:46	5.6	30.5	1.0	195.5	0.1	0.063	0.001
06/26/2013 13:47	5.6	28.1	3.1	194.2	0.0	0.058	0.002
06/26/2013 13:48	5.7	28.7	2.6	193.2	0.0	0.060	0.002
06/26/2013 13:49	5.7	28.6	2.2	179.0	0.0	0.060	0.002
06/26/2013 13:50	5.5	28.6	1.9	207.0	0.0	0.059	0.001
06/26/2013 13:51	5.5	28.1	4.3	201.3	0.0	0.058	0.003
06/26/2013 13:52	5.6	26.9	6.5	203.5	0.0	0.056	0.005
06/26/2013 13:53	5.6	29.2	4.4	191.4	0.0	0.060	0.003
06/26/2013 13:54	5.6	29.8	2.7	178.4	0.0	0.062	0.002
06/26/2013 13:55	5.7	30.1	1.3	197.5	0.0	0.063	0.001
06/26/2013 13:56	5.5	29.6	0.4	191.4	0.0	0.061	0.000
06/26/2013 13:57	5.3	27.7	2.4	162.4	0.0	0.056	0.002
06/26/2013 13:58	5.2	26.6	6.8	175.9	0.0	0.053	0.005
06/26/2013 13:59	5.4	27.9	7.1	205.2	0.0	0.057	0.005
06/26/2013 14:00	5.4	30.1	3.9	216.4	0.0	0.061	0.003
06/26/2013 14:01	5.5	31.3	2.0	249.5	0.0	0.064	0.002
06/26/2013 14:02	5.5	30.8	3.6	199.1	0.0	0.063	0.003
06/26/2013 14:03	5.9	31.2	3.8	270.7	0.0	0.066	0.003
06/26/2013 14:04	5.5	32.9	0.0	256.2	0.0	0.067	0.000
06/26/2013 14:05	5.5	30.0	4.0	185.7	0.0	0.061	0.003
06/26/2013 14:06	5.6	28.2	9.2	196.9	0.1	0.058	0.007
06/26/2013 14:07	5.5	31.9	3.6	204.4	0.1	0.065	0.003
06/26/2013 14:08	5.5	32.7	6.1	177.7	0.1	0.067	0.005
06/26/2013 14:09	5.6	33.2	7.6	178.9	0.1	0.069	0.006
06/26/2013 14:10	5.5	35.6	4.2	163.9	0.1	0.073	0.003
06/26/2013 14:11	5.4	36.8	1.9	175.8	0.1	0.075	0.001
06/26/2013 14:12	5.4	37.0	0.8	229.6	0.1	0.075	0.001
06/26/2013 14:13	5.3	36.5	1.3	216.8	0.1	0.073	0.001
06/26/2013 14:14	5.5	35.2	3.1	221.9	0.0	0.072	0.002
06/26/2013 14:15	5.7	35.9	0.9	204.4	0.1	0.075	0.001
06/26/2013 14:16	5.9	36.5	0.0	189.6	0.1	0.077	0.000
06/26/2013 14:17	5.9	35.0	0.0	223.9	0.1	0.074	0.000
06/26/2013 14:18	5.7	33.6	0.4	217.2	0.1	0.070	0.000
06/26/2013 14:19	5.7	31.6	2.7	185.5	0.1	0.066	0.002
06/26/2013 14:20	5.5	30.8	3.8	200.5	0.0	0.063	0.003
06/26/2013 14:21	5.5	32.0	3.3	217.1	0.0	0.066	0.002
06/26/2013 14:22	5.4	31.8	6.0	237.5	0.0	0.065	0.004
06/26/2013 14:23	5.5	32.5	5.8	275.6	0.0	0.067	0.004
06/26/2013 14:24	5.4	34.8	3.2	222.0	0.1	0.071	0.002
06/26/2013 14:25	5.3	35.2	2.1	208.1	0.0	0.071	0.002
06/26/2013 14:26	5.1	35.0	0.5	249.1	0.0	0.069	0.000
06/26/2013 14:27	4.9	34.5	0.1	331.3	0.0	0.067	0.000
06/26/2013 14:28	4.9	33.3	0.4	411.2	0.0	0.065	0.000
06/26/2013 14:29	4.7	32.5	0.1	497.7	0.0	0.062	0.000
06/26/2013 14:30	4.6	30.5	0.4	511.8	0.0	0.058	0.000
06/26/2013 14:31	4.6	29.4	1.0	511.8	0.0	0.056	0.001
06/26/2013 14:32	4.8	28.5	0.5	511.8	0.0	0.055	0.000
06/26/2013 14:33	4.8	27.7	1.2	511.8	0.0	0.053	0.001

RATA Run # 4

Verified By: ______________________________

RATA Report
For 6/26/2013, Hour 13:00

Time	O2 %	NOX PPM	NH3 PPM	CO PPM	SO2 PPM	NOX lb/MBtu	NH3 lb/MBtu
06/26/2013 14:34	4.9	26.2	2.1	497.3	0.0	0.051	0.002
06/26/2013 14:35	4.9	26.4	1.4	421.3	0.0	0.051	0.001
06/26/2013 14:36	4.8	25.3	3.5	394.8	0.0	0.049	0.002
06/26/2013 14:37	4.9	25.5	2.8	510.3	0.0	0.050	0.002
06/26/2013 14:38	5.1	26.0	2.4	441.2	0.0	0.051	0.002
06/26/2013 14:39	5.6	25.8	1.6	392.2	0.0	0.053	0.001
06/26/2013 14:40	5.3	25.6	0.0	331.6	0.0	0.051	0.000
06/26/2013 14:41	5.4	22.9	2.5	305.8	0.0	0.046	0.002
06/26/2013 14:42	5.5	22.1	4.8	323.3	0.0	0.045	0.004
06/26/2013 14:43	5.4	23.2	3.5	319.8	0.0	0.047	0.003
06/26/2013 14:44	5.7	23.0	3.5	328.8	0.0	0.048	0.003
06/26/2013 14:45	5.6	23.0	1.6	361.3	0.0	0.048	0.001
06/26/2013 14:46	5.8	23.4	2.1	268.0	0.0	0.049	0.002
06/26/2013 14:47	5.8	20.9	4.9	227.0	0.0	0.044	0.004
06/26/2013 14:48	5.7	21.8	4.2	221.5	0.0	0.045	0.003
06/26/2013 14:49	5.6	21.9	3.5	248.1	0.0	0.045	0.003
06/26/2013 14:50	5.6	21.8	2.6	313.9	0.0	0.045	0.002
06/26/2013 14:51	5.4	21.2	3.3	321.9	0.0	0.043	0.002
06/26/2013 14:52	5.6	21.0	5.3	316.5	0.0	0.043	0.004
06/26/2013 14:53	5.7	20.8	5.4	289.9	0.0	0.043	0.004
06/26/2013 14:54	5.8	21.5	4.0	264.9	0.0	0.045	0.003
06/26/2013 14:55	5.9	21.5	3.6	241.6	0.0	0.046	0.003
06/26/2013 14:56	5.8	21.0	2.7	254.1	0.0	0.044	0.002
06/26/2013 14:57	5.6	20.6	3.4	211.3	0.0	0.043	0.003
06/26/2013 14:58	5.5	19.6	5.0	240.3	0.0	0.040	0.004
06/26/2013 14:59	5.4	19.7	5.8	266.3	0.0	0.040	0.004
06/26/2013 15:00	5.4	20.3	6.0	284.1	0.0	0.041	0.004
06/26/2013 15:01	5.6	20.1	6.6	312.2	0.0	0.042	0.005
06/26/2013 15:02	5.5	21.5	4.5	288.9	0.0	0.044	0.003
06/26/2013 15:03	5.5	21.0	4.5	284.3	0.0	0.043	0.003
06/26/2013 15:04	5.5	20.4	7.4	245.5	0.0	0.042	0.006
06/26/2013 15:05	5.4	21.9	6.8	296.2	0.0	0.044	0.005
06/26/2013 15:06	5.4	23.8	5.0	391.1	0.0	0.048	0.004
06/26/2013 15:07	5.4	24.4	3.0	398.2	0.0	0.050	0.002
06/26/2013 15:08	5.4	24.1	3.5	317.5	0.0	0.049	0.003
06/26/2013 15:09	5.5	23.6	4.3	292.6	0.0	0.048	0.003
06/26/2013 15:10	5.4	23.8	4.3	292.6	0.0	0.048	0.003
06/26/2013 15:11	5.2	23.9	4.2	395.3	0.0	0.048	0.003
06/26/2013 15:12	5.2	23.7	2.9	443.1	0.0	0.047	0.002
06/26/2013 15:13	5.1	23.9	2.7	475.6	0.0	0.047	0.002
06/26/2013 15:14	5.3	22.5	5.1	488.2	0.0	0.045	0.004
06/26/2013 15:15	5.5	22.9	5.6	405.8	0.0	0.047	0.004
06/26/2013 15:16	5.5	24.0	3.1	309.6	0.0	0.049	0.002
06/26/2013 15:17	5.5	23.7	2.7	324.6	0.0	0.049	0.002
06/26/2013 15:18	5.2	23.2	2.0	438.0	0.0	0.046	0.001
06/26/2013 15:19	5.1	22.8	2.6	470.9	0.0	0.045	0.002
06/26/2013 15:20	4.9	21.9	3.6	511.8	0.0	0.043	0.003
06/26/2013 15:21	5.1	22.0	3.8	511.8	0.0	0.043	0.003
06/26/2013 15:22	5.2	21.9	4.3	511.8	0.0	0.044	0.003
06/26/2013 15:23	5.5	22.3	2.3	511.1	0.0	0.046	0.002
06/26/2013 15:24	5.5	22.1	2.1	427.0	0.0	0.045	0.002
06/26/2013 15:25	5.6	20.9	4.3	324.1	0.0	0.043	0.003
06/26/2013 15:26	5.6	20.6	5.1	279.4	0.0	0.043	0.004
Average Value	5.4	27.3	3.2	293.9	0.0	0.056	0.002

RATA Run # 4

Verified By: ______________________________

RATA Report
For 6/26/2013, Hour 13:00

Time	CO lb/MBtu	SO2 lb/MBtu	NOX lb/hr	NH3 lb/hr	CO lb/hr	SO2 lb/hr
06/26/2013 13:30	0.276	0.000	15.6	1.0	75.6	0.0
06/26/2013 13:31	0.270	0.000	15.9	1.1	73.4	0.0
06/26/2013 13:32	0.250	0.000	16.4	0.8	66.2	0.0
06/26/2013 13:33	0.248	0.000	17.0	0.4	66.6	0.0
06/26/2013 13:34	0.288	0.000	17.2	0.1	78.9	0.0
06/26/2013 13:35	0.302	0.000	16.3	0.6	83.1	0.0
06/26/2013 13:36	0.306	0.000	16.0	1.0	84.6	0.0
06/26/2013 13:37	0.427	0.000	16.5	0.7	118.5	0.0
06/26/2013 13:38	0.413	0.000	16.9	0.6	112.9	0.0
06/26/2013 13:39	0.423	0.000	17.3	0.2	117.1	0.0
06/26/2013 13:40	0.362	0.000	17.4	0.2	101.2	0.0
06/26/2013 13:41	0.341	0.000	16.7	0.8	93.6	0.0
06/26/2013 13:42	0.282	0.000	17.1	0.9	77.7	0.0
06/26/2013 13:43	0.267	0.000	17.5	0.5	72.3	0.0
06/26/2013 13:44	0.297	0.000	17.4	0.2	79.9	0.0
06/26/2013 13:45	0.304	0.000	17.2	0.0	82.7	0.0
06/26/2013 13:46	0.246	0.000	17.0	0.2	66.1	0.1
06/26/2013 13:47	0.244	0.000	15.7	0.6	66.0	0.0
06/26/2013 13:48	0.245	0.000	16.0	0.5	65.6	0.0
06/26/2013 13:49	0.227	0.000	16.1	0.5	61.3	0.0
06/26/2013 13:50	0.258	0.000	16.2	0.4	71.6	0.0
06/26/2013 13:51	0.251	0.000	16.0	0.9	69.8	0.0
06/26/2013 13:52	0.256	0.000	15.2	1.4	70.1	0.0
06/26/2013 13:53	0.241	0.000	16.4	0.9	65.3	0.0
06/26/2013 13:54	0.224	0.000	16.7	0.6	60.8	0.0
06/26/2013 13:55	0.251	0.000	16.8	0.3	67.1	0.0
06/26/2013 13:56	0.238	0.000	16.5	0.1	65.0	0.0
06/26/2013 13:57	0.199	0.000	15.5	0.5	55.3	0.0
06/26/2013 13:58	0.213	0.000	15.0	1.4	60.2	0.0
06/26/2013 13:59	0.253	0.000	15.8	1.5	70.7	0.0
06/26/2013 14:00	0.267	0.000	16.8	0.8	73.7	0.0
06/26/2013 14:01	0.311	0.000	17.6	0.4	85.5	0.0
06/26/2013 14:02	0.248	0.000	17.6	0.8	69.3	0.0
06/26/2013 14:03	0.350	0.000	17.7	0.8	93.5	0.0
06/26/2013 14:04	0.319	0.000	18.7	0.0	88.6	0.0
06/26/2013 14:05	0.231	0.000	16.9	0.8	63.7	0.0
06/26/2013 14:06	0.248	0.000	16.0	1.9	68.0	0.1
06/26/2013 14:07	0.255	0.000	18.2	0.8	70.9	0.1
06/26/2013 14:08	0.221	0.000	18.6	1.3	61.4	0.1
06/26/2013 14:09	0.225	0.000	18.8	1.6	61.6	0.1
06/26/2013 14:10	0.204	0.000	20.1	0.9	56.2	0.1
06/26/2013 14:11	0.217	0.000	21.0	0.4	60.9	0.1
06/26/2013 14:12	0.284	0.000	21.2	0.2	80.1	0.1
06/26/2013 14:13	0.265	0.000	20.9	0.3	75.6	0.1
06/26/2013 14:14	0.276	0.000	20.1	0.7	77.0	0.0
06/26/2013 14:15	0.259	0.000	20.5	0.2	71.1	0.1
06/26/2013 14:16	0.245	0.000	20.8	0.0	65.6	0.1
06/26/2013 14:17	0.289	0.000	19.8	0.0	77.2	0.1
06/26/2013 14:18	0.276	0.000	19.1	0.1	75.2	0.1
06/26/2013 14:19	0.235	0.000	18.1	0.6	64.5	0.1
06/26/2013 14:20	0.250	0.000	17.7	0.8	70.0	0.0
06/26/2013 14:21	0.271	0.000	18.2	0.7	75.1	0.0
06/26/2013 14:22	0.293	0.000	18.0	1.3	81.9	0.0
06/26/2013 14:23	0.343	0.000	18.1	1.2	93.2	0.0
06/26/2013 14:24	0.274	0.000	19.3	0.7	74.9	0.1
06/26/2013 14:25	0.255	0.000	19.1	0.4	68.7	0.0
06/26/2013 14:26	0.300	0.000	19.0	0.1	82.3	0.0
06/26/2013 14:27	0.392	0.000	18.8	0.0	110.1	0.0
06/26/2013 14:28	0.486	0.000	18.2	0.1	136.8	0.0
06/26/2013 14:29	0.579	0.000	17.6	0.0	164.1	0.0
06/26/2013 14:30	0.590	0.000	16.4	0.1	167.1	0.0
06/26/2013 14:31	0.590	0.000	15.7	0.2	166.0	0.0
06/26/2013 14:32	0.600	0.000	15.3	0.1	167.1	0.0

RATA Run # 4

Verified By: ______________________

RATA Report
For 6/26/2013, Hour 13:00

Time	CO lb/MBtu	SO2 lb/MBtu	NOX lb/hr	NH3 lb/hr	CO lb/hr	SO2 lb/hr
06/26/2013 14:33	0.600	0.000	15.0	0.2	168.3	0.0
06/26/2013 14:34	0.588	0.000	14.3	0.4	165.0	0.0
06/26/2013 14:35	0.498	0.000	14.5	0.3	141.1	0.0
06/26/2013 14:36	0.463	0.000	14.0	0.7	133.1	0.0
06/26/2013 14:37	0.604	0.000	14.3	0.6	174.4	0.0
06/26/2013 14:38	0.531	0.000	14.6	0.5	150.6	0.0
06/26/2013 14:39	0.493	0.000	14.5	0.3	134.2	0.0
06/26/2013 14:40	0.406	0.000	14.4	0.0	113.6	0.0
06/26/2013 14:41	0.378	0.000	13.1	0.5	106.4	0.0
06/26/2013 14:42	0.403	0.000	12.6	1.0	112.5	0.0
06/26/2013 14:43	0.395	0.000	13.4	0.7	112.4	0.0
06/26/2013 14:44	0.417	0.000	13.3	0.7	115.4	0.0
06/26/2013 14:45	0.454	0.000	13.2	0.3	126.2	0.0
06/26/2013 14:46	0.343	0.000	13.4	0.4	93.2	0.0
06/26/2013 14:47	0.291	0.000	11.9	1.0	78.6	0.0
06/26/2013 14:48	0.281	0.000	12.3	0.9	76.1	0.0
06/26/2013 14:49	0.312	0.000	12.5	0.7	85.9	0.0
06/26/2013 14:50	0.395	0.000	12.5	0.6	109.8	0.0
06/26/2013 14:51	0.398	0.000	12.4	0.7	114.4	0.0
06/26/2013 14:52	0.398	0.000	12.1	1.1	111.2	0.0
06/26/2013 14:53	0.368	0.000	12.0	1.1	101.6	0.0
06/26/2013 14:54	0.339	0.000	12.3	0.8	92.5	0.0
06/26/2013 14:55	0.312	0.000	12.2	0.8	83.7	0.0
06/26/2013 14:56	0.325	0.000	11.7	0.6	86.5	0.0
06/26/2013 14:57	0.266	0.000	11.7	0.7	72.8	0.0
06/26/2013 14:58	0.299	0.000	11.0	1.0	82.4	0.0
06/26/2013 14:59	0.329	0.000	11.1	1.2	91.3	0.0
06/26/2013 15:00	0.351	0.000	11.3	1.2	96.5	0.0
06/26/2013 15:01	0.393	0.000	11.3	1.4	106.6	0.0
06/26/2013 15:02	0.360	0.000	12.0	0.9	97.7	0.0
06/26/2013 15:03	0.354	0.000	11.7	0.9	96.4	0.0
06/26/2013 15:04	0.306	0.000	11.3	1.5	82.7	0.0
06/26/2013 15:05	0.366	0.000	12.1	1.4	99.8	0.0
06/26/2013 15:06	0.483	0.000	13.2	1.0	132.3	0.0
06/26/2013 15:07	0.492	0.000	13.5	0.6	134.4	0.0
06/26/2013 15:08	0.392	0.000	13.4	0.7	107.1	0.0
06/26/2013 15:09	0.365	0.000	13.1	0.9	98.5	0.0
06/26/2013 15:10	0.361	0.000	13.3	0.9	99.3	0.0
06/26/2013 15:11	0.480	0.000	13.3	0.9	133.4	0.0
06/26/2013 15:12	0.538	0.000	13.4	0.6	152.0	0.0
06/26/2013 15:13	0.572	0.000	13.5	0.6	163.8	0.0
06/26/2013 15:14	0.598	0.000	12.7	1.1	168.0	0.0
06/26/2013 15:15	0.506	0.000	12.7	1.1	137.3	0.0
06/26/2013 15:16	0.386	0.000	13.2	0.6	103.8	0.0
06/26/2013 15:17	0.404	0.000	12.9	0.5	107.8	0.0
06/26/2013 15:18	0.532	0.000	12.8	0.4	146.9	0.0
06/26/2013 15:19	0.567	0.000	12.6	0.5	157.9	0.0
06/26/2013 15:20	0.605	0.000	12.1	0.7	172.7	0.0
06/26/2013 15:21	0.616	0.000	12.2	0.8	172.7	0.0
06/26/2013 15:22	0.621	0.000	12.1	0.9	172.3	0.0
06/26/2013 15:23	0.637	0.000	12.3	0.5	172.3	0.0
06/26/2013 15:24	0.532	0.000	12.2	0.4	143.9	0.0
06/26/2013 15:25	0.407	0.000	11.5	0.9	108.2	0.0
06/26/2013 15:26	0.351	0.000	11.2	1.0	92.7	0.0
Average Value	0.362	0.000	15.3	0.7	99.9	0.0

RATA Run # 4

Verified By: ______________________

RATA Report
For 6/27/2013, Hour 08:00

Time	O2 %	NOX PPM	NH3 PPM	CO PPM	SO2 PPM	NOX lb/MBtu	NH3 lb/MBtu
06/27/2013 08:20	5.8	45.2	1.8	378.3	0.2	0.095	0.001
06/27/2013 08:21	5.4	45.3	0.0	421.0	0.1	0.092	0.000
06/27/2013 08:22	5.1	38.7	2.6	299.6	0.1	0.077	0.002
06/27/2013 08:23	5.3	34.5	9.4	280.1	0.1	0.069	0.007
06/27/2013 08:24	5.1	37.9	6.3	275.4	0.1	0.075	0.005
06/27/2013 08:25	5.2	40.2	6.2	235.0	0.1	0.080	0.005
06/27/2013 08:26	5.1	40.6	5.9	207.0	0.1	0.080	0.004
06/27/2013 08:27	5.2	42.6	2.3	278.7	0.1	0.085	0.002
06/27/2013 08:28	4.9	43.3	0.8	306.1	0.2	0.084	0.001
06/27/2013 08:29	4.9	41.1	0.9	414.0	0.2	0.080	0.001
06/27/2013 08:30	4.9	40.4	2.3	455.8	0.2	0.079	0.002
06/27/2013 08:31	4.9	39.7	1.9	423.3	0.2	0.077	0.001
06/27/2013 08:32	4.9	40.1	0.6	511.8	0.1	0.078	0.000
06/27/2013 08:33	4.9	39.6	1.3	511.8	0.1	0.077	0.001
06/27/2013 08:34	5.0	38.8	3.3	451.3	0.1	0.076	0.002
06/27/2013 08:35	5.2	38.9	1.9	441.7	0.1	0.078	0.001
06/27/2013 08:36	5.1	39.5	2.0	296.1	0.1	0.078	0.001
06/27/2013 08:37	5.0	38.6	5.7	222.2	0.1	0.076	0.004
06/27/2013 08:38	5.0	39.8	5.9	251.5	0.1	0.078	0.004
06/27/2013 08:39	4.9	41.8	2.5	414.7	0.1	0.081	0.002
06/27/2013 08:40	4.9	42.4	0.4	392.4	0.1	0.082	0.000
06/27/2013 08:41	4.8	41.0	1.3	435.0	0.1	0.079	0.001
06/27/2013 08:42	4.9	40.5	2.1	511.8	0.1	0.079	0.002
06/27/2013 08:43	4.9	40.7	0.6	462.6	0.1	0.079	0.000
06/27/2013 08:44	4.9	40.5	1.3	434.7	0.1	0.079	0.001
06/27/2013 08:45	5.0	38.0	5.6	395.2	0.1	0.074	0.004
06/27/2013 08:46	4.9	39.8	3.7	407.2	0.0	0.077	0.003
06/27/2013 08:47	5.1	40.6	1.7	429.0	0.0	0.080	0.001
06/27/2013 08:48	5.2	39.9	1.9	342.7	0.1	0.080	0.001
06/27/2013 08:49	5.6	38.7	5.6	251.5	0.1	0.080	0.004
06/27/2013 08:50	5.7	40.0	3.0	218.3	0.1	0.083	0.002
06/27/2013 08:51	5.7	41.3	0.0	288.9	0.1	0.086	0.000
06/27/2013 08:52	5.5	39.6	0.9	192.5	0.1	0.081	0.001
06/27/2013 08:53	5.6	35.6	6.7	160.0	0.1	0.074	0.005
06/27/2013 08:54	5.6	37.7	5.5	219.7	0.1	0.078	0.004
06/27/2013 08:55	5.6	40.8	0.0	280.3	0.1	0.084	0.000
06/27/2013 08:56	5.7	38.9	0.3	204.4	0.0	0.081	0.000
06/27/2013 08:57	5.4	36.0	4.1	172.4	0.1	0.073	0.003
06/27/2013 08:58	5.5	36.6	4.6	220.6	0.1	0.075	0.003
06/27/2013 08:59	5.2	37.1	5.4	181.7	0.1	0.074	0.004
06/27/2013 09:00	5.2	37.8	7.9	161.1	0.1	0.075	0.006
06/27/2013 09:01	5.1	37.9	10.2	173.0	0.1	0.075	0.007
06/27/2013 09:02	5.2	41.2	6.4	235.0	0.1	0.082	0.005
06/27/2013 09:03	5.3	44.0	0.9	222.3	0.1	0.089	0.001
06/27/2013 09:04	5.4	44.6	0.0	240.4	0.1	0.091	0.000
06/27/2013 09:05	5.4	43.4	1.1	214.4	0.1	0.088	0.001
06/27/2013 09:06	5.6	42.2	1.5	282.7	0.2	0.087	0.001
06/27/2013 09:07	5.4	42.0	1.1	239.3	0.1	0.085	0.001
06/27/2013 09:08	5.6	39.5	5.3	216.4	0.1	0.082	0.004
06/27/2013 09:09	5.6	39.8	7.8	207.2	0.1	0.082	0.006
06/27/2013 09:10	5.8	42.5	2.2	254.1	0.1	0.089	0.002
06/27/2013 09:11	5.8	43.3	0.7	209.8	0.1	0.091	0.001
06/27/2013 09:12	5.7	41.2	5.0	169.8	0.1	0.086	0.004
06/27/2013 09:13	5.7	40.9	8.2	169.3	0.1	0.085	0.006
06/27/2013 09:14	5.7	43.6	3.6	225.7	0.1	0.091	0.003
06/27/2013 09:15	5.9	45.5	0.8	190.6	0.1	0.097	0.001
06/27/2013 09:16	5.9	42.4	5.4	161.1	0.2	0.090	0.004
06/27/2013 09:17	6.0	44.0	6.4	171.7	0.2	0.094	0.005
06/27/2013 09:18	6.1	46.0	0.1	231.5	0.1	0.099	0.000
06/27/2013 09:19	6.0	46.7	0.3	163.4	0.1	0.100	0.000
06/27/2013 09:20	6.0	43.8	3.7	155.8	0.1	0.094	0.003
06/27/2013 09:21	6.3	44.7	4.4	182.0	0.1	0.099	0.004
06/27/2013 09:22	6.2	46.7	0.0	303.0	0.1	0.102	0.000
06/27/2013 09:23	6.3	45.0	1.2	190.5	0.1	0.099	0.001

RATA Run # 5

Verified By: ______________________

RATA Report
For 6/27/2013, Hour 08:00

Time	O2 %	NOX PPM	NH3 PPM	CO PPM	SO2 PPM	NOX lb/MBtu	NH3 lb/MBtu
06/27/2013 09:24	6.4	40.2	7.8	184.7	0.1	0.089	0.006
06/27/2013 09:25	6.5	43.1	4.9	176.2	0.1	0.097	0.004
06/27/2013 09:26	6.5	44.5	1.8	206.1	0.1	0.100	0.001
06/27/2013 09:27	6.3	44.1	1.7	153.0	0.0	0.097	0.001
06/27/2013 09:28	6.1	41.0	8.3	157.1	0.0	0.089	0.007
06/27/2013 09:29	6.3	43.4	7.4	190.7	0.1	0.096	0.006
06/27/2013 09:30	6.3	47.0	0.2	253.8	0.1	0.104	0.000
06/27/2013 09:31	6.6	47.9	0.1	209.9	0.1	0.109	0.000
06/27/2013 09:32	6.7	45.6	2.3	190.0	0.1	0.105	0.002
06/27/2013 09:33	6.7	46.1	3.6	164.4	0.2	0.106	0.003
06/27/2013 09:34	6.6	46.5	2.6	155.9	0.3	0.106	0.002
06/27/2013 09:35	6.5	46.9	1.4	200.8	0.2	0.105	0.001
06/27/2013 09:36	6.2	47.1	1.3	164.0	0.1	0.103	0.001
06/27/2013 09:37	6.0	43.1	9.5	121.9	0.1	0.092	0.008
06/27/2013 09:38	6.0	45.7	11.9	122.2	0.1	0.098	0.009
06/27/2013 09:39	6.1	50.5	6.8	120.9	0.3	0.109	0.005
06/27/2013 09:40	6.0	53.3	3.1	132.4	0.3	0.114	0.002
06/27/2013 09:41	5.8	54.2	0.8	176.1	0.4	0.114	0.001
06/27/2013 09:42	5.7	52.1	3.7	137.6	0.3	0.109	0.003
06/27/2013 09:43	5.7	49.1	11.8	138.8	0.3	0.102	0.009
06/27/2013 09:44	5.7	54.0	6.8	155.4	0.3	0.113	0.005
06/27/2013 09:45	5.9	57.2	1.7	146.1	0.3	0.121	0.001
06/27/2013 09:46	5.9	57.5	0.4	173.3	0.3	0.122	0.000
06/27/2013 09:47	5.7	57.0	0.3	150.4	0.3	0.119	0.000
06/27/2013 09:48	5.8	51.9	7.0	140.4	0.3	0.109	0.005
06/27/2013 09:49	5.7	53.6	7.4	140.6	0.3	0.112	0.006
06/27/2013 09:50	5.7	55.9	5.2	148.5	0.3	0.117	0.004
06/27/2013 09:51	5.9	57.4	2.6	180.6	0.3	0.122	0.002
06/27/2013 09:52	5.8	59.3	0.0	255.5	0.3	0.125	0.000
06/27/2013 09:53	5.9	55.8	0.5	161.5	0.3	0.118	0.000
06/27/2013 09:54	5.9	50.3	7.4	164.2	0.3	0.107	0.006
06/27/2013 09:55	5.9	53.8	4.2	148.4	0.3	0.114	0.003
06/27/2013 09:56	5.8	54.3	4.8	142.3	0.3	0.114	0.004
06/27/2013 09:57	5.8	55.8	2.7	179.6	0.3	0.117	0.002
06/27/2013 09:58	5.8	56.7	0.0	174.3	0.3	0.119	0.000
06/27/2013 09:59	5.8	53.8	3.5	160.6	0.3	0.113	0.003
06/27/2013 10:00	5.9	53.9	6.5	157.7	0.3	0.114	0.005
06/27/2013 10:01	6.0	55.3	2.6	165.8	0.3	0.118	0.002
06/27/2013 10:02	6.0	56.1	1.3	163.6	0.3	0.120	0.001
06/27/2013 10:03	5.8	56.0	0.0	253.4	0.4	0.118	0.000
06/27/2013 10:04	5.7	55.5	0.0	189.7	0.3	0.116	0.000
06/27/2013 10:05	5.7	51.5	4.4	176.6	0.3	0.107	0.003
06/27/2013 10:06	6.0	53.2	4.8	174.1	0.4	0.114	0.004
06/27/2013 10:07	6.0	54.7	1.5	168.1	0.3	0.117	0.001
06/27/2013 10:08	6.0	55.0	0.5	174.8	0.3	0.118	0.000
06/27/2013 10:09	5.8	54.6	0.4	180.6	0.3	0.115	0.000
06/27/2013 10:10	5.8	52.4	2.9	161.9	0.3	0.110	0.002
06/27/2013 10:11	5.8	51.3	7.0	151.8	0.3	0.108	0.005
06/27/2013 10:12	5.9	52.0	6.9	169.8	0.3	0.110	0.005
06/27/2013 10:13	6.3	54.5	2.9	201.9	0.4	0.120	0.002
06/27/2013 10:14	6.7	55.9	0.0	237.0	0.3	0.128	0.000
06/27/2013 10:15	6.5	54.8	0.0	350.2	0.3	0.123	0.000
06/27/2013 10:16	6.2	49.5	3.2	165.1	0.1	0.108	0.003
06/27/2013 10:17	6.2	42.8	14.1	141.1	0.1	0.093	0.011
06/27/2013 10:18	6.2	48.9	10.7	136.8	0.1	0.107	0.009
06/27/2013 10:19	6.0	53.3	4.1	133.6	0.2	0.114	0.003
06/27/2013 10:20	6.3	53.6	1.7	185.2	0.3	0.118	0.001
06/27/2013 10:21	6.2	55.0	0.0	203.8	0.3	0.120	0.000
06/27/2013 10:22	6.3	51.4	2.3	151.6	0.3	0.113	0.002
06/27/2013 10:23	6.2	48.1	8.7	143.6	0.3	0.105	0.007
06/27/2013 10:24	6.3	50.7	6.4	148.0	0.3	0.112	0.005
06/27/2013 10:25	6.2	52.8	3.1	146.2	0.1	0.115	0.002

RATA Run # 5

Verified By: ______________________

RATA Report
For 6/27/2013, Hour 08:00

Time	O2 %	NOX PPM	NH3 PPM	CO PPM	SO2 PPM	NOX lb/MBtu	NH3 lb/MBtu
Average Value	5.7	46.1	3.5	229.0	0.2	0.097	0.003

RATA Run # 5

Verified By: ______________________________

RATA Report
For 6/27/2013, Hour 08:00

Time	CO lb/MBtu	SO2 lb/MBtu	NOX lb/hr	NH3 lb/hr	CO lb/hr	SO2 lb/hr
06/27/2013 08:20	0.484	0.001	25.8	0.4	131.3	0.2
06/27/2013 08:21	0.520	0.000	25.5	0.0	144.1	0.1
06/27/2013 08:22	0.360	0.000	21.7	0.5	102.4	0.1
06/27/2013 08:23	0.343	0.000	19.3	1.9	95.4	0.1
06/27/2013 08:24	0.331	0.000	21.4	1.3	94.6	0.1
06/27/2013 08:25	0.285	0.000	22.5	1.3	80.2	0.1
06/27/2013 08:26	0.249	0.000	22.8	1.2	70.8	0.1
06/27/2013 08:27	0.338	0.000	23.9	0.5	95.0	0.1
06/27/2013 08:28	0.362	0.001	24.4	0.2	104.8	0.2
06/27/2013 08:29	0.490	0.001	22.8	0.2	139.9	0.2
06/27/2013 08:30	0.539	0.001	22.4	0.5	154.0	0.2
06/27/2013 08:31	0.501	0.001	22.1	0.4	143.6	0.2
06/27/2013 08:32	0.605	0.000	22.5	0.1	174.7	0.1
06/27/2013 08:33	0.605	0.000	22.2	0.3	174.7	0.1
06/27/2013 08:34	0.538	0.000	21.6	0.7	153.1	0.1
06/27/2013 08:35	0.536	0.000	21.5	0.4	148.3	0.1
06/27/2013 08:36	0.356	0.000	21.7	0.4	99.2	0.1
06/27/2013 08:37	0.265	0.000	21.3	1.2	74.7	0.1
06/27/2013 08:38	0.300	0.000	22.2	1.2	85.5	0.1
06/27/2013 08:39	0.491	0.000	23.6	0.5	142.5	0.1
06/27/2013 08:40	0.464	0.000	24.1	0.1	135.5	0.1
06/27/2013 08:41	0.510	0.000	23.4	0.3	151.0	0.1
06/27/2013 08:42	0.605	0.000	23.0	0.4	176.5	0.1
06/27/2013 08:43	0.547	0.000	23.4	0.1	162.0	0.1
06/27/2013 08:44	0.514	0.000	23.2	0.3	151.3	0.1
06/27/2013 08:45	0.471	0.000	21.7	1.2	137.5	0.1
06/27/2013 08:46	0.482	0.000	22.9	0.8	142.4	0.0
06/27/2013 08:47	0.516	0.000	23.2	0.4	149.3	0.0
06/27/2013 08:48	0.416	0.000	22.6	0.4	118.0	0.1
06/27/2013 08:49	0.316	0.000	21.9	1.2	86.6	0.1
06/27/2013 08:50	0.277	0.000	22.4	0.6	74.4	0.1
06/27/2013 08:51	0.367	0.000	23.0	0.0	98.0	0.1
06/27/2013 08:52	0.240	0.000	21.9	0.2	64.7	0.1
06/27/2013 08:53	0.201	0.000	19.6	1.4	53.5	0.1
06/27/2013 08:54	0.276	0.000	20.7	1.1	73.3	0.1
06/27/2013 08:55	0.352	0.000	22.0	0.0	91.8	0.1
06/27/2013 08:56	0.259	0.000	20.7	0.1	66.3	0.0
06/27/2013 08:57	0.213	0.000	19.2	0.8	55.9	0.1
06/27/2013 08:58	0.275	0.000	19.6	0.9	71.9	0.1
06/27/2013 08:59	0.221	0.000	20.0	1.1	59.7	0.1
06/27/2013 09:00	0.196	0.000	20.4	1.6	52.8	0.1
06/27/2013 09:01	0.208	0.000	20.6	2.0	57.3	0.1
06/27/2013 09:02	0.285	0.000	22.5	1.3	78.3	0.1
06/27/2013 09:03	0.272	0.000	24.0	0.2	73.8	0.1
06/27/2013 09:04	0.297	0.000	24.4	0.0	80.0	0.1
06/27/2013 09:05	0.265	0.000	23.4	0.2	70.3	0.1
06/27/2013 09:06	0.355	0.001	23.0	0.3	93.7	0.2
06/27/2013 09:07	0.296	0.000	23.1	0.2	80.2	0.1
06/27/2013 09:08	0.272	0.000	21.8	1.1	72.8	0.1
06/27/2013 09:09	0.261	0.000	21.9	1.6	69.4	0.1
06/27/2013 09:10	0.325	0.000	23.3	0.4	84.8	0.1
06/27/2013 09:11	0.269	0.000	23.7	0.1	70.0	0.1
06/27/2013 09:12	0.215	0.000	22.8	1.0	57.3	0.1
06/27/2013 09:13	0.215	0.000	22.7	1.7	57.1	0.1
06/27/2013 09:14	0.286	0.000	24.1	0.7	76.0	0.1
06/27/2013 09:15	0.246	0.000	25.3	0.2	64.4	0.1
06/27/2013 09:16	0.208	0.001	23.4	1.1	54.2	0.2
06/27/2013 09:17	0.224	0.001	24.1	1.3	57.3	0.2
06/27/2013 09:18	0.305	0.000	25.2	0.0	77.2	0.1
06/27/2013 09:19	0.213	0.000	25.6	0.1	54.4	0.1
06/27/2013 09:20	0.203	0.000	24.2	0.8	52.3	0.1
06/27/2013 09:21	0.244	0.000	24.8	0.9	61.3	0.1
06/27/2013 09:22	0.403	0.000	25.8	0.0	102.0	0.1

RATA Run # 5

Verified By: ______________________

RATA Report
For 6/27/2013, Hour 08:00

Time	CO lb/MBtu	SO2 lb/MBtu	NOX lb/hr	NH3 lb/hr	CO lb/hr	SO2 lb/hr
06/27/2013 09:23	0.256	0.000	24.9	0.2	64.1	0.1
06/27/2013 09:24	0.250	0.000	21.8	1.6	61.0	0.1
06/27/2013 09:25	0.241	0.000	23.2	1.0	57.7	0.1
06/27/2013 09:26	0.282	0.000	24.0	0.4	67.7	0.1
06/27/2013 09:27	0.205	0.000	23.8	0.3	50.2	0.0
06/27/2013 09:28	0.207	0.000	22.2	1.7	51.7	0.0
06/27/2013 09:29	0.256	0.000	23.7	1.5	63.4	0.1
06/27/2013 09:30	0.341	0.000	25.6	0.0	84.2	0.1
06/27/2013 09:31	0.290	0.000	26.1	0.0	69.6	0.1
06/27/2013 09:32	0.265	0.000	24.5	0.5	62.2	0.1
06/27/2013 09:33	0.229	0.001	24.7	0.7	53.7	0.1
06/27/2013 09:34	0.215	0.001	24.9	0.5	50.8	0.2
06/27/2013 09:35	0.275	0.001	24.9	0.3	65.0	0.1
06/27/2013 09:36	0.218	0.000	24.8	0.3	52.5	0.1
06/27/2013 09:37	0.159	0.000	22.8	1.9	39.3	0.1
06/27/2013 09:38	0.159	0.000	24.0	2.3	39.0	0.1
06/27/2013 09:39	0.159	0.001	26.6	1.3	38.7	0.2
06/27/2013 09:40	0.173	0.001	28.1	0.6	42.5	0.2
06/27/2013 09:41	0.225	0.001	28.7	0.2	56.7	0.3
06/27/2013 09:42	0.175	0.001	27.8	0.7	44.7	0.2
06/27/2013 09:43	0.176	0.001	26.2	2.3	45.1	0.2
06/27/2013 09:44	0.197	0.001	28.8	1.3	50.4	0.2
06/27/2013 09:45	0.189	0.001	30.1	0.3	46.8	0.2
06/27/2013 09:46	0.224	0.001	30.4	0.1	55.8	0.2
06/27/2013 09:47	0.191	0.001	30.4	0.1	48.8	0.2
06/27/2013 09:48	0.180	0.001	27.7	1.4	45.6	0.2
06/27/2013 09:49	0.178	0.001	28.8	1.5	46.0	0.2
06/27/2013 09:50	0.188	0.001	30.3	1.0	49.0	0.2
06/27/2013 09:51	0.233	0.001	30.9	0.5	59.2	0.2
06/27/2013 09:52	0.327	0.001	32.1	0.0	84.1	0.2
06/27/2013 09:53	0.209	0.001	30.1	0.1	53.1	0.2
06/27/2013 09:54	0.212	0.001	27.1	1.5	53.9	0.2
06/27/2013 09:55	0.192	0.001	28.9	0.8	48.5	0.2
06/27/2013 09:56	0.182	0.001	29.1	0.9	46.5	0.2
06/27/2013 09:57	0.230	0.001	30.3	0.5	59.4	0.2
06/27/2013 09:58	0.223	0.001	30.8	0.0	57.6	0.2
06/27/2013 09:59	0.206	0.001	29.0	0.7	52.7	0.2
06/27/2013 10:00	0.204	0.001	29.3	1.3	52.1	0.2
06/27/2013 10:01	0.216	0.001	29.7	0.5	54.1	0.2
06/27/2013 10:02	0.213	0.001	30.3	0.3	53.9	0.2
06/27/2013 10:03	0.324	0.001	30.4	0.0	83.9	0.3
06/27/2013 10:04	0.241	0.001	29.9	0.0	62.2	0.2
06/27/2013 10:05	0.224	0.001	28.0	0.9	58.4	0.2
06/27/2013 10:06	0.227	0.001	28.7	1.0	57.1	0.3
06/27/2013 10:07	0.219	0.001	29.4	0.3	55.0	0.2
06/27/2013 10:08	0.228	0.001	29.5	0.1	57.1	0.2
06/27/2013 10:09	0.231	0.001	29.5	0.1	59.4	0.2
06/27/2013 10:10	0.207	0.001	28.3	0.6	53.3	0.2
06/27/2013 10:11	0.194	0.001	27.7	1.4	50.0	0.2
06/27/2013 10:12	0.219	0.001	28.8	1.4	57.3	0.2
06/27/2013 10:13	0.271	0.001	29.8	0.6	67.2	0.3
06/27/2013 10:14	0.331	0.001	30.3	0.0	78.1	0.2
06/27/2013 10:15	0.479	0.001	29.7	0.0	115.4	0.2
06/27/2013 10:16	0.219	0.000	26.6	0.6	54.1	0.1
06/27/2013 10:17	0.188	0.000	22.9	2.8	46.0	0.1
06/27/2013 10:18	0.182	0.000	26.3	2.1	44.7	0.1
06/27/2013 10:19	0.174	0.001	28.7	0.8	43.7	0.1
06/27/2013 10:20	0.248	0.001	28.7	0.3	60.3	0.2
06/27/2013 10:21	0.271	0.001	29.5	0.0	66.5	0.2
06/27/2013 10:22	0.203	0.001	27.5	0.5	49.4	0.2
06/27/2013 10:23	0.191	0.001	25.6	1.7	46.5	0.2
06/27/2013 10:24	0.199	0.001	27.1	1.3	48.1	0.2
06/27/2013 10:25	0.194	0.000	28.3	0.6	47.6	0.1

RATA Run # 5

Verified By: ____________________

RATA Report
For 6/27/2013, Hour 08:00

Time	CO lb/MBtu	SO2 lb/MBtu	NOX lb/hr	NH3 lb/hr	CO lb/hr	SO2 lb/hr
Average Value	0.288	0.000	25.1	0.7	76.7	0.1

RATA Run # 5

Verified By: ______________________

RATA Report
For 6/27/2013, Hour 10:00

Time	O2 %	NOX PPM	NH3 PPM	CO PPM	SO2 PPM	NOX lb/MBtu	NH3 lb/MBtu
06/27/2013 10:45	6.1	53.9	3.9	138.7	0.3	0.117	0.003
06/27/2013 10:46	6.2	53.3	7.7	131.8	0.3	0.116	0.006
06/27/2013 10:47	6.3	55.0	6.8	125.4	0.3	0.121	0.006
06/27/2013 10:48	6.2	57.7	2.8	189.2	0.3	0.126	0.002
06/27/2013 10:49	6.0	59.1	0.0	147.0	0.3	0.127	0.000
06/27/2013 10:50	6.1	54.1	5.2	132.8	0.3	0.117	0.004
06/27/2013 10:51	6.2	55.4	6.4	138.0	0.3	0.121	0.005
06/27/2013 10:52	6.0	57.8	2.2	127.0	0.3	0.124	0.002
06/27/2013 10:53	6.1	57.1	3.5	141.1	0.3	0.124	0.003
06/27/2013 10:54	6.0	57.7	1.7	174.5	0.3	0.124	0.001
06/27/2013 10:55	6.1	57.1	0.9	147.6	0.3	0.124	0.001
06/27/2013 10:56	6.2	53.5	7.0	150.6	0.3	0.117	0.006
06/27/2013 10:57	6.3	55.6	5.1	140.4	0.3	0.123	0.004
06/27/2013 10:58	6.2	56.8	2.7	122.0	0.3	0.124	0.002
06/27/2013 10:59	6.2	57.0	1.6	174.3	0.3	0.124	0.001
06/27/2013 11:00	5.9	57.5	0.3	155.5	0.3	0.122	0.000
06/27/2013 11:01	5.7	53.6	6.0	118.4	0.3	0.112	0.005
06/27/2013 11:02	5.7	54.4	9.7	134.0	0.3	0.113	0.007
06/27/2013 11:03	6.1	57.2	6.5	160.2	0.3	0.124	0.005
06/27/2013 11:04	6.3	60.0	0.6	170.5	0.3	0.132	0.000
06/27/2013 11:05	6.2	60.6	0.0	192.7	0.3	0.132	0.000
06/27/2013 11:06	6.3	57.4	0.8	141.5	0.3	0.127	0.001
06/27/2013 11:07	6.2	53.2	7.3	118.4	0.3	0.116	0.006
06/27/2013 11:08	5.8	55.6	6.8	102.4	0.3	0.117	0.005
06/27/2013 11:09	5.8	57.4	7.9	104.7	0.3	0.121	0.006
06/27/2013 11:10	6.0	60.0	2.3	155.8	0.3	0.129	0.002
06/27/2013 11:11	5.9	62.7	0.0	153.1	0.3	0.133	0.000
06/27/2013 11:12	5.9	58.3	3.3	124.3	0.3	0.124	0.003
06/27/2013 11:13	6.1	57.2	6.0	138.8	0.3	0.124	0.005
06/27/2013 11:14	6.1	60.0	0.1	136.6	0.3	0.130	0.000
06/27/2013 11:15	6.1	58.9	1.2	132.0	0.3	0.127	0.001
06/27/2013 11:16	6.1	58.6	0.0	179.6	0.4	0.127	0.000
06/27/2013 11:17	6.2	58.6	0.1	151.8	0.4	0.128	0.000
06/27/2013 11:18	6.1	54.0	4.9	134.8	0.4	0.117	0.004
06/27/2013 11:19	6.0	55.3	7.0	117.4	0.4	0.118	0.006
06/27/2013 11:20	6.2	57.3	4.9	120.7	0.3	0.125	0.004
06/27/2013 11:21	6.3	59.3	1.7	174.3	0.3	0.131	0.001
06/27/2013 11:22	6.0	59.7	0.0	179.9	0.3	0.128	0.000
06/27/2013 11:23	6.0	55.7	2.5	145.5	0.3	0.119	0.002
06/27/2013 11:24	6.0	54.2	6.0	135.9	0.3	0.116	0.005
06/27/2013 11:25	6.1	55.8	5.6	133.8	0.3	0.121	0.004
06/27/2013 11:26	6.3	57.5	2.8	134.4	0.4	0.127	0.002
06/27/2013 11:27	6.4	58.3	0.8	168.9	0.3	0.130	0.001
06/27/2013 11:28	6.0	57.5	0.1	124.5	0.3	0.123	0.000
06/27/2013 11:29	5.9	51.6	8.0	103.4	0.3	0.110	0.006
06/27/2013 11:30	6.0	53.6	9.6	101.7	0.3	0.115	0.008
06/27/2013 11:31	6.0	57.6	5.0	111.1	0.3	0.123	0.004
06/27/2013 11:32	6.5	59.1	0.9	171.4	0.3	0.133	0.001
06/27/2013 11:33	6.5	59.6	0.0	228.3	0.4	0.134	0.000
06/27/2013 11:34	6.4	55.8	0.5	157.4	0.3	0.124	0.000
06/27/2013 11:35	6.2	49.4	9.0	131.1	0.3	0.108	0.007
06/27/2013 11:36	6.3	52.4	7.8	131.5	0.3	0.116	0.006
06/27/2013 11:37	6.3	55.2	3.8	111.6	0.3	0.122	0.003
06/27/2013 11:38	6.2	56.5	1.3	146.7	0.3	0.123	0.001
06/27/2013 11:39	6.2	56.4	0.9	142.9	0.3	0.123	0.001
06/27/2013 11:40	6.3	53.6	5.9	131.0	0.3	0.118	0.005
06/27/2013 11:41	6.2	55.0	4.6	127.2	0.3	0.120	0.004
06/27/2013 11:42	6.4	56.5	2.7	130.2	0.3	0.126	0.002
06/27/2013 11:43	6.5	56.6	0.6	156.3	0.3	0.127	0.000
06/27/2013 11:44	6.2	57.8	0.0	197.1	0.3	0.126	0.000
06/27/2013 11:45	6.2	54.4	2.5	129.4	0.3	0.119	0.002
06/27/2013 11:46	6.3	50.5	12.1	124.5	0.3	0.111	0.010
06/27/2013 11:47	6.3	55.3	4.6	124.0	0.3	0.122	0.004
06/27/2013 11:48	6.2	57.3	2.2	121.9	0.3	0.125	0.002

RATA Run # 6

Verified By: ______________________

RATA Report
For 6/27/2013, Hour 10:00

Time	O2 %	NOX PPM	NH3 PPM	CO PPM	SO2 PPM	NOX lb/MBtu	NH3 lb/MBtu
06/27/2013 11:49	6.3	57.2	1.2	152.5	0.3	0.126	0.001
06/27/2013 11:50	6.1	57.5	1.2	125.6	0.3	0.124	0.001
06/27/2013 11:51	6.0	53.5	7.4	109.3	0.3	0.115	0.006
06/27/2013 11:52	6.0	56.3	6.0	129.2	0.3	0.121	0.005
06/27/2013 11:53	5.9	58.8	2.5	133.1	0.4	0.125	0.002
06/27/2013 11:54	6.2	58.5	3.0	143.8	0.4	0.128	0.002
06/27/2013 11:55	6.3	59.6	0.0	210.4	0.3	0.131	0.000
06/27/2013 11:56	6.3	59.9	0.0	144.0	0.3	0.132	0.000
06/27/2013 11:57	6.2	56.0	3.4	107.1	0.3	0.122	0.003
06/27/2013 11:58	6.1	55.8	5.6	99.3	0.3	0.121	0.004
06/27/2013 11:59	6.1	56.8	3.7	108.8	0.3	0.123	0.003
06/27/2013 12:00	6.1	57.7	1.8	128.6	0.3	0.125	0.001
06/27/2013 12:01	6.0	58.2	1.4	132.7	0.3	0.125	0.001
06/27/2013 12:02	6.1	56.3	3.6	132.0	0.4	0.122	0.003
06/27/2013 12:03	6.3	56.9	4.4	129.6	0.3	0.125	0.004
06/27/2013 12:04	6.3	57.9	2.0	123.0	0.3	0.128	0.002
06/27/2013 12:05	6.6	58.7	0.5	134.1	0.3	0.133	0.000
06/27/2013 12:06	6.5	57.7	0.0	183.0	0.3	0.130	0.000
06/27/2013 12:07	6.3	55.2	1.2	109.7	0.3	0.122	0.001
06/27/2013 12:08	6.4	50.0	8.0	124.0	0.3	0.111	0.007
06/27/2013 12:09	6.4	53.4	5.3	125.1	0.3	0.119	0.004
06/27/2013 12:10	6.4	54.5	3.8	110.7	0.3	0.121	0.003
06/27/2013 12:11	6.4	54.8	1.7	121.9	0.3	0.122	0.001
06/27/2013 12:12	6.6	55.5	0.2	126.5	0.3	0.126	0.000
06/27/2013 12:13	6.3	53.9	0.8	122.2	0.3	0.119	0.001
06/27/2013 12:14	6.4	53.1	4.7	119.0	0.3	0.118	0.004
06/27/2013 12:15	6.6	53.3	4.8	130.6	0.3	0.121	0.004
06/27/2013 12:16	6.8	54.9	1.3	137.2	0.3	0.127	0.001
06/27/2013 12:17	6.7	55.9	0.0	178.4	0.1	0.128	0.000
06/27/2013 12:18	6.5	53.2	0.7	113.6	0.1	0.120	0.001
06/27/2013 12:19	6.5	48.8	8.4	103.7	0.3	0.110	0.007
06/27/2013 12:20	6.5	52.0	5.3	99.6	0.3	0.117	0.004
06/27/2013 12:21	6.4	52.9	4.4	112.0	0.3	0.118	0.004
06/27/2013 12:22	6.6	53.6	1.5	150.4	0.3	0.122	0.001
06/27/2013 12:23	6.5	55.1	0.0	150.5	0.3	0.124	0.000
06/27/2013 12:24	6.6	52.2	2.8	126.6	0.3	0.118	0.002
06/27/2013 12:25	6.9	51.6	4.5	134.7	0.2	0.121	0.004
06/27/2013 12:26	6.8	53.9	0.9	122.9	0.1	0.125	0.001
06/27/2013 12:27	6.7	52.8	2.5	105.6	0.1	0.121	0.002
06/27/2013 12:28	6.6	52.4	0.1	159.9	0.3	0.119	0.000
06/27/2013 12:29	6.4	53.8	1.7	113.5	0.3	0.120	0.001
06/27/2013 12:30	6.3	50.6	6.6	107.5	0.3	0.112	0.005
06/27/2013 12:31	6.3	53.0	7.1	117.1	0.3	0.117	0.006
06/27/2013 12:32	6.4	55.1	4.1	125.0	0.3	0.123	0.003
06/27/2013 12:33	6.4	55.9	1.9	123.1	0.3	0.124	0.002
06/27/2013 12:34	6.1	56.2	1.8	114.6	0.3	0.122	0.001
06/27/2013 12:35	6.1	54.7	7.2	108.9	0.3	0.118	0.006
06/27/2013 12:36	6.2	56.2	6.7	119.4	0.3	0.123	0.005
06/27/2013 12:37	6.2	58.7	3.3	111.8	0.3	0.128	0.003
06/27/2013 12:38	6.1	59.3	2.9	112.4	0.3	0.128	0.002
06/27/2013 12:39	6.0	58.8	1.4	146.7	0.3	0.126	0.001
06/27/2013 12:40	5.8	58.8	2.1	106.8	0.3	0.124	0.002
06/27/2013 12:41	5.5	55.8	8.7	96.6	0.3	0.114	0.007
06/27/2013 12:42	5.8	58.7	7.9	102.1	0.4	0.123	0.006
06/27/2013 12:43	5.7	61.5	3.6	115.2	0.4	0.128	0.003
06/27/2013 12:44	5.9	63.0	1.0	137.2	0.4	0.134	0.001
06/27/2013 12:45	5.9	62.1	0.2	147.0	0.3	0.132	0.000
06/27/2013 12:46	5.9	60.1	1.7	117.6	0.3	0.128	0.001
06/27/2013 12:47	5.8	58.4	5.0	106.5	0.3	0.123	0.004
06/27/2013 12:48	5.8	59.6	4.1	103.0	0.3	0.125	0.003
06/27/2013 12:49	5.8	59.9	4.2	110.3	0.3	0.126	0.003
06/27/2013 12:50	5.6	60.9	0.0	145.9	0.4	0.126	0.000

RATA Run # 6

Verified By: ______________________

RATA Report
For 6/27/2013, Hour 10:00

Time	O2 %	NOX PPM	NH3 PPM	CO PPM	SO2 PPM	NOX lb/MBtu	NH3 lb/MBtu
Average Value	6.2	56.3	3.4	134.1	0.3	0.123	0.003

RATA Run # 6

Verified By: ______________________

RATA Report
For 6/27/2013, Hour 10:00

Time	CO lb/MBtu	SO2 lb/MBtu	NOX lb/hr	NH3 lb/hr	CO lb/hr	SO2 lb/hr
06/27/2013 10:45	0.183	0.001	28.7	0.8	45.0	0.2
06/27/2013 10:46	0.175	0.001	28.1	1.5	42.2	0.2
06/27/2013 10:47	0.168	0.001	28.8	1.3	39.9	0.2
06/27/2013 10:48	0.251	0.001	30.3	0.5	60.5	0.2
06/27/2013 10:49	0.192	0.001	31.0	0.0	47.0	0.2
06/27/2013 10:50	0.175	0.001	28.4	1.0	42.4	0.2
06/27/2013 10:51	0.183	0.001	29.1	1.2	44.2	0.2
06/27/2013 10:52	0.166	0.001	30.4	0.4	40.7	0.2
06/27/2013 10:53	0.186	0.001	29.9	0.7	44.9	0.2
06/27/2013 10:54	0.228	0.001	30.4	0.3	56.0	0.2
06/27/2013 10:55	0.194	0.001	30.2	0.2	47.6	0.2
06/27/2013 10:56	0.200	0.001	28.0	1.4	48.0	0.2
06/27/2013 10:57	0.188	0.001	29.0	1.0	44.5	0.2
06/27/2013 10:58	0.162	0.001	29.6	0.5	38.7	0.2
06/27/2013 10:59	0.232	0.001	29.6	0.3	55.2	0.2
06/27/2013 11:00	0.201	0.001	30.1	0.1	49.6	0.2
06/27/2013 11:01	0.150	0.001	28.6	1.2	38.4	0.2
06/27/2013 11:02	0.170	0.001	29.1	1.9	43.6	0.2
06/27/2013 11:03	0.211	0.001	30.3	1.3	51.7	0.2
06/27/2013 11:04	0.229	0.001	31.8	0.1	54.9	0.2
06/27/2013 11:05	0.256	0.001	31.9	0.0	61.7	0.2
06/27/2013 11:06	0.190	0.001	29.8	0.2	44.7	0.2
06/27/2013 11:07	0.157	0.001	27.7	1.4	37.6	0.2
06/27/2013 11:08	0.131	0.001	29.2	1.3	32.7	0.2
06/27/2013 11:09	0.134	0.001	30.1	1.5	33.4	0.2
06/27/2013 11:10	0.203	0.001	31.5	0.4	49.8	0.2
06/27/2013 11:11	0.198	0.001	33.0	0.0	49.0	0.2
06/27/2013 11:12	0.161	0.001	30.8	0.6	39.9	0.2
06/27/2013 11:13	0.183	0.001	30.0	1.2	44.4	0.2
06/27/2013 11:14	0.180	0.001	31.6	0.0	43.8	0.2
06/27/2013 11:15	0.174	0.001	30.9	0.2	42.2	0.2
06/27/2013 11:16	0.236	0.001	31.1	0.0	58.1	0.3
06/27/2013 11:17	0.202	0.001	31.1	0.0	49.1	0.3
06/27/2013 11:18	0.177	0.001	28.7	1.0	43.6	0.3
06/27/2013 11:19	0.153	0.001	29.0	1.4	37.4	0.3
06/27/2013 11:20	0.160	0.001	29.9	0.9	38.4	0.2
06/27/2013 11:21	0.234	0.001	31.1	0.3	55.6	0.2
06/27/2013 11:22	0.235	0.001	31.5	0.0	57.7	0.2
06/27/2013 11:23	0.190	0.001	29.6	0.5	47.1	0.2
06/27/2013 11:24	0.177	0.001	28.7	1.2	43.8	0.2
06/27/2013 11:25	0.176	0.001	29.5	1.1	43.0	0.2
06/27/2013 11:26	0.180	0.001	29.9	0.5	42.6	0.3
06/27/2013 11:27	0.229	0.001	30.4	0.2	53.6	0.2
06/27/2013 11:28	0.162	0.001	30.1	0.0	39.6	0.2
06/27/2013 11:29	0.134	0.001	26.9	1.5	32.8	0.2
06/27/2013 11:30	0.133	0.001	28.2	1.9	32.5	0.2
06/27/2013 11:31	0.145	0.001	30.2	1.0	35.5	0.2
06/27/2013 11:32	0.234	0.001	31.1	0.2	54.9	0.2
06/27/2013 11:33	0.312	0.001	31.3	0.0	72.9	0.3
06/27/2013 11:34	0.213	0.001	29.4	0.1	50.4	0.2
06/27/2013 11:35	0.174	0.001	25.8	1.7	41.6	0.2
06/27/2013 11:36	0.176	0.001	27.1	1.5	41.4	0.2
06/27/2013 11:37	0.150	0.001	28.7	0.7	35.4	0.2
06/27/2013 11:38	0.195	0.001	29.7	0.3	46.9	0.2
06/27/2013 11:39	0.190	0.001	29.7	0.2	45.8	0.2
06/27/2013 11:40	0.176	0.001	28.0	1.1	41.6	0.2
06/27/2013 11:41	0.169	0.001	28.6	0.9	40.2	0.2
06/27/2013 11:42	0.176	0.001	29.3	0.5	41.1	0.2
06/27/2013 11:43	0.214	0.001	29.6	0.1	49.8	0.2
06/27/2013 11:44	0.262	0.001	30.4	0.0	63.2	0.2
06/27/2013 11:45	0.172	0.001	28.4	0.5	41.1	0.2
06/27/2013 11:46	0.167	0.001	26.3	2.3	39.5	0.2
06/27/2013 11:47	0.166	0.001	28.8	0.9	39.4	0.2

RATA Run # 6

Verified By: ______________________

RATA Report
For 6/27/2013, Hour 10:00

Time	CO lb/MBtu	SO2 lb/MBtu	NOX lb/hr	NH3 lb/hr	CO lb/hr	SO2 lb/hr
06/27/2013 11:48	0.162	0.001	29.8	0.4	38.6	0.2
06/27/2013 11:49	0.205	0.001	29.7	0.2	48.2	0.2
06/27/2013 11:50	0.165	0.001	30.1	0.2	40.0	0.2
06/27/2013 11:51	0.143	0.001	28.6	1.5	35.6	0.2
06/27/2013 11:52	0.168	0.001	30.0	1.2	41.9	0.2
06/27/2013 11:53	0.172	0.001	31.4	0.5	43.3	0.3
06/27/2013 11:54	0.191	0.001	31.0	0.6	46.3	0.3
06/27/2013 11:55	0.282	0.001	31.6	0.0	67.9	0.2
06/27/2013 11:56	0.193	0.001	31.2	0.0	45.6	0.2
06/27/2013 11:57	0.142	0.001	29.3	0.7	34.1	0.2
06/27/2013 11:58	0.131	0.001	29.5	1.1	31.9	0.2
06/27/2013 11:59	0.143	0.001	29.8	0.7	34.7	0.2
06/27/2013 12:00	0.169	0.001	30.5	0.4	41.4	0.2
06/27/2013 12:01	0.173	0.001	30.9	0.3	42.9	0.2
06/27/2013 12:02	0.174	0.001	29.8	0.7	42.5	0.3
06/27/2013 12:03	0.174	0.001	30.1	0.9	41.8	0.2
06/27/2013 12:04	0.165	0.001	30.5	0.4	39.5	0.2
06/27/2013 12:05	0.185	0.001	30.9	0.1	43.0	0.2
06/27/2013 12:06	0.250	0.001	30.1	0.0	58.1	0.2
06/27/2013 12:07	0.147	0.001	28.9	0.2	35.0	0.2
06/27/2013 12:08	0.168	0.001	26.2	1.5	39.6	0.2
06/27/2013 12:09	0.169	0.001	27.9	1.0	39.7	0.2
06/27/2013 12:10	0.150	0.001	28.5	0.7	35.2	0.2
06/27/2013 12:11	0.165	0.001	28.6	0.3	38.7	0.2
06/27/2013 12:12	0.175	0.001	29.1	0.0	40.4	0.2
06/27/2013 12:13	0.164	0.001	28.4	0.2	39.2	0.2
06/27/2013 12:14	0.161	0.001	28.2	0.9	38.5	0.2
06/27/2013 12:15	0.180	0.001	28.1	0.9	41.9	0.2
06/27/2013 12:16	0.193	0.001	28.8	0.3	43.8	0.2
06/27/2013 12:17	0.249	0.000	29.1	0.0	56.6	0.1
06/27/2013 12:18	0.155	0.000	27.6	0.1	35.9	0.1
06/27/2013 12:19	0.142	0.001	25.3	1.6	32.8	0.2
06/27/2013 12:20	0.136	0.001	27.2	1.0	31.7	0.2
06/27/2013 12:21	0.152	0.001	27.6	0.8	35.6	0.2
06/27/2013 12:22	0.208	0.001	28.2	0.3	48.1	0.2
06/27/2013 12:23	0.206	0.001	28.9	0.0	48.1	0.2
06/27/2013 12:24	0.175	0.001	27.3	0.5	40.3	0.2
06/27/2013 12:25	0.192	0.001	26.8	0.9	42.6	0.1
06/27/2013 12:26	0.173	0.000	27.9	0.2	38.7	0.1
06/27/2013 12:27	0.147	0.000	27.4	0.5	33.3	0.1
06/27/2013 12:28	0.221	0.001	27.1	0.0	50.3	0.2
06/27/2013 12:29	0.154	0.001	27.9	0.3	35.8	0.2
06/27/2013 12:30	0.144	0.001	26.6	1.3	34.5	0.2
06/27/2013 12:31	0.157	0.001	27.6	1.4	37.1	0.2
06/27/2013 12:32	0.169	0.001	28.5	0.8	39.4	0.2
06/27/2013 12:33	0.167	0.001	29.3	0.4	39.2	0.2
06/27/2013 12:34	0.151	0.001	29.8	0.4	37.0	0.2
06/27/2013 12:35	0.143	0.001	28.8	1.4	34.9	0.2
06/27/2013 12:36	0.159	0.001	29.2	1.3	37.8	0.2
06/27/2013 12:37	0.149	0.001	30.8	0.6	35.7	0.2
06/27/2013 12:38	0.148	0.001	30.9	0.6	35.7	0.2
06/27/2013 12:39	0.191	0.001	30.5	0.3	46.3	0.2
06/27/2013 12:40	0.137	0.001	30.5	0.4	33.7	0.2
06/27/2013 12:41	0.120	0.001	29.2	1.7	30.8	0.2
06/27/2013 12:42	0.131	0.001	30.9	1.5	32.7	0.3
06/27/2013 12:43	0.146	0.001	32.4	0.7	36.9	0.3
06/27/2013 12:44	0.177	0.001	33.2	0.2	44.0	0.3
06/27/2013 12:45	0.190	0.001	32.6	0.0	47.0	0.2
06/27/2013 12:46	0.152	0.001	31.6	0.3	37.6	0.2
06/27/2013 12:47	0.136	0.001	30.5	1.0	33.8	0.2
06/27/2013 12:48	0.132	0.001	31.0	0.8	32.6	0.2
06/27/2013 12:49	0.141	0.001	31.3	0.8	35.1	0.2
06/27/2013 12:50	0.183	0.001	32.3	0.0	47.1	0.3

RATA Run # 6

Verified By: ______________________

RATA Report
For 6/27/2013, Hour 10:00

Time	CO lb/MBtu	SO2 lb/MBtu	NOX lb/hr	NH3 lb/hr	CO lb/hr	SO2 lb/hr
Average Value	0.178	0.001	29.5	0.7	42.8	0.2

RATA Run # 6

Verified By: ____________________

Hourly One Minute Report
For 6/26/2013, Hour 08:00

Minute	PROCESS 1-Min	Stat	OPACITY % 1-Min	Stat	O2 % 1-Min	Stat	NOX PPM 1-Min	Stat	NH3 PPM 1-Min	Stat
0	1.00	SVC	1.9	SVC	5.0	SVC	26.8	SVC	4.4	SVC
1	1.00	SVC	2.2	SVC	4.7	SVC	27.4	SVC	4.3	SVC
2	1.00	SVC	2.3	SVC	4.9	SVC	28.3	SVC	4.8	SVC
3	1.00	SVC	1.9	SVC	5.2	SVC	29.6	SVC	2.6	SVC
4	1.00	SVC	1.5	SVC	5.3	SVC	30.8	SVC	0.0	SVC
5	1.00	SVC	1.3	SVC	5.5	SVC	30.2	SVC	0.0	SVC
6	1.00	SVC	1.3	SVC	5.3	SVC	27.6	SVC	0.1	SVC
7	1.00	SVC	1.4	SVC	5.1	SVC	27.1	SVC	0.2	SVC
8	1.00	SVC	1.6	SVC	5.2	SVC	25.1	SVC	1.3	SVC
9	1.00	SVC	1.5	SVC	5.1	SVC	24.4	SVC	0.7	SVC
10	1.00	SVC	1.5	SVC	5.1	SVC	24.5	SVC	0.2	SVC
11	1.00	SVC	1.5	SVC	5.1	SVC	22.9	SVC	2.0	SVC
12	1.00	SVC	1.4	SVC	5.2	SVC	22.4	SVC	2.1	SVC
13	1.00	SVC	1.5	SVC	5.4	SVC	22.8	SVC	1.7	SVC
14	1.00	SVC	1.4	SVC	5.6	SVC	21.8	SVC	1.6	SVC
15	1.00	SVC	1.4	SVC	5.3	SVC	22.1	SVC	0.2	SVC
16	1.00	SVC	1.5	SVC	5.2	SVC	21.1	SVC	2.0	SVC
17	1.00	SVC	1.5	SVC	5.2	SVC	19.6	SVC	4.2	SVC
18	1.00	SVC	1.5	SVC	5.4	SVC	20.6	SVC	3.7	SVC
19	1.00	SVC	1.6	SVC	5.4	SVC	20.5	SVC	4.1	SVC
20	1.00	SVC	1.4	SVC	5.5	SVC	20.9	SVC	3.6	SVC
21	1.00	SVC	1.4	SVC	5.4	SVC	21.7	SVC	3.2	SVC
22	1.00	SVC	1.4	SVC	5.2	SVC	21.8	SVC	2.6	SVC
23	1.00	SVC	1.4	SVC	5.3	SVC	21.9	SVC	3.0	SVC
24	1.00	SVC	1.4	SVC	5.4	SVC	21.7	SVC	3.2	SVC
25	1.00	SVC	1.6	SVC	5.5	SVC	21.8	SVC	3.4	SVC
26	1.00	SVC	1.5	SVC	5.5	SVC	22.2	SVC	1.9	SVC
27	1.00	SVC	1.4	SVC	5.5	SVC	22.0	SVC	2.3	SVC
28	1.00	SVC	1.3	SVC	5.6	SVC	21.1	SVC	4.2	SVC
29	1.00	SVC	1.3	SVC	5.7	SVC	21.9	SVC	3.5	SVC
30	1.00	SVC	1.3	SVC	5.6	SVC	23.0	SVC	1.8	SVC
31	1.00	SVC	1.3	SVC	5.5	SVC	22.9	SVC	1.0	SVC
32	1.00	SVC	1.3	SVC	5.5	SVC	22.3	SVC	2.0	SVC
33	1.00	SVC	1.3	SVC	5.5	SVC	21.8	SVC	3.0	SVC
34	1.00	SVC	1.3	SVC	5.8	SVC	21.7	SVC	4.2	SVC
35	1.00	SVC	1.2	SVC	5.9	SVC	22.3	SVC	4.2	SVC
36	1.00	SVC	1.3	SVC	6.1	SVC	22.9	SVC	4.4	SVC
37	1.00	SVC	1.2	SVC	6.0	SVC	24.0	SVC	2.0	SVC
38	1.00	SVC	1.2	SVC	5.8	SVC	24.7	SVC	1.9	SVC
39	1.00	SVC	1.2	SVC	5.9	SVC	23.8	SVC	3.4	SVC
40	1.00	SVC	1.3	SVC	5.8	SVC	24.5	SVC	3.8	SVC
41	1.00	SVC	1.5	SVC	5.5	SVC	24.8	SVC	3.9	SVC
42	1.00	SVC	1.5	SVC	5.8	SVC	25.7	SVC	3.6	SVC
43	1.00	SVC	1.3	SVC	5.9	SVC	26.0	SVC	3.9	SVC
44	1.00	SVC	1.3	SVC	6.0	SVC	27.0	SVC	3.8	SVC
45	1.00	SVC	1.2	SVC	6.1	SVC	27.8	SVC	2.9	SVC
46	1.00	SVC	1.1	SVC	6.3	SVC	28.4	SVC	1.6	SVC
47	1.00	SVC	1.3	SVC	6.2	SVC	28.5	SVC	0.8	SVC
48	1.00	SVC	1.2	SVC	6.1	SVC	27.9	SVC	0.4	SVC
49	1.00	SVC	1.3	SVC	5.8	SVC	27.2	SVC	1.4	SVC
50	1.00	SVC	1.3	SVC	5.8	SVC	25.9	SVC	5.8	SVC
51	1.00	SVC	1.2	SVC	5.8	SVC	27.6	SVC	4.9	SVC
52	1.00	SVC	1.3	SVC	5.9	SVC	29.1	SVC	3.2	SVC
53	1.00	SVC	1.2	SVC	6.0	SVC	29.8	SVC	1.3	SVC
54	1.00	SVC	1.2	SVC	6.0	SVC	29.9	SVC	0.0	SVC
55	1.00	SVC	1.1	SVC	6.0	SVC	29.3	SVC	0.3	SVC
56	1.00	SVC	1.1	SVC	6.1	SVC	27.6	SVC	1.3	SVC
57	1.00	SVC	1.1	SVC	5.8	SVC	27.6	SVC	0.7	SVC
58	1.00	SVC	1.4	SVC	5.8	SVC	27.4	SVC	2.1	SVC
59	1.00	SVC	32.3	SVC	5.7	SVC	26.9	SVC	2.5	SVC

Explanation for Status Code

SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/26/2013, Hour 08:00

Minute	CO PPM 1-Min	Stat	SO2 PPM 1-Min	Stat	DELTA P IWC 1-Min	Stat	TEMP deg F 1-Min	Stat
0	247.4	SVC	0.1	SVC	0.702	SVC	361.0	SVC
1	281.7	SVC	0.1	SVC	0.703	SVC	361.6	SVC
2	401.9	SVC	0.1	SVC	0.706	SVC	362.1	SVC
3	284.2	SVC	0.1	SVC	0.701	SVC	362.5	SVC
4	256.4	SVC	0.1	SVC	0.695	SVC	363.0	SVC
5	162.9	SVC	0.0	SVC	0.691	SVC	362.9	SVC
6	137.8	SVC	0.0	SVC	0.695	SVC	362.9	SVC
7	149.2	SVC	0.0	SVC	0.695	SVC	363.0	SVC
8	224.7	SVC	0.0	SVC	0.693	SVC	363.4	SVC
9	333.2	SVC	0.0	SVC	0.694	SVC	363.8	SVC
10	337.5	SVC	0.0	SVC	0.696	SVC	364.0	SVC
11	267.5	SVC	0.0	SVC	0.695	SVC	364.1	SVC
12	274.3	SVC	0.0	SVC	0.695	SVC	364.2	SVC
13	193.2	SVC	0.0	SVC	0.691	SVC	364.3	SVC
14	163.7	SVC	0.0	SVC	0.690	SVC	364.4	SVC
15	162.3	SVC	0.0	SVC	0.691	SVC	364.9	SVC
16	157.7	SVC	0.0	SVC	0.692	SVC	365.1	SVC
17	209.6	SVC	0.0	SVC	0.695	SVC	365.4	SVC
18	241.9	SVC	0.0	SVC	0.696	SVC	365.6	SVC
19	201.0	SVC	0.0	SVC	0.693	SVC	365.6	SVC
20	272.8	SVC	0.0	SVC	0.691	SVC	365.7	SVC
21	175.4	SVC	0.0	SVC	0.691	SVC	366.0	SVC
22	193.7	SVC	0.0	SVC	0.692	SVC	365.9	SVC
23	219.7	SVC	0.0	SVC	0.691	SVC	366.0	SVC
24	185.5	SVC	0.0	SVC	0.689	SVC	366.2	SVC
25	153.8	SVC	0.0	SVC	0.694	SVC	366.3	SVC
26	171.8	SVC	0.0	SVC	0.691	SVC	366.4	SVC
27	145.1	SVC	0.0	SVC	0.692	SVC	366.6	SVC
28	131.2	SVC	0.0	SVC	0.692	SVC	366.4	SVC
29	121.9	SVC	0.0	SVC	0.690	SVC	366.3	SVC
30	119.0	SVC	0.0	SVC	0.688	SVC	366.3	SVC
31	171.0	SVC	0.0	SVC	0.693	SVC	366.4	SVC
32	191.7	SVC	0.0	SVC	0.694	SVC	366.6	SVC
33	154.7	SVC	0.0	SVC	0.691	SVC	366.6	SVC
34	156.5	SVC	0.0	SVC	0.687	SVC	366.6	SVC
35	127.7	SVC	0.0	SVC	0.689	SVC	366.8	SVC
36	114.0	SVC	0.0	SVC	0.690	SVC	366.9	SVC
37	136.7	SVC	0.0	SVC	0.688	SVC	366.9	SVC
38	100.7	SVC	0.0	SVC	0.691	SVC	366.9	SVC
39	104.7	SVC	0.0	SVC	0.692	SVC	366.9	SVC
40	106.4	SVC	0.0	SVC	0.693	SVC	366.9	SVC
41	115.9	SVC	0.0	SVC	0.695	SVC	366.9	SVC
42	208.8	SVC	0.0	SVC	0.696	SVC	366.9	SVC
43	159.7	SVC	0.0	SVC	0.695	SVC	366.9	SVC
44	127.9	SVC	0.0	SVC	0.692	SVC	367.0	SVC
45	111.3	SVC	0.0	SVC	0.689	SVC	366.9	SVC
46	92.9	SVC	0.0	SVC	0.687	SVC	366.8	SVC
47	91.8	SVC	0.0	SVC	0.690	SVC	366.7	SVC
48	132.0	SVC	0.0	SVC	0.694	SVC	366.4	SVC
49	105.2	SVC	0.0	SVC	0.694	SVC	366.8	SVC
50	107.5	SVC	0.0	SVC	0.695	SVC	366.9	SVC
51	124.8	SVC	0.0	SVC	0.685	SVC	366.7	SVC
52	112.7	SVC	0.0	SVC	0.690	SVC	366.9	SVC
53	128.2	SVC	0.0	SVC	0.690	SVC	366.9	SVC
54	122.7	SVC	0.0	SVC	0.693	SVC	366.7	SVC
55	106.6	SVC	0.1	SVC	0.690	SVC	366.5	SVC
56	99.2	SVC	0.0	SVC	0.691	SVC	366.4	SVC
57	94.0	SVC	0.0	SVC	0.691	SVC	366.5	SVC
58	106.3	SVC	0.0	SVC	0.691	SVC	366.7	SVC
59	148.5	SVC	0.0	SVC	0.694	SVC	366.6	SVC

Explanation for Status Code

SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/26/2013, Hour 09:00

Minute	PROCESS 1-Min	Stat	OPACITY % 1-Min	Stat	O2 % 1-Min	Stat	NOX PPM 1-Min	Stat	NH3 PPM 1-Min	Stat
0	1.00	SVC	69.6	SVC	5.6	SVC	28.0	SVC	3.0	SVC
1	1.00	SVC	73.9	SVC	5.6	SVC	27.6	SVC	3.8	SVC
2	1.00	SVC	78.4	SVC	5.8	SVC	28.4	SVC	2.8	SVC
3	1.00	SVC	72.3	SVC	5.4	SVC	29.2	SVC	0.6	SVC
4	1.00	SVC	25.0	SVC	5.4	SVC	29.3	SVC	1.1	SVC
5	1.00	SVC	1.1	SVC	5.5	SVC	27.8	SVC	4.0	SVC
6	1.00	SVC	1.1	SVC	5.6	SVC	28.3	SVC	4.4	SVC
7	1.00	SVC	1.1	SVC	5.6	SVC	29.1	SVC	3.5	SVC
8	1.00	SVC	1.0	SVC	5.5	SVC	30.0	SVC	2.3	SVC
9	1.00	SVC	1.2	SVC	5.7	SVC	30.2	SVC	2.9	SVC
10	1.00	SVC	1.2	SVC	5.7	SVC	29.5	SVC	2.2	SVC
11	1.00	SVC	1.1	SVC	5.6	SVC	31.6	SVC	0.5	SVC
12	1.00	SVC	1.1	SVC	5.7	SVC	29.9	SVC	3.4	SVC
13	1.00	SVC	1.3	SVC	5.7	SVC	30.4	SVC	3.1	SVC
14	1.00	SVC	1.4	SVC	5.6	SVC	31.3	SVC	2.3	SVC
15	1.00	SVC	1.4	SVC	5.7	SVC	31.5	SVC	2.7	SVC
16	1.00	SVC	1.3	SVC	5.7	SVC	31.8	SVC	2.9	SVC
17	1.00	SVC	1.1	SVC	5.7	SVC	32.9	SVC	2.1	SVC
18	1.00	SVC	1.1	SVC	5.7	SVC	33.1	SVC	1.2	SVC
19	1.00	SVC	1.1	SVC	5.4	SVC	33.2	SVC	0.1	SVC
20	1.00	SVC	1.3	SVC	5.6	SVC	32.5	SVC	0.5	SVC
21	1.00	SVC	1.2	SVC	5.8	SVC	31.9	SVC	0.2	SVC
22	1.00	SVC	1.2	SVC	5.7	SVC	32.5	SVC	0.0	SVC
23	1.00	SVC	1.4	SVC	5.6	SVC	29.1	SVC	1.0	SVC
24	1.00	SVC	1.3	SVC	5.8	SVC	28.5	SVC	2.1	SVC
25	1.00	SVC	1.2	SVC	5.9	SVC	28.9	SVC	0.3	SVC
26	1.00	SVC	1.2	SVC	5.9	SVC	28.6	SVC	0.0	SVC
27	1.00	SVC	1.0	SVC	5.9	SVC	27.2	SVC	0.0	SVC
28	1.00	SVC	1.1	SVC	5.8	SVC	26.5	SVC	0.0	SVC
29	1.00	SVC	1.2	SVC	5.4	SVC	23.8	SVC	1.7	SVC
30	1.00	SVC	1.3	SVC	5.2	SVC	23.4	SVC	3.3	SVC
31	1.00	SVC	1.3	SVC	5.3	SVC	23.5	SVC	3.9	SVC
32	1.00	SVC	1.3	SVC	5.6	SVC	24.2	SVC	2.1	SVC
33	1.00	SVC	1.3	SVC	5.4	SVC	25.1	SVC	0.0	SVC
34	1.00	SVC	1.3	SVC	5.2	SVC	24.0	SVC	0.6	SVC
35	1.00	SVC	1.3	SVC	5.3	SVC	22.4	SVC	2.6	SVC
36	1.00	SVC	1.4	SVC	5.1	SVC	22.2	SVC	2.9	SVC
37	1.00	SVC	1.5	SVC	5.3	SVC	22.1	SVC	3.2	SVC
38	1.00	SVC	1.4	SVC	5.1	SVC	22.1	SVC	3.3	SVC
39	1.00	SVC	1.5	SVC	5.1	SVC	22.2	SVC	3.8	SVC
40	1.00	SVC	1.6	SVC	5.1	SVC	22.5	SVC	4.9	SVC
41	1.00	SVC	1.5	SVC	5.1	SVC	22.8	SVC	4.6	SVC
42	1.00	SVC	1.4	SVC	5.3	SVC	23.7	SVC	3.5	SVC
43	1.00	SVC	1.3	SVC	5.5	SVC	24.1	SVC	1.6	SVC
44	1.00	SVC	1.2	SVC	5.2	SVC	23.6	SVC	0.5	SVC
45	1.00	SVC	1.3	SVC	5.2	SVC	22.1	SVC	1.9	SVC
46	1.00	SVC	1.3	SVC	5.0	SVC	21.1	SVC	3.5	SVC
47	1.00	SVC	1.2	SVC	5.1	SVC	21.4	SVC	3.3	SVC
48	1.00	SVC	1.3	SVC	5.4	SVC	21.4	SVC	3.1	SVC
49	1.00	SVC	1.2	SVC	5.2	SVC	21.6	SVC	1.6	SVC
50	1.00	SVC	1.2	SVC	5.2	SVC	21.3	SVC	1.8	SVC
51	1.00	SVC	1.3	SVC	5.0	SVC	20.5	SVC	2.8	SVC
52	1.00	SVC	1.5	SVC	5.0	SVC	20.5	SVC	3.0	SVC
53	1.00	SVC	1.4	SVC	5.3	SVC	20.5	SVC	4.4	SVC
54	1.00	SVC	1.3	SVC	5.2	SVC	20.8	SVC	3.6	SVC
55	1.00	SVC	1.4	SVC	4.8	SVC	21.8	SVC	2.4	SVC
56	1.00	SVC	1.4	SVC	4.8	SVC	20.7	SVC	3.9	SVC
57	1.00	SVC	1.4	SVC	4.9	SVC	20.8	SVC	4.6	SVC
58	1.00	SVC	1.3	SVC	5.2	SVC	21.6	SVC	3.7	SVC
59	1.00	SVC	1.3	SVC	5.4	SVC	21.8	SVC	3.1	SVC

Explanation for Status Code

SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/26/2013, Hour 09:00

Minute	CO PPM 1-Min	Stat	SO2 PPM 1-Min	Stat	DELTA P IWC 1-Min	Stat	TEMP deg F 1-Min	Stat
0	117.8	SVC	0.1	SVC	0.693	SVC	366.8	SVC
1	106.7	SVC	0.1	SVC	0.688	SVC	366.9	SVC
2	99.2	SVC	0.1	SVC	0.691	SVC	366.8	SVC
3	97.9	SVC	0.1	SVC	0.692	SVC	366.8	SVC
4	152.8	SVC	0.0	SVC	0.695	SVC	367.0	SVC
5	161.5	SVC	0.0	SVC	0.695	SVC	366.9	SVC
6	127.9	SVC	0.0	SVC	0.696	SVC	367.2	SVC
7	109.9	SVC	0.0	SVC	0.693	SVC	367.3	SVC
8	101.2	SVC	0.1	SVC	0.691	SVC	367.4	SVC
9	94.6	SVC	0.1	SVC	0.693	SVC	367.5	SVC
10	128.4	SVC	0.1	SVC	0.693	SVC	367.5	SVC
11	113.9	SVC	0.1	SVC	0.695	SVC	367.4	SVC
12	111.4	SVC	0.1	SVC	0.694	SVC	367.1	SVC
13	106.4	SVC	0.1	SVC	0.697	SVC	367.4	SVC
14	124.3	SVC	0.1	SVC	0.699	SVC	367.5	SVC
15	158.0	SVC	0.1	SVC	0.697	SVC	367.5	SVC
16	156.5	SVC	0.1	SVC	0.696	SVC	367.5	SVC
17	119.6	SVC	0.1	SVC	0.693	SVC	367.5	SVC
18	103.9	SVC	0.1	SVC	0.693	SVC	367.5	SVC
19	106.3	SVC	0.1	SVC	0.694	SVC	367.5	SVC
20	109.7	SVC	0.1	SVC	0.693	SVC	367.5	SVC
21	147.3	SVC	0.1	SVC	0.697	SVC	367.6	SVC
22	122.6	SVC	0.0	SVC	0.697	SVC	367.7	SVC
23	115.9	SVC	0.0	SVC	0.699	SVC	368.2	SVC
24	134.5	SVC	0.0	SVC	0.696	SVC	368.6	SVC
25	130.4	SVC	0.1	SVC	0.696	SVC	368.5	SVC
26	119.4	SVC	0.0	SVC	0.694	SVC	368.5	SVC
27	130.8	SVC	0.0	SVC	0.691	SVC	368.2	SVC
28	98.2	SVC	0.0	SVC	0.694	SVC	368.3	SVC
29	99.6	SVC	0.0	SVC	0.698	SVC	368.5	SVC
30	168.1	SVC	0.0	SVC	0.701	SVC	368.9	SVC
31	179.5	SVC	0.0	SVC	0.699	SVC	369.2	SVC
32	179.7	SVC	0.0	SVC	0.698	SVC	369.2	SVC
33	161.1	SVC	0.0	SVC	0.696	SVC	369.4	SVC
34	153.0	SVC	0.0	SVC	0.699	SVC	369.5	SVC
35	149.2	SVC	0.0	SVC	0.698	SVC	370.0	SVC
36	161.7	SVC	0.0	SVC	0.699	SVC	370.0	SVC
37	219.9	SVC	0.0	SVC	0.703	SVC	370.0	SVC
38	267.9	SVC	0.0	SVC	0.702	SVC	370.2	SVC
39	228.2	SVC	0.0	SVC	0.702	SVC	370.6	SVC
40	224.1	SVC	0.0	SVC	0.704	SVC	370.8	SVC
41	237.6	SVC	0.0	SVC	0.706	SVC	371.1	SVC
42	206.5	SVC	0.0	SVC	0.700	SVC	371.2	SVC
43	184.6	SVC	0.0	SVC	0.704	SVC	370.9	SVC
44	165.2	SVC	0.0	SVC	0.696	SVC	370.9	SVC
45	199.4	SVC	0.0	SVC	0.699	SVC	371.0	SVC
46	220.0	SVC	0.0	SVC	0.698	SVC	370.9	SVC
47	268.0	SVC	0.0	SVC	0.698	SVC	371.0	SVC
48	218.2	SVC	0.0	SVC	0.694	SVC	371.0	SVC
49	224.1	SVC	0.0	SVC	0.697	SVC	371.3	SVC
50	226.7	SVC	0.0	SVC	0.696	SVC	371.3	SVC
51	218.4	SVC	0.0	SVC	0.698	SVC	371.6	SVC
52	351.2	SVC	0.0	SVC	0.704	SVC	371.9	SVC
53	270.3	SVC	0.0	SVC	0.697	SVC	372.0	SVC
54	209.9	SVC	0.0	SVC	0.703	SVC	372.1	SVC
55	259.3	SVC	0.0	SVC	0.701	SVC	372.4	SVC
56	419.5	SVC	0.0	SVC	0.705	SVC	372.5	SVC
57	431.0	SVC	0.0	SVC	0.698	SVC	372.5	SVC
58	310.8	SVC	0.0	SVC	0.696	SVC	372.5	SVC
59	174.4	SVC	0.0	SVC	0.699	SVC	372.5	SVC

Explanation for Status Code

SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/26/2013, Hour 10:00

Minute	PROCESS 1-Min	Stat	OPACITY % 1-Min	Stat	O2 % 1-Min	Stat	NOX PPM 1-Min	Stat	NH3 PPM 1-Min	Stat
0	1.00	SVC	1.3	SVC	4.9	SVC	21.8	SVC	1.3	SVC
1	1.00	SVC	1.4	SVC	4.6	SVC	22.0	SVC	1.2	SVC
2	1.00	SVC	1.4	SVC	4.6	SVC	20.5	SVC	3.8	SVC
3	1.00	SVC	1.4	SVC	4.7	SVC	20.7	SVC	4.7	SVC
4	1.00	SVC	1.5	SVC	5.0	SVC	21.5	SVC	4.8	SVC
5	1.00	SVC	1.5	SVC	5.1	SVC	22.2	SVC	3.4	SVC
6	1.00	SVC	1.3	SVC	4.9	SVC	23.0	SVC	1.4	SVC
7	1.00	SVC	1.3	SVC	4.9	SVC	22.9	SVC	2.2	SVC
8	1.00	SVC	1.3	SVC	5.1	SVC	22.4	SVC	3.1	SVC
9	1.00	SVC	1.3	SVC	4.9	SVC	22.7	SVC	2.8	SVC
10	1.00	SVC	1.6	SVC	4.6	SVC	22.6	SVC	2.5	SVC
11	1.00	SVC	1.8	SVC	4.5	SVC	23.0	SVC	2.6	SVC
12	1.00	SVC	1.6	SVC	4.7	SVC	22.6	SVC	4.4	SVC
13	1.00	SVC	1.5	SVC	5.0	SVC	22.7	SVC	5.7	SVC
14	1.00	SVC	1.3	SVC	5.1	SVC	24.0	SVC	4.6	SVC
15	1.00	SVC	1.3	SVC	5.1	SVC	25.2	SVC	2.9	SVC
16	1.00	SVC	1.3	SVC	5.0	SVC	25.6	SVC	1.8	SVC
17	1.00	SVC	1.3	SVC	5.0	SVC	25.4	SVC	0.9	SVC
18	1.00	SVC	1.3	SVC	5.3	SVC	24.4	SVC	2.1	SVC
19	1.00	SVC	1.3	SVC	5.3	SVC	23.3	SVC	4.4	SVC
20	1.00	SVC	1.4	SVC	4.9	SVC	24.5	SVC	4.1	SVC
21	1.00	SVC	1.6	SVC	4.9	SVC	25.3	SVC	4.3	SVC
22	1.00	SVC	1.4	SVC	5.0	SVC	25.6	SVC	2.6	SVC
23	1.00	SVC	1.2	SVC	5.4	SVC	27.1	SVC	1.4	SVC
24	1.00	SVC	1.1	SVC	5.4	SVC	25.9	SVC	2.1	SVC
25	1.00	SVC	1.1	SVC	5.1	SVC	26.3	SVC	2.1	SVC
26	1.00	SVC	1.1	SVC	5.0	SVC	25.9	SVC	1.9	SVC
27	1.00	SVC	1.1	SVC	5.2	SVC	25.8	SVC	1.9	SVC
28	1.00	SVC	1.1	SVC	5.1	SVC	25.3	SVC	2.8	SVC
29	1.00	SVC	1.2	SVC	5.1	SVC	25.1	SVC	3.9	SVC
30	1.00	SVC	1.2	SVC	4.8	SVC	25.4	SVC	4.2	SVC
31	1.00	SVC	1.1	SVC	4.7	SVC	25.9	SVC	4.0	SVC
32	1.00	SVC	1.1	SVC	5.1	SVC	26.7	SVC	3.6	SVC
33	1.00	SVC	0.9	SVC	5.1	SVC	27.7	SVC	0.9	SVC
34	1.00	SVC	0.9	SVC	5.0	SVC	27.9	SVC	1.1	SVC
35	1.00	SVC	1.0	SVC	4.8	SVC	26.9	SVC	2.3	SVC
36	1.00	SVC	1.0	SVC	4.9	SVC	27.2	SVC	2.8	SVC
37	1.00	SVC	1.1	SVC	5.0	SVC	27.0	SVC	4.1	SVC
38	1.00	SVC	1.1	SVC	5.3	SVC	28.2	SVC	2.8	SVC
39	1.00	SVC	0.9	SVC	5.2	SVC	28.8	SVC	0.8	SVC
40	1.00	SVC	1.0	SVC	5.0	SVC	29.0	SVC	0.9	SVC
41	1.00	SVC	1.0	SVC	5.1	SVC	27.9	SVC	3.3	SVC
42	1.00	SVC	1.2	SVC	5.2	SVC	28.3	SVC	3.3	SVC
43	1.00	SVC	1.2	SVC	5.4	SVC	28.9	SVC	4.8	SVC
44	1.00	SVC	1.2	SVC	5.6	SVC	29.5	SVC	2.8	SVC
45	1.00	SVC	1.0	SVC	5.3	SVC	31.4	SVC	0.3	SVC
46	1.00	SVC	1.0	SVC	5.2	SVC	29.8	SVC	1.0	SVC
47	1.00	SVC	1.0	SVC	5.5	SVC	28.3	SVC	3.6	SVC
48	1.00	SVC	0.9	SVC	5.5	SVC	29.6	SVC	1.1	SVC
49	1.00	SVC	1.0	SVC	5.2	SVC	30.0	SVC	0.7	SVC
50	1.00	SVC	1.0	SVC	5.1	SVC	28.8	SVC	2.6	SVC
51	1.00	SVC	1.1	SVC	5.1	SVC	29.1	SVC	3.5	SVC
52	1.00	SVC	1.2	SVC	4.9	SVC	29.6	SVC	2.8	SVC
53	1.00	SVC	1.1	SVC	4.9	SVC	30.1	SVC	3.0	SVC
54	1.00	SVC	1.1	SVC	4.9	SVC	30.2	SVC	3.6	SVC
55	1.00	SVC	1.1	SVC	5.0	SVC	31.0	SVC	2.2	SVC
56	1.00	SVC	1.0	SVC	5.1	SVC	31.5	SVC	0.6	SVC
57	1.00	SVC	1.1	SVC	5.1	SVC	30.6	SVC	1.8	SVC
58	1.00	SVC	1.2	SVC	5.1	SVC	29.9	SVC	4.2	SVC
59	1.00	SVC	1.2	SVC	5.1	SVC	31.1	SVC	2.6	SVC

Explanation for Status Code

SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/26/2013, Hour 10:00

Minute	CO PPM 1-Min	Stat	SO2 PPM 1-Min	Stat	DELTA P IWC 1-Min	Stat	TEMP deg F 1-Min	Stat
0	234.4	SVC	0.0	SVC	0.696	SVC	372.6	SVC
1	375.4	SVC	0.0	SVC	0.695	SVC	372.8	SVC
2	511.8	MOR	0.0	SVC	0.698	SVC	373.0	SVC
3	465.7	SVC	0.0	SVC	0.698	SVC	373.0	SVC
4	354.2	SVC	0.0	SVC	0.694	SVC	373.1	SVC
5	243.6	SVC	0.0	SVC	0.700	SVC	373.2	SVC
6	247.9	SVC	0.0	SVC	0.701	SVC	373.3	SVC
7	284.0	SVC	0.0	SVC	0.866	SVC	373.7	SVC
8	234.7	SVC	0.0	SVC	0.896	SVC	373.3	SVC
9	197.4	SVC	0.0	SVC	0.911	SVC	373.7	SVC
10	282.7	SVC	0.0	SVC	0.946	SVC	373.8	SVC
11	511.8	MOR	0.0	SVC	0.950	SVC	374.2	SVC
12	511.8	MOR	0.0	SVC	0.957	SVC	374.4	SVC
13	363.3	SVC	0.0	SVC	0.942	SVC	374.5	SVC
14	216.1	SVC	0.0	SVC	0.936	SVC	374.7	SVC
15	182.2	SVC	0.0	SVC	0.914	SVC	374.5	SVC
16	230.1	SVC	0.0	SVC	0.920	SVC	374.9	SVC
17	309.9	SVC	0.0	SVC	0.916	SVC	374.7	SVC
18	225.5	SVC	0.0	SVC	0.931	SVC	374.4	SVC
19	145.2	SVC	0.0	SVC	0.942	SVC	374.4	SVC
20	160.1	SVC	0.0	SVC	0.947	SVC	374.9	SVC
21	237.0	SVC	0.0	SVC	0.950	SVC	375.0	SVC
22	401.1	SVC	0.0	SVC	0.925	SVC	375.0	SVC
23	237.4	SVC	0.0	SVC	0.902	SVC	375.0	SVC
24	144.7	SVC	0.0	SVC	0.906	SVC	374.9	SVC
25	148.8	SVC	0.0	SVC	0.898	SVC	374.9	SVC
26	233.7	SVC	0.0	SVC	0.875	SVC	374.7	SVC
27	267.9	SVC	0.0	SVC	0.890	SVC	374.4	SVC
28	228.0	SVC	0.0	SVC	0.892	SVC	374.8	SVC
29	196.2	SVC	0.0	SVC	0.898	SVC	374.7	SVC
30	264.0	SVC	0.1	SVC	0.930	SVC	374.9	SVC
31	404.5	SVC	0.1	SVC	0.903	SVC	375.0	SVC
32	411.6	SVC	0.0	SVC	0.900	SVC	374.7	SVC
33	279.5	SVC	0.0	SVC	0.904	SVC	374.4	SVC
34	224.6	SVC	0.0	SVC	0.901	SVC	374.5	SVC
35	288.0	SVC	0.0	SVC	0.918	SVC	374.7	SVC
36	399.0	SVC	0.0	SVC	0.920	SVC	374.5	SVC
37	286.3	SVC	0.0	SVC	0.902	SVC	374.7	SVC
38	289.0	SVC	0.0	SVC	0.910	SVC	374.8	SVC
39	236.8	SVC	0.0	SVC	0.914	SVC	374.9	SVC
40	222.9	SVC	0.1	SVC	0.912	SVC	375.0	SVC
41	241.7	SVC	0.1	SVC	0.924	SVC	375.0	SVC
42	218.9	SVC	0.1	SVC	0.944	SVC	375.0	SVC
43	178.0	SVC	0.0	SVC	0.961	SVC	375.1	SVC
44	204.1	SVC	0.0	SVC	0.970	SVC	375.1	SVC
45	249.8	SVC	0.0	SVC	0.958	SVC	375.1	SVC
46	244.3	SVC	0.0	SVC	0.946	SVC	375.0	SVC
47	194.6	SVC	0.0	SVC	0.940	SVC	375.0	SVC
48	178.6	SVC	0.0	SVC	0.932	SVC	374.7	SVC
49	184.5	SVC	0.0	SVC	0.938	SVC	374.5	SVC
50	226.7	SVC	0.0	SVC	0.945	SVC	374.5	SVC
51	259.5	SVC	0.0	SVC	0.953	SVC	374.8	SVC
52	394.6	SVC	0.0	SVC	0.976	SVC	375.0	SVC
53	462.0	SVC	0.0	SVC	0.968	SVC	375.0	SVC
54	459.3	SVC	0.0	SVC	0.961	SVC	375.0	SVC
55	461.8	SVC	0.0	SVC	0.949	SVC	375.0	SVC
56	384.3	SVC	0.0	SVC	0.930	SVC	375.0	SVC
57	310.8	SVC	0.0	SVC	0.935	SVC	375.0	SVC
58	275.5	SVC	0.0	SVC	0.940	SVC	374.8	SVC
59	309.2	SVC	0.1	SVC	0.957	SVC	374.7	SVC

Explanation for Status Code

MOR = MONITOR OUT OF RANGE
SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/26/2013, Hour 11:00

	PROCESS		OPACITY %		O2 %		NOX PPM		NH3 PPM	
Minute	1-Min	Stat	1-Min	Stat	1-Min	Stat	1-Min	Stat	1-Min	Stat
0	1.00	SVC	1.3	SVC	4.8	SVC	32.0	SVC	0.7	SVC
1	1.00	SVC	1.3	SVC	4.8	SVC	31.9	SVC	1.9	SVC
2	1.00	SVC	1.3	SVC	5.0	SVC	31.3	SVC	3.6	SVC
3	1.00	SVC	1.2	SVC	5.4	SVC	32.4	SVC	1.5	SVC
4	1.00	SVC	1.3	SVC	6.0	SVC	32.8	SVC	1.6	SVC
5	1.00	SVC	1.0	SVC	5.8	SVC	31.6	SVC	0.4	SVC
6	1.00	SVC	1.2	SVC	5.3	SVC	33.3	SVC	0.0	SVC
7	1.00	SVC	1.1	SVC	5.3	SVC	30.5	SVC	0.0	SVC
8	1.00	SVC	1.3	SVC	5.1	SVC	29.0	SVC	3.0	SVC
9	1.00	SVC	1.3	SVC	5.2	SVC	29.0	SVC	5.8	SVC
10	1.00	SVC	1.3	SVC	5.5	SVC	29.7	SVC	4.9	SVC
11	1.00	SVC	1.1	SVC	5.4	SVC	32.1	SVC	0.9	SVC
12	1.00	SVC	1.0	SVC	5.7	SVC	31.7	SVC	0.3	SVC
13	1.00	SVC	1.0	SVC	5.7	SVC	28.9	SVC	2.9	SVC
14	1.00	SVC	1.1	SVC	5.7	SVC	30.3	SVC	1.3	SVC
15	1.00	SVC	1.1	SVC	5.7	SVC	30.1	SVC	0.0	SVC
16	1.00	SVC	1.1	SVC	5.5	SVC	29.9	SVC	0.0	SVC
17	1.00	SVC	1.2	SVC	5.4	SVC	27.6	SVC	3.1	SVC
18	1.00	SVC	1.0	SVC	5.8	SVC	28.1	SVC	2.9	SVC
19	1.00	SVC	1.0	SVC	5.5	SVC	28.5	SVC	0.3	SVC
20	1.00	SVC	1.0	SVC	5.3	SVC	27.7	SVC	1.4	SVC
21	1.00	SVC	1.2	SVC	4.8	SVC	26.8	SVC	6.9	SVC
22	1.00	SVC	1.1	SVC	4.5	SVC	27.1	SVC	26.7	SVC
23	1.00	SVC	1.2	SVC	4.2	SVC	31.0	SVC	41.4	SVC
24	1.00	SVC	1.3	SVC	4.0	SVC	50.9	SVC	46.2	SVC
25	1.00	SVC	1.3	SVC	4.1	SVC	60.0	SVC	44.0	SVC
26	1.00	SVC	1.2	SVC	4.3	SVC	84.7	SVC	16.1	SVC
27	1.00	SVC	1.1	SVC	4.3	SVC	91.3	SVC	4.3	SVC
28	1.00	SVC	1.1	SVC	4.3	SVC	86.4	SVC	9.0	SVC
29	1.00	SVC	1.2	SVC	4.2	SVC	90.6	SVC	5.4	SVC
30	1.00	SVC	1.9	SVC	4.0	SVC	90.7	SVC	3.0	SVC
31	1.00	SVC	3.0	SVC	3.6	SVC	90.5	SVC	3.8	SVC
32	1.00	SVC	3.2	SVC	3.2	SVC	88.9	SVC	4.1	SVC
33	1.00	SVC	2.5	SVC	3.1	SVC	87.6	SVC	2.4	SVC
34	1.00	SVC	2.0	SVC	3.4	SVC	86.2	SVC	10.5	SVC
35	1.00	SVC	2.0	SVC	3.3	SVC	82.7	SVC	14.4	SVC
36	1.00	SVC	1.4	SVC	3.7	SVC	84.5	SVC	12.2	SVC
37	1.00	SVC	1.5	SVC	3.9	SVC	84.0	SVC	14.6	SVC
38	1.00	SVC	1.7	SVC	3.3	SVC	85.8	SVC	9.9	SVC
39	1.00	SVC	2.0	SVC	3.2	SVC	88.8	SVC	1.6	SVC
40	1.00	SVC	2.1	SVC	3.1	SVC	88.3	SVC	3.2	SVC
41	1.00	SVC	2.1	SVC	2.8	SVC	81.1	SVC	10.9	SVC
42	1.00	SVC	1.7	SVC	3.2	SVC	83.2	SVC	14.8	SVC
43	1.00	SVC	2.0	SVC	3.7	SVC	83.1	SVC	19.3	SVC
44	1.00	SVC	3.5	SVC	3.3	SVC	82.7	SVC	17.6	SVC
45	1.00	SVC	4.2	SVC	3.5	SVC	88.5	SVC	5.5	SVC
46	1.00	SVC	3.4	SVC	3.3	SVC	90.8	SVC	0.6	SVC
47	1.00	SVC	2.0	SVC	3.3	SVC	83.3	SVC	2.6	SVC
48	1.00	SVC	2.1	SVC	3.3	SVC	78.4	SVC	13.6	SVC
49	1.00	SVC	1.5	SVC	3.6	SVC	73.7	SVC	25.6	SVC
50	1.00	SVC	1.5	SVC	3.5	SVC	80.9	SVC	20.5	SVC
51	1.00	SVC	2.0	SVC	3.4	SVC	85.6	SVC	13.6	SVC
52	1.00	SVC	13.2	SVC	3.5	SVC	86.7	SVC	12.9	SVC
53	1.00	SVC	45.9	SVC	3.8	SVC	89.3	SVC	8.9	SVC
54	1.00	SVC	2.6	SVC	3.7	SVC	89.2	SVC	7.7	SVC
55	1.00	SVC	2.2	SVC	3.8	SVC	87.2	SVC	9.7	SVC
56	1.00	SVC	1.5	SVC	4.0	SVC	88.3	SVC	6.2	SVC
57	1.00	SVC	1.1	SVC	4.3	SVC	87.8	SVC	3.7	SVC
58	1.00	SVC	1.6	SVC	3.9	SVC	90.0	SVC	1.8	SVC
59	1.00	SVC	1.3	SVC	4.5	SVC	86.9	SVC	0.0	SVC

Explanation for Status Code

SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/26/2013, Hour 11:00

Minute	CO PPM 1-Min	Stat	SO2 PPM 1-Min	Stat	DELTA P IWC 1-Min	Stat	TEMP deg F 1-Min	Stat
0	338.7	SVC	0.1	SVC	0.976	SVC	375.0	SVC
1	432.5	SVC	0.0	SVC	0.988	SVC	375.2	SVC
2	395.3	SVC	0.0	SVC	0.973	SVC	375.1	SVC
3	344.1	SVC	0.1	SVC	0.972	SVC	375.0	SVC
4	234.8	SVC	0.1	SVC	0.950	SVC	374.8	SVC
5	290.5	SVC	0.1	SVC	0.935	SVC	374.4	SVC
6	212.7	SVC	0.1	SVC	0.936	SVC	374.4	SVC
7	283.9	SVC	0.0	SVC	0.946	SVC	374.3	SVC
8	222.4	SVC	0.0	SVC	0.969	SVC	374.4	SVC
9	239.7	SVC	0.0	SVC	0.976	SVC	374.4	SVC
10	244.2	SVC	0.0	SVC	0.969	SVC	374.4	SVC
11	262.3	SVC	0.0	SVC	0.962	SVC	374.3	SVC
12	193.7	SVC	0.0	SVC	0.954	SVC	374.0	SVC
13	170.6	SVC	0.0	SVC	0.941	SVC	374.0	SVC
14	208.0	SVC	0.0	SVC	0.949	SVC	373.8	SVC
15	267.3	SVC	0.0	SVC	0.959	SVC	373.8	SVC
16	256.7	SVC	0.0	SVC	0.938	SVC	373.8	SVC
17	301.5	SVC	0.0	SVC	0.949	SVC	373.5	SVC
18	294.5	SVC	0.0	SVC	0.925	SVC	373.1	SVC
19	263.0	SVC	0.0	SVC	0.933	SVC	372.9	SVC
20	275.3	SVC	0.0	SVC	0.902	SVC	372.7	SVC
21	305.2	SVC	0.0	SVC	0.816	SVC	373.1	SVC
22	385.9	SVC	0.0	SVC	0.802	SVC	374.7	SVC
23	447.8	SVC	0.1	SVC	0.810	SVC	376.4	SVC
24	431.6	SVC	0.3	SVC	0.815	SVC	377.8	SVC
25	457.3	SVC	0.4	SVC	0.819	SVC	378.7	SVC
26	422.5	SVC	0.5	SVC	0.802	SVC	379.4	SVC
27	320.4	SVC	0.6	SVC	0.795	SVC	380.0	SVC
28	361.6	SVC	0.8	SVC	0.772	SVC	380.0	SVC
29	419.4	SVC	0.8	SVC	0.767	SVC	380.5	SVC
30	488.0	SVC	0.8	SVC	0.782	SVC	380.8	SVC
31	511.8	MOR	0.6	SVC	0.795	SVC	381.4	SVC
32	511.8	MOR	0.6	SVC	0.833	SVC	381.9	SVC
33	511.8	MOR	0.6	SVC	0.824	SVC	382.3	SVC
34	511.8	MOR	0.6	SVC	0.831	SVC	382.5	SVC
35	511.8	MOR	0.6	SVC	0.838	SVC	382.5	SVC
36	511.8	MOR	0.6	SVC	0.796	SVC	382.5	SVC
37	511.8	MOR	0.6	SVC	0.798	SVC	382.0	SVC
38	511.8	MOR	0.6	SVC	0.819	SVC	382.4	SVC
39	511.8	MOR	0.6	SVC	0.813	SVC	382.6	SVC
40	511.8	MOR	0.6	SVC	0.838	SVC	383.0	SVC
41	511.8	MOR	0.5	SVC	0.843	SVC	383.2	SVC
42	511.8	MOR	0.5	SVC	0.816	SVC	383.2	SVC
43	511.8	MOR	0.5	SVC	0.817	SVC	383.0	SVC
44	511.8	MOR	0.6	SVC	0.820	SVC	383.1	SVC
45	511.8	MOR	0.6	SVC	0.813	SVC	383.1	SVC
46	511.8	MOR	0.6	SVC	0.813	SVC	383.1	SVC
47	511.8	MOR	0.5	SVC	0.828	SVC	383.1	SVC
48	511.8	MOR	0.5	SVC	0.818	SVC	383.1	SVC
49	511.8	MOR	0.5	SVC	0.797	SVC	382.7	SVC
50	511.8	MOR	0.6	SVC	0.815	SVC	382.6	SVC
51	511.8	MOR	0.5	SVC	0.807	SVC	382.8	SVC
52	511.8	MOR	0.5	SVC	0.781	SVC	382.8	SVC
53	511.8	MOR	0.5	SVC	0.802	SVC	382.7	SVC
54	511.8	MOR	0.6	SVC	0.785	SVC	382.6	SVC
55	511.8	MOR	0.6	SVC	0.781	SVC	382.5	SVC
56	511.8	MOR	0.6	SVC	0.786	SVC	382.1	SVC
57	511.8	MOR	0.6	SVC	0.803	SVC	382.1	SVC
58	511.8	MOR	0.6	SVC	0.820	SVC	381.1	SVC
59	511.8	MOR	0.6	SVC	0.872	SVC	376.6	SVC

Explanation for Status Code

MOR = MONITOR OUT OF RANGE
SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/26/2013, Hour 12:00

	PROCESS		OPACITY %		O2 %		NOX PPM		NH3 PPM	
Minute	1-Min	Stat	1-Min	Stat	1-Min	Stat	1-Min	Stat	1-Min	Stat
0	1.00	SVC	1.4	SVC	4.4	SVC	73.8	SVC	0.0	SVC
1	1.00	SVC	1.1	SVC	4.5	SVC	56.8	SVC	0.0	SVC
2	1.00	SVC	1.1	SVC	4.5	SVC	16.4	SVC	5.6	SVC
3	1.00	SVC	1.2	SVC	4.6	SVC	14.4	SVC	15.4	SVC
4	1.00	SVC	1.1	SVC	4.4	SVC	16.8	SVC	15.0	SVC
5	1.00	SVC	1.1	SVC	4.6	SVC	23.4	SVC	11.7	SVC
6	1.00	SVC	1.3	SVC	4.6	SVC	26.6	SVC	10.0	SVC
7	1.00	SVC	1.1	SVC	4.7	SVC	28.6	SVC	7.0	SVC
8	1.00	SVC	1.2	SVC	4.9	SVC	31.2	SVC	5.9	SVC
9	1.00	SVC	1.0	SVC	5.1	SVC	31.5	SVC	7.4	SVC
10	1.00	SVC	1.0	SVC	5.1	SVC	33.2	SVC	5.4	SVC
11	1.00	SVC	0.8	SVC	5.4	SVC	36.7	SVC	0.9	SVC
12	1.00	SVC	0.8	SVC	5.3	SVC	34.8	SVC	0.4	SVC
13	1.00	SVC	0.9	SVC	5.0	SVC	33.6	SVC	0.3	SVC
14	1.00	SVC	0.8	SVC	5.0	SVC	32.8	SVC	0.4	SVC
15	1.00	SVC	0.8	SVC	5.1	SVC	31.7	SVC	1.5	SVC
16	1.00	SVC	0.8	SVC	4.9	SVC	31.5	SVC	1.6	SVC
17	1.00	SVC	0.8	SVC	5.0	SVC	31.7	SVC	0.3	SVC
18	1.00	SVC	0.7	SVC	5.2	SVC	30.9	SVC	0.0	SVC
19	1.00	SVC	0.6	SVC	5.4	SVC	28.8	SVC	1.6	SVC
20	1.00	SVC	0.5	SVC	5.5	SVC	29.4	SVC	0.4	SVC
21	1.00	SVC	0.6	SVC	5.5	SVC	28.7	SVC	0.0	SVC
22	1.00	SVC	0.7	SVC	4.9	SVC	26.1	SVC	0.0	SVC
23	1.00	SVC	0.8	SVC	4.9	SVC	24.1	SVC	2.7	SVC
24	1.00	SVC	0.6	SVC	5.2	SVC	24.2	SVC	4.1	SVC
25	1.00	SVC	0.5	SVC	5.5	SVC	24.8	SVC	3.8	SVC
26	1.00	SVC	0.6	SVC	5.4	SVC	25.2	SVC	2.6	SVC
27	1.00	SVC	0.6	SVC	5.2	SVC	26.4	SVC	0.2	SVC
28	1.00	SVC	0.7	SVC	5.6	SVC	25.3	SVC	0.6	SVC
29	1.00	SVC	0.8	SVC	5.3	SVC	23.6	SVC	2.5	SVC
30	1.00	SVC	0.9	SVC	5.1	SVC	23.7	SVC	2.7	SVC
31	1.00	SVC	1.0	SVC	5.1	SVC	23.9	SVC	2.4	SVC
32	1.00	SVC	1.0	SVC	5.2	SVC	23.4	SVC	3.1	SVC
33	1.00	SVC	1.2	SVC	5.4	SVC	23.7	SVC	3.5	SVC
34	1.00	SVC	0.9	SVC	5.7	SVC	23.9	SVC	1.7	SVC
35	1.00	SVC	0.8	SVC	6.0	SVC	23.7	SVC	1.0	SVC
36	1.00	SVC	0.9	SVC	5.8	SVC	22.4	SVC	1.4	SVC
37	1.00	SVC	0.8	SVC	5.8	SVC	21.5	SVC	1.9	SVC
38	1.00	SVC	0.9	SVC	5.7	SVC	20.7	SVC	2.6	SVC
39	1.00	SVC	1.0	SVC	5.4	SVC	19.5	SVC	4.8	SVC
40	1.00	SVC	1.1	SVC	5.3	SVC	19.4	SVC	6.3	SVC
41	1.00	SVC	1.0	SVC	5.4	SVC	20.6	SVC	4.2	SVC
42	1.00	SVC	1.0	SVC	5.4	SVC	21.4	SVC	2.7	SVC
43	1.00	SVC	1.2	SVC	5.3	SVC	20.5	SVC	3.6	SVC
44	1.00	SVC	1.3	SVC	5.6	SVC	20.9	SVC	1.0	SVC
45	1.00	SVC	1.1	SVC	5.3	SVC	20.5	SVC	1.4	SVC
46	1.00	SVC	1.1	SVC	5.2	SVC	19.4	SVC	3.1	SVC
47	1.00	SVC	1.1	SVC	5.4	SVC	18.8	SVC	4.3	SVC
48	1.00	SVC	1.2	SVC	5.5	SVC	19.1	SVC	4.9	SVC
49	1.00	SVC	1.2	SVC	5.7	SVC	19.8	SVC	4.7	SVC
50	1.00	SVC	1.1	SVC	5.6	SVC	20.2	SVC	3.0	SVC
51	1.00	SVC	1.2	SVC	5.5	SVC	20.2	SVC	3.7	SVC
52	1.00	SVC	1.4	SVC	5.4	SVC	18.9	SVC	5.7	SVC
53	1.00	SVC	1.5	SVC	5.5	SVC	20.4	SVC	5.2	SVC
54	1.00	SVC	1.4	SVC	5.6	SVC	20.8	SVC	5.7	SVC
55	1.00	SVC	1.2	SVC	5.9	SVC	21.4	SVC	3.6	SVC
56	1.00	SVC	1.1	SVC	6.2	SVC	22.5	SVC	2.3	SVC
57	1.00	SVC	1.0	SVC	6.2	SVC	21.0	SVC	2.8	SVC
58	1.00	SVC	1.1	SVC	5.8	SVC	21.0	SVC	4.4	SVC
59	1.00	SVC	1.1	SVC	5.9	SVC	20.5	SVC	6.5	SVC

Explanation for Status Code

SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/26/2013, Hour 12:00

Minute	CO PPM 1-Min	Stat	SO2 PPM 1-Min	Stat	DELTA P IWC 1-Min	Stat	TEMP deg F 1-Min	Stat
0	511.8	MOR	0.4	SVC	0.889	SVC	370.4	SVC
1	511.8	MOR	0.2	SVC	0.887	SVC	367.5	SVC
2	511.8	MOR	0.0	SVC	0.883	SVC	366.4	SVC
3	511.8	MOR	0.0	SVC	0.900	SVC	365.7	SVC
4	511.8	MOR	0.0	SVC	0.898	SVC	365.4	SVC
5	511.8	MOR	0.0	SVC	0.910	SVC	365.3	SVC
6	511.8	MOR	0.0	SVC	0.924	SVC	365.3	SVC
7	511.8	MOR	0.0	SVC	0.938	SVC	365.3	SVC
8	511.8	MOR	0.0	SVC	0.945	SVC	365.6	SVC
9	466.5	SVC	0.1	SVC	0.935	SVC	365.3	SVC
10	400.4	SVC	0.1	SVC	0.918	SVC	365.1	SVC
11	422.3	SVC	0.1	SVC	0.898	SVC	365.0	SVC
12	312.8	SVC	0.1	SVC	0.907	SVC	365.0	SVC
13	403.4	SVC	0.1	SVC	0.911	SVC	365.0	SVC
14	511.8	MOR	0.1	SVC	0.912	SVC	365.0	SVC
15	444.5	SVC	0.1	SVC	0.926	SVC	365.0	SVC
16	462.1	SVC	0.1	SVC	0.917	SVC	365.0	SVC
17	511.8	MOR	0.0	SVC	0.920	SVC	365.0	SVC
18	470.7	SVC	0.0	SVC	0.910	SVC	365.0	SVC
19	369.9	SVC	0.0	SVC	0.910	SVC	365.0	SVC
20	437.8	SVC	0.0	SVC	0.892	SVC	364.7	SVC
21	484.1	SVC	0.0	SVC	0.920	SVC	364.6	SVC
22	481.8	SVC	0.0	SVC	0.952	SVC	365.0	SVC
23	511.8	MOR	0.0	SVC	0.935	SVC	365.0	SVC
24	511.8	MOR	0.0	SVC	0.949	SVC	365.2	SVC
25	510.7	MOR	0.0	SVC	0.928	SVC	365.2	SVC
26	481.2	SVC	0.0	SVC	0.929	SVC	365.1	SVC
27	511.8	MOR	0.0	SVC	0.921	SVC	365.0	SVC
28	446.3	SVC	0.0	SVC	0.932	SVC	365.0	SVC
29	388.3	SVC	0.0	SVC	0.945	SVC	365.0	SVC
30	443.9	SVC	0.0	SVC	0.952	SVC	365.2	SVC
31	458.6	SVC	0.0	SVC	0.976	SVC	365.5	SVC
32	458.0	SVC	0.0	SVC	0.973	SVC	365.6	SVC
33	425.3	SVC	0.0	SVC	0.977	SVC	366.0	SVC
34	460.7	SVC	0.0	SVC	0.945	SVC	366.0	SVC
35	311.6	SVC	0.0	SVC	0.914	SVC	365.6	SVC
36	233.9	SVC	0.0	SVC	0.913	SVC	365.4	SVC
37	340.0	SVC	0.0	SVC	0.906	SVC	365.3	SVC
38	279.1	SVC	0.0	SVC	0.908	SVC	365.3	SVC
39	317.4	SVC	0.0	SVC	0.907	SVC	365.0	SVC
40	366.1	SVC	0.0	SVC	0.877	SVC	365.0	SVC
41	392.1	SVC	0.0	SVC	0.866	SVC	364.9	SVC
42	268.7	SVC	0.0	SVC	0.871	SVC	364.9	SVC
43	331.7	SVC	0.0	SVC	0.866	SVC	365.0	SVC
44	431.9	SVC	0.0	SVC	0.909	SVC	365.0	SVC
45	331.8	SVC	0.0	SVC	0.901	SVC	365.0	SVC
46	463.0	SVC	0.0	SVC	0.904	SVC	364.9	SVC
47	436.2	SVC	0.0	SVC	0.907	SVC	365.0	SVC
48	331.6	SVC	0.0	SVC	0.902	SVC	364.9	SVC
49	320.2	SVC	0.0	SVC	0.905	SVC	365.0	SVC
50	309.4	SVC	0.0	SVC	0.924	SVC	365.0	SVC
51	263.1	SVC	0.0	SVC	0.945	SVC	365.2	SVC
52	303.4	SVC	0.0	SVC	0.971	SVC	365.5	SVC
53	306.4	SVC	0.0	SVC	0.984	SVC	366.0	SVC
54	284.7	SVC	0.0	SVC	0.995	SVC	366.3	SVC
55	369.2	SVC	0.0	SVC	0.972	SVC	366.3	SVC
56	242.7	SVC	0.0	SVC	0.942	SVC	366.3	SVC
57	182.9	SVC	0.0	SVC	0.951	SVC	366.3	SVC
58	164.1	SVC	0.0	SVC	0.934	SVC	366.3	SVC
59	182.4	SVC	0.0	SVC	0.938	SVC	366.2	SVC

-------------------------------------Explanation for Status Code-------------------------------------

MOR = MONITOR OUT OF RANGE
SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/26/2013, Hour 13:00

	PROCESS		OPACITY %		O2 %		NOX PPM		NH3 PPM	
Minute	1-Min	Stat	1-Min	Stat	1-Min	Stat	1-Min	Stat	1-Min	Stat
0	1.00	SVC	1.3	SVC	5.7	SVC	21.7	SVC	5.8	SVC
1	1.00	SVC	1.2	SVC	5.7	SVC	23.5	SVC	2.4	SVC
2	1.00	SVC	1.1	SVC	5.8	SVC	22.9	SVC	3.8	SVC
3	1.00	SVC	1.1	SVC	6.0	SVC	22.6	SVC	4.6	SVC
4	1.00	SVC	1.1	SVC	5.9	SVC	23.3	SVC	3.5	SVC
5	1.00	SVC	1.2	SVC	6.1	SVC	23.4	SVC	3.6	SVC
6	1.00	SVC	1.0	SVC	6.0	SVC	23.6	SVC	1.8	SVC
7	1.00	SVC	1.1	SVC	5.6	SVC	24.0	SVC	2.0	SVC
8	1.00	SVC	1.2	SVC	5.5	SVC	22.2	SVC	5.3	SVC
9	1.00	SVC	1.2	SVC	5.8	SVC	23.0	SVC	6.1	SVC
10	1.00	SVC	1.2	SVC	6.0	SVC	23.9	SVC	4.5	SVC
11	1.00	SVC	1.1	SVC	6.4	SVC	25.0	SVC	2.2	SVC
12	1.00	SVC	1.1	SVC	6.2	SVC	24.9	SVC	0.3	SVC
13	1.00	SVC	1.1	SVC	6.1	SVC	24.4	SVC	1.5	SVC
14	1.00	SVC	1.1	SVC	6.0	SVC	22.4	SVC	4.2	SVC
15	1.00	SVC	1.2	SVC	6.2	SVC	23.2	SVC	4.6	SVC
16	1.00	SVC	1.2	SVC	6.4	SVC	23.4	SVC	3.5	SVC
17	1.00	SVC	1.1	SVC	6.4	SVC	24.4	SVC	0.8	SVC
18	1.00	SVC	1.0	SVC	6.4	SVC	23.6	SVC	0.9	SVC
19	1.00	SVC	1.1	SVC	6.1	SVC	22.4	SVC	3.0	SVC
20	1.00	SVC	1.1	SVC	6.2	SVC	22.1	SVC	4.3	SVC
21	1.00	SVC	1.2	SVC	6.2	SVC	22.7	SVC	4.1	SVC
22	1.00	SVC	1.3	SVC	6.1	SVC	23.5	SVC	4.2	SVC
23	1.00	SVC	1.3	SVC	5.8	SVC	22.9	SVC	4.6	SVC
24	1.00	SVC	1.3	SVC	5.8	SVC	23.6	SVC	6.6	SVC
25	1.00	SVC	1.1	SVC	6.0	SVC	23.0	SVC	8.3	SVC
26	1.00	SVC	1.1	SVC	5.8	SVC	25.9	SVC	6.0	SVC
27	1.00	SVC	1.3	SVC	5.6	SVC	27.2	SVC	4.1	SVC
28	1.00	SVC	1.2	SVC	5.6	SVC	27.1	SVC	4.0	SVC
29	1.00	SVC	1.2	SVC	5.5	SVC	28.4	SVC	3.6	SVC
30	1.00	SVC	1.3	SVC	5.4	SVC	28.1	SVC	4.7	SVC
31	1.00	SVC	1.3	SVC	5.5	SVC	28.6	SVC	5.3	SVC
32	1.00	SVC	1.3	SVC	5.6	SVC	29.9	SVC	4.1	SVC
33	1.00	SVC	1.3	SVC	5.6	SVC	30.7	SVC	2.2	SVC
34	1.00	SVC	1.3	SVC	5.3	SVC	31.2	SVC	0.5	SVC
35	1.00	SVC	1.3	SVC	5.3	SVC	29.4	SVC	2.8	SVC
36	1.00	SVC	1.3	SVC	5.2	SVC	29.1	SVC	4.9	SVC
37	1.00	SVC	1.4	SVC	5.1	SVC	30.0	SVC	3.7	SVC
38	1.00	SVC	1.5	SVC	5.3	SVC	30.8	SVC	2.8	SVC
39	1.00	SVC	1.4	SVC	5.3	SVC	31.0	SVC	0.8	SVC
40	1.00	SVC	1.4	SVC	5.2	SVC	31.3	SVC	0.9	SVC
41	1.00	SVC	1.4	SVC	5.4	SVC	29.9	SVC	4.0	SVC
42	1.00	SVC	1.4	SVC	5.5	SVC	30.4	SVC	4.1	SVC
43	1.00	SVC	1.5	SVC	5.6	SVC	31.3	SVC	2.3	SVC
44	1.00	SVC	1.4	SVC	5.7	SVC	31.0	SVC	1.2	SVC
45	1.00	SVC	1.3	SVC	5.5	SVC	30.8	SVC	0.2	SVC
46	1.00	SVC	1.3	SVC	5.6	SVC	30.5	SVC	1.0	SVC
47	1.00	SVC	1.3	SVC	5.6	SVC	28.1	SVC	3.1	SVC
48	1.00	SVC	1.3	SVC	5.7	SVC	28.7	SVC	2.6	SVC
49	1.00	SVC	1.4	SVC	5.7	SVC	28.6	SVC	2.2	SVC
50	1.00	SVC	1.4	SVC	5.5	SVC	28.6	SVC	1.9	SVC
51	1.00	SVC	1.4	SVC	5.5	SVC	28.1	SVC	4.3	SVC
52	1.00	SVC	1.3	SVC	5.6	SVC	26.9	SVC	6.5	SVC
53	1.00	SVC	1.2	SVC	5.6	SVC	29.2	SVC	4.4	SVC
54	1.00	SVC	1.2	SVC	5.6	SVC	29.8	SVC	2.7	SVC
55	1.00	SVC	1.1	SVC	5.7	SVC	30.1	SVC	1.3	SVC
56	1.00	SVC	1.1	SVC	5.5	SVC	29.6	SVC	0.4	SVC
57	1.00	SVC	1.1	SVC	5.3	SVC	27.7	SVC	2.4	SVC
58	1.00	SVC	1.3	SVC	5.2	SVC	26.6	SVC	6.8	SVC
59	1.00	SVC	1.3	SVC	5.4	SVC	27.9	SVC	7.1	SVC

Explanation for Status Code

SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/26/2013, Hour 13:00

Minute	CO PPM 1-Min	Stat	SO2 PPM 1-Min	Stat	DELTA P IWC 1-Min	Stat	TEMP deg F 1-Min	Stat
0	188.0	SVC	0.0	SVC	0.950	SVC	366.4	SVC
1	227.5	SVC	0.0	SVC	0.948	SVC	366.7	SVC
2	201.5	SVC	0.0	SVC	0.934	SVC	366.8	SVC
3	199.3	SVC	0.0	SVC	0.928	SVC	366.4	SVC
4	185.6	SVC	0.0	SVC	0.923	SVC	366.3	SVC
5	184.6	SVC	0.0	SVC	0.895	SVC	366.3	SVC
6	235.6	SVC	0.0	SVC	0.902	SVC	366.3	SVC
7	197.9	SVC	0.0	SVC	0.930	SVC	366.3	SVC
8	249.1	SVC	0.0	SVC	0.956	SVC	366.7	SVC
9	230.0	SVC	0.0	SVC	0.943	SVC	366.9	SVC
10	207.6	SVC	0.0	SVC	0.911	SVC	366.9	SVC
11	206.2	SVC	0.0	SVC	0.918	SVC	366.9	SVC
12	211.3	SVC	0.0	SVC	0.933	SVC	366.9	SVC
13	181.9	SVC	0.0	SVC	0.914	SVC	367.0	SVC
14	182.1	SVC	0.0	SVC	0.924	SVC	367.1	SVC
15	185.2	SVC	0.0	SVC	0.902	SVC	367.3	SVC
16	194.8	SVC	0.0	SVC	0.906	SVC	367.0	SVC
17	228.0	SVC	0.0	SVC	0.896	SVC	366.9	SVC
18	190.7	SVC	0.0	SVC	0.878	SVC	366.9	SVC
19	160.6	SVC	0.0	SVC	0.883	SVC	366.9	SVC
20	145.5	SVC	0.0	SVC	0.879	SVC	366.9	SVC
21	167.4	SVC	0.0	SVC	0.893	SVC	366.9	SVC
22	178.8	SVC	0.0	SVC	0.902	SVC	366.9	SVC
23	210.0	SVC	0.0	SVC	0.920	SVC	367.2	SVC
24	177.0	SVC	0.0	SVC	0.922	SVC	367.5	SVC
25	170.6	SVC	0.0	SVC	0.890	SVC	367.4	SVC
26	147.8	SVC	0.0	SVC	0.881	SVC	367.4	SVC
27	151.4	SVC	0.0	SVC	0.886	SVC	367.5	SVC
28	222.6	SVC	0.0	SVC	0.895	SVC	367.3	SVC
29	202.1	SVC	0.0	SVC	0.899	SVC	367.4	SVC
30	223.5	SVC	0.0	SVC	0.915	SVC	367.5	SVC
31	216.7	SVC	0.0	SVC	0.918	SVC	367.7	SVC
32	198.7	SVC	0.0	SVC	0.887	SVC	367.8	SVC
33	197.3	SVC	0.0	SVC	0.912	SVC	367.8	SVC
34	235.0	SVC	0.0	SVC	0.903	SVC	367.8	SVC
35	246.6	SVC	0.0	SVC	0.909	SVC	368.0	SVC
36	252.5	SVC	0.0	SVC	0.897	SVC	368.2	SVC
37	354.8	SVC	0.0	SVC	0.894	SVC	368.5	SVC
38	337.3	SVC	0.0	SVC	0.898	SVC	368.8	SVC
39	345.5	SVC	0.0	SVC	0.920	SVC	368.8	SVC
40	298.6	SVC	0.0	SVC	0.920	SVC	369.0	SVC
41	275.9	SVC	0.0	SVC	0.923	SVC	369.0	SVC
42	226.7	SVC	0.0	SVC	0.942	SVC	369.1	SVC
43	212.2	SVC	0.0	SVC	0.930	SVC	369.1	SVC
44	234.3	SVC	0.0	SVC	0.932	SVC	369.2	SVC
45	243.7	SVC	0.0	SVC	0.923	SVC	369.5	SVC
46	195.5	SVC	0.1	SVC	0.917	SVC	369.7	SVC
47	194.2	SVC	0.0	SVC	0.926	SVC	369.5	SVC
48	193.2	SVC	0.0	SVC	0.925	SVC	369.6	SVC
49	179.0	SVC	0.0	SVC	0.943	SVC	370.0	SVC
50	207.0	SVC	0.0	SVC	0.959	SVC	370.2	SVC
51	201.3	SVC	0.0	SVC	0.964	SVC	370.3	SVC
52	203.5	SVC	0.0	SVC	0.953	SVC	370.5	SVC
53	191.4	SVC	0.0	SVC	0.935	SVC	370.6	SVC
54	178.4	SVC	0.0	SVC	0.933	SVC	370.7	SVC
55	197.5	SVC	0.0	SVC	0.927	SVC	370.7	SVC
56	191.4	SVC	0.0	SVC	0.926	SVC	370.6	SVC
57	162.4	SVC	0.0	SVC	0.930	SVC	370.6	SVC
58	175.9	SVC	0.0	SVC	0.941	SVC	370.6	SVC
59	205.2	SVC	0.0	SVC	0.952	SVC	370.6	SVC

Explanation for Status Code

SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/26/2013, Hour 14:00

	PROCESS		OPACITY %		O2 %		NOX PPM		NH3 PPM	
Minute	1-Min	Stat	1-Min	Stat	1-Min	Stat	1-Min	Stat	1-Min	Stat
0	1.00	SVC	1.4	SVC	5.4	SVC	30.1	SVC	3.9	SVC
1	1.00	SVC	1.3	SVC	5.5	SVC	31.3	SVC	2.0	SVC
2	1.00	SVC	1.6	SVC	5.5	SVC	30.8	SVC	3.6	SVC
3	1.00	SVC	1.3	SVC	5.9	SVC	31.2	SVC	3.8	SVC
4	1.00	SVC	1.2	SVC	5.5	SVC	32.9	SVC	0.0	SVC
5	1.00	SVC	1.3	SVC	5.5	SVC	30.0	SVC	4.0	SVC
6	1.00	SVC	1.3	SVC	5.6	SVC	28.2	SVC	9.2	SVC
7	1.00	SVC	1.3	SVC	5.5	SVC	31.9	SVC	3.6	SVC
8	1.00	SVC	1.3	SVC	5.5	SVC	32.7	SVC	6.1	SVC
9	1.00	SVC	1.2	SVC	5.6	SVC	33.2	SVC	7.6	SVC
10	1.00	SVC	1.3	SVC	5.5	SVC	35.6	SVC	4.2	SVC
11	1.00	SVC	1.4	SVC	5.4	SVC	36.8	SVC	1.9	SVC
12	1.00	SVC	1.4	SVC	5.4	SVC	37.0	SVC	0.8	SVC
13	1.00	SVC	1.5	SVC	5.3	SVC	36.5	SVC	1.3	SVC
14	1.00	SVC	1.4	SVC	5.5	SVC	35.2	SVC	3.1	SVC
15	1.00	SVC	1.4	SVC	5.7	SVC	35.9	SVC	0.9	SVC
16	1.00	SVC	1.3	SVC	5.9	SVC	36.5	SVC	0.0	SVC
17	1.00	SVC	1.2	SVC	5.9	SVC	35.0	SVC	0.0	SVC
18	1.00	SVC	1.3	SVC	5.7	SVC	33.6	SVC	0.4	SVC
19	1.00	SVC	1.3	SVC	5.7	SVC	31.6	SVC	2.7	SVC
20	1.00	SVC	1.4	SVC	5.5	SVC	30.8	SVC	3.8	SVC
21	1.00	SVC	1.4	SVC	5.5	SVC	32.0	SVC	3.3	SVC
22	1.00	SVC	1.5	SVC	5.4	SVC	31.8	SVC	6.0	SVC
23	1.00	SVC	1.3	SVC	5.5	SVC	32.5	SVC	5.8	SVC
24	1.00	SVC	1.2	SVC	5.4	SVC	34.8	SVC	3.2	SVC
25	1.00	SVC	1.1	SVC	5.3	SVC	35.2	SVC	2.1	SVC
26	1.00	SVC	1.2	SVC	5.1	SVC	35.0	SVC	0.5	SVC
27	1.00	SVC	1.2	SVC	4.9	SVC	34.5	SVC	0.1	SVC
28	1.00	SVC	1.2	SVC	4.9	SVC	33.3	SVC	0.4	SVC
29	1.00	SVC	1.2	SVC	4.7	SVC	32.5	SVC	0.1	SVC
30	1.00	SVC	1.2	SVC	4.6	SVC	30.5	SVC	0.4	SVC
31	1.00	SVC	1.2	SVC	4.6	SVC	29.4	SVC	1.0	SVC
32	1.00	SVC	1.1	SVC	4.8	SVC	28.5	SVC	0.5	SVC
33	1.00	SVC	1.2	SVC	4.8	SVC	27.7	SVC	1.2	SVC
34	1.00	SVC	1.1	SVC	4.9	SVC	26.2	SVC	2.1	SVC
35	1.00	SVC	1.2	SVC	4.9	SVC	26.4	SVC	1.4	SVC
36	1.00	SVC	1.2	SVC	4.8	SVC	25.3	SVC	3.5	SVC
37	1.00	SVC	1.5	SVC	4.9	SVC	25.5	SVC	2.8	SVC
38	1.00	SVC	1.4	SVC	5.1	SVC	26.0	SVC	2.4	SVC
39	1.00	SVC	1.3	SVC	5.6	SVC	25.8	SVC	1.6	SVC
40	1.00	SVC	1.3	SVC	5.3	SVC	25.6	SVC	0.0	SVC
41	1.00	SVC	1.3	SVC	5.4	SVC	22.9	SVC	2.5	SVC
42	1.00	SVC	1.4	SVC	5.5	SVC	22.1	SVC	4.8	SVC
43	1.00	SVC	1.4	SVC	5.4	SVC	23.2	SVC	3.5	SVC
44	1.00	SVC	1.5	SVC	5.7	SVC	23.0	SVC	3.5	SVC
45	1.00	SVC	1.3	SVC	5.6	SVC	23.0	SVC	1.6	SVC
46	1.00	SVC	1.2	SVC	5.8	SVC	23.4	SVC	2.1	SVC
47	1.00	SVC	1.2	SVC	5.8	SVC	20.9	SVC	4.9	SVC
48	1.00	SVC	1.2	SVC	5.7	SVC	21.8	SVC	4.2	SVC
49	1.00	SVC	1.3	SVC	5.6	SVC	21.9	SVC	3.5	SVC
50	1.00	SVC	1.4	SVC	5.6	SVC	21.8	SVC	2.6	SVC
51	1.00	SVC	1.4	SVC	5.4	SVC	21.2	SVC	3.3	SVC
52	1.00	SVC	1.4	SVC	5.6	SVC	21.0	SVC	5.3	SVC
53	1.00	SVC	1.3	SVC	5.7	SVC	20.8	SVC	5.4	SVC
54	1.00	SVC	1.3	SVC	5.8	SVC	21.5	SVC	4.0	SVC
55	1.00	SVC	1.3	SVC	5.9	SVC	21.5	SVC	3.6	SVC
56	1.00	SVC	1.2	SVC	5.8	SVC	21.0	SVC	2.7	SVC
57	1.00	SVC	1.3	SVC	5.6	SVC	20.6	SVC	3.4	SVC
58	1.00	SVC	1.3	SVC	5.5	SVC	19.6	SVC	5.0	SVC
59	1.00	SVC	1.3	SVC	5.4	SVC	19.7	SVC	5.8	SVC

Explanation for Status Code

SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/26/2013, Hour 14:00

Minute	CO PPM 1-Min	Stat	SO2 PPM 1-Min	Stat	DELTA P IWC 1-Min	Stat	TEMP deg F 1-Min	Stat
0	216.4	SVC	0.0	SVC	0.930	SVC	370.7	SVC
1	249.5	SVC	0.0	SVC	0.944	SVC	370.8	SVC
2	199.1	SVC	0.0	SVC	0.974	SVC	371.3	SVC
3	270.7	SVC	0.0	SVC	0.959	SVC	371.4	SVC
4	256.2	SVC	0.0	SVC	0.960	SVC	371.6	SVC
5	185.7	SVC	0.0	SVC	0.947	SVC	371.9	SVC
6	196.9	SVC	0.1	SVC	0.959	SVC	371.9	SVC
7	204.4	SVC	0.1	SVC	0.968	SVC	371.9	SVC
8	177.7	SVC	0.1	SVC	0.960	SVC	371.9	SVC
9	178.9	SVC	0.1	SVC	0.954	SVC	372.0	SVC
10	163.9	SVC	0.1	SVC	0.948	SVC	372.3	SVC
11	175.8	SVC	0.1	SVC	0.968	SVC	372.5	SVC
12	229.6	SVC	0.1	SVC	0.980	SVC	372.5	SVC
13	216.8	SVC	0.1	SVC	0.979	SVC	372.6	SVC
14	221.9	SVC	0.0	SVC	0.970	SVC	372.5	SVC
15	204.4	SVC	0.1	SVC	0.974	SVC	372.6	SVC
16	189.6	SVC	0.1	SVC	0.965	SVC	372.5	SVC
17	223.9	SVC	0.1	SVC	0.957	SVC	372.5	SVC
18	217.2	SVC	0.1	SVC	0.964	SVC	372.5	SVC
19	185.5	SVC	0.1	SVC	0.974	SVC	372.5	SVC
20	200.5	SVC	0.0	SVC	0.982	SVC	372.5	SVC
21	217.1	SVC	0.0	SVC	0.963	SVC	372.4	SVC
22	237.5	SVC	0.0	SVC	0.958	SVC	372.4	SVC
23	275.6	SVC	0.0	SVC	0.920	SVC	371.9	SVC
24	222.0	SVC	0.1	SVC	0.915	SVC	371.8	SVC
25	208.1	SVC	0.0	SVC	0.875	SVC	371.4	SVC
26	249.1	SVC	0.0	SVC	0.877	SVC	371.2	SVC
27	331.3	SVC	0.0	SVC	0.887	SVC	370.9	SVC
28	411.2	SVC	0.0	SVC	0.888	SVC	370.7	SVC
29	497.7	SVC	0.0	SVC	0.872	SVC	370.5	SVC
30	511.8	MOR	0.0	SVC	0.856	SVC	370.0	SVC
31	511.8	MOR	0.0	SVC	0.843	SVC	369.8	SVC
32	511.8	MOR	0.0	SVC	0.855	SVC	369.4	SVC
33	511.8	MOR	0.0	SVC	0.866	SVC	369.2	SVC
34	497.3	SVC	0.0	SVC	0.881	SVC	368.8	SVC
35	421.3	SVC	0.0	SVC	0.898	SVC	368.8	SVC
36	394.8	SVC	0.0	SVC	0.909	SVC	368.9	SVC
37	510.3	MOR	0.0	SVC	0.937	SVC	369.0	SVC
38	441.2	SVC	0.0	SVC	0.935	SVC	369.0	SVC
39	392.2	SVC	0.0	SVC	0.939	SVC	368.8	SVC
40	331.6	SVC	0.0	SVC	0.940	SVC	368.8	SVC
41	305.8	SVC	0.0	SVC	0.971	SVC	368.8	SVC
42	323.3	SVC	0.0	SVC	0.969	SVC	368.8	SVC
43	319.8	SVC	0.0	SVC	0.989	SVC	368.8	SVC
44	328.8	SVC	0.0	SVC	0.987	SVC	368.6	SVC
45	361.3	SVC	0.0	SVC	0.978	SVC	368.6	SVC
46	268.0	SVC	0.0	SVC	0.970	SVC	368.5	SVC
47	227.0	SVC	0.0	SVC	0.960	SVC	368.1	SVC
48	221.5	SVC	0.0	SVC	0.945	SVC	368.0	SVC
49	248.1	SVC	0.0	SVC	0.958	SVC	367.7	SVC
50	313.9	SVC	0.0	SVC	0.978	SVC	367.5	SVC
51	321.9	SVC	0.0	SVC	1.011	SVC	367.5	SVC
52	316.5	SVC	0.0	SVC	0.988	SVC	367.5	SVC
53	289.9	SVC	0.0	SVC	0.984	SVC	367.5	SVC
54	264.9	SVC	0.0	SVC	0.974	SVC	367.1	SVC
55	241.6	SVC	0.0	SVC	0.960	SVC	366.7	SVC
56	254.1	SVC	0.0	SVC	0.927	SVC	366.5	SVC
57	211.3	SVC	0.0	SVC	0.947	SVC	366.3	SVC
58	240.3	SVC	0.0	SVC	0.938	SVC	366.2	SVC
59	266.3	SVC	0.0	SVC	0.938	SVC	366.1	SVC

Explanation for Status Code

MOR = MONITOR OUT OF RANGE
SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/26/2013, Hour 15:00

	PROCESS		OPACITY %		O2 %		NOX PPM		NH3 PPM	
Minute	1-Min	Stat	1-Min	Stat	1-Min	Stat	1-Min	Stat	1-Min	Stat
0	1.00	SVC	1.4	SVC	5.4	SVC	20.3	SVC	6.0	SVC
1	1.00	SVC	1.3	SVC	5.6	SVC	20.1	SVC	6.6	SVC
2	1.00	SVC	1.2	SVC	5.5	SVC	21.5	SVC	4.5	SVC
3	1.00	SVC	1.2	SVC	5.5	SVC	21.0	SVC	4.5	SVC
4	1.00	SVC	1.2	SVC	5.5	SVC	20.4	SVC	7.4	SVC
5	1.00	SVC	1.3	SVC	5.4	SVC	21.9	SVC	6.8	SVC
6	1.00	SVC	1.3	SVC	5.4	SVC	23.8	SVC	5.0	SVC
7	1.00	SVC	1.3	SVC	5.4	SVC	24.4	SVC	3.0	SVC
8	1.00	SVC	1.2	SVC	5.4	SVC	24.1	SVC	3.5	SVC
9	1.00	SVC	1.2	SVC	5.5	SVC	23.6	SVC	4.3	SVC
10	1.00	SVC	1.3	SVC	5.4	SVC	23.8	SVC	4.3	SVC
11	1.00	SVC	1.3	SVC	5.2	SVC	23.9	SVC	4.2	SVC
12	1.00	SVC	1.3	SVC	5.2	SVC	23.7	SVC	2.9	SVC
13	1.00	SVC	1.5	SVC	5.1	SVC	23.9	SVC	2.7	SVC
14	1.00	SVC	1.4	SVC	5.3	SVC	22.5	SVC	5.1	SVC
15	1.00	SVC	1.3	SVC	5.5	SVC	22.9	SVC	5.6	SVC
16	1.00	SVC	1.2	SVC	5.5	SVC	24.0	SVC	3.1	SVC
17	1.00	SVC	1.2	SVC	5.5	SVC	23.7	SVC	2.7	SVC
18	1.00	SVC	1.2	SVC	5.2	SVC	23.2	SVC	2.0	SVC
19	1.00	SVC	1.2	SVC	5.1	SVC	22.8	SVC	2.6	SVC
20	1.00	SVC	1.4	SVC	4.9	SVC	21.9	SVC	3.6	SVC
21	1.00	SVC	1.3	SVC	5.1	SVC	22.0	SVC	3.8	SVC
22	1.00	SVC	1.4	SVC	5.2	SVC	21.9	SVC	4.3	SVC
23	1.00	SVC	1.3	SVC	5.5	SVC	22.3	SVC	2.3	SVC
24	1.00	SVC	1.2	SVC	5.5	SVC	22.1	SVC	2.1	SVC
25	1.00	SVC	1.2	SVC	5.6	SVC	20.9	SVC	4.3	SVC
26	1.00	SVC	1.1	SVC	5.6	SVC	20.6	SVC	5.1	SVC
27	1.00	SVC	1.2	SVC	5.5	SVC	21.4	SVC	4.4	SVC
28	1.00	SVC	1.4	SVC	5.4	SVC	21.4	SVC	4.5	SVC
29	1.00	SVC	1.3	SVC	5.4	SVC	21.6	SVC	2.8	SVC
30	1.00	SVC	1.3	SVC	5.4	SVC	21.2	SVC	2.9	SVC
31	1.00	SVC	1.2	SVC	5.5	SVC	20.4	SVC	4.9	SVC
32	1.00	SVC	1.3	SVC	5.5	SVC	20.6	SVC	5.0	SVC
33	1.00	SVC	1.4	SVC	5.6	SVC	21.2	SVC	4.6	SVC
34	1.00	SVC	1.2	SVC	5.8	SVC	21.1	SVC	3.4	SVC
35	1.00	SVC	1.2	SVC	5.7	SVC	21.7	SVC	3.0	SVC
36	1.00	SVC	1.2	SVC	5.6	SVC	19.9	SVC	5.1	SVC
37	1.00	SVC	1.2	SVC	5.6	SVC	19.9	SVC	6.5	SVC
38	1.00	SVC	1.2	SVC	5.7	SVC	21.2	SVC	5.4	SVC
39	1.00	SVC	1.3	SVC	5.7	SVC	21.8	SVC	4.0	SVC
40	1.00	SVC	1.3	SVC	5.6	SVC	21.9	SVC	2.6	SVC
41	1.00	SVC	1.3	SVC	5.5	SVC	21.7	SVC	4.1	SVC
42	1.00	SVC	1.3	SVC	5.6	SVC	21.6	SVC	6.2	SVC
43	1.00	SVC	1.4	SVC	5.6	SVC	22.5	SVC	5.8	SVC
44	1.00	SVC	1.4	SVC	5.8	SVC	23.2	SVC	5.4	SVC
45	1.00	SVC	1.3	SVC	5.9	SVC	24.3	SVC	1.9	SVC
46	1.00	SVC	1.2	SVC	5.8	SVC	24.5	SVC	1.5	SVC
47	1.00	SVC	1.2	SVC	5.8	SVC	22.6	SVC	4.7	SVC
48	1.00	SVC	1.3	SVC	5.9	SVC	23.0	SVC	6.1	SVC
49	1.00	SVC	1.3	SVC	5.8	SVC	24.0	SVC	4.0	SVC
50	1.00	SVC	1.4	SVC	6.0	SVC	24.5	SVC	3.9	SVC
51	1.00	SVC	1.3	SVC	5.9	SVC	25.0	SVC	2.1	SVC
52	1.00	SVC	1.3	SVC	5.9	SVC	25.4	SVC	2.3	SVC
53	1.00	SVC	1.3	SVC	6.0	SVC	24.0	SVC	4.6	SVC
54	1.00	SVC	1.3	SVC	6.1	SVC	25.0	SVC	3.9	SVC
55	1.00	SVC	1.3	SVC	6.1	SVC	25.7	SVC	3.0	SVC
56	1.00	SVC	1.3	SVC	6.1	SVC	25.4	SVC	0.8	SVC
57	1.00	SVC	1.3	SVC	5.7	SVC	25.5	SVC	2.2	SVC
58	1.00	SVC	1.4	SVC	5.8	SVC	24.1	SVC	5.6	SVC
59	1.00	SVC	1.4	SVC	5.8	SVC	24.6	SVC	6.3	SVC

Explanation for Status Code

SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/26/2013, Hour 15:00

Minute	CO PPM 1-Min	Stat	SO2 PPM 1-Min	Stat	DELTA P IWC 1-Min	Stat	TEMP deg F 1-Min	Stat
0	284.1	SVC	0.0	SVC	0.922	SVC	365.8	SVC
1	312.2	SVC	0.0	SVC	0.930	SVC	365.4	SVC
2	288.9	SVC	0.0	SVC	0.913	SVC	365.0	SVC
3	284.3	SVC	0.0	SVC	0.918	SVC	365.0	SVC
4	245.5	SVC	0.0	SVC	0.905	SVC	364.4	SVC
5	296.2	SVC	0.0	SVC	0.906	SVC	364.4	SVC
6	391.1	SVC	0.0	SVC	0.913	SVC	364.4	SVC
7	398.2	SVC	0.0	SVC	0.907	SVC	364.1	SVC
8	317.5	SVC	0.0	SVC	0.907	SVC	363.8	SVC
9	292.6	SVC	0.0	SVC	0.902	SVC	363.8	SVC
10	292.6	SVC	0.0	SVC	0.915	SVC	363.6	SVC
11	395.3	SVC	0.0	SVC	0.907	SVC	363.2	SVC
12	443.1	SVC	0.0	SVC	0.936	SVC	363.1	SVC
13	475.6	SVC	0.0	SVC	0.945	SVC	363.1	SVC
14	488.2	SVC	0.0	SVC	0.941	SVC	363.0	SVC
15	405.8	SVC	0.0	SVC	0.910	SVC	362.7	SVC
16	309.6	SVC	0.0	SVC	0.894	SVC	362.5	SVC
17	324.6	SVC	0.0	SVC	0.877	SVC	362.5	SVC
18	438.0	SVC	0.0	SVC	0.894	SVC	362.1	SVC
19	470.9	SVC	0.0	SVC	0.892	SVC	361.9	SVC
20	511.8	MOR	0.0	SVC	0.904	SVC	361.9	SVC
21	511.8	MOR	0.0	SVC	0.904	SVC	361.8	SVC
22	511.8	MOR	0.0	SVC	0.899	SVC	361.6	SVC
23	511.1	MOR	0.0	SVC	0.902	SVC	361.7	SVC
24	427.0	SVC	0.0	SVC	0.903	SVC	361.6	SVC
25	324.1	SVC	0.0	SVC	0.886	SVC	361.5	SVC
26	279.4	SVC	0.0	SVC	0.873	SVC	361.3	SVC
27	264.2	SVC	0.0	SVC	0.886	SVC	361.4	SVC
28	337.9	SVC	0.0	SVC	0.890	SVC	361.3	SVC
29	423.3	SVC	0.0	SVC	0.905	SVC	361.3	SVC
30	365.7	SVC	0.0	SVC	0.885	SVC	361.3	SVC
31	311.7	SVC	0.0	SVC	0.878	SVC	361.3	SVC
32	287.9	SVC	0.0	SVC	0.890	SVC	361.4	SVC
33	288.4	SVC	0.0	SVC	0.897	SVC	361.5	SVC
34	333.0	SVC	0.0	SVC	0.890	SVC	361.6	SVC
35	263.3	SVC	0.0	SVC	0.911	SVC	361.4	SVC
36	225.7	SVC	0.0	SVC	0.915	SVC	361.4	SVC
37	246.4	SVC	0.0	SVC	0.918	SVC	361.3	SVC
38	237.3	SVC	0.0	SVC	0.902	SVC	361.3	SVC
39	245.1	SVC	0.0	SVC	0.908	SVC	361.3	SVC
40	260.6	SVC	0.0	SVC	0.911	SVC	361.3	SVC
41	228.0	SVC	0.0	SVC	0.934	SVC	361.4	SVC
42	258.0	SVC	0.0	SVC	0.962	SVC	361.6	SVC
43	251.1	SVC	0.0	SVC	0.971	SVC	361.9	SVC
44	242.2	SVC	0.0	SVC	0.958	SVC	362.3	SVC
45	313.9	SVC	0.0	SVC	0.958	SVC	362.5	SVC
46	250.8	SVC	0.0	SVC	0.950	SVC	362.5	SVC
47	205.9	SVC	0.0	SVC	0.953	SVC	362.5	SVC
48	215.5	SVC	0.0	SVC	0.953	SVC	362.5	SVC
49	213.0	SVC	0.0	SVC	0.966	SVC	362.5	SVC
50	226.6	SVC	0.0	SVC	0.973	SVC	362.7	SVC
51	267.5	SVC	0.0	SVC	0.982	SVC	363.0	SVC
52	235.0	SVC	0.0	SVC	0.980	SVC	363.2	SVC
53	226.4	SVC	0.0	SVC	0.990	SVC	363.3	SVC
54	223.7	SVC	0.0	SVC	0.963	SVC	363.6	SVC
55	206.0	SVC	0.0	SVC	0.956	SVC	363.4	SVC
56	276.5	SVC	0.0	SVC	0.949	SVC	363.6	SVC
57	218.0	SVC	0.0	SVC	0.967	SVC	363.8	SVC
58	200.2	SVC	0.0	SVC	0.963	SVC	363.8	SVC
59	208.9	SVC	0.0	SVC	0.976	SVC	363.8	SVC

Explanation for Status Code

MOR = MONITOR OUT OF RANGE
SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/27/2013, Hour 09:00

	PROCESS		OPACITY %		O2 %		NOX PPM		NH3 PPM	
Minute	1-Min	Stat	1-Min	Stat	1-Min	Stat	1-Min	Stat	1-Min	Stat
0	1.00	SVC	1.2	SVC	5.2	SVC	37.8	SVC	7.9	SVC
1	1.00	SVC	1.4	SVC	5.1	SVC	37.9	SVC	10.2	SVC
2	1.00	SVC	1.3	SVC	5.2	SVC	41.2	SVC	6.4	SVC
3	1.00	SVC	1.3	SVC	5.3	SVC	44.0	SVC	0.9	SVC
4	1.00	SVC	1.2	SVC	5.4	SVC	44.6	SVC	0.0	SVC
5	1.00	SVC	1.3	SVC	5.4	SVC	43.4	SVC	1.1	SVC
6	1.00	SVC	1.2	SVC	5.6	SVC	42.2	SVC	1.5	SVC
7	1.00	SVC	1.3	SVC	5.4	SVC	42.0	SVC	1.1	SVC
8	1.00	SVC	1.2	SVC	5.6	SVC	39.5	SVC	5.3	SVC
9	1.00	SVC	1.3	SVC	5.6	SVC	39.8	SVC	7.8	SVC
10	1.00	SVC	1.2	SVC	5.8	SVC	42.5	SVC	2.2	SVC
11	1.00	SVC	1.1	SVC	5.8	SVC	43.3	SVC	0.7	SVC
12	1.00	SVC	1.2	SVC	5.7	SVC	41.2	SVC	5.0	SVC
13	1.00	SVC	1.3	SVC	5.7	SVC	40.9	SVC	8.2	SVC
14	1.00	SVC	1.2	SVC	5.7	SVC	43.6	SVC	3.6	SVC
15	1.00	SVC	1.1	SVC	5.9	SVC	45.5	SVC	0.8	SVC
16	1.00	SVC	1.2	SVC	5.9	SVC	42.4	SVC	5.4	SVC
17	1.00	SVC	1.2	SVC	6.0	SVC	44.0	SVC	6.4	SVC
18	1.00	SVC	1.1	SVC	6.1	SVC	46.0	SVC	0.1	SVC
19	1.00	SVC	1.0	SVC	6.0	SVC	46.7	SVC	0.3	SVC
20	1.00	SVC	1.1	SVC	6.0	SVC	43.8	SVC	3.7	SVC
21	1.00	SVC	1.3	SVC	6.3	SVC	44.7	SVC	4.4	SVC
22	1.00	SVC	1.1	SVC	6.2	SVC	46.7	SVC	0.0	SVC
23	1.00	SVC	1.1	SVC	6.3	SVC	45.0	SVC	1.2	SVC
24	1.00	SVC	1.1	SVC	6.4	SVC	40.2	SVC	7.8	SVC
25	1.00	SVC	1.1	SVC	6.5	SVC	43.1	SVC	4.9	SVC
26	1.00	SVC	1.0	SVC	6.5	SVC	44.5	SVC	1.8	SVC
27	1.00	SVC	1.0	SVC	6.3	SVC	44.1	SVC	1.7	SVC
28	1.00	SVC	1.1	SVC	6.1	SVC	41.0	SVC	8.3	SVC
29	1.00	SVC	1.1	SVC	6.3	SVC	43.4	SVC	7.4	SVC
30	1.00	SVC	1.2	SVC	6.3	SVC	47.0	SVC	0.2	SVC
31	1.00	SVC	1.2	SVC	6.6	SVC	47.9	SVC	0.1	SVC
32	1.00	SVC	1.0	SVC	6.7	SVC	45.6	SVC	2.3	SVC
33	1.00	SVC	1.0	SVC	6.7	SVC	46.1	SVC	3.6	SVC
34	1.00	SVC	1.1	SVC	6.6	SVC	46.5	SVC	2.6	SVC
35	1.00	SVC	1.1	SVC	6.5	SVC	46.9	SVC	1.4	SVC
36	1.00	SVC	1.0	SVC	6.2	SVC	47.1	SVC	1.3	SVC
37	1.00	SVC	1.0	SVC	6.0	SVC	43.1	SVC	9.5	SVC
38	1.00	SVC	1.0	SVC	6.0	SVC	45.7	SVC	11.9	SVC
39	1.00	SVC	1.0	SVC	6.1	SVC	50.5	SVC	6.8	SVC
40	1.00	SVC	1.2	SVC	6.0	SVC	53.3	SVC	3.1	SVC
41	1.00	SVC	1.1	SVC	5.8	SVC	54.2	SVC	0.8	SVC
42	1.00	SVC	1.1	SVC	5.7	SVC	52.1	SVC	3.7	SVC
43	1.00	SVC	1.2	SVC	5.7	SVC	49.1	SVC	11.8	SVC
44	1.00	SVC	1.1	SVC	5.7	SVC	54.0	SVC	6.8	SVC
45	1.00	SVC	1.2	SVC	5.9	SVC	57.2	SVC	1.7	SVC
46	1.00	SVC	1.1	SVC	5.9	SVC	57.5	SVC	0.4	SVC
47	1.00	SVC	1.1	SVC	5.7	SVC	57.0	SVC	0.3	SVC
48	1.00	SVC	1.1	SVC	5.8	SVC	51.9	SVC	7.0	SVC
49	1.00	SVC	1.2	SVC	5.7	SVC	53.6	SVC	7.4	SVC
50	1.00	SVC	1.2	SVC	5.7	SVC	55.9	SVC	5.2	SVC
51	1.00	SVC	1.3	SVC	5.9	SVC	57.4	SVC	2.6	SVC
52	1.00	SVC	1.1	SVC	5.8	SVC	59.3	SVC	0.0	SVC
53	1.00	SVC	1.1	SVC	5.9	SVC	55.8	SVC	0.5	SVC
54	1.00	SVC	1.0	SVC	5.9	SVC	50.3	SVC	7.4	SVC
55	1.00	SVC	1.1	SVC	5.9	SVC	53.8	SVC	4.2	SVC
56	1.00	SVC	1.2	SVC	5.8	SVC	54.3	SVC	4.8	SVC
57	1.00	SVC	1.1	SVC	5.8	SVC	55.8	SVC	2.7	SVC
58	1.00	SVC	1.2	SVC	5.8	SVC	56.7	SVC	0.0	SVC
59	1.00	SVC	1.1	SVC	5.8	SVC	53.8	SVC	3.5	SVC

Explanation for Status Code
SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/27/2013, Hour 09:00

Minute	CO PPM 1-Min	Stat	SO2 PPM 1-Min	Stat	DELTA P IWC 1-Min	Stat	TEMP deg F 1-Min	Stat
0	161.1	SVC	0.1	SVC	0.858	SVC	365.8	SVC
1	173.0	SVC	0.1	SVC	0.876	SVC	365.8	SVC
2	235.0	SVC	0.1	SVC	0.886	SVC	365.7	SVC
3	222.3	SVC	0.1	SVC	0.878	SVC	365.9	SVC
4	240.4	SVC	0.1	SVC	0.884	SVC	365.7	SVC
5	214.4	SVC	0.1	SVC	0.859	SVC	365.6	SVC
6	282.7	SVC	0.2	SVC	0.877	SVC	365.7	SVC
7	239.3	SVC	0.1	SVC	0.898	SVC	365.9	SVC
8	216.4	SVC	0.1	SVC	0.904	SVC	365.7	SVC
9	207.2	SVC	0.1	SVC	0.896	SVC	365.8	SVC
10	254.1	SVC	0.1	SVC	0.888	SVC	365.9	SVC
11	209.8	SVC	0.1	SVC	0.888	SVC	365.8	SVC
12	169.8	SVC	0.1	SVC	0.908	SVC	365.8	SVC
13	169.3	SVC	0.1	SVC	0.909	SVC	365.8	SVC
14	225.7	SVC	0.1	SVC	0.904	SVC	365.9	SVC
15	190.6	SVC	0.1	SVC	0.911	SVC	366.0	SVC
16	161.1	SVC	0.2	SVC	0.902	SVC	366.0	SVC
17	171.7	SVC	0.2	SVC	0.888	SVC	366.3	SVC
18	231.5	SVC	0.1	SVC	0.888	SVC	366.1	SVC
19	163.4	SVC	0.1	SVC	0.885	SVC	365.7	SVC
20	155.8	SVC	0.1	SVC	0.900	SVC	365.6	SVC
21	182.0	SVC	0.1	SVC	0.907	SVC	365.6	SVC
22	303.0	SVC	0.1	SVC	0.905	SVC	365.5	SVC
23	190.5	SVC	0.1	SVC	0.904	SVC	365.3	SVC
24	184.7	SVC	0.1	SVC	0.869	SVC	365.0	SVC
25	176.2	SVC	0.1	SVC	0.855	SVC	365.1	SVC
26	206.1	SVC	0.1	SVC	0.859	SVC	365.2	SVC
27	153.0	SVC	0.0	SVC	0.859	SVC	365.3	SVC
28	157.1	SVC	0.0	SVC	0.865	SVC	365.1	SVC
29	190.7	SVC	0.1	SVC	0.880	SVC	365.1	SVC
30	253.8	SVC	0.1	SVC	0.878	SVC	365.0	SVC
31	209.9	SVC	0.1	SVC	0.876	SVC	365.2	SVC
32	190.0	SVC	0.1	SVC	0.855	SVC	365.1	SVC
33	164.4	SVC	0.2	SVC	0.850	SVC	365.0	SVC
34	155.9	SVC	0.3	SVC	0.847	SVC	364.8	SVC
35	200.8	SVC	0.2	SVC	0.834	SVC	364.5	SVC
36	164.0	SVC	0.1	SVC	0.816	SVC	364.3	SVC
37	121.9	SVC	0.1	SVC	0.826	SVC	363.9	SVC
38	122.2	SVC	0.1	SVC	0.811	SVC	363.8	SVC
39	120.9	SVC	0.3	SVC	0.817	SVC	363.7	SVC
40	132.4	SVC	0.3	SVC	0.819	SVC	363.4	SVC
41	176.1	SVC	0.4	SVC	0.823	SVC	363.3	SVC
42	137.6	SVC	0.3	SVC	0.840	SVC	363.4	SVC
43	138.8	SVC	0.3	SVC	0.843	SVC	363.5	SVC
44	155.4	SVC	0.3	SVC	0.838	SVC	363.3	SVC
45	146.1	SVC	0.3	SVC	0.818	SVC	363.1	SVC
46	173.3	SVC	0.3	SVC	0.824	SVC	363.0	SVC
47	150.4	SVC	0.3	SVC	0.837	SVC	362.9	SVC
48	140.4	SVC	0.3	SVC	0.840	SVC	362.9	SVC
49	140.6	SVC	0.3	SVC	0.853	SVC	362.9	SVC
50	148.5	SVC	0.3	SVC	0.865	SVC	362.9	SVC
51	180.6	SVC	0.3	SVC	0.855	SVC	362.9	SVC
52	255.5	SVC	0.3	SVC	0.861	SVC	362.8	SVC
53	161.5	SVC	0.3	SVC	0.859	SVC	362.8	SVC
54	164.2	SVC	0.3	SVC	0.857	SVC	362.6	SVC
55	148.4	SVC	0.3	SVC	0.848	SVC	362.7	SVC
56	142.3	SVC	0.3	SVC	0.848	SVC	362.8	SVC
57	179.6	SVC	0.3	SVC	0.868	SVC	362.7	SVC
58	174.3	SVC	0.3	SVC	0.868	SVC	362.9	SVC
59	160.6	SVC	0.3	SVC	0.858	SVC	362.8	SVC

Explanation for Status Code

SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/27/2013, Hour 10:00

	PROCESS		OPACITY %		O2 %		NOX PPM		NH3 PPM	
Minute	1-Min	Stat	1-Min	Stat	1-Min	Stat	1-Min	Stat	1-Min	Stat
0	1.00	SVC	1.1	SVC	5.9	SVC	53.9	SVC	6.5	SVC
1	1.00	SVC	1.1	SVC	6.0	SVC	55.3	SVC	2.6	SVC
2	1.00	SVC	1.3	SVC	6.0	SVC	56.1	SVC	1.3	SVC
3	1.00	SVC	1.2	SVC	5.8	SVC	56.0	SVC	0.0	SVC
4	1.00	SVC	1.2	SVC	5.7	SVC	55.5	SVC	0.0	SVC
5	1.00	SVC	1.2	SVC	5.7	SVC	51.5	SVC	4.4	SVC
6	1.00	SVC	1.1	SVC	6.0	SVC	53.2	SVC	4.8	SVC
7	1.00	SVC	1.2	SVC	6.0	SVC	54.7	SVC	1.5	SVC
8	1.00	SVC	1.2	SVC	6.0	SVC	55.0	SVC	0.5	SVC
9	1.00	SVC	1.1	SVC	5.8	SVC	54.6	SVC	0.4	SVC
10	1.00	SVC	1.2	SVC	5.8	SVC	52.4	SVC	2.9	SVC
11	1.00	SVC	1.2	SVC	5.8	SVC	51.3	SVC	7.0	SVC
12	1.00	SVC	1.4	SVC	5.9	SVC	52.0	SVC	6.9	SVC
13	1.00	SVC	1.3	SVC	6.3	SVC	54.5	SVC	2.9	SVC
14	1.00	SVC	1.3	SVC	6.7	SVC	55.9	SVC	0.0	SVC
15	1.00	SVC	1.1	SVC	6.5	SVC	54.8	SVC	0.0	SVC
16	1.00	SVC	1.1	SVC	6.2	SVC	49.5	SVC	3.2	SVC
17	1.00	SVC	1.1	SVC	6.2	SVC	42.8	SVC	14.1	SVC
18	1.00	SVC	1.1	SVC	6.2	SVC	48.9	SVC	10.7	SVC
19	1.00	SVC	1.2	SVC	6.0	SVC	53.3	SVC	4.1	SVC
20	1.00	SVC	1.2	SVC	6.3	SVC	53.6	SVC	1.7	SVC
21	1.00	SVC	1.1	SVC	6.2	SVC	55.0	SVC	0.0	SVC
22	1.00	SVC	1.1	SVC	6.3	SVC	51.4	SVC	2.3	SVC
23	1.00	SVC	1.0	SVC	6.2	SVC	48.1	SVC	8.7	SVC
24	1.00	SVC	1.0	SVC	6.3	SVC	50.7	SVC	6.4	SVC
25	1.00	SVC	1.2	SVC	6.2	SVC	52.8	SVC	3.1	SVC
26	1.00	SVC	1.1	SVC	6.3	SVC	53.3	SVC	0.5	SVC
27	1.00	SVC	1.0	SVC	6.3	SVC	52.9	SVC	1.4	SVC
28	1.00	SVC	1.1	SVC	6.4	SVC	48.5	SVC	7.0	SVC
29	1.00	SVC	1.1	SVC	6.1	SVC	50.7	SVC	6.0	SVC
30	1.00	SVC	1.1	SVC	6.2	SVC	52.2	SVC	5.4	SVC
31	1.00	SVC	1.1	SVC	6.2	SVC	54.0	SVC	3.7	SVC
32	1.00	SVC	1.1	SVC	5.9	SVC	55.8	SVC	0.0	SVC
33	1.00	SVC	1.1	SVC	6.1	SVC	53.8	SVC	2.0	SVC
34	1.00	SVC	1.1	SVC	6.3	SVC	51.9	SVC	7.5	SVC
35	1.00	SVC	1.1	SVC	6.3	SVC	54.9	SVC	2.7	SVC
36	1.00	SVC	1.2	SVC	6.5	SVC	55.5	SVC	1.1	SVC
37	1.00	SVC	1.0	SVC	6.4	SVC	54.7	SVC	0.1	SVC
38	1.00	SVC	1.0	SVC	6.1	SVC	54.3	SVC	1.8	SVC
39	1.00	SVC	1.0	SVC	6.1	SVC	49.7	SVC	9.4	SVC
40	1.00	SVC	1.1	SVC	6.2	SVC	53.8	SVC	6.9	SVC
41	1.00	SVC	1.2	SVC	6.1	SVC	56.2	SVC	3.6	SVC
42	1.00	SVC	1.3	SVC	6.1	SVC	57.0	SVC	3.2	SVC
43	1.00	SVC	1.1	SVC	6.3	SVC	57.7	SVC	0.0	SVC
44	1.00	SVC	1.1	SVC	6.4	SVC	58.4	SVC	0.0	SVC
45	1.00	SVC	1.1	SVC	6.1	SVC	53.9	SVC	3.9	SVC
46	1.00	SVC	1.0	SVC	6.2	SVC	53.3	SVC	7.7	SVC
47	1.00	SVC	1.1	SVC	6.3	SVC	55.0	SVC	6.8	SVC
48	1.00	SVC	1.0	SVC	6.2	SVC	57.7	SVC	2.8	SVC
49	1.00	SVC	1.1	SVC	6.0	SVC	59.1	SVC	0.0	SVC
50	1.00	SVC	1.0	SVC	6.1	SVC	54.1	SVC	5.2	SVC
51	1.00	SVC	1.0	SVC	6.2	SVC	55.4	SVC	6.4	SVC
52	1.00	SVC	1.1	SVC	6.0	SVC	57.8	SVC	2.2	SVC
53	1.00	SVC	1.2	SVC	6.1	SVC	57.1	SVC	3.5	SVC
54	1.00	SVC	1.1	SVC	6.0	SVC	57.7	SVC	1.7	SVC
55	1.00	SVC	1.1	SVC	6.1	SVC	57.1	SVC	0.9	SVC
56	1.00	SVC	1.0	SVC	6.2	SVC	53.5	SVC	7.0	SVC
57	1.00	SVC	1.0	SVC	6.3	SVC	55.6	SVC	5.1	SVC
58	1.00	SVC	1.1	SVC	6.2	SVC	56.8	SVC	2.7	SVC
59	1.00	SVC	1.0	SVC	6.2	SVC	57.0	SVC	1.6	SVC

Explanation for Status Code

SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/27/2013, Hour 10:00

Minute	CO PPM 1-Min	Stat	SO2 PPM 1-Min	Stat	DELTA P IWC 1-Min	Stat	TEMP deg F 1-Min	Stat
0	157.7	SVC	0.3	SVC	0.868	SVC	362.8	SVC
1	165.8	SVC	0.3	SVC	0.848	SVC	362.7	SVC
2	163.6	SVC	0.3	SVC	0.862	SVC	362.6	SVC
3	253.4	SVC	0.4	SVC	0.870	SVC	362.7	SVC
4	189.7	SVC	0.3	SVC	0.854	SVC	362.7	SVC
5	176.6	SVC	0.3	SVC	0.872	SVC	362.8	SVC
6	174.1	SVC	0.4	SVC	0.855	SVC	362.6	SVC
7	168.1	SVC	0.3	SVC	0.850	SVC	362.5	SVC
8	174.8	SVC	0.3	SVC	0.848	SVC	362.5	SVC
9	180.6	SVC	0.3	SVC	0.859	SVC	362.5	SVC
10	161.9	SVC	0.3	SVC	0.861	SVC	362.5	SVC
11	151.8	SVC	0.3	SVC	0.862	SVC	362.6	SVC
12	169.8	SVC	0.3	SVC	0.905	SVC	362.8	SVC
13	201.9	SVC	0.4	SVC	0.880	SVC	362.7	SVC
14	237.0	SVC	0.3	SVC	0.864	SVC	362.7	SVC
15	350.2	SVC	0.3	SVC	0.864	SVC	362.5	SVC
16	165.1	SVC	0.1	SVC	0.853	SVC	362.6	SVC
17	141.1	SVC	0.1	SVC	0.844	SVC	362.5	SVC
18	136.8	SVC	0.1	SVC	0.850	SVC	362.4	SVC
19	133.6	SVC	0.2	SVC	0.853	SVC	362.2	SVC
20	185.2	SVC	0.3	SVC	0.843	SVC	362.0	SVC
21	203.8	SVC	0.3	SVC	0.846	SVC	362.0	SVC
22	151.6	SVC	0.3	SVC	0.844	SVC	361.9	SVC
23	143.6	SVC	0.3	SVC	0.834	SVC	361.8	SVC
24	148.0	SVC	0.3	SVC	0.837	SVC	361.4	SVC
25	146.2	SVC	0.1	SVC	0.843	SVC	361.3	SVC
26	228.3	SVC	0.1	SVC	0.869	SVC	361.3	SVC
27	163.5	SVC	0.1	SVC	0.860	SVC	360.9	SVC
28	141.8	SVC	0.3	SVC	0.856	SVC	360.7	SVC
29	139.4	SVC	0.3	SVC	0.859	SVC	360.6	SVC
30	127.2	SVC	0.3	SVC	0.854	SVC	360.4	SVC
31	141.7	SVC	0.3	SVC	0.857	SVC	360.3	SVC
32	162.1	SVC	0.3	SVC	0.863	SVC	360.1	SVC
33	146.8	SVC	0.3	SVC	0.852	SVC	359.8	SVC
34	154.5	SVC	0.2	SVC	0.860	SVC	359.5	SVC
35	157.4	SVC	0.3	SVC	0.848	SVC	359.4	SVC
36	154.0	SVC	0.3	SVC	0.830	SVC	359.3	SVC
37	229.6	SVC	0.3	SVC	0.829	SVC	359.0	SVC
38	137.6	SVC	0.3	SVC	0.827	SVC	358.9	SVC
39	113.3	SVC	0.3	SVC	0.832	SVC	358.8	SVC
40	122.8	SVC	0.3	SVC	0.846	SVC	358.7	SVC
41	135.8	SVC	0.3	SVC	0.848	SVC	358.5	SVC
42	146.7	SVC	0.3	SVC	0.842	SVC	358.4	SVC
43	196.7	SVC	0.3	SVC	0.832	SVC	358.2	SVC
44	167.0	SVC	0.3	SVC	0.846	SVC	357.9	SVC
45	138.7	SVC	0.3	SVC	0.832	SVC	358.0	SVC
46	131.8	SVC	0.3	SVC	0.812	SVC	358.0	SVC
47	125.4	SVC	0.3	SVC	0.801	SVC	357.6	SVC
48	189.2	SVC	0.3	SVC	0.808	SVC	357.5	SVC
49	147.0	SVC	0.3	SVC	0.807	SVC	357.5	SVC
50	132.8	SVC	0.3	SVC	0.805	SVC	357.4	SVC
51	138.0	SVC	0.3	SVC	0.809	SVC	357.3	SVC
52	127.0	SVC	0.3	SVC	0.811	SVC	357.3	SVC
53	141.1	SVC	0.3	SVC	0.800	SVC	357.2	SVC
54	174.5	SVC	0.3	SVC	0.813	SVC	357.2	SVC
55	147.6	SVC	0.3	SVC	0.820	SVC	357.0	SVC
56	150.6	SVC	0.3	SVC	0.802	SVC	356.9	SVC
57	140.4	SVC	0.3	SVC	0.793	SVC	356.7	SVC
58	122.0	SVC	0.3	SVC	0.794	SVC	356.6	SVC
59	174.3	SVC	0.3	SVC	0.791	SVC	356.5	SVC

Explanation for Status Code

SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/27/2013, Hour 11:00

Minute	PROCESS 1-Min	Stat	OPACITY % 1-Min	Stat	O2 % 1-Min	Stat	NOX PPM 1-Min	Stat	NH3 PPM 1-Min	Stat
0	1.00	SVC	1.0	SVC	5.9	SVC	57.5	SVC	0.3	SVC
1	1.00	SVC	1.1	SVC	5.7	SVC	53.6	SVC	6.0	SVC
2	1.00	SVC	1.3	SVC	5.7	SVC	54.4	SVC	9.7	SVC
3	1.00	SVC	1.1	SVC	6.1	SVC	57.2	SVC	6.5	SVC
4	1.00	SVC	1.2	SVC	6.3	SVC	60.0	SVC	0.6	SVC
5	1.00	SVC	1.0	SVC	6.2	SVC	60.6	SVC	0.0	SVC
6	1.00	SVC	0.9	SVC	6.3	SVC	57.4	SVC	0.8	SVC
7	1.00	SVC	0.9	SVC	6.2	SVC	53.2	SVC	7.3	SVC
8	1.00	SVC	1.0	SVC	5.8	SVC	55.6	SVC	6.8	SVC
9	1.00	SVC	1.2	SVC	5.8	SVC	57.4	SVC	7.9	SVC
10	1.00	SVC	1.1	SVC	6.0	SVC	60.0	SVC	2.3	SVC
11	1.00	SVC	1.1	SVC	5.9	SVC	62.7	SVC	0.0	SVC
12	1.00	SVC	1.1	SVC	5.9	SVC	58.3	SVC	3.3	SVC
13	1.00	SVC	1.1	SVC	6.1	SVC	57.2	SVC	6.0	SVC
14	1.00	SVC	1.1	SVC	6.1	SVC	60.0	SVC	0.1	SVC
15	1.00	SVC	1.2	SVC	6.1	SVC	58.9	SVC	1.2	SVC
16	1.00	SVC	1.2	SVC	6.1	SVC	58.6	SVC	0.0	SVC
17	1.00	SVC	1.1	SVC	6.2	SVC	58.6	SVC	0.1	SVC
18	1.00	SVC	1.0	SVC	6.1	SVC	54.0	SVC	4.9	SVC
19	1.00	SVC	1.0	SVC	6.0	SVC	55.3	SVC	7.0	SVC
20	1.00	SVC	1.1	SVC	6.2	SVC	57.3	SVC	4.9	SVC
21	1.00	SVC	1.0	SVC	6.3	SVC	59.3	SVC	1.7	SVC
22	1.00	SVC	1.0	SVC	6.0	SVC	59.7	SVC	0.0	SVC
23	1.00	SVC	1.1	SVC	6.0	SVC	55.7	SVC	2.5	SVC
24	1.00	SVC	1.0	SVC	6.0	SVC	54.2	SVC	6.0	SVC
25	1.00	SVC	1.1	SVC	6.1	SVC	55.8	SVC	5.6	SVC
26	1.00	SVC	1.1	SVC	6.3	SVC	57.5	SVC	2.8	SVC
27	1.00	SVC	0.9	SVC	6.4	SVC	58.3	SVC	0.8	SVC
28	1.00	SVC	0.9	SVC	6.0	SVC	57.5	SVC	0.1	SVC
29	1.00	SVC	1.0	SVC	5.9	SVC	51.6	SVC	8.0	SVC
30	1.00	SVC	1.0	SVC	6.0	SVC	53.6	SVC	9.6	SVC
31	1.00	SVC	1.2	SVC	6.0	SVC	57.6	SVC	5.0	SVC
32	1.00	SVC	1.2	SVC	6.5	SVC	59.1	SVC	0.9	SVC
33	1.00	SVC	1.0	SVC	6.5	SVC	59.6	SVC	0.0	SVC
34	1.00	SVC	1.0	SVC	6.4	SVC	55.8	SVC	0.5	SVC
35	1.00	SVC	1.0	SVC	6.2	SVC	49.4	SVC	9.0	SVC
36	1.00	SVC	0.9	SVC	6.3	SVC	52.4	SVC	7.8	SVC
37	1.00	SVC	1.2	SVC	6.3	SVC	55.2	SVC	3.8	SVC
38	1.00	SVC	1.1	SVC	6.2	SVC	56.5	SVC	1.3	SVC
39	1.00	SVC	1.0	SVC	6.2	SVC	56.4	SVC	0.9	SVC
40	1.00	SVC	1.0	SVC	6.3	SVC	53.6	SVC	5.9	SVC
41	1.00	SVC	1.0	SVC	6.2	SVC	55.0	SVC	4.6	SVC
42	1.00	SVC	1.1	SVC	6.4	SVC	56.5	SVC	2.7	SVC
43	1.00	SVC	1.1	SVC	6.5	SVC	56.6	SVC	0.6	SVC
44	1.00	SVC	1.0	SVC	6.2	SVC	57.8	SVC	0.0	SVC
45	1.00	SVC	1.0	SVC	6.2	SVC	54.4	SVC	2.5	SVC
46	1.00	SVC	1.0	SVC	6.3	SVC	50.5	SVC	12.1	SVC
47	1.00	SVC	1.0	SVC	6.3	SVC	55.3	SVC	4.6	SVC
48	1.00	SVC	1.2	SVC	6.2	SVC	57.3	SVC	2.2	SVC
49	1.00	SVC	1.1	SVC	6.3	SVC	57.2	SVC	1.2	SVC
50	1.00	SVC	1.0	SVC	6.1	SVC	57.5	SVC	1.2	SVC
51	1.00	SVC	1.2	SVC	6.0	SVC	53.5	SVC	7.4	SVC
52	1.00	SVC	1.1	SVC	6.0	SVC	56.3	SVC	6.0	SVC
53	1.00	SVC	1.2	SVC	5.9	SVC	58.8	SVC	2.5	SVC
54	1.00	SVC	1.3	SVC	6.2	SVC	58.5	SVC	3.0	SVC
55	1.00	SVC	1.1	SVC	6.3	SVC	59.6	SVC	0.0	SVC
56	1.00	SVC	1.0	SVC	6.3	SVC	59.9	SVC	0.0	SVC
57	1.00	SVC	1.0	SVC	6.2	SVC	56.0	SVC	3.4	SVC
58	1.00	SVC	1.0	SVC	6.1	SVC	55.8	SVC	5.6	SVC
59	1.00	SVC	1.1	SVC	6.1	SVC	56.8	SVC	3.7	SVC

Explanation for Status Code

SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/27/2013, Hour 11:00

Minute	CO PPM 1-Min	Stat	SO2 PPM 1-Min	Stat	DELTA P IWC 1-Min	Stat	TEMP deg F 1-Min	Stat
0	155.5	SVC	0.3	SVC	0.801	SVC	356.3	SVC
1	118.4	SVC	0.3	SVC	0.830	SVC	356.3	SVC
2	134.0	SVC	0.3	SVC	0.836	SVC	356.4	SVC
3	160.2	SVC	0.3	SVC	0.821	SVC	356.4	SVC
4	170.5	SVC	0.3	SVC	0.819	SVC	356.3	SVC
5	192.7	SVC	0.3	SVC	0.808	SVC	356.3	SVC
6	141.5	SVC	0.3	SVC	0.787	SVC	356.2	SVC
7	118.4	SVC	0.3	SVC	0.795	SVC	355.8	SVC
8	102.4	SVC	0.3	SVC	0.803	SVC	355.6	SVC
9	104.7	SVC	0.3	SVC	0.802	SVC	355.6	SVC
10	155.8	SVC	0.3	SVC	0.806	SVC	355.7	SVC
11	153.1	SVC	0.3	SVC	0.808	SVC	355.9	SVC
12	124.3	SVC	0.3	SVC	0.815	SVC	355.9	SVC
13	138.8	SVC	0.3	SVC	0.805	SVC	355.6	SVC
14	136.6	SVC	0.3	SVC	0.809	SVC	355.6	SVC
15	132.0	SVC	0.3	SVC	0.806	SVC	355.4	SVC
16	179.6	SVC	0.4	SVC	0.825	SVC	355.6	SVC
17	151.8	SVC	0.4	SVC	0.826	SVC	355.8	SVC
18	134.8	SVC	0.4	SVC	0.824	SVC	355.6	SVC
19	117.4	SVC	0.4	SVC	0.801	SVC	355.6	SVC
20	120.7	SVC	0.3	SVC	0.797	SVC	355.6	SVC
21	174.3	SVC	0.3	SVC	0.804	SVC	355.5	SVC
22	179.9	SVC	0.3	SVC	0.812	SVC	355.6	SVC
23	145.5	SVC	0.3	SVC	0.827	SVC	355.3	SVC
24	135.9	SVC	0.3	SVC	0.818	SVC	355.4	SVC
25	133.8	SVC	0.3	SVC	0.813	SVC	355.4	SVC
26	134.4	SVC	0.4	SVC	0.791	SVC	355.3	SVC
27	168.9	SVC	0.3	SVC	0.794	SVC	355.1	SVC
28	124.5	SVC	0.3	SVC	0.799	SVC	355.1	SVC
29	103.4	SVC	0.3	SVC	0.794	SVC	355.2	SVC
30	101.7	SVC	0.3	SVC	0.806	SVC	355.0	SVC
31	111.1	SVC	0.3	SVC	0.804	SVC	355.0	SVC
32	171.4	SVC	0.3	SVC	0.809	SVC	355.0	SVC
33	228.3	SVC	0.4	SVC	0.803	SVC	355.0	SVC
34	157.4	SVC	0.3	SVC	0.810	SVC	355.1	SVC
35	131.1	SVC	0.3	SVC	0.795	SVC	355.2	SVC
36	131.5	SVC	0.3	SVC	0.780	SVC	355.0	SVC
37	111.6	SVC	0.3	SVC	0.792	SVC	355.0	SVC
38	146.7	SVC	0.3	SVC	0.804	SVC	355.0	SVC
39	142.9	SVC	0.3	SVC	0.809	SVC	355.0	SVC
40	131.0	SVC	0.3	SVC	0.796	SVC	355.0	SVC
41	127.2	SVC	0.3	SVC	0.788	SVC	355.0	SVC
42	130.2	SVC	0.3	SVC	0.784	SVC	355.0	SVC
43	156.3	SVC	0.3	SVC	0.800	SVC	355.0	SVC
44	197.1	SVC	0.3	SVC	0.809	SVC	355.0	SVC
45	129.4	SVC	0.3	SVC	0.797	SVC	355.0	SVC
46	124.5	SVC	0.3	SVC	0.791	SVC	355.0	SVC
47	124.0	SVC	0.3	SVC	0.793	SVC	355.0	SVC
48	121.9	SVC	0.3	SVC	0.790	SVC	355.0	SVC
49	152.5	SVC	0.3	SVC	0.788	SVC	355.0	SVC
50	125.6	SVC	0.3	SVC	0.798	SVC	355.0	SVC
51	109.3	SVC	0.3	SVC	0.835	SVC	355.0	SVC
52	129.2	SVC	0.3	SVC	0.830	SVC	355.3	SVC
53	133.1	SVC	0.4	SVC	0.833	SVC	355.3	SVC
54	143.8	SVC	0.4	SVC	0.818	SVC	355.4	SVC
55	210.4	SVC	0.3	SVC	0.820	SVC	355.3	SVC
56	144.0	SVC	0.3	SVC	0.791	SVC	355.1	SVC
57	107.1	SVC	0.3	SVC	0.798	SVC	355.0	SVC
58	99.3	SVC	0.3	SVC	0.814	SVC	355.1	SVC
59	108.8	SVC	0.3	SVC	0.802	SVC	355.0	SVC

Explanation for Status Code

SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/27/2013, Hour 12:00

Minute	PROCESS 1-Min	Stat	OPACITY % 1-Min	Stat	O2 % 1-Min	Stat	NOX PPM 1-Min	Stat	NH3 PPM 1-Min	Stat
0	1.00	SVC	1.1	SVC	6.1	SVC	57.7	SVC	1.8	SVC
1	1.00	SVC	1.1	SVC	6.0	SVC	58.2	SVC	1.4	SVC
2	1.00	SVC	1.0	SVC	6.1	SVC	56.3	SVC	3.6	SVC
3	1.00	SVC	1.0	SVC	6.3	SVC	56.9	SVC	4.4	SVC
4	1.00	SVC	1.0	SVC	6.3	SVC	57.9	SVC	2.0	SVC
5	1.00	SVC	1.1	SVC	6.6	SVC	58.7	SVC	0.5	SVC
6	1.00	SVC	0.9	SVC	6.5	SVC	57.7	SVC	0.0	SVC
7	1.00	SVC	1.0	SVC	6.3	SVC	55.2	SVC	1.2	SVC
8	1.00	SVC	1.0	SVC	6.4	SVC	50.0	SVC	8.0	SVC
9	1.00	SVC	1.0	SVC	6.4	SVC	53.4	SVC	5.3	SVC
10	1.00	SVC	1.1	SVC	6.4	SVC	54.5	SVC	3.8	SVC
11	1.00	SVC	1.0	SVC	6.4	SVC	54.8	SVC	1.7	SVC
12	1.00	SVC	1.0	SVC	6.6	SVC	55.5	SVC	0.2	SVC
13	1.00	SVC	1.1	SVC	6.3	SVC	53.9	SVC	0.8	SVC
14	1.00	SVC	1.2	SVC	6.4	SVC	53.1	SVC	4.7	SVC
15	1.00	SVC	1.1	SVC	6.6	SVC	53.3	SVC	4.8	SVC
16	1.00	SVC	1.1	SVC	6.8	SVC	54.9	SVC	1.3	SVC
17	1.00	SVC	1.0	SVC	6.7	SVC	55.9	SVC	0.0	SVC
18	1.00	SVC	1.0	SVC	6.5	SVC	53.2	SVC	0.7	SVC
19	1.00	SVC	1.0	SVC	6.5	SVC	48.8	SVC	8.4	SVC
20	1.00	SVC	1.0	SVC	6.5	SVC	52.0	SVC	5.3	SVC
21	1.00	SVC	1.2	SVC	6.4	SVC	52.9	SVC	4.4	SVC
22	1.00	SVC	1.1	SVC	6.6	SVC	53.6	SVC	1.5	SVC
23	1.00	SVC	1.0	SVC	6.5	SVC	55.1	SVC	0.0	SVC
24	1.00	SVC	1.0	SVC	6.6	SVC	52.2	SVC	2.8	SVC
25	1.00	SVC	0.9	SVC	6.9	SVC	51.6	SVC	4.5	SVC
26	1.00	SVC	0.9	SVC	6.8	SVC	53.9	SVC	0.9	SVC
27	1.00	SVC	1.0	SVC	6.7	SVC	52.8	SVC	2.5	SVC
28	1.00	SVC	0.9	SVC	6.6	SVC	52.4	SVC	0.1	SVC
29	1.00	SVC	0.9	SVC	6.4	SVC	53.8	SVC	1.7	SVC
30	1.00	SVC	1.0	SVC	6.3	SVC	50.6	SVC	6.6	SVC
31	1.00	SVC	1.0	SVC	6.3	SVC	53.0	SVC	7.1	SVC
32	1.00	SVC	1.0	SVC	6.4	SVC	55.1	SVC	4.1	SVC
33	1.00	SVC	1.0	SVC	6.4	SVC	55.9	SVC	1.9	SVC
34	1.00	SVC	1.1	SVC	6.1	SVC	56.2	SVC	1.8	SVC
35	1.00	SVC	1.1	SVC	6.1	SVC	54.7	SVC	7.2	SVC
36	1.00	SVC	1.0	SVC	6.2	SVC	56.2	SVC	6.7	SVC
37	1.00	SVC	1.0	SVC	6.2	SVC	58.7	SVC	3.3	SVC
38	1.00	SVC	1.2	SVC	6.1	SVC	59.3	SVC	2.9	SVC
39	1.00	SVC	1.0	SVC	6.0	SVC	58.8	SVC	1.4	SVC
40	1.00	SVC	1.1	SVC	5.8	SVC	58.8	SVC	2.1	SVC
41	1.00	SVC	1.1	SVC	5.5	SVC	55.8	SVC	8.7	SVC
42	1.00	SVC	1.2	SVC	5.8	SVC	58.7	SVC	7.9	SVC
43	1.00	SVC	1.3	SVC	5.7	SVC	61.5	SVC	3.6	SVC
44	1.00	SVC	1.2	SVC	5.9	SVC	63.0	SVC	1.0	SVC
45	1.00	SVC	1.1	SVC	5.9	SVC	62.1	SVC	0.2	SVC
46	1.00	SVC	1.1	SVC	5.9	SVC	60.1	SVC	1.7	SVC
47	1.00	SVC	1.1	SVC	5.8	SVC	58.4	SVC	5.0	SVC
48	1.00	SVC	1.1	SVC	5.8	SVC	59.6	SVC	4.1	SVC
49	1.00	SVC	1.2	SVC	5.8	SVC	59.9	SVC	4.2	SVC
50	1.00	SVC	1.2	SVC	5.6	SVC	60.9	SVC	0.0	SVC
51	1.00	SVC	1.2	SVC	5.6	SVC	60.4	SVC	1.9	SVC
52	1.00	SVC	1.2	SVC	5.7	SVC	57.2	SVC	7.7	SVC
53	1.00	SVC	1.2	SVC	5.7	SVC	59.1	SVC	6.1	SVC
54	1.00	SVC	1.3	SVC	5.6	SVC	60.1	SVC	5.3	SVC
55	1.00	SVC	1.2	SVC	5.7	SVC	61.5	SVC	2.5	SVC
56	1.00	SVC	1.1	SVC	5.6	SVC	62.2	SVC	0.0	SVC
57	1.00	SVC	1.2	SVC	5.3	SVC	60.4	SVC	1.0	SVC
58	1.00	SVC	1.1	SVC	5.5	SVC	58.7	SVC	6.0	SVC
59	1.00	SVC	1.1	SVC	5.7	SVC	59.4	SVC	4.1	SVC

Explanation for Status Code

SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/27/2013, Hour 12:00

Minute	CO PPM 1-Min	Stat	SO2 PPM 1-Min	Stat	DELTA P IWC 1-Min	Stat	TEMP deg F 1-Min	Stat
0	128.6	SVC	0.3	SVC	0.818	SVC	355.2	SVC
1	132.7	SVC	0.3	SVC	0.823	SVC	355.4	SVC
2	132.0	SVC	0.4	SVC	0.817	SVC	355.6	SVC
3	129.6	SVC	0.3	SVC	0.819	SVC	355.4	SVC
4	123.0	SVC	0.3	SVC	0.811	SVC	355.3	SVC
5	134.1	SVC	0.3	SVC	0.809	SVC	355.1	SVC
6	183.0	SVC	0.3	SVC	0.793	SVC	355.1	SVC
7	109.7	SVC	0.3	SVC	0.800	SVC	355.2	SVC
8	124.0	SVC	0.3	SVC	0.802	SVC	355.1	SVC
9	125.1	SVC	0.3	SVC	0.793	SVC	355.1	SVC
10	110.7	SVC	0.3	SVC	0.797	SVC	355.0	SVC
11	121.9	SVC	0.3	SVC	0.797	SVC	355.1	SVC
12	126.5	SVC	0.3	SVC	0.804	SVC	355.3	SVC
13	122.2	SVC	0.3	SVC	0.812	SVC	355.3	SVC
14	119.0	SVC	0.3	SVC	0.826	SVC	355.5	SVC
15	130.6	SVC	0.3	SVC	0.810	SVC	355.6	SVC
16	137.2	SVC	0.3	SVC	0.805	SVC	355.4	SVC
17	178.4	SVC	0.1	SVC	0.791	SVC	355.3	SVC
18	113.6	SVC	0.1	SVC	0.785	SVC	355.3	SVC
19	103.7	SVC	0.3	SVC	0.787	SVC	355.3	SVC
20	99.6	SVC	0.3	SVC	0.797	SVC	355.2	SVC
21	112.0	SVC	0.3	SVC	0.797	SVC	355.3	SVC
22	150.4	SVC	0.3	SVC	0.808	SVC	355.3	SVC
23	150.5	SVC	0.3	SVC	0.805	SVC	355.3	SVC
24	126.6	SVC	0.3	SVC	0.798	SVC	355.4	SVC
25	134.7	SVC	0.2	SVC	0.788	SVC	355.6	SVC
26	122.9	SVC	0.1	SVC	0.780	SVC	355.3	SVC
27	105.6	SVC	0.1	SVC	0.786	SVC	355.0	SVC
28	159.9	SVC	0.3	SVC	0.781	SVC	355.0	SVC
29	113.5	SVC	0.3	SVC	0.786	SVC	355.3	SVC
30	107.5	SVC	0.3	SVC	0.810	SVC	355.3	SVC
31	117.1	SVC	0.3	SVC	0.792	SVC	355.1	SVC
32	125.0	SVC	0.3	SVC	0.783	SVC	355.2	SVC
33	123.1	SVC	0.3	SVC	0.800	SVC	355.3	SVC
34	114.6	SVC	0.3	SVC	0.822	SVC	355.5	SVC
35	108.9	SVC	0.3	SVC	0.811	SVC	355.6	SVC
36	119.4	SVC	0.3	SVC	0.791	SVC	355.6	SVC
37	111.8	SVC	0.3	SVC	0.802	SVC	355.6	SVC
38	112.4	SVC	0.3	SVC	0.794	SVC	355.7	SVC
39	146.7	SVC	0.3	SVC	0.785	SVC	355.6	SVC
40	106.8	SVC	0.3	SVC	0.786	SVC	355.7	SVC
41	96.6	SVC	0.3	SVC	0.800	SVC	355.7	SVC
42	102.1	SVC	0.4	SVC	0.807	SVC	355.6	SVC
43	115.2	SVC	0.4	SVC	0.809	SVC	355.8	SVC
44	137.2	SVC	0.4	SVC	0.812	SVC	356.1	SVC
45	147.0	SVC	0.3	SVC	0.807	SVC	356.3	SVC
46	117.6	SVC	0.3	SVC	0.806	SVC	356.3	SVC
47	106.5	SVC	0.3	SVC	0.796	SVC	356.3	SVC
48	103.0	SVC	0.3	SVC	0.792	SVC	356.3	SVC
49	110.3	SVC	0.3	SVC	0.800	SVC	356.4	SVC
50	145.9	SVC	0.4	SVC	0.822	SVC	356.6	SVC
51	137.9	SVC	0.4	SVC	0.812	SVC	356.8	SVC
52	131.7	SVC	0.4	SVC	0.806	SVC	356.9	SVC
53	120.8	SVC	0.4	SVC	0.811	SVC	357.0	SVC
54	116.4	SVC	0.4	SVC	0.822	SVC	356.9	SVC
55	126.3	SVC	0.3	SVC	0.826	SVC	356.9	SVC
56	129.5	SVC	0.3	SVC	0.820	SVC	356.9	SVC
57	120.5	SVC	0.3	SVC	0.824	SVC	356.9	SVC
58	128.4	SVC	0.3	SVC	0.830	SVC	356.9	SVC
59	130.6	SVC	0.3	SVC	0.825	SVC	356.8	SVC

Explanation for Status Code

SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/27/2013, Hour 08:00

Minute	PROCESS 1-Min	Stat	OPACITY % 1-Min	Stat	O2 % 1-Min	Stat	NOX PPM 1-Min	Stat	NH3 PPM 1-Min	Stat
0	1.00	SVC	1.8	SVC	5.2	SVC	47.3	SVC	5.6	SVC
1	1.00	SVC	1.8	SVC	5.1	SVC	51.8	PRG	0.0	PRG
2	1.00	SVC	1.8	SVC	5.1	SVC	48.6	PRG	0.1	PRG
3	1.00	SVC	2.0	SVC	5.0	SVC	13.2	PRG	28.9	PRG
4	1.00	SVC	1.9	SVC	5.2	SVC	17.6	PRG	36.6	PRG
5	1.00	SVC	1.7	SVC	5.0	SVC	43.8	NSA	2.1	NSA
6	1.00	SVC	1.7	SVC	5.1	SVC	42.9	NSA	1.1	NSA
7	1.00	SVC	1.6	SVC	5.0	SVC	42.1	NSA	3.9	NSA
8	1.00	SVC	1.4	SVC	5.0	SVC	36.4	NSA	7.9	NSA
9	1.00	SVC	1.4	SVC	4.8	SVC	42.4	NSA	4.6	NSA
10	1.00	SVC	1.5	SVC	4.6	SVC	40.9	SVC	7.8	SVC
11	1.00	SVC	1.6	SVC	4.7	SVC	43.1	SVC	6.8	SVC
12	1.00	SVC	1.5	SVC	4.7	SVC	45.1	SVC	2.0	SVC
13	1.00	SVC	1.6	SVC	4.6	SVC	46.7	SVC	1.9	SVC
14	1.00	SVC	1.4	SVC	4.9	SVC	44.7	SVC	4.7	SVC
15	1.00	SVC	1.4	SVC	5.1	SVC	45.8	SVC	4.4	SVC
16	1.00	SVC	1.3	SVC	5.1	SVC	47.5	SVC	0.0	SVC
17	1.00	SVC	1.3	SVC	5.0	SVC	47.1	SVC	0.0	SVC
18	1.00	SVC	1.5	SVC	5.1	SVC	43.9	SVC	2.7	SVC
19	1.00	SVC	2.0	SVC	5.3	SVC	43.5	SVC	4.5	SVC
20	1.00	SVC	1.7	SVC	5.8	SVC	45.2	SVC	1.8	SVC
21	1.00	SVC	1.4	SVC	5.4	SVC	45.3	SVC	0.0	SVC
22	1.00	SVC	1.3	SVC	5.1	SVC	38.7	SVC	2.6	SVC
23	1.00	SVC	1.3	SVC	5.3	SVC	34.5	SVC	9.4	SVC
24	1.00	SVC	1.3	SVC	5.1	SVC	37.9	SVC	6.3	SVC
25	1.00	SVC	1.3	SVC	5.2	SVC	40.2	SVC	6.2	SVC
26	1.00	SVC	1.4	SVC	5.1	SVC	40.6	SVC	5.9	SVC
27	1.00	SVC	1.4	SVC	5.2	SVC	42.6	SVC	2.3	SVC
28	1.00	SVC	1.5	SVC	4.9	SVC	43.3	SVC	0.8	SVC
29	1.00	SVC	1.4	SVC	4.9	SVC	41.1	SVC	0.9	SVC
30	1.00	SVC	1.4	SVC	4.9	SVC	40.4	SVC	2.3	SVC
31	1.00	SVC	1.4	SVC	4.9	SVC	39.7	SVC	1.9	SVC
32	1.00	SVC	1.4	SVC	4.9	SVC	40.1	SVC	0.6	SVC
33	1.00	SVC	1.4	SVC	4.9	SVC	39.6	SVC	1.3	SVC
34	1.00	SVC	1.5	SVC	5.0	SVC	38.8	SVC	3.3	SVC
35	1.00	SVC	1.3	SVC	5.2	SVC	38.9	SVC	1.9	SVC
36	1.00	SVC	1.2	SVC	5.1	SVC	39.5	SVC	2.0	SVC
37	1.00	SVC	1.3	SVC	5.0	SVC	38.6	SVC	5.7	SVC
38	1.00	SVC	1.4	SVC	5.0	SVC	39.8	SVC	5.9	SVC
39	1.00	SVC	1.6	SVC	4.9	SVC	41.8	SVC	2.5	SVC
40	1.00	SVC	1.5	SVC	4.9	SVC	42.4	SVC	0.4	SVC
41	1.00	SVC	1.6	SVC	4.8	SVC	41.0	SVC	1.3	SVC
42	1.00	SVC	1.6	SVC	4.9	SVC	40.5	SVC	2.1	SVC
43	1.00	SVC	1.6	SVC	4.9	SVC	40.7	SVC	0.6	SVC
44	1.00	SVC	1.4	SVC	4.9	SVC	40.5	SVC	1.3	SVC
45	1.00	SVC	1.4	SVC	5.0	SVC	38.0	SVC	5.6	SVC
46	1.00	SVC	1.6	SVC	4.9	SVC	39.8	SVC	3.7	SVC
47	1.00	SVC	1.4	SVC	5.1	SVC	40.6	SVC	1.7	SVC
48	1.00	SVC	1.3	SVC	5.2	SVC	39.9	SVC	1.9	SVC
49	1.00	SVC	1.2	SVC	5.6	SVC	38.7	SVC	5.6	SVC
50	1.00	SVC	1.3	SVC	5.7	SVC	40.0	SVC	3.0	SVC
51	1.00	SVC	1.1	SVC	5.7	SVC	41.3	SVC	0.0	SVC
52	1.00	SVC	1.2	SVC	5.5	SVC	39.6	SVC	0.9	SVC
53	1.00	SVC	1.2	SVC	5.6	SVC	35.6	SVC	6.7	SVC
54	1.00	SVC	1.2	SVC	5.6	SVC	37.7	SVC	5.5	SVC
55	1.00	SVC	1.1	SVC	5.6	SVC	40.8	SVC	0.0	SVC
56	1.00	SVC	1.0	SVC	5.7	SVC	38.9	SVC	0.3	SVC
57	1.00	SVC	1.1	SVC	5.4	SVC	36.0	SVC	4.1	SVC
58	1.00	SVC	1.1	SVC	5.5	SVC	36.6	SVC	4.6	SVC
59	1.00	SVC	1.2	SVC	5.2	SVC	37.1	SVC	5.4	SVC

Explanation for Status Code

PRG = PROBE PURGING
NSA = NO SAMPLE AVAILABLE
SVC = MONITOR IN SERVICE

Hourly One Minute Report
For 6/27/2013, Hour 08:00

Minute	CO PPM 1-Min	Stat	SO2 PPM 1-Min	Stat	DELTA P IWC 1-Min	Stat	TEMP deg F 1-Min	Stat
0	195.1	SVC	0.3	SVC	0.896	SVC	350.7	SVC
1	24.4	PRG	0.3	PRG	0.906	SVC	351.3	SVC
2	186.6	PRG	0.3	PRG	0.911	SVC	351.8	SVC
3	334.7	PRG	0.3	PRG	0.916	SVC	352.5	SVC
4	398.3	PRG	0.2	PRG	0.925	SVC	352.9	SVC
5	355.9	NSA	0.2	NSA	0.933	SVC	353.5	SVC
6	275.8	NSA	0.1	NSA	0.904	SVC	353.9	SVC
7	306.2	NSA	0.1	NSA	0.888	SVC	354.3	SVC
8	449.9	NSA	0.1	NSA	0.884	SVC	354.5	SVC
9	248.8	NSA	0.1	NSA	0.872	SVC	354.9	SVC
10	251.0	SVC	0.1	SVC	0.883	SVC	355.2	SVC
11	302.8	SVC	0.1	SVC	0.876	SVC	355.5	SVC
12	350.7	SVC	0.2	SVC	0.892	SVC	355.9	SVC
13	311.1	SVC	0.2	SVC	0.906	SVC	356.5	SVC
14	241.2	SVC	0.2	SVC	0.881	SVC	356.9	SVC
15	181.0	SVC	0.3	SVC	0.879	SVC	357.1	SVC
16	219.8	SVC	0.1	SVC	0.878	SVC	357.5	SVC
17	183.4	SVC	0.1	SVC	0.902	SVC	357.8	SVC
18	185.7	SVC	0.1	SVC	0.921	SVC	358.4	SVC
19	215.5	SVC	0.1	SVC	0.939	SVC	358.9	SVC
20	378.3	SVC	0.2	SVC	0.953	SVC	359.4	SVC
21	421.0	SVC	0.1	SVC	0.928	SVC	359.9	SVC
22	299.6	SVC	0.1	SVC	0.926	SVC	360.2	SVC
23	280.1	SVC	0.1	SVC	0.919	SVC	360.4	SVC
24	275.4	SVC	0.1	SVC	0.936	SVC	360.8	SVC
25	235.0	SVC	0.1	SVC	0.925	SVC	361.3	SVC
26	207.0	SVC	0.1	SVC	0.927	SVC	361.4	SVC
27	278.7	SVC	0.1	SVC	0.923	SVC	361.8	SVC
28	306.1	SVC	0.2	SVC	0.931	SVC	362.2	SVC
29	414.0	SVC	0.2	SVC	0.908	SVC	362.5	SVC
30	455.8	SVC	0.2	SVC	0.907	SVC	362.5	SVC
31	423.3	SVC	0.2	SVC	0.914	SVC	362.7	SVC
32	511.8	MOR	0.1	SVC	0.927	SVC	362.9	SVC
33	511.8	MOR	0.1	SVC	0.927	SVC	363.2	SVC
34	451.3	SVC	0.1	SVC	0.915	SVC	363.4	SVC
35	441.7	SVC	0.1	SVC	0.897	SVC	363.7	SVC
36	296.1	SVC	0.1	SVC	0.892	SVC	363.8	SVC
37	222.2	SVC	0.1	SVC	0.899	SVC	364.0	SVC
38	251.5	SVC	0.1	SVC	0.922	SVC	364.0	SVC
39	414.7	SVC	0.1	SVC	0.940	SVC	364.1	SVC
40	392.4	SVC	0.1	SVC	0.951	SVC	364.5	SVC
41	435.0	SVC	0.1	SVC	0.961	SVC	364.9	SVC
42	511.8	MOR	0.1	SVC	0.948	SVC	365.1	SVC
43	462.6	SVC	0.1	SVC	0.978	SVC	365.3	SVC
44	434.7	SVC	0.1	SVC	0.965	SVC	365.6	SVC
45	395.2	SVC	0.1	SVC	0.966	SVC	365.9	SVC
46	407.2	SVC	0.0	SVC	0.976	SVC	366.3	SVC
47	429.0	SVC	0.0	SVC	0.966	SVC	366.3	SVC
48	342.7	SVC	0.1	SVC	0.948	SVC	366.5	SVC
49	251.5	SVC	0.1	SVC	0.947	SVC	366.3	SVC
50	218.3	SVC	0.1	SVC	0.928	SVC	366.3	SVC
51	288.9	SVC	0.1	SVC	0.919	SVC	366.3	SVC
52	192.5	SVC	0.1	SVC	0.904	SVC	366.5	SVC
53	160.0	SVC	0.1	SVC	0.893	SVC	366.6	SVC
54	219.7	SVC	0.1	SVC	0.890	SVC	366.7	SVC
55	280.3	SVC	0.1	SVC	0.856	SVC	366.6	SVC
56	204.4	SVC	0.0	SVC	0.841	SVC	366.4	SVC
57	172.4	SVC	0.1	SVC	0.837	SVC	366.1	SVC
58	220.6	SVC	0.1	SVC	0.847	SVC	365.7	SVC
59	181.7	SVC	0.1	SVC	0.862	SVC	365.6	SVC

Explanation for Status Code

PRG = PROBE PURGING
NSA = NO SAMPLE AVAILABLE
MOR = MONITOR OUT OF RANGE
SVC = MONITOR IN SERVICE

Appendix N

NOZZLE CALIBRATION DATA

FACILITY: Pinetree Fitchburg DATE: 6-26-13

NOZZLE ID: SS-TFE-8-1

DIAMETER #	INSIDE DIAMETER (in)
1	0.251
2	0.250
3	0.250
AVERAGE	0.250

NOZZLE ID: PM10-3-1

DIAMETER #	INSIDE DIAMETER (in)
1	0.165
2	0.166
3	0.166
AVERAGE	0.166

NOZZLE ID: PM10-3-2

DIAMETER #	INSIDE DIAMETER (in)
1	0.166
2	0.165
3	0.167
AVERAGE	0.166

NOTE: The difference between inside diameters shall not exceed 0.004 inches

METHOD 5 PRE-TEST CONSOLE CALIBRATION
USING CALIBRATED CRITICAL ORIFICES
6-POINT ENGLISH UNITS

Meter Console Information	
Console Model Number	MB-2
Console Serial Number	MB-2
DGM Model Number	175
DGM Serial Number	MB2-175

Calibration Conditions			
Date	Time	13-Jun-13	11:20
Barometric Pressure		29.45	in Hg
Theoretical Critical Vacuum[1]		13.80	in Hg
Calibration Technician		CP	

Factors/Conversions		
Std Temp	528	°R
Std Press	29.92	in Hg
K_1	17.647	oR/in Hg

[1]For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.

[2]The Critical Orifice Coefficient, K', must be entered in English units, $(ft^3 \cdot R^{1/2})/(in.Hg \cdot min)$.

Calibration Data										
Run Time	Metering Console					Critical Orifice				
Elapsed	DGM Orifice ΔH	Volume Initial	Volume Final	Outlet Temp Initial	Outlet Temp Final	Serial Number	Coefficient	Amb Temp Initial	Amb Temp Final	Actual Vacuum
(θ)	(P_m)	(V_{mi})	(V_{mf})	(t_{mi})	(t_{mf})		K'	(t_{amb})	(t_{amb})	
min	in H2O	cubic feet	cubic feet	°F	°F		see above2	°F	°F	in Hg
10.0	0.33	748.500	751.803	67	68	1	0.2598	65	65	19
10.0	0.82	758.500	763.774	69	71	2	0.4114	65	66	18
10.0	1.50	764.700	771.763	71	72	3	0.5502	66	66	17
10.0	2.20	772.700	781.259	73	74	4	0.6650	65	66	16
10.0	3.40	782.500	793.222	74	75	5	0.8268	65	64	14
10.0	3.85	795.000	806.410	75	75	6	0.8809	65	66	14

Results								
Standardized Data				Dry Gas Meter				
Dry Gas Meter		Critical Orifice		Calibration Factor		Flowrate	ΔH @	
				Value	Variation	Std & Corr	0.75 SCFM	Variation
($V_{m(std)}$)	($Q_{m(std)}$)	($Vcr_{(std)}$)	($Q_{cr(std)}$)	(Y)	(ΔY)	($Q_{m(std)(corr)}$)	(ΔH@)	(ΔΔH@)
cubic feet	cfm	cubic feet	cfm			cfm	in H2O	
3.257	0.326	3.339	0.334	1.0253	0.008	0.334	1.644	-0.013
5.182	0.518	5.285	0.529	1.0199	0.003	0.529	1.627	-0.030
6.952	0.695	7.068	0.707	1.0168	0.000	0.707	1.665	0.008
8.423	0.842	8.556	0.856	1.0158	-0.001	0.856	1.666	0.009
10.514	1.051	10.658	1.066	1.0137	-0.003	1.066	1.666	0.009
11.190	1.119	11.317	1.132	1.0113	-0.006	1.132	1.676	0.018
				1.0171	Y Average		1.657	ΔH@ Average

Note: 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.

I certify that the above Dry Gas Meter was calibrated in accordance with USEPA Methods, CFR 40 Part 60, using the Precision Wet Test Meter # 11AE6 which in turn was calibrated using the American Bell Prover # 3785, certificate # F107, which is traceable to the National Bureau of Standards (N.I.S.T.).

Signature ______________________ Date ______________

Thermocouple Calibration Sheet

DATE: 4/4/2013
TECHNICIAN: CS

ALL READINGS IN DEGREES FARENHEIGHT

T.C. ID	ASSET NUMBER	ICE WATER	ACTUAL RESPONSE	BOILING WATER	ACTUAL RESPONSE	% DIFF LOW	% DIFF HIGH	RESULT
M5-3-1	0115	32.2	32.2	212.0	213.0	0.00	0.47	**PASS**
M5-3-2	0116	32.1	32.0	212.0	212.0	0.31	0.00	**PASS**
M5-3-3	0117	32.1	32.1	212.0	211.0	0.00	0.47	**PASS**
M5-3-4	0118	32.1	32.1	212.0	212.0	0.00	0.00	**PASS**
M5-5-1	0114	32.1	32.2	212.0	213.0	0.31	0.47	**PASS**
M5-5-2	0122	32.1	32.3	212.0	213.0	0.62	0.47	**PASS**
M5-6-1	0112	32.2	32.2	212.0	210.0	0.00	0.94	**PASS**
M5-7-2	0113	32.2	32.2	212.0	211.0	0.00	0.47	**PASS**
M5-7-3	0110	32.2	32.0	212.0	212.0	0.63	0.00	**PASS**
M5-7-4	0111	32.2	32.2	212.0	212.0	0.00	0.00	**PASS**
M5-7-HH	0134	32.1	32.3	212.0	212.0	0.62	0.00	**PASS**
M5INC-7-1	0123	32.0	32.2	212.0	212.0	0.62	0.00	**PASS**
M5INC-7-2	0124	32.1	32.3	212.0	211.0	0.62	0.47	**PASS**
M5-8-1	0108	32.1	32.1	212.0	212.0	0.00	0.00	**PASS**
M5-8-2	0109	32.1	32.1	212.0	212.0	0.00	0.00	**PASS**
M5-9-1	0107	32.1	32.0	212.0	212.0	0.31	0.00	**PASS**
M5-10-1	0106	32.1	32.4	212.0	213.0	0.93	0.47	**PASS**
M5-12-1	0130							
M5-13-1	0105							
M5-16-1	0131							
M5-16-2	0132	32.2	32.1	212.0	212.0	0.31	0.00	**PASS**
M5-16-3	0133	32.2	32.4	212.0	212.0	0.62	0.00	**PASS**
TF-7	0125	32.1	32.2	212.0	212.0	0.31	0.00	**PASS**
TF-TELE	0126							
TF-9	-							
TF-10	-	32.1	32.2	212.0	213.0	0.31	0.47	**PASS**
TF-11-1	0135	32.2	32.1	212.0	211.0	0.31	0.47	**PASS**

Thermocouple Calibration Sheet

DATE: 4/4/2013
TECHNICIAN CS

ALL READINGS IN DEGREES FARENHEIGHT

T.C. ID	ASSET NUMBER	ICE WATER	ACTUAL RESPONSE	BOILING WATER	ACTUAL RESPONSE	% DIFF LOW	% DIFF HIGH	RESULT
FIA-1	0052	32.0	32.1	212	212	0.31	0.00	PASS
		32.0	32.1	212	212	0.31	0.00	PASS
FIA-2	0053	32.0	32.1	212	212	0.31	0.00	PASS
		32.0	32.2	212	212	0.62	0.00	PASS
FIA-3	0054	32.0	32.2	212	211	0.62	0.47	PASS
		32.0	32.0	212	211	0.00	0.47	PASS
FIA-4	0055	32.0	32.0	212	213	0.00	0.47	PASS
		32.0	32.2	212	212	0.62	0.00	PASS
FIA-5	0056	32.0	32.1	212	213	0.31	0.47	PASS
		32.0	32.0	212	213	0.00	0.47	PASS
FIA-6	0057	32.0	32.3	212	211	0.93	0.47	PASS
		32.0	32.4	212	211	1.23	0.47	PASS
MB-1	0001	32.0	32.1	212	213	0.31	0.47	PASS
DGM IN		32.0	32.2	212	212	0.62	0.00	PASS
MB-1		32.0	32.2	212	213	0.62	0.47	PASS
DGM OUT		32.0	32.2	212	213	0.62	0.47	PASS
MB-2	0002	32.0	32.1	212	212	0.31	0.00	PASS
DGM IN		32.0	32.2	212	211	0.62	0.47	PASS
MB-2		32.0	32.0	212	211	0.00	0.47	PASS
DGM OUT		32.0	31.9	212	211	0.31	0.47	PASS
MB-3	0003	32.0	32.0	212	212	0.00	0.00	PASS
DGM IN		32.0	32.1	212	212	0.31	0.00	PASS
MB-3		32.0	32.0	212	212	0.00	0.00	PASS
DGM OUT		32.0	31.9	212	210	0.31	0.94	PASS
MB-4	0004	32.0	32.1	212	210	0.31	0.94	PASS
DGM OUT		32.0	31.9	212	210	0.31	0.94	PASS
AUX		32.0	32.3	212	213	0.93	0.47	PASS
		32.0	32.2	212	213	0.62	0.47	PASS

CEMServices
360 Old Colony Road, Suite 1, Norton, MA 02766

Thermocouple Calibration Sheet

DATE: 4/4/2013
TECHNICIAN JJ

ALL READINGS IN DEGREES FARENHEIGHT

T.C. ID	AMBIENT WATER	ACTUAL RESPONSE	BOILING WATER	ACTUAL RESPONSE	% DIFF LOW	% DIFF HIGH	RESULT
TF-3'	32	32.2	212	212	0.62	0.05	**PASS**
	32	32.0	212	212	0.00	0.05	**PASS**
TF-5'	32	32.1	212	211	0.31	0.47	**PASS**
	32	32.2	212	211	0.62	0.47	**PASS**
TF-7-1-SS	32	32.0	212	210	0.00	0.94	**PASS**
	32	32.1	212	211	0.31	0.47	**PASS**
TF-10-1-ADJ'	32	32.0	212	210	0.00	0.94	**PASS**
	32	32.2	212	211	0.62	0.47	**PASS**

Thermocouple Calibration Sheet

DATE: 4/4/2013
TECHNICIAN CS

ALL READINGS IN DEGREES FARENHEIGHT

Ser. #	T.C. ID	ICE WATER	ACTUAL RESPONSE	BOILING WATER	ACTUAL RESPONSE	% DIFF LOW	% DIFF HIGH	RESULT
501	IS-1	32.0	32.2	212	212	0.62	0.00	PASS
		32.0	32.2	212	211	0.62	0.47	PASS
2206	IS-2	32.0	32.0	212	212	0.00	0.00	PASS
		32.0	32.0	212	212	0.00	0.00	PASS
	OFFSET-1	32.0	32.3	212	212	0.93	0.00	PASS
		32.0	32.3	212	213	0.93	0.47	PASS
708	OFFSET-2	32.0	32.2	212	211	0.62	0.47	PASS
		32.0	32.2	212	211	0.62	0.47	PASS
	OFFSET-3	32.0	32.2	212	211	0.62	0.47	PASS
		32.0	32.3	212	211	0.93	0.47	PASS
183	OFFSET-4	32.0	31.9	212	210	0.31	0.94	PASS
		32.0	32.0	212	212	0.00	0.00	PASS
454	OFFSET-5	32.0	32.4	212	212	1.23	0.00	PASS
		32.0	32.4	212	213	1.23	0.47	PASS
459	OFFSET-6	32.0	32.1	212	210	0.31	0.94	PASS
		32.0	32.2	212	210	0.62	0.94	PASS
709	OFFSET-7	32.0	32.0	212	214	0.00	0.94	PASS
		32.0	31.9	212	213	0.31	0.47	PASS
	OFFSET-8	32.0	32.0	212	212	0.00	0.00	PASS
		32.0	31.9	212	211	0.31	0.47	PASS
	FH-1	32.0	32.1	212	211	0.31	0.47	PASS
		32.0	32.1	212	212	0.31	0.00	PASS
	FH-2	32.0	32.3	212	213	0.93	0.47	PASS
		32.0	32.3	212	213	0.93	0.47	PASS
	FH-3	32.0	32.0	212	212	0.00	0.00	PASS
		32.0	32.1	212	210	0.31	0.94	PASS
	GLASS-1	32.0	32.0	212	212	0.00	0.00	PASS
		32.0	32.0	212	211	0.00	0.47	PASS
	GLASS-2	32.0	32.3	212	212	0.93	0.00	PASS
		32.0	32.3	212	213	0.93	0.47	PASS
	GLASS-3	32.0	32.0	212	212	0.00	0.00	PASS
		32.0	32.0	212	213	0.00	0.47	PASS
	GLASS-4	32.0	32.1	212	214	0.31	0.94	PASS
		32.0	32.2	212	214	0.62	0.94	PASS
	VOST 1	32.0	31.9	212	213	0.31	0.47	PASS
		32.0	31.9	212	212	0.31	0.00	PASS
	VOST-2	32.0	31.9	212	210	0.31	0.94	PASS
		32.0	32.1	212	210	0.31	0.94	PASS
5122	OFFSET-9-	32.0	32.0	212	210	0.00	0.94	PASS
	SHORT	32.0	32.1	212	210	0.31	0.94	PASS
5049	OFFSET-10-	32.0	32.1	212	212	0.31	0.00	PASS
	SHORT	32.0	32.2	212	212	0.62	0.00	PASS

GLASS-5-	32.0	32.1	212	212	0.31	0.00	PASS
SHORT	32.0	32.1	212	212	0.31	0.00	PASS
GLASS-6-	32.0	32.0	212	212	0.00	0.00	PASS
SHORT	32.0	31.8	212	212	0.63	0.00	PASS

360 Old Colony Road, Suite 1, Norton, MA 02766

CEMServices

S - TYPE PITOT GEOMETRIC CALIBRATION

PROBE IDENTIFICATION:	M5-7-2
PITOT IDENTIFICATION:	12-1
TECHNICAL SPECIALIST:	CS
CALIBRATION DATE:	5/2/2013

PART 1 - PROBE CONFIGURATION

			RESULT
A.	Dt=	0.373	PASS
	Dn =	0.500	PASS
	a =	0.985	PASS
B.	Pa=	0.504	SEE PART-2
	Pb =	0.510	SEE PART-2
	b =	1.454	PASS
C.	c =	3.115	PASS
	d =	7.02	PASS
	e =	0.86	PASS
D.	c =	NA	NA
	f =	NA	NA

PART 2 - PITOT ALIGNMENT

			RESULT
A.	a=	0.912	
	b=	0.366	
	c=	0.959	
	d=	0.373	
	e=	0.97	
	=	86.05	PASS
	'=	87.48	PASS
B.	a=	0.886	
	b=	0.488	
	c=	0.979	
	d=	0.482	
	e=	1.030	
	›=	85.71	PASS
	›'=	92.92	PASS
C.	f=	0.030	PASS
D.	g=	0.00	PASS

SPECIFICATIONS (EPA Method #2)

Dt = 3/16" to 3/8"	b >= 0
Dn = 1/2"	c,d >= 3"
* Pa = Pb	f >= 2"
a,e >= 3/4"	

* Slight misalignments of the openings are permissible.
If PART 2 - PITOT ALIGNMENT specifications are met,
then these will not effect the baseline value of Cp(s).

SPECIFICATIONS (EPA Method #2)

80ø</'< 100ø

85ø<›/›'< 95ø

f < 1/8"

g < 1/32"

Environmental Supply Company, Inc.
Quality Source Sampling Systems & Accessories

Wind Tunnel Pitot Calibration

S-type Pitot ID:	P-749	Date:	26-Jul-12
Standard Pitot ID:	RE2-20	Personnel:	BR
Cp(std):	0.99	Cp(actual):	0.770
Part Number:	PPS12-Y-PM1025	P(bar):	29.61
Test Velocity (fps):	50	T(°F):	89
Wind Tunnel Location:	Wake Forest, NC	Tunnel Size:	30" x 36"

A-SIDE

ΔP_{std} (in. H_2O)	ΔP_s (in. H_2O)	Cp(s)	Deviation*
0.423	0.697	0.772	0.002
0.420	0.697	0.769	-0.001
0.420	0.693	0.770	0.000
	AVERAGE	0.770	0.001
		Std deviation	0.002

NOTES:

1. **Pitot calibrated with an Environmental Supply Co. PM10 cyclone.**
2. **C_p is only valid when used with PM10 cyclone.**
3. **C_p is only valid with 1" spacing from PM10 cyclone.**

$$Cp(s) = Cp(std)\sqrt{\frac{\Delta P(std)}{\Delta P(s)}}$$

*Deviation = {Cp(s) - *AVG* Cp(s)} {must be <0.010}

Standard deviation of the deviations must be less than 0.02 for both sides.

Pitot tube S/N P-749 was calibrated in accordance with the CFR 40, Part 60 Appendix A, Method 2, Section 10.

Signature

07/27/12
Date

2142 E. Geer Street, Durham, North Carolina 27704 www.environsupply.com 919-956-9688 FAX: 919-682-0333

Interference Response Test

Auditor: CP **Vehicle:** T4
Date: 10/5/2012 **Asset #:** 69

	191.5 CO / 192.5 NOx / 196.7 SO2				
S/N	**Type**	**Zero**	**Response**	**% Diff**	**Range**
04902C1-2668	**O2**	0.08	0.03	0.2%	25
04902C1-2668	**CO2**	0.00	-0.04	0.2%	20

Servomex O2/CO2 Monitor

Interference must be less than 2% of Span

Interference Response Test

Auditor:	CP	**Vehicle:**	T2
Date:	9/13/2012	**Asset #:**	0025

	22.7 O2 / 19.77 CO2				
S/N	**Type**	**Zero**	**Response**	**% Diff**	**Range**
48-40156-262	**CO**	0.09	-0.315	0.2%	200

	44.0 NOx / 109.9 SO2				
S/N	**Type**	**Zero**	**Response**	**% Diff**	**Range**
48-40156-262	**CO**	0.09	0.09	0.0%	200

TECO 48H CO Monitor

Interference must be less than 2% of Span

Interference Response Test

Auditor: CP　　Vehicle: T5

Date: 10/5/2012　　Asset #: 0071

	22.6 O2 / 19.65 CO2				
S/N	Type	Zero	Response	% Diff	Range
93-721M-8072-8	SO2	-0.2	-0.2	0.0%	100

	227 CO				
S/N	Type	Zero	Response	% Diff	Range
93-721M-8072-8	SO2	-0.2	-0.1	0.1%	100

	110 NOX				
S/N	Type	Zero	Response	% Diff	Range
93-721M-8072-8	SO2	-0.2	0.1	0.3%	100

Western Research 721 SO2 Rack 1 Trailer 5

Interference must be less than 2% of Span

Interference Response Test

Auditor: CP　　Vehicle: T5
Date: 6/15/2013　　Asset #: 0072

10.01% O2 / 10.96% CO2 / 1140 CO / 221 SO2					
S/N	Type	Zero	Response	% Diff	Range
42H-38654-258	NOx	0.01	0.22	0.1%	200

	22.8% O2 / 19.82% CO2				
S/N	Type	Zero	Response	% Diff	Range
42H-38654-258	NOx	0.01	0.01	0.0%	200

TECO 42H NOx Rack 1 Trailer 5

Interference must be less than 2% of Span

Interference Response Test

Auditor: CP **Vehicle:** T5

Date: 6/15/2013 **Asset #:** 0073

	22.8% O2 / 19.82% CO2				
S/N	**Type**	**Zero**	**Response**	**% Diff**	**Range**
N4J3890T	**CO**	-1.11	-0.67	0.0%	2000

	44.5 NOx / 111.4 SO2				
S/N	**Type**	**Zero**	**Response**	**% Diff**	**Range**
N4J3890T	**CO**	-1.110	-1.45	0.0%	2000

California Analytical ZRH CO Rack 1 Trailer 5

Interference must be less than 2% of Span

Appendix O

DEFINITION OF ABBREVIATIONS

ACFM	Flowrate reported in actual cubic feet per minute.
An	Area of the nozzle, cross-sectional, in square feet.
As	Area of the stack in square feet.
BWO	Water vapor in gas stream, proportional by volume.
CC	Percent error confidence coefficient (one tailed).
Cd	Conversion calibration for concentration (PPMdv to lbs/SCF)
Cgas	Final emissions data reported by CEMS, adjusted for calibration drift. Reported as ppm dry, proportional by volume.
Cm	Average CEM response to initial and final span gas system calibration.
Cma	Concentration of the calibration gases.
Co	Average CEM response to initial and final zero gas system calibration.
Craw	Raw emissions data reported by the CEMS, uncorrected for calibration drift.
Cwet	Final emissions data reported by CEMS, adjusted for calibration drift and water vapor. Reported as ppm wet, proportional by volume.
% CO	Percent of carbon monoxide in the flue gas.
% CO_2	Percent of carbon dioxide in the flue gas.
Cp	Pitot tube coefficient.
Cs	The concentration in the stack in pounds per standard cubic foot.
Cs'	The concentration in the stack in grains per standard cubic foot.
Cs' @ 12%	The concentration in the stack in grains per dry standard cubic feet corrected to 12% CO_2.
DELTA H	The pressure differential across orifice meter, reported in inches of H_2O.
DELTA H(ABS)	The pressure differential across orifice meter, absolute conditions in inches of mercury.
Dn (IN)	Diameter of the nozzle in inches.
DGM IN	Temperature of the dry gas meter inlet, reported in degrees Fahrenheit.
DGM OUT	Temperature of the dry gas meter outlet, reported in degrees Fahrenheit.
Ds (FT)	Diameter of the stack in feet.
DSCFH	Dry standard cubic feet per hour.
DSCFM	Dry standard cubic feet per minute.
DSCMH	Dry standard cubic meters per hour.
E	Emission rate in pounds per million Btu using F Factor of fuel burned.
END METER	The dry gas meter reading at the end of the test.
F FACTOR	The theoretical amount of air in dry standard cubic feet (DSCF) needed to combust a million Btu's worth of fuel.
GR/BHP-HR	Grams per brake horsepower hour.
IMP(FIN)	Final volume of absorbing solution in impinger.
IMP(INT)	Initial volume of absorbing solution in impinger.
INT METER	The dry gas meter reading at the beginning of the test.
% ISO	Variation of sampling from isokinetic conditions.
LB/HR	Pounds per hour.
LB/MMBTU	Pounds per million British Thermal Unit.
LB/SCF	Pounds per standard cubic foot.
Md (DRY)	The dry molecular weight of the flue gas in pounds per pound mole.
Ml	Volume in milliliters.
Mg/M3	Milligrams per cubic meter.
Mn	Total particulate found in sample minus the acetone residue (blank). Reported in milligrams.
Ms (WET)	Wet or actual molecular weight of the flue gas in pounds per pound mole.
MW	Molecular weight
% N2	The percent of nitrogen in the flue gas.
NO. PTS	Number of traverse points.
% O2	% oxygen in the flue gas.
P BAR	Barometric pressure at test location.
PIT COEFF	Pitot tube coefficient (S Type=.84, standard=.99).
PPM	Parts per million.

DEFINITION OF ABBREVIATIONS

PPMdv	Parts per million - dry volume.
PPMwv	Parts per million - wet volume.
P STK	Static pressure of the stack in inches of water.
PMR	The pollutant mass rate in pounds per hour.
PS (ABS)	Absolute stack pressure in inches of mercury.
Pstd	Standard absolute pressure, (29.92 in. Hg).
Qs	The volumetric flow rate of the flue gas in dry standard cubic feet per hour.
RA	Relative accuracy.
RATA	Relative accuracy test audit.
RM	Reference Method.
Sd	Emission standard (allowable emission rate).
SQ ROOT	The square root of each velocity head measurement (Delta P).
SQRT DELTA P	The average of the square roots of the measured pressure drops.
Stack Temp	The temperature of the stack in degrees (°F) Fahrenheit.
TM (°F)	Average temperature of the dry gas meter in degrees Fahrenheit.
TM (°R)	Average temperature of the dry gas meter in degrees Rankine.
TS (°R)	The temperature of the stack in degrees Rankine.
VEL HEAD	The pressure drop measured across the pitot tubes.
VI (TOT)	The amount of water collected in the impingers in milliliters.
VM (CF)	The volume sampled through the dry gas meter in cubic feet.
VM STD	Volume sampled through the dry gas meter corrected to standard conditions.
VOC	Volatile organic compounds
VS	Velocity of the stack gas in feet per second.
VW STD	The amount of moisture collected, corrected to standard conditions.
Y	Dry gas meter calibration factor.

GSI Emission Chart 2013 FITCHBURG

2013	Operation Hours	Generation Gross MWh	Generation Net MWh	CO Tons	CO lbs.	CO lb/MWh	NOX Tons	NOX lbs.
July	639.1	10108.8	8846.7	19.3	38696.27	4.374	6.5	12932.44
August	715.0	11437.3	9330.0	19.6	39112.08	4.192	6.4	12704.3
September	660.4	10931.6	9654.4	17.1	34187.18	3.541	6.3	12579.39
Total	2014.49	32477.73	27831.1	55.99776	111995.5	4.024	19.10806	38216.13

			MSS 538		CT?			
NOX lb/MMbtu	NOX lbs/hr	Heat Input	SOX lb/MWh	SOX Tons	SOX lbs.	Particulate lb/MWh	Particulate Tons	Particulate :lbs.
0.069	18.3	264.555	0.0293	0.15	296.30	0.0253	0.2397	479.31
0.064	17.7	275.375	0.0311	0.18	356.10	0.0250	0.2681	536.26
0.064	17.7	275.130	0.0400	0.22	436.83	0.0242	0.2477	495.30
0.066	17.92	271.687	0.033	0.1732	1089.23	0.025	0.7554	1510.87

Mercury lb/MWh
0.000073
0.000078
0.000069
0.000073

CEMServices

360 Old Colony Road, Suite 1
Norton, MA 02766
508-226-6700

PINETREE POWER FITCHBURG, LP
WESTMINSTER, MASSACHUSETTS
DIAGNOSTIC EMISSIONS TEST PROGRAM

JUNE 2013

Source Designation:
Pinetree Power Fitchburg LP
Wood Fired Boiler
2 Rowtier Dr.
Westminster, Massachusetts 01473

Concerning:
Emission Testing for
PM, NOx, CO, NH3

Prepared for:
Pinetree Power Fitchburg LP
2 Rowtier Dr.
Westminster, Massachusetts 01473
and
Combustion Components Associates, Inc.
884 Main Street
Monroe, CT 06468

Prepared by:
CEMServices Inc.
360 Old Colony Road
Norton, Massachusetts 02766

All information contained in this report is true and accurate to the best of my knowledge.

Robert Arnold
Sr. Project Director

8/1/2013
Date

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1. INTRODUCTION

CEMServices of Norton, Massachusetts was retained by Pinetree Power Fitchburg and Combustion Component Associates (CCA) to conduct a Diagnostic Emission Test Program at the Pinetree Fitchburg Facility located in Westminster, Massachusetts.

Table 1-1 indicates the air constituents / pollutants tested, and the test methodologies used during the emissions test program, and the emission limits for any applicable pollutants.

TABLE 1-1
POLLUTANTS, TEST METHODOLOGIES, AND EMISSION LIMITS

CONSTITUENTS	TEST METHODS	EMISSION LIMIT
Volumetric Flow	EPA Method 1 & 2	N/A
Oxygen\Carbon Dioxide	EPA Method 3A	N/A
Moisture	EPA Method 4	N/A
Filterable Particulate Matter	EPA Method 5	0.016 #/MMBtu 4.16 #/hr
Nitrogen Oxides	EPA Method 7E	0.175 #/MMBtu 45.5 #/hr
Carbon Monoxide	EPA Method 10	0.20 #/MM/Btu 52.0 #/hr
Ammonia	5/26A	10 ppmv 2.04 #/hr

For the testing, a total of three runs were performed for each pollutant parameter. All Reference Method LB/MMBtu emission rates were calculated using a calculated 11022 fuel factor (Fd) from a wood sample taken by CCA while onsite. Sterling Analytical conducted the fuel analysis and Maxxam Analytics of conducted all ammonia analysis.

The test program took place on June 25 and 26, 2013. Robert Arnold was the Project Director for this test Program. Jim Jardin, Chris Parrott and Mike Dadmun also of CEMServices assisted him.

2. SUMMARY OF RESULTS

TABLE 2-1
TEST RESULTS JUNE 2013

Run		100% Run 1	100% Run 2 Repeat	50%
PM Total	LB/MMBtu	0.010	0.012	0.009
	LB/HR	3.50	4.17	1.47
NOx	PPM	31.76	33.84	29.37
	LB/MMBtu	0.061	0.065	0.068
	LB/HR	14.45	15.78	9.02
CO	PPM	173.78	409.57	86.44
	LB/MMBtu	0.213	0.480	0.122
	LB/HR	48.09	113.83	16.15
NH3	PPM	1.25	1.30	0.26
	LB/MMBtu	0.0009	0.0009	0.0002
	LB/HR	0.21	0.22	0.03

3. FACILITY DESCRIPTION

3.1 General

Pinetree Power Fitchburg L.P., located in Westminster, Massachusetts consists of a wood fired boiler with a maximum design capacity of 260 MMBTU/hour which uses wood chips as its primary fuel. The boiler drives a steam turbine generator with a nominal output of approximately 16 megawatts net electricity.

Wood fuel is introduced into the boiler through three pneumatic wood fuel distributors. The wood is partially burned in suspension on a Harrington grate provided by Riley Stoker. Multiple levels of overfire air are injected into the combustion section to ensure the complete burn.

Exhaust gases exiting the boiler are directed through a 75-inch inside diameter exhaust stack standing 180 feet above grade. The CEM probes and EPA RM test ports are located approximately 130 feet above grade.

Particulate emissions generated from the source are controlled by a dry mechanical dust collector and a positive pressure air filter system (baghouse). NOx is controlled by the use of Selective Non-catalytic Reduction technology with ammonia injection.

3.2 Test Location

The stack that services the wood-fired boiler at Pinetree Fitchburg has an internal diameter of 6.25 feet at the port height (130 feet). There are two sampling ports, 6 inches in diameter and ninety degrees apart. The distance from the nearest downstream disturbance (taper) to the sampling ports is 20 feet. The distance from the ports to the nearest upstream disturbance (stack exit) is 50 feet. Figure 3-1 is a schematic of the sampling location.

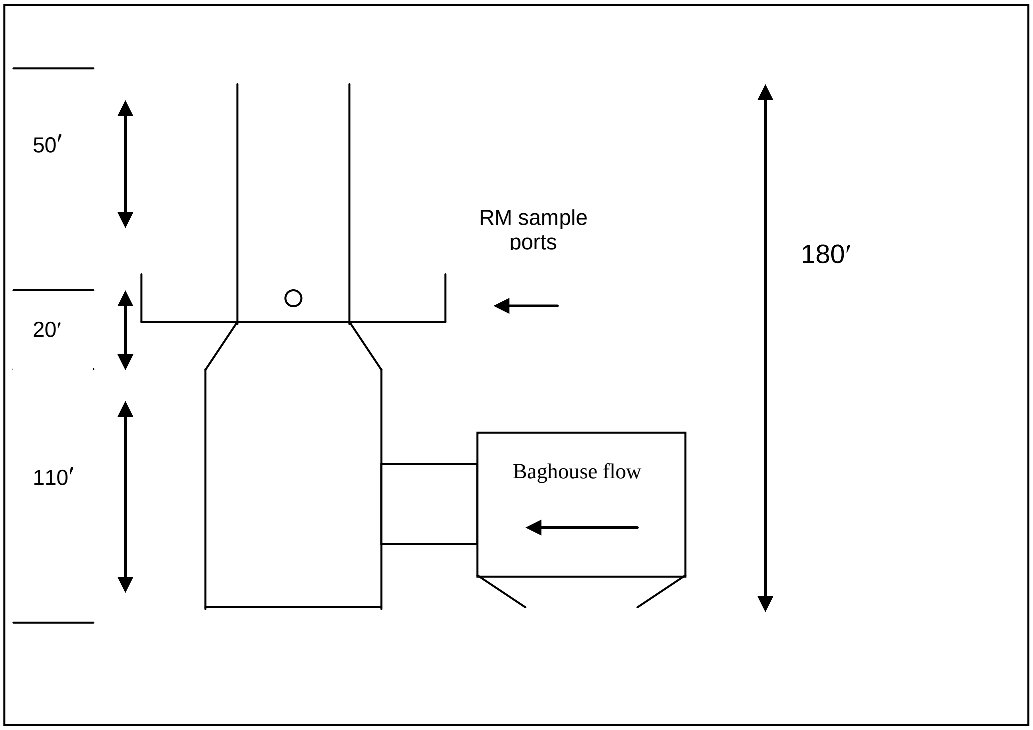

Figure not drawn to scale

FIGURE 3-1
TEST LOCATION

3.3 Plant Entry and Safety Policies

Pinetree Fitchburg requires all visitors to check in with the control room before walking about the plant. Most areas of the plant require a hard hat. Safety glasses and steel toe boots are also encouraged.

4. REFERENCE METHOD TEST PROCEDURES

4.1 Velocity Traverse - EPA Test Method 1

Method 1 procedures delineate velocity traverses for stationary sources. As described in Section 2, the stack internal diameter at the port location is 6.25 feet. The ports are 20 feet or 3.2 diameters from the nearest downstream disturbance, and 50 feet or 8 diameters from the nearest upstream disturbance.

Based upon EPA Method 1 criteria, a total of twenty four (24) traverse points (12 per port) were used for particulate, volumetric flowrate determinations and isokenectic sampling traverses. The probe was marked according to the measurements in Table 4-1. For PM 10/2.5 testing, the probe was placed at a total of twelve (12) traverse points, 6 per port, during the constant rate sampling. This probe was marked according to the measurements in Tables 4-2.

TABLE 4-1
VELOCITY TRAVERSE POINT LOCATIONS

Traverse Point	Distance (% Diameter)	Distance from Wall (inches)
1	2.1	1.6
2	6.7	5.0
3	11.8	8.9
4	17.7	13.3
5	25.0	18.8
6	35.6	26.7
7	64.4	48.3
8	75.0	56.3
9	82.3	61.7
10	88.2	66.2
11	93.3	70.0
12	97.9	73.4

4.2 Volumetric Flow Rate - EPA Test Method 2

Method 2 was used for the determination of stack gas velocity and volumetric flow rate. Before the velocity traverse was started, a leak check was conducted on the pitots, and the manometer was leveled. The pitots were connected to a manometer using 1/8 inch ID Tygon tubing. These connections were checked for leaks prior to the initiation of testing, and at the conclusion of the day. The velocity head and stack gas temperatures were recorded for each of the required sampling points. Simultaneous gas density (Method 3A) and stack gas moisture content (Method 4) testing was conducted during every test run.

4.3 Moisture Content - EPA Test Method 4

Method 4 is used for the determination of moisture content in stack gas. This method consists of extracting a known volume of gas sample and quantifying the removed moisture portion of this sample. Moisture content was determined from each corresponding test run.

Before each test run the impingers used to remove condensate from the gas were prepared according to each specific method. Impingers were loaded according to each method. The sampling train was then assembled and the sampling probe heated. The train was checked for leaks by plugging the sample inlet and challenging the train with a vacuum of 15 inches of Hg. All leak rates were below 0.02 CFM. The initial meter volume was recorded and the probe was positioned at the first traverse point. Sampling was conducted isokinetically for each run when required. At the completion of each test run the final meter volume was recorded and another leak check was conducted. The impingers were recovered and their final volumes recorded.

4.4 Nitrogen Oxides and CEMS Calibration Procedures - EPA Test Method 7E

Method 7E is used for the determination of Nitrogen Oxides emissions from stationary sources using instrumental analyzer procedures. In addition, all calibration procedures and requirements for the other instrumentation methods used (Method 3A) are specified in this method.

Before any testing was conducted, the calibration span of all test analyzers was set up so that expected source emissions were at least twenty (20) percent of this span and would not exceed this span. Once this span was determined, calibration gases were chosen within this span. Only gases prepared according to EPA Protocol G1/G2 were used. Certificates of analysis for all gases were provided on-site at the time of testing. Analyzer calibration error checks were then conducted by challenging each analyzer with a zero, mid, and high gas.

The actual value of the high gas used was the calibration span of each analyzer. Analyzer responses to these gases were within two (2) percent of the instrument's span or within 0.5 PPM of the gas value. Before and after each test run a sampling system bias check was conducted on each monitor.

This check consisted of introducing the calibration gases at the sampling probe thus allowing the gases to travel through the entire sampling system including any filters. The analyzer responses to this check were then recorded by the data acquisition system. All system bias check responses were within five (5) percent of the instruments span or within 0.5 PPM, when compared to the analyzer calibration error check conducted initially.

The sampling system bias check conducted prior to each test run was compared to the sampling system bias check conducted at the completion of that same run.

Differences between the two bias checks constitute the upscale and zero calibration drifts. All calculated calibration drifts were below three (3) percent of the span of the analyzer or within 0.5 PPM.

Once the initial system bias check was conducted the system was put into the sample mode and data acquisition was initiated. The probe was positioned at the first traverse point. The heated probe was 5/8" stainless steel tube that was traversed at 16.7%, 50.0%, and 83.3% of the stack diameter (6.5 ft). Table 4-2 shows the CEM traverse point locations

TABLE 4-2
PS 2 CEM TRAVERSE POINT LOCATIONS

Traverse Point	Distance (% Diameter)	Distance from Wall
1	16.7	12.5 "
2	50.0	37.5 "
3	83.3	62.5 "

A Thermo Environmental Model 42 NOx/NO2/NO analyzer was used to continuously measure the concentration of NOx in the effluent gas. The analytical technique of the analyzer is chemiluminescence. In the determination of NOx, the sample is routed through a molybdenum converter where the NO2 is disassociated to form NO. The sample is then passed through a reaction chamber where the NO is quantitatively converted to NO2 by gas phase oxidation with molecular ozone produced within the analyzer. In this reaction, the NO2 molecules are elevated to an electronically excited state, and then immediately reverted to a non-excited ground state. This reversion is accompanied by the emission of photons, which impinge on a photomultiplier detector and generate a low level DC current. The current is then amplified and used to drive a front panel LED display and data recorder. The NOx concentration measured by the instrument includes the contributions of both the NO in the effluent and the NO resulting from the dissociation of NO2. The efficiency of this converter was checked prior to testing using the procedure specified in Section 8.2.4.1 of this Method.

To ensure that the NH3 in the stack gas was not converted to NO, CEMServices utilized a Model 300 Molybdenum converter. The Molybdenum converter is used to convert NOx to NO at a lower temperature (approx. 350 °C) specific to NOx, thus eliminating the conversion of NH3.

A STRATA data shuttle documented voltage output from each monitor. This instrument sends all signals via a RS-232 cable to a computer for data archiving. Data points were logged every two (2) seconds during each test run. At the test run completion, data was transferred to a spreadsheet for determination of the raw run average. This data is included in the appendices. Results from the initial and final system bias checks were used to adjust the raw run average to correct it for any deviations due to the system bias.

4.5 Carbon Monoxide - EPA Test Method 10

Method 10 is used for the determination of Carbon Monoxide emissions from stationary sources using instrumental analyzer procedures. All calibration procedures and requirements for this instrumentation method are identical to those found in EPA Test Method 7E.

A Thermo Environmental Model 48 Gas Filter Correlation (GFC) analyzer was used to continuously sample the CO concentrations in the gas stream. GFC spectroscopy is based on the comparison of the infrared (IR) absorption spectrum of the measured gas to that of other gases in the sample being analyzed. This technique is implemented by using a high concentration sample of the measured gas (i.e. CO) as a filter for the infrared radiation transmitted through the analyzer. Radiation from an IR source is chopped and passed through a gas filter alternating between CO and N2 due to rotation of the filter wheel. The radiation then passes through an interference filter and on to an absorption cell. The IR radiation exits the sample cell and falls on to an IR detector. The CO gas filter produces a reference beam which cannot be further attenuated by CO in the sample cell. The N2 side of the filter wheel is transparent to the IR radiation and thus produces a measure beam which is partially absorbed by CO in the cell. The chopped detector signal is modulated by the alternation between the two gas filters with is amplified and related to the concentration of CO in the sample cell. Other gases, which absorb the reference and measure beams equally, do not cause modulation of the detector signal leaving the GFC responding specifically to CO. An interference response check was conducted on the CO analyzer prior to testing.

4.6 Oxygen and Carbon Dioxide - EPA Test Method 3A

Method 3A is used for the determination of Oxygen and Carbon Dioxide emissions from stationary sources using instrumental analyzer procedures. All calibration procedures and requirements for this instrumentation method are identical to those found in EPA Test Method 7E.

O2 and CO2 content in the effluent was determined by a California Analytical Instruments monitor. For the O2, the instrument utilizes a micro-fuel cell that consumes O2 from the atmosphere surrounding the measurement probe. The consumption of O2 generates a proportional electrical current. This current is then amplified and provides a signal output of 0-1 V DC which corresponds to a full-scale range of 0-25 % O2.

For the CO2, a non-dispersive infrared detector is used to continuously measure the concentration in the effluent. The theory of operation for this portion of the analyzer is based on the principle that CO2 has a unique absorption line spectrum in the infrared region.

The instrument consists of an infrared light source, a chopper, a measurement cell, and a detector. The infrared light beam emitted by the source passes through the measuring cell, which is filled with a continuously flowing gas sample. The light beam is partially absorbed or attenuated by the gas species of interest in this cell before reaching the front chamber of the detector.

Both the front and rear chambers of the sealed detector are filled with a reference gas. The difference in the amount of light absorbed between the front and rear chambers are dependent of the concentration of the gas species of interest within the sample measurement cell. A pressure differential is thus created between the two chambers. This pressure difference is then observed as gas flow by the micro-flow sensor located in a channel connecting the two chambers.

The resulting AC signal from the micro-flow sensor is rectified, amplified, and linearized into a DC voltage signal for output. An interference response check was conducted on the O2 and CO2 analyzers prior to testing.

4.7 PM and Ammonia - EPA Method 5 / CTM027

Method 5 and CTM 027 was combined for this testing. Method 5 is used for the determination of particulate emissions from stationary sources. The tests consisted of three (3) – fifty five (55) minute test runs. Particulate matter was drawn isokinetically from the source and collected onto a glass fiber filter. CTM 027 was used for the determination of Ammonia in stack gas.

Before each test run the impingers used to remove condensate from the gas were prepared. A total of four impingers were loaded according to the method (modified Greenburg Smith, Greenburg Smith, modified Greenburg Smith, and modified Greenburg Smith). The first two impingers were loaded with 100 ml of 0.1 N sulfuric acid solution. Inserting a desiccated tared filter into the glass filter holder assembled the remainder of the sample train. The filter holder was then placed into the hotbox and the sample probe and nozzle are attached. Prior the start of each run a leak check was performed from the end of the nozzle at a vacuum of 15 inches of mercury.

The run was initiated and isokinetic sampling took place. The entire stack was traversed according to the sample points specified in Method 1. Five (5) minute readings were taken during each of the fifty five minute test run. At the conclusion of the test a post leak check was conducted at the highest vacuum obtained during the run and the sample train was moved to the cleanup site where it was recovered in strict accordance with Method 5 and CT027 Recovery Procedures as follows:

Container #1. The filter was carefully removed from the filter holder and placed in it's identified petri dish container.

Container #2. Taking care to see that dust on the outside of the probe or other exterior surfaces did not get into the sample, particulate matter from the nozzle, probe liner and front half of the filter holder was quantitatively recovered by washing these components with acetone into a glass or nalgene container. The inside of each component was brushed and rinsed until the acetone rinse showed no visible particles, after which a final rinse of the inside surface was performed.

Container #3 (impinger contents for Ammonia): The solution in the impingers was measured using a clean graduated cylinder and the volumes recorded. Each impinger and all connecting glassware was rinsed twice and all contents were transferred to a clean sample bottle.

5. REFERENCE METHOD TEST EQUIPMENT

5.1 Modified Method 5 Sampling Trains

All modified Method 5 testing, described in Section 4 was conducted using several trains manufactured by Nutech. During the test program testing for different constituents was conducted simultaneously. Due to the sampling requirements of the individual test methods, each modified Method 5 train was slightly different to conform to the specific method requirements. Although there were slight differences to the sample filters and impinger contents, all trains consisted of the following basic components:

Meter Boxes - The meter boxes used in this program were the Nutech Model 2010 - Isokinetic Stack Samplers. These boxes consist of a leak-free sample pump, a dry gas meter, a vacuum gauge, and a temperature readout. Thermocouples are mounted on the inlet and outlet of the dry gas meter to provide meter temperatures during testing.

Umbilicals - The umbilicals used in this program consisted of a sample line, pitot lines, and thermocouple lines. These lines transported sample from the impingers to the meter box, indicated pressure difference at the pitots to the meter box, and carried temperature signals from the stack to the temperature readout in the meter box.

Condenser System - This system consisted of glass or Teflon impingers placed in series and in an ice bath. The number of impingers, impinger content, and impinger type varied depending on which test method was being performed.

Probe - The probe assembly consisted of a set of "S" type pitots, a stack thermocouple, and a stainless steel sheath with a heated stainless steel liner.

Particulate Filter - This in-stack filter is a Labyrinth Systems 5 micron sintered stainless steel design.

5.2 Mobile CEM Laboratory

All reference test methods described in Section 4 were conducted using the CEMServices mobile CEM laboratory. This laboratory consists of all analyzers and support equipment used to conduct the CEM sampling during this test program. The following is a description of each item that makes up the entire system:

Sample Probe - A seven foot heated stainless steel probe was used for this test program. The probe has a filter at the end of it to remove particulate matter. The other end contains a heated three-way "flood chamber" allowing either sample or calibration gas to flow to the sample line.

Particulate Filter - This in-stack filter is a Labyrinth Systems 5 micron sintered stainless steel design.

Calibration Valve Assembly - This assembly consists of a Hoke three-way stainless steel valve mounted inside the mobile test lab. The assembly is capable of blocking sample flow and introducing calibration gas into the system. This assembly along with the “flood chamber” ensures that calibrations are performed under the same conditions as sampling.

Heated Sample Line - The heated sample line is two hundred (200) feet long and transports the gas sample from the CEM probe to the moisture removal system and FID in the Mobile Lab. A resistor box that allows you to set the temperature can control the heater in this line. This line was set to 250 degrees F. A heater jumper in the Mobile Lab transported a slip stream sample form the heated line to the FID prior to the moisture removal system.

Moisture Removal System - This system continuously removes moisture from the sample gas while maintaining minimal contact between the condensate and the sample gas. CEMServices uses an electronically cooled condenser consisting of two (2) Teflon heat exchangers which are continuously drained of condensate by two (2) peristaltic pumps. The inlet to the system is connected to the heated sample line and the outlet was connected to the sample pump.

Sample Pump - A dual headed diaphragm pump was used to transport the gas sample through the system to the sample gas manifold. Air Dimension manufactures this pump and all parts coming into contact with the gas stream are either Teflon or stainless steel.

Sample Gas Manifold - This manifold consists of a series of valves and adjustable rotameters capable of setting and maintaining the desired backpressure and flow rate to the analyzers during both sampling and calibration.

Sample Gas Analyzers - CEMServices used the following analyzers to complete this test program:

TABLE 5-1
REFERENCE METHOD ANALYZERS

Gas	Manufacturer	Model	Span
O_2	California Analytical	100	0-22.8%
CO_2	California Analytical	100	0-19.85 %
NOx	Thermo Electron	42	0-192.3 PPM
CO	Thermo Electron	48	0-947.0 PPM

Data Recorder - All voltage outputs from the analyzers are sent to a Strawberry Tree Data Shuttle. This shuttle logged data at two-second intervals. Data from the shuttle is sent to a computer where a Strawberry Tree data acquisition program lists instantaneous concentration values for each parameter. At the conclusion of each run, one-minute averages are printed out and a calibration is initiated through the program. The calibration data is used to correct the raw averages for system bias and drift.

5.3 Calibration Gases

All calibration gases used in this test program were prepared according to EPA Protocol G1/G2. As per EPA Test Method 7E for all O2, CO2, CO, NOx, and SO2 testing, the high level calibration gas was the span of the analyzer. All mid calibration gas values were between 40-60 % of the span of the analyzer (or value of the high level gas), and all low (or zero) calibration gas values were between 0-20 % of the span of the analyzer (or value of the high level gas) using pre-purified nitrogen.

6. QUALITY CONTROL PROCEDURES

6.1 General

Throughout all phases of this test program strict attention was given to all testing to provide the highest quality of results possible. All of CEMServices test equipment is of the highest quality available and undergoes routine maintenance to ensure top operating condition. This includes meter boxes, thermocouples, barometers, pitot tubes and sampling nozzles.

Meter boxes are calibrated over a full range of flow rates against certified orifices every six months. After each field use the meter box is given a calibration check against an orifice at the average flow rates and highest vacuums experienced in the field. Thermocouples are calibrated as specified in the EPA Handbook against NBS traceable mercury in glass thermometer. Pitot tubes are visually inspected for conformance to the dimensional specified in EPA Method 2.

Sampling was conducted by trained personnel with extensive experience in CEM sampling. All analyzers are tested for interference of other gas compounds at least once every six months. In addition, a converter efficiency check is performed on the NOx analyzer to ensure the proper conversion of NO2 to NO.

All sampling and analysis was conducted in strict accordance with EPA test procedures (where available). The quality control procedures found in the EPA Quality Assurance Handbook for Air Pollution Measurement Systems was adhered to as well.

Analyzer calibrations were performed at the beginning of each test day. System calibrations were performed before and after each test run through the entire sampling system. All calculations were conducted in strict accordance with the equations found in the individual Methods. Calculations were conducted on a computer and the input data was checked by a person other than the original calculator to ensure that it is correct.

The entire staff of CEMServices is thoroughly familiar with all test methods used in this program and has extensive experience in source emission monitoring.

Appendix A

CO EMISSION RATE CALCULATION

FACILTY:	PINETREE FITCHBURG	RUN ID#:	Run 1
UNIT:	WOOD FIRED BOILER	START:	08:25
DATE:	6-26-13	END:	09:25

Cgas PPMdv	=	173.78	Cgas % CO2	=	12.80
PPMwv	=	138.85	Cgas % O2	=	7.27
M.W. CO	=	28.01	FUEL FACTOR(Fd)	=	11022
BWO %	=	20.1%	Qs DSCFH	=	3809386

Cd = Cgas X (M.W. / 385.6) / 1000000	=	1.262E-05	LBS/SCF
E = Cd X FUEL FACTOR X(20.9/(20.9-%O2))	=	0.213	LBS/MMBTU
PMR = CD X QS DSCFH	=	48.09	LBS/HR

CO EMISSION RATE CALCULATION

FACILTY:	PINETREE FITCHBURG	RUN ID#:	Run 2
UNIT:	WOOD FIRED BOILER	START:	09:55
DATE:	6-26-13	END:	10:55

Cgas PPMdv =	409.57	Cgas % CO2 =	13.48
PPMwv =	322.74	Cgas % O2 =	6.63
M.W. CO =	28.01	FUEL FACTOR(Fd)=	11022
BWO % =	21.2%	Qs DSCFH =	3826163

Cd = Cgas X (M.W. / 385.6) / 1000000	=	2.975E-05	LBS/SCF
E = Cd X FUEL FACTOR X(20.9/(20.9-%O2))	=	0.480	LBS/MMBTU
PMR = CD X QS DSCFH	=	113.83	LBS/HR

CO EMISSION RATE CALCULATION

FACILTY:	PINETREE FITCHBURG	RUN ID#:	Dia 50-1
UNIT:	WOOD FIRED BOILER	START:	13:35
DATE:	6-25-13	END:	14:35

Cgas PPMdv	=	86.44	Cgas % CO2	=	11.60
PPMwv	=	71.31	Cgas % O2	=	9.03
M.W. CO	=	28.01	FUEL FACTOR(Fd)	=	11022
BWO %	=	17.5%	Qs DSCFH	=	2572399

Cd = Cgas X (M.W. / 385.6) / 1000000	=	6.279E-06	LBS/SCF
E = Cd X FUEL FACTOR X(20.9/(20.9-%O2))	=	0.122	LBS/MMBTU
PMR = CD X QS DSCFH	=	16.15	LBS/HR

Appendix B

NOx EMISSION RATE CALCULATION

FACILTY:	PINETREE FITCHBURG	RUN ID#:	Run 1
UNIT:	WOOD FIRED BOILER	START:	08:25
DATE:	6-26-13	END:	09:25

Cgas PPMdv	=	31.76	Cgas % CO2	=	12.80
PPMwv	=	25.38	Cgas % O2	=	7.27
M.W. NO	=	46.01	FUEL FACTOR(Fd)	=	11022
BWO %	=	20.1%	Qs DSCFH	=	3809386

Cd = Cgas X 1.194 E-7	=	3.79E-06	LBS/SCF
E = Cd X FUEL FACTOR X(20.9/(20.9-%O2))	=	0.064	LBS/MMBTU
PMR = CD X QS DSCFH	=	14.45	LBS/HR

NOx EMISSION RATE CALCULATION

FACILTY:	PINETREE FITCHBURG	RUN ID#:	Run 2
UNIT:	WOOD FIRED BOILER	START:	09:55
DATE:	6-26-13	END:	10:55

Cgas PPMdv	=	33.84	Cgas % CO2	=	13.48
PPMwv	=	26.93	Cgas % O2	=	6.63
M.W. NO	=	46.01	FUEL FACTOR(Fd)	=	11022
BWO %	=	20.4%	Qs DSCFH	=	3905087

Cd = Cgas X 1.194 E-7	=	4.04E-06	LBS/SCF
E = Cd X FUEL FACTOR X(20.9/(20.9-%O2))	=	0.065	LBS/MMBTU
PMR = CD X QS DSCFH	=	15.78	LBS/HR

NOx EMISSION RATE CALCULATION

FACILTY:	PINETREE FITCHBURG	RUN ID#:	Dia 50-1
UNIT:	WOOD FIRED BOILER	START:	08:15
DATE:	6-25-13	END:	09:15

Cgas PPMdv	=	29.37	Cgas % CO2	=	11.60
PPMwv	=	23.38	Cgas % O2	=	9.03
M.W. NO	=	46.01	FUEL FACTOR(Fd)	=	11022
BWO %	=	20.4%	Qs DSCFH	=	2572399

Cd = Cgas X 1.194 E-7	=	3.51E-06	LBS/SCF
E = Cd X FUEL FACTOR X(20.9/(20.9-%O2))	=	0.068	LBS/MMBTU
PMR = CD X QS DSCFH	=	9.02	LBS/HR

Appendix C

AMMONIA EMISSIONS CALCULATION SHEET

FACILITY:	PINETREE FITCHBURG	RUN ID#:	Run 1
UNIT	: WOOD FIRED BOILER	START:	08:25
DATE	: 6-26-13	END:	09:35

SAMPLE ANALYTE SUMMARY REPORT — VOLUME (ml) 533

IMP 1,2,3,RINSE - MICROGRAMS PER SAMPLE = 1100 ug

TOTAL (ug) - MICROGRAMS PER SAMPLE = 1100 ug

MOLECULAR WEIGHT OF AMMONIA (NH3) = 17.03 g/g-mole

BLANK ANALYTE SUMMARY REPORT — VOLUME (ml) 300

TOTAL BLANK - MICROGRAMS PER SAMPLE = 25 ug

VM STD = 17.64 * (VM)*Y*DELTA H ABS) / (TM) = 43.91 DSCF

Qs = 3600(1-BWO)(VS)(AS)(17.64)(PS)/(TS) = 3809386.37 DSCFH

CS = (2.205 X 10-9) (ug) / (VM STD) = 5.52E-08 LBS/DSCF

CS' = 0.0000154 (ug) / (VM STD) = 3.86E-04 GRAINS /DSCF

$$PPMdv = \frac{CS * 1000000}{(MW) / 385.6} = 1.25 \text{ PPM}$$

PPM @ 7% O2 = PPM * (13.9 / (20.9 - %O2)) = 1.28 PPM @ 7% O2

PMR = (QS) (CS) = 0.21 LBS/HR

Em = PPM * M.W/385.6/1,000,000*Fd*20.9/(20.9-O2) = 0.0009 LBS/MMBtu

AMMONIA EMISSIONS CALCULATION SHEET

FACILITY: PINETREE FITCHBURG
UNIT : WOOD FIRED BOILER
DATE : 6-26-13

RUN ID#: Run 2
START: 09:55
END: 10:57

SAMPLE ANALYTE SUMMARY REPORT				VOLUME (ml) 534
IMP 1,2,3,RINSE - MICROGRAMS PER SAMPLE	=	1200	ug	
TOTAL (ug) - MICROGRAMS PER SAMPLE	=	1200	ug	
MOLECULAR WEIGHT OF AMMONIA (NH3)	=	17.03	g/g-mole	
BLANK ANALYTE SUMMARY REPORT				VOLUME (ml) 300
TOTAL BLANK - MICROGRAMS PER SAMPLE	=	25	ug	

VM STD	=	17.64 * (VM)*Y*DELTA H ABS) / (TM)	=	46.10	DSCF
Qs	=	3600(1-BWO)(VS)(AS)(17.64)(PS)/(TS)	=	3826163.42	DSCFH
CS	=	(2.205 X 10-9) (ug) / (VM STD)	=	5.74E-08	LBS/DSCF
CS'	=	0.0000154 (ug) / (VM STD)	=	4.01E-04	GRAINS /DSCF
PPMdv	=	$\dfrac{CS * 1000000}{(MW) / 385.6}$	=	1.30	PPM
PPM @ 7% O2	=	PPM * (13.9 / (20.9 - %O2))	=	1.27	PPM @ 7% O2
PMR	=	(QS) (CS)	=	0.22	LBS/HR
Em	=	PPM * M.W/385.6/1,000,000*Fd*20.9/(20.9-O2)	=	0.0009	LBS/MMBtu

AMMONIA EMISSIONS CALCULATION SHEET

FACILITY: PINETREE FITCHBURG
UNIT : WOOD FIRED BOILER
DATE : 6-25-13

RUN ID#: Dia 50-1
START: 13:35
END: 14:40

SAMPLE ANALYTE SUMMARY REPORT — VOLUME (ml) 536

IMP 1,2,3,RINSE - MICROGRAMS PER SAMPLE = 190 ug

TOTAL (ug) - MICROGRAMS PER SAMPLE = 190 ug

MOLECULAR WEIGHT OF AMMONIA (NH3) = 17.03 g/g-mole

BLANK ANALYTE SUMMARY REPORT — VOLUME (ml) 300

TOTAL BLANK - MICROGRAMS PER SAMPLE = 25 ug

VM STD	=	17.64 * (VM)*Y*DELTA H ABS) / (TM) =	35.89	DSCF
Qs	=	3600(1-BWO)(VS)(AS)(17.64)(PS)/(TS) =	2572398.81	DSCFH
CS	=	(2.205 X 10-9) (ug) / (VM STD) =	1.17E-08	LBS/DSCF
CS'	=	0.0000154 (ug) / (VM STD) =	8.15E-05	GRAINS /DSCF
PPMdv	=	CS * 1000000 / ((MW) / 385.6) =	0.26	PPM
PPM @ 7% O2	=	PPM * (13.9 / (20.9 - %O2)) =	0.31	PPM @ 7% O2
PMR	=	(QS) (CS) =	0.03	LBS/HR
Em	=	PPM * M.W/385.6/1,000,000*Fd*20.9/(20.9-O2) =	0.0002	LBS/MMBtu

Appendix D

VELOCITY TRAVERSE DATA AND PARTICULATE EMISSION CALCULATIONS

FACILITY: PINETREE FITCHBURG — RUN ID# : Dia 50-1
UNIT : WOOD FIRED BOILER — START TIME: 13:35
END TIME: 14:40

DATE :	6-25-13	TRAV PT	DELTA P	SQ ROOT	DELTA H	DGM IN	DGM OUT	STACK TEMP
Ds (FT)	6.25	A1	0.37	0.61	1.11	98	98	325
As (SQFT)	30.68	2	0.39	0.62	1.17	99	99	328
Y =	1.0171	3	0.43	0.66	1.29	99	99	330
PIT COEFF	0.84	4	0.46	0.68	1.38	99	99	330
Dn (IN)	0.280	5	0.46	0.68	1.38	99	99	331
An (SQFT)	0.00043	6	0.40	0.63	1.20	99	99	331
IMP-1 (INT)	100	7	0.40	0.63	1.20	99	99	330
IMP-2 (INT)	100	8	0.39	0.62	1.17	99	99	330
IMP-3 (INT)	0	9	0.38	0.62	1.14	99	99	331
IMP-4 (INT)	550	10	0.40	0.63	1.20	99	99	328
IMP-1 (FIN)	189	11	0.34	0.58	1.02	100	100	325
IMP-2 (FIN)	147	12	0.28	0.53	0.84	100	100	325
IMP-3 (FIN)	11	B1	0.35	0.59	1.05	100	100	327
IMP-4 (FIN)	564.2	2	0.36	0.60	1.08	100	100	327
% CO2 (OUT)	11.60	3	0.36	0.60	1.08	100	100	330
% O2 (OUT)	9.03	4	0.38	0.62	1.14	100	100	331
% CO (OUT)	0.01	5	0.40	0.63	1.20	100	100	332
% N2 (OUT)	79.36	6	0.39	0.62	1.17	100	100	332
		7	0.36	0.60	1.08	100	100	332
		8	0.38	0.62	1.14	101	101	331
P BAR	29.8	9	0.32	0.57	0.96	101	101	329
PSTK	-0.46	10	0.32	0.57	0.96	101	101	329
FINAL METER	424.118	11	0.31	0.56	0.93	101	101	328
INT METER	386.646	12	0.27	0.52	0.81	101	101	323
MID CHECK	0.000	AVG:	0.37	0.61	1.11	99.8	99.8	329.0
VM (CF)	37.472	TS ('R)=		789.0	DELTA H (ABS) =			29.88
RUN TIME	60	TM ('F)=		99.8	PS (ABS) =			29.77
F-FACTOR	11022	TM ('R)=		559.8	VI (TOT) =			161.2

SAMPLE	FILTER	BEAKER	SAMPLE	FILTER	BEAKER
NUMBER	3589	20	NUMBER	3593	30
FINAL WT.	0.3467	63.2237	FINAL WT.	0.3376	66.8444
TARE WT.	0.3419	63.2191	TARE WT.	0.3377	66.8442
NET WT.	0.0048	0.0046	NET WT.	-0.0001	0.0002

SAMPLE BEAKER VOLUME 60 ml — BLANK BEAKER VOLUME 100 ml
TOTAL SAMPLE GAIN 9.40 mg — ACETONE RESIDUE 0.12 mg
TOTAL SAMPLE GAIN LESS ACETONE RESIDUE (Mn) = 9.28 mg

VM STD	=	17.64 (VM) (Y) (DELTA H ABS) / (TM)	=	35.89	DSCF
VW STD	=	.04707 (VI TOT)	=	7.59	CF
BWO	=	(VW STD)/(VW STD)+(VM STD)	=	0.175	
Md (DRY)	=	.44(%CO2)+.32(%O2)+.28(%CO)+.28(%N2)	=	30.22	LBS/MOLE
Ms (WET)	=	Md(1-BWO)+18(BWO)	=	28.09	LBS/MOLE
G	=	SQRT (TS / PS / MS)	=	0.97	
VS	=	85.49(CP)(G)(SQRT DELTA P)	=	42.39	FPS
H	=	0.002669 (VI TOT)	=	0.43	
J	=	(DELTA H ABS) (VM) (Y) / (TM)	=	2.03	
K	=	(H) + (J)	=	2.46	
% ISO	=	((TS)(K)(1.667))/ ((TIME)(VS)(PS)(AN))	=	100.1	%
Qs	=	3600(1-BWO)(VS)(AS)(17.64)(PS)/(TS)	=	2572399	DSCFH
CS	=	(2.205x10-6) (MN) / (VM STD)	=	5.701E-07	LBS/SCF
CS'	=	.0154 (MN) / (VM STD)	=	0.00398	GRAINS/SCF
CS'@7%O2	=	CS' * (20.9-7) / (20.9 - O2)	=	0.00466	GRAINS/SCF
CS'@12%CO2	=	CS' * (12 / % CO2)	=	0.00412	GRAINS/SCF
PMR	=	CS X Qs	=	1.47	LBS/HR
E	=	CS x FUEL FACTOR X(20.9/(20.9-%O2))	=	0.009	LBS/MMBTU

VELOCITY TRAVERSE DATA AND PARTICULATE EMISSION CALCULATIONS

FACILITY: PINETREE FITCHBURG
UNIT : WOOD FIRED BOILER

RUN ID# : Run 1
START TIME: 08:25
END TIME: 09:35

DATE :	6-26-13	TRAV PT	DELTA P	SQ ROOT	DELTA H	DGM IN	DGM OUT	STACK TEMP
Ds (FT)	6.25	B1	0.90	0.95	1.80	93	93	362
As (SQFT)	30.68	2	0.94	0.97	1.88	94	94	366
Y =	1.0171	3	1.00	1.00	2.00	94	94	368
PIT COEFF	0.84	4	1.00	1.00	2.00	94	94	368
Dn (IN)	0.250	5	1.00	1.00	2.00	94	94	369
An (SQFT)	0.00034	6	0.95	0.97	1.90	94	94	369
IMP-1 (INT)	100	7	0.84	0.92	1.68	94	94	370
IMP-2 (INT)	100	8	0.95	0.97	1.90	95	95	369
IMP-3 (INT)	0	9	0.93	0.96	1.86	96	96	368
IMP-4 (INT)	550	10	0.83	0.91	1.66	96	96	367
IMP-1 (FIN)	254	11	0.73	0.85	1.46	96	96	360
IMP-2 (FIN)	159	12	0.70	0.84	1.40	96	96	354
IMP-3 (FIN)	11	A1	0.78	0.88	1.56	96	96	347
IMP-4 (FIN)	561.0	2	0.82	0.91	1.64	97	97	358
% CO2 (OUT)	12.80	3	1.05	1.02	2.10	97	97	365
% O2 (OUT)	7.27	4	1.05	1.02	2.10	97	97	370
% CO (OUT)	0.02	5	1.00	1.00	2.00	97	97	370
% N2 (OUT)	79.91	6	0.90	0.95	1.80	97	97	371
		7	0.92	0.96	1.84	97	97	371
		8	0.96	0.98	1.92	97	97	370
P BAR	29.78	9	0.95	0.97	1.90	96	96	369
PSTK	-0.67	10	0.92	0.96	1.84	96	96	369
FINAL METER	470.048	11	0.88	0.94	1.76	97	97	366
INT METER	424.583	12	0.65	0.81	1.30	97	97	361
MID CHECK	0.000	AVG:	0.90	0.95	1.80	95.7	95.7	365.7
VM (CF)	45.465	TS ('R)=		825.7	DELTA H (ABS)	=		29.91
RUN TIME	60	TM ('F)=		95.7	PS (ABS)	=		29.73
F-FACTOR	11022	TM ('R)=		555.7	VI (TOT)	=		235.0

SAMPLE	FILTER	BEAKER	SAMPLE	FILTER	BEAKER
NUMBER	3590	21	NUMBER	3593	30
FINAL WT.	0.3545	49.6213	FINAL WT.	0.3376	66.8444
TARE WT.	0.3429	49.6145	TARE WT.	0.3377	66.8442
NET WT.	0.0116	0.0068	NET WT.	-0.0001	0.0002

SAMPLE BEAKER VOLUME 60 ml — BLANK BEAKER VOLUME 100 ml
TOTAL SAMPLE GAIN 18.40 mg — ACETONE RESIDUE 0.12 mg
TOTAL SAMPLE GAIN LESS ACETONE RESIDUE (Mn) = 18.28 mg

VM STD	=	17.64 (VM) (Y) (DELTA H ABS) / (TM)	=	43.91	DSCF
VW STD	=	.04707 (VI TOT)	=	11.06	CF
BWO	=	(VW STD)/(VW STD)+(VM STD)	=	0.201	
Md (DRY)	=	.44(%CO2)+.32(%O2)+.28(%CO)+.28(%N2)	=	30.34	LBS/MOLE
Ms (WET)	=	Md(1-BWO)+18(BWO)	=	27.86	LBS/MOLE
G	=	SQRT (TS / PS / MS)	=	1.00	
VS	=	85.49(CP)(G)(SQRT DELTA P)	=	67.98	FPS
H	=	0.002669 (VI TOT)	=	0.63	
J	=	(DELTA H ABS) (VM) (Y) / (TM)	=	2.49	
K	=	(H) + (J)	=	3.12	
% ISO	=	((TS)(K)(1.667))/ ((TIME)(VS)(PS)(AN))	=	103.8	%
Qs	=	3600(1-BWO)(VS)(AS)(17.64)(PS)/(TS)	=	3809386	DSCFH
CS	=	(2.205x10-6) (MN) / (VM STD)	=	9.18E-07	LBS/SCF
CS'	=	.0154 (MN) / (VM STD)	=	0.00641	GRAINS/SCF
CS'@7%O2	=	CS' * (20.9-7) / (20.9 - O2)	=	0.00654	GRAINS/SCF
CS'@12%CO2	=	CS' * (12 / % CO2)	=	0.00601	GRAINS/SCF
PMR	=	CS X Qs	=	3.50	LBS/HR
E	=	CS x FUEL FACTOR X(20.9/(20.9-%O2))	=	0.010	LBS/MMBTU

VELOCITY TRAVERSE DATA AND PARTICULATE EMISSION CALCULATIONS

FACILITY: PINETREE FITCHBURG
UNIT : WOOD FIRED BOILER

RUN ID# : Run 2
START TIME: 09:55
END TIME: 10:57

DATE :	6-26-13	TRAV PT	DELTA P	SQ ROOT	DELTA H	DGM IN	DGM OUT	STACK TEMP
Ds (FT)	6.25	A1	0.92	0.96	1.84	96	96	373
As (SQFT)	30.68	2	0.95	0.97	1.90	97	97	374
Y =	1.0171	3	1.00	1.00	2.00	97	97	376
PIT COEFF	0.84	4	1.05	1.02	2.10	98	98	377
Dn (IN)	0.250	5	1.05	1.02	2.10	98	98	377
An (SQFT)	0.00034	6	0.80	0.89	1.60	98	98	377
IMP-1 (INT)	100	7	0.75	0.87	1.50	97	97	377
IMP-2 (INT)	100	8	1.10	1.05	2.20	97	97	377
IMP-3 (INT)	0	9	1.00	1.00	2.00	97	97	375
IMP-4 (INT)	550	10	0.92	0.96	1.84	98	98	375
IMP-1 (FIN)	264	11	0.95	0.97	1.90	98	98	375
IMP-2 (FIN)	167	12	0.83	0.91	1.66	98	98	371
IMP-3 (FIN)	16	B1	0.93	0.96	1.86	97	97	370
IMP-4 (FIN)	565.8	2	0.94	0.97	1.88	97	97	371
% CO2 (OUT)	13.48	3	0.98	0.99	1.96	98	98	375
% O2 (OUT)	6.63	4	1.05	1.02	2.10	97	97	377
% CO (OUT)	0.04	5	1.00	1.00	2.00	97	97	378
% N2 (OUT)	79.85	6	1.00	1.00	2.00	97	97	378
		7	0.91	0.95	1.82	97	97	378
		8	0.90	0.95	1.80	97	97	378
P BAR	29.78	9	0.94	0.97	1.88	97	97	379
PSTK	-0.65	10	0.93	0.96	1.86	97	97	373
FINAL METER	519.358	11	0.88	0.94	1.76	97	97	374
INT METER	471.500	12	0.81	0.90	1.62	97	97	370
MID CHECK	0.000	AVG:	0.94	0.97	1.88	97.3	97.3	375.2
VM (CF)	47.858	TS ('R)=		835.2	DELTA H (ABS)	=		29.92
RUN TIME	60	TM ('F)=		97.3	PS (ABS)	=		29.73
F-FACTOR	11022	TM ('R)=		557.3	VI (TOT)	=		262.8

SAMPLE	FILTER	BEAKER	SAMPLE	FILTER	BEAKER	
NUMBER	3591	22	NUMBER	3593	30	
FINAL WT.	0.3571	60.2763	FINAL WT.	0.3376	66.8444	
TARE WT.	0.3432	60.2673	TARE WT.	0.3377	66.8442	
NET WT.	0.0139	0.0090	NET WT.	-0.0001	0.0002	
SAMPLE BEAKER VOLUME		60 ml	BLANK BEAKER VOLUME		100	ml
TOTAL SAMPLE GAIN		22.90 mg	ACETONE RESIDUE		0.12	mg
TOTAL SAMPLE GAIN LESS ACETONE RESIDUE (Mn)				=	22.78	mg

VM STD	=	17.64 (VM) (Y) (DELTA H ABS) / (TM)	=	46.10	DSCF
VW STD	=	.04707 (VI TOT)	=	12.37	CF
BWO	=	(VW STD)/(VW STD)+(VM STD)	=	0.212	
Md (DRY)	=	.44(%CO2)+.32(%O2)+.28(%CO)+.28(%N2)	=	30.42	LBS/MOLE
Ms (WET)	=	Md(1-BWO)+18(BWO)	=	27.79	LBS/MOLE
G	=	SQRT (TS / PS / MS)	=	1.01	
VS	=	85.49(CP)(G)(SQRT DELTA P)	=	69.97	FPS
H	=	0.002669 (VI TOT)	=	0.70	
J	=	(DELTA H ABS) (VM) (Y) / (TM)	=	2.61	
K	=	(H) + (J)	=	3.31	
% ISO	=	((TS)(K)(1.667))/ ((TIME)(VS)(PS)(AN))	=	108.5	%
Qs	=	3600(1-BWO)(VS)(AS)(17.64)(PS)/(TS)	=	3826163	DSCFH
CS	=	(2.205x10-6) (MN) / (VM STD)	=	1.09E-06	LBS/SCF
CS'	=	.0154 (MN) / (VM STD)	=	0.00761	GRAINS/SCF
CS'@7%O2	=	CS' * (20.9-7) / (20.9 - O2)	=	0.00741	GRAINS/SCF
CS'@12%CO2	=	CS' * (12 / % CO2)	=	0.00677	GRAINS/SCF
PMR	=	CS X Qs	=	4.17	LBS/HR
E	=	CS x FUEL FACTOR X(20.9/(20.9-%O2))	=	0.012	LBS/MMBTU

Appendix E

Dil 1 SO2

Calibration Error Test, Run 1 STRATA Version 3.2

Operator: Robert Arnold

Plant Name: Fitchburg

Location: Stack

Reference Cylinder Numbers	Zero	Low-range	Mid-range	High-range
O2				
CO2				
CO				
NOx				
SO2				

Date/Time	06-25-2013		12:36:50		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Avg	0.128	0.001	1.57	0.05	-0.33
Zero Error%	0.6%	0.0%	0.2%	0.0%	0.3%
Low Ref Cyl					
Low Avg					
Low Error%					
Mid Ref Cyl	11.450	9.910	476.00	94.40	50.90
Mid Avg	11.437	9.916	473.34	93.49	50.88
Mid Error%	0.1%	0.0%	0.3%	0.5%	0.0%
High Ref Cyl	22.800	19.850	947.00	192.30	122.00
High Avg	22.707	20.015	934.39	191.78	122.87
High Error%	0.4%	0.8%	1.3%	0.3%	0.7%

Calibration Error Test End

Run 1 [illegible]

Initial System Bias Check, Run 1 STRATA Version 3.2

Operator: Robert Arnold

Plant Name: Fitchburg

Location: Stack

Reference Cylinder Numbers

	Zero	Span
O2		
CO2		
CO		
NOx		
SO2		

Date/Time	06-25-2013		13:36:25		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.128	0.001	1.57	0.05	-0.33
Zero Avg	0.187	0.003	-1.48	0.05	-0.20
Zero Bias%	0.3%	0.0%	0.3%	0.0%	0.1%
Zero Drift%					
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.437	9.916	473.34	191.78	50.88
Span Avg	11.439	9.993	466.07	193.85	52.43
Span Bias%	0.0%	0.4%	0.8%	1.1%	1.3%
Span Drift%					

System Bias Check End

D.. SO-1

Final System Bias Check, Run 1 STRATA Version 3.2
Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack

Reference Cylinder Numbers

	Zero	Span
O2		
CO2		
CO		
NOx		
SO2		

Date/Time	06-25-2013		14:48:15		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.128	0.001	1.57	0.05	-0.33
Zero Avg	0.211	0.012	-0.30	0.04	-1.51
Zero Bias%	0.4%	0.1%	0.2%	0.0%	1.0%
Zero Drift%	0.1%	0.0%	0.1%	0.0%	-1.1%
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.437	9.916	473.34	191.78	50.88
Span Avg	11.399	9.976	463.10	188.76	49.33
Span Bias%	0.2%	0.3%	1.1%	1.6%	1.3%
Span Drift%	-0.2%	-0.1%	-0.3%	-2.6%	-2.5%
Ini Zero Avg	0.187	0.003	-1.48	0.05	-0.20
Ini Span Avg	11.439	9.993	466.07	193.85	52.43
Run Avg	9.048	11.687	83.64	29.26	-0.88
Co	0.199	0.008	-0.89	0.04	-0.85
Cm	11.419	9.985	464.59	191.30	50.88
Correct Avg	9.031	11.601	86.44	29.37	-0.02
	7.44		0.104	0.058	∅
			16.2	9.0	∅

System Bias Check End

Calibration Error Test, Run 2 STRATA Version 3.2
Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack

	Reference Cylinder Numbers			
	Zero	Low-range	Mid-range	High-range
O2				
CO2				
CO				
NOx				
SO2				

Date/Time	06-26-2013		07:24:58		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Avg	0.083	0.003	-0.27	0.07	-0.28
Zero Error%	0.4%	0.0%	0.0%	0.0%	0.2%
Low Ref Cyl					
Low Avg					
Low Error%					
Mid Ref Cyl	11.450	9.910	476.00	94.40	50.90
Mid Avg	11.352	9.899	471.25	94.14	50.70
Mid Error%	0.4%	0.1%	0.5%	0.1%	0.2%
High Ref Cyl	22.800	19.850	947.00	192.30	122.00
High Avg	22.588	19.804	941.37	191.87	120.58
High Error%	0.9%	0.2%	0.6%	0.2%	1.2%

Calibration Error Test End

T. Wheeler
MassDEP
6/26/13

Initial System Bias Check, Run 2 STRATA Version 3.2

Operator: Robert Arnold

Plant Name: Fitchburg

Location: Stack

	Reference Cylinder Numbers	
	Zero	Span
O2		
CO2		
CO		
NOx		
SO2		

Date/Time	06-26-2013		07:34:34		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.083	0.003	-0.27	0.07	-0.28
Zero Avg	0.076	0.019	2.75	1.13	0.64
Zero Bias%	0.0%	0.1%	0.3%	0.5%	0.8%
Zero Drift%					
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.352	9.899	471.25	191.87	50.70
Span Avg	11.230	9.903	470.21	190.88	50.51
Span Bias%	0.5%	0.0%	0.1%	0.5%	0.2%
Span Drift%					

System Bias Check End

T. Wheeler
MassDEP
6/26/13

Final System Bias Check, Run 2 STRATA Version 3.2

KH1A

MS-1A

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack

Reference Cylinder Numbers

	Zero	Span
O2		
CO2		
CO		
NOx		
SO2		

Date/Time	06-26-2013		08:51:04		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.083	0.003	-0.27	0.07	-0.28
Zero Avg	0.114	0.035	-0.24	0.27	-0.01
Zero Bias%	0.1%	0.2%	0.0%	0.1%	0.2%
Zero Drift%	0.2%	0.1%	-0.3%	-0.4%	-0.5%
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.352	9.899	471.25	191.87	50.70
Span Avg	11.294	9.937	469.22	190.87	50.79
Span Bias%	0.3%	0.2%	0.2%	0.5%	0.1%
Span Drift%	0.3%	0.2%	-0.1%	0.0%	0.2%
Ini Zero Avg	0.076	0.019	2.75	1.13	0.64
Ini Span Avg	11.230	9.903	470.21	190.88	50.51
Run Avg	7.288	12.745	166.31	29.67	0.06
Co	0.095	0.027	1.25	0.70	0.31
Cm	11.262	9.920	469.72	190.88	50.65
Correct Avg	7.375	12.740	167.71	29.30	-0.26

System Bias Check End

T. Wheeler
Mass DEP
6/26/13

Final System Bias Check, Run 3 STRATA Version 3.2

Operator: Robert Arnold

Plant Name: Fitchburg

Location: Stack

Reference Cylinder Numbers

	Zero	Span
O2		
CO2		
CO		
NOx		
SO2		

Date/Time	06-26-2013		09:19:41		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.083	0.003	-0.27	0.07	-0.28
Zero Avg	0.123	0.048	0.17	0.28	0.32
Zero Bias%	0.2%	0.2%	0.0%	0.1%	0.5%
Zero Drift%	0.0%	0.1%	0.0%	0.0%	0.3%
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.352	9.899	471.25	191.87	50.70
Span Avg	11.296	9.941	470.11	191.68	50.21
Span Bias%	0.2%	0.2%	0.1%	0.1%	0.4%
Span Drift%	0.0%	0.0%	0.1%	0.4%	-0.5%
Ini Zero Avg	0.114	0.035	-0.24	0.27	-0.01
Ini Span Avg	11.294	9.937	469.22	190.87	50.79
Run Avg	7.350	12.733	139.11	36.54	1.41
Co	0.119	0.041	-0.03	0.28	0.15
Cm	11.295	9.939	469.67	191.28	50.50
Correct Avg	7.408	12.708	141.01	36.51	1.27

System Bias Check End

T. Wheeler
MassDEP
6/04/13

Final System Bias Check, Run 4 STRATA Version 3.2
Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack

	Reference Cylinder Numbers	
	Zero	Span
O2		
CO2		
CO		
NOx		
SO2		

MS-1C

Date/Time	06-26-2013		09:50:46		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.083	0.003	-0.27	0.07	-0.28
Zero Avg	0.131	0.060	-2.40	0.06	-0.17
Zero Bias%	0.2%	0.3%	0.2%	0.0%	0.1%
Zero Drift%	0.0%	0.1%	-0.3%	-0.1%	-0.4%
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.352	9.899	471.25	191.87	50.70
Span Avg	11.376	10.005	470.11	191.41	50.52
Span Bias%	0.1%	0.5%	0.1%	0.2%	0.1%
Span Drift%	0.3%	0.3%	0.0%	-0.1%	0.3%
Ini Zero Avg	0.123	0.048	0.17	0.28	0.32
Ini Span Avg	11.296	9.941	470.11	191.68	50.21
Run Avg	7.004	13.021	209.37	29.51	-0.56
Co	0.127	0.054	-1.11	0.17	0.07
Cm	11.336	9.973	470.11	191.54	50.36
Correct Avg	7.025	12.955	212.62	29.48	-0.64

System Bias Check End

T. Wheeler
MassDEP
6/26/13

Final System Bias Check, Run 5 STRATA Version 3.2
Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack

M5-2 A

Reference Cylinder Numbers

	Zero	Span
O2		
CO2		
CO		
NOx		
SO2		

Date/Time	06-26-2013		10:20:25		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.083	0.003	-0.27	0.07	-0.28
Zero Avg	0.131	0.053	-0.27	0.05	-0.17
Zero Bias%	0.2%	0.3%	0.0%	0.0%	0.1%
Zero Drift%	0.0%	0.0%	0.2%	0.0%	0.0%
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.352	9.899	471.25	191.87	50.70
Span Avg	11.336	10.020	470.82	193.08	49.97
Span Bias%	0.1%	0.6%	0.0%	0.6%	0.6%
Span Drift%	-0.2%	0.1%	0.1%	0.9%	-0.4%
Ini Zero Avg	0.131	0.060	-2.40	0.06	-0.17
Ini Span Avg	11.376	10.005	470.11	191.41	50.52
Run Avg	6.462	13.669	466.23	28.15	-0.29
Co	0.131	0.057	-1.33	0.06	-0.17
Cm	11.356	10.013	470.46	192.24	50.24
Correct Avg	6.458	13.550	471.73	28.11	-0.12

System Bias Check End

T. Wheeler
MassDEP
6/24/13

Final System Bias Check, Run 6 STRATA Version 3.2
Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack

MS-2 B

Reference Cylinder Numbers

	Zero	Span
O2		
CO2		
CO		
NOx		
SO2		

Date/Time	06-26-2013		10:47:45		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.083	0.003	-0.27	0.07	-0.28
Zero Avg	0.138	0.054	-0.29	0.06	-0.60
Zero Bias%	0.2%	0.3%	0.0%	0.0%	0.3%
Zero Drift%	0.0%	0.0%	0.0%	0.0%	-0.4%
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.352	9.899	471.25	191.87	50.70
Span Avg	11.334	10.033	469.58	192.66	49.62
Span Bias%	0.1%	0.7%	0.2%	0.4%	0.9%
Span Drift%	0.0%	0.1%	-0.1%	-0.2%	-0.3%
Ini Zero Avg	0.131	0.053	-0.27	0.05	-0.17
Ini Span Avg	11.336	10.020	470.82	193.08	49.97
Run Avg	6.617	13.504	336.57	34.48	-0.46
Co	0.135	0.054	-0.28	0.06	-0.38
Cm	11.335	10.027	470.20	192.87	49.79
Correct Avg	6.627	13.365	340.80	34.33	-0.08

System Bias Check End

T. Wheeler
MassDEP
6/26/13

Final System Bias Check, Run 7 STRATA Version 3.2

Operator: Robert Arnold

Plant Name: Fitchburg

Location: Stack

PMS-2C

Reference Cylinder Numbers

	Zero	Span
O2		
CO2		
CO		
NOx		
SO2		

Date/Time	06-26-2013		11:17:19		PASSED
Analyte	O2	CO2	CO	NOx	SO2
Units	%	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.000	0.00	0.00	0.00
Zero Cal	0.083	0.003	-0.27	0.07	-0.28
Zero Avg	0.155	0.056	-1.35	0.07	-0.51
Zero Bias%	0.3%	0.3%	0.1%	0.0%	0.2%
Zero Drift%	0.1%	0.0%	-0.1%	0.0%	0.1%
Span Ref Cyl	11.450	9.910	476.00	192.30	50.90
Span Cal	11.352	9.899	471.25	191.87	50.70
Span Avg	11.343	10.022	469.21	191.60	49.54
Span Bias%	0.0%	0.6%	0.2%	0.1%	1.0%
Span Drift%	0.0%	-0.1%	0.0%	-0.6%	-0.1%
Ini Zero Avg	0.138	0.054	-0.29	0.06	-0.60
Ini Span Avg	11.334	10.033	469.58	192.66	49.62
Run Avg	6.794	13.356	410.29	39.08	0.07
Co	0.147	0.055	-0.82	0.06	-0.55
Cm	11.338	10.028	469.39	192.13	49.58
Correct Avg	6.801	13.217	416.17	39.07	0.64

System Bias Check End

T. Wheeler
MassDEP 6/26/13

Test Run 1 STRATA Version 3.2

	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
Begin calculating run averages					
06-25-2013 13:38:16	9.188	11.507	75.04	33.59	0.39
06-25-2013 13:39:16	9.315	11.391	79.29	31.99	-0.09
06-25-2013 13:40:16	9.341	11.374	125.15	28.42	-0.28
06-25-2013 13:41:16	9.044	11.634	78.15	31.13	-0.32
06-25-2013 13:42:15	8.934	11.760	79.39	31.90	-0.49
06-25-2013 13:43:15	8.877	11.816	72.79	33.30	-0.55
06-25-2013 13:44:15	8.937	11.766	60.61	34.03	-0.70
06-25-2013 13:45:15	8.976	11.733	110.70	31.66	-0.54
06-25-2013 13:46:15	9.013	11.697	94.16	31.21	-0.54
06-25-2013 13:47:15	9.033	11.683	80.76	31.35	-0.60
06-25-2013 13:48:15	9.151	11.571	73.99	31.37	-0.61
06-25-2013 13:49:15	9.157	11.566	67.80	31.50	-0.53
06-25-2013 13:50:16	8.938	11.728	67.17	32.17	-0.64
06-25-2013 13:51:16	8.716	11.979	117.93	30.55	-0.64
06-25-2013 13:52:16	8.700	11.977	75.89	32.24	-0.68
06-25-2013 13:53:16	8.795	11.921	78.89	32.65	-0.69
06-25-2013 13:54:16	8.870	11.848	72.53	32.65	-0.70
06-25-2013 13:55:15	9.063	11.681	63.30	32.62	-0.72
06-25-2013 13:56:15	9.110	11.618	97.05	29.78	-0.73
06-25-2013 13:57:15	9.134	11.600	108.22	28.58	-0.75
06-25-2013 13:58:15	9.138	11.595	84.89	29.43	-0.67
06-25-2013 13:59:15	9.224	11.530	68.20	30.44	-0.73
06-25-2013 14:00:15	9.136	11.585	62.91	31.23	-0.84
06-25-2013 14:01:15	8.917	11.780	61.98	31.57	-0.81
06-25-2013 14:02:15	8.860	11.870	122.10	28.91	-0.85
06-25-2013 14:03:15	9.095	11.654	88.28	29.57	-0.83
06-25-2013 14:04:15	9.252	11.511	75.02	29.84	-0.90
06-25-2013 14:05:16	9.394	11.352	67.18	29.84	-0.77
06-25-2013 14:06:16	9.226	11.508	66.20	30.06	-0.95
06-25-2013 14:07:16	9.029	11.694	73.58	30.02	-0.85
06-25-2013 14:08:16	9.079	11.668	87.93	29.06	-0.78
06-25-2013 14:09:16	9.065	11.681	71.31	29.88	-0.88
06-25-2013 14:10:16	9.164	11.594	64.11	29.78	-0.95
06-25-2013 14:11:16	9.152	11.604	72.95	28.82	-0.93
06-25-2013 14:12:16	9.205	11.552	67.22	28.84	-0.88
06-25-2013 14:13:16	9.110	11.645	118.87	26.18	-0.91
06-25-2013 14:14:16	9.144	11.612	100.70	26.77	-1.00
06-25-2013 14:15:16	8.984	11.750	73.00	29.18	-1.05
06-25-2013 14:16:16	8.861	11.875	62.31	30.51	-0.97
06-25-2013 14:17:16	8.934	11.819	67.38	30.21	-0.98
06-25-2013 14:18:16	8.946	11.809	74.64	29.33	-0.95
06-25-2013 14:19:16	9.134	11.647	99.18	27.28	-0.92
06-25-2013 14:20:16	9.285	11.483	76.97	27.33	-1.09
06-25-2013 14:21:16	9.188	11.566	66.05	27.98	-1.10
06-25-2013 14:22:16	8.970	11.752	69.34	28.66	-0.99
06-25-2013 14:23:16	8.811	11.927	64.76	30.16	-1.08
06-25-2013 14:24:16	8.684	12.041	125.33	27.13	-1.23
06-25-2013 14:25:16	8.740	12.007	134.15	25.69	-1.21
06-25-2013 14:26:16	8.952	11.813	83.55	27.14	-1.20
06-25-2013 14:27:16	9.073	11.688	104.18	25.60	-1.17
06-25-2013 14:28:16	9.147	11.623	109.39	24.54	-1.20
06-25-2013 14:29:16	8.970	11.775	87.42	26.35	-1.28
06-25-2013 14:30:16	9.102	11.663	99.11	25.09	-1.24
06-25-2013 14:31:16	9.054	11.690	76.87	26.31	-1.22
06-25-2013 14:32:16	8.989	11.783	71.14	27.21	-1.29
06-25-2013 14:33:16	8.684	12.037	76.40	28.26	-1.27
06-25-2013 14:34:16	8.728	12.027	76.90	28.87	-1.28
06-25-2013 14:35:16	8.865	11.910	131.53	25.90	-1.23
06-25-2013 14:36:15	9.340	11.465	117.48	24.51	-1.41
06-25-2013 14:37:15	9.480	11.281	73.45	25.33	-1.31
06-25-2013 14:38:15	9.438	11.317	67.61	25.41	-1.40
Run Averages	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
06-25-2013 14:39:02	9.048	11.687	83.64	29.26	-0.88

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 1 End

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Test Run 2   STRATA Version 3.2

	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
Begin calculating run averages					
06-26-2013 08:26:05	7.030	12.913	199.61	26.16	0.07
06-26-2013 08:27:04	7.015	12.907	193.87	26.24	-0.02
06-26-2013 08:28:04	7.148	12.830	168.39	27.22	-0.13
06-26-2013 08:29:04	7.074	12.879	154.78	28.21	0.09
06-26-2013 08:30:04	7.299	12.737	141.44	27.25	-0.02
06-26-2013 08:31:04	7.153	12.826	148.01	27.35	0.04
06-26-2013 08:32:04	7.162	12.819	221.05	26.41	-0.02
06-26-2013 08:33:04	6.993	12.941	227.32	26.96	-0.04
06-26-2013 08:34:04	7.008	12.914	182.70	28.09	0.09
06-26-2013 08:35:04	7.213	12.810	184.81	28.64	0.03
06-26-2013 08:36:05	7.469	12.633	142.65	29.43	0.12
06-26-2013 08:37:05	7.521	12.625	148.77	29.75	0.17
06-26-2013 08:38:05	7.719	12.420	142.84	29.00	-0.02
06-26-2013 08:39:05	7.347	12.705	120.80	29.98	0.15
06-26-2013 08:40:05	7.411	12.668	123.25	30.61	0.15
06-26-2013 08:41:05	7.420	12.663	126.22	31.75	0.06
06-26-2013 08:42:05	7.111	12.844	155.15	32.76	0.14
06-26-2013 08:43:05	7.216	12.824	261.51	33.08	0.09
06-26-2013 08:44:05	7.475	12.645	177.05	34.45	0.11
06-26-2013 08:45:05	7.487	12.617	144.58	35.14	0.03
06-26-2013 08:46:05	7.769	12.431	127.63	34.66	0.11
Run Averages	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
06-26-2013 08:46:05	7.288	12.745	166.31	29.67	0.06

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 2   End

T. Wheeler
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Test Run 3 STRATA Version 3.2

	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
Begin calculating run averages					
06-26-2013 08:54:01	7.629	12.525	159.74	34.63	4.33
06-26-2013 08:55:01	7.561	12.560	140.82	34.68	3.76
06-26-2013 08:56:01	7.664	12.499	127.00	34.49	3.12
06-26-2013 08:57:01	7.745	12.451	115.11	33.59	2.54
06-26-2013 08:58:01	7.654	12.482	111.78	33.52	2.05
06-26-2013 08:59:01	7.316	12.752	136.49	35.40	1.71
06-26-2013 09:00:01	7.454	12.677	179.73	34.42	1.53
06-26-2013 09:01:02	7.247	12.801	134.00	36.33	1.32
06-26-2013 09:02:02	7.146	12.873	127.23	36.90	1.25
06-26-2013 09:03:02	7.407	12.717	115.74	35.71	1.05
06-26-2013 09:04:02	7.253	12.785	117.84	35.09	0.95
06-26-2013 09:05:02	7.007	12.973	217.29	36.19	0.88
06-26-2013 09:06:02	7.103	12.907	174.14	37.84	0.84
06-26-2013 09:07:02	7.143	12.888	150.17	37.91	0.72
06-26-2013 09:08:02	7.327	12.768	125.93	37.84	0.67
06-26-2013 09:09:02	7.178	12.856	118.29	38.11	0.66
06-26-2013 09:10:02	7.162	12.867	114.07	39.67	0.42
06-26-2013 09:11:02	7.458	12.661	160.39	37.19	0.59
06-26-2013 09:12:02	7.192	12.848	134.35	38.65	0.39
06-26-2013 09:13:02	7.294	12.790	133.15	39.83	0.37
06-26-2013 09:14:02	7.400	12.715	128.04	39.38	0.36
Run Averages	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
06-26-2013 09:14:02	7.350	12.733	139.11	36.54	1.41

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 3 End

T. Wheeler
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Test Run 4 STRATA Version 3.2

	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
Begin calculating run averages					
06-26-2013 09:25:02	7.349	12.764	161.16	35.07	-0.32
06-26-2013 09:26:02	7.533	12.633	153.39	33.20	-0.80
06-26-2013 09:27:02	7.582	12.595	147.29	30.85	-1.24
06-26-2013 09:28:02	7.576	12.586	144.07	28.84	-1.53
06-26-2013 09:29:02	7.546	12.606	113.30	28.92	-0.50
06-26-2013 09:30:02	7.195	12.828	130.97	29.67	-0.60
06-26-2013 09:31:02	6.726	13.211	223.07	30.63	-0.65
06-26-2013 09:32:02	6.837	13.097	213.05	30.90	-0.49
06-26-2013 09:33:02	7.148	12.900	219.04	27.77	-0.37
06-26-2013 09:34:02	7.002	12.972	185.79	27.95	-0.45
06-26-2013 09:35:02	6.850	13.081	182.54	28.11	-0.28
06-26-2013 09:36:02	6.766	13.170	180.71	28.38	-0.42
06-26-2013 09:37:03	6.765	13.186	210.48	27.83	-0.47
06-26-2013 09:38:03	6.737	13.265	317.10	28.52	-0.61
06-26-2013 09:39:03	6.742	13.233	308.57	28.86	-0.61
06-26-2013 09:40:03	6.661	13.364	270.26	29.26	-0.65
06-26-2013 09:41:03	6.584	13.447	284.02	30.47	-0.65
06-26-2013 09:42:03	6.609	13.408	298.39	30.36	-0.31
06-26-2013 09:43:03	6.856	13.129	227.12	30.19	-0.25
06-26-2013 09:44:03	7.092	12.937	235.49	26.86	-0.33
06-26-2013 09:45:03	6.920	13.029	191.03	27.08	-0.20
Run Averages	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
06-26-2013 09:45:03	7.004	13.021	209.37	29.51	-0.56

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 4 End

T. Wheeler
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KATH 4

Test Run 5 STRATA Version 3.2

	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
Begin calculating run averages					
06-26-2013 09:53:14	6.537	13.511	425.46	27.18	-0.14
06-26-2013 09:54:14	6.818	13.189	269.23	27.37	-0.10
06-26-2013 09:55:14	6.909	13.066	263.95	25.58	-0.13
06-26-2013 09:56:14	6.330	13.787	425.18	27.27	-0.22
06-26-2013 09:57:14	6.279	13.895	564.01	27.77	-0.29
06-26-2013 09:58:14	6.379	13.792	534.25	27.82	-0.24
06-26-2013 09:59:14	6.771	13.281	265.36	27.90	-0.33
06-26-2013 10:00:14	7.047	12.980	234.82	26.18	-0.35
06-26-2013 10:01:14	6.585	13.427	360.28	26.03	-0.31
06-26-2013 10:02:14	6.132	14.094	789.79	27.08	-0.24
06-26-2013 10:03:14	6.132	14.093	831.56	27.96	-0.29
06-26-2013 10:04:14	6.199	14.050	576.77	29.20	-0.29
06-26-2013 10:05:14	6.530	13.621	340.56	29.49	-0.24
06-26-2013 10:06:14	6.722	13.298	288.70	27.54	-0.35
06-26-2013 10:07:14	6.388	13.768	343.78	28.84	-0.37
06-26-2013 10:08:14	6.451	13.702	320.98	29.04	-0.35
06-26-2013 10:09:14	6.614	13.480	262.59	28.78	-0.34
06-26-2013 10:10:14	6.549	13.542	249.94	28.75	-0.39
06-26-2013 10:11:14	6.137	14.083	690.66*	29.22	-0.33
06-26-2013 10:12:14	6.029	14.263	977.46*	30.26	-0.41
06-26-2013 10:13:14	6.156	14.126	775.50*	31.98	-0.40
Run Averages	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
06-26-2013 10:13:15	6.462	13.669	466.23*	28.15	-0.29

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 5 End

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RATA 5

Test Run 6 STRATA Version 3.2

	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
Begin calculating run averages					
06-26-2013 10:22:22	6.439	13.617	466.78	33.37	0.04
06-26-2013 10:23:22	6.569	13.550	374.36	33.46	-0.23
06-26-2013 10:24:22	7.017	13.025	191.77	33.11	-0.32
06-26-2013 10:25:23	7.001	13.004	163.31	32.57	-0.38
06-26-2013 10:26:23	6.641	13.383	235.52	32.55	-0.32
06-26-2013 10:27:23	6.562	13.533	302.04	32.63	-0.42
06-26-2013 10:28:23	6.762	13.281	335.13	31.60	-0.45
06-26-2013 10:29:23	6.597	13.517	246.92	33.17	-0.52
06-26-2013 10:30:23	6.618	13.491	260.80	34.03	-0.47
06-26-2013 10:31:23	6.326	13.852	445.83	35.03	-0.47
06-26-2013 10:32:23	6.249	14.015	644.09	35.71	-0.47
06-26-2013 10:33:23	6.719	13.427	419.11	34.40	-0.62
06-26-2013 10:34:23	6.704	13.376	295.18	34.29	-0.53
06-26-2013 10:35:23	6.632	13.472	283.36	34.35	-0.60
06-26-2013 10:36:23	6.320	13.908	498.37	35.34	-0.48
06-26-2013 10:37:23	6.434	13.803	407.29	36.63	-0.53
06-26-2013 10:38:23	6.579	13.600	312.77	37.08	-0.62
06-26-2013 10:39:23	6.865	13.241	349.75	34.76	-0.55
06-26-2013 10:40:23	6.765	13.313	254.20	35.85	-0.57
06-26-2013 10:41:23	6.563	13.599	292.34	36.83	-0.52
06-26-2013 10:42:23	6.592	13.571	289.02	37.38	-0.62
Run Averages	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
06-26-2013 10:42:23	6.617	13.504	336.57	34.48	-0.46

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 6 End

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Test Run 7 STRATA Version 3.2

	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
Begin calculating run averages					
06-26-2013 10:51:16	6.710	13.372	288.11	38.43	1.98
06-26-2013 10:52:16	6.698	13.372	424.64	38.21	1.72
06-26-2013 10:53:16	6.432	13.766	545.78	39.66	1.29
06-26-2013 10:54:16	6.438	13.767	611.32	40.03	0.89
06-26-2013 10:55:16	6.491	13.721	593.61	39.49	0.56
06-26-2013 10:56:16	6.644	13.510	558.90	38.35	0.47
06-26-2013 10:57:16	6.654	13.488	442.16	39.05	0.19
06-26-2013 10:58:16	6.682	13.466	382.59	40.11	0.10
06-26-2013 10:59:16	6.719	13.425	310.78	40.56	-0.06
06-26-2013 11:00:16	6.776	13.323	420.35	38.87	-0.13
06-26-2013 11:01:16	6.377	13.836	491.60	40.59	-0.26
06-26-2013 11:02:16	6.370	13.901	561.54	42.20	-0.29
06-26-2013 11:03:16	6.592	13.610	464.71	41.57	-0.42
06-26-2013 11:04:16	6.984	13.098	372.35	39.51	-0.49
06-26-2013 11:05:16	7.639	12.672	292.72	39.97	-0.54
06-26-2013 11:06:16	7.747	12.477	316.26	31.99	-0.46
06-26-2013 11:07:16	6.904	13.153	323.36	36.90	-0.56
06-26-2013 11:08:16	7.003	13.054	299.86	37.20	-0.61
06-26-2013 11:09:16	6.800	13.260	287.44	39.52	-0.63
06-26-2013 11:10:16	6.840	13.252	303.18	40.56	-0.54
06-26-2013 11:11:16	7.177	12.957	324.74	37.97	-0.69
Run Averages	O2	CO2	CO	NOx	SO2
	%	%	ppm	ppm	ppm
06-26-2013 11:11:16	6.794	13.356	410.29	39.08	0.07

Operator: Robert Arnold
Plant Name: Fitchburg
Location: Stack
Test Run 7 End

T. Wheeler
MassDEP 6/26/13

Appendix F

Preformance RunAlog

Start Stop

Untitled

LOG : 25-JUN-13 14:00:00 LCP-47 LOG REQUESTED

PERFORMANCE

"PINETREE POWER-FITCHBURG PERFORMANCE LOG"

FI-03019	STEAM FLOW	75.71	KPPH	AMBIENT	OUTSIDE AIR TEMP	88	DEGF
TI-03013	MAIN STEAM TEMP	949	DEGF				
PI-03016	MAIN STEAM PRESS	1253	PSIG	TI-02004	FD OUT AIR HTR IN	96	DEGF
				TI-02039	AH AIR OUT TEMP	408	DEGF
FI-05012	ATTEMP SPRAY FLOW	9.90	KLB/H	TI-02035	ECON GAS IN	660	DEGF
TI-03007	ATTEMP INLET TEMP	901	DEGF	TI-02036	AH GAS IN TEMP	471	DEGF
TIC-03010	ATTEMP OUT TEMP	733	DEGF	TI-02042	AH GAS OUT TEMP	281	DEGF
FI-10012	BLOWDOWN FLOW	0.4	KLB/H	TI-02B51	BH INLET TEMP	400	DEGF
TI-03A05	DRUM TEMP	580	DEGF	TI-02C51	BH OUTLET TEMP	386	DEGF
PI-05022	DRUM PRESSURE	1257	PSIG	PDI-02A51	BH DIFF PRESS	4.2	"H2O
LI-05018	DRUM LEVEL	0.2	"NWL	JI-03020	GENERATOR GROSS	9.1	MW
PI-05013	FEEDWATER PRESS	1288	PSIG	JI-03022	STATION SERVICE	2.0	MW
FI-05011	FEEDWATER FLOW	75.72	KLB/H	CALC	STATION NET PWR	7.2	MW
TI-05051	BFP SUCTION TEMP	271	DEGF	JIC-03020	GROSS MW PROD	7491.62	MWHRS
TI-05023	FW TEMP ECON IN	363	DEGF	JI-03022	STA.SERVICE	126.56	MWHRS
PI-06012	DEAERATOR PRESS	26.3	PSIG	JQI-03024	NET MHR PROD	9045.16	MWHRS
TI-06006	COND DISCH TEMP	129	DEGF	FI-30170	FIRING RATE	29.0	PCNT
TI-09001	COND RCVR TEMP	128	DEGF	DB-00106	CEM NH3	3.7	PPM
TI-09023	COND LEG A	73.7	DEGF	DB-00109	STACK OPACITY	0.7	%
TI-09024	COND LEG B	73.7	DEGF	AI-02030	BOILER EXIT O2	4.4	%O2
TI-09021	EXHAUST TEMP	105	DEGF	DB-00108	CEM FLUE GAS O2	6.5	%O2
PI-09004	TURBINE EXH PRESS	4.01	"HGA	DB-00107	CEM CO	53	PPM
LI-09030	DEMIN TANK LEVEL	62.5	"LVL	DB-00105	CEM NOX	25	PPM
				SO2	CEM SO2	-0	PPM
PIC-02020	ID FAN INLET	81	%OPEN	UREA FLOW	RATE %	0.0	%
PI-02020	FURNACE PRESSURE	-0.17	"H2O	% CH4	% METHANE	-0.15	% CH4
PIC-02003	FD FAN INLET	38	%OPEN	FLOW CH4	LFG GAS FLOW	-750.0	CFM
PIC-02003	FD DUCT PRESSURE	13.4	"WC	LFG METER	LFG MASS FLOW	965.9	MSCF
FI-02001	FD AIR FLOW	124.52	KLB/H	LFG METER	LFG HEAT FLOW	5870.0	MMBTU
				LFG SUC	LFG SUCTION	-0.34	"H2O
FI-02001B	UGA FLOW(CALC)	93.24	KLB/H	WT-1000	BLR WOOD FEED	8158.1	TONS
FIC-02001C	OFA FAN INLET	29	%OPEN	WT-2000	WOOD RETURN	2914.7	TONS
PI-02007	OFA DISCHG PRESS	-12	"WC				
FI-02007	OVERFIRE AIR FLOW	30.99	KLB/H	DDU1	DDU1 START STOP	STOP	
FI-14003	GAS BURNER FLOW	4.2	KLB/H	SPEED DDU1	PAPER FEED 1	0.0	
				DDU2	DDU2 START STOP	STOP	
				SPEED DDU2	PAPER FEED 2	0.0	

RATA Report
For 6/25/2013, Hour 13:00

Time	O2 %	NOX PPM	NH3 PPM	CO PPM	SO2 PPM	NOX lb/MBtu	NH3 lb/MBtu
06/25/2013 13:35	6.4	27.2	2.5	70.0	0.0	0.061	0.002
06/25/2013 13:36	6.5	26.8	3.9	64.2	0.0	0.060	0.003
06/25/2013 13:37	6.6	27.6	2.4	61.9	0.0	0.063	0.002
06/25/2013 13:38	6.7	27.9	1.4	60.6	0.0	0.064	0.001
06/25/2013 13:39	6.7	27.9	0.0	100.6	0.0	0.064	0.000
06/25/2013 13:40	6.4	27.2	0.0	77.8	0.0	0.061	0.000
06/25/2013 13:41	6.4	24.1	3.3	65.8	0.0	0.054	0.003
06/25/2013 13:42	6.4	24.3	4.5	70.6	0.0	0.054	0.004
06/25/2013 13:43	6.4	25.1	4.2	56.3	0.1	0.056	0.003
06/25/2013 13:44	6.5	26.4	3.5	66.8	0.0	0.059	0.003
06/25/2013 13:45	6.5	28.0	0.0	103.0	0.0	0.063	0.000
06/25/2013 13:46	6.5	27.4	0.1	71.2	0.0	0.062	0.000
06/25/2013 13:47	6.6	25.5	2.2	67.8	0.0	0.058	0.002
06/25/2013 13:48	6.6	25.7	1.9	60.9	0.0	0.058	0.002
06/25/2013 13:49	6.3	25.8	2.8	53.4	0.0	0.057	0.002
06/25/2013 13:50	6.2	25.8	1.4	89.7	0.0	0.056	0.001
06/25/2013 13:51	6.2	26.6	1.1	76.4	0.0	0.058	0.001
06/25/2013 13:52	6.3	26.4	1.5	64.8	0.0	0.058	0.001
06/25/2013 13:53	6.3	26.3	2.9	66.7	0.0	0.058	0.002
06/25/2013 13:54	6.5	27.0	2.0	59.4	0.0	0.061	0.002
06/25/2013 13:55	6.5	27.3	1.5	57.2	0.0	0.061	0.001
06/25/2013 13:56	6.5	27.6	0.0	101.6	0.0	0.062	0.000
06/25/2013 13:57	6.6	26.9	0.1	82.8	0.0	0.061	0.000
06/25/2013 13:58	6.6	24.7	1.9	62.5	0.0	0.056	0.002
06/25/2013 13:59	6.5	24.2	3.9	55.9	0.0	0.054	0.003
06/25/2013 14:00	6.4	25.0	3.7	50.9	0.0	0.056	0.003
06/25/2013 14:01	6.4	25.9	2.2	14.1	0.3	0.058	0.002
06/25/2013 14:02	6.5	26.5	0.0	41.5	0.7	0.060	0.000
06/25/2013 14:03	6.7	8.2	15.1	64.0	0.6	0.019	0.013
06/25/2013 14:04	6.8	4.5	29.5	59.6	0.3	0.010	0.025
06/25/2013 14:05	6.6	20.3	9.8	59.1	0.1	0.046	0.008
06/25/2013 14:06	6.5	24.4	1.2	41.0	0.0	0.055	0.001
06/25/2013 14:07	6.5	24.2	0.4	75.7	0.0	0.054	0.000
06/25/2013 14:08	6.5	21.3	4.6	64.2	0.0	0.048	0.004
06/25/2013 14:09	6.6	23.2	3.5	54.0	0.0	0.053	0.003
06/25/2013 14:10	6.6	23.8	3.0	59.3	0.0	0.054	0.003
06/25/2013 14:11	6.6	24.6	1.1	58.0	0.0	0.056	0.001
06/25/2013 14:12	6.6	24.3	0.6	75.3	0.0	0.055	0.001
06/25/2013 14:13	6.5	24.5	0.0	99.5	0.0	0.055	0.000
06/25/2013 14:14	6.4	23.1	1.0	69.2	0.0	0.051	0.001
06/25/2013 14:15	6.4	21.6	5.6	53.1	0.0	0.048	0.005
06/25/2013 14:16	6.4	22.4	5.4	55.9	0.0	0.050	0.004
06/25/2013 14:17	6.4	24.4	2.8	53.7	0.0	0.054	0.002
06/25/2013 14:18	6.6	25.2	0.6	84.4	0.0	0.057	0.001
06/25/2013 14:19	6.7	25.3	0.0	71.4	0.0	0.058	0.000
06/25/2013 14:20	6.5	23.3	1.2	60.2	0.0	0.052	0.001
06/25/2013 14:21	6.4	23.0	2.8	54.8	0.0	0.051	0.002
06/25/2013 14:22	6.2	23.1	2.7	58.5	0.0	0.050	0.002
06/25/2013 14:23	6.2	23.7	3.3	69.8	0.0	0.052	0.003
06/25/2013 14:24	6.2	24.8	0.0	128.6	0.0	0.054	0.000
06/25/2013 14:25	6.4	24.6	0.2	81.7	0.0	0.055	0.000
06/25/2013 14:26	6.5	21.2	2.6	81.0	0.0	0.048	0.002
06/25/2013 14:27	6.5	22.6	0.6	92.8	0.0	0.051	0.000
06/25/2013 14:28	6.4	22.6	0.2	80.8	0.0	0.050	0.000
06/25/2013 14:29	6.5	21.2	2.0	87.8	0.0	0.048	0.002
06/25/2013 14:30	6.5	21.3	2.6	72.4	0.0	0.048	0.002
06/25/2013 14:31	6.4	22.1	1.3	61.1	0.0	0.049	0.001
06/25/2013 14:32	6.2	21.7	3.1	60.4	0.0	0.047	0.002
06/25/2013 14:33	6.2	22.6	3.3	68.3	0.0	0.049	0.003
06/25/2013 14:34	6.4	23.3	2.5	78.6	0.0	0.052	0.002
06/25/2013 14:35	6.8	24.1	0.0	119.8	0.0	0.056	0.000
06/25/2013 14:36	6.8	23.8	0.0	77.6	0.0	0.055	0.000
06/25/2013 14:37	6.7	21.6	1.3	57.7	0.0	0.050	0.001
06/25/2013 14:38	6.5	21.0	2.2	59.0	0.0	0.047	0.002

RATA Run # 1

Verified By: ____________________

RATA Report
For 6/25/2013, Hour 13:00

Time	O2 %	NOX PPM	NH3 PPM	CO PPM	SO2 PPM	NOX lb/MBtu	NH3 lb/MBtu
06/25/2013 14:39	6.4	21.3	3.2	47.3	0.0	0.047	0.003
Average Value	6.5	23.9	2.7	68.8	0.0	0.054	0.002

RATA Run # 1

Verified By: ____________________

RATA Report
For 6/25/2013, Hour 13:00

Time	CO lb/MBtu	SO2 lb/MBtu	NOX lb/hr	NH3 lb/hr	CO lb/hr	SO2 lb/hr
06/25/2013 13:35	0.095	0.000	10.2	0.3	16.0	0.0
06/25/2013 13:36	0.088	0.000	10.2	0.5	14.8	0.0
06/25/2013 13:37	0.086	0.000	10.5	0.3	14.4	0.0
06/25/2013 13:38	0.085	0.000	10.7	0.2	14.1	0.0
06/25/2013 13:39	0.140	0.000	10.6	0.0	23.3	0.0
06/25/2013 13:40	0.105	0.000	10.3	0.0	17.9	0.0
06/25/2013 13:41	0.089	0.000	9.1	0.5	15.1	0.0
06/25/2013 13:42	0.096	0.000	9.1	0.6	16.1	0.0
06/25/2013 13:43	0.076	0.000	9.5	0.6	13.0	0.1
06/25/2013 13:44	0.091	0.000	9.9	0.5	15.3	0.0
06/25/2013 13:45	0.141	0.000	10.8	0.0	24.1	0.0
06/25/2013 13:46	0.097	0.000	10.4	0.0	16.5	0.0
06/25/2013 13:47	0.094	0.000	9.8	0.3	15.8	0.0
06/25/2013 13:48	0.084	0.000	9.8	0.3	14.1	0.0
06/25/2013 13:49	0.072	0.000	9.9	0.4	12.5	0.0
06/25/2013 13:50	0.119	0.000	9.7	0.2	20.6	0.0
06/25/2013 13:51	0.102	0.000	10.0	0.2	17.5	0.0
06/25/2013 13:52	0.087	0.000	10.1	0.2	15.1	0.0
06/25/2013 13:53	0.089	0.000	9.9	0.4	15.3	0.0
06/25/2013 13:54	0.081	0.000	10.6	0.3	14.1	0.0
06/25/2013 13:55	0.078	0.000	10.7	0.2	13.6	0.0
06/25/2013 13:56	0.139	0.000	10.7	0.0	24.0	0.0
06/25/2013 13:57	0.114	0.000	10.7	0.0	20.0	0.0
06/25/2013 13:58	0.086	0.000	9.7	0.3	15.0	0.0
06/25/2013 13:59	0.076	0.000	9.4	0.6	13.2	0.0
06/25/2013 14:00	0.069	0.000	9.7	0.5	12.0	0.0
06/25/2013 14:01	0.019	0.001	9.7	0.3	3.2	0.2
06/25/2013 14:02	0.057	0.002	10.4	0.0	9.9	0.4
06/25/2013 14:03	0.089	0.002	3.2	2.2	15.0	0.3
06/25/2013 14:04	0.084	0.001	1.7	4.2	13.9	0.2
06/25/2013 14:05	0.082	0.000	7.8	1.4	13.9	0.1
06/25/2013 14:06	0.056	0.000	9.5	0.2	9.7	0.0
06/25/2013 14:07	0.104	0.000	9.0	0.1	17.1	0.0
06/25/2013 14:08	0.088	0.000	8.1	0.6	14.9	0.0
06/25/2013 14:09	0.075	0.000	8.5	0.5	12.1	0.0
06/25/2013 14:10	0.082	0.000	9.0	0.4	13.6	0.0
06/25/2013 14:11	0.080	0.000	9.3	0.2	13.3	0.0
06/25/2013 14:12	0.104	0.000	9.1	0.1	17.1	0.0
06/25/2013 14:13	0.136	0.000	9.0	0.0	22.2	0.0
06/25/2013 14:14	0.094	0.000	8.8	0.1	16.1	0.0
06/25/2013 14:15	0.072	0.000	8.2	0.8	12.3	0.0
06/25/2013 14:16	0.076	0.000	8.7	0.8	13.2	0.0
06/25/2013 14:17	0.073	0.000	9.4	0.4	12.6	0.0
06/25/2013 14:18	0.117	0.000	9.7	0.1	19.7	0.0
06/25/2013 14:19	0.100	0.000	9.8	0.0	16.8	0.0
06/25/2013 14:20	0.082	0.000	9.0	0.2	14.1	0.0
06/25/2013 14:21	0.074	0.000	8.9	0.4	12.9	0.0
06/25/2013 14:22	0.078	0.000	9.0	0.4	13.9	0.0
06/25/2013 14:23	0.093	0.000	9.1	0.5	16.3	0.0
06/25/2013 14:24	0.171	0.000	9.6	0.0	30.2	0.0
06/25/2013 14:25	0.111	0.000	9.4	0.0	19.1	0.0
06/25/2013 14:26	0.111	0.000	7.8	0.4	18.2	0.0
06/25/2013 14:27	0.127	0.000	8.5	0.1	21.1	0.0
06/25/2013 14:28	0.109	0.000	8.5	0.0	18.5	0.0
06/25/2013 14:29	0.120	0.000	7.9	0.3	20.0	0.0
06/25/2013 14:30	0.099	0.000	8.0	0.4	16.6	0.0
06/25/2013 14:31	0.083	0.000	8.4	0.2	14.1	0.0
06/25/2013 14:32	0.080	0.000	8.4	0.4	14.2	0.0
06/25/2013 14:33	0.091	0.000	8.7	0.5	16.1	0.0
06/25/2013 14:34	0.106	0.000	8.9	0.4	18.3	0.0
06/25/2013 14:35	0.169	0.000	9.2	0.0	27.7	0.0
06/25/2013 14:36	0.109	0.000	9.0	0.0	17.9	0.0
06/25/2013 14:37	0.081	0.000	8.2	0.2	13.3	0.0

RATA Run # 1

Verified By: ____________________

RATA Report
For 6/25/2013, Hour 13:00

Time	CO lb/MBtu	SO2 lb/MBtu	NOX lb/hr	NH3 lb/hr	CO lb/hr	SO2 lb/hr
06/25/2013 14:38	0.081	0.000	8.2	0.3	13.9	0.0
06/25/2013 14:39	0.064	0.000	8.3	0.5	11.2	0.0
Average Value	0.094	0.000	9.1	0.4	16.0	0.0

RATA Run # 1

Verified By: ______________________

1/ CEM / OPACITY Data

2/ fuel samples

3/ 5B times

6.26.13

0825 - 0935 ✓

0955 - 1057 ✓

1120 - 1222 ✓

1330 - 1536 ✓

6-27.13

0820 - 1025 ✓ ✓

~~0945 - 1150~~ ✓

10:45 12:50 ✓

LOG : 26-JUN-13 08:24:46 LCP-47 LOG REQUESTED

PERFORMANCE

start MS·1

"PINETREE POWER-FITCHBURG PERFORMANCE LOG"

FI-03019	STEAM FLOW	136.52	KPPH	AMBIENT	OUTSIDE AIR TEMP	77	DEGF
TI-03013	MAIN STEAM TEMP	948	DEGF				
PI-03016	MAIN STEAM PRESS	1244	PSIG	TI-02004	FD OUT AIR HTR IN	87	DEGF
				TI-02039	AH AIR OUT TEMP	442	DEGF
FI-05012	ATTEMP SPRAY FLOW	15.48	KLB/H	TI-02035	ECON GAS IN	723	DEGF
TI-03007	ATTEMP INLET TEMP	953	DEGF	TI-02036	AH GAS IN TEMP	545	DEGF
TIC-03010	ATTEMP OUT TEMP	725	DEGF	TI-02042	AH GAS OUT TEMP	305	DEGF
FI-10012	BLOWDOWN FLOW	0.4	KLB/H	TI-02B51	BH INLET TEMP	434	DEGF
TI-03A05	DRUM TEMP	583	DEGF	TI-02C51	BH OUTLET TEMP	422	DEGF
PI-05022	DRUM PRESSURE	1287	PSIG	PDI-02A51	BH DIFF PRESS	5.2	"H2O
LI-05018	DRUM LEVEL	0.2	"NWL	JI-03020	GENERATOR GROSS	16.4	MW
PI-05013	FEEDWATER PRESS	1341	PSIG	JI-03022	STATION SERVICE	2.5	MW
FI-05011	FEEDWATER FLOW	129.23	KLB/H	CALC	STATION NET PWR	13.9	MW
TI-05051	BFP SUCTION TEMP	304	DEGF	JIC-03020	GROSS MW PROD	7704.04	MWHRS
TI-05023	FW TEMP ECON IN	405	DEGF	JI-03022	STA.SERVICE	13.35	MWHRS
PI-06012	DEAERATOR PRESS	55.9	PSIG	JQI-03024	NET MHR PROD	9080.69	MWHRS
TI-06006	COND DISCH TEMP	135	DEGF	FI-30170	FIRING RATE	49.0	PCNT
TI-09001	COND RCVR TEMP	138	DEGF	DB-00106	CEM NH3	3.8	PPM
TI-09023	COND LEG A	73.7	DEGF	DB-00109	STACK OPACITY	1.2	%
TI-09024	COND LEG B	73.7	DEGF	AI-02030	BOILER EXIT O2	2.8	%O2
TI-09021	EXHAUST TEMP	105	DEGF	DB-00108	CEM FLUE GAS O2	5.5	%O2
PI-09004	TURBINE EXH PRESS	4.20	"HGA	DB-00107	CEM CO	183	PPM
LI-09030	DEMIN TANK LEVEL	89.0	"LVL	DB-00105	CEM NOX	21	PPM
				SO2	CEM SO2	0	PPM
PIC-02020	ID FAN INLET	94	%OPEN	UREA FLOW	RATE %	0.0	%
PI-02020	FURNACE PRESSURE	-0.19	"H2O	% CH4	% METHANE	-0.15	% CH4
PIC-02003	FD FAN INLET	54	%OPEN	FLOW CH4	LFG GAS FLOW	-750.9	CFM
PIC-02003	FD DUCT PRESSURE	13.2	"WC	LFG METER	LFG MASS FLOW	965.9	MSCF
FI-02001	FD AIR FLOW	210.69	KLB/H	LFG METER	LFG HEAT FLOW	6007.3	MMBTU
				LFG SUC	LFG SUCTION	-0.34	"H2O
FI-02001B	UGA FLOW(CALC)	152.60	KLB/H	WT-1000	BLR WOOD FEED	8630.2	TONS
FIC-02001C	OFA FAN INLET	47	%OPEN	WT-2000	WOOD RETURN	3005.2	TONS
PI-02007	OFA DISCHG PRESS	-12	"WC				
FI-02007	OVERFIRE AIR FLOW	57.96	KLB/H	DDU1	DDU1 START STOP	STOP	
FI-14003	GAS BURNER FLOW	5.0	KLB/H	SPEED DDU1	PAPER FEED 1	0.0	
				DDU2	DDU2 START STOP	STOP	
				SPEED DDU2	PAPER FEED 2	0.0	

LOG : 26-JUN-13 09:35:31 LCP-47 LOG REQUESTED

PERFORMANCE

"PINETREE POWER-FITCHBURG PERFORMANCE LOG"

FI-03019	STEAM FLOW	140.18	KPPH	AMBIENT	OUTSIDE AIR TEMP	80	DEGF
TI-03013	MAIN STEAM TEMP	959	DEGF				
PI-03016	MAIN STEAM PRESS	1255	PSIG	TI-02004	FD OUT AIR HTR IN	90	DEGF
				TI-02039	AH AIR OUT TEMP	439	DEGF
FI-05012	ATTEMP SPRAY FLOW	15.48	KLB/H	TI-02035	ECON GAS IN	725	DEGF
TI-03007	ATTEMP INLET TEMP	935	DEGF	TI-02036	AH GAS IN TEMP	548	DEGF
TIC-03010	ATTEMP OUT TEMP	739	DEGF	TI-02042	AH GAS OUT TEMP	303	DEGF
FI-10012	BLOWDOWN FLOW	0.3	KLB/H	TI-02B51	BH INLET TEMP	435	DEGF
TI-03A05	DRUM TEMP	584	DEGF	TI-02C51	BH OUTLET TEMP	424	DEGF
PI-05022	DRUM PRESSURE	1303	PSIG	PDI-02A51	BH DIFF PRESS	5.1	"H2O
LI-05018	DRUM LEVEL	-0.9	"NWL	JI-03020	GENERATOR GROSS	16.7	MW
PI-05013	FEEDWATER PRESS	1366	PSIG	JI-03022	STATION SERVICE	2.6	MW
FI-05011	FEEDWATER FLOW	150.17	KLB/H	CALC	STATION NET PWR	14.2	MW
TI-05051	BFP SUCTION TEMP	306	DEGF	JIC-03020	GROSS MW PROD	7722.36	MWHRS
TI-05023	FW TEMP ECON IN	407	DEGF	JI-03022	STA.SERVICE	16.31	MWHRS
PI-06012	DEAERATOR PRESS	57.9	PSIG	JQI-03024	NET MHR PROD	9082.95	MWHRS
TI-06006	COND DISCH TEMP	140	DEGF	FI-30170	FIRING RATE	53.0	PCNT
TI-09001	COND RCVR TEMP	142	DEGF	DB-00106	CEM NH3	3.8	PPM

TI-09023	COND LEG A	73.7	DEGF	DB-00109	STACK OPACITY	1.2	%
TI-09024	COND LEG B	73.7	DEGF	AI-02030	BOILER EXIT O2	3.3	%O2
TI-09021	EXHAUST TEMP	105	DEGF	DB-00108	CEM FLUE GAS O2	5.3	%O2
PI-09004	TURBINE EXH PRESS	4.69	"HGA	DB-00107	CEM CO	151	PPM
LI-09030	DEMIN TANK LEVEL	82.9	"LVL	DB-00105	CEM NOX	22	PPM
				SO2	CEM SO2	-0	PPM
PIC-02020	ID FAN INLET	96	%OPEN	UREA FLOW	RATE %	0.0	%
PI-02020	FURNACE PRESSURE	-0.16	"H2O	% CH4	% METHANE	-0.15	% CH4
PIC-02003	FD FAN INLET	56	%OPEN	FLOW CH4	LFG GAS FLOW	-750.9	CFM
PIC-02003	FD DUCT PRESSURE	13.4	"WC	LFG METER	LFG MASS FLOW	965.9	MSCF
FI-02001	FD AIR FLOW	220.82	KLB/H	LFG METER	LFG HEAT FLOW	6016.1	MMBTU
				LFG SUC	LFG SUCTION	-0.34	"H2O
FI-02001B	UGA FLOW(CALC)	156.97	KLB/H	WT-1000	BLR WOOD FEED	8669.9	TONS
FIC-02001C	OFA FAN INLET	53	%OPEN	WT-2000	WOOD RETURN	3012.4	TONS
PI-02007	OFA DISCHG PRESS	-12	"WC				
FI-02007	OVERFIRE AIR FLOW	63.82	KLB/H	DDU1	DDU1 START STOP	STOP	
FI-14003	GAS BURNER FLOW	6.4	KLB/H	SPEED DDU1	PAPER FEED 1	0.0	
				DDU2	DDU2 START STOP	STOP	
				SPEED DDU2	PAPER FEED 2	0.0	

End MS-1

LOG : 26-JUN-13 09:55:03 LCP-47 LOG REQUESTED

PERFORMANCE

Start MS-2

"PINETREE POWER-FITCHBURG PERFORMANCE LOG"

FI-03019	STEAM FLOW	140.53	KPPH	AMBIENT	OUTSIDE AIR TEMP	81	DEGF
TI-03013	MAIN STEAM TEMP	950	DEGF				
PI-03016	MAIN STEAM PRESS	1257	PSIG	TI-02004	FD OUT AIR HTR IN	91	DEGF
				TI-02039	AH AIR OUT TEMP	443	DEGF
FI-05012	ATTEMP SPRAY FLOW	15.47	KLB/H	TI-02035	ECON GAS IN	728	DEGF
TI-03007	ATTEMP INLET TEMP	941	DEGF	TI-02036	AH GAS IN TEMP	551	DEGF
TIC-03010	ATTEMP OUT TEMP	724	DEGF	TI-02042	AH GAS OUT TEMP	307	DEGF
FI-10012	BLOWDOWN FLOW	0.4	KLB/H	TI-02B51	BH INLET TEMP	438	DEGF
TI-03A05	DRUM TEMP	584	DEGF	TI-02C51	BH OUTLET TEMP	426	DEGF
PI-05022	DRUM PRESSURE	1304	PSIG	PDI-02A51	BH DIFF PRESS	4.7	"H2O
LI-05018	DRUM LEVEL	0.4	"NWL	JI-03020	GENERATOR GROSS	16.7	MW
PI-05013	FEEDWATER PRESS	1359	PSIG	JI-03022	STATION SERVICE	2.5	MW
FI-05011	FEEDWATER FLOW	132.16	KLB/H	CALC	STATION NET PWR	14.2	MW
TI-05051	BFP SUCTION TEMP	306	DEGF	JIC-03020	GROSS MW PROD	7727.86	MWHRS
TI-05023	FW TEMP ECON IN	408	DEGF	JI-03022	STA.SERVICE	17.15	MWHRS
PI-06012	DEAERATOR PRESS	57.2	PSIG	JQI-03024	NET MHR PROD	9083.70	MWHRS
TI-06006	COND DISCH TEMP	143	DEGF	FI-30170	FIRING RATE	52.0	PCNT
TI-09001	COND RCVR TEMP	144	DEGF	DB-00106	CEM NH3	2.6	PPM
TI-09023	COND LEG A	73.7	DEGF	DB-00109	STACK OPACITY	1.2	%
TI-09024	COND LEG B	73.7	DEGF	AI-02030	BOILER EXIT O2	2.9	%O2
TI-09021	EXHAUST TEMP	105	DEGF	DB-00108	CEM FLUE GAS O2	4.9	%O2
PI-09004	TURBINE EXH PRESS	4.82	"HGA	DB-00107	CEM CO	224	PPM
LI-09030	DEMIN TANK LEVEL	82.4	"LVL	DB-00105	CEM NOX	21	PPM
				SO2	CEM SO2	-0	PPM
PIC-02020	ID FAN INLET	96	%OPEN	UREA FLOW	RATE %	0.0	%
PI-02020	FURNACE PRESSURE	-0.16	"H2O	% CH4	% METHANE	-0.15	% CH4
PIC-02003	FD FAN INLET	56	%OPEN	FLOW CH4	LFG GAS FLOW	-751.9	CFM
PIC-02003	FD DUCT PRESSURE	13.2	"WC	LFG METER	LFG MASS FLOW	965.9	MSCF
FI-02001	FD AIR FLOW	221.47	KLB/H	LFG METER	LFG HEAT FLOW	6018.5	MMBTU
				LFG SUC	LFG SUCTION	-0.34	"H2O
FI-02001B	UGA FLOW(CALC)	158.04	KLB/H	WT-1000	BLR WOOD FEED	8680.0	TONS
FIC-02001C	OFA FAN INLET	54	%OPEN	WT-2000	WOOD RETURN	3012.8	TONS
PI-02007	OFA DISCHG PRESS	-12	"WC				
FI-02007	OVERFIRE AIR FLOW	63.65	KLB/H	DDU1	DDU1 START STOP	STOP	
FI-14003	GAS BURNER FLOW	5.0	KLB/H	SPEED DDU1	PAPER FEED 1	0.0	
				DDU2	DDU2 START STOP	STOP	
				SPEED DDU2	PAPER FEED 2	0.0	

LOG : 26-JUN-13 10:57:22 LCP-47 LOG REQUESTED

PERFORMANCE

"PINETREE POWER-FITCHBURG PERFORMANCE LOG"

FI-03019	STEAM FLOW	141.46	KPPH	AMBIENT	OUTSIDE AIR TEMP	80	DEGF
TI-03013	MAIN STEAM TEMP	951	DEGF				
PI-03016	MAIN STEAM PRESS	1255	PSIG	TI-02004	FD OUT AIR HTR IN	91	DEGF
				TI-02039	AH AIR OUT TEMP	448	DEGF
FI-05012	ATTEMP SPRAY FLOW	15.47	KLB/H	TI-02035	ECON GAS IN	730	DEGF
TI-03007	ATTEMP INLET TEMP	944	DEGF	TI-02036	AH GAS IN TEMP	555	DEGF
TIC-03010	ATTEMP OUT TEMP	728	DEGF	TI-02042	AH GAS OUT TEMP	309	DEGF
FI-10012	BLOWDOWN FLOW	0.3	KLB/H	TI-02B51	BH INLET TEMP	436	DEGF
TI-03A05	DRUM TEMP	583	DEGF	TI-02C51	BH OUTLET TEMP	428	DEGF
PI-05022	DRUM PRESSURE	1302	PSIG	PDI-02A51	BH DIFF PRESS	5.1	"H2O
LI-05018	DRUM LEVEL	-0.1	"NWL	JI-03020	GENERATOR GROSS	16.9	MW
PI-05013	FEEDWATER PRESS	1362	PSIG	JI-03022	STATION SERVICE	2.6	MW
FI-05011	FEEDWATER FLOW	143.38	KLB/H	CALC	STATION NET PWR	14.3	MW
TI-05051	BFP SUCTION TEMP	307	DEGF	JIC-03020	GROSS MW PROD	7745.38	MWHRS
TI-05023	FW TEMP ECON IN	408	DEGF	JI-03022	STA.SERVICE	19.84	MWHRS
PI-06012	DEAERATOR PRESS	58.3	PSIG	JQI-03024	NET MHR PROD	9086.00	MWHRS
TI-06006	COND DISCH TEMP	144	DEGF	FI-30170	FIRING RATE	52.0	PCNT
TI-09001	COND RCVR TEMP	145	DEGF	DB-00106	CEM NH3	0.5	PPM
TI-09023	COND LEG A	73.7	DEGF	DB-00109	STACK OPACITY	0.9	%
TI-09024	COND LEG B	73.7	DEGF	AI-02030	BOILER EXIT O2	3.1	%O2
TI-09021	EXHAUST TEMP	105	DEGF	DB-00108	CEM FLUE GAS O2	5.0	%O2
PI-09004	TURBINE EXH PRESS	5.10	"HGA	DB-00107	CEM CO	334	PPM
LI-09030	DEMIN TANK LEVEL	77.2	"LVL	DB-00105	CEM NOX	31	PPM
				SO2	CEM SO2	0	PPM
PIC-02020	ID FAN INLET	96	%OPEN	UREA FLOW	RATE %	0.0	%
PI-02020	FURNACE PRESSURE	-0.19	"H2O	% CH4	% METHANE	-0.15	% CH4
PIC-02003	FD FAN INLET	56	%OPEN	FLOW CH4	LFG GAS FLOW	-751.9	CFM
PIC-02003	FD DUCT PRESSURE	13.5	"WC	LFG METER	LFG MASS FLOW	965.9	MSCF
FI-02001	FD AIR FLOW	220.08	KLB/H	LFG METER	LFG HEAT FLOW	6026.3	MMBTU
				LFG SUC	LFG SUCTION	-0.34	"H2O
FI-02001B	UGA FLOW(CALC)	160.49	KLB/H	WT-1000	BLR WOOD FEED	8715.4	TONS
FIC-02001C	OFA FAN INLET	50	%OPEN	WT-2000	WOOD RETURN	3016.6	TONS
PI-02007	OFA DISCHG PRESS	-12	"WC				
FI-02007	OVERFIRE AIR FLOW	59.58	KLB/H	DDU1	DDU1 START STOP	STOP	
FI-14003	GAS BURNER FLOW	7.0	KLB/H	SPEED DDU1	PAPER FEED 1	0.0	
				DDU2	DDU2 START STOP	STOP	
				SPEED DDU2	PAPER FEED 2	0.0	

End M5-2

LOG : 26-JUN-13 11:20:16 LCP-47 LOG REQUESTED

PERFORMANCE

START M5-3

"PINETREE POWER-FITCHBURG PERFORMANCE LOG"

FI-03019	STEAM FLOW	133.02	KPPH	AMBIENT	OUTSIDE AIR TEMP	80	DEGF
TI-03013	MAIN STEAM TEMP	952	DEGF				
PI-03016	MAIN STEAM PRESS	1238	PSIG	TI-02004	FD OUT AIR HTR IN	91	DEGF
				TI-02039	AH AIR OUT TEMP	451	DEGF
FI-05012	ATTEMP SPRAY FLOW	15.48	KLB/H	TI-02035	ECON GAS IN	721	DEGF
TI-03007	ATTEMP INLET TEMP	926	DEGF	TI-02036	AH GAS IN TEMP	554	DEGF
TIC-03010	ATTEMP OUT TEMP	732	DEGF	TI-02042	AH GAS OUT TEMP	315	DEGF
FI-10012	BLOWDOWN FLOW	0.4	KLB/H	TI-02B51	BH INLET TEMP	428	DEGF
TI-03A05	DRUM TEMP	583	DEGF	TI-02C51	BH OUTLET TEMP	422	DEGF
PI-05022	DRUM PRESSURE	1278	PSIG	PDI-02A51	BH DIFF PRESS	5.0	"H2O
LI-05018	DRUM LEVEL	0.2	"NWL	JI-03020	GENERATOR GROSS	16.0	MW
PI-05013	FEEDWATER PRESS	1332	PSIG	JI-03022	STATION SERVICE	2.6	MW
FI-05011	FEEDWATER FLOW	133.70	KLB/H	CALC	STATION NET PWR	13.4	MW
TI-05051	BFP SUCTION TEMP	303	DEGF	JIC-03020	GROSS MW PROD	7751.74	MWHRS
TI-05023	FW TEMP ECON IN	405	DEGF	JI-03022	STA.SERVICE	20.84	MWHRS
PI-06012	DEAERATOR PRESS	54.7	PSIG	JQI-03024	NET MHR PROD	9087.08	MWHRS
TI-06006	COND DISCH TEMP	139	DEGF	FI-30170	FIRING RATE	51.0	PCNT
TI-09001	COND RCVR TEMP	140	DEGF	DB-00106	CEM NH3	0.5	PPM
TI-09023	COND LEG A	73.7	DEGF	DB-00109	STACK OPACITY	0.8	%

RATA Report
For 6/26/2013, Hour 08:00

Time	O2 %	NOX PPM	NH3 PPM	CO PPM	SO2 PPM	NOX lb/MBtu	NH3 lb/MBtu
06/26/2013 08:25	5.5	21.8	3.4	153.8	0.0	0.045	0.003
06/26/2013 08:26	5.5	22.2	1.9	171.8	0.0	0.045	0.001
06/26/2013 08:27	5.5	22.0	2.3	145.1	0.0	0.045	0.002
06/26/2013 08:28	5.6	21.1	4.2	131.2	0.0	0.044	0.003
06/26/2013 08:29	5.7	21.9	3.5	121.9	0.0	0.046	0.003
06/26/2013 08:30	5.6	23.0	1.8	119.0	0.0	0.048	0.001
06/26/2013 08:31	5.5	22.9	1.0	171.0	0.0	0.047	0.001
06/26/2013 08:32	5.5	22.3	2.0	191.7	0.0	0.046	0.002
06/26/2013 08:33	5.5	21.8	3.0	154.7	0.0	0.045	0.002
06/26/2013 08:34	5.8	21.7	4.2	156.5	0.0	0.046	0.003
06/26/2013 08:35	5.9	22.3	4.2	127.7	0.0	0.047	0.003
06/26/2013 08:36	6.1	22.9	4.4	114.0	0.0	0.050	0.004
06/26/2013 08:37	6.0	24.0	2.0	136.7	0.0	0.051	0.002
06/26/2013 08:38	5.8	24.7	1.9	100.7	0.0	0.052	0.001
06/26/2013 08:39	5.9	23.8	3.4	104.7	0.0	0.051	0.003
06/26/2013 08:40	5.8	24.5	3.8	106.4	0.0	0.052	0.003
06/26/2013 08:41	5.5	24.8	3.9	115.9	0.0	0.051	0.003
06/26/2013 08:42	5.8	25.7	3.6	208.8	0.0	0.054	0.003
06/26/2013 08:43	5.9	26.0	3.9	159.7	0.0	0.055	0.003
06/26/2013 08:44	6.0	27.0	3.8	127.9	0.0	0.058	0.003
06/26/2013 08:45	6.1	27.8	2.9	111.3	0.0	0.060	0.002
06/26/2013 08:46	6.3	28.4	1.6	92.9	0.0	0.063	0.001
06/26/2013 08:47	6.2	28.5	0.8	91.8	0.0	0.062	0.001
06/26/2013 08:48	6.1	27.9	0.4	132.0	0.0	0.060	0.000
06/26/2013 08:49	5.8	27.2	1.4	105.2	0.0	0.057	0.001
06/26/2013 08:50	5.8	25.9	5.8	107.5	0.0	0.054	0.004
06/26/2013 08:51	5.8	27.6	4.9	124.8	0.0	0.058	0.004
06/26/2013 08:52	5.9	29.1	3.2	112.7	0.0	0.062	0.003
06/26/2013 08:53	6.0	29.8	1.3	128.2	0.0	0.064	0.001
06/26/2013 08:54	6.0	29.9	0.0	122.7	0.0	0.064	0.000
06/26/2013 08:55	6.0	29.3	0.3	106.6	0.1	0.063	0.000
06/26/2013 08:56	6.1	27.6	1.3	99.2	0.0	0.060	0.001
06/26/2013 08:57	5.8	27.6	0.7	94.0	0.0	0.058	0.001
06/26/2013 08:58	5.8	27.4	2.1	106.3	0.0	0.058	0.002
06/26/2013 08:59	5.7	26.9	2.5	148.5	0.0	0.056	0.002
06/26/2013 09:00	5.6	28.0	3.0	117.8	0.1	0.058	0.002
06/26/2013 09:01	5.6	27.6	3.8	106.7	0.1	0.057	0.003
06/26/2013 09:02	5.8	28.4	2.8	99.2	0.1	0.060	0.002
06/26/2013 09:03	5.4	29.2	0.6	97.9	0.1	0.059	0.000
06/26/2013 09:04	5.4	29.3	1.1	152.8	0.0	0.059	0.001
06/26/2013 09:05	5.5	27.8	4.0	161.5	0.0	0.057	0.003
06/26/2013 09:06	5.6	28.3	4.4	127.9	0.0	0.058	0.003
06/26/2013 09:07	5.6	29.1	3.5	109.9	0.0	0.060	0.003
06/26/2013 09:08	5.5	30.0	2.3	101.2	0.1	0.061	0.002
06/26/2013 09:09	5.7	30.2	2.9	94.6	0.1	0.063	0.002
06/26/2013 09:10	5.7	29.5	2.2	128.4	0.1	0.061	0.002
06/26/2013 09:11	5.6	31.6	0.5	113.9	0.1	0.065	0.000
06/26/2013 09:12	5.7	29.9	3.4	111.4	0.1	0.062	0.003
06/26/2013 09:13	5.7	30.4	3.1	106.4	0.1	0.063	0.002
06/26/2013 09:14	5.6	31.3	2.3	124.3	0.1	0.065	0.002
06/26/2013 09:15	5.7	31.5	2.7	158.0	0.1	0.066	0.002
06/26/2013 09:16	5.7	31.8	2.9	156.5	0.1	0.066	0.002
06/26/2013 09:17	5.7	32.9	2.1	119.6	0.1	0.069	0.002
06/26/2013 09:18	5.7	33.1	1.2	103.9	0.1	0.069	0.001
06/26/2013 09:19	5.4	33.2	0.1	106.3	0.1	0.067	0.000
06/26/2013 09:20	5.6	32.5	0.5	109.7	0.1	0.067	0.000
06/26/2013 09:21	5.8	31.9	0.2	147.3	0.1	0.067	0.000
06/26/2013 09:22	5.7	32.5	0.0	122.6	0.0	0.068	0.000
06/26/2013 09:23	5.6	29.1	1.0	115.9	0.0	0.060	0.001
06/26/2013 09:24	5.8	28.5	2.1	134.5	0.0	0.060	0.002
06/26/2013 09:25	5.9	28.9	0.3	130.4	0.1	0.061	0.000
06/26/2013 09:26	5.9	28.6	0.0	119.4	0.0	0.061	0.000
06/26/2013 09:27	5.9	27.2	0.0	130.8	0.0	0.058	0.000
06/26/2013 09:28	5.8	26.5	0.0	98.2	0.0	0.056	0.000

RATA Run # 1

Verified By: ______________________

RATA Report
For 6/26/2013, Hour 08:00

Time	O2 %	NOX PPM	NH3 PPM	CO PPM	SO2 PPM	NOX lb/MBtu	NH3 lb/MBtu
06/26/2013 09:29	5.4	23.8	1.7	99.6	0.0	0.048	0.001
06/26/2013 09:30	5.2	23.4	3.3	168.1	0.0	0.047	0.002
06/26/2013 09:31	5.3	23.5	3.9	179.5	0.0	0.047	0.003
06/26/2013 09:32	5.6	24.2	2.1	179.7	0.0	0.050	0.002
06/26/2013 09:33	5.4	25.1	0.0	161.1	0.0	0.051	0.000
06/26/2013 09:34	5.2	24.0	0.6	153.0	0.0	0.048	0.000
06/26/2013 09:35	5.3	22.4	2.6	149.2	0.0	0.045	0.002
Average Value	5.7	27.1	2.2	128.2	0.0	0.057	0.002

RATA Run # 1

Verified By: ____________________

RATA Report
For 6/26/2013, Hour 08:00

Time	CO lb/MBtu	SO2 lb/MBtu	NOX lb/hr	NH3 lb/hr	CO lb/hr	SO2 lb/hr
06/26/2013 08:25	0.192	0.000	10.6	0.6	45.3	0.0
06/26/2013 08:26	0.214	0.000	10.7	0.3	50.6	0.0
06/26/2013 08:27	0.181	0.000	10.6	0.4	42.7	0.0
06/26/2013 08:28	0.165	0.000	10.2	0.7	38.6	0.0
06/26/2013 08:29	0.155	0.000	10.6	0.6	35.8	0.0
06/26/2013 08:30	0.150	0.000	11.1	0.3	34.9	0.0
06/26/2013 08:31	0.213	0.000	11.1	0.2	50.4	0.0
06/26/2013 08:32	0.239	0.000	10.8	0.4	56.5	0.0
06/26/2013 08:33	0.193	0.000	10.5	0.5	45.5	0.0
06/26/2013 08:34	0.200	0.000	10.5	0.7	45.9	0.0
06/26/2013 08:35	0.165	0.000	10.8	0.7	37.5	0.0
06/26/2013 08:36	0.150	0.000	11.1	0.8	33.5	0.0
06/26/2013 08:37	0.178	0.000	11.6	0.4	40.1	0.0
06/26/2013 08:38	0.129	0.000	11.9	0.3	29.6	0.0
06/26/2013 08:39	0.135	0.000	11.5	0.6	30.8	0.0
06/26/2013 08:40	0.136	0.000	11.8	0.7	31.3	0.0
06/26/2013 08:41	0.144	0.000	12.0	0.7	34.2	0.0
06/26/2013 08:42	0.267	0.000	12.5	0.6	61.6	0.0
06/26/2013 08:43	0.206	0.000	12.6	0.7	47.1	0.0
06/26/2013 08:44	0.167	0.000	13.1	0.7	37.6	0.0
06/26/2013 08:45	0.147	0.000	13.4	0.5	32.7	0.0
06/26/2013 08:46	0.125	0.000	13.7	0.3	27.2	0.0
06/26/2013 08:47	0.122	0.000	13.8	0.1	27.0	0.0
06/26/2013 08:48	0.174	0.000	13.5	0.1	38.9	0.0
06/26/2013 08:49	0.135	0.000	13.2	0.3	31.0	0.0
06/26/2013 08:50	0.138	0.000	12.5	1.0	31.7	0.0
06/26/2013 08:51	0.160	0.000	13.3	0.9	36.5	0.0
06/26/2013 08:52	0.146	0.000	14.1	0.6	33.1	0.0
06/26/2013 08:53	0.167	0.000	14.4	0.2	37.7	0.0
06/26/2013 08:54	0.160	0.000	14.5	0.0	36.1	0.0
06/26/2013 08:55	0.139	0.000	14.1	0.1	31.3	0.1
06/26/2013 08:56	0.131	0.000	13.3	0.2	29.2	0.0
06/26/2013 08:57	0.120	0.000	13.3	0.1	27.7	0.0
06/26/2013 08:58	0.136	0.000	13.2	0.4	31.2	0.0
06/26/2013 08:59	0.188	0.000	13.0	0.4	43.8	0.0
06/26/2013 09:00	0.148	0.000	13.5	0.5	34.7	0.1
06/26/2013 09:01	0.134	0.000	13.3	0.7	31.3	0.1
06/26/2013 09:02	0.127	0.000	13.7	0.5	29.2	0.1
06/26/2013 09:03	0.121	0.000	14.1	0.1	28.8	0.1
06/26/2013 09:04	0.189	0.000	14.2	0.2	45.0	0.0
06/26/2013 09:05	0.201	0.000	13.5	0.7	47.6	0.0
06/26/2013 09:06	0.161	0.000	13.7	0.8	37.8	0.0
06/26/2013 09:07	0.138	0.000	14.1	0.6	32.3	0.0
06/26/2013 09:08	0.126	0.000	14.5	0.4	29.7	0.1
06/26/2013 09:09	0.120	0.000	14.6	0.5	27.8	0.1
06/26/2013 09:10	0.163	0.000	14.3	0.4	37.8	0.1
06/26/2013 09:11	0.143	0.000	15.3	0.1	33.6	0.1
06/26/2013 09:12	0.141	0.000	14.5	0.6	32.8	0.1
06/26/2013 09:13	0.135	0.000	14.7	0.6	31.4	0.1
06/26/2013 09:14	0.156	0.000	15.2	0.4	36.7	0.1
06/26/2013 09:15	0.200	0.000	15.3	0.5	46.6	0.1
06/26/2013 09:16	0.199	0.000	15.4	0.5	46.2	0.1
06/26/2013 09:17	0.152	0.000	15.9	0.4	35.2	0.1
06/26/2013 09:18	0.132	0.000	16.0	0.2	30.6	0.1
06/26/2013 09:19	0.131	0.000	16.1	0.0	31.3	0.1
06/26/2013 09:20	0.138	0.000	15.7	0.1	32.3	0.1
06/26/2013 09:21	0.189	0.000	15.5	0.0	43.5	0.1
06/26/2013 09:22	0.156	0.000	15.8	0.0	36.2	0.0
06/26/2013 09:23	0.146	0.000	14.1	0.2	34.3	0.0
06/26/2013 09:24	0.172	0.000	13.8	0.4	39.6	0.0
06/26/2013 09:25	0.168	0.000	14.0	0.1	38.4	0.1
06/26/2013 09:26	0.154	0.000	13.8	0.0	35.1	0.0
06/26/2013 09:27	0.169	0.000	13.1	0.0	38.4	0.0

RATA Run # 1

Verified By: ____________________

RATA Report
For 6/26/2013, Hour 08:00

Time	CO lb/MBtu	SO2 lb/MBtu	NOX lb/hr	NH3 lb/hr	CO lb/hr	SO2 lb/hr
06/26/2013 09:28	0.126	0.000	12.8	0.0	28.9	0.0
06/26/2013 09:29	0.123	0.000	11.5	0.3	29.4	0.0
06/26/2013 09:30	0.204	0.000	11.4	0.6	49.7	0.0
06/26/2013 09:31	0.220	0.000	11.4	0.7	53.0	0.0
06/26/2013 09:32	0.226	0.000	11.7	0.4	53.0	0.0
06/26/2013 09:33	0.199	0.000	12.2	0.0	47.5	0.0
06/26/2013 09:34	0.186	0.000	11.6	0.1	45.2	0.0
06/26/2013 09:35	0.183	0.000	10.8	0.5	44.0	0.0
Average Value	0.163	0.000	13.1	0.4	37.7	0.0

RATA Run # 1

Verified By: ______________________

RATA Report
For 6/26/2013, Hour 09:00

Time	O2 %	NOX PPM	NH3 PPM	CO PPM	SO2 PPM	NOX lb/MBtu	NH3 lb/MBtu
06/26/2013 09:55	4.8	21.8	2.4	259.3	0.0	0.042	0.002
06/26/2013 09:56	4.8	20.7	3.9	419.5	0.0	0.040	0.003
06/26/2013 09:57	4.9	20.8	4.6	431.0	0.0	0.040	0.003
06/26/2013 09:58	5.2	21.6	3.7	310.8	0.0	0.043	0.003
06/26/2013 09:59	5.4	21.8	3.1	174.4	0.0	0.044	0.002
06/26/2013 10:00	4.9	21.8	1.3	234.4	0.0	0.042	0.001
06/26/2013 10:01	4.6	22.0	1.2	375.4	0.0	0.042	0.001
06/26/2013 10:02	4.6	20.5	3.8	511.8	0.0	0.039	0.003
06/26/2013 10:03	4.7	20.7	4.7	465.7	0.0	0.040	0.003
06/26/2013 10:04	5.0	21.5	4.8	354.2	0.0	0.042	0.003
06/26/2013 10:05	5.1	22.2	3.4	243.6	0.0	0.044	0.002
06/26/2013 10:06	4.9	23.0	1.4	247.9	0.0	0.045	0.001
06/26/2013 10:07	4.9	22.9	2.2	284.0	0.0	0.045	0.002
06/26/2013 10:08	5.1	22.4	3.1	234.7	0.0	0.044	0.002
06/26/2013 10:09	4.9	22.7	2.8	197.4	0.0	0.044	0.002
06/26/2013 10:10	4.6	22.6	2.5	282.7	0.0	0.043	0.002
06/26/2013 10:11	4.5	23.0	2.6	511.8	0.0	0.043	0.002
06/26/2013 10:12	4.7	22.6	4.4	511.8	0.0	0.043	0.003
06/26/2013 10:13	5.0	22.7	5.7	363.3	0.0	0.044	0.004
06/26/2013 10:14	5.1	24.0	4.6	216.1	0.0	0.047	0.003
06/26/2013 10:15	5.1	25.2	2.9	182.2	0.0	0.050	0.002
06/26/2013 10:16	5.0	25.6	1.8	230.1	0.0	0.050	0.001
06/26/2013 10:17	5.0	25.4	0.9	309.9	0.0	0.050	0.001
06/26/2013 10:18	5.3	24.4	2.1	225.5	0.0	0.049	0.002
06/26/2013 10:19	5.3	23.3	4.4	145.2	0.0	0.047	0.003
06/26/2013 10:20	4.9	24.5	4.1	160.1	0.0	0.048	0.003
06/26/2013 10:21	4.9	25.3	4.3	237.0	0.0	0.049	0.003
06/26/2013 10:22	5.0	25.6	2.6	401.1	0.0	0.050	0.002
06/26/2013 10:23	5.4	27.1	1.4	237.4	0.0	0.055	0.001
06/26/2013 10:24	5.4	25.9	2.1	144.7	0.0	0.053	0.002
06/26/2013 10:25	5.1	26.3	2.1	148.8	0.0	0.052	0.002
06/26/2013 10:26	5.0	25.9	1.9	233.7	0.0	0.051	0.001
06/26/2013 10:27	5.2	25.8	1.9	267.9	0.0	0.051	0.001
06/26/2013 10:28	5.1	25.3	2.8	228.0	0.0	0.050	0.002
06/26/2013 10:29	5.1	25.1	3.9	196.2	0.0	0.050	0.003
06/26/2013 10:30	4.8	25.4	4.2	264.0	0.1	0.049	0.003
06/26/2013 10:31	4.7	25.9	4.0	404.5	0.1	0.049	0.003
06/26/2013 10:32	5.1	26.7	3.6	411.6	0.0	0.053	0.003
06/26/2013 10:33	5.1	27.7	0.9	279.5	0.0	0.055	0.001
06/26/2013 10:34	5.0	27.9	1.1	224.6	0.0	0.055	0.001
06/26/2013 10:35	4.8	26.9	2.3	288.0	0.0	0.052	0.002
06/26/2013 10:36	4.9	27.2	2.8	399.0	0.0	0.053	0.002
06/26/2013 10:37	5.0	27.0	4.1	286.3	0.0	0.053	0.003
06/26/2013 10:38	5.3	28.2	2.8	289.0	0.0	0.057	0.002
06/26/2013 10:39	5.2	28.8	0.8	236.8	0.0	0.057	0.001
06/26/2013 10:40	5.0	29.0	0.9	222.9	0.1	0.057	0.001
06/26/2013 10:41	5.1	27.9	3.3	241.7	0.1	0.055	0.002
06/26/2013 10:42	5.2	28.3	3.3	218.9	0.1	0.056	0.002
06/26/2013 10:43	5.4	28.9	4.8	178.0	0.0	0.059	0.004
06/26/2013 10:44	5.6	29.5	2.8	204.1	0.0	0.061	0.002
06/26/2013 10:45	5.3	31.4	0.3	249.8	0.0	0.063	0.000
06/26/2013 10:46	5.2	29.8	1.0	244.3	0.0	0.059	0.001
06/26/2013 10:47	5.5	28.3	3.6	194.6	0.0	0.058	0.003
06/26/2013 10:48	5.5	29.6	1.1	178.6	0.0	0.061	0.001
06/26/2013 10:49	5.2	30.0	0.7	184.5	0.0	0.060	0.001
06/26/2013 10:50	5.1	28.8	2.6	226.7	0.0	0.057	0.002
06/26/2013 10:51	5.1	29.1	3.5	259.5	0.0	0.058	0.003
06/26/2013 10:52	4.9	29.6	2.8	394.6	0.0	0.058	0.002
06/26/2013 10:53	4.9	30.1	3.0	462.0	0.0	0.058	0.002
06/26/2013 10:54	4.9	30.2	3.6	459.3	0.0	0.059	0.003
06/26/2013 10:55	5.0	31.0	2.2	461.8	0.0	0.061	0.002
06/26/2013 10:56	5.1	31.5	0.6	384.3	0.0	0.062	0.000
06/26/2013 10:57	5.1	30.6	1.8	310.8	0.0	0.060	0.001

RATA Run # 2

Verified By: ______________________

RATA Report
For 6/26/2013, Hour 09:00

Time	O2 %	NOX PPM	NH3 PPM	CO PPM	SO2 PPM	NOX lb/MBtu	NH3 lb/MBtu
Average Value	5.0	25.8	2.8	287.9	0.0	0.051	0.002

RATA Run # 2

Verified By: ______________________________

RATA Report
For 6/26/2013, Hour 09:00

Time	CO lb/MBtu	SO2 lb/MBtu	NOX lb/hr	NH3 lb/hr	CO lb/hr	SO2 lb/hr
06/26/2013 09:55	0.304	0.000	10.6	0.4	76.5	0.0
06/26/2013 09:56	0.492	0.000	10.1	0.7	124.2	0.0
06/26/2013 09:57	0.510	0.000	10.1	0.8	126.8	0.0
06/26/2013 09:58	0.377	0.000	10.4	0.7	91.5	0.0
06/26/2013 09:59	0.215	0.000	10.6	0.6	51.4	0.0
06/26/2013 10:00	0.277	0.000	10.5	0.2	68.9	0.0
06/26/2013 10:01	0.433	0.000	10.6	0.2	110.3	0.0
06/26/2013 10:02	0.590	0.000	9.9	0.7	150.6	0.0
06/26/2013 10:03	0.542	0.000	10.0	0.8	137.1	0.0
06/26/2013 10:04	0.423	0.000	10.4	0.9	103.9	0.0
06/26/2013 10:05	0.293	0.000	10.8	0.6	71.8	0.0
06/26/2013 10:06	0.293	0.000	11.2	0.3	73.2	0.0
06/26/2013 10:07	0.336	0.000	12.3	0.4	93.1	0.0
06/26/2013 10:08	0.282	0.000	12.3	0.6	78.3	0.0
06/26/2013 10:09	0.233	0.000	12.5	0.6	66.4	0.0
06/26/2013 10:10	0.326	0.000	12.7	0.5	96.9	0.0
06/26/2013 10:11	0.586	0.000	13.0	0.5	175.6	0.0
06/26/2013 10:12	0.595	0.000	12.8	0.9	176.3	0.0
06/26/2013 10:13	0.433	0.000	12.7	1.2	124.2	0.0
06/26/2013 10:14	0.260	0.000	13.4	0.9	73.6	0.0
06/26/2013 10:15	0.219	0.000	13.9	0.6	61.3	0.0
06/26/2013 10:16	0.274	0.000	14.2	0.4	77.7	0.0
06/26/2013 10:17	0.370	0.000	14.1	0.2	104.4	0.0
06/26/2013 10:18	0.276	0.000	13.6	0.4	76.6	0.0
06/26/2013 10:19	0.178	0.000	13.1	0.9	49.6	0.0
06/26/2013 10:20	0.189	0.000	13.8	0.9	54.9	0.0
06/26/2013 10:21	0.280	0.000	14.3	0.9	81.3	0.0
06/26/2013 10:22	0.478	0.000	14.2	0.5	135.7	0.0
06/26/2013 10:23	0.293	0.000	14.9	0.3	79.4	0.0
06/26/2013 10:24	0.179	0.000	14.3	0.4	48.5	0.0
06/26/2013 10:25	0.179	0.000	14.4	0.4	49.6	0.0
06/26/2013 10:26	0.279	0.000	14.0	0.4	76.9	0.0
06/26/2013 10:27	0.325	0.000	14.1	0.4	89.0	0.0
06/26/2013 10:28	0.274	0.000	13.8	0.6	75.9	0.0
06/26/2013 10:29	0.236	0.000	13.8	0.8	65.4	0.0
06/26/2013 10:30	0.310	0.000	14.2	0.9	89.7	0.1
06/26/2013 10:31	0.470	0.000	14.2	0.8	135.3	0.1
06/26/2013 10:32	0.495	0.000	14.7	0.7	137.5	0.0
06/26/2013 10:33	0.336	0.000	15.2	0.2	93.6	0.0
06/26/2013 10:34	0.268	0.000	15.3	0.2	75.1	0.0
06/26/2013 10:35	0.338	0.000	14.9	0.5	97.2	0.0
06/26/2013 10:36	0.472	0.000	15.1	0.6	134.8	0.0
06/26/2013 10:37	0.342	0.000	14.8	0.8	95.7	0.0
06/26/2013 10:38	0.354	0.000	15.6	0.6	97.0	0.0
06/26/2013 10:39	0.287	0.000	15.9	0.2	79.7	0.0
06/26/2013 10:40	0.266	0.000	16.0	0.2	74.9	0.1
06/26/2013 10:41	0.291	0.000	15.5	0.7	81.8	0.1
06/26/2013 10:42	0.266	0.000	15.9	0.7	74.8	0.1
06/26/2013 10:43	0.220	0.000	16.4	1.0	61.4	0.0
06/26/2013 10:44	0.257	0.000	16.8	0.6	70.7	0.0
06/26/2013 10:45	0.306	0.000	17.8	0.1	86.0	0.0
06/26/2013 10:46	0.296	0.000	16.8	0.2	83.6	0.0
06/26/2013 10:47	0.242	0.000	15.9	0.7	66.4	0.0
06/26/2013 10:48	0.223	0.000	16.5	0.2	60.7	0.0
06/26/2013 10:49	0.224	0.000	16.8	0.1	62.9	0.0
06/26/2013 10:50	0.273	0.000	16.2	0.5	77.6	0.0
06/26/2013 10:51	0.312	0.000	16.4	0.7	89.2	0.0
06/26/2013 10:52	0.467	0.000	16.9	0.6	137.3	0.0
06/26/2013 10:53	0.546	0.000	17.1	0.6	159.9	0.0
06/26/2013 10:54	0.543	0.000	17.1	0.8	158.4	0.0
06/26/2013 10:55	0.551	0.000	17.5	0.5	158.3	0.0
06/26/2013 10:56	0.462	0.000	17.6	0.1	130.5	0.0
06/26/2013 10:57	0.374	0.000	17.1	0.4	105.8	0.0

RATA Run # 2

Verified By: ____________________

RATA Report
For 6/26/2013, Hour 09:00

Time	CO lb/MBtu	SO2 lb/MBtu	NOX lb/hr	NH3 lb/hr	CO lb/hr	SO2 lb/hr
Average Value	0.343	0.000	14.1	0.6	94.8	0.0

RATA Run # 2

Verified By: ______________________

Appendix G

FIELD ANALYSIS job: Pinetree Fitchburg

test date(s): 6-26-13 ; 6-27-13

CALIBRATION

DATE	TIME	TEMP	OHAUS	SCALE
7-10-13	1130	77	1.0000	1.0000
7-11-13	1200	77	1.0000	1.0001
7-11-13	1200	77	50.0000	50.0007
7-12-13	1000	76	50.0000	50.0007

SAMPLE FILTER RESULTS

FILTER#/ RUN#	weight 1	weight 2	weight 3	weight 4	weight 5	final	tare
DATE:	7-10-13	7-11-13					
TIME:	1130	1200					
3590 TSP-1	0.3545	0.3544				0.3545	0.3429
3591 TSP-2	0.3570	0.3571				0.3571	0.3432
3592 TSP-3	0.3629	0.3628				0.3629	0.3419
3593 TSP blank	0.3375	0.3377				0.3376	0.3377
372 PM2.5-1	0.1206	0.1208				0.1207	0.1165
373 PM2.5-2	0.1200	0.1202				0.1201	0.1158
374 PM2.5-3	0.1203	0.1203				0.1203	0.1163
375 PM2.5 blank	0.1158	0.1159				0.1159	0.1159

SAMPLE BEAKER RESULTS

BEAKER#/ RUN#	weight 1	weight 2	weight 3	weight 4	weight 5	final	tare	vol (ml)
DATE:	7-11-13	7-12-13						
TIME:	1200	1000						
21 TSP-1	49.6213	49.6213				49.6213	49.6145	60
22 TSP-2	60.2762	60.2764				60.2763	60.2673	60
23 TSP-3	64.4696	64.4693				64.4695	64.4558	70
24 PM10-1	62.2603	62.2603				62.2603	62.2545	60
25 PM10-2	61.1679	61.1682				61.1681	61.1617	70
26 PM10-3	65.5854	65.5858				65.5856	65.5810	70
27 PM2.5-1	61.4327	61.4327				61.4327	61.4310	60
28 PM2.5-2	65.5620	65.5622				65.5621	65.5595	60
29 PM2.5-3	63.3908	63.3910				63.3909	63.3899	60
30 blank	66.8445	66.8443				66.8444	66.8442	100

FIELD ANALYSIS

job: Pinetree Fitchburg

test date(s): 6-26-13 ; 6-27-13

M5-50% filter# 3589 tare=0.3419
1st wt 0.3466
1. 0.3466
2. 0.3467
3.
Final: 0.3467

CALIBRATION

DATE	TIME	TEMP	OHAUS	SCALE
7-10-13	1130	77	1.0000	1.0000
7-11-13	1200	77	1.0000	1.0001
7-11-13	1200	77	50.0000	50.0007
7-12-13	1000	76	50.0000	50.0007

M5-50% run
bkr# 20
60ml
tare 63.2191
1. 63.2238
2. 63.2236
3.
4.
Final 63.2237

SAMPLE FILTER RESULTS

FILTER#/ RUN#	weight 1	weight 2	weight 3	weight 4	weight 5	final	tare
DATE:	7-10-13	7-11-13					
TIME:	1130	1200					
3590 TSP-1	0.3545	0.3544				0.3545	0.3429
3591 TSP-2	0.3570	0.3571				0.3571	0.3432
3592 TSP-3	0.3629	0.3628				0.3629	0.3419
3593 TSP blank	0.3375	0.3377				0.3376	0.3377
372 PM2.5-1	0.1206	0.1208				0.1207	0.1165
373 PM2.5-2	0.1200	0.1202				0.1201	0.1158
374 PM2.5-3	0.1203	0.1203				0.1203	0.1163
375 PM2.5 blank	0.1158	0.1159				0.1159	0.1159

SAMPLE BEAKER RESULTS

BEAKER#/ RUN#	weight 1	weight 2	weight 3	weight 4	weight 5	final	tare	vol (ml)
DATE:	7-11-13	7-12-13						
TIME:	1200	1000						
21 TSP-1	49.6213	49.6213				49.6213	49.6145	60
22 TSP-2	60.2762	60.2764				60.2763	60.2673	60
23 TSP-3	64.4696	64.4693				64.4695	64.4558	70
24 PM10-1	62.2603	62.2603				62.2603	62.2545	60
25 PM10-2	61.1679	61.1682				61.1681	61.1617	70
26 PM10-3	65.5854	65.5858				65.5856	65.5810	70
27 PM2.5-1	61.4327	61.4327				61.4327	61.4310	60
28 PM2.5-2	65.5620	65.5622				65.5621	65.5595	60
29 PM2.5-3	63.3908	63.3910				63.3909	66.3899	60
30 blank	66.8445	66.8443				66.8444	66.8442	100

Maxxam

Your P.O. #: 754858
Site Location: CCA - FITCHBURG
Your C.O.C. #: N/A

Attention: Bob Arnold
CEM Services Inc
360 Old Colony Rd
Suite 1
Norton, MA
USA 02766

Report Date: 2013/07/16

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3A4658
Received: 2013/07/02, 12:45

Sample Matrix: Stack Sampling Train
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Ammonium in H2SO4 Impingers (CTM-027)	3	2013/07/04	2013/07/05	BRL SOP-00107	EPA CTM-027
Volume of Sulfuric Acid Impinger	3	N/A	2013/07/04		

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Clayton Johnson
16 Jul 2013 15:26:58 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Clayton Johnson, Project Manager - Air Toxics, Source Evaluation
Email: CJohnson@maxxam.ca
Phone# (905) 817-5769

==
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

Maxxam Job #: B3A4658
Report Date: 2013/07/16

CEM Services Inc

Site Location: CCA - FITCHBURG
Your P.O. #: 754858

EPA CTM 027 AMMONIA (STACK SAMPLING TRAIN)

Maxxam ID		SC3011	SC3011		SC3012		SC3013		
Sampling Date		2013/06/25 00:01	2013/06/25 00:01		2013/06/26 00:01		2013/06/26 00:01		
COC Number		N/A	N/A		N/A		N/A		
	Units	**NH3-50%**	**NH3-50% Lab-Dup**	**RDL**	**NH3-100%-1**	**RDL**	**NH3-100%-2**	**RDL**	**QC Batch**
Sulfuric Acid Volume	ml	447	N/A	1	524	1	547	1	3268394
Ammonium (NH4)	ug	190	180	25	1100	26	1200	27	3268388

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B3A4658
Report Date: 2013/07/16

CEM Services Inc

Site Location: CCA - FITCHBURG
Your P.O. #: 754858

Test Summary

Maxxam ID SC3011
Sample ID NH3-50%
Matrix Stack Sampling Train

Collected 2013/06/25
Shipped
Received 2013/07/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Ammonium in H2SO4 Impingers (CTM-027)	IC/SPEC	3268388	2013/07/04	2013/07/05	Ann-Marie Stern
Volume of Sulfuric Acid Impinger		3268394	N/A	2013/07/04	Frank Mo

Maxxam ID SC3011 Dup
Sample ID NH3-50%
Matrix Stack Sampling Train

Collected 2013/06/25
Shipped
Received 2013/07/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Ammonium in H2SO4 Impingers (CTM-027)	IC/SPEC	3268388	2013/07/05	2013/07/05	Ann-Marie Stern

Maxxam ID SC3012
Sample ID NH3-100%-1
Matrix Stack Sampling Train

Collected 2013/06/26
Shipped
Received 2013/07/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Ammonium in H2SO4 Impingers (CTM-027)	IC/SPEC	3268388	2013/07/04	2013/07/05	Ann-Marie Stern
Volume of Sulfuric Acid Impinger		3268394	N/A	2013/07/04	Frank Mo

Maxxam ID SC3013
Sample ID NH3-100%-2
Matrix Stack Sampling Train

Collected 2013/06/26
Shipped
Received 2013/07/02

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Ammonium in H2SO4 Impingers (CTM-027)	IC/SPEC	3268388	2013/07/04	2013/07/05	Ann-Marie Stern
Volume of Sulfuric Acid Impinger		3268394	N/A	2013/07/04	Frank Mo

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

CEM Services Inc
Attention: Bob Arnold
Client Project #:
P.O. #: 754858
Site Location: CCA - FITCHBURG

Quality Assurance Report

Maxxam Job Number: GB3A4658

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3268388 A_S	Matrix Spike (SC3011)	Ammonium (NH4)	2013/07/05		100	%	75 - 125
	Spiked Blank	Ammonium (NH4)	2013/07/05		100	%	90 - 110
	Method Blank	Ammonium (NH4)	2013/07/05	<25		ug	
	RPD - Sample/Sample Dup	Ammonium (NH4)	2013/07/05	5.3		%	20

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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Validation Signature Page

Maxxam Job #: B3A4658

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Frank Mo, B.Sc., Inorganic Lab. Manager

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Appendix H

METHOD 5 SAMPLING DATA SHEET

Facility: Pinetree Fitchburg Unit : Stack

Date : 6/26/13 Run Time : 0825 - 0930

Run : MS - 1 Filter No. : 3590 TARE 0.3429

Nozzle No.: 0.250

Leak Test Data

Initial Rate:
Probe: 0.0615 "Hg
Pitots: @ 6.3 "H_2O

Final Rate:
Probe: 0.068 "Hg
Pitots: @ 6.3 "H_2O

Initial Meter Reading: 424.583 Final Meter Reading: 470.048

Time Hr	Time Min	Trav. Point	Delta P	Delta H	Meter Vol.	DGM IN	DGM Out	Imp Temp	Stack Temp	Hot Temp	Pump Vac
	2.5	A1	0.90	1.80	426.6	N/A	93	67	362	250	4
	5	2	0.94	1.88	428.5		94	66	366	252	5
	7.5	3	1.00	2.00	430.6		94	66	368	253	5
	10	4	1.00	2.00	432.5		94	65	368	250	5
	12.5	5	1.00	2.00	434.9		94	65	369	249	5
	15	6	0.95	1.90	437.0		94	66	369	243	5
	17.5	7	0.84	1.68	439.0		94	66	370	248	5
	20	8	0.95	1.90	440.6		95	64	369	245	5
	22.5	9	0.93	1.86	442.5		96	64	368	246	5
	25	10	0.83	1.66	444.5		96	65	367	250	5
	27.5	11	0.73	1.46	446.2		96	65	360	251	5
	30	12	0.70	1.40	447.9		96	66	354	248	4
	32.5	B1	0.78	1.56	449.8		96	64	347	250	4
	35	2	0.82	1.64	451.2		97	65	358	251	4
	37.5	3	1.05	2.10	453.5		97	66	365	253	5
	40	4	1.05	2.10	455.6		97	66	370	249	5
	42.5	5	1.00	2.00	457.6		97	67	370	259	5
	45	6	0.90	1.80	459.6		97	67	371	255	5
	47.5	7	0.92	1.84	461.6		97	66	371	256	5
	50	8	0.96	1.92	463.5		97	66	370	250	5
	52.5	9	0.95	1.90	465.6		96	66	369	253	5
	55	10	0.92	1.84	467.8		96	65	369	254	5
	57.5	11	0.88	1.76	469.5		97	66	366	252	5
	60	12	0.65	1.30	470.0		97	67	361	250	5

General:
Box No :MB2
Delta H@: 1.66
Gamma Y: 1.0171

Operators:
Box : CP
Probe: MD
CEMS: BA

Conditions:
Ambient Temp: ______
Pbar : ______
Static P : -0.67

Moisture Data:

Gross	Tare	Net
254	100	ml
159	100	ml
11	0	ml
561	550	g

RATA 1, 2, 3

O_2	CO_2	CO
7.38	12.74	0.2
7.40	12.71	0.1
7.03	12.96	0.2
7.27	12.80	0.02

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METHOD 5 SAMPLING DATA SHEET

Page 1 of 1

Facility: Pinetree Fitchburg

Unit : Stack

Date : 6/26/2013

Run Time : 0955-1057

Run : 2

Filter No. :

Nozzle No.:

Leak Test Data

Initial Rate:
Probe: 0.0615 "Hg
Pitots: Ø@3 "H_2O

Final Rate:
Probe: 0.068 "Hg
Pitots: Ø@3 "H_2O

Initial Meter Reading: 471.500

Final Meter Reading: 519.358

Time Hr	Time Min	Trav. Point	Delta P	Delta H	Meter Vol.	DGM IN	DGM Out	Imp Temp	Stack Temp	Hot Temp	Pump Vac
	2.5	A1	0.92	1.84	473.6	N/A	96	67	373	229	4
	5	2	0.95	1.90	475.5		97	65	374	232	4
	7.5	3	1.00	2.00	477.5		97	64	376	258	5
	10	4	1.05	2.10	479.5		98	64	377	259	5
	12.5	5	1.05	2.10	481.6		98	65	377	258	5
	15	6	0.80	1.60	483.4		98	65	377	258	5
	17.5	7	0.75	1.50	485.3		97	65	377	251	4
	20	8	1.10	2.20	487.4		97	66	377	248	6
	22.5	9	1.00	2.00	489.5		97	66	375	249	6
	25	10	0.92	1.84	491.5		98	67	375	246	5
	27.5	11	0.95	1.90	493.4		98	65	375	247	5
	30	12	0.83	1.66	495.5		98	66	371	248	5
	32.5	B1	0.93	1.86	497.4		97	63	370	250	5
	35	2	0.94	1.88	499.3		97	63	371	249	5
	37.5	3	0.98	1.96	501.3		98	64	375	250	5
	40	4	1.05	2.10	503.4		97	65	377	249	5
	42.5	5	1.00	2.00	505.6		97	66	378	251	5
	45	6	1.00	2.00	507.5		97	65	378	250	5
	47.5	7	0.91	1.82	509.7		97	66	378	249	5
	50	8	0.90	1.80	511.6		97	67	376	248	5
	52.5	9	0.94	1.88	513.6		97	64	375	250	5
	55	10	0.93	1.86	515.6		97	64	373	250	5
	57.5	11	0.88	1.76	517.7		97	65	374	251	5
	60	12	0.81	1.62	519.3		97	66	370	249	5

General:
Box No :MB2
Delta H@: 1.66
Gamma Y: 1.0171

Operators:
Box : CP
Probe: MD
CEMS: BA

Conditions:
Ambient Temp:
Pbar : 29.78
Static P : -0.65

Moisture Data:

Gross	Tare	Net
264		ml
167		ml
16		ml
565.8		g

O_2	CO_2	CO
6.46	13.55	0.5
6.63	13.67	0.3
6.80	13.22	0.4
6.63	13.48	0.4

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METHOD 5 SAMPLING DATA SHEET

Facility: Pinetree Fitchburg

Unit : Stack

Date : 6/25/13

Run Time : 1335-1437

Run : 1-Diag

Filter No. :

Nozzle No.: .30

Leak Test Data

Initial Rate:
Probe: 0.0615 "Hg
Pitots: 0.03 "H_2O

Final Rate:
Probe: 0.0615 "Hg
Pitots: 0.03 "H_2O

386.646

Initial Meter Reading: [illegible]

Final Meter Reading: 424.118

Time Hr	Time Min	Trav. Point	Delta P	Delta H	Meter Vol.	DGM IN	DGM Out	Imp Temp	Stack Temp	Hot Temp	Pump Vac
		A1	0.37	1.11	387.4	N/A	98	66	325	249	3
	5	2	0.39	1.17	389.0		99	64	328	249	3
		3	0.43	1.29	391.8		99	64	336	250	4
	10	4	0.46	1.38	392.7		99	63	330	250	4
		5	0.46	1.38	394.5		99	63	331	250	4
	15	6	0.40	1.20	396.2		99	64	331	252	4
		7	0.40	1.20	398.4		99	64	330	250	4
	20	8	0.39	1.17	399.5		99	65	330	251	4
		9	0.38	1.15	401.0		99	65	331	251	4
	25	10	0.40	1.20	402.6		99	64	328	250	4
		11	0.34	1.02	403.7		100	64	325	250	4
	30	12	0.28	0.84	405.8		100	63	325	251	4
		B1	0.35	1.05	407.9		100	62	327	248	4
	35	2	0.36	1.08	408.6		100	62	327	248	5
		3	0.36	1.08	409.8		100	62	330	250	5
	40	4	0.38	1.14	411.0		100	61	331	250	5
		5	0.40	1.20	413.9		100	61	332	250	5
	45	6	0.39	1.17	415.3		100	61	332	251	5
		7	0.36	1.08	416.4		100	62	332	250	5
	50	8	0.38	1.14	418.5		101	62	331	247	5
		9	0.32	0.96	420.3		101	63	329	250	5
	55	10	0.32	0.96	421.4		101	63	329	250	5
		11	0.31	0.93	422.6		101	63	328	249	5
	60	12	0.27	0.81	424.1		101	64	323	249	5

General:
Box No :MB1
Delta H@: 1.66
Gamma Y: 1.0171

Operators:
Box : CP
Probe: MD
CEMS: BA

Conditions:
Ambient Temp:
Pbar :
Static P : -0.46

Moisture Data:

Gross	Tare	Net
189	100	ml
147	100	ml
11	0	ml
564.2	550	g

Appendix I

FUEL FACTOR CALCULATION SHEET

PLANT : Pinetree Fitchburg

LOCATION : Wood Fired Boiler

DATE : 06/26/13

$$\text{Fd FACTOR} = \frac{1000000\ (3.64\%H+1.53\%C+0.57\%S+0.14\%N-0.46\%O)}{GCV}$$

$$\text{Fc FACTOR} = \frac{1000000\ (0.321\ SCF/LB * \%\ C)}{GCV}$$

FUEL : Wood Chips

% HYDROGEN	=	8.63
% CARBON	=	52.07
% SULFUR	=	0.13
% NITROGEN	=	0.49
% OXYGEN	=	38.13
GCV (Btu/lb)	=	8500

CALCULATED Fd - FACTOR = 11022

CALCULATED Fc - FACTOR = 1966

Sterling Analytical, Inc.
West Springfield, MA 01089
Phone (413) 214-6541 Fax (413) 214-6842
email-madhu@sterlinganalytical.com

Analysis Report

Sample Number 39005

Station Combustion Comp.Asso.Inc.

Contact

Date Received 7/2/13

As Fired 7/1/13

Air Dried Moisture 30.71%

Report Date 7/12/13

Work Order 13-0935

Source Identification

Pine-Fitchburg-13-1
Wood

Proximate/Ultimate Analysis

Parameter	Date Analyzed	As Received	Dry	Air Dried	Method
Moisture		44.77%		20.29%	
Ash,%	7/11/13	0.35	0.63	0.5	ASTM D-3174
BTU/Lb	7/11/13	4711	8500	6800	ASTM D-5865
Sulfur, %	7/11/13 Less Than	0.07	0.13	0.1	ASTM D-4239
Carbon,%	7/11/13	28.75	52.07	41.5	**ASTM D-5373**
Hydrogen,%	7/11/13	4.77	8.63	6.88	**ASTM D-5373**
Nitrogen,%	7/11/13	0.27	0.49	0.39	**ASTM D-5373**
Oxygen,%	7/9/13	21.08	38.18	30.43	ASTM D-3176

Comments

Madhu Shah, Laboratory Supervisor

Date

Mass Certification - MA-00071
Conn Certification - PH-0520

Appendix J

DEFINITION OF ABBREVIATIONS

ACFM	Flowrate reported in actual cubic feet per minute.
An	Area of the nozzle, cross-sectional, in square feet.
As	Area of the stack in square feet.
BWO	Water vapor in gas stream, proportional by volume.
CC	Percent error confidence coefficient (one tailed).
Cd	Conversion calibration for concentration (PPMdv to lbs/SCF)
Cgas	Final emissions data reported by CEMS, adjusted for calibration drift. Reported as ppm dry, proportional by volume.
Cm	Average CEM response to initial and final span gas system calibration.
Cma	Concentration of the calibration gases.
Co	Average CEM response to initial and final zero gas system calibration.
Craw	Raw emissions data reported by the CEMS, uncorrected for calibration drift.
Cwet	Final emissions data reported by CEMS, adjusted for calibration drift and water vapor. Reported as ppm wet, proportional by volume.
% CO	Percent of carbon monoxide in the flue gas.
% CO_2	Percent of carbon dioxide in the flue gas.
Cp	Pitot tube coefficient.
Cs	The concentration in the stack in pounds per standard cubic foot.
Cs'	The concentration in the stack in grains per standard cubic foot.
Cs' @ 12%	The concentration in the stack in grains per dry standard cubic feet corrected to 12% CO_2.
DELTA H	The pressure differential across orifice meter, reported in inches of H_2O.
DELTA H(ABS)	The pressure differential across orifice meter, absolute conditions in inches of mercury.
Dn (IN)	Diameter of the nozzle in inches.
DGM IN	Temperature of the dry gas meter inlet, reported in degrees Fahrenheit.
DGM OUT	Temperature of the dry gas meter outlet, reported in degrees Fahrenheit.
Ds (FT)	Diameter of the stack in feet.
DSCFH	Dry standard cubic feet per hour.
DSCFM	Dry standard cubic feet per minute.
DSCMH	Dry standard cubic meters per hour.
E	Emission rate in pounds per million Btu using F Factor of fuel burned.
END METER	The dry gas meter reading at the end of the test.
F FACTOR	The theoretical amount of air in dry standard cubic feet (DSCF) needed to combust a million Btu's worth of fuel.
GR/BHP-HR	Grams per brake horsepower hour.
IMP(FIN)	Final volume of absorbing solution in impinger.
IMP(INT)	Initial volume of absorbing solution in impinger.
INT METER	The dry gas meter reading at the beginning of the test.
% ISO	Variation of sampling from isokinetic conditions.
LB/HR	Pounds per hour.
LB/MMBTU	Pounds per million British Thermal Unit.
LB/SCF	Pounds per standard cubic foot.
Md (DRY)	The dry molecular weight of the flue gas in pounds per pound mole.
Ml	Volume in milliliters.
Mg/M3	Milligrams per cubic meter.
Mn	Total particulate found in sample minus the acetone residue (blank). Reported in milligrams.
Ms (WET)	Wet or actual molecular weight of the flue gas in pounds per pound mole.
MW	Molecular weight
% N2	The percent of nitrogen in the flue gas.
NO. PTS	Number of traverse points.
% O2	% oxygen in the flue gas.
P BAR	Barometric pressure at test location.
PIT COEFF	Pitot tube coefficient (S Type=.84, standard=.99).
PPM	Parts per million.

DEFINITION OF ABBREVIATIONS

PPMdv	Parts per million - dry volume.
PPMwv	Parts per million - wet volume.
P STK	Static pressure of the stack in inches of water.
PMR	The pollutant mass rate in pounds per hour.
PS (ABS)	Absolute stack pressure in inches of mercury.
Pstd	Standard absolute pressure, (29.92 in. Hg).
Qs	The volumetric flow rate of the flue gas in dry standard cubic feet per hour.
RA	Relative accuracy.
RATA	Relative accuracy test audit.
RM	Reference Method.
Sd	Emission standard (allowable emission rate).
SQ ROOT	The square root of each velocity head measurement (Delta P).
SQRT DELTA P	The average of the square roots of the measured pressure drops.
Stack Temp	The temperature of the stack in degrees (°F) Fahrenheit.
TM (°F)	Average temperature of the dry gas meter in degrees Fahrenheit.
TM (°R)	Average temperature of the dry gas meter in degrees Rankine.
TS (°R)	The temperature of the stack in degrees Rankine.
VEL HEAD	The pressure drop measured across the pitot tubes.
VI (TOT)	The amount of water collected in the impingers in milliliters.
VM (CF)	The volume sampled through the dry gas meter in cubic feet.
VM STD	Volume sampled through the dry gas meter corrected to standard conditions.
VOC	Volatile organic compounds
VS	Velocity of the stack gas in feet per second.
VW STD	The amount of moisture collected, corrected to standard conditions.
Y	Dry gas meter calibration factor.

GDF SUEZ

Pinetree Power Fitchburg, Inc.
2 Rowtier Drive
Westminster, MA 01473
Telephone (978) 874-2966
Facsimile (978) 874-2968

Pinetree Power Fitchburg

via Certified Mail

Ms. Maria L'Annunziata
MA DEP – Central Region
627 Main Street
Worcester, MA 01608

October 11, 2013

Air Compliance Clerk
US Environmental Protection Agency
5 Post Office Sq. Ste 100
Boston, MA 02109

RE: PINETREE POWER: – DEP THIRD QUARTER 2013 EMISSION REPORT
– DEP THIRD QUARTER 2013 OPACITY AUDIT
– DEP THIRD QUARTER 2013 CGA
– DEP SEMI- ANNUAL MONITORING SUMMARY

Dear Ms. L'Annunziata & Sir/Madam,

In accordance with Pinetree Power's Final Operating Permit, Section 4B Table 6 Paragraph 1 (DEP) and 40 CFR Part 60 Subpart GG (EPA), enclosed please find the following emission reports for the above stated Quarterly report:

- Q3 - 2013 Semi-Annual Monitoring Summary
- Excess Emission Data Summary & CEMS Performance Summary
- Excess Emission Deviation Summary Report for NOx, CO, SO2, Opacity and NH3
- Source Operation Report by Quarter and Month
- CEMS Availability Report
- Failed Daily Calibration Drift Reports
- CGA & Opacity Audit

The 3rd Quarter Opacity Audit and Cylinder Gas Audits were satisfactorily performed on Unit #1 on September 27 & 30, 2013.

Please note that the Responsible Official, Mr. Michael Buckman, is fully abreast of daily operations and contents of all reports submitted. BWP Air Section Chief is the DEP representative Pinetree Power interfaces with regarding the air program.

The facility's Authorized Account Representative is Mr. Michael Buckman (michael.buckman@gdfsuezna.com) and the Authorized Agent is Mr. Robert K. Maggiani (robert.maggiani@gdfsuezna.com).

I am authorized to make this submission on behalf of the owners and operators of the source or units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Michael R Buckman 10/11/2013

Michael Buckman
RO and AAR

If you have any questions or comments pertaining to the above, please be sure to contact me at the above letterhead address, on telephone number of (978) 874-2966 x3, or electronically at timothy.haley@gdfsuezna.com.

Sincerely,

Timothy R Haley 10-11-13

Timothy Haley
Site Administrator

Encls. (5)
cc: , File.

Massachusetts Department of Environmental Protection
Bureau of Waste Prevention – Business Compliance Division

Semi-Annual Compliance Monitoring Summary and Certification

118/61	204855	**X257919**
SSEIS Number	FMF Facility Number	Transmittal Number
	194030	4911
Application Number	FMF R.O. Number	SIC Code(s)

Pursuant to 310 CMR 7.00 Appendix C(10)(h), the Semi-Annual Compliance Certification must be certified by the responsible official. Failure to provide accurate information in this report may result in civil and/or criminal penalties according to 310 CMR 7.01(2).

Additional information regarding the report and documentation listed below must be kept on file for at least 5 years and be made available to the Department upon request as required by 310 CMR 7.00 Appendix C(10).

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

tab

return

Facility Information

Pinetree Power Fitchburg, Inc
Name

2 Rowtier Drive (170 Fitchburg Rd.)
Street Address

Westminster	MA	01473	978-874-2966
City	State	Zip Code	Telephone Number

Michael Buckman	Plant Manager
Facility Contact Person	Contact person's title

Semi-Annual Compliance Certification

Reporting Period (Provide Inclusive Dates) 1/1/13 (From) 9/30/13 (To)

1. ☐ During the entire reporting period, no deviations from the Operating Permit requirements or any other terms or conditions occurred. If yes, submit only this page.
2. ☒ During the entire reporting period, there were deviations and;

2a. ☒ All deviations reported previously

2b. ☐ One or more deviation(s) were not previously reported as required. Attach appropriate Deviation Report(s) and supporting documentation.

I certify that I have personally examined the foregoing and am familiar with the information contained in this document and all attachments and that, based on my inquiry of those individual immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including possible fines and imprisonment. I am aware that additional information may be requested.

Michael Buckman	Plant Manager
Name of Responsible Official	Title

[signature]
Signature of Responsible Official

978-874-2966	10-11-2013 10/11/2013
Phone Number	Date

By Signing This Form You are Certifying to Page 1 Through Page 5

Facility Name: __Pinetree Power Fitchburg Inc.________ Facility Address: ____________________ SSEIS No.:___________ Transmittal No._X252275_ Date of Issuance ___________

Air Operating Permit Semi-Annual Monitoring Summary

Emission Unit Identification Table 1.

EU No.	Description of Emission Unit	EU Design Capacity	Pollution Control Device
1	Multi-fuel fired electric generator (wood,natural gas,landfill gas & paper)	260 MMBtu/hr	Primary: Dry mechanical dust collector Secondary: Positive pressure Bag House

Emission Limits/Restrictions Table 3.

EU No.	Fuel/Raw Material	Pollutant	Restrictions	Applicable Regulation and/or Approval No.	Deviation?		Deviation Previously Reported?		Date(s) Previously Reported	Returned to Compliance?		Proposed Date of Return to Compliance	Corrective Action Plan Filed?			Comments (Including Date of Return to Compliance)
					Y	N	Y	N		Y	N		Y	N	NR*	
1	Wood PDSF Landfill Gas Natural Gas	PM	0.016 lb/mmbtu 4.16 lb/hr 18.2 tpy	W21004212 A		N										
1	Wood PDSF Landfill Gas Natural Gas	SO2	0.03 lb/mmbtu 7.8 lb/hr 34.2 tpy	W21004212 A		N										
1	Wood PDSF Landfill Gas Natural Gas	NOx	0.175 lb/mmbtu 45.5 lb/hr 199.3 tpy	W21004212 A		N										
1	Wood PDSF Landfill Gas Natural Gas	VOC	0.03 lb/mmbtu 7.8 lb/hr 34.2 tpy	W21004212 A		N										
1	Wood PDSF Landfill Gas Natural Gas	CO	0.30 lb/mmbtu 52.0 lb/hr 227.8 tpy	W21004212 A		N										

Air Operating Permit Semi-Annual Monitoring Summary

Emission Limits/Restrictions Table 3. continued

EU No.	Fuel/Raw Material	Pollutant	Restrictions	Applicable Regulation and/or Approval No.	Deviation? Y	Deviation? N	Deviation Previously Reported? Y	Deviation Previously Reported? N	Date(s) Previously Reported	Returned to Compliance? Y	Returned to Compliance? N	Proposed Date of Return to Compliance	Corrective Action Plan Filed? Y	Corrective Action Plan Filed? N	Corrective Action Plan Filed? NR*	Comments (Including Date of Return to Compliance)
1	Wood PDSF Landfill Gas Natural Gas	PB	0.0002 lb/mmbtu 0.05 lb/hr 0.22 tpy	W21004212 A		N										
1	Wood PDSF Landfill Gas Natural Gas	NH3	2.04 lb/hr (10 ppmvd) 8.9 tpy	W21004212 A	Y		Y		7/6/13	Y						7/6/13 SCR Dampers leaking by.
					Y		Y		7/7/13	Y						7/7/13 SCR Urea nozzle failed open.
1	Wood PDSF Landfill Gas Natural Gas	Visible Emissions	10% 2min. 20%	W21004212 A	Y		Y		1/4/13	Y						1/4/13 Bag failure replaced 11 bags.
					Y		Y		1/16/13	Y						1/16/13 New filter bags first cleaning.
					Y		Y		1/17/13	Y						1/17/13 Bag failure during shutdown.
					Y		Y		3/10/13	Y						3/10/13 Spike when sootblowing
					Y		Y		3/14/13	Y						3/14/13 Sootblowing bypass damper ajar.
					Y		Y		7/1/13	Y						7/1/13 SCR flow change Opacity spike
					Y		Y		7/7/13	Y						7/7/13 ID fan trip Bag failure. Opacity spike
					Y		Y		7/19/13	Y						7/19/13 SCR flow change Opacity spike
					Y		Y		7/22/13	Y						7/22/13 SCR flow change. Opacity spike
					Y		Y		7/23/13	Y						7/23/13 SCR flow change. Opacity spike
					Y		Y		7/26/13	Y						7/26/13 Opacity spike on start up
					Y		Y		8/8/13	Y						8/8/13 SCR flow change. Opacity spike

*** Not required**

Air Operating Permit Semi-Annual Monitoring Summary

Monitoring/Testing Table 4.

EU No.	Monitoring/Testing Requirements	Deviation?		Deviation Previously Reported?		Date(s) Previously Reported	Returned to Compliance?		Proposed Date of Return to Compliance	Corrective Action Plan Filed?			Comments (Including Date of Return to Compliance)
		Y	N	Y	N		Y	N		Y	N	NR	
1	Continuous monitoring of NH3, NOx, SO2 & CO	Y		Y		2/9/13	Y						2/9/13 Air line to CEM system froze
1	Continuous monitoring of OPACITY		N										
1	Monitoring and Testing Requirements 2 - 12 of table 4 of operating permit.		N										

Record Keeping Table 5.

EU No.	Record Keeping Requirements	Deviation?		Deviation Previously Reported?		Date(s) Previously Reported	Returned to Compliance?		Proposed Date of Return to Compliance	Corrective Action Plan Filed?			Comments (Including Date of Return to Compliance)
		Y	N	Y	N		Y	N		Y	N	NR	
1	The terms and conditions presented in Table 5 : 1 - 15		N										

Air Operating Permit Semi-Annual Monitoring Summary

Reporting Table 6.

EU No.	Reporting Requirements	Deviation?		Deviation Previously Reported?		Date(s) Previously Reported	Returned to Compliance?		Proposed Date of Return to Compliance	Corrective Action Plan Filed?			Comments (Including Date of Return to Compliance)
		Y	N	Y	N		Y	N		Y	N	NR	
1	The terms and conditions presented in Table 6 : 1 - 8	Y		Y		3/10/13	Y						3/11/13 Failure to report deviation within 4 hours.

Special Terms and Conditions

EU No.	Special Term/Conditions	Deviation?		Deviation Previously Reported?		Date(s) Previously Reported	Returned to Compliance?		Proposed Date of Return to Compliance	Corrective Action Plan Filed?			Comments (Including Date of Return to Compliance)
		Y	N	Y	N		Y	N		Y	N	NR	
1	A : GENERAL		N										
1	B: Air Pollution Controls		N										
1	C: LANDFILL GAS		N										
1	D: ASH		N										
1	E: Paper Derived Supplemental Fuel (PSDF)		N										
1	F: NOISE REQUIREMENTS		N										
1	G: RATA / CGA REPORTING REQUIREMENTS		N										

Alternative Operating Scenarios

EU No.	Alternative Operating Scenario	Deviation?		Deviation Previously Reported?		Date(s) Previously Reported	Returned to Compliance?		Proposed Date of Return to Compliance	Corrective Action Plan Filed?			Comments (Including Date of Return to Compliance)
		Y	N	Y	N		Y	N		Y	N	NR	
1	N / A												

Air Operating Permit Semi-Annual Monitoring Summary

Emissions Trading

EU No.	Emissions Trading	Deviation?		Deviation Previously Reported?		Date(s) Previously Reported	Returned to Compliance?		Proposed Date of Return to Compliance	Corrective Action Plan Filed?			Comments (Including Date of Return to Compliance)
		Y	N	Y	N		Y	N		Y	N	NR	
1	N / A												

Massachusetts Department of Environmental Protection
Bureau of Waste Prevention – Business Compliance Division
Operating Permit Cross Reference Form

EU No.(s)	Deviation Date(s)	Type of Deviation	Return to Compliance Plan Date or Date Returned to Compliance
EU #1	01-04-2013	OPACITY >10%	01-04-2013 - X254157
EU #1	01-16-2013	OPACITY >20%	01-16-2013 - X254433
EU #1	01-17-2013	Opacity	01-17-2013 - X254438
EU #1	02-09-2013	CEM -OOS	02-09-2013 - X254682
EU #1	03-10-2013	Opacity > 10% and FTR	03-10-2013 - X255161
EU #1	03-14-2013	Opacity > 20%	03-14-2013 - X255215

Massachusetts Department of Environmental Protection
Bureau of Waste Prevention – Business Compliance Division
Operating Permit Cross Reference Form

EU No.(s)	Deviation Date(s)	Type of Deviation	Return to Compliance Plan Date or Date Returned to Compliance
EU #1	07-01-2013	Opacity > 20%	07-01-2013 - X256579
EU #1	07-06-2013	NH3 > 20ppm	07-06-2013 - X256648
EU #1	07-07-2013	Opacity > 20%	07-07-2013-X256649
EU #1	07-07-2013	9-2 min average Opacity > 10%	07-07-2013-X256649
EU #1	07-07-2013	NH3 > 20ppm	07-07-2013-X256649
EU#1	07-19-2013	Opacity>20%	07-19-2013-X256913
EU#1	07-22-2013	Opacity>20%	07-22-2013-X256933
EU#1	07-23-2013	Opacity>20%	07-23-2013-X256958
EU#1	07-26-2013	Opacity>20%	07-26-2013-X257015
EU#1	08-08-2013	Opacity>20%	08-08-2013-X257162

EXCESS EMISSION AND CONTINUOUS EMISSION MONITOR
REPORT SUMMARY PAGE

Company name : PINETREE POWER - FITCHBURG L.P.

Continuous emission monitor for :

NOx X CO ___ SO2 ___ Opacity ___ NH3 ___

QUARTER : 3rd YEAR : 2013

TOTAL FACILITY OPERATING HOURS THIS QUARTER : 2014

I. EXCESS EMISSION SUMMERY

MARK EITHER PART A. OR PART B.

___ A. There were excess emission periods as follows :

1. Number of separate excess emission periods : 0

2. Total hours of all excess emission periods : 0

For each excess emission period, fill out one of the attached Excess Emission Event Explanations.

XX B. There were no periods of excess emissions indicated by the Continuous Emissions Monitor system this quarter.

II. CONTINUOUS EMISSION MONITOR SUMMERY

MARK EITHER PART A. OR PART B.

___ A. There were CEM inoperative periods as follows :

1. Number of periods when CEM was inoperative (except for zero and span checks) 0

2. Total number of hours that CEM was inoperative : 0

For each period that the CEM was inoperative, fill out one of the attached CEM Inoperative Period Explanations.

XX B. There were no periods when the CEM was inoperative during this quarter

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EXCESS EMISSION AND CONTINUOUS EMISSION MONITOR
REPORT SUMMARY PAGE

Company name : PINETREE POWER - FITCHBURG L.P.

Continuous emission monitor for :

NOx ____ CO X ____ SO2 ____ Opacity ________ NH3 ________

QUARTER : 3rd YEAR : 2013

TOTAL FACILITY OPERATING HOURS THIS QUARTER : 2014

I. EXCESS EMISSION SUMMERY

MARK EITHER PART A. OR PART B.

_____ A. There were excess emission periods as follows :

1. Number of separate excess emission periods : 0

2. Total hours of all excess emission periods : 0

For each excess emission period, fill out one of the attached Excess Emission Event Explanations.

XX B. There were no periods of excess emissions indicated by the Continuous Emissions Monitor system this quarter.

II. CONTINUOUS EMISSION MONITOR SUMMERY

MARK EITHER PART A. OR PART B.

_____ A. There were CEM inoperative periods as follows :

1. Number of periods when CEM was inoperative (except for zero and span checks) 0

2. Total number of hours that CEM was inoperative : 0

For each period that the CEM was inoperative, fill out one of the attached CEM Inoperative Period Explanations.

XX B. There were no periods when the CEM was inoperative during this quarter

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EXCESS EMISSION AND CONTINUOUS EMISSION MONITOR
REPORT SUMMARY PAGE

Company name : PINETREE POWER - FITCHBURG L.P.
Continuous emission monitor for :
NOx ____ CO ____ SO2 X Opacity ________ NH3 ________

QUARTER : 3rd YEAR : 2013

TOTAL FACILITY OPERATING HOURS THIS QUARTER : 2014

I. EXCESS EMISSION SUMMERY

MARK EITHER PART A. OR PART B.

____ A. There were excess emission periods as follows :

1. Number of separate excess emission periods : 0

2. Total hours of all excess emission periods : 0

For each excess emission period, fill out one of the attached Excess Emission Event Explanations.

XX B. There were no periods of excess emissions indicated by the Continuous Emissions Monitor system this quarter.

II. CONTINUOUS EMISSION MONITOR SUMMERY

MARK EITHER PART A. OR PART B.

____ A. There were CEM inoperative periods as follows :

1. Number of periods when CEM was inoperative (except for zero and span checks) 0

2. Total number of hours that CEM was inoperative : 0

For each period that the CEM was inoperative, fill out one of the attached CEM Inoperative Period Explanations.

XX B. There were no periods when the CEM was inoperative during this quarter

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EXCESS EMISSION AND CONTINUOUS EMISSION MONITOR
REPORT SUMMARY PAGE

Company name : PINETREE POWER - FITCHBURG L.P.

Continuous emission monitor for :

NOx ____ CO ____ SO2 ____ Opacity X ______ NH3 ______

QUARTER : 3rd YEAR : 2013

TOTAL FACILITY OPERATING HOURS THIS QUARTER : 2014

I. EXCESS EMISSION SUMMERY

MARK EITHER PART A. OR PART B.

XX A. There were excess emission periods as follows :

1. Number of separate excess emission periods : 8

2. Total hours of all excess emission periods : 0.3

For each excess emission period, fill out one of the attached Excess Emission Event Explanations.

______ B. There were no periods of excess emissions indicated by the Continuous Emissions Monitor system this quarter.

II. CONTINUOUS EMISSION MONITOR SUMMERY

MARK EITHER PART A. OR PART B.

______ A. There were CEM inoperative periods as follows :

1. Number of periods when CEM was inoperative (except for zero and span checks) 0

2. Total number of hours that CEM was inoperative : 0

For each period that the CEM was inoperative, fill out one of the attached CEM Inoperative Period Explanations.

XX B. There were no periods when the CEM was inoperative during this quarter

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EXCESS EMISSION AND CONTINUOUS EMISSION MONITOR
REPORT SUMMARY PAGE

Company name : PINETREE POWER - FITCHBURG L.P.

Continuous emission monitor for :

NOx ___ CO ___ SO2 ___ Opacity ________ NH3 X

QUARTER : 3rd YEAR : 2013

TOTAL FACILITY OPERATING HOURS THIS QUARTER : 2014

I. EXCESS EMISSION SUMMERY

MARK EITHER PART A. OR PART B.

XX A. There were excess emission periods as follows :

1. Number of separate excess emission periods : 2

2. Total hours of all excess emission periods : 6

For each excess emission period, fill out one of the attached Excess Emission Event Explanations.

_____ B. There were no periods of excess emissions indicated by the Continuous Emissions Monitor system this quarter.

II. CONTINUOUS EMISSION MONITOR SUMMERY

MARK EITHER PART A. OR PART B.

_____ A. There were CEM inoperative periods as follows :

1. Number of periods when CEM was inoperative (except for zero and span checks) 0

2. Total number of hours that CEM was inoperative : 0

For each period that the CEM was inoperative, fill out one of the attached CEM Inoperative Period Explanations.

XX B. There were no periods when the CEM was inoperative during this quarter

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PINETREE POWER FITCHBURG EMISSION REPORT (daily averages)

DATE	HOURS ON LINE	NH3 PPM	NH3 LB/HR	NH3 LB/MM BTU	NH3 365 ROLL TONS	NOX PPM	NOX LB/HR	NOX LB/MM BTU	NOX 30 DAY AVE.	NOX 365 ROLL TONS	CO PPM	CO LB/HR	CO LB/MM BTU	CO 365 ROLL TONS	SO2 PPM	SO2 LB/HR	SO2 LB/MM BTU	SO2 TON DAY	SO2 30 DAY TOTAL TONS	SO2 365 ROLL TONS	STACK O2	WOOD INTO PLANT DAY	WOOD BURN LAST 365	NOX QTR AVE. TO DATE	F W	U L	E P	L N	OPACITY AVE.
1-Jul-13	24	5.4	0.9	0.003	0.86	31.2	17.1	0.064	0.043	83.59	203.900	58.700	0.240	105.249	0.200	0.200	0.001	0.00	0.03	0.42	5.60	814.5	77422.9	0.064	X	0	0	0	0.2
2-Jul-13	24	6.2	1	0.004	0.87	30.3	16.8	0.062	0.045	83.64	216.600	53.000	0.264	105.655	0.200	0.200	0.001	0.00	0.03	0.42	5.40	804.3	77700.1	0.063	X	0	0	0	0.1
3-Jul-13	24	5.7	0.9	0.003	0.88	36	19.7	0.073	0.048	83.34	203.900	61.700	0.250	105.978	0.300	0.200	0.001	0.00	0.03	0.43	5.40	526.9	77552.9	0.066	X	0	0	0	0.1
4-Jul-13	24	12.9	2.2	0.008	0.90	35.5	20.3	0.072	0.050	83.04	168.700	57.200	0.209	106.174	0.300	0.200	0.001	0.00	0.03	0.43	5.40	0.0	77552.9	0.068	X	0	0	0	0.2
5-Jul-13	24	11.9	2.1	0.007	0.93	36.4	21.2	0.072	0.053	82.78	163.400	58.500	0.199	106.530	1.400	1.100	0.004	0.01	0.05	0.43	5.20	675.0	77471.1	0.069	X	0	0	0	0.2
6-Jul-13	24	14.2	2.5	0.008	0.95	42.5	25.3	0.086	0.055	82.90	174.200	58.300	0.212	107.093	2.200	1.900	0.006	0.02	0.07	0.43	5.30	0.0	76698.8	0.072	X	0	0	0	0.3
7-Jul-13	14.3	11.7	2	0.007	0.98	45.7	26.6	0.093	0.059	82.71	199.700	66.300	0.245	107.467	0.700	0.500	0.002	0.01	0.07	0.43	6.20	0.0	76698.8	0.075	X	0	0	0	0.7
8-Jul-13	0	0	0	0.000	0.97	0	0.0	0.000	0.061	82.38	0.000	0.000	0.000	107.081	0.000	0.000	0.000	0.00	0.07	0.43	0.00	535.9	77234.7		0	0	0	0	0.0
9-Jul-13	0	0	0	0.000	0.97	0	0.0	0.000	0.058	82.09	0.000	0.000	0.000	106.803	0.000	0.000	0.000	0.00	0.07	0.43	0.00	35.4	76646.8		0	0	0	0	0.0
10-Jul-13	16.4	5.1	0.7	0.026	0.98	34.1	15.9	0.114	0.062	81.95	254.000	57.800	0.238	107.157	0.200	0.200	0.001	0.00	0.08	0.43	9.20	418.2	76230.4	0.080	X	0	0	X	0.0
11-Jul-13	24	5.8	0.9	0.003	0.98	52	25.9	0.100	0.059	81.88	219.500	63.100	0.258	107.443	0.500	0.300	0.001	0.00	0.08	0.43	4.80	705.4	76174.9	0.082	X	0	0	0	0.1
12-Jul-13	24	8	1.2	0.004	0.99	37.6	19.6	0.068	0.057	81.52	208.000	61.900	0.229	107.550	0.000	0.000	0.000	0.00	0.07	0.43	4.00	985.2	76615.7	0.080	X	0	0	0	0.1
13-Jul-13	24	8.5	1.3	0.005	1.00	50.7	26.7	0.092	0.057	81.37	214.200	68.400	0.236	107.922	0.200	0.200	0.000	0.00	0.08	0.43	4.00	0.0	76210.6	0.081	X	0	0	0	0.2
14-Jul-13	24	5.2	0.7	0.003	1.00	77.6	37.4	0.139	0.062	81.33	208.400	61.200	0.227	108.097	0.700	0.500	0.002	0.01	0.08	0.43	3.90	0.0	76210.6	0.086	X	0	0	0	0.1
15-Jul-13	24	8	1.2	0.004	1.01	50.8	25.2	0.089	0.065	81.15	216.500	63.900	0.231	108.532	0.600	0.400	0.001	0.00	0.09	0.43	3.60	684.8	76895.4	0.086	X	0	0	0	0.2
16-Jul-13	24	8.8	1.3	0.004	1.02	28.7	14.1	0.050	0.067	81.09	249.700	63.400	0.263	108.883	0.800	0.500	0.002	0.01	0.09	0.43	3.60	764.5	77003.4	0.084	X	0	0	0	0.2
17-Jul-13	24	8.9	1.3	0.005	1.03	34.5	17.0	0.060	0.069	80.84	191.600	57.200	0.202	109.200	0.800	0.600	0.002	0.01	0.10	0.43	3.50	990.2	77384.6	0.082	X	0	0	0	0.3
18-Jul-13	24	9.2	1.4	0.005	1.05	35.9	18.1	0.062	0.071	80.57	215.200	66.100	0.227	109.956	0.900	0.600	0.002	0.01	0.11	0.43	3.30	996.9	77765.1	0.081	X	0	0	0	0.3
19-Jul-13	24	7.2	1	0.004	1.05	38	18.5	0.065	0.073	80.25	184.600	54.700	0.193	110.192	0.800	0.500	0.002	0.01	0.11	0.43	3.40	823.7	78207.4	0.080	X	0	0	0	0.4
20-Jul-13	2.65	3.9	0.3	0.045	1.05	11.5	4.7	0.067	0.076	79.70	191.000	31.600	0.027	110.054	0.300	0.100	0.004	0.00	0.11	0.43	16.50	0.0	78039.9	0.079	X	0	0	X	0.0
21-Jul-13	24	6.9	1	0.004	1.05	38.6	18.3	0.068	0.078	79.37	219.000	62.800	0.233	110.244	0.600	0.400	0.001	0.00	0.12	0.43	3.70	0.0	78039.9	0.079	X	0	0	0	0.1
22-Jul-13	23.5	7.4	1	0.004	1.06	42.5	20.2	0.073	0.081	79.12	230.400	61.600	0.241	110.676	0.600	0.400	0.002	0.00	0.12	0.44	3.40	801.7	78841.6	0.078	X	0	0	0	0.2
23-Jul-13	21.05	9.4	1.2	0.004	1.08	28.8	13.9	0.056	0.083	79.17	253.300	66.800	0.211	111.200	0.600	0.400	0.001	0.00	0.13	0.44	5.60	538.8	78541.6	0.077	X	0	0	0	0.2
24-Jul-13	24	8.8	1.3	0.004	1.09	30.3	15.3	0.052	0.080	79.13	197.700	60.700	0.207	111.645	0.600	0.500	0.001	0.01	0.13	0.44	3.40	692.7	78521.5	0.076	X	0	0	X	0.2
25-Jul-13	24	8.5	1.3	0.004	1.11	36.9	19.2	0.063	0.080	79.29	196.700	61.600	0.205	112.194	0.500	0.400	0.001	0.00	0.13	0.44	3.30	563.4	79084.8	0.076	X	0	0	0	0.3
26-Jul-13	10.7	7.5	0.7	0.006	1.11	21.4	10.6	0.053	0.079	78.91	211.500	46.400	0.123	112.355	0.300	0.200	0.001	0.00	0.13	0.44	12.30	422.1	79506.9	0.075	X	0	0	X	0.1
27-Jul-13	24	7.5	1.1	0.004	1.12	46	23.0	0.078	0.078	78.66	226.100	67.200	0.231	112.605	0.700	0.500	0.002	0.01	0.14	0.44	3.10	0.0	79506.9	0.075	X	0	0	0	0.3
28-Jul-13	24	9	1.3	0.005	1.13	37.4	18.6	0.065	0.077	78.33	190.000	57.600	0.199	112.734	0.700	0.500	0.002	0.01	0.14	0.44	3.40	0.0	79506.9	0.074	X	0	0	0	0.2
29-Jul-13	22.48	8.3	1.2	0.004	1.14	36.5	18.6	0.063	0.075	78.00	177.300	52.700	0.183	112.814	0.700	0.500	0.002	0.01	0.15	0.44	4.10	706.5	80213.4	0.074	X	0	0	X	0.2
30-Jul-13	24	7.1	1	0.005	1.14	44.7	21.8	0.084	0.074	77.72	207.400	60.800	0.205	112.996	0.700	0.400	0.002	0.00	0.15	0.44	4.70	936.4	80199.7	0.074	X	0	0	0	0.2
31-Jul-13	24	8.4	1.2	0.004	1.15	36.6	18.4	0.064	0.074	77.38	224.100	62.900	0.237	113.289	0.700	0.500	0.002	0.01	0.15	0.44	3.50	0.0	79417.8	0.074	X	0	0	X	0.2
AVG./TOTAl	639.08	7.59	1.14	0.01	1.02	35.76	18.32	0.069	0:07	80.75	194.08	55.62	0.20	109.22	0.57	0.42	0.00	0.15	31	31	31	31	77841.9	0.076					

	JULy	YTD
TOTAL TONS NH3	0.40	0.79
TOTAL TONS NOX	6.47	37.78
TOTAL TONS CO	19.35	62.50
TOTAL TONS SO2	0.15	0.37
HOURS ON LINE	639	2164.76

EMISSION LIMITS

Pollutant	PPMV	#/MMBTU	Tons	Averaging Period	
SO2		0.10		3 Hr Arithmatic	
			2.90	30 Day Rolling	
CO		0.20		24 Hr Arithmatic	0 .30 - Startup & Shutdown & Load Swings
NOx		0.175		30 Day rolling	
NH3	10			3 Hr Arithmatic	

PINETREE POWER FITCHBURG EMISSION REPORT (daily averages)

DATE	HOURS ON LINE	NH3 PPM	NH3 LB/HR	NH3 LB/MM BTU	NH3 365 ROLL TONS	NOX PPM	NOX LB/HR	NOX LB/MM BTU	NOX 30 DAY AVE.	NOX 365 ROLL TONS	CO PPM	CO LB/HR	CO LB/MM BTU	CO 365 ROLL TONS	SO2 PPM	SO2 LB/HR	SO2 LB/MM BTU	SO2 TON DAY	SO2 30 DAY TOTAL TONS	SO2 365 ROLL TONS	STACK O2	WOOD INTO PLANT DAY	WOOD BURN LAST 365	NOX QTR AVE. TO DATE	FUEL F W	FUEL U L	FUEL E P	FUEL L N	OPACITY AVE.
1-Jul-13	24	5.4	0.9	0.003	0.86	31.2	17.1	0.064	0.043	83.59	203.900	58.700	0.240	105.249	0.200	0.200	0.001	0.00	0.03	0.42	5.60	814.5	77422.9	0.064	X	0	0	0	0.2
2-Jul-13	24	6.2	1	0.004	0.87	30.3	16.8	0.062	0.045	83.64	216.600	53.000	0.264	105.655	0.200	0.200	0.001	0.00	0.03	0.42	5.40	804.3	77700.1	0.063	X	0	0	0	0.1
3-Jul-13	24	5.7	0.9	0.003	0.88	36	19.7	0.073	0.048	83.34	203.900	61.700	0.250	105.978	0.300	0.200	0.001	0.00	0.03	0.43	5.40	526.9	77552.9	0.066	X	0	0	0	0.1
4-Jul-13	24	12.9	2.2	0.008	0.90	35.5	20.3	0.072	0.050	83.04	168.700	57.200	0.209	106.174	0.300	0.200	0.001	0.00	0.03	0.43	5.40	0.0	77552.9	0.068	X	0	0	0	0.2
5-Jul-13	24	11.9	2.1	0.007	0.93	36.4	21.2	0.072	0.053	82.78	163.400	58.500	0.199	106.530	1.400	1.100	0.004	0.01	0.05	0.43	5.20	675.0	77471.1	0.069	X	0	0	0	0.2
6-Jul-13	24	14.2	2.5	0.008	0.95	42.5	25.3	0.086	0.055	82.90	174.200	58.300	0.212	107.093	2.200	1.900	0.006	0.02	0.07	0.43	5.30	0.0	76698.8	0.072	X	0	0	0	0.3
7-Jul-13	14.3	11.7	2	0.007	0.98	45.7	26.6	0.093	0.059	82.71	199.700	66.300	0.245	107.467	0.700	0.500	0.002	0.01	0.07	0.43	6.20	0.0	76698.8	0.075	X	0	0	0	0.7
8-Jul-13	0	0	0	0.000	0.97	0	0.0	0.000	0.061	82.38	0.000	0.000	0.000	107.081	0.000	0.000	0.000	0.00	0.07	0.43	0.00	535.9	77234.7		0	0	0	0	0.0
9-Jul-13	0	0	0	0.000	0.97	0	0.0	0.000	0.058	82.09	0.000	0.000	0.000	106.803	0.000	0.000	0.000	0.00	0.07	0.43	0.00	35.4	76646.8		0	0	0	0	0.0
10-Jul-13	16.4	5.1	0.7	0.026	0.98	34.1	15.9	0.114	0.062	81.95	254.000	57.800	0.238	107.157	0.200	0.200	0.001	0.00	0.08	0.43	9.20	418.2	76230.4	0.080	X	0	0	X	0.0
11-Jul-13	24	5.8	0.9	0.003	0.98	52	25.9	0.100	0.059	81.88	219.500	63.100	0.258	107.443	0.500	0.300	0.001	0.00	0.08	0.43	4.80	705.4	76174.9	0.082	X	0	0	0	0.1
12-Jul-13	24	8	1.2	0.004	0.99	37.6	19.6	0.068	0.057	81.52	208.000	61.900	0.229	107.550	0.000	0.000	0.000	0.00	0.07	0.43	4.00	985.2	76615.7	0.080	X	0	0	0	0.1
13-Jul-13	24	8.5	1.3	0.005	1.00	50.7	26.7	0.092	0.057	81.37	214.200	68.400	0.236	107.922	0.200	0.200	0.000	0.00	0.08	0.43	4.00	0.0	76210.6	0.081	X	0	0	0	0.2
14-Jul-13	24	5.2	0.7	0.003	1.00	77.6	37.4	0.139	0.062	81.33	208.400	61.200	0.227	108.097	0.700	0.500	0.002	0.01	0.08	0.43	3.90	0.0	76210.6	0.086	X	0	0	0	0.1
15-Jul-13	24	8	1.2	0.004	1.01	50.8	25.2	0.089	0.065	81.15	216.500	63.900	0.231	108.532	0.600	0.400	0.001	0.00	0.09	0.43	3.60	684.8	76895.4	0.086	X	0	0	0	0.2
16-Jul-13	24	8.8	1.3	0.004	1.02	28.7	14.1	0.050	0.067	81.09	249.700	63.400	0.263	108.883	0.800	0.500	0.002	0.01	0.09	0.43	3.60	764.5	77003.4	0.084	X	0	0	0	0.2
17-Jul-13	24	8.9	1.3	0.005	1.03	34.5	17.0	0.060	0.069	80.84	191.600	57.200	0.202	109.200	0.800	0.600	0.002	0.01	0.10	0.43	3.50	990.2	77384.6	0.082	X	0	0	0	0.3
18-Jul-13	24	9.2	1.4	0.005	1.05	35.9	18.1	0.062	0.071	80.57	215.200	66.100	0.227	109.956	0.900	0.600	0.002	0.01	0.11	0.43	3.30	996.9	77765.1	0.081	X	0	0	0	0.3
19-Jul-13	24	7.2	1	0.004	1.05	38	18.5	0.065	0.073	80.25	184.600	54.700	0.193	110.192	0.800	0.500	0.002	0.01	0.11	0.43	3.40	823.7	78207.4	0.080	X	0	0	0	0.4
20-Jul-13	2.65	3.9	0.3	0.045	1.05	11.5	4.7	0.067	0.076	79.70	191.000	31.600	0.027	110.054	0.300	0.100	0.004	0.00	0.11	0.43	16.50	0.0	78039.9	0.079	X	0	0	X	0.0
21-Jul-13	24	6.9	1	0.004	1.05	38.6	18.3	0.068	0.078	79.37	219.000	62.800	0.233	110.244	0.600	0.400	0.001	0.00	0.12	0.43	3.70	0.0	78039.9	0.079	X	0	0	0	0.1
22-Jul-13	23.5	7.4	1	0.004	1.06	42.5	20.2	0.073	0.081	79.12	230.400	61.600	0.241	110.676	0.600	0.400	0.002	0.00	0.12	0.44	3.40	801.7	78841.6	0.078	X	0	0	0	0.2
23-Jul-13	21.05	9.4	1.2	0.004	1.08	28.8	13.9	0.056	0.083	79.17	253.300	66.800	0.211	111.200	0.600	0.400	0.001	0.00	0.13	0.44	5.60	538.8	78541.6	0.077	X	0	0	0	0.2
24-Jul-13	24	8.8	1.3	0.004	1.09	30.3	15.3	0.052	0.080	79.13	197.700	60.700	0.207	111.645	0.600	0.500	0.001	0.01	0.13	0.44	3.40	692.7	78521.5	0.076	X	0	0	X	0.2
25-Jul-13	24	8.5	1.3	0.004	1.11	36.9	19.2	0.063	0.080	79.29	196.700	61.600	0.205	112.194	0.500	0.400	0.001	0.00	0.13	0.44	3.30	563.4	79084.8	0.076	X	0	0	0	0.3
26-Jul-13	10.7	7.5	0.7	0.006	1.11	21.4	10.6	0.053	0.079	78.91	211.500	46.400	0.123	112.355	0.300	0.200	0.001	0.00	0.13	0.44	12.30	422.1	79506.9	0.075	X	0	0	X	0.1
27-Jul-13	24	7.5	1.1	0.004	1.12	46	23.0	0.078	0.078	78.66	226.100	67.200	0.231	112.605	0.700	0.500	0.002	0.01	0.14	0.44	3.10	0.0	79506.9	0.075	X	0	0	0	0.3
28-Jul-13	24	9	1.3	0.005	1.13	37.4	18.6	0.065	0.077	78.33	190.000	57.600	0.199	112.734	0.700	0.500	0.002	0.01	0.14	0.44	3.40	0.0	79506.9	0.074	X	0	0	0	0.2
29-Jul-13	22.48	8.3	1.2	0.004	1.14	36.5	18.6	0.063	0.075	78.00	177.300	52.700	0.183	112.814	0.700	0.500	0.002	0.01	0.15	0.44	4.10	706.5	80213.4	0.074	X	0	0	X	0.2
30-Jul-13	24	7.1	1	0.005	1.14	44.7	21.8	0.084	0.074	77.72	207.400	60.800	0.205	112.996	0.700	0.400	0.002	0.00	0.15	0.44	4.70	936.4	80199.7	0.074	X	0	0	0	0.2
31-Jul-13	24	8.4	1.2	0.004	1.15	36.6	18.4	0.064	0.074	77.38	224.100	62.900	0.237	113.289	0.700	0.500	0.002	0.01	0.15	0.44	3.50	0.0	79417.8	0.074	X	0	0	X	0.2
AVG./TOTAL	639.08	7.59	1.14	0.01	1.02	35.76	18.32	0.069	0:07	80.75	194.08	55.62	0.20	109.22	0.57	0.42	0.00	0.15	31	31	31	31	77841.9	0.076					

	JULy	YTD
TOTAL TONS NH3	0.40	0.79
TOTAL TONS NOX	6.47	37.78
TOTAL TONS CO	19.35	62.50
TOTAL TONS SO2	0.15	0.37
HOURS ON LINE	639	2164.76

EMISSION LIMITS

Pollutant	PPMV	#/MMBTU	Tons	Averaging Period	
SO2		0.10		3 Hr Arithmatic	
			2.90	30 Day Rolling	
CO		0.20		24 Hr Arithmatic	0 .30 - Startup & Shutdown & Load Swings
NOx		0.175		30 Day rolling	
NH3	10			3 Hr Arithmatic	

PINETREE POWER FITCHBURG EMISSION REPORT (daily averages)

DATE	HOURS ON LINE	NH3 PPM	NH3 LB/HR	NH3 LB/MM BTU	NH3 365 ROLL TONS	NOX PPM	NOX LB/HR	NOX LB/MM BTU	NOX 30 DAY AVE.	NOX 365 ROLL TONS	CO PPM	CO LB/HR	CO LB/MM BTU	CO 365 ROLL TONS	SO2 PPM	SO2 LB/HR	SO2 LB/MM BTU	SO2 TON DAY	SO2 30 DAY TOTAL TONS	SO2 365 ROLL TONS	STACK O2	WOOD INTO PLANT DAY	WOOD BURN LAST 365	NOX QTR AVE. TO DATE	F W	U L	E P	L N	OPACITY AVE.
1-Aug-13	24	7.9	1.2	0.004	1.16	37	18.7	0.063	0.074	77.04	208.600	62.500	0.216	113.414	0.700	0.500	0.002	0.01	0.16	0.44	3.20	738.5	79372.3	0.074	X	0	0	0	0.3
2-Aug-13	24	7.9	1.2	0.004	1.17	39.2	19.7	0.068	0.074	76.74	202.100	55.500	0.214	113.489	0.700	0.500	0.002	0.01	0.16	0.44	3.60	526.7	79508.1	0.073	X	0	0	0	0.2
3-Aug-13	24	9.7	1.4	0.005	1.18	33.9	17.0	0.059	0.074	76.42	209.400	63.900	0.220	113.769	0.600	0.400	0.001	0.00	0.16	0.44	3.50	0.0	78979.6	0.073	X	0	0	0	0.2
4-Aug-13	24	9	1.2	0.005	1.19	34.6	16.2	0.061	0.073	76.07	184.100	52.400	0.197	113.992	0.600	0.400	0.001	0.00	0.15	0.45	3.70	0.0	78979.6	0.073	X	0	0	0	0.1
5-Aug-13	24	8.8	1.3	0.004	1.21	40	20.0	0.069	0.073	75.72	192.600	58.600	0.201	114.179	0.600	0.400	0.001	0.00	0.14	0.45	3.40	794.4	79773.9	0.073	X	0	0	0	0.2
6-Aug-13	24	7.8	1.1	0.004	1.22	38.1	18.3	0.068	0.072	75.40	184.300	53.700	0.199	114.282	0.500	0.300	0.001	0.00	0.13	0.45	3.90	874.9	79875.7	0.072	X	0	0	0	0.2
7-Aug-13	24	7	1	0.004	1.23	38.9	19.8	0.069	0.072	75.08	186.300	57.900	0.204	114.506	0.500	0.400	0.001	0.00	0.14	0.45	3.90	881.1	80038.9	0.072	X	0	0	0	0.2
8-Aug-13	23.99	6.2	0.9	0.003	1.24	35.5	18.1	0.065	0.072	74.79	189.000	56.200	0.211	114.567	0.500	0.400	0.001	0.00	0.14	0.45	4.20	624.1	79890.5	0.072	X	0	0	0	0.2
9-Aug-13					1.23				0.070	74.28	0.000	0.000	0.000	113.992	0.000	0.000	0.000	0.00	0.14	0.44	0.00	7.8	79378.6		0	0	0	0	0.0
10-Aug-13	19.02	4.2	0.6	0.005	1.24	27.8	14.2	0.073	0.069	73.90	230.100	56.900	0.207	114.034	0.400	0.300	0.001	0.00	0.14	0.45	7.70	0.0	79011.9	0.072	X	0	0	X	0.1
11-Aug-13	24	4.6	0.8	0.003	1.25	29.7	16.9	0.061	0.069	73.55	155.100	51.000	0.192	113.962	0.500	0.400	0.001	0.00	0.15	0.45	5.50	0.0	79011.9	0.072	X	0	0	0	0.1
12-Aug-13	24	4.8	0.8	0.003	1.25	31.5	17.4	0.062	0.068	73.21	182.600	57.500	0.219	114.050	0.500	0.400	0.001	0.00	0.15	0.45	5.10	780.8	79792.6	0.072	X	0	0	0	0.1
13-Aug-13	24	4.4	0.7	0.003	1.26	33.3	18.4	0.066	0.065	72.85	207.000	69.300	0.248	114.262	0.600	0.500	0.002	0.01	0.15	0.45	5.10	655.9	79990.4	0.071	X	0	0	0	0.1
14-Aug-13	24	3.5	0.6	0.002	1.27	30.6	17.0	0.064	0.065	72.48	156.400	53.000	0.198	114.263	0.500	0.400	0.001	0.00	0.15	0.45	5.70	607.3	79794.4	0.071	X	0	0	0	0.1
15-Aug-13	24	3.6	0.6	0.002	1.27	29.5	16.9	0.062	0.065	72.25	176.900	56.400	0.227	114.279	0.500	0.400	0.001	0.00	0.15	0.45	5.90	646.5	80064.1	0.071	X	0	0	0	0.1
16-Aug-13	24	3.8	0.6	0.002	1.28	27.6	15.1	0.059	0.065	71.92	162.400	54.000	0.215	114.364	0.500	0.400	0.001	0.00	0.14	0.45	6.10	654.7	79945.5	0.071	X	0	0	0	0.1
17-Aug-13	24	4.8	0.8	0.003	1.28	29.4	16.7	0.061	0.065	71.61	157.800	54.500	0.201	114.459	0.600	0.400	0.002	0.00	0.14	0.45	5.70	0.0	79167.6	0.071	X	0	0	0	0.1
18-Aug-13	24	3.6	0.6	0.002	1.29	28.7	16.1	0.060	0.065	71.20	154.900	52.800	0.196	114.578	0.600	0.500	0.002	0.01	0.14	0.45	5.70	0.0	79167.6	0.070	X	0	0	0	0.1
19-Aug-13	24	3.3	0.5	0.002	1.29	31.6	17.1	0.062	0.065	70.84	165.300	54.500	0.198	114.714	0.700	0.500	0.002	0.01	0.15	0.45	5.10	962.8	80130.4	0.070	X	0	0	0	0.1
20-Aug-13	24	4.1	0.6	0.002	1.29	31	16.0	0.059	0.064	70.45	169.700	53.200	0.197	114.848	0.700	0.500	0.002	0.01	0.15	0.45	4.70	592.4	79999.1	0.070	X	0	0	0	0.1
21-Aug-13	24	3.5	0.5	0.002	1.30	32	16.5	0.063	0.064	70.06	144.600	45.200	0.172	114.686	0.800	0.600	0.002	0.01	0.15	0.45	5.00	501.3	79737.2	0.070	X	0	0	0	0.1
22-Aug-13	24	4.1	0.6	0.003	1.30	29.7	15.8	0.059	0.064	69.66	185.700	60.200	0.227	114.911	0.700	0.600	0.002	0.01	0.15	0.45	5.30	688.9	79617.3	0.070	X	0	0	0	0.2
23-Aug-13	24	4.1	0.7	0.002	1.31	28.9	16.3	0.060	0.064	69.30	130.500	44.500	0.164	114.968	0.700	0.500	0.002	0.01	0.15	0.45	5.60	576.6	79544.8	0.069	X	0	0	0	0.1
24-Aug-13	24	5.1	0.9	0.003	1.31	31.8	18.7	0.067	0.064	68.96	145.100	52.000	0.186	115.215	0.700	0.600	0.002	0.01	0.15	0.45	5.80	0.0	79155.3	0.069	X	0	0	0	0.2
25-Aug-13	24	4.3	0.8	0.003	1.31	30.7	18.0	0.063	0.065	68.60	130.700	46.800	0.163	115.360	0.700	0.500	0.002	0.01	0.16	0.45	5.50	0.0	79155.3	0.069	X	0	0	0	0.2
26-Aug-13	24	4	0.7	0.002	1.32	31.7	18.8	0.065	0.064	68.23	148.400	53.500	0.186	115.587	0.700	0.600	0.002	0.01	0.16	0.45	5.60	898.4	80053.7	0.069	X	0	0	0	0.3
27-Aug-13	24	5.8	1	0.004	1.33	32	18.5	0.065	0.064	67.89	140.100	49.500	0.174	115.838	0.800	0.700	0.002	0.01	0.16	0.45	5.50	860.8	80163.1	0.069	X	0	0	0	0.2
28-Aug-13	24	5.6	1	0.003	1.34	31.9	18.9	0.065	0.064	67.53	154.300	55.400	0.189	116.174	0.900	0.700	0.002	0.01	0.16	0.45	5.40	915.0	80467.0	0.069	X	0	0	0	0.2
29-Aug-13	24	4.1	0.7	0.002	1.35	34.2	20.5	0.070	0.064	67.24	146.100	53.300	0.182	116.296	0.800	0.700	0.002	0.01	0.17	0.45	5.50	637.7	80436.9	0.069	X	0	0	0	0.1
30-Aug-13	24	3.7	0.6	0.002	1.35	35.4	20.6	0.073	0.064	66.90	143.200	50.700	0.181	116.553	0.900	0.700	0.003	0.01	0.17	0.45	5.70	742.8	80829.0	0.069	X	0	0	0	0.2
31-Aug-13	24	3.7	0.6	0.002	1.36	34.2	20.1	0.072	0.064	66.61	157.900	56.600	0.202	116.811	0.900	0.700	0.003	0.01	0.17	0.46	5.80	0.0	80371.0	0.069	X	0	0	0	0.2
AVG./TOTAL	715.01	5.23	0.82	0.00	1.27	32.68	17.74	0.064	0.07	71.83	164.55	52.95	0.19	114.72	0.63	0.48	0.00	0.18	31	31	31	31	79722.7	0.071					

	AUG	YTD
TOTAL TONS NH3	0.29	1.08
TOTAL TONS NOX	6.35	44.14
TOTAL TONS CO	19.56	82.06
TOTAL TONS SO2	0.18	0.55
HOURS ON LINE	715	2879.77

EMISSION LIMITS

Pollutant	PPMV	#/MMBTU	Tons	Averaging Period	
SO2		0.10		3 Hr Arithmatic	
			2.90	30 Day Rolling	
CO		0.20		24 Hr Arithmatic	0 .30 - Startup & Shutdown & Load Swings
NOx		0.175		30 Day rolling	
NH3	10			3 Hr Arithmatic	

PINETREE POWER FITCHBURG EMISSION REPORT (daily averages)

DATE	HOURS ON LINE	NH3 PPM	NH3 LB/HR	NH3 LB/MM BTU	NH3 365 ROLL TONS	NOX PPM	NOX LB/HR	NOX LB/MM BTU	NOX 30 DAY AVE.	NOX 365 ROLL TONS	CO PPM	CO LB/HR	CO LB/MM BTU	CO 365 ROLL TONS	SO2 PPM	SO2 LB/HR	SO2 LB/MM BTU	SO2 TON DAY	SO2 30 DAY TOTAL TONS	SO2 365 ROLL TONS	STACK O2	WOOD INTO PLANT DAY	WOOD BURN LAST 365	NOX QTR AVE. TO DATE	F W	U L	E P	L N	OPACITY AVE.
1-Aug-13	24	7.9	1.2	0.004	1.16	37	18.7	0.063	0.074	77.04	208.600	62.500	0.216	113.414	0.700	0.500	0.002	0.01	0.16	0.44	3.20	738.5	79372.3	0.074	X	0	0	0	0.3
2-Aug-13	24	7.9	1.2	0.004	1.17	39.2	19.7	0.068	0.074	76.74	202.100	55.500	0.214	113.489	0.700	0.500	0.002	0.01	0.16	0.44	3.60	526.7	79508.1	0.073	X	0	0	0	0.2
3-Aug-13	24	9.7	1.4	0.005	1.18	33.9	17.0	0.059	0.074	76.42	209.400	63.900	0.220	113.769	0.600	0.400	0.001	0.00	0.16	0.44	3.50	0.0	78979.6	0.073	X	0	0	0	0.2
4-Aug-13	24	9	1.2	0.005	1.19	34.6	16.2	0.061	0.073	76.07	184.100	52.400	0.197	113.992	0.600	0.400	0.001	0.00	0.15	0.45	3.70	0.0	78979.6	0.073	X	0	0	0	0.1
5-Aug-13	24	8.8	1.3	0.004	1.21	40	20.0	0.069	0.073	75.72	192.600	58.600	0.201	114.179	0.600	0.400	0.001	0.00	0.14	0.45	3.40	794.4	79773.9	0.073	X	0	0	0	0.2
6-Aug-13	24	7.8	1.1	0.004	1.22	38.1	18.3	0.068	0.072	75.40	184.300	53.700	0.199	114.282	0.500	0.300	0.001	0.00	0.13	0.45	3.90	874.9	79875.7	0.072	X	0	0	0	0.2
7-Aug-13	24	7	1	0.004	1.23	38.9	19.8	0.069	0.072	75.08	186.300	57.900	0.204	114.506	0.500	0.400	0.001	0.00	0.14	0.45	3.90	881.1	80038.9	0.072	X	0	0	0	0.2
8-Aug-13	23.99	6.2	0.9	0.003	1.24	35.5	18.1	0.065	0.072	74.79	189.000	56.200	0.211	114.567	0.500	0.400	0.001	0.00	0.14	0.45	4.20	624.1	79890.5	0.072	X	0	0	0	0.2
9-Aug-13					1.23				0.070	74.28	0.000	0.000	0.000	113.992	0.000	0.000	0.000	0.00	0.14	0.44	0.00	7.8	79378.6		0	0	0	0	0.0
10-Aug-13	19.02	4.2	0.6	0.005	1.24	27.8	14.2	0.073	0.069	73.90	230.100	56.900	0.207	114.034	0.400	0.300	0.001	0.00	0.14	0.45	7.70	0.0	79011.9	0.072	X	0	0	X	0.1
11-Aug-13	24	4.6	0.8	0.003	1.25	29.7	16.9	0.061	0.069	73.55	155.100	51.000	0.192	113.962	0.500	0.400	0.001	0.00	0.15	0.45	5.50	0.0	79011.9	0.072	X	0	0	0	0.1
12-Aug-13	24	4.8	0.8	0.003	1.25	31.5	17.4	0.062	0.068	73.21	182.600	57.500	0.219	114.050	0.500	0.400	0.001	0.00	0.15	0.45	5.10	780.8	79792.6	0.072	X	0	0	0	0.1
13-Aug-13	24	4.4	0.7	0.003	1.26	33.3	18.4	0.066	0.065	72.85	207.000	69.300	0.248	114.262	0.600	0.500	0.002	0.01	0.15	0.45	5.10	655.9	79990.4	0.071	X	0	0	0	0.1
14-Aug-13	24	3.5	0.6	0.002	1.27	30.6	17.0	0.064	0.065	72.48	156.400	53.000	0.198	114.263	0.500	0.400	0.001	0.00	0.15	0.45	5.70	607.3	79794.4	0.071	X	0	0	0	0.1
15-Aug-13	24	3.6	0.6	0.002	1.27	29.5	16.9	0.062	0.065	72.25	176.900	56.400	0.227	114.279	0.500	0.400	0.001	0.00	0.15	0.45	5.90	646.5	80064.1	0.071	X	0	0	0	0.1
16-Aug-13	24	3.8	0.6	0.002	1.28	27.6	15.1	0.059	0.065	71.92	162.400	54.000	0.215	114.364	0.500	0.400	0.001	0.00	0.14	0.45	6.10	654.7	79945.5	0.071	X	0	0	0	0.1
17-Aug-13	24	4.8	0.8	0.003	1.28	29.4	16.7	0.061	0.065	71.61	157.800	54.500	0.201	114.459	0.600	0.400	0.002	0.00	0.14	0.45	5.70	0.0	79167.6	0.071	X	0	0	0	0.1
18-Aug-13	24	3.6	0.6	0.002	1.29	28.7	16.1	0.060	0.065	71.20	154.900	52.800	0.196	114.578	0.600	0.500	0.002	0.01	0.14	0.45	5.70	0.0	79167.6	0.070	X	0	0	0	0.1
19-Aug-13	24	3.3	0.5	0.002	1.29	31.6	17.1	0.062	0.065	70.84	165.300	54.500	0.198	114.714	0.700	0.500	0.002	0.01	0.15	0.45	5.10	962.8	80130.4	0.070	X	0	0	0	0.1
20-Aug-13	24	4.1	0.6	0.002	1.29	31	16.0	0.059	0.064	70.45	169.700	53.200	0.197	114.848	0.700	0.500	0.002	0.01	0.15	0.45	4.70	592.4	79999.1	0.070	X	0	0	0	0.1
21-Aug-13	24	3.5	0.5	0.002	1.30	32	16.5	0.063	0.064	70.06	144.600	45.200	0.172	114.686	0.800	0.600	0.002	0.01	0.15	0.45	5.00	501.3	79737.2	0.070	X	0	0	0	0.1
22-Aug-13	24	4.1	0.6	0.003	1.30	29.7	15.8	0.059	0.064	69.66	185.700	60.200	0.227	114.911	0.700	0.600	0.002	0.01	0.15	0.45	5.30	688.9	79617.3	0.070	X	0	0	0	0.2
23-Aug-13	24	4.1	0.7	0.002	1.31	28.9	16.3	0.060	0.064	69.30	130.500	44.500	0.164	114.968	0.700	0.500	0.002	0.01	0.15	0.45	5.60	576.6	79544.8	0.069	X	0	0	0	0.1
24-Aug-13	24	5.1	0.9	0.003	1.31	31.8	18.7	0.067	0.064	68.96	145.100	52.000	0.186	115.215	0.700	0.600	0.002	0.01	0.15	0.45	5.80	0.0	79155.3	0.069	X	0	0	0	0.2
25-Aug-13	24	4.3	0.8	0.003	1.31	30.7	18.0	0.063	0.065	68.60	130.700	46.800	0.163	115.360	0.700	0.500	0.002	0.01	0.16	0.45	5.50	0.0	79155.3	0.069	X	0	0	0	0.2
26-Aug-13	24	4	0.7	0.002	1.32	31.7	18.8	0.065	0.064	68.23	148.400	53.500	0.186	115.587	0.700	0.600	0.002	0.01	0.16	0.45	5.60	898.4	80053.7	0.069	X	0	0	0	0.3
27-Aug-13	24	5.8	1	0.004	1.33	32	18.5	0.065	0.064	67.89	140.100	49.500	0.174	115.838	0.800	0.700	0.002	0.01	0.16	0.45	5.50	860.8	80163.1	0.069	X	0	0	0	0.2
28-Aug-13	24	5.6	1	0.003	1.34	31.9	18.9	0.065	0.064	67.53	154.300	55.400	0.189	116.174	0.900	0.700	0.002	0.01	0.16	0.45	5.40	915.0	80467.0	0.069	X	0	0	0	0.2
29-Aug-13	24	4.1	0.7	0.002	1.35	34.2	20.5	0.070	0.064	67.24	146.100	53.300	0.182	116.296	0.800	0.700	0.002	0.01	0.17	0.45	5.50	637.7	80436.9	0.069	X	0	0	0	0.1
30-Aug-13	24	3.7	0.6	0.002	1.35	35.4	20.6	0.073	0.064	66.90	143.200	50.700	0.181	116.553	0.900	0.700	0.003	0.01	0.17	0.45	5.70	742.8	80829.0	0.069	X	0	0	0	0.2
31-Aug-13	24	3.7	0.6	0.002	1.36	34.2	20.1	0.072	0.064	66.61	157.900	56.600	0.202	116.811	0.900	0.700	0.003	0.01	0.17	0.46	5.80	0.0	80371.0	0.069	X	0	0	0	0.2
AVG./TOTAL	715.01	5.23	0.82	0.00	1.27	32.68	17.74	0.064	0.07	71.83	164.55	52.95	0.19	114.72	0.63	0.48	0.00	0.18	31	31	31	31	79722.7	0.071					

	AUG	YTD
TOTAL TONS NH3	0.29	1.08
TOTAL TONS NOX	6.35	44.14
TOTAL TONS CO	19.56	82.06
TOTAL TONS SO2	0.18	0.55
HOURS ON LINE	715	2879.77

EMISSION LIMITS

Pollutant	PPMV	#/MMBTU	Tons	Averaging Period	
SO2		0.10		3 Hr Arithmatic	
			2.90	30 Day Rolling	
CO		0.20		24 Hr Arithmatic	0 .30 - Startup & Shutdown & Load Swings
NOx		0.175		30 Day rolling	
NH3	10			3 Hr Arithmatic	

PINETREE POWER FITCHBURG EMISSION REPORT (daily averages)

DATE	HOURS ON LINE	NH3 PPM	NH3 LB/HR	NH3 LB/MM BTU	NH3 365 ROLL TONS	NOX PPM	NOX LB/HR	NOX LB/MM BTU	NOX 30 DAY AVE.	NOX 365 ROLL TONS	CO PPM	CO LB/HR	CO LB/MM BTU	CO 365 ROLL TONS	SO2 PPM	SO2 LB/HR	SO2 LB/MM BTU	SO2 TON DAY	SO2 30 DAY TOTAL TONS	SO2 365 ROLL TONS	STACK O2	WOOD INTO PLANT DAY	WOOD BURN LAST 365	NOX QTR AVE. TO DATE	F W	U L	E P	L N	OPACITY AVE.
1-Sep-13	24	4	0.7	0.002	1.36	34.5	20.0	0.074	0.065	66.28	142.000	50.100	0.185	116.912	1.000	0.800	0.003	0.01	0.18	0.46	6.00	0.0	80371.0	0.069	X	0	0	0	0.1
2-Sep-13	24	3.8	0.6	0.002	1.37	32.5	18.7	0.070	0.065	65.91	143.500	50.300	0.187	117.222	1.000	0.800	0.003	0.01	0.18	0.46	6.10	0.0	80371.0	0.069	X	0	0	0	0.1
3-Sep-13	24	3.9	0.7	0.003	1.37	32.9	19.5	0.076	0.066	65.54	150.800	52.200	0.194	117.426	1.000	0.100	0.004	0.00	0.18	0.46	6.30	614.0	80985.0	0.069	X	0	0	0	0.1
4-Sep-13	15.58	3.6	0.6	0.002	1.37	26.7	16.0	0.057	0.065	65.13	130.000	43.300	0.142	117.092	0.800	0.700	0.003	0.01	0.18	0.46	8.30	943.7	81263.5	0.069	X	0	0	0	0.2
5-Sep-13	0	0	0	0.000	1.36	0	0.0	0.000	0.063	64.57	0.000	0.000	0.000	116.306	0.000	0.000	0.000	0.00	0.18	0.45	0.00	931.8	81427.2		0	0	0	0	0.0
6-Sep-13	0	0.6	0	0.000	1.35	1.2	0.0	0.000	0.060	64.00	339.900	0.000	0.000	115.532	0.200	0.000	0.000	0.00	0.17	0.45	17.40	362.5	80950.4		0	0	0	X	0.0
7-Sep-13	20.82	4	0.6	0.006	1.36	17.5	9.4	0.047	0.060	63.51	191.400	52.400	0.172	115.469	0.500	0.400	0.004	0.00	0.17	0.45	8.10	0.0	80178.0	0.067	X	0	0	X	0.1
8-Sep-13	24	4.8	0.8	0.003	1.36	21	12.1	0.045	0.059	63.06	173.000	60.600	0.225	115.616	0.600	0.500	0.002	0.01	0.18	0.45	6.00	0.0	80178.0	0.066	X	0	0	0	0.1
9-Sep-13	24	6.8	1.1	0.004	1.37	22.1	12.5	0.047	0.058	62.61	163.500	53.100	0.208	115.620	0.600	0.500	0.002	0.01	0.18	0.45	5.80	780.6	80958.6	0.066	X	0	0	0	0.1
10-Sep-13	24	3.5	0.6	0.002	1.37	33.7	20.0	0.069	0.059	62.22	165.600	59.800	0.206	115.719	0.800	0.700	0.002	0.01	0.18	0.45	5.50	474.4	80811.9	0.066	X	0	0	0	0.2
11-Sep-13	24	3.8	0.6	0.002	1.37	32.5	18.6	0.066	0.059	61.81	167.400	56.300	0.207	115.666	0.900	0.700	0.003	0.01	0.19	0.45	5.50	634.2	80815.4	0.066	X	0	0	0	0.1
12-Sep-13	24	3.4	0.6	0.002	1.36	34.1	19.8	0.068	0.059	61.46	164.400	58.300	0.198	115.652	1.000	0.800	0.003	0.01	0.19	0.45	5.20	662.8	80725.6	0.066	X	0	0	0	0.1
13-Sep-13	24	3.9	0.7	0.002	1.36	34.7	21.0	0.071	0.059	61.23	155.900	57.300	0.194	115.768	1.000	0.800	0.003	0.01	0.20	0.45	5.60	584.1	80625.5	0.066	X	0	0	X	0.1
14-Sep-13	24	4.2	0.7	0.002	1.37	30.3	17.9	0.063	0.059	60.90	154.900	55.800	0.195	115.694	0.900	0.700	0.002	0.01	0.20	0.45	5.60	0.0	79843.6	0.066	X	0	0	0	0.1
15-Sep-13	24	3.4	0.6	0.002	1.37	33.7	19.9	0.071	0.060	60.59	128.900	46.400	0.164	115.521	0.800	0.700	0.002	0.01	0.20	0.45	5.80	0.0	79843.6	0.066	X	0	0	0	0.1
16-Sep-13	24	3.7	0.6	0.002	1.37	33	20.0	0.069	0.060	60.27	135.600	50.000	0.173	115.263	0.900	0.700	0.003	0.01	0.21	0.45	5.80	725.0	80568.6	0.066	X	0	0	0	0.1
17-Sep-13	24	3.8	0.7	0.002	1.38	34.6	21.1	0.073	0.060	59.98	132.400	49.100	0.169	115.074	0.800	0.700	0.002	0.01	0.21	0.45	5.80	907.4	80682.6	0.066	X	0	0	0	0.1
18-Sep-13	24	3.8	0.7	0.002	1.38	34.5	20.8	0.073	0.061	59.70	147.000	53.800	0.190	115.100	0.800	0.700	0.002	0.01	0.21	0.45	5.90	794.1	80441.1	0.066	X	0	0	0	0.1
19-Sep-13	24	3.9	0.7	0.002	1.39	36	21.4	0.074	0.061	59.41	142.600	51.800	0.179	115.038	0.900	0.700	0.003	0.01	0.21	0.45	5.60	901.2	80682.9	0.067	X	0	0	0	0.1
20-Sep-13	24	5.1	0.9	0.003	1.39	36.3	21.9	0.076	0.062	59.13	136.700	50.100	0.174	114.966	0.900	0.800	0.003	0.01	0.22	0.44	5.70	562.1	80759.1	0.067	X	0	0	0	0.1
21-Sep-13	24	4.8	0.9	0.003	1.40	34	20.7	0.072	0.062	58.83	148.400	55.000	0.193	115.031	0.900	0.800	0.003	0.01	0.22	0.44	5.90	0.0	80279.1	0.067	X	0	0	0	0.2
22-Sep-13	24	4.3	0.7	0.003	1.40	36.8	20.6	0.077	0.063	58.53	151.300	51.000	0.194	115.032	1.000	0.800	0.003	0.01	0.22	0.44	5.80	0.0	80279.1	0.067	X	0	0	0	0.1
23-Sep-13	24	4.2	0.7	0.003	1.41	31.6	17.3	0.071	0.063	58.19	130.100	42.100	0.176	114.921	0.800	0.600	0.002	0.01	0.22	0.44	6.50	606.1	80885.2	0.067	X	0	0	0	0.1
24-Sep-13	24	4.1	0.7	0.003	1.41	34.2	19.8	0.072	0.063	57.90	153.000	54.600	0.194	114.965	0.700	0.600	0.002	0.01	0.22	0.44	5.70	924.7	81118.0	0.067	X	0	0	0	0.1
25-Sep-13	24	3.3	0.6	0.002	1.42	35.3	20.0	0.075	0.063	57.61	157.800	54.700	0.204	114.996	0.800	0.600	0.002	0.01	0.22	0.44	5.90	707.7	81050.1	0.067	X	0	0	0	0.1
26-Sep-13	24	4.3	0.7	0.003	1.43	36.6	20.4	0.076	0.064	57.32	140.800	46.800	0.177	114.888	0.800	0.600	0.002	0.01	0.22	0.44	5.60	794.8	81114.5	0.067	X	0	0	0	0.1
27-Sep-13	24	3.6	0.6	0.002	1.43	35.8	20.2	0.073	0.064	57.02	144.800	47.000	0.180	114.726	0.900	0.700	0.002	0.01	0.22	0.44	5.50	584.8	80889.0	0.067	X	0	0	0	0.1
28-Sep-13	24	4.3	0.7	0.003	1.44	35.3	20.4	0.073	0.064	56.72	137.900	49.300	0.174	114.722	0.800	0.700	0.002	0.01	0.22	0.44	5.70	0.0	80417.8	0.067	X	0	0	0	0.1
29-Sep-13	24	4	0.7	0.002	1.44	36.3	20.2	0.076	0.064	56.42	139.000	44.700	0.177	114.676	0.800	0.600	0.002	0.01	0.22	0.44	5.80	0.0	80417.8	0.067	X	0	0	0	0.1
30-Sep-13	24	4.8	0.8	0.003	1.45	36.1	20.8	0.076	0.064	56.15	144.500	50.700	0.185	114.714	0.800	0.700	0.002	0.01	0.22	0.44	5.80	345.4	80763.2	0.068	X	0	0	0	0.1
AVG./TOTAl	660.40	3.86	0.65	0.00	1.39	30.46	17.70	0.064	0.06	60.73	150.44	48.22	0.17	115.51	0.79	0.62	0.002	0.22	30	30	30	30	80656.6	0.067					

	SEPT	YTD
TOTAL TONS NH3	0.23	1.32
TOTAL TONS NOX	6.29	50.43
TOTAL TONS CO	17.09	99.15
TOTAL TONS SO2	0.22	0.77
HOURS ON LINE	660	3540.17

EMISSION LIMITS

Pollutant	PPMV	#/MMBTU	Tons	Averaging Period	
SO2		0.10		3 Hr Arithmatic	
			2.90	30 Day Rolling	
CO		0.20		24 Hr Arithmatic	0 .30 - Startup & Shutdown & Load Swings
NOx		0.175		30 Day rolling	
NH3	10			3 Hr Arithmatic	

Excess Emission Deviation Summary Report for PM, NO_X, CO, SO2, NH_3 and Opacity

(EPA only; reports previously submitted to DEP in accordance with PTP Operating Permit).

Summary:

1) There were no NOx, SO2 or CO excess emission deviation events for the reported quarter.

2) There were 2 NH3 & 8 Opacity excess emission deviation events for the reported quarter.

SOURCE OPERATION REPORT BY QUARTER AND MONTH

Period	Unit Operation in hours
Quarter	2014
July	639
August	715
September	660

<u>CEMS AVAILABILITY REPORT</u>

Daily, Monthly, & Quarterly CEMS Uptime Calculations

Availability = 100% - % Downtime

{% Downtime = CEMS Downtime/GT Uptime * 100}

Availability Limits: - Daily 75 %; Monthly 75 %; Quarterly 90%

<u>There were no monthly, or quarterly CEMS uptime deviations.</u>

<u>There were no CEMS downtime events on Opacity, CO, NOx, NH3, SO2 or O2.</u>

Failed Daily Calibration Drift Report for NOx, CO, NH3, Opacity, SO2 and O2

There were no 40 CFR Part 60 failed daily calibration drift events on CO, NOx, NH3, SO2, Opacity and O2 CEMS.

Pinetree Power Fitchburg - Unit 1 CEMS Cylinder Gas Audit Report

Test Date:	9/27/2013	9/30/2013	Tester(s):	Timothy Haley

Parameter:	O2		
Range:	0-25%		
Gas Range	Bottle Gas Value	Bottle #	Expiration Date
Gas 1: Low	4.939	CC351214	8/29/2020
Gas 2: Mid	9.964	CC119402	8/21/2020
Test Results			
Time	Gas 1: Low	Gas 2: Mid	
8:16	4.400		
8:22		9.400	
8:29	4.440		
8:37		9.600	
8:43	4.700		
8:50		9.700	Limits
Average:	4.513	9.567	CGA
RA %:	8.6%	4.0%	15.0 %
Abs Diff (%)	0.4%	0.4%	5.0 %

Parameter	CO		
Ranges	0-500 ppm		
Gas Range	Bottle Gas Value	Bottle #	Expiration Date
Gas 1: Low	127.300	CC320881	9/7/2020
Gas 2: Mid	276.100	CC414158	6/22/2021
Test Results			
Time	Gas 1: Low	Gas 2: Mid	
9:14	130.060		
9:25		272.200	
9:37	131.120		
9:48		277.100	
10:00	130.920		
10:09		278.100	Limits
Average:	130.700	275.800	CGA
RA %:	2.7%	0.1%	15.0 %
Abs Diff (ppm)	3.4	0.3	5.0 ppm

Parameter	Nox		
Ranges	0-250 ppm		
Gas Range	Bottle Gas Value	Bottle #	Expiration Date
Gas 1: Low	61.030	CC320881	9/7/2020
Gas 2: Mid	138.800	CC414158	6/22/2021
Test Results			
Time	Gas 1: Low	Gas 2: Mid	
9:14	60.480		
9:25		137.280	
9:37	61.240		
9:48		139.020	
10:00	61.620		
10:09		139.080	Limits
Average:	61.113	138.460	CGA
RA %:	0.1%	-0.2%	15.0 %
Abs Diff (ppm)	0.1	0.3	5.0 ppm

Parameter	SO2		
Ranges	0-250 ppm		
Gas Range	Bottle Gas Value	Bottle #	Expiration Date
Gas 1: Low	59.500	CC320881	9/7/2020
Gas 2: Mid	138.100	CC414158	6/22/2021
Test Results			
Time	Gas 1: Low	Gas 2: Mid	
9:14	60.620		
9:25		139.580	
9:37	61.040		
9:48		143.540	
10:00	61.380		
10:09		143.840	Limits
Average:	61.013	142.320	CGA
RA:	2.5%	3.1%	15.0 %
Abs Diff (ppm)	1.5	4.2	5.0 ppm

Enter data in the blue shaded areas.
Enter data on this sheet only.

Note: Must pass one of the two passing parameters.
Note: Each test run can pass either of the two passing parameter

Parameter	NH3		
Ranges	0-50 ppm		
Gas Range	Bottle Gas Value	Bottle #	Expiration Date
Gas 1: Low	12.460	CC411700	N/A
Gas 2: Mid	27.140	CC196211	N/A
Test Results			
Time	Gas 1: Low	Gas 2: Mid	
13:29	13.100		
13:17		25.960	
13:49	13.480		
13:53		25.940	
14:07	12.840		
14:20		26.140	Limits
Average:	13.140	26.013	CGA
RA:	5.5%	4.2%	15.0 %
Abs Diff (ppm)	0.7	1.1	5.0 ppm

PINETREE POWER FITCHBURG | September 30, 2013

OPACITY AUDIT CALCULATION SHEET | DURAG DR-290-AW

run #	filter value	reading	difference	d^2
1	0.000	0.000	0.000	0.000
17	0.000	0.100	0.100	0.010
		SUM1=	0.100	
			SUM2=	0.010
	ARITH MEAN DIFFERENCE			0.050
	CONFIDENCE COEFFICIENT			0.028
	CALIBRATION ERROR			**0.078**

run #	filter value	reading	difference	d^2
2	21.800	21.775	-0.025	0.001
6	21.800	21.800	0.000	0.000
10	21.800	21.800	0.000	0.000
13	21.800	21.800	0.000	0.000
16	21.800	21.800	0.000	0.000
		SUM1=	-0.025	
			SUM2=	0.001
	ARITH MEAN DIFFERENCE			-0.005
	CONFIDENCE COEFFICIENT			0.014
	CALIBRATION ERROR			**0.009**

run #	filter value	reading	difference	d^2
4	48.700	48.700	0.000	0.000
7	48.700	48.750	0.050	0.002
9	48.700	48.700	0.000	0.000
12	48.700	48.700	0.000	0.000
14	48.700	48.750	0.050	0.002
		SUM1=	0.100	
			SUM2=	0.005
	ARITH MEAN DIFFERENCE			0.020
	CONFIDENCE COEFFICIENT			0.034
	CALIBRATION ERROR			**0.054**

run #	filter value	reading	difference	d^2
3	74.800	74.900	0.100	0.010
5	74.800	75.000	0.200	0.040
8	74.800	74.900	0.100	0.010
11	74.800	74.950	0.150	0.023
15	74.800	75.200	0.400	0.160
		SUM1=	0.950	
			SUM2=	0.243
	ARITH MEAN DIFFERENCE			0.190
	CONFIDENCE COEFFICIENT			0.155
	CALIBRATION ERROR			**0.345**

CONFIDENCE COEFFICIENT= $0.2776\sqrt{5[SUM1]-[SUM2]^2}$

ARITHMATIC MEAN DIFF= $\frac{SUM1}{5}$

OPACITY AUDIT FIELD DATA SHEET

OPERATOR : T.R.Haley DATE : 9/30/2013

CITY, STATE : Westminster , MA. OPLR :

STACK # : #1 DURAG DR-290-AW S/N : 423981

FILTER DATA

LOW FILTER S/N : VN64 Exp. 7/30/2014 CAL OPACITY : 21.8

MID FILTER S/N : VN65 Exp. 7/30/2014 CAL OPACITY : 48.7

HIGH FILTER S/N : VN66 Exp. 7/30/2014 CAL OPACITY : 74.8

		FILTER VALUE		INSTRUMENT READING R1	R2	R3	R4
1	ZERO	0	0.00	0	0	0	0
2	LOW	21.8	21.78	21.8	21.8	21.7	21.8
3	HIGH	74.8	74.90	74.9	74.9	74.9	74.9
4	MID	48.7	48.70	48.7	48.7	48.7	48.7
5	HIGH	74.8	75.00	75	75	75	75
6	LOW	21.8	21.80	21.8	21.8	21.8	21.8
7	MID	48.7	48.75	48.7	48.8	48.7	48.8
8	HIGH	74.8	74.90	74.9	74.9	74.9	74.9
9	MID	48.7	48.70	48.7	48.7	48.7	48.7
10	LOW	21.8	21.80	21.8	21.8	21.8	21.8
11	HIGH	74.8	74.95	74.9	75	75	74.9
12	MID	48.7	48.70	48.7	48.7	48.7	48.7
13	LOW	21.8	21.80	21.8	21.8	21.8	21.8
14	MID	48.7	48.75	48.8	48.7	48.7	48.8
15	HIGH	74.8	75.20	75.2	75.2	75.2	75.2
16	LOW	21.8	21.80	21.8	21.8	21.8	21.8
17	ZERO	0	0.10	0.1	0.1	0.1	0.1

OPACITY RESPONSE TIME TEST DATA SHEET

SITE : PINETREE POWER - FITCHBURG DATE : 9/30/2013

OPERATOR : T.R.Haley

MODEL : DURAG DR-290-AW S/N: 423981

HIGH FILTER S/N : VN66 OPACITY : 74.7%

UPSCALE :

1	10	SECONDS
2	9.5	SECONDS
3	9.8	SECONDS
4	9	SECONDS
5	9.5	SECONDS

DOWNSCALE :

1	9	SECONDS
2	10	SECONDS
3	9	SECONDS
4	9.5	SECONDS
5	10	SECONDS

AVERAGE :

10 READINGS 9.53

TIME REQUIRED FOR INSTRUMENT TO REACH 95% OF INDICATED FILTER VALUE