EMISSIONS TEST REPORT

POLK POWER STATION
FACILITY ID NUMBER: 1050233

IGCC – UNIT 1, EMISSIONS UNIT ID -001

NITROGEN OXIDES, SULFUR DIOXIDE, SULFURIC ACID MIST, CARBON MONOXIDE, AND VISIBLE EMISSIONS

SULFURIC ACID PLANT, EMISSIONS UNIT ID -004

SULFUR DIOXIDE, SULFURIC ACID MIST AND VISIBLE EMISSIONS

January 18, 2007

RECEIVED
MAR 05 2007
BUREAU OF AIR REGULATION

Prepared For:
Tampa Electric Company
Polk Power Station
P.O. Box 111
Tampa, Florida 33601-0111

Prepared By:
Tampa Electric Company
Environmental, Health and Safety
Environmental Services
Air Services Group

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Environmental Services
Air Services Group
5010 Causeway Boulevard
Tampa, Florida 33619- 6130

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March 2, 2007

Mr. J. Koerner
Florida Department of Environmental Protection
111 South Magnolia Drive, Suite 4
Tallahassee, FL 32301

Via FedEx
Airbill No. 7906 8456 7136

Mr. Christopher Bradley
Southwest District
Florida Department of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637

Via FedEx
Airbill No. 7929 4329 0321

Re: Tampa Electric Company (TEC)
Polk Power Station
Combustion Turbine Unit 1 and Sulfuric Acid Plant (SAP)
85% Petroleum-Coke Test Burn – Trial #2
Permit No. 1050233-019-AC
AIRS #1050233, E.U. ID #001, #004

Dear Mr. J. Koerner and Mr. C. Bradley:

In accordance with Condition 11 of Construction Air Permit No. 1050233-019-AC TEC is required to conduct emissions tests on the combustion turbine Unit 1 (E.U. 001) and the sulfuric acid plant (E.U. 004) for each of the trial burn test scenarios. TEC conducted Trial 2 test burn, gasifying and firing an approximate 85% petroleum coke and 15% coal blend, on January 18, 2007.

Per Condition 15, TEC shall prepare and submit a stack test report to the Compliance Authority within 45 days of completing the last emissions test required for each test scenario. The test demonstrated compliance with all applicable emission standards of the permit.

Enclosed please find the emissions compliance report for tests performed on January 18, 2007.

If you have any questions, please contact me or Joshua Ellwein at (813) 228-4433.

Sincerely,

Byron T. Burrows, P.E., BCEE
Manager - Air Programs
Environmental, Health & Safety

ENVP/Admin/STAKTEST/2007/PPS111 PPS Petcoke Trial 2 Test Burn Stack Test

Enclosure

EMISSIONS TEST REPORT

POLK POWER STATION
FACILITY ID NUMBER: 1050233

IGCC – UNIT 1, EMISSIONS UNIT ID -001

NITROGEN OXIDES, SULFUR DIOXIDE, SULFURIC ACID MIST, CARBON MONOXIDE, AND VISIBLE EMISSIONS

SULFURIC ACID PLANT, EMISSIONS UNIT ID -004

SULFUR DIOXIDE, SULFURIC ACID MIST AND VISIBLE EMISSIONS

January 18, 2007

Prepared For:
Tampa Electric Company
Polk Power Station
P.O. Box 111
Tampa, Florida 33601-0111

Prepared By:
Tampa Electric Company
Environmental, Health and Safety
Environmental Services
Air Services Group

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Environmental Services
Air Services Group
5010 Causeway Boulevard
Tampa, Florida 33619- 6130

REPORT CERTIFICATION

The sampling and subsequent data entry/reduction detailed in this report was conducted at my direction, and I hereby certify that this test report is authentic and accurate to the best of my knowledge.

Signature: _____

Charles R. Dufeny
Environmental Technician
Test Team Lead
Air Services Group
Environmental Health & Safety
Tampa Electric Company

I have reviewed the test performance, associated quality assurance activities, the resultant calculations, and the contents of this report, and certify that all project quality objectives have been met. This report is approved for submittal.

Signature: _____ 22-FEB-2007

Raymond A. McDarby, Jr.
Senior Environmental Technician
Quality Assurance/Quality Control Specialist
Air Services Group
Environmental Health & Safety
Tampa Electric Company

I have reviewed the testing details and results submitted in this report, and hereby certify that this test report is authentic and accurate to the best of my knowledge.

Signature: _____

David A. Smith
Coordinator – Air Services Group
Environmental Health & Safety
Tampa Electric Company

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APPENDICIES

1.0 INTRODUCTION

On January 18, 2007, Tampa Electric Company's Air Services Group (ASG), and Trigon Engineering Consultants performed relative concurrent emissions testing on Polk Power Station's Integrated Gasification and Combined Cycle (IGCC) Combustion Turbine (Unit 1, E.U. 001), and it's attendant Sulfuric Acid Plant (SAP, E.U. 004). Testing was conducted as part of the project specified in Florida Department of Environmental Protection (FDEP) Draft Air Permit No. 1050233-019-AC. The permitted emissions limits and test methodologies are consistent with the requirements of Title V Permit No. 1050233-016-AV. This specific test was conducted with a blended fuel content of 85% petroleum coke/15% coal gasification. For the purposes of Permit No. 1050233-019-AC this test establishes emissions for test burn scenario number 2 for Nitrogen Oxides (NO_x, IGCC only), Sulfur Dioxide (SO_2, SAP and IGCC), Sulfuric Acid Mist (H_2SO_4, SAP and IGCC), Carbon Monoxide (CO, IGCC), and Visible Emissions (SAP and IGCC). All testing was performed using approved United States Environmental Protection Agency (USEPA) Reference Methods. SO_2 and NO_x for E.U. 001 were provided by the installed, certified Continuous Emissions Monitoring (CEM) system.

2.0 DISCUSSION OF RESULTS

Executive Summary
Tampa Electric Company
Polk Power Station
IGCC Combustion Turbine Unit 1 and Sulfuric Acid Plant
Emission Unit -001 and -004
Firing Petroleum Coke/Coal Gasification Syngas Fuel

IGCC Combustion Turbine		
Compliance Parameter	**Test Result**	**FDEP Permit Limit**
NO_X, ppmvd @ 15% O_2	13	25
NO_X, lbs/hr	111.40	220.25
SO_2, lb/mmBtu	0.12	0.17
SO_2, lbs/hr	193	357
H_2SO_4, lbs/hr	28	55
CO, ppmvd	2	25
CO, lbs/hr	13	98
VE, % Opacity	0	10
Calculated Heat Input, mmBtu/hr	1696	--
Permitted Heat Input, mmBtu/hr[1]	1735	--
Unit Capacity Factor, % of Permit[2]	98%	90 – 100 %
Sulfuric Acid Plant		
SO_2, lbs/ton of acid produced	Three	Four
H_2SO_4, lbs/ton of acid produced	0.06	0.15
VE, % Opacity	0	10

[1] Permitted Heat Input Corrected to Inlet Vane Temperature.
[2] Calculated Heat Input divided by Permitted Heat Input, result times 100.

IGCC Combustion Turbine

Nitrogen Oxides (NO_X)

During the Sulfuric Acid Mist test time period (13:49 to 18:03) on the IGCC, the average NO_X concentration was 13 ppmvd @ 15% O_2, and the average emission rate was 111.40 lbs/hr. The permitted concentration and emission rate is 25 ppmvd @ 15% O2, and 220.25 lbs/hr.

Sulfur Dioxide SO_2

During the Sulfuric Acid Mist test time period (13:49 to 18:03) on the IGCC, the average SO2 concentration was 0.12 lb/mmBtu, and the average emission rate

was 193 lbs/hr. The permitted concentration and emission rate is 0.17 lb/mmBtu and 357 lbs/hr.

Sulfuric Acid Mist (H_2SO_4)

The Sulfuric Acid Mist test was conducted from 13:49 to 18:03. The average H2SO4 emission rate for the test period was 28 pounds per hour. The permitted emission rate is 55 lbs/hr.

Carbon Monoxide (CO)

During the Sulfuric Acid Mist test time period (13:49 to 18:03) on the IGCC, the average CO concentration was 2 ppmvd, and the average emission rate was 13 lbs/hr. The permitted concentration and emission rate is 25 ppmvd, and 98 lbs/hr.

Visible Emissions

The Visible Emissions test was conducted from 15:30 through 16:00. The average opacity from the IGCC was 0%. The permitted opacity from this source is 10%.

Heat Input

During the test the IGCC was operated at an average heat input of 1696 mmBtu/hr. The FDEP permitted heat input is 1755 mmBtu/hr, at an ambient temperature of 59° (corrected to 1735 mmBtu/hr based on an average inlet vane temperature of 76°F, and the manufacturer's heat input correction curve for this unit). The calculated capacity factor during the test was 98% of the FDEP permitted heat input.

Sulfuric Acid Plant

Sulfur Dioxide SO_2

During the Sulfuric Acid Mist test time period (13:46 to 17:46) on the SAP, the average SO2 emission rate was three pounds per ton of 100% acid produced. The permitted emission rate is four pounds per ton of 100 percent acid produced.

Sulfuric Acid Mist (H_2SO_4)

The Sulfuric Acid Mist test was conducted from 13:46 to 17:46. The average H2SO4 emission rate for the test period was 0.06pound per ton of 100 percent

acid produced. The permitted emission rate is 0.15 pound per ton of 100 percent acid produced.

Visible Emissions

The Visible Emissions test was conducted from 15:30 through 16:00. The average opacity from the Sulfuric Acid Plant was 0%. The permitted opacity from this source is 10%.

3.0 SOURCE DESCRIPTION

The Polk Power Station facility is located at 9995 State Road 37 South, Mulberry, Polk County, Florida. The UTM Coordinates are, Zone 17, 402.45 km East and 3067.35 km North. Title V Air Operation Permit No. 1050233-016-AV regulates the emissions from this facility.

The Sulfuric Acid Plant at this facility takes the sulfur gas stream from the solid fuel gasification plant's hot or cold gas cleanup systems and converts it to sulfuric acid using a double contact process. The sulfuric acid plant has a 15 MMBtu/hr, propane fired, H_2S to SO_2 conversion furnace, and a 9 MMBtu/hr, propane fired non-contact SO_2 to SO_3 converter pre-heater, which vents to the atmosphere through a 198-foot exhaust stack. The exhaust stack is designed to maintain ultra low flow velocities to prevent sulfuric acid liquid from becoming entrained in the exhaust stream, elimninating the emissions of acid droplets. A diagram of the exhaust stack is included as Figure 1 in this report.

Unit No. 1 is an Integrated Gasification Combined Cycle Combustion Turbine generating unit, with a net capacity of 192 MW when fired with Syngas fuel. The source sampling location consists of a circular stack 19 feet in diameter with four sample ports located 90 degrees apart on the stack circumference. A diagram of the stack sampling location is included as Figure 2 in this report.

4.0 FUEL INFORMATION

Blending Procedure

Coal and petroleum coke for Polk Power Station are blended at Tampa Electric's Big Bend Power Station and delivered by truck to the Polk site. Blending is accomplished as follows. Polk's blend coal is stored in a dedicated pile at Big Bend Power Station. As each petroleum coke barge is received and unloaded using a conveyor system with a calibrated scale, coal is reclaimed from the coal pile, weighed and blended with the petroleum coke on the unloading conveyor. The blended fuel is stacked in a separate dedicated blended fuel pile for Polk. The sulfur content and other parameters of the blended fuel are measured using ASTM methods on each barge of petroleum coke and coal (individually) and calculated based on their ratio in the blended fuel.

Blended Fuel

The fuel consumed during this stack test was from a blend of the petroleum coke barges # 12354 and # 12361, and coal from barge #SL-06-255. The coal, both petroleum coke analysis, and the calculated composition of the final blend are shown in Table 2. The tonnages of both the petroleum coke barges and the coal from the Big Bend certified scales used in the blending operation are also included in Table 2.

01/18/07 FUEL (As Received Basis)	Units	Blend Coal	Pet Coke Barge #12534	Pet Coke Barge #12361	Blended Fuel
Quantity	Tons	2670	9383	4845	16898
Total Moisture	%	13.95	5.95	8.15	7.84
Ash	%	11.85	0.38	1.17	2.42
Carbon	%	58.76	82.92	79.06	78.00
Hydrogen	%	4.24	3.34	3.61	3.56
Nitrogen	%	1.23	2.02	1.68	1.80
Sulfur	%	0.66	4.15	4.33	3.65
Chlorine as Cl	%	0.03	0.01	0.05	0.02
Oxygen (By Difference)	%	9.28	1.23	1.96	2.71
Volatiles	%	32.66	9.09	11.91	13.62
Fixed Carbon	%	41.54	84.58	78.77	76.11
HHV	BTU/Lb	10420	14306	13747	13532

Table 2 Blended Fuel

5.0 TESTING PROCEDURES

Nitrogen Oxides (NOx) and Sulfur Dioxide (SO2) data for the IGCC for the test period was supplied by the installed, certified CEM system on that unit.

Sulfur Dioxide (SO2) data for the SAP was derived from 3 United States Environmental Protection Agency (USEPA) Reference Method 6C – "DETERMINATION OF SULFUR DIOXIDE EMISSIONS FROM STATIONARY SOURCES (INSTRUMENTAL ANALYZER PROCEDURE)" test runs.

Sulfuric Acid Mist (H2SO4) data for the IGCC, and the SAP were derived from 3 USEPA Reference Method 8 – "DETERMINATION OF SULFURIC ACID MIST AND SULFUR DIOXIDE EMISSIONS FROM STATIONARY SOURCES" test runs.

Carbon Monoxide (CO) data for the IGCC was derived from 3 USEPA Reference Method 10 – "DETERMINATION OF CARBON MONOXIDE EMISSIONS FROM STATIONARY SOURCES (INSTRUMENTAL ANALYZER PROCEDURE)" test runs.

Visible Emissions data for the IGCC and SAP were derived from 30-minute visible emissions observations using USEPA Reference Method 9 – "VISUAL DETERMINATION OF THE OPACITY OF EMISSIONS FROM STATIONARY SOURCES" test runs. These tests were conducted concurrently.

6.0 TABULATED RESULTS

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POLK POWER STATION - INTEGRATED GASIFICATION COMBINED CYCLE
NITROGEN OXIDES FROM CEMS DATA SUMMARY

IGCC COMBUSTION TURBINE - UNIT 1
January 18, 2007

Test Period Start Time: 13:49 Test Period Stop Time: 18:03

CEMS Data

Average NO_X, ppmvw for Test Period:	18.91 ppmvw
Average NO_X, ppmvd @ 15% O_2 for Test Period:	12.67 ppmvd@ 15% O_2
Average Stack Flow for Test Period:	822.20 kscfm

Calculated Data

NO_X, lbs/hr:	111.40 lbs/hr

NO_X in lbs/hr is calculated as:
NO_X, ppmvw x 1.194E-07 x Stack Flow, kscfm x 1,000/k x 60 min/hr

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POLK POWER STATION - INTEGRATED GASIFICATION COMBINED CYCLE
SULFUR DIOXIDE FROM CEMS DATA SUMMARY

IGCC COMBUSTION TURBINE - UNIT 1
January 18, 2007

Test Period Start Time: 13:49 Test Period Stop Time: 18:03

CEMS Data

Average SO_2, ppmvw for Test Period:	36.79 ppmvw
Average CO_2, % volume for Test Period:	8.60 % volume

Calculated Data

Heat Input:	1673 mmBtu/hr
SO_2, lb/mmBtu	0.12 lb/mmBtu
SO_2, lbs/hr:	192.72 lbs/hr

SO_2 in lb/mmBtu is calculated as:

SO_2, ppmvw x 1.660E-07 x Fc x (100/CO_2, %)

Where:

Fc= 2310 scf/mmBtu

SO_2 in lbs/hr is calculated as:

SO_2, lb/mmBtu x Heat Input, mmBtu/hr

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POLK POWER STATION - INTEGRATED GASIFICATION COMBINED CYCLE
SULFURIC ACID MIST DATA SUMMARY

IGCC COMBUSTION TURBINE - UNIT 1
January 18, 2007

	Run #1	Run #2	Run #3	Average
Gas Flow Rates				
Q_s, acfm:	1369255.2	1338182.3	1357841.6	1355093.03
$Q_{s(std)}$, dscfm:	902458.2	882943.1	897010.4	894137.24
Sampled Volume, $V_{m(std)}$, dscf:	42.24	42.48	42.29	42.338
Stack Moisture, B_{ws} x 100, %:	4.19	3.90	3.84	3.977
Isokinetic Sampling Rate, I, %:	100.4	100.2	101.1	100.57
C_{H2SO4}, lb/dscf:	4.491E-07	5.581E-07	5.731E-07	5.268E-07
$Q_{s(std)}$, dscfm:	902458.2	882943.1	897010.4	894137.2
E_{H2SO4}, lbs/hr:	24.318	29.567	30.843	28.260

Emission Rate Calculated as C_{H2SO4} x Qs(std) x 60 minutes/hr

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POLK POWER STATION - INTEGRATED GASIFICATION COMBINED CYCLE CARBON MONOXIDE DATA SUMMARY

IGCC COMBUSTION TURBINE - UNIT 1
January 18, 2007

Run	Test Times		CO	O2	CO	CO
Number	Start	Stop	ppmvd	% volume	ppmvd@15% O2	lbs/hr
1	13:49	14:49	3.508	11.746	2.261	12.586
2	15:28	16:28	3.519	11.777	2.276	12.625
3	16:46	17:46	3.862	11.763	2.494	13.856
				Averages :	2.3435	13.0221

CO, ppmvd @ 15% O2 is calculated as:

CO, ppmvd x (5.9 / (20.9 - O2, % volume))

CO, lbs/hr is calculated as:

CO, ppmvd x Cf x Stack Flow x 1000/k x 60 minutes/hr

Where:

Cf = 7.272E-08

Stack Flow = 822.205 kscfm

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POLK POWER STATION - INTEGRATED GASIFICATION COMBINED CYCLE HEAT INPUT CALCULATION

IGCC COMBUSTION TURBINE - UNIT 1
January 18, 2007

Average fuel flow:	6822.07	Kcfh
Mole weight correction to meter cal:	0.9883	mole weight correction factor
Corrected fuel flow:[1]	6742.2518	Kcfh, corrected for density
Average moisture:	0.0464357	% H_20 added to fuel
Corrected fuel flow:[2]	6505.2826	Kscfh, corrected for moisture
Gross heating value of fuel (HHV):	260.67	Btu/scf
Heat Input:	1696	mmBtu/hr

Average fuel flow from Plant Information Data Base.
Mole weight correction factor to meter calibration is taken from ratio of syngas mole weight to calibration gas mole weight.
[1]Average fuel flow times mole weight correction factor.
[2]Corrected fuel flow times (1 - (Average moisture / 100)).
Gross Heating value of fuel (HHV) is from fuel analysis.
Heat input is (HHV x Corrected fuel flow) / 1000.

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POLK POWER STATION
SULFUR DIOXIDE CALCULATIONS

SULFURIC ACID PLANT
January 18, 2007

Data Calculated from Plant Operational Measurements:

	Run 1	Run 2	Run 3	
Gallons of Acid Produced During The Test Period, P_{gal} =	1238.513	1317.566	1265.052	gallons
Density of Water, D =	8.345	8.345	8.345	lbs/gallon
Specific Gravity of Sulfuric Acid, SG =	1.84	1.84	1.84	dimensonless
Average Concentration of Acid Produced, C_{acid} =	93.801	93.786	93.798	%
Tons of Acid Produced During The Test Period, P_{st} =	8.919	9.487	9.110	short tons

Where:

Tons of acid produced = (P_{gal} x D x SG x (C_{acid})) / 2000 lbs/ton

Data Calculated from Stack Measurements:

Volumeteric Flow Rate Through Stack , Q_{std} =	1041010.5	1044157.8	1099216.3	dscf/hr
Sulfur Dioxide Concentration in Stack, C_{SO2} =	157.75	160.82	153.78	ppmvd
Sulfur Dioxide Concentration in Stack, C_{SO2} =	2.619E-05	2.670E-05	2.553E-05	lbs/scf
Sulfur Dioxide Emission Rate, E_{SO2} =	3.06	2.94	3.08	lbs/ton of acid
Average Sulfur Dioxide Emission Rate, E_{SO2} =			3.02	lbs/ton of acid

Where:

C_{SO2} lbs/scf = C_{SO2}, ppm x 1.66E-07

E_{SO2} = (C_{SO2}, lbs/scf x Q_{std}) / tons of acid produced

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Air Services Group

40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Summary

Customer: Polk Power Station
Facility: Acid Plant
Sampling Location: Stack
Operating Conditions: Compliance Load
Test Date: January 18, 2007

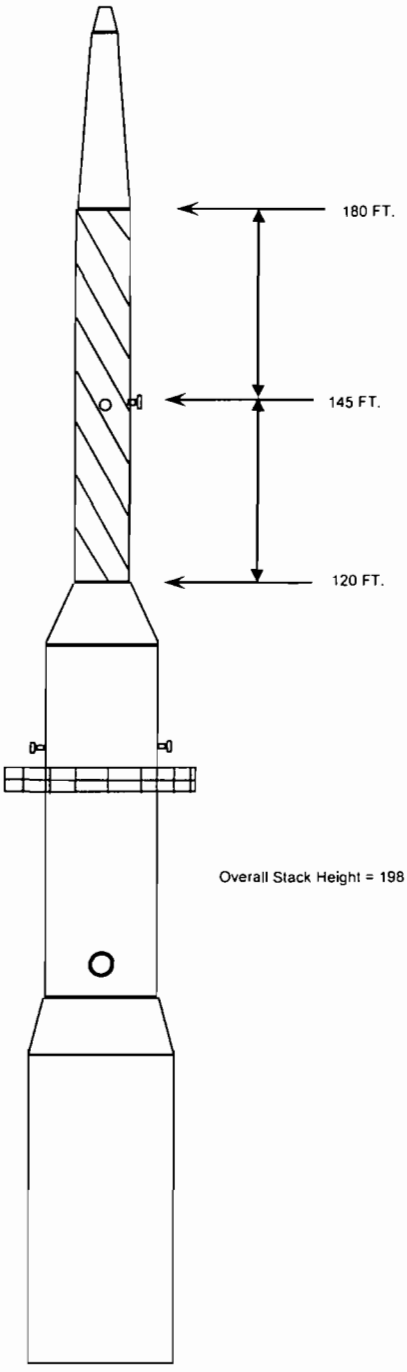
	Run #1	Run #2	Run #3	Average
Gas Flow Rates				
Q_s, acfm:	18394.5	18490.3	18733.4	18539.4
$Q_{s(std)}$, dscfm:	15807.7	15896.6	16032.0	15912.1
Sampled Volume, $V_{m(std)}$, dscf:	47.06	47.54	48.07	47.55
Stack Moisture, B_{ws} x 100, %:	0.00	0.05	0.79	0.28
Isokinetic Sampling Rate, I, %:	100.9	101.3	101.6	101.27
C_{H2SO4}, lbs/dscf:	3.6953E-07	5.0995E-07	8.44211E-07	5.75E-07
Tons of Acid Produced:	11.09	10.26	9.90	10.417
E lbs H_2SO_4/ton of 100% acid:	0.034	0.051	0.087	0.0572

E_{H2SO4}, lbs/ton of acid is calculated as:

(C_{H2SO4}, lb/dscf x $Q_{s(std)}$, dscfm x 60 minutes/hr) / Tons of Acid Produced

7.0 FIGURES

POLK POWER STATION
UNIT NO.1 ACID PLANT TEST LOCATION
SAMPLING TRAVERSE POINTS



Overall Stack Height = 198 feet

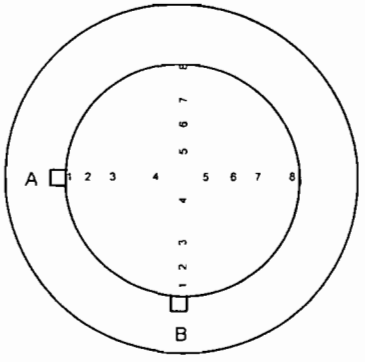
TRAVERSE POINTS	% OF STACK DIAMETER	IN. FROM STACK WALL
1	3.2 %	2.30
2	10.5 %	7.56
3	19.4 %	13.97
4	32.3 %	23.26
5	67.7 %	48.74
6	80.6 %	58.03
7	89.5 %	64.44
8	96.8 %	69.70

STACK DIAMETERS DOWNSTREAM FROM DISTURBANCE = 4.2

STACK DIAMETERS UPSTREAM FROM DISTURBANCE = 5.8

STACK DIAMETER = 6.0 FT. ID.
STACK AREA = 28.274 SQ. FT.

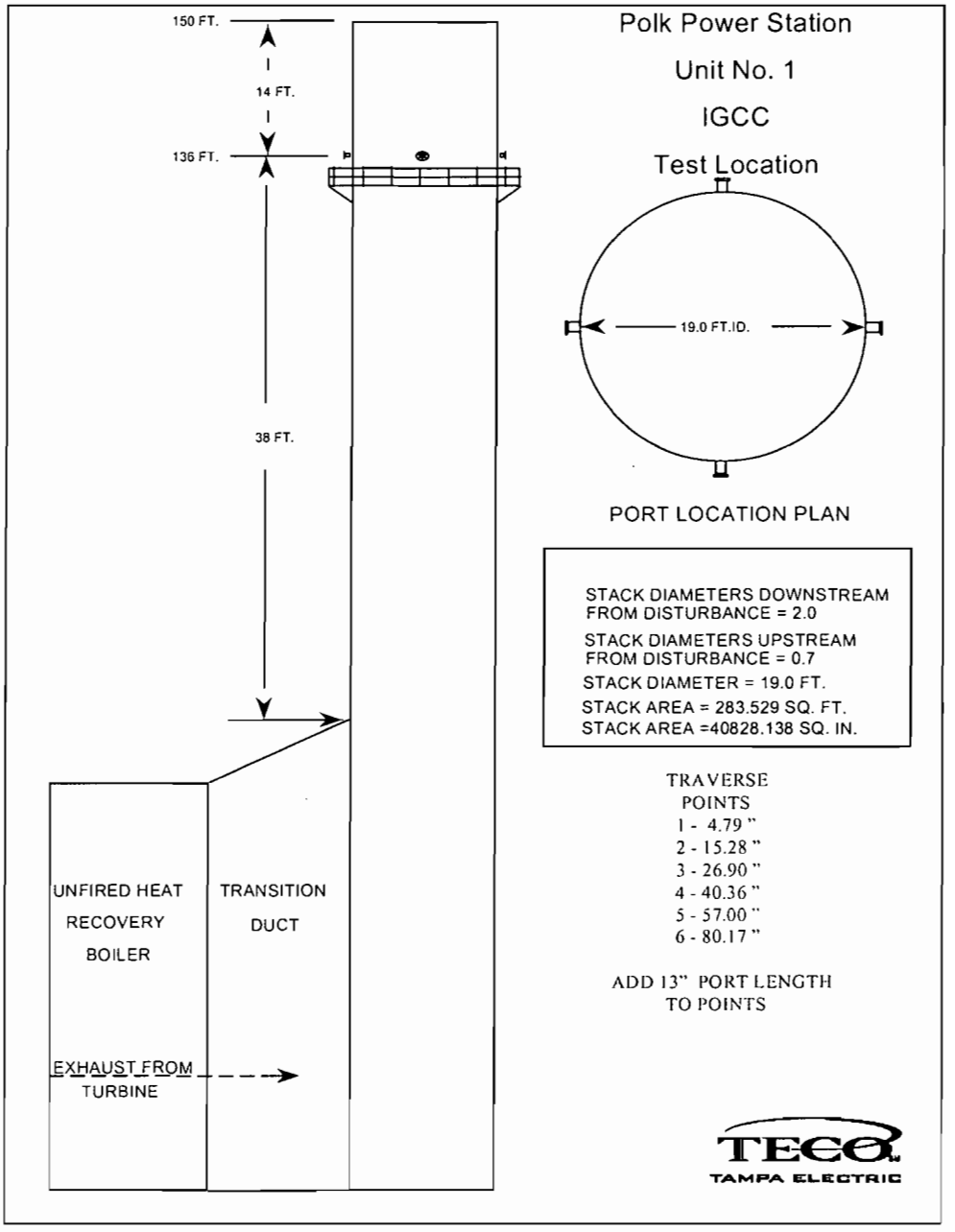
PORT LENGTH = 5.0 IN.



PORT LOCATION PLAN

Source is Monsanto Enviro-Chem Drawing no. 511-150 v. 2

Figure 1


150 FT.
14 FT.
136 FT.
38 FT.
UNFIRED HEAT RECOVERY BOILER
TRANSITION DUCT
EXHAUST FROM TURBINE
Polk Power Station
Unit No. 1
IGCC
Test Location
19.0 FT.ID.
PORT LOCATION PLAN
STACK DIAMETERS DOWNSTREAM FROM DISTURBANCE = 2.0
STACK DIAMETERS UPSTREAM FROM DISTURBANCE = 0.7
STACK DIAMETER = 19.0 FT.
STACK AREA = 283.529 SQ. FT.
STACK AREA =40828.138 SQ. IN.
TRAVERSE POINTS
1 - 4.79 "
2 - 15.28 "
3 - 26.90 "
4 - 40.36 "
5 - 57.00 "
6 - 80.17 "
ADD 13" PORT LENGTH TO POINTS
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APPENDIX A

IGCC CEMS DATA
SO_2, NO_X, CO_2, STACK FLOW

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
01/18/2007 13:49	36.2	19	12.63	817.3	8.6
01/18/2007 13:50	35.98	19.1	12.73	803.3	8.6
01/18/2007 13:51	36.45	19	12.774	808.1	8.6
01/18/2007 13:52	36.73	18.1	12.171	809.1	8.6
01/18/2007 13:53	36.86	18	11.951	809.5	8.6
01/18/2007 13:54	37.35	18.5	12.307	822.8	8.6
01/18/2007 13:55	38.21	18.8	12.552	839.7	8.6
01/18/2007 13:56	39.14	18.6	12.405	831	8.6
01/18/2007 13:57	39.69	17.6	11.795	805.5	8.6
01/18/2007 13:58	37.4	17.5	11.532	805.2	8.6
01/18/2007 13:59	36.03	18.1	12.073	811.5	8.6
01/18/2007 14:00	37.42	18	11.984	804	8.6
01/18/2007 14:01	38.3	18.2	12.151	826.4	8.6
01/18/2007 14:02	38.55	18.1	12.084	838.6	8.6
01/18/2007 14:03	39.38	18	12.04	813.4	8.6
01/18/2007 14:04	40.35	18.5	12.284	830.3	8.6
01/18/2007 14:05	40.65	18.9	12.53	807.4	8.6
01/18/2007 14:06	40.5	19.2	12.827	815.1	8.6
01/18/2007 14:07	38.23	17.5	11.906	802.5	8.6
01/18/2007 14:08	36.02	18.4	12.129	811	8.6
01/18/2007 14:09	36.84	18.7	12.488	821	8.6
01/18/2007 14:10	38.07	19.1	12.696	829.5	8.6
01/18/2007 14:11	39.47	19	12.696	830.2	8.6
01/18/2007 14:12	39.65	18.4	12.385	815.8	8.6
01/18/2007 14:13	38.58	18.2	12.085	827.7	8.6
01/18/2007 14:14	37.08	18.6	12.419	819.6	8.6
01/18/2007 14:15	37.19	19.2	12.84	826.3	8.6
01/18/2007 14:16	38.55	19.4	12.921	800.6	8.6
01/18/2007 14:17	38.6	18.4	12.45	816	8.6
01/18/2007 14:18	36.97	18	11.94	805.6	8.6
01/18/2007 14:19	37.7	18.8	12.429	810.6	8.6
01/18/2007 14:20	38.54	19.1	12.754	833.1	8.6
01/18/2007 14:21	38.98	19.3	12.994	791.4	8.6
01/18/2007 14:22	38.62	19	12.84	808.3	8.6
01/18/2007 14:23	37.95	19.3	12.891	818.6	8.6
01/18/2007 14:24	37.6	19.2	12.906	815.8	8.6
01/18/2007 14:25	38.37	19.4	13.028	822.5	8.6
01/18/2007 14:26	39.54	19.3	12.941	823.5	8.6
01/18/2007 14:27	39.03	17.8	12.007	819.8	8.6
01/18/2007 14:28	37.06	18.4	12.254	804.4	8.6

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
01/18/2007 14:29	36.63	19	12.793	806.6	8.6
01/18/2007 14:30	36.13	19.2	12.823	812.9	8.6
01/18/2007 14:31	36.5	19.4	12.941	816.5	8.6
01/18/2007 14:32	36.55	18.6	12.685	799.5	8.6
01/18/2007 14:33	36.55	18.3	12.187	850.9	8.6
01/18/2007 14:34	36.45	18.8	12.623	828.4	8.6
01/18/2007 14:35	37.56	19.3	12.868	814.1	8.6
01/18/2007 14:36	38.87	19.4	12.989	821.2	8.6
01/18/2007 14:37	38.31	18.4	12.438	817.5	8.6
01/18/2007 14:38	35.98	17.8	11.828	823.3	8.6
01/18/2007 14:39	35.75	18.6	12.341	824.6	8.6
01/18/2007 14:40	36.85	19.1	12.834	835.2	8.6
01/18/2007 14:41	38.04	19.3	12.971	809.2	8.6
01/18/2007 14:42	38.82	19.2	12.848	818.9	8.6
01/18/2007 14:43	39.5	19.2	12.883	829.8	8.6
01/18/2007 14:44	39.44	19.2	12.97	827.8	8.6
01/18/2007 14:45	39.27	19.4	13.078	824.2	8.6
01/18/2007 14:46	39.51	19.6	13.091	822.6	8.6
01/18/2007 14:47	36.66	18.3	12.318	819.2	8.6
01/18/2007 14:48	34.75	18.9	12.522	809.8	8.6
01/18/2007 14:49	35.92	19.3	12.999	811.3	8.6
01/18/2007 14:50	36.87	19.6	13.191	825.4	8.6
01/18/2007 14:51	37.71	19.6	13.141	826.9	8.6
01/18/2007 14:52	37.98	18.8	12.652	826.2	8.6
01/18/2007 14:53	36.51	18.5	12.307	808.2	8.6
01/18/2007 14:54	35.88	19	12.701	810.6	8.6
01/18/2007 14:55	35.96	19.3	12.954	839.4	8.6
01/18/2007 14:56	37.21	19.4	13.015	840.4	8.6
01/18/2007 14:57	37.65	18.5	12.504	832.7	8.6
01/18/2007 14:58	37.07	17.9	11.94	824.1	8.6
01/18/2007 14:59	37.82	18.9	12.605	816.3	8.6
01/18/2007 15:00	38.2	19.2	12.954	829	8.6
01/18/2007 15:01	37.98	19.5	13.123	823.2	8.6
01/18/2007 15:02	37.26	19.6	13.168	823.4	8.6
01/18/2007 15:03	37.02	19.7	13.258	812.9	8.6
01/18/2007 15:04	37.12	19.9	13.371	818.5	8.6
01/18/2007 15:05	37.23	20	13.551	798.1	8.6
01/18/2007 15:06	37.93	19.7	13.273	827.9	8.6
01/18/2007 15:07	37.6	18.6	12.591	819	8.6
01/18/2007 15:08	35.91	19.4	12.963	820.4	8.6

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
01/18/2007 15:09	35.62	19.6	13.258	819.1	8.6
01/18/2007 15:10	35.4	19.6	13.303	819.6	8.6
01/18/2007 15:11	35.8	19.7	13.253	825.1	8.6
01/18/2007 15:12	35.87	18.9	12.707	818.6	8.6
01/18/2007 15:13	35.34	18.3	12.243	830.5	8.6
01/18/2007 15:14	35.73	19	12.715	825.6	8.6
01/18/2007 15:15	36.69	19.2	12.928	810.5	8.6
01/18/2007 15:16	38.23	19.6	13.068	831.5	8.6
01/18/2007 15:17	37.44	18.6	12.641	801.9	8.6
01/18/2007 15:18	35.47	17.8	11.851	818.2	8.6
01/18/2007 15:19	35.73	18.6	12.386	812.4	8.6
01/18/2007 15:20	36.63	19	12.761	815.5	8.6
01/18/2007 15:21	37.72	19.4	13.031	827.6	8.6
01/18/2007 15:22	38.11	18.9	12.759	821.7	8.6
01/18/2007 15:23	39.22	19.3	12.943	826	8.6
01/18/2007 15:24	38.66	19.9	13.416	832.2	8.6
01/18/2007 15:25	37.71	19.8	13.359	822.1	8.6
01/18/2007 15:26	37.19	19.9	13.37	820.7	8.6
01/18/2007 15:27	35.53	18.6	12.611	816	8.6
01/18/2007 15:28	33.78	19	12.625	815.7	8.6
01/18/2007 15:29	34.17	19.6	13.258	824.4	8.6
01/18/2007 15:30	35.23	19.6	13.247	830.5	8.6
01/18/2007 15:31	36.52	19.8	13.331	835.4	8.6
01/18/2007 15:32	36.4	19.1	12.852	825.2	8.6
01/18/2007 15:33	36.26	18.4	12.33	814.6	8.6
01/18/2007 15:34	35.4	19	12.728	813.3	8.6
01/18/2007 15:35	35.27	19.5	13.112	813.5	8.6
01/18/2007 15:36	36.15	19.7	13.241	815.9	8.6
01/18/2007 15:37	36.56	19.1	12.919	828	8.6
01/18/2007 15:38	36.22	18.2	12.107	823.6	8.6
01/18/2007 15:39	35.36	18.9	12.634	820.3	8.6
01/18/2007 15:40	36.26	19.4	13.09	819.6	8.6
01/18/2007 15:41	36.11	19.5	13.146	822.1	8.6
01/18/2007 15:42	35.65	19.4	13.157	827.8	8.6
01/18/2007 15:43	35.26	19.4	13.09	829.4	8.6
01/18/2007 15:44	35.92	19.4	13.034	830.1	8.6
01/18/2007 15:45	36.69	19.5	13.146	821.3	8.6
01/18/2007 15:46	37.89	19.7	13.222	825.4	8.6
01/18/2007 15:47	37.13	18.3	12.374	819.3	8.6
01/18/2007 15:48	34.51	18.8	12.571	838.6	8.6

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
01/18/2007 15:49	34.28	19.4	13.022	838.3	8.6
01/18/2007 15:50	35.16	19.5	13.177	804.1	8.6
01/18/2007 15:51	35.66	19.5	13.129	809.6	8.6
01/18/2007 15:52	35.66	18.9	12.763	811.5	8.6
01/18/2007 15:53	34.83	18.4	12.299	836.2	8.6
01/18/2007 15:54	34.8	18.9	12.636	814.3	8.6
01/18/2007 15:55	35.5	19.5	13.071	826.5	8.6
01/18/2007 15:56	36.52	19.4	13.037	821.8	8.6
01/18/2007 15:57	36.74	18.9	12.66	826.3	8.6
01/18/2007 15:58	35.36	18	12.062	831.3	8.6
01/18/2007 15:59	35.17	18.9	12.626	811.8	8.6
01/18/2007 16:00	36.22	19.2	12.977	815.1	8.6
01/18/2007 16:01	36.66	19.3	13.009	837.2	8.6
01/18/2007 16:02	36.81	19.2	12.908	823.4	8.6
01/18/2007 16:03	36.39	19.3	13.011	827.5	8.6
01/18/2007 16:04	35.26	19.6	13.157	826.7	8.6
01/18/2007 16:05	35.25	19.7	13.303	817.4	8.6
01/18/2007 16:06	36.7	19.7	13.27	815.3	8.6
01/18/2007 16:07	35.97	18.5	12.429	822.7	8.6
01/18/2007 16:08	33.81	18.7	12.523	814.2	8.6
01/18/2007 16:09	34.48	19	12.745	825.5	8.6
01/18/2007 16:10	35.75	19.2	12.862	822.2	8.6
01/18/2007 16:11	36.51	19.2	12.855	818.5	8.6
01/18/2007 16:12	36.73	18.7	12.63	820.6	8.6
01/18/2007 16:13	35.25	18	11.973	829.3	8.6
01/18/2007 16:14	35.15	18.8	12.518	830.1	8.6
01/18/2007 16:15	35.85	19	12.83	823.6	8.6
01/18/2007 16:16	36.53	19.4	12.934	823.9	8.6
01/18/2007 16:17	36.82	18.8	12.602	822.6	8.6
01/18/2007 16:18	35.79	17.9	11.873	814.2	8.6
01/18/2007 16:19	35.39	18.4	12.288	828.1	8.6
01/18/2007 16:20	35.08	18.9	12.684	823.2	8.6
01/18/2007 16:21	34.69	19.2	12.896	834.1	8.6
01/18/2007 16:22	35.05	19.1	12.786	851.1	8.6
01/18/2007 16:23	36.01	19.1	12.779	846.2	8.6
01/18/2007 16:24	36.22	19.3	13.056	839.9	8.6
01/18/2007 16:25	36.54	19.5	13.112	852.4	8.6
01/18/2007 16:26	38.04	19.4	13.047	851.6	8.6
01/18/2007 16:27	36.99	18.1	12.205	824.6	8.6
01/18/2007 16:28	34.95	18.5	12.262	825.1	8.6

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
01/18/2007 16:29	34.62	19	12.619	825.3	8.6
01/18/2007 16:30	35.7	19.1	12.752	845.8	8.6
01/18/2007 16:31	37.02	18.9	12.608	842.5	8.6
01/18/2007 16:32	37.61	18.3	12.29	819.5	8.6
01/18/2007 16:33	37.3	17.8	11.795	814.6	8.6
01/18/2007 16:34	36.89	18.6	12.34	831.1	8.6
01/18/2007 16:35	37.12	18.6	12.474	827.2	8.6
01/18/2007 16:36	37.98	18.8	12.519	835.1	8.6
01/18/2007 16:37	37.71	18.1	12.125	814.2	8.6
01/18/2007 16:38	36.67	17.3	11.497	825	8.6
01/18/2007 16:39	36.88	18	11.917	828.9	8.6
01/18/2007 16:40	38.29	18.5	12.367	814.3	8.6
01/18/2007 16:41	39.24	19	12.678	822	8.6
01/18/2007 16:42	39.62	18.8	12.631	815.5	8.6
01/18/2007 16:43	38.56	19	12.726	821.1	8.6
01/18/2007 16:44	37.38	19.4	12.988	808.9	8.6
01/18/2007 16:45	36.91	19.8	13.326	824.6	8.6
01/18/2007 16:46	37.42	19.8	13.233	816.8	8.6
01/18/2007 16:47	36.59	18.3	12.405	816	8.6
01/18/2007 16:48	34.99	18.5	12.218	842.8	8.6
01/18/2007 16:49	35.31	19	12.722	835.1	8.6
01/18/2007 16:50	35.68	19.1	12.825	826.9	8.6
01/18/2007 16:51	36.35	19	12.696	824.9	8.6
01/18/2007 16:52	35.85	18.5	12.452	828.1	8.6
01/18/2007 16:53	35.05	18.1	12.04	821.7	8.6
01/18/2007 16:54	35.33	18.7	12.547	816.6	8.6
01/18/2007 16:55	36.27	19	12.785	815.6	8.6
01/18/2007 16:56	37.79	19.4	13.027	820.3	8.6
01/18/2007 16:57	37.87	19	12.808	800.5	8.6
01/18/2007 16:58	36.06	17.8	11.895	823.5	8.6
01/18/2007 16:59	34.84	18.6	12.458	820.6	8.6
01/18/2007 17:00	35.52	19.1	12.732	819.6	8.6
01/18/2007 17:01	35.76	19.2	12.917	815	8.6
01/18/2007 17:02	35.96	19	12.686	810.5	8.6
01/18/2007 17:03	36.46	19.1	12.864	813	8.6
01/18/2007 17:04	36.74	19.3	12.977	826	8.6
01/18/2007 17:05	37.97	19.4	13.11	830.6	8.6
01/18/2007 17:06	38.54	19.2	12.853	822.9	8.6
01/18/2007 17:07	37	18.2	12.318	819	8.6
01/18/2007 17:08	34.76	18.5	12.252	790.8	8.6

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
01/18/2007 17:09	34.71	19.2	12.869	807	8.6
01/18/2007 17:10	35.77	19	12.864	834.7	8.6
01/18/2007 17:11	36.37	19.1	12.789	830.2	8.6
01/18/2007 17:12	37.52	18.8	12.663	823	8.6
01/18/2007 17:13	37.09	18.2	12.14	822	8.6
01/18/2007 17:14	35.92	18.9	12.568	822.8	8.6
01/18/2007 17:15	36.15	19.4	13.065	834.1	8.6
01/18/2007 17:16	36.47	19.6	13.152	839.6	8.6
01/18/2007 17:17	37.15	18.9	12.786	817.1	8.6
01/18/2007 17:18	36.15	18	12.029	830.4	8.7
01/18/2007 17:19	36.16	18.6	12.41	830.2	8.7
01/18/2007 17:20	36.94	19.2	12.885	825.9	8.7
01/18/2007 17:21	37.18	19.3	12.877	806.3	8.7
01/18/2007 17:22	36.93	19.1	12.819	810.6	8.7
01/18/2007 17:23	36.49	19.1	12.769	829.1	8.7
01/18/2007 17:24	35.96	19.5	13.099	823.6	8.7
01/18/2007 17:25	36.04	19.6	13.188	846.4	8.6
01/18/2007 17:26	37.68	19.7	13.225	843.7	8.6
01/18/2007 17:27	37.67	18.3	12.416	832.6	8.6
01/18/2007 17:28	36.39	18.4	12.162	813	8.6
01/18/2007 17:29	36.94	19	12.676	810.8	8.6
01/18/2007 17:30	37.33	19.2	12.808	828.7	8.6
01/18/2007 17:31	37.69	19.1	12.763	803	8.6
01/18/2007 17:32	37.75	18.7	12.56	826.8	8.6
01/18/2007 17:33	36.81	18.1	12.084	818.3	8.6
01/18/2007 17:34	36.55	18.8	12.498	819.9	8.7
01/18/2007 17:35	36.98	19.3	12.941	822.9	8.6
01/18/2007 17:36	38.23	19.3	12.886	839.6	8.6
01/18/2007 17:37	38.39	18.6	12.492	839.7	8.6
01/18/2007 17:38	37.39	17.5	11.74	824.4	8.6
01/18/2007 17:39	35.05	18.2	11.984	812.8	8.6
01/18/2007 17:40	34.92	18.9	12.555	830.5	8.6
01/18/2007 17:41	35.67	19.2	12.797	832.7	8.6
01/18/2007 17:42	36.53	19.1	12.81	823.2	8.6
01/18/2007 17:43	37.26	18.9	12.728	817	8.6
01/18/2007 17:44	37.59	19.5	13.134	814.3	8.6
01/18/2007 17:45	38.19	19.6	13.303	822.3	8.6
01/18/2007 17:46	38	19.8	13.258	839.7	8.6
01/18/2007 17:47	36.95	18.7	12.58	831.5	8.6
01/18/2007 17:48	34.19	18.2	12.107	832.2	8.6

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
01/18/2007 17:49	34.23	19	12.608	826.1	8.6
01/18/2007 17:50	35.53	19	12.73	812.2	8.6
01/18/2007 17:51	35.76	19.2	12.785	814	8.6
01/18/2007 17:52	35.84	18.8	12.696	820.4	8.6
01/18/2007 17:53	35.14	17.9	11.94	825.3	8.6
01/18/2007 17:54	34.83	18.4	12.207	822.1	8.6
01/18/2007 17:55	34.93	18.9	12.585	822.3	8.7
01/18/2007 17:56	35.74	19.1	12.752	827.7	8.6
01/18/2007 17:57	37.13	18.4	12.336	827.3	8.6
01/18/2007 17:58	37.45	17.2	11.451	818.5	8.6
01/18/2007 17:59	37.21	18	11.884	825.3	8.6
01/18/2007 18:00	38.68	18.8	12.521	822.6	8.6
01/18/2007 18:01	39.26	19.1	12.741	806.6	8.6
01/18/2007 18:02	38.53	19.1	12.774	842.5	8.6
01/18/2007 18:03	37.47	19.3	12.962	839.4	8.6

APPENDIX B

SULFURIC ACID MIST TEST DATA – IGCC

FIELD DATA SHEETS

EPA Method 1
Determination of Sampling Ports and Points

Client TECO — City/State Tampa FL

Sampling Location Polk Unit 1 — Date 1/17/07

Sampling Location Dimensions, in inches:

From Far Wall to Outside of Port	241
Nipple Length	13
Depth of Duct	228
Width (Rectangular Duct)	–

Equivalent Diameter Calculation (DE):

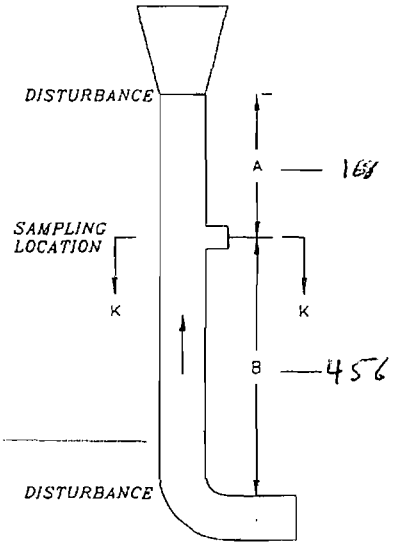
$$DE = \frac{2 \times \text{Length} \times \text{Width}}{\text{Length} + \text{Width}} = \frac{2(\ -\ )(\ -\ )}{(\ -\ +\ -\ )} = -$$

Distance to Ports From Nearest Flow Disturbance:

	Upstream - A	Downstream - B
Dimensions in Inches	168	456
Duct Diameters	0.737	2.0

Stack Area, in Square Feet 283.529

Calculations By [redacted]



Schematic of Sampling Location

Location of Traverse Points in Circular Stacks					
	4	6	8	10	12
1	6.7	4.4	3.2	2.6	2.1
2	25.0	14.6	10.5	8.2	6.7
3	75.0	29.6	19.4	14.6	11.8
4	93.3	70.4	32.3	22.6	17.7
5		85.4	67.7	34.2	25.0
6		95.6	80.6	65.8	35.6
7			89.5	77.4	64.4
8			96.8	85.4	75.0
9				91.8	82.3
10				97.4	88.2
11					93.3
12					97.9

Location of Traverse Points in Rectangular Stacks							
	2	3	4	5	6	7	8
1	25.0	16.7	12.5	10.0	8.3	7.1	6.3
2	75.0	50.0	37.5	30.0	25.0	21.4	18.8
3		83.3	62.5	50.0	41.7	35.7	31.3
4			87.5	70.0	58.3	50.0	43.8
5				90.0	75.0	64.3	56.3
6					91.7	78.6	68.8
7						92.9	81.3
8							93.8
9							
10							
11							
12							

Point No.	% of Stack ID	Stack ID, in.	Distance From Inside Wall, in.	Nipple Length, in.	Distance From Outside of Port, in.
1	2.1	228	4.79	13	17.79
2	6.7		15.28		28.28
3	11.8		26.9		39.90
4	17.7		40.36		53.36
5	25.0		57		70.00
6	35.6		81.17		94.17

Stack Diameter = 12 - 24 inches Relocate to 0.50 inches from stack wall

Stack Diameter > 24 inches Relocate to 1.00 inches from stack wall

Audited by [redacted] Date: 1/19/07

TRIGON

EPA Method 2
Determination of Stack Gas Velocity, Volumetric Flow Rate and Cyclonic Flow

Client TECO
Sampling Location Unit 1
Run Date 1-18-07
Barometric Pressure, in. Hg 30.09
Static Pressure, in. H_2O -1.2
Pitot Tube Coefficient .84

City, State Tampa, FL
Operators LER S
Time 0845
Pitot Tube I.D. No. 200.108
Date Calibrated 1-5-07
Leak Check, in. H_2O <0.1 @ 5.7/-6.4

Field Data

Traverse Point Number	Velocity Head Δp Inches H_2O		Stack Temperature °F		Cyclonic Flow Determination			
					Δp, at 0° Reference		Angle Which Yields a Null Δp	
1	1.5		310					
2	1.5		310					
3	1.5		310					
4	1.5		310					
5	1.4		308					
6	1.4		311					
		SPOT	Steel		Flow	Before	Run	
					LER			
						1-18-07		
Averages	1.47		309.8					

Stack Temperature, Dry, °F (A) —
Stack Temperature, Wet °F (B) —
Difference (A - B) —
Preliminary Percent Moisture —

Comments

Audited by LER Date: 1/19/07

TRIGON

EPA Methods 4 and 8 - Moisture Determination and Sample Recovery - Data Analysis

Client Name TECO
City/State Tampa FL
Sampling Location Unit 1
Clean-Up Box Number 1
Chain of Custody: Date Received 1-19-07

Project Number 046-06-121
Sample Date 1/18/07
Samples Recovered By DTO
Recovery Date 1/18/07
Received By JDS Locked? ✓

Equipment Documentation

Run Number	1	2	3	
Sample ID Number	6121-01	6121-02	6121-03	6121-
Sample Box Number	6 3	4 3	8 3	
Probe Number	200.108	200.109	200.108	

Analysis of Moisture and Sample Recovery - Sulfuric Acid

Reagent Recovery Container #	6121-01	6121-02	6121-03	
Impinger Absorbing Solution	80% IPA	80% IPA	80% IPA	
Description of Reagent	clear	clear	clear	
Reagent Level Marked?	✓	✓	✓	
Final Volume, ml	64	62	64	
Initial Volume, ml	100	100	100	
Net Condensed Volume, ml	-36	-38	-36	
80% Isopropanol Rinse?	✓	✓	✓	
Dilute to 250 ml in Isopropanol?	✓	✓	✓	

Analysis of Moisture and Sample Recovery - Sulfur Dioxide

Reagent Recovery Container #	6121-01	6121-02	6121-03	
Impinger Absorbing Solution	3% H_2O_2	3% H_2O_2	3% H_2O_2	
Description of Reagent	Clear	Clear	clear	
Reagent Level Marked?	✓	✓	✓	
Final Volume, ml	255	260	265	
Initial Volume, ml	200	200	zero	
Net Condensed Volume, ml	55	60	55	
Distilled Water Rinse?	✓	✓	✓	
Dilute to 1000 ml in DI Water?	✓	✓	✓	

Analysis of Moisture Recovery

Silica Gel Recovery Container #	6121-01	6121-02	6121-03	
Percent Silica Gel Spent	30	40	50	
Final Weight, g	220.2	214.6	216.8	
Initial Weight, g	200	200	200	
Net Absorbed Water, g	20.2	14.6	16.8	
Total Moisture Collected, ml	75.2 - 36 = 39.2	74.6 - 38 = 36.6	71.8 - 36 = 35.8	

Reagent Blanks

Absorbing Reagent Blank	80% IPA	Rinsing Reagent Blank	DI
Absorbing Blank Identification #	6121-05	Rinsing Blank Identification #	6121-05
Absorbing Reagent Blank	3% H_2O_2	Rinsing Reagent Blank	—
Absorbing Blank Identification #	6121-05	Rinsing Blank Identification #	—

JBR

TRIGON

Isokinetic Field Data Sheet - EPA Method 8

Client: Tampa | Run Number: 1
City/State: Tampa FL | Date: 1-18-07
Sampling Location: Unit 1 | Operators: SM LER

Bar. Press., In. Hg: ~~30.06~~ 30.09 | *NOMOGRAPH SET-UP:* K Factor: ~~1206~~ 1.167 | *LEAK CHECKS*
Static Press., In. H_2O: -1.2 | ΔH @ ~~1.91~~ Y = ~~1.977~~ | Avg. Δ P: 1.47 | Pre-Test: 0.006 @ 15 In. Hg.
Meter Box No.: 300, ~~397~~ 045 | Meter Temp.: 71 | Ref. Δ P: | Post-Test: 0.005 @ 8 In. Hg.
Sample Box No.: 3 | Stack Temp.: 315 | Desired Nozzle: .207 | Pre-Test Pitot <0.1 @ ~~9.1~~ 9.4 In. H_2O
Probe/Pitot No.: 200 108 | Pitot Coeff.: 0.84 | Nozzle No.: Sec. 205 | Post-Test Pitot <0.1 @ ~~4.2~~ 4.4 In. H_2O
Probe Temp. Setting: 250 | % Moisture: 3 | Nozzle Calibration: .201 .201 .200
Sample ID No.: 6121 - 01 | C Factor: | Nozzle Diameter: .201 | Observer:
Filter No.: N/A | Start Time: 13.49 | End Time: 1456 | Agency:

Sample Point	Clock Time	Dry Gas Meter Cubic Feet	Pitot Reading Δ P In. H_2O	Orifice Setting ΔH Inches H_2O Ideal	Orifice Setting ΔH Inches H_2O Actual	Dry Gas Meter Temp. °F	Pump Vacuum Inches Hg	Stack Temp °F	Probe Temp °F	Filter Box °F	Imp. Temp °F
A 1	0 ~~76~~	~~523.400~~ 585.542	1.7	1.52	1.50	76	4	310	252	NA	62
2	2.5	587.21	1.5	1.75	1.75	76	4	310	255		60
3	5	~~589~~ 13	1.5	1.75	1.75	77	4	310	258		58
4	7.5	691.0	1.4	1.63	1.60	78	4	309	256		54
5	10	692.72	1.6	1.87	~~2.00~~ 1.90	79	4	310	254		52
6	12.5	694.42	1.3	1.52	1.50	80	5	308	256		52
B 1	15	696.38	1.2	1.40	1.40	80	5	308	255		52
2	17.5	698.10	1.3	1.52	1.50	81	5	310	257		56
3	20	699.84	1.4	1.63	1.60	82	5	310	254		55
4	22.5	601.72	1.5	1.75	1.75	81	5	310	254		53
5	25	603.07	1.4	1.63	1.60	81	5	316	255		53
6	27.5	605.22	1.2	1.40	1.40	81	5	310	252		52
C 1	30	606.88	1.5	1.75	1.75	80	5	309	255		56
2	32.5	608.74	1.6	~~2.00~~ 1.87	~~2.00~~ 1.90	81	5	316	256		54
3	35	610.60	1.5	1.75	1.75	82	5	310	254		54
4	37.5	612.61	1.5	1.75	1.75	82	5	310	253		53
5	40	614.46	1.4	1.63	1.60	82	5	310	254		54
6	42.5	616.32	1.3	1.52	1.50	82	5	309	254		54
D 1	45	618.01	1.6	~~2.00~~ 1.87	~~2.00~~ 1.90	80	5	309	254		56
2	47.5	619.96	1.5	1.75	1.75	82	5	310	253		52
3	50	621.84	1.6	~~2.00~~ 1.87	~~2.00~~ 1.90	82	5	310	252		53
4	52.5	623.81	1.7	1.99	2.00	83	5	310	253		54
5	55	625.91	1.6	1.87	1.90	83	5	310	252		54
6	57.5	627.52	1.2	1.40	1.40	83	5	309	253		55
	60	629.643	—	—	—	—	—	—	—	—	—
		44.101 ✓	1.44 ✓		1.641 ✓	80.6 ✓		309.6 ✓			

Comments:

Isokinetic Check: 99.5

Audited by: ~~LER~~ Date: 1/19/07

TRIG

Isokinetic Field Data Sheet - EPA Method 8

Client: TECO | Run Number: 2
City/State: Tampa FL | Date: 1/18/07
Sampling Location: Unit 1 | Operators: SM LER

Bar. Press., In. Hg: 30.06 | Static Press., In. H_2O: -1.2 | Meter Box No.: 360.045 | Sample Box No.: 3 | Probe/Pitot No.: 300.109 | Probe Temp. Setting: 250 | Sample ID No.: 0121-02 | Filter No.: NA

NOMOGRAPH SET-UP: K Factor 1.27
ΔH @ 1.847 Y = .971 | Meter Temp.: 82 | Pitot Coeff.: 0.84 | % Moisture: 3 | C Factor: — | Start Time: 1527
Avg. Δ P: 1.47 | Ref. Δ P: — | Desired Nozzle: .204 | Nozzle No.: 300.211 | Nozzle Calibration: .204, .204, .205 | Nozzle Diameter: .204 | End Time: 1634

LEAK CHECKS
Pre-Test: .002 @ 15 In. Hg.
Post-Test: 0.001 @ 8 In. Hg.
Pre-Test Pitot <0.1 @ 14.5 In. H_2O
Post-Test Pitot <0.1 @ 8.4 In. H_2O
Observer: — | Agency: —

Sample Point	Clock Time	Dry Gas Meter Cubic Feet	Pitot Reading Δ P, In. H_2O	Orifice Setting ΔH, Inches H_2O Ideal	Orifice Setting ΔH, Inches H_2O Actual	Dry Gas Meter Temp. °F	Pump Vacuum Inches Hg	Stack Temp °F	Probe Temp °F	Filter Box °F	Imp Temp °F
D 1	~~15~~ 0	630.203	1.3	1.65	1.65	82	4	313	253	NA	60
2	2.5	621.96	1.4	1.78	1.80	82	4	312	254	|	56
~~3~~	5	633.79	1.4	1.78	1.80	82	4	312	256	|	55
~~4~~	7.5	635.66	1.5	1.91	1.90	82	4	311	254	|	54
5	10	637.67	1.5	1.91	1.90	83	4	311	255	|	54
6	12.5	639.51	1.3	1.65	1.65	82	4	310	253	|	53
C 1	15	641.32	1.3	1.65	1.65	81	4	310	251	|	52
2	17.5	643.12	1.3	1.65	1.65	81	4	311	250	|	52
3	20	644.92	1.4	1.78	1.80	81	4	311	253	|	52
4	22.5	646.79	1.4	1.78	1.80	81	4	310	254	|	53
5	25	648.67	1.3	1.65	1.65	80	4	310	255	|	53
6	27.5	650.46	1.5	1.91	1.90	80	4	310	254	|	54
B 1	30	652.36	1.4	1.78	1.80	79	4	311	254	|	54
2	32.5	654.23	1.3	1.65	1.65	79	4	310	253	|	53
3	35	656.07	1.4	1.78	1.80	79	4	310	254	|	54
4	37.5	658.01	1.3	1.65	1.65	79	4	310	255	|	53
5	40	659.94	1.3	1.65	1.65	79	4	310	256	|	54
6	42.5	661.58	1.2	1.53	1.55	79	4	309	255	|	54
A 1	45	663.33	1.2	1.53	1.55	78	4	308	254	|	56
2	47.5	665.09	1.4	1.78	1.80	78	4	310	253	|	55
3	50	666.94	1.4	1.78	1.80	78	4	310	254	|	54
~~4~~	~~52.5~~	668.79	1.5	1.91	1.90	78	4	309	254	|	54
5	55	670.68	1.4	1.78	1.80	79	4	310	255	|	53
6	57.5	672.60	1.6	2.04	2.00	79	4	310	255	|	53
	60	674.555								↓	
						80.0		310.3	was		
		44.352	1.38		1.754	~~76.6~~		~~309.9~~			

Comments: _____

Isokinetic Check: 100.0

Audited by: LER Date: 1/19/07

Isokinetic Field Data Sheet - EPA Method 8

Client Teco — Run Number 3

City/State Tampa FL. — Date 1/18/07

Sampling Location Unit 1 — Operators SM LER

Bar. Press., In. Hg 30.00 — *NOMOGRAPH SET-UP: K Factor* 1.19 — *LEAK CHECKS*

Static Press., In. H_2O -1.2 — ΔH @ 1.917 Y = .991 — Avg. Δ P 1.47 — Pre-Test .002 @ 17 In. Hg.

Meter Box No. 308.045 — Meter Temp. 74 — Ref. Δ P — — Post-Test 0.001 @ 9 In. Hg.

Sample Box No. 3 — Stack Temp. 310 — Desired Nozzle .204 — Pre-Test Pitot <0.1 @ 55-69 In. H_2O

Probe/Pitot No. 260.106 — Pitot Coeff. 0.84 — Nozzle No. 300.205 — Post-Test Pitot <0.1 @ 61-72 In. H_2O

Probe Temp. Setting 250 — % Moisture 3 — Nozzle Calibration .201 .201 .202

Sample ID No. 6121-03 — C Factor — — Nozzle Diameter .201 — Observer —

Filter No. N/A — Start Time 1155 — End Time 1803 — Agency —

Sample Point	Clock Time	Dry Gas Meter Cubic Feet	Pitot Reading Δ P In. H_2O	Orifice Setting ΔH Inches H_2O Ideal	Orifice Setting ΔH Inches H_2O Actual	Dry Gas Meter Temp. °F	Pump Vacuum Inches Hg	Stack Temp °F	Probe Temp °F	Filter Box °F	Imp. Temp °F
A 1	0	675.904	1.5	1.80	1.80	77	4	310	253	N/A	60
2	2.5	677.91	1.4	1.68	1.70	78	4	310	254		55
3	5	679.76	1.4	1.68	1.70	79	4	310	253		54
4	7.5	681.97	1.4	1.68	1.70	79	4	310	254		52
5	10	682.79	1.5	1.80	1.80	79	4	310	252		52
6	12.5	684.67	1.5	1.80	1.80	79	4	310	252		52
B 1	15	686.54	1.3	1.56	1.55	78	4	309	251		53
2	17.5	688.32	1.2	1.44	1.45	78	4	310	254		52
3	20	690.06	1.3	1.56	1.55	79	4	310	253		52
4	22.5	691.82	1.3	1.56	1.55	79	4	310	252		52
5	25	693.61	1.4	1.68	1.70	79	4	310	253		53
6	27.5	695.33	1.4	1.68	1.70	79	4	310	253		52
C 1	30	697.17	1.4	1.68	1.70	77	4	309	251		54
2	32.5	699.05	1.5	1.80	1.80	77	4	310	252		53
3	35	700.90	1.4	1.68	1.80	77	4	310	253		54
4	37.5	702.75	1.3	1.56	1.60	78	4	310	252		54
5	40	704.60	1.5	1.80	1.80	78	4	310	254		53
6	42.5	706.48	1.4	1.70	1.70	78	4	310	253		53
D 1	45	708.31	1.4	1.70	1.70	77	4	310	254		55
2	47.5	710.19	1.5	1.80	1.80	77	4	310	253		53
3	50	712.08	1.6	1.91	1.90	77	4	310	251		52
4	52.5	713.96	1.4	1.70	1.70	77	4	310	251		53
5	55	715.71	1.4	1.70	1.70	77	4	310	253		54
6	57.5	717.49	1.6	1.91	1.90	77	4	310	254		53
	60	719.388									
		43.984	1.42		1.713	77.9		309.9			

Comments: _____

Isokinetic Check: 100.5

Audited by: LER Date: 1,19,07

TRIGON

CALCULATED DATA

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: Acid Plant
Sampling Location: Stack
Operating Conditions: Full Load
Run Number: 1
Date: 01/18/07

Sample Time, θ:	60 minutes	Nozzle Diameter, D_n:	0.201 inches
Barometric Pressure, P_b:	30.09 "Hg	Nozzle Area, A_n:	0.0002203 ft^2
Stack Pressure, P_s:	30.00 "Hg	Average Orifice Meter, ΔH:	1.681 "H_2O
Effective Stack Area, A_s:	283.529 ft^2	Sample Volume, V_m:	44.101 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	80.6 °F
Gas Analysis:	8.8 % CO_2	Average Stack Temp., T_s:	309.6 °F
	11.4 % O_2	Average $\sqrt{\Delta p}$:	1.199 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	39.2 ml
	79.8 % N_2	Meter Box Y:	0.971 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	1.848 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	42.236 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.042 %
$FDA = 1.0 - B_{ws}$	0.958 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%\ CO))$	29.86 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	29.37 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	80.49 ft/second
$Q_s = v_s \times A_s \times 60$	1369255.2 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	902458.2 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s \times 60)$	100.4 %

Data from Laboratory Analysis:	H_2SO_4
Normality of Barium Chloride titrant, N	0.00975
Volume Titrant Blank, V_{tb}	0.08
Volume Titrant Sample, V_t	500
Volume of Sample Aliquot, V_a	100
Total Volume of Solution, V_{soln}	3.6

Calculated Concentration and Emission Rate Data:

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / V_{m(std)} =$	4.491E-07 lb/dscf
F_c-factor =	2310 dscf/mmBtu
$E_{H2SO4} = C_{H2SO4} \times F_c\text{-factor} \times (100/\%CO_2) =$	0.01179 lb/mmBtu
$E_{H2SO4} = C_{H2SO4} \times Q_{s(std)} \times 60 =$	24.3183 lb/hr

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Air Services Group

40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: Acid Plant
Sampling Location: Stack
Operating Conditions: Full Load
Run Number: 2
Date: 01/18/07

Sample Time, θ:	60 minutes	Nozzle Diameter, D_n:	0.204 inches
Barometric Pressure, P_b:	30.06 "Hg	Nozzle Area, A_n:	0.000227 ft^2
Stack Pressure, P_s:	29.97 "Hg	Average Orifice Meter, ΔH:	1.754 "H_2O
Effective Stack Area, A_s:	283.529 ft^2	Sample Volume, V_m:	44.352 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	80.0 °F
Gas Analysis:	8.8 % CO_2	Average Stack Temp., T_s:	310.3 °F
	11.8 % O_2	Average $\sqrt{\Delta p}$:	1.172 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	36.6 ml
	79.4 % N_2	Meter Box Y:	0.971 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	1.725 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	42.484 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.039 %
$FDA = 1.0 - B_{ws}$	0.961 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \% CO))$	29.88 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	29.42 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	78.66 ft/second
$Q_s = v_s \times A_s \times 60$	1338182.3 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	882943.1 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s$	100.2 %

Data from Laboratory Analysis:	H_2SO_4
Normality of Barium Chloride titrant, N	0.00975
Volume Titrant Blank, V_{tb}	0.08
Volume Titrant Sample, V_t	500
Volume of Sample Aliquot, V_a	100
Total Volume of Solution, V_{soln}	4.5

Calculated Concentration and Emission Rate Data:

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / V_{m(std)} =$	5.581E-07 lb/dscf
F_c-factor =	2310 dscf/MMBtu
$E_{H2SO4} = C_{H2SO4} \times F_c\text{-factor} \times (100/\%CO_2) =$	0.01465 lb/MMBtu
$E_{H2SO4} = C_{H2SO4} \times Q_{s(std)} \times 60 =$	29.5667 lb/hr

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Environmental Services
Air Services Group

40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: Acid Plant
Sampling Location: Stack
Operating Conditions: Full Load
Run Number: 3
Date: 01/18/07

Sample Time, θ:	60 minutes	Nozzle Diameter, D_n:	0.201 inches
Barometric Pressure, P_b:	30.06 "Hg	Nozzle Area, A_n:	0.00022034 ft^2
Stack Pressure, P_s:	29.97 "Hg	Average Orifice Meter, ΔH:	1.713 "H_2O
Effective Stack Area, A_s:	283.529 ft^2	Sample Volume, V_m:	43.984 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	77.9 °F
Gas Analysis:	8.8 % CO_2	Average Stack Temp., T_s:	309.9 °F
	11.8 % O_2	Average $\sqrt{\Delta p}$:	1.190 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	35.8 ml
	79.4 % N_2	Meter Box Y:	0.971 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	1.688 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	42.294 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.038 %
$FDA = 1.0 - B_{ws}$	0.962 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%\ CO))$	29.88 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	29.42 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460) / (M_s \times P_s)})$	79.82 ft/second
$Q_s = v_s \times A_s \times 60$	1357841.6 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	897010.4 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / \theta \times P_s \times A_n \times v_s \times 6$	101.1 %

Data from Laboratory Analysis:	**H_2SO_4**
Normality of Barium Chloride titrant, N	0.00975
Volume Titrant Blank, V_{tb}	0.08
Volume Titrant Sample, V_t	500
Volume of Sample Aliquot, V_a	100
Total Volume of Solution, V_{soln}	4.6

Calculated Concentration and Emission Rate Data:

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / V_{m(std)} =$	5.731E-07 lb/dscf
F_c-factor =	2310 dscf/MMBtu
$E_{H2SO4} = C_{H2SO4} \times F_c\text{-factor} \times (100/\%CO_2) =$	0.01504 lb/MMBtu
$E_{H2SO4} = C_{H2SO4} \times Q_{s(std)} \times 60 =$	30.8435 lb/hr

LABORATORY ANALYSIS

TECO TAMPA ELECTRIC

Laboratory Services

5012 Causeway Blvd * Tampa Fl. 33619 * Ph (813)630-7378 * Fax (813)630-7360 * DOH #E54272

Report For:

Report Date: 02/15/2007

Laboratory ID: AA86400

Location Code: TE_PPS_1_SAM_SYNGAS

Sample Information

Description: Polk No. 1 Acid Mist Comp on Syngas

Project Account Code:

Sample Collection Method:

Sampled By: TRIGON

Date and Time Collected: 01/18/2007 6:00:00 PM

Date of Sample Receipt: 01/19/2007

Laboratory Results

PARAMETER	Result	Units	MDL	Qualifier Code	Test Method	Analyst	Analysis Date & Time	Lower Limit	Upper Limit	Violation Check
Normality of BaCl2 * 2H2O	0.00975		0.0001			MM	11/08/2006 11:00:00 AM			
SO3 emission rate, lbs/hr	0.06	lbs/hr			EPA - RM8	RAM	01/31/2007 7:41:00 AM			
SO3, Avg. of Blank Titrations	0.08	milliliters	0.01		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			
SO3, Run #1, Avg. of Titrations	3.6	milliliters	0.01		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			
SO3, Run #2, Avg. of Titrations	4.5	milliliters	0.01		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			
SO3, Run #3, Avg. of Titrations	4.6	milliliters	0.01		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			
SO3, Volume of Contained Sample	500	milliliters	1		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			
SO3, Volume of Sample Aliquot	100	milliliters	0.1		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			

Comments

All results calculated on a wet to wet basis, unless otherwise indicated.

Data Qualifier Codes Explanation:

Subcontracted Laboratories:

Robert Dorey,
Manager, Laboratory Services

CALIBRATION DATA

QUALITY ASSURANCE AND EQUIPMENT CALIBRATION PROCEDURES

General. Field or laboratory test equipment purchased or fabricated by Trigon Engineering Consultants is assigned a unique, permanent identification number. New items for which calibration is required are calibrated before initial field use. Equipment whose calibration status may change with use or with time is inspected in the field before testing begins, and again upon return from field use. When an item of equipment is found to be out of calibration, it is adjusted and recalibrated or retired from service. Trigon's equipment is periodically recalibrated, regardless of the outcome of these regular inspections.

Calibrations are conducted in accordance with United States Environmental Protection Agency (US EPA) specifications. Trigon follows the calibration procedures outlined in EPA Reference Methods found in the Code of Federal Regulations (Volume 40, Part 60) and those recommended in the Quality Assurance Handbook for Air Pollution Measurement Systems: Volume III (EPA/600/R-94/038c). When the Reference Methods do not detail procedures, Trigon uses methods such as those prescribed by the American Society for Testing and Materials (ASTM).

Data obtained during calibrations are recorded on standardized forms, which are verified for completeness and accuracy by the Quality Assurance Manager. Data reduction and subsequent calculations are performed using Trigon's Air Quality Data System. Calibration calculations are performed by an environmental scientist, independently audited by the Project Manager, and reviewed by the Quality Assurance Manager for verification of data. Copies of calibration data are included in the test or project report.

Inspection and Maintenance. An effective preventative maintenance program is necessary to ensure equipment performance quality prior to, during, and following the source test. Equipment returning from the field is inspected before it is returned to storage. During the course of these inspections, items are cleaned, repaired, reconditioned, and recalibrated when necessary.

Equipment that is transported to the field for a test project is inspected again prior to being packed. Trigon performs these quality assurance checks prior to departure for the project site to detect equipment problems, which may occur during periods of storage. Trigon transports adequate back-up equipment to the project site so as to minimize delays in the test schedule.

Calibration. Source sampling equipment that requires calibration include nozzles, pitot tubes, thermometers, flow meters, dry gas meters, and barometers. The following sections briefly describe the calibration procedures followed by Trigon.

Nozzles. Probe nozzles are uniquely and permanently identified at the time of purchase or fabrication, and are calibrated before initial field use and prior to the source test. The inside diameter of the nozzle is measured to the nearest 0.001 inch using a precision jeweled micrometer. Three measurements are made using different diameters. If the difference between the high and the low measurements do not exceed 0.004 inch, the average of the three measurements is used. If the difference exceeds this amount, or when the nozzle becomes nicked, dented, or corroded, the nozzle is reshaped, sharpened, and recalibrated. Regardless of usage, nozzles are inspected on a yearly basis.

Pitot Tubes. Trigon Type S pitot tubes have been constructed and calibrated using those recommendations in accordance with EPA Reference Method 2, Calibration Procedures 2 and 2a. Trigon Type S pitot tubes C_p coefficients have been determined according Calibration Procedure 2a. Trigon standard pitot tubes have been assigned a C_p coefficient of 0.99 according to Calibration Procedure 2. Pitot tubes are visually inspected prior to field use. If the inspection indicates damage, the calibration is rechecked. Regardless of usage, Trigon pitot tubes are inspected and recalibrated on a yearly basis.

Dry Gas Meter and Orifice. Console metering systems receive a full calibration at the time of purchase and annually, thereafter. Post-test calibrations are performed after the source test. If the calibration factor, γ (gamma), deviates by less than five percent from the initial value, the test data is deemed acceptable. If γ deviates by more than five percent, the meter is recalibrated and the meter coefficient (initial or recalibrated) that yields the lowest sample volume for the test runs is used. Standard practice at Trigon is to recalibrate the dry gas meter when the γ is found to be outside the range of $0.98 \leq \gamma \leq 1.02$.

Barometer. Field barometers are compared to a reference mercury barometer and are deemed acceptable when they agree to within $\pm$ 0.1 inches Hg. The barometric pressure is corrected for pressure and temperature. Prior to and following the field test the field barometer is verified against the reference barometer.

Thermometers. New thermometers, pyrometers and thermocouples purchased or fabricated by Trigon are calibrated using the procedures described by US EPA Test Protocol. Calibration tolerance limits are as follow:

Impinger Temperature Gauge	±1°C or 2°F
Dry Gas Meter Temperature Gauge	±3°C or 5.4°F
Stack Thermocouples	±1.5% of absolute temperature

Thermometers and thermocouples are inspected and calibrated prior to and following the field test. Regardless of usage, Trigon thermometers and thermocouples are inspected and recalibrated on a yearly basis.

Laboratory Equipment. Trigon Engineering Consultants has a written quality assurance document that covers calibration and maintenance of laboratory equipment. This includes calibration of the analytical balance against Class S weights. Calibration of thermometers, barometers, and wet test meters are traceable to NIST. A copy of our quality assurance document may be obtained by written request.

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY

Is hereby granting a Louisiana Environmental Laboratory Accreditation to:

Trigon Engineering Consultants, Inc.
6200 Harris Technology Blvd.
Charlotte, NC 28269

Agency Interest No. 91040

According to the Louisiana Administrative Code, Title 33, Part I, Subpart 3, LABORATORY ACCREDITATION, the State of Louisiana formally recognizes that this laboratory is technically competent to perform the environmental analyses listed on the scope of accreditation detailed in the attachment.

The laboratory agrees to perform all analyses listed on this scope of accreditation according to the Part I, Subpart 3 requirements and acknowledges that continued accreditation is dependent on successful ongoing compliance with the applicable requirements of Part I. Please contact the Department of Environmental Quality, Louisiana Environmental Laboratory Accreditation Program (LELAP) to verify the laboratory's scope of accreditation and accreditation status. Accreditation by the State of Louisiana is not an endorsement or a guarantee of validity of the data generated by the laboratory, and does not constitute an endorsement of the suitability of the listed methods for any specific application.

To be accredited initially and maintain accreditation, the laboratory agrees to participate in two single-blind, single-concentration PT studies, where available, per year for each field of testing for which it seeks accreditation or maintains accreditation as required in LAC 33:I.4711.

Melvin C. Mitchell Sr., Accreditation Officer
Louisiana Environmental Laboratory Accreditation Program

Certificate Number: 04036
Expiration Date: June 30, 2007
Issued On: July 1, 2006

Louisiana Environmental Laboratory
LELAP
Accreditation Program

Laboratory Scope of Accreditation

Organization

04036 (704) 598-1049
Trigon Engineering Consultants Inc.
6200 Harris Technology Blvd.
Charlotte, NC 28269

Louisiana Stack Testing Program Certification

Method Code	Method Ref	Analyte	Status	Date Effective	Type	AA
1238	Method 13B 40 CFR 60 App. A	Fluoride	Accredited	7/1/2003	STATE	LA
1248	Method 1A 40 CFR 60 App. A	Traverse Points	Accredited	7/1/2003	STATE	LA
1253	Method 204 40 CFR 51 App. M	Criteria for and Verification of a Permanent or Temporary Total Enclosure	Accredited	7/1/2003	STATE	LA
1262	Method 22 40 CFR 60 App. A	Visible emissions from coke oven batteries	Accredited	7/1/2003	STATE	LA
1294	Method 315 40 CFR 63 App. A	Particulate and Methylene Chloride Extractable Matter (MCEM)	Accredited	7/1/2003	STATE	LA
1757	Method 10 40 CFR 60 App. A (Sample Only)	Carbon monoxide	Accredited	7/1/2003	STATE	LA
1793	Method 12 40 CFR 60 App. A (Sample Only)	Lead	Accredited	7/1/2003	STATE	LA
1857	Method 26 40 CFR 60 App. A (Sample Only)	Hydrochloric acid (Hydrogen chloride (gas only))	Accredited	7/1/2003	STATE	LA
1859	Method 26A 40 CFR 60 App. A (Sample Only)	Bromine (Br2)	Accredited	7/1/2003	STATE	LA
1859	Method 26A 40 CFR 60 App. A (Sample Only)	Chlorine	Accredited	7/1/2003	STATE	LA
1859	Method 26A 40 CFR 60 App. A (Sample Only)	Hydrochloric acid (Hydrogen chloride (gas only))	Accredited	7/1/2003	STATE	LA
1859	Method 26A 40 CFR 60 App. A (Sample Only)	Hydrogen Bromide (HBr)	Accredited	7/1/2003	STATE	LA
1859	Method 26A 40 CFR 60 App. A (Sample Only)	Hydrogen fluoride (Hydrofluoric acid)	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Antimony	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Arsenic	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Barium	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Beryllium	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Cadmium	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Chromium	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Cobalt	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Copper	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Lead	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Manganese	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Mercury	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Nickel	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Phosphorus total	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Selenium	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Silver	Accredited	7/1/2003	STATE	LA

Issue Date: July 1, 2006
Expiration Date: June 30, 2007

Laboratory Scope of Accreditation

Organization

04036 (704) 598-1049
Trigon Engineering Consultants Inc.
6200 Harris Technology Blvd.
Charlotte, NC 28269

Louisiana Stack Testing Program Certification

Method Code	Method Ref	Analyte	Status	Date Effective	Type	AA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Thallium	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Zinc	Accredited	7/1/2003	STATE	LA
1951	Method 6C 40 CFR 60 App. A (Sample Only)	Sulfur dioxide	Accredited	7/1/2003	STATE	LA
1963	Method 7E 40 CFR 60 App. A (Sample Only)	Nitrogen Oxides	Accredited	7/1/2003	STATE	LA
1967	Method 9 40 CFR 60 App. A (Sample Only)	Opacity	Accredited	7/1/2003	STATE	LA
1971	NCASI Vents (Sample Only)	Chlorine	Accredited	7/1/2003	STATE	LA
1971	NCASI Vents (Sample Only)	Chlorine dioxide res. disinfectant	Accredited	7/1/2003	STATE	LA
2035	Alcoa Method 4075A	Gaseous Fluoride	Accredited	7/1/2003	STATE	LA
2035	Alcoa Method 4075A	Particulate Flouride	Accredited	7/1/2003	STATE	LA
2043	Alcoa RM 4075A TF	Particulate and Gaseous Fluorides	Accredited	7/1/2003	STATE	LA
2044	Alcoa RM 4076TF-94	Particulate and Gaseous Fluorides	Accredited	7/1/2003	STATE	LA
2045	Alcoa RM 4076-94	Particulate and Gaseous Fluorides	Accredited	7/1/2003	STATE	LA
2046	Alcoa RM 913C-94	Particulate and Gaseous Fluorides	Accredited	7/1/2003	STATE	LA
2047	Alcoa RM 914F-94	Particulate and Gaseous Fluorides	Accredited	7/1/2003	STATE	LA
2048	Alcoa RM 4076D-92	Particulate and Gaseous Fluorides	Accredited	7/1/2003	STATE	LA

Air and Emissions Certification

Method Code	Method Ref	Analyte	Status	Date Effective	Type	AA
703	EPA 202	Condensible Particulate Matter	Accredited	7/7/2002	STATE	
762	RM 1	Stack traverses	Accredited	7/7/2002	STATE	
776	RM 17	Particulates	Accredited	7/7/2002	STATE	
779	RM 2	Stack gas velocity volume flow rate	Accredited	7/7/2002	STATE	
780	RM 20	SO2 NOX O2 CO2 from stationary gas turbines	Accredited	7/7/2002	STATE	
787	RM 25A	VOC's	Accredited	7/7/2002	STATE	
798	RM 2A	Volume flow rate through small pipes and ducts	Accredited	7/7/2002	STATE	LA
800	RM 2C	Stack gas velocity volume flow rate in small stacks/ducts	Accredited	7/7/2002	STATE	LA
801	RM 2D	Volume flow rate in small pipes and ducts	Accredited	7/7/2002	STATE	LA
803	RM 3	Carbon dioxide oxygen dry molecular weight	Accredited	7/7/2002	STATE	LA
804	RM 3A	Carbon dioxide oxygen	Accredited	7/7/2002	STATE	LA

Louisiana Environmental Laboratory
LELAP
Accreditation Program

Laboratory Scope of Accreditation

Organization

04036 (704) 598-1049
Trigon Engineering Consultants Inc.
6200 Harris Technology Blvd.
Charlotte, NC 28269

Air and Emissions Certification

Method Code	Method Ref	Analyte	Status	Date Effective	Type	AA
805	RM 3B	Carbon dioxide oxygen carbon monoxide	Accredited	7/7/2002	STATE	LA
807	RM 4	Moisture content	Accredited	7/7/2002	STATE	LA
808	RM 5	Particulates	Accredited	7/7/2002	STATE	LA
816	RM 6	Sulfur dioxide	Accredited	7/7/2002	STATE	LA
826	RM 8	Sulfuric acid mist sulfur dioxide	Accredited	7/7/2002	STATE	
2035	Alcoa Method 4075A	Gaseous Fluoride	Accredited	7/1/2003	STATE	LA
2035	Alcoa Method 4075A	Particulate Flouride	Accredited	7/1/2003	STATE	LA

Meter Console Information	
Console Number:	300.045
Dry Gas Meter Number:	009421
Calibration Date:	12/27/2006
Expiration Date:	12/27/2007

Calibration Condition	
Time:	
Barometric Pressure (P_b):	29.20
Calibration Technician:	JAJ
Wet Test Meter ID:	11088.00
Wet Test Meter Verification Date:	8/1/2006

Pass Positive Leak Check?	Yes
Pass Negative Leak Check?	Yes

		Console Meter						Wet Test Meter						Run Time			
DGM Orifice Setting	Vacuum Setting	Meter Initial Volume	Meter Final Volume	Sample Volume	Outlet Temp. Initial	Outlet Temp. Final	Outlet Temp. Average	Wet Test Initial Volume	Wet Test Final Volume	Wet Test Volume	Wet Test Temp. Initial	Wet Test Temp. Final	Wet Test Temp. Average	Minutes	Seconds	hundreds	Elapsed
(P_m)	(2-4 in Hg)	(V_{di})	(V_{df})	(V_m)	(T_{di})	(T_{df})	(T_d)	(V_{wi})	(V_{wf})	(V_w)	(T_{wi})	(T_{wf})	(T_w)				Θ
in. H_2O	in Hg	cubic feet	cubic feet	cubic feet	°F	°F	°F	cubic feet	cubic feet	cubic feet	°F	°F	°F				minutes
0.5	3.0	440.5	445.715	5.215	69	71	70.0	4	9	5.000	67	67	67.0	12.0	10.0	84.0	12.175
1.0	3.0	446	451.21	5.210	71	73	72.0	4	9	5.000	67	67	67.0	8.0	53.0	79.0	8.8912
1.5	3.0	451.5	461.935	10.435	73	76	74.5	1	11	10.000	67	67	67.0	14.0	44.0	96.0	14.743
2.0	3.0	462.2	472.645	10.445	77	81	79.0	1	11	10.000	67	67	67.0	12.0	58.0	30.0	12.97
3.0	3.0	473	483.464	10.464	80	83	81.5	1	11	10.000	67	67	67.0	10.0	41.0	6.0	10.684
4.0	3.0	483.8	494.24	10.440	83	86	84.5	1	11	10.000	67	67	67.0	9.0	16.0	50.0	9.2717

DGM Orifice Setting	DGM Factor	DGM Factor	Orifice Meter	Orifice Meter
(P_m)	γ_i	$\Delta\gamma$	$\Delta H_@$	$\Delta\Delta H_@$
in. H_2O			in. H_2O	in. H_2O
0.5	0.963	-0.008	1.697	-0.149
1	0.966	-0.005	1.803	-0.043
1.5	0.968	-0.003	1.851	0.004
2	0.974	0.003	1.894	0.047
3	0.975	0.004	1.919	0.072
4	0.980	0.009	1.916	0.069
	0.971	γ Average	1.847	ΔH@ Average

Meter Box Thermocouple Calibration:

Test Points	30	50	75	90	120
Reading	31	51	75	90	120

$\gamma = V_w * P_b * (T_d + 460) / V_d * (P_b + \Delta H/13.6) * (T_w + 460)$

$\Delta H_@ = ((0.0319 * \Delta H) / (P_b * (T_d + 460))) * (((T_w + 460) * \theta) / V_w)^2$

Note: For Calibration Factor γ, the ratio of the calibration meter to dry gas meter, acceptable tolerance of individual values from the average is ±0.02.

Note: For $\Delta H_@$, orifice pressure differential that equates to 0.75 cfm (0.0212 m3/min) at standard temperature and pressure, acceptable tolerance of individual values from the average is ±0.2 inches (5.1mm) H2O.

TEMPERATURE SENSOR CALIBRATION FORM
NIST REFERENCE THERMOMETER TRANSFER CALIBRATION

Tolerance: +/- 1.5% of Absolute Temperature

Date: 01/16/2007
Ambient Temperature, Deg. F: 68
Calibrated By: JAJ

Barometric Pressure, In. Hg: 29.44
Reference Instrument Serial No.: 2890
Reference Instrument Serial No.: 2775
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	NIST Reference Instrument Temperature Degrees F	Transfer Instrument Temperature Degrees F	Temperature Difference Calculation Percent, %
-30 to 120 Deg. F Thermometer Serial Number F96-247					
100.022	1	Water Bath	32	32	0.00
	2	Water Bath	70	71	-0.19
	3	Water Bath	140	140	0.00
-5 to 400 Deg. C Thermometer Serial Number U38717					
100.024	1	Water Bath	80	26 Deg. C	0.22
	2	Water Bath	140	60 Deg. C	0.00
	3	Water Bath	200	92 Deg. C	0.36
-120 to 2000 Deg. F Omega HH25 KF Pyrometer Serial Number T-124997 CEM					
100.025	1	Tegam Calibrator	32	32	0.00
	2	Tegam Calibrator	250	251	-0.14
	3	Tegam Calibrator	500	500	0.00
-120 to 2000 Deg. F Omega HH501 BK Pyrometer Serial Number 00000338 Blue Team					
300.380	1	Tegam Calibrator	32	32	0.00
	2	Tegam Calibrator	250	251	-0.14
	3	Tegam Calibrator	500	502	-0.21
-120 to 2000 Deg. F Omega HH501 BK Pyrometer Serial Number 00000347 Gold Team					
300.381	1	Tegam Calibrator	32	32	0.00
	2	Tegam Calibrator	250	251	-0.14
	3	Tegam Calibrator	500	501	-0.10
-120 to 2000 Deg. F Omega HH25 KF Pyrometer Serial Number T-148889 Grey Team					
100.026	1	Tegam Calibrator	32	32	0.00
	2	Tegam Calibrator	250	250	0.00
	3	Tegam Calibrator	500	500	0.00
-120 to 2000 Deg. F Omega HH25 KF Pyrometer Serial Number T-148841					
100.027	1	Tegam Calibrator	32	32	0.00
	2	Tegam Calibrator	250	252	-0.28
	3	Tegam Calibrator	500	500	0.00
-120 to 2000 Deg. F Omega HH501 BK Pyrometer Serial Number 00000335 Lab					
300.382	1	Tegam Calibrator	32	32	0.00
	2	Tegam Calibrator	250	250	0.00
	3	Tegam Calibrator	500	501	-0.10

Temperature Difference Calculation:

$$\frac{\text{(Ref. Temp. Deg. F + 460) - (Test Temp. Deg. F + 460)}}{\text{Ref. Temp. Deg. F + 460}} \times 100 = <1.5\%$$

TEMPERATURE SENSOR CALIBRATION FORM
NIST REFERENCE THERMOMETER TRANSFER CALIBRATION

Tolerance: +/- 1.5% of Absolute Temperature

Date: 01/16/2007
Ambient Temperature, Deg. F: 68
Calibrated By: JAJ

Barometric Pressure, In. Hg: 29.44
Reference Instrument Serial No.: 2890
Reference Instrument Serial No.: 2775
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	NIST Reference Instrument Temperature Degrees F	Transfer Instrument Temperature Degrees F	Temperature Difference Calculation Percent, %
-120 to 2000 Deg. F Omega HH501 BK Pyrometer Serial Number 00000331					
300.383	1	Tegam Calibrator	32	32	0.00
	2	Tegam Calibrator	250	250	0.00
	3	Tegam Calibrator	500	499	0.10
-120 to 2000 Deg. F Omega HH25 KF Pyrometer Serial Number T-225752					
100.040	1	Tegam Calibrator	32	31	0.20
	2	Tegam Calibrator	250	251	-0.14
	3	Tegam Calibrator	500	499	0.10

Source = Type of calibration system used.

Temperature Difference Calculation:

$$\frac{\text{(Ref. Temp. Deg. F + 460) - (Test Temp. Deg. F + 460)}}{\text{Ref. Temp. Deg. F + 460}} \times 100 = <1.5\%$$

TEMPERATURE SENSOR CALIBRATION FORM
THERMOCOUPLES

Tolerance: +/- 1.5% of Absolute Temperature

Date: 01/16/2007
Ambient Temperature, Deg. F: 68
Calibrated By: JAJ

Barometric Pressure, In. Hg: 29.44
Reference Instrument Serial No.: 2890
Reference Instrument Serial No.: 2775
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	Reference Thermometer Temperature Degrees F	Thermocouple Potentiometer Temperature Degrees F	Temperature Difference Calculation Percent, %
Omega HH-25 KF Dry Bulb - CEM					
100.025	1	Water Bath	65	65	0.00
	2	Water Bath	135	135	0.00
	3	Oil Bath	375	375	0.00
Omega HH-25 KF Wet Bulb - CEM					
100.025	1	Water Bath	65	65	0.00
	2	Water Bath	135	134	0.17
	3	Oil Bath	374	374	0.00
Omega HH501 BK Dry Bulb - Blue Team					
300.380	1	Water Bath	65	65	0.00
	2	Water Bath	136	135	0.17
	3	Oil Bath	376	375	0.12
Omega HH501 BK Wet Bulb - Blue Team					
300.380	1	Water Bath	65	65	0.00
	2	Water Bath	134	135	-0.17
	3	Oil Bath	373	375	-0.24
Omega HH501 BK Dry Bulb - Gold Team					
300.381	1	Water Bath	65	65	0.00
	2	Water Bath	134	135	-0.17
	3	Oil Bath	375	375	0.00
Omega HH501 BK Wet Bulb - Gold Team					
300.381	1	Water Bath	65	65	0.00
	2	Water Bath	136	135	0.17
	3	Oil Bath	377	376	0.12
Omega HH-25 KF Dry Bulb - Grey Team					
100.026	1	Water Bath	64	65	-0.19
	2	Water Bath	134	135	-0.17
	3	Water Bath	374	375	-0.12
Omega HH-25 KF Wet Bulb - Grey Team					
100.026	1	Water Bath	65	65	0.00
	2	Water Bath	134	135	-0.17
	3	Water Bath	374	375	-0.12

Source = Type of calibration system used.

Temperature Difference Calculation:

$$\frac{\text{(Ref. Temp. Deg. F + 460) - (Test Temp. Deg. F + 460)}}{\text{Ref. Temp. Deg. F + 460}} \times 100 = <1.5\%$$

TEMPERATURE SENSOR CALIBRATION FORM
THERMOCOUPLES

Tolerance: +/- 1.5% of Absolute Temperature

Barometric Pressure, In. Hg: 29.44
Date: 01/16/2007
Reference Instrument Serial No.: 2890
Ambient Temperature, Deg. F: 68
Reference Instrument Serial No.: 2775
Calibrated By: JAJ
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	Reference Thermometer Temperature Degrees F	Thermocouple Potentiometer Temperature Degrees F	Temperature Difference Calculation Percent, %
Omega HH501 BK Dry Bulb - Lab					
300.382	1	Water Bath	65	65	0.00
	2	Water Bath	135	135	0.00
	3	Water Bath	374	375	-0.12
Omega HH501 BK Wet Bulb - Lab					
300.382	1	Water Bath	65	65	0.00
	2	Water Bath	135	136	-0.17
	3	Water Bath	374	375	-0.12
Omega HH501 BK Dry Bulb					
300.383	1	Water Bath	65	65	0.00
	2	Water Bath	135	135	0.00
	3	Water Bath	375	375	0.00
Omega HH501 BK Wet Bulb					
300.383	1	Water Bath	65	65	0.00
	2	Water Bath	135	135	0.00
	3	Water Bath	375	375	0.00
Omega HH-25 KF Dry Bulb					
100.040	1	Water Bath	64	65	-0.19
	2	Water Bath	135	135	0.00
	3	Water Bath	375	376	-0.12
Omega HH-25 KF Wet Bulb					
100.040	1	Water Bath	65	65	0.00
	2	Water Bath	135	135	0.00
	3	Water Bath	376	375	0.12
High Temperature					
100.015	1	Water Bath	148	148	0.00
	2	Muffle Furnace	305	301	0.52
	3	Muffle Furnace	550	546	0.40
	4	Muffle Furnace	975	973	0.14

Source = Type of calibration system used.

Temperature Difference Calculation:

$$\frac{\text{(Ref. Temp. Deg. F + 460) - (Test Temp. Deg. F + 460)}}{\text{Ref. Temp. Deg. F + 460}} \times 100 = <1.5\%$$

TEMPERATURE SENSOR CALIBRATION FORM
THERMOCOUPLES

Tolerance: +/- 1.5% of Absolute Temperature

Date: 1.12.2007
Ambient Temperature, Deg. F: 64
Calibrated By: JAJ

Barometric Pressure, In. Hg: 29.44
Reference Instrument Serial No.: 2890
Reference Instrument Serial No.: 2775
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	Reference Thermometer Temperature Degrees F	Thermocouple Potentiometer Temperature Degrees F	Temperature Difference Calculation Percent, %
Umbilical Adaptor #1					
300.030	1	Water Bath	33	33	0.00
	2	Water Bath	60	62	-0.38
	3	Water Bath	135	135	0.00
Umbilical Adaptor #2					
300.031	1	Water Bath	34	34	0.00
	2	Water Bath	61	61	0.00
	3	Water Bath	135	135	0.00
Umbilical Adaptor #3					
300.032	1	Water Bath	34	34	0.00
	2	Water Bath	61	62	-0.19
	3	Water Bath	132	132	0.00
Umbilical Adaptor #4					
300.042	1	Water Bath	33	34	-0.20
	2	Water Bath	62	62	0.00
	3	Water Bath	136	136	0.00
Umbilical Adaptor #5					
300.317	1	Water Bath	33	33	0.00
	2	Water Bath	60	60	0.00
	3	Water Bath	134	134	0.00
Umbilical Adaptor #6					
300.044	1	Water Bath	33	33	0.00
	2	Water Bath	61	61	0.00
	3	Water Bath	134	134	0.00
Umbilical Adaptor #7					
300.134	1	Water Bath	33	33	0.00
	2	Water Bath	61	62	-0.19
	3	Water Bath	134	133	0.17
Umbilical Adaptor #8					
300.135	1	Water Bath	33	33	0.00
	2	Water Bath	61	61	0.00
	3	Water Bath	135	135	0.00

Source = Type of calibration system used.

Temperature Difference Calculation:

$$\frac{\text{(Ref. Temp. Deg. F + 460) - (Test Temp. Deg. F + 460)}}{\text{Ref. Temp. Deg. F + 460}} \times 100 = <1.5\%$$

TEMPERATURE SENSOR CALIBRATION FORM
THERMOCOUPLES

Tolerance: +/- 1.5% of Absolute Temperature

Date: 1.16.2007
Ambient Temperature, Deg. F: 70
Calibrated By: JAJ

Barometric Pressure, In. Hg: 29.44
Reference Instrument Serial No.: 2890
Reference Instrument Serial No.: 2775
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	Reference Thermometer Temperature Degrees F	Thermocouple Potentiometer Temperature Degrees F	Temperature Difference Calculation Percent, %
DGM Inlet/Outlet					
300.035	1	Ambient Air	35	35	0.00
	2	Ambient Air	65	65	0.00
	3	Ambient Air	83	84	-0.18
DGM Inlet/Outlet		Ambient Air			
300.045	1	Ambient Air	36	36	0.00
	2	Ambient Air	68	69	-0.19
	3	Ambient Air	86	86	0.00
DGM Inlet/Outlet					
300.200	1	Ambient Air	34	35	-0.20
	2	Ambient Air	67	69	-0.38
	3	Ambient Air	84	85	-0.18
DGM Inlet/Outlet					
300.214	1	Ambient Air	35	36	-0.20
	2	Ambient Air	64	65	-0.19
	3	Ambient Air	84	86	-0.37
DGM Inlet/Outlet					
300.241	1	Ambient Air	34	35	-0.20
	2	Ambient Air	65	65	0.00
	3	Ambient Air	83	84	-0.18
DGM Inlet/Outlet					
300.310	1	Ambient Air	35	35	0.00
	2	Ambient Air	66	65	0.19
	3	Ambient Air	86	86	0.00
DGM Inlet/Outlet					
300.321	1	Ambient Air	36	36	0
	2	Ambient Air	66	65	0.19
	3	Ambient Air	85	85	0
DGM Inlet/Outlet					
300.388	1	Ambient Air	35	36	-0.20
	2	Ambient Air	64	65	-0.19
	3	Ambient Air	84	85	-0.18

Source = Type of calibration system used.

Temperature Difference Calculation:

$$\frac{\text{(Ref. Temp. Deg. F + 460) - (Test Temp. Deg. F + 460)}}{\text{Ref. Temp. Deg. F + 460}} \times 100 = <1.5\%$$

TEMPERATURE SENSOR CALIBRATION FORM
THERMOCOUPLES

Tolerance: +/- 1.5% of Absolute Temperature

Date: 1/5/2007
Ambient Temperature, Deg. F: 68
Calibrated By: JAJ

Barometric Pressure, In. Hg: 29.44
Reference Instrument Serial No.: 2890
Reference Instrument Serial No.: 2775
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	Reference Thermometer Temperature Degrees F	Thermocouple Potentiometer Temperature Degrees F	Temperature Difference Calculation Percent, %
8' Probe					
200.041	1	Water Bath	66	66	0.00
	2	Water Bath	160	156	0.65
	3	Oil Bath	370	371	-0.12
8' Probe					
200.045	1	Water Bath	66	66	0.00
	2	Water Bath	161	160	0.16
	3	Oil Bath	380	380	0.00
8' Probe					
200.108	1	Water Bath	65	65	0.00
	2	Water Bath	157	159	-0.32
	3	Oil Bath	375	374	0.12
8' Probe					
200.109	1	Water Bath	65	65	0.00
	2	Water Bath	161	160	0.16
	3	Oil Bath	377	375	0.24
9' Probe					
200.363	1	Water Bath	67	66	0.19
	2	Water Bath	165	160	0.80
	3	Oil Bath	361	366	-0.61
9' Probe					
200.101	1	Water Bath	67	66	0.19
	2	Water Bath	156	157	-0.16
	3	Oil Bath	366	371	-0.61

Source = Type of calibration system used.

Temperature Difference Calculation:

$$\frac{\text{(Ref. Temp. Deg. F + 460) - (Test Temp. Deg. F + 460)}}{\text{Ref. Temp. Deg. F + 460}} \times 100 = <1.5\%$$

TYPE "S" PITOT TUBE CALIBRATION FORM

Date: 01/05/07

Calibrator: JAJ

Specifications:

A.) Pitot tube assembly must be level.

B.) If pitot tube is damaged explain under comments section.

C.) $Z = A \sin \gamma$ (<0.125) and $W = A \sin \theta$ (<0.03125)

D.) α <10° and β <5°

Probes w/ Pitot Tubes

I.D. Length	α1°	α2°	β1°	β2°	γ°	θ°	Z, in.	W, in.	A	PA, in.	PB, in.	Dt, in.	Pass/Fail
200.021 2'	2.0	1.0	1.0	0.0	1.0	0.0	0.018	0.00000	1.040	0.520	0.520	0.338	Pass
200.063 2'	1.0	2.0	1.0	0.0	0.0	0.0	0.000	0.00000	0.935	0.468	0.467	0.371	Pass
200.569 2'	1.0	2.0	3.0	2.0	3.0	1.0	0.049	0.01639	0.939	0.470	0.469	0.373	Pass
200.074 2'	1.0	0.0	0.0	0.0	1.0	0.0	0.016	0.00000	0.928	0.464	0.464	0.370	Pass
200.669 2'	1.0	2.0	3.0	2.0	3.0	0.0	0.048	0.00000	0.924	0.462	0.462	0.371	Pass
200.300 2'	1.0	0.0	1.0	0.0	0.0	0.0	0.000	0.00000	0.631	0.316	0.315	0.244	Pass
200.004 3'	2.0	2.0	2.0	2.0	3.0	1.0	0.050	0.01682	0.964	0.482	0.482	0.373	Pass
200.005 3'	0.0	2.0	0.0	0.0	1.0	0.0	0.016	0.00000	0.928	0.464	0.464	0.380	Pass
200.015 3'	2.0	1.0	1.0	1.0	1.0	0.0	0.016	0.00000	0.927	0.464	0.463	0.367	Pass
200.017 3'	1.0	1.0	1.0	2.0	1.0	0.0	0.017	0.00000	0.995	0.498	0.497	0.373	Pass
200.066 3'	1.0	1.0	1.0	0.0	0.0	0.0	0.000	0.00000	0.983	0.492	0.491	0.368	Pass
200.075 3'	1.0	1.0	1.0	0.0	1.0	0.0	0.016	0.00000	0.913	0.457	0.456	0.373	Pass
200.076 3'	1.0	1.0	1.0	1.0	2.0	1.0	0.032	0.01604	0.919	0.460	0.459	0.355	Pass
200.079 3'	1.0	1.0	2.0	1.0	2.0	1.0	0.032	0.01585	0.908	0.454	0.454	0.372	Pass
200.080 3'	1.0	2.0	1.0	1.0	0.0	1.0	0.000	0.01222	0.700	0.350	0.350	0.120	Pass
200.297 3'	2.0	2.0	1.0	1.0	0.0	0.0	0.000	0.00000	0.868	0.434	0.434	0.240	Pass
200.008 5'	0.0	1.0	0.0	1.0	1.0	0.0	0.016	0.00000	0.929	0.465	0.464	0.384	Pass
200.034 5'	0.0	1.0	1.0	2.0	0.0	0.0	0.000	0.00000	0.991	0.496	0.495	0.376	Pass
200.056 5'	2.0	1.0	3.0	1.0	2.0	0.0	0.031	0.00000	0.878	0.439	0.439	0.385	Pass
200.061 5'	2.0	1.0	3.0	1.0	2.0	1.0	0.020	0.00995	0.570	0.285	0.285	0.251	Pass
200.104 5'	1.0	1.0	2.0	1.0	2.0	1.0	0.035	0.01726	0.989	0.495	0.494	0.366	Pass
200.105 5'	1.0	1.0	1.0	1.0	0.0	0.0	0.000	0.00000	0.932	0.466	0.466	0.386	Pass
200.106 5'	2.0	0.0	1.0	3.0	1.0	0.0	0.016	0.00000	0.919	0.460	0.459	0.383	Pass
200.107 5'	1.0	0.0	2.0	1.0	0.0	1.0	0.000	0.01613	0.924	0.462	0.462	0.277	Pass
200.024 6'	1.0	0.0	1.0	2.0	1.0	0.0	0.010	0.00000	0.556	0.278	0.278	0.376	Pass
200.113 7'	1.0	1.0	1.0	1.0	2.0	0.0	0.029	0.00000	0.829	0.415	0.414	0.375	Pass
200.115 7'	2.0	0.0	0.0	2.0	2.0	1.0	0.032	0.01620	0.928	0.464	0.464	0.376	Pass
200.114 7'	2.0	0.0	0.0	2.0	3.0	0.0	0.048	0.00000	0.919	0.460	0.459	0.363	Pass
200.399 7'	4.0	4.0	2.0	3.0	1.0	1.0	0.016	0.01555	0.891	0.446	0.445	0.388	Pass
200.010 7'	2.0	2.0	1.0	1.0	2.0	1.0	0.033	0.01646	0.943	0.472	0.471	0.376	Pass
200.011 7'	1.0	1.0	2.0	0.0	1.0	0.0	0.016	0.00000	0.925	0.463	0.462	0.379	Pass
200.012 7'	2.0	1.0	1.0	2.0	1.0	0.0	0.016	0.00000	0.941	0.471	0.470	0.361	Pass
200.093 7'	0.0	1.0	1.0	0.0	0.0	0.0	0.000	0.00000	0.931	0.466	0.465	0.386	Pass
200.094 7'	1.0	1.0	2.0	1.0	1.0	0.0	0.016	0.00000	0.925	0.463	0.462	0.385	Pass
200.041 8'	2.0	1.0	2.0	1.0	1.0	0.0	0.017	0.00000	1.000	0.500	0.500	0.376	Pass
200.045 8'	0.0	0.0	0.0	0.0	2.0	0.0	0.035	0.00000	1.000	0.500	0.500	0.378	Pass
200.108 8'	0.0	0.0	1.0	1.0	0.5	0.0	0.008	0.00000	0.934	0.467	0.467	0.379	Pass
200.109 8'	0.0	0.0	0.5	0.5	0.5	1.0	0.008	0.01632	0.935	0.468	0.467	0.375	Pass
200.363 9'	1.0	1.0	0.0	1.0	1.0	0.0	0.005	0.00000	0.300	0.150	0.150	0.379	Pass
200.101 9'	1.0	1.0	1.0	1.0	2.0	0.0	0.027	0.00000	0.779	0.390	0.389	0.384	Pass
200.013 10'	0.0	1.0	1.0	0.0	0.0	0.0	0.000	0.00000	0.914	0.457	0.457	0.374	Pass
200.014 10'	2.0	0.0	2.0	2.0	2.0	0.0	0.032	0.00000	0.926	0.463	0.463	0.379	Pass
200.050 12'	0.0	1.0	1.0	1.0	2.0	1.0	0.033	0.01642	0.941	0.471	0.470	0.363	Pass
200.051 12'	1.0	1.0	2.0	2.0	1.0	0.0	0.017	0.00000	0.968	0.484	0.484	0.379	Pass
200.052 12'	1.0	1.0	1.0	2.0	1.0	0.0	0.016	0.00000	0.895	0.448	0.447	0.371	Pass
200.053 12'	2.0	1.0	1.0	2.0	2.0	0.0	0.031	0.00000	0.895	0.448	0.447	0.356	Pass
200.098 14'	1.0	1.0	2.0	2.0	1.0	1.0	0.016	0.01639	0.939	0.470	0.469	0.382	Pass
200.099 14'	2.0	2.0	1.0	1.0	1.0	1.0	0.016	0.01621	0.929	0.465	0.464	0.386	Pass
200.091 17'	1.0	1.0	1.0	2.0	0.0	0.0	0.000	0.00000	0.974	0.487	0.487	0.373	Pass
200.092 17'	2.0	1.0	1.0	1.0	0.0	0.0	0.000	0.00000	0.932	0.466	0.466	0.376	Pass
200.110 17'	1.0	0.0	1.0	2.0	1.0	1.0	0.016	0.01649	0.945	0.473	0.472	0.376	Pass
200.111 17'	1.0	1.0	2.0	2.0	2.0	1.0	0.033	0.01627	0.932	0.466	0.466	0.362	Pass

Comments: Pitot tubes required only minor maintenance & reconditioning

APEX INSTRUMENTS WET TEST METER AUDIT USING BELL PROVER

BELL PROVER ID# 157

3-POINT ENGLISH UNITS

Wet Test Meter Information	
Model Number	AL-20
Serial Number	11088

Calibration Conditions			
Date	Time	17-Aug-06	14:00
Barometric Pressure		29.75	in Hg
Calibration Technician		WCC	
Calibration Meter Gamma		1.0000	unitless

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

Calibration Data

Run Time	Wet Test Meter						Bell Prover				
Elapsed	ΔH	Volume Initial	Volume Final	Sample Volume	Outlet Temp Initial	Outlet Temp Final	Volume Initial	Volume Final	Outlet Temp Initial	Outlet Temp Final	Pressure ΔH
(Θ)	($P_{m(m)}$)	(V_{mi})	(V_{mf})	(V_m)	(t_{mi})	(t_{mf})	(Vbp_i)	(Vbp_f)	(t_{bpi})	(t_{bpf})	(P_{bp})
min	in H_2O	cubic feet	cubic feet	cubic feet	°F	°F	cubic feet	cubic feet	°F	°F	in H_2O
3.00	0.000	5775.155	5776.163	1.008	80.5	80.5	0.000	1.000	81.5	81.5	3.00
3.00	0.000	5776.163	5777.170	1.007	80.5	80.5	1.000	2.000	81.5	81.5	3.00
6.00	0.000	5777.170	5779.188	2.017	80.5	80.5	0.000	2.000	81.5	81.5	3.00

Results

Standardized Data				Final Results	
				Calibration Factor	
Wet Test Meter		Bell Prover		Value	Variation
($Vw_{(std)}$)	($Qw_{(std)}$)	($V_{bp(std)}$)	($Q_{bp(std)}$)	(Y)	(ΔY)
cubic feet	cfm	cubic feet	cfm		
0.9786	0.326	0.9767	0.326	0.9981	0.000
0.9786	0.326	0.9767	0.326	0.9981	0.000
1.9596	0.327	1.9534	0.326	0.9968	-0.001
				0.9977	Y 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.

Note: For $\Delta H_@$, orifice pressure differential that equates to 0.75cfm (0.0212m^3/min) at standard temperature and pressure, acceptable tolerance of individual values from the average is +-0.2inches (5.1mm) H_2O

I certify that the above Wet Test Meter was calibrated in accordance with USEPA Methods, CFR 40 Part 60, using Bell Prover #157, which is traceable to the National Bureau of Standards (N.I.S.T).

Signature _____ Date 8/17/06

TECO Tampa, Florida

Polk Unit 1 — Trigon Project No. 046-06-121

SUMMARY OF RESULTS
EPA Methods 1 through 4
Moisture, Isokinetic and Quality Assurance Determinations

Run Number		1	2	3	Average
Sample Identification		6121-01	6121-02	6121-03	----
Date:		1/18/2007	1/18/2007	1/18/2007	----
θ	Net Time of Test, minutes	60.0	60.0	60.0	----
	Sample Time, 24-hour clock	1349-1456	1527-1634	1655-1803	----
P_{bar}	Barometric Pressure, in. Hg	30.06	30.06	30.06	30.06
P_g	Static Pressure, in. Hg	-0.088	-0.088	-0.088	-0.088
P_S	Stack Pressure, Absolute, in. Hg	29.972	29.972	29.972	29.972
V_M	Actual Meter Volume Sampled, cu. ft.	44.101	44.352	43.984	44.146
ΔH	Avg. Delta H, in. H_20	1.68	1.75	1.71	1.72
T_M	Avg. Gas Meter Temp., Deg. F	80.6	80.0	77.9	79.5
V_{STD}	Volume Sampled at Stand. Cond., cu. ft.	42.192	42.487	42.295	42.325
V_C	Volume of Water Collected, ml	39.2	36.6	35.8	37.2
V_{WC}	Volume of Water Vapor at Std. Cond.,SCF	1.85	1.72	1.69	1.75
B_{WS}	Moisture Content of Gas Stream	0.042	0.039	0.038	0.040
P_{MV}	Percent Moisture in Stack	4.2	3.9	3.8	4.0
M_{FD}	Mole Fraction of Dry Gas	0.958	0.961	0.962	0.960
$\%O_2$	Percent Oxygen, Dry	11.75	11.78	11.76	11.76
%CO	Percent Carbon Dioxide, Dry	8.81	8.78	8.80	8.80
%CO	Percent Carbon Monoxide, Dry	0.00	0.00	0.00	0.00
M_d	Mole. Wt. Stack Gas, Dry Basis, lb/lb mole	29.880	29.876	29.878	29.878
M_S	Mole. Wt. Stack Gas, Wet Basis, lb/lb mole	29.382	29.413	29.423	29.406
Cp	Pitot Tube Constant	0.84	0.84	0.84	0.84
ΔPS	Avg. Sqrt. Delta P, in. H20	1.199	1.172	1.190	1.187
T_S	Avg. Stack Temp., Deg. F	309.6	310.3	309.9	309.9
V_S	Avg. Stack Velocity, ft/sec	80.5	78.7	79.8	79.7
A	Area Stack, ft^2	283.53	283.53	283.53	283.53
Q_{SD}	Gas Volume Flow, Dry Std. Cond. CFM	901790	883049	897071	893970
Q_A	Actual Gas Volume Flow, CFM	1369569	1338229	1357851	1355217
Q_{SW}	Gas Volume Flow, Wet Std. Cond., CFM	941244	918869	932827	930980
D_n	Sample Nozzle Diameter, inches	0.201	0.204	0.201	0.202
A_n	Area of Nozzle, ft^2	0.00022	0.00023	0.00022	0.00022

SUMMARY OF RESULTS
EPA Methods 1 through 4
Moisture, Isokinetic and Quality Assurance Determinations

Run Number		1	2	3	Average
I	Percent Isokinetic	100.4	100.2	101.2	100.6
Mb #	Meter Box Number	300.045	300.045	300.045	300.045
ΔH@	ΔH@ of Meter Box	1.85	1.85	1.85	1.85
Y_{qa}	Alt. Method 5 Posttest Calibration (ALT-009)	0.97	0.98	0.98	0.97
Y	Meter Factor	0.97	0.97	0.97	0.97

APPENDIX C

SULFURIC ACID MIST TEST DATA – SULFURIC ACID PLANT

FIELD DATA SHEETS

ISOKINETIC FIELD DATA SHEET

WKC FINAL

Plant	Polk SAP	Run No.	1	Dry Gas Meter Volume	
Location	Acid Plant	Nozzle I.D. No.	~~0.489~~ 74	Final	922.006 Ft.³
Date	1/18/07	Nozzle Diameter	0.489	Initial	874.21 Ft.³
Method No.	RM 8	Pitot Tube No.	PTO5	Net	47.796 Ft.³
Box Operator	SEC	Pitot Tube (C_p)	.084		
Probe Operator	GDB	Probe Length	9'	Equipment Leak Checks	
Time - Start:	1:46 End: 2:59	Probe Liner Material	Glass	Initial	0 CFM @ 15 "Hg
Sampling Time	64	Pressure	Pb ("Hg) 30.11 Pg ("H_2O) .6	Final	0 CFM @ 15 "H_2O
Min \ Pt	4	Assumed Moisture (%)	0	Pitot Tube	OK @ 2 "H_2O
Meter Box No	MB06	Filter Holder No.	1		
Pyrometer No	P410	Comments		Moisture Determination	
Barometer No		Start	Imp#1 20 Imp#2 16 Imp#3 10	Impinger	-22 ml
Meter Cal. (ΔH)	1.877	Finish	Imp#1 136 Imp#2 128 Imp#3 114	Silica Gel	18.5 gm
Meter Cal. (ΔY)	0.992	O_2 6.78	CO_2 20.08	Total	-3.5

Traverse Point No.	Clock Time	Gas Sample Volume (Ft³)	Stack Temp. Ts (°F)	Meter Temp (°F)	Δ P (In. H_2O)	Δ H (In. H_2O)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	1:46	874.21	158	76	.03	1.81	217		62	9
2	1:50	877.16	159	75	.03	1.11	219		58	9
3	1:54	879.73	159	76	.0205	1.14	242		64	7
4	1:58	882.05	160	76	.011	.61	245		66	4
5	2:02	883.32	160	77	.0345	1.92	246		66	8
6	2:06	886.84	160	78	.0395	2.20	245		62	9
28 7	2:10	889.87	159	78	.0485	2.70	240		61	12
32 8	2:14	893.23	158	78	.0500	2.79	243		63	14
	2:18	896.128								
4 1	2:27	899.49	159	78	.03	1.67	240		64	7
8 2	2:31	902.21	157	78	.029	1.62	240		63	7
12 3	2:35	905.34	160	78	.039	2.17	235		63	10
16 4	2:39	908.67	160	79	.0440	2.45	230		63	13
20 5	2:43	911.90	162	80	.04	2.23	229		62	12
24 6	2:47	915.43	163	80	.049	2.06	200		63	13
28 7	2:51	918.75	162	80	.0405	2.25	225		64	13
32 8	2:55	922.006	161	80	.042	2.34	220		64	13
	2:59									

Quality Assurance / Quality Control Information

Console Operator Signature: Scott [signature] Date: 1/18/07

Complete: ✓ Legible: ✓ Accurate: ✓ Project Scope: ✓ Reasonableness: ✓

Reviewer's Signature: [signature] Title: SET Date: 22-JAN-07

ISOKINETIC FIELD DATA SHEET

Plant	Polk SAP	Run No	2	Dry Gas Meter Volume	
Location	Acid Plant	Nozzle ID No	74	Final	971.188 Ft³
Date	1/18/07	Nozzle Diameter	.489	Initial	922.375 Ft³
Method No.	M8	Pitot Tube No.		Net	~~47.796~~ 48,813 Ft
Box Operator	SEC	Pitot Tube (C_p)	0.84		
Probe Operator	GDB	Probe Length	1'	Equipment Leak Checks	
Time - Start	3:19 End 4:26	Probe Liner Material	Glass	Initial	0 CFM @ 15 "Hg
Sampling Time	64 min	Pressure	Pb ("Hg): 3.11 Pg ("H2O): .6	Final	0 CFM @ 11 "H2O
Min \ Pt	4	Assumed Moisture (%)	0	Pitot Tube	OKE2 "H2O
Meter Box No.	MBO6	Filter Holder No.	2		
Pyrometer No	PY 10	Comments		Moisture Determination	
Barometer No.		Start	Imp#1 200 Imp#2 100 Imp#3 100	Impinger	-16.0 ml
Meter Cal. (Δ H)	1.877	Finish	Imp#1 142 Imp#2 128 Imp#3 114	Silica Gel	16.5 gm
Meter Cal. (Δ Y)	0.992	O_2 6.31	CO_2 20.4	Total	0.5

Traverse Point No	Clock Time	Gas Sample Volume (Ft³) 922.375	Stack Temp. Ts (F)	Meter Temp (F)	Δ P (In H_2O)	Δ H (In H_2O)	Probe Temp (F)	Filter Box Temp Tm (F)	Last Imp Temp (F)	Vacuum (In Hg)
4 1	3:19	925.00	158	82	.0245	1.38	227		68	6
8 2	3:23	927.703	159	83	.0285	1.60	240		62	6
12 3	3:27	930.416	160	83	.0275	1.54	236		59	6
16 4	3:31	933.22	162	83	.0285	1.60	236		61	6
20 5	3:35	935.30	164	83	.017	.95	237		61	4
24 6	3:39	938.93	161	84	.05	2.81	237		61	10
28 7	3:43	942.49	159	84	.046	2.59	235		61	10
32 8	3:47	946.0045	157	84	.048	2.71	231		63	10
	3:51									
36 1	3:54	948.55	158	84	.023	1.30	227		68	5
40 2	3:58	951.420	159	85	.0325	1.84	233		63	6
44 3	4:02	954.32	156	84	.036	2.04	230		63	9
48 4	4:06	957.745	158	85	.045	2.55	230		63	9
52 5	4:10	960.99	159	84	.038	2.14	226		63	9
56 6	4:14	964.33	160	85	.0425	2.40	229		64	9
60 7	4:18	967.70	159	84	.044	2.48	233		64	9
64 8	4:22	971.188	158	85	.046	2.60	226		64	9
	4:26									

Quality Assurance / Quality Control Information

Console Operator Signature: [signature] Date 1/18/07

Complete: ✓ Legible: ✓ Accurate ✓ Project Scope: ✓ Reasonableness: ✓

Reviewer's Signature: [signature] Title SET Date 22-JAN-07

ISOKINETIC FIELD DATA SHEET

Plant	PAC SAP	Run No	3	Dry Gas Meter Volume	
Location	Acid Plant	Nozzle I.D. No.	74	Final	1020.8 Ft.³
Date	1/18/07	Nozzle Diameter	.489	Initial	971.492 Ft.³
Method No.	RM 8	Pitot Tube No		Net	~~49~~ 49.308 Ft.³
Box Operator	SEG	Pitot Tube (C_p)	0.84		
Probe Operator	BDB	Probe Length	9'	Equipment Leak Checks	
Time - Start:	7:41 End: 5:46	Probe Liner Material	Glass	Initial	0 CFM @ 15 "Hg
Sampling Time	64	Pressure	Pb ("Hg): 29.1 Pg ("H2O): .6	Final	0 CFM @ 13 "H2O
Min./ Pt.	4	Assumed Moisture (%)	0	Pitot Tube	oke "H2O
Meter Box No	MBC	Filter Holder No.	3		
Pyrometer No.	P410	Comments		Moisture Determination	
Barometer No.		Start	Imp#1 200 Imp#2 100 Imp#3 100	Impinger	-18 ml
Meter Cal. (Δ H)	1.877	Finish	Imp#1 142 Imp#2 128 Imp#3 112	Silica Gel	14.9 gm
Meter Cal. (Δ Y)	0.992	O_2 6.48	CO_2 20.46	Total	-3.1

Traverse Point No	Clock Time	Gas Sample Volume (Ft^3)	Stack Temp. Ts (°F)	Meter Temp (°F)	Δ P (In. H_2O)	Δ H (In. H_2O)	Probe Temp (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
	[redacted]	971.492	[redacted]	[redacted]			[redacted]			
4 1	4:49	974.69	158	84	.0375	2.12	160		57	11
8 2	4:45	977.87	156	84	.0360	2.04	166		54	11
12 3	4:49	980.73	157	84	.0285	1.61	170		58	8
16 4	4:53	983.44	160	84	.0280	1.58	169		59	8
20 5	4:57	986.81	162	84	.045	2.52	169		60	11
24 6	5:01	990.08	159	84	.04	2.25	171		60	11
28 7	[redacted]05	993.386	158	84	.0425	2.40	173		61	11
32 8	5:09	996.680	156	84	.0420	2.38	171		61	11
	[redacted]5:13						[redacted]			
36 1	5:18	999.07	156	83	.0225	1.27	170		63	6
40 2	5:22	1001.92	157	83	.0325	1.83	173		62	8
44 3	5:26	1004.87	155	83	.0335	1.90	173		58	9
48 4	5:30	1007.92	156	83	.036	2.04	168		59	10
52 5	5:34	1011.12	158	83	.039	2.20	171		60	10
56 6	5:38	1014.30	159	83	.039	2.19	170		60	11
60 7	5:42	1017.53	156	83	.04	2.26	171		60	11
64 8	5:46	1020.80	157	82	.042	2.37	169		60	11

Quality Assurance / Quality Control Information

Console Operator Signature: [signature] Date: 1/18/07

Complete: ✓ Legible: ✓ Accurate: ✓ Project Scope: ✓ Reasonableness: ✓

Reviewer's Signature: [signature] Title: SET Date: 22-JAN-07

CALCULATED DATA

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TAMPA ELECTRIC

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Air Services Group

40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: Acid Plant
Sampling Location: Stack
Operating Conditions: Compliance Load
Run Number: 1
Date: 01/18/07

Sample Time, θ:	64 minutes	Nozzle Diameter, D_n:	0.489 inches
Barometric Pressure, P_b:	30.11 "Hg	Nozzle Area, A_n:	0.00130412 ft^2
Stack Pressure, P_s:	30.18 "Hg	Average Orifice Meter, ΔH:	1.996 "H_2O
Effective Stack Area, A_s:	28.274 ft^2	Sample Volume, V_m:	47.796 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	77.9 °F
Gas Analysis:	20.0 % CO_2	Average Stack Temp., T_s:	159.8 °F
	6.4 % O_2	Average $\sqrt{\Delta p}$:	0.187 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	0.0 ml
	73.6 % N_2	Meter Box Y:	0.992 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	0.000 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	47.061 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.000 %
$FDA = 1.0 - B_{ws}$	1.000 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%CO))$	31.46 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	31.46 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	10.84 ft/second
$Q_s = v_s \times A_s \times 60$	18394.5 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	15807.7 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s \times 60)$	100.9 %

Data from Laboratory Analysis:	H_2SO_4
Normality of Barium Chloride titrant, N	0.00975
Volume Titrant Blank, V_{tb}	0.1
Volume Titrant Sample, V_t	3.4
Volume of Sample Aliquot, V_a	100
Total Volume of Solution, V_{soln}	500

Data Calculated from Plant Operational Measurements:

Gallons of Acid Produced During The Test Period,	P_{gal}	1540.22792	gallons
Density of Water,	D	8.345	lbs/gallon
Specific Gravity of Sulfuric Acid,	SG	1.84	dimensonless
Average Concentration of Acid Produced,	C_{acid}	93.7948295	%
Tons of Acid Produced During The Test Period,	P_{st}	11.0911878	short tons
Volumeteric Flow Rate Through Stack ,	Q_{std}	15807.7	dscf/min
Total Sampling Time During Test Period,	θ	64	minutes

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / Vm_{(std)} =$ 3.695E-07 lbs/dscf

Calculated H_2SO_4 Emission Rate, E= **0.03371** lbs H_2SO_4/ton of acid

Where;
Tons of Acid Produced, $P_{st} = (P_{gal} \times D \times SG \times C_{acid}) / 2000$
Emission Rate, $E = (Q_{std} \times \theta \times C_{sample}) / P_{st}$

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40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: Acid Plant
Sampling Location: Stack
Operating Conditions: Compliance Load
Run Number: 2
Date: 01/18/07

Sample Time, θ:	64 minutes	Nozzle Diameter, D_n:	0.489 inches
Barometric Pressure, P_b:	30.11 "Hg	Nozzle Area, A_n:	0.00130412 ft^2
Stack Pressure, P_s:	30.18 "Hg	Average Orifice Meter, ΔH:	2.033 "H_2O
Effective Stack Area, A_s:	28.274 ft^2	Sample Volume, V_m:	48.813 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	83.9 °F
Gas Analysis:	20.0 % CO_2	Average Stack Temp., T_s:	159.3 °F
	6.4 % O_2	Average √Δp:	0.188 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	0.5 ml
	73.6 % N_2	Meter Box Y:	0.992 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	0.024 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	47.537 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.000 %
$FDA = 1.0 - B_{ws}$	1.000 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%\ CO))$	31.46 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	31.45 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	10.90 ft/second
$Q_s = v_s \times A_s \times 60$	18490.3 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	15896.6 dscf/minute
$I = (T_s + 460) \times \{(2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / \{\theta \times P_s \times A_n \times v_s$	101.3 %

Data from Laboratory Analysis:	H_2SO_4
Normality of Barium Chloride titrant, N	0.00975
Volume Titrant Blank, V_{tb}	0.1
Volume Titrant Sample, V_t	4.7
Volume of Sample Aliquot, V_a	100
Total Volume of Solution, V_{soln}	500

Data Calculated from Plant Operational Measurements:

Gallons of Acid Produced During The Test Period,	P_{gal}	1424.375239	gallons
Density of Water,	D	8.345	lbs/gallon
Specific Gravity of Sulfuric Acid,	SG	1.84	dimensonless
Average Concentration of Acid Produced,	C_{acid}	93.79254554	%
Tons of Acid Produced During The Test Period,	P_{st}	10.25668238	short tons
Volumeteric Flow Rate Through Stack ,	Q_{std}	15896.6	dscf/min
Total Sampling Time During Test Period,	θ	64	minutes
$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / Vm_{(std)} =$		5.100E-07	lbs/dscf
Calculated H_2SO_4 Emission Rate,	**E=**	**0.05058**	lbs H_2SO_4/ton of acid

Where;
Tons of Acid Produced, $P_{st} = (P_{gal} \times D \times SG \times C_{acid}) / 2000$
Emission Rate, $E = (Q_{std} \times \theta \times C_{sample}) / P_{st}$

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40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: Acid Plant
Sampling Location: Stack
Operating Conditions: Compliance Load
Run Number: 3
Date: 01/18/07

Sample Time, θ:	64 minutes	Nozzle Diameter, D_n:	0.489 inches
Barometric Pressure, P_b:	30.11 "Hg	Nozzle Area, A_n:	0.00130412 ft^2
Stack Pressure, P_s:	30.18 "Hg	Average Orifice Meter, ΔH:	2.060 "H_2O
Effective Stack Area, A_s:	28.274 ft^2	Sample Volume, V_m:	49.308 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	83.4 °F
Gas Analysis:	20.0 % CO_2	Average Stack Temp., T_s:	157.5 °F
	6.4 % O_2	Average $\sqrt{\Delta p}$:	0.190 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	8.1 ml
	73.6 % N_2	Meter Box Y:	0.992 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	0.382 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	48.066 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.008 %
$FDA = 1.0 - B_{ws}$	0.992 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%\ CO))$	31.46 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	31.35 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	11.04 ft/second
$Q_s = v_s \times A_s \times 60$	18733.4 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	16032.0 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s$	101.6 %

Data from Laboratory Analysis:	**H_2SO_4**
Normality of Barium Chloride titrant, N	0.00975 meq/ml
Volume Titrant Blank, V_{tb}	0.1 ml
Volume Titrant Sample, V_t	7.8 ml
Volume of Sample Aliquot, V_a	100 ml
Total Volume of Solution, V_{soln}	500 ml

Data Calculated from Plant Operational Measurements:

Gallons of Acid Produced During The Test Period,	P_{gal}	1375.448462	gallons
Density of Water,	D	8.345	lbs/gallon
Specific Gravity of Sulfuric Acid,	SG	1.84	dimensonless
Average Concentration of Acid Produced,	C_{acid}	93.79010068	%
Tons of Acid Produced During The Test Period,	P_{st}	9.904110853	short tons
Volumeteric Flow Rate Through Stack ,	Q_{std}	16032.0	dscf/min
Total Sampling Time During Test Period,	θ	64	minutes

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / Vm_{(std)} =$ 8.442E-07 lbs/dscf

Calculated H_2SO_4 Emission Rate, E= **0.08746** lbs H_2SO_4/ton of acid

Where;
Tons of Acid Produced, $P_{st} = (P_{gal} \times D \times SG \times C_{acid}) / 2000$
Emission Rate, $E = (Q_{std} \times \theta \times C_{sample}) / P_{st}$

LABORATORY ANALYSIS

TECO TAMPA ELECTRIC

Laboratory Services

5012 Causeway Blvd * Tampa Fl. 33619 * Ph (813)630-7378 * Fax (813)630-7360 * DOH #E54272

Report For:

Report Date: 02/15/2007

Laboratory ID: AA86401

Location Code: TE_PPS_SAP_RM6

Sample Information

Description: Polk Sulfuric Acid Plant Reference Method 6

Project Account Code:

Sample Collection Method:

Sampled By: ASG

Date and Time Collected: 01/18/2007 6:00:00 PM

Date of Sample Receipt: 01/19/2007

Laboratory Results

PARAMETER	Result	Units	MDL	Qualifier Code	Test Method	Analyst	Analysis Date & Time	Lower Limit	Upper Limit	Violation Check
Normality of BaCl2 * 2H2O	0.00975		0.0001			MM	11/08/2006 11:00:00 AM			
SO3, Avg. of Blank Titrations	0.1	milliliters	0.01		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			
SO3, Run #1, Avg. of Titrations	3.4	milliliters	0.01		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			
SO3, Run #2, Avg. of Titrations	4.7	milliliters	0.01		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			
SO3, Run #3, Avg. of Titrations	7.8	milliliters	0.01		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			
SO3, Volume of Contained Sample	500	milliliters	1		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			
SO3, Volume of Sample Aliquot	100	milliliters	0.1		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			

Comments

All results calculated on a wet to wet basis, unless otherwise indicated.

Data Qualifier Codes Explanation:

Subcontracted Laboratories:

Robert Dorey,
Manager, Laboratory Services

CALIBRATION DATA

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SUMMARY OF EQUIPMENT CALIBRATIONS

EQUIPMENT	CAL DATE	METHOD	RESULTS
CONSOLE (MB 06)		USEPA RM 5	
INITIAL	01/02/2007	(ORIFICE)	0.992
POST TEST	01/25/2007		0.973
NOZZLE (SN74)			
INITIAL	01/02/2007	CALIPER	0.489
POST TEST	01/25/2007	MEASUREMENTS	0.490
PYROMETER (PY 10)	01/03/2007	ASTM THERMOMETER	$\pm$ 2° F
PITOT TUBE (PT 05)	01/03/2007	USEPA RM 2	C_p = 0.84
BAROMETER (BR 07)	01/10/2007	NWS COMPARISON	$\pm$ 0.1" Hg

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USEPA Reference Method 5
Dry Gas Meter Calibration
Critical Orifice Method
Quarterly Calibration

Environmental Services
Air Services Group

Red Team

Manufacturer: Thermo Anderson
Model Number: MST-C1
Instrument Code Number: ^MB06
LabWorks Sample Number:

Calibration Date: 01/02/2007
Barometric Pressure: 30.2 "Hg
Theoretical Critical Vacuum: 14.25 "Hg
Calibrated By: gdb

IMPORTANT

For valid test results, the Actual Vacuum should be 1 to 2 "Hg greater than the Theoretical Critical Vacuum Shown above. The Critical Orifice Coefficient, K', should be in English units.

IMPORTANT

Dry Gas Meter Readings

ΔH	Time	Initial Volume	Final Volume	Total Volume	Initial Temperatures		Final Tempertures	
					Inlet	Outlet	Inlet	Outlet
$"H_2O$	Minutes	ft^3	ft^3	ft^3	°F	°F	°F	°F
0.67	15	863.200	870.055	6.855	74	74	75	74
1.20	15	838.700	847.836	9.136	78	75	79	75
2.00	15	804.100	815.677	11.577	75	67	80	71
3.80	15	820.700	836.588	15.888	81	71	88	74

Critical Orifice Readings

Orifice Serial Number	K' Orifice Coefficient	Actual Vacuum "Hg	Ambient Temperatures		
			Initial °F	Final °F	Average °F
48	0.3455	23.0	72	72	72.0
55	0.4592	21.2	72	72	72.0
63	0.5877	19.5	72	72	72.0
73	0.8022	16.5	72	72	72.0

CALCULATED DATA

Dry Gas Meter Volume Corrected	Critical Orifice Volume Corrected	Critical Orifice Volume Nominal	Calibration Y Value	QA/QC	Calibration ΔHα Value	QA/QC
$Vm_{(std)}$, ft^3	$Vcr_{(std)}$, ft^3	$Vcr_{(std)}$, ft^3	(ratio)	± 0.02	$"H_2O$	± 0.2
6.847	6.786	6.776	0.991	-0.001	1.837	-0.040
9.094	9.019	9.006	0.992	-0.001	1.854	-0.023
11.622	11.542	11.527	0.993	0.001	1.899	0.022
15.863	15.755	15.734	0.993	0.001	1.917	0.041
		Averages:	**0.992**		**1.877**	

For Calibration Y, the ratio of the reading of the calibration orifice to the dry gas meter, acceptable tolerance from average is± 0.02.
For Calibration ΔHα, the acceptable tolerance of individual values from the average is + 0.2.

Review/Approval: 9-Jan-07

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

USEPA Reference Method 5
Dry Gas Meter Calibration
Critical Orifice Method
POST - TEST CALIBRATION CHECK

Manufacturer: Thermo Anderson
Model Number: MST
Instrument Code Number: MB06
LabWorks Sample Number:
Associated Test: POLK SAP 1-18-07

Calibration Date: 01/25/2007
Barometric Pressure: 30.09 "Hg
Theoretical Critical Vacuum: 14.19 "Hg
Calibrated By: SEG
Team: RED

IMPORTANT

For valid test results, the Actual Vacuum should be 1 to 2 "Hg greater than the Theoretical Critical Vacuum Shown above. The Critical Orifice Coefficient, K', should be in English units.

IMPORTANT

Dry Gas Meter Readings

ΔH "H_2O	Time Minutes	Initial Volume ft^3	Final Volume ft^3	Total Volume ft^3	Initial Temperatures Inlet °F	Initial Temperatures Outlet °F	Final Tempertures Inlet °F	Final Tempertures Outlet °F
2	10	93.241	101.153	7.912	77	74	77	74
2	10	101.153	109.063	7.910	77	74	77	74
2	10	109.063	116.978	7.915	77	74	77	74

Orifice Serial Number	K' Orifice Coefficient	Actual Vacuum "Hg	Ambient Temperatures Initial °F	Ambient Temperatures Final °F	Ambient Temperatures Average °F
63	0.5877	20.0	72	72	72.0
63	0.5877	20.0	72	72	72.0
63	0.5877	20.0	72	72	72.0

CALCULATED DATA

Dry Gas Meter Volume Corrected $Vm_{(std)}$, ft^3	Critical Orifice Volume Corrected $Vcr_{(std)}$, ft^3	Critical Orifice Volume Nominal $Vcr_{(std)}$, ft^3	Calibration Y Value (ratio)	QA/QC ± 0.02	Calibration ΔHα Value "H_2O	QA/QC ± 0.2
7.881	7.667	7.684	0.973	0.000	1.898	0.000
7.879	7.667	7.684	0.973	0.000	1.898	0.000
7.884	7.667	7.684	0.973	0.000	1.898	0.000
		Averages:	**0.973**		**1.898**	
		Prior Y:	**0.992**			
		% Difference:	**1.93%**			

For Calibration Y, the ratio of the reading of the calibration orifice to the dry gas meter, acceptable tolerance from average is± 0.02.
For Calibration ΔHα, the acceptable tolerance of individual values from the average is + 0.2.

Review/Approval:  Date: 25-Jan-07

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

QUARTERLY NOZZLE CALIBRATIONS

Shared Resource

STEEL NOZZLE SET

Calibration Date: 01/02/2007 Responsible Party: **SEG**

Nozzle I.D.	Nozzle Diameter, D_n (cm)			Maximum Difference, "	Average D_n, inches
	D_1	D_2	D_3		
^SN01	0.290	0.295	0.295	0.002	0.115
^SN04	0.324	0.322	0.320	0.002	0.127
^SN05	0.380	0.380	0.380	0.000	0.150
^SN06	0.498	0.500	0.500	0.001	0.197
^SN09	0.690	0.695	0.690	0.002	0.272
^SN10	0.750	0.755	0.755	0.002	0.297
^SN12	0.988	0.985	0.985	0.001	0.388
^SN15	0.420	0.422	0.422	0.001	0.166
^SN16	0.508	0.505	0.505	0.001	0.199
^SN19	0.720	0.718	0.715	0.002	0.283
^SN22	0.930	0.928	0.930	0.001	0.366
^SN30	0.795	0.790	0.795	0.002	0.312
^SN36	0.480	0.478	0.475	0.002	0.188
^SN37	0.539	0.534	0.539	0.002	0.212
^SN38	0.633	0.638	0.635	0.002	0.250
^SN46	0.485	0.483	0.483	0.001	0.190
^SN47	0.515	0.518	0.518	0.001	0.204
^SN48	0.644	0.640	0.642	0.002	0.253
^SN50	0.784	0.788	0.788	0.002	0.310
^SN58	0.613	0.619	0.619	0.002	0.243
^SN68	0.625	0.630	0.631	0.002	0.248
^SN69	0.952	0.950	0.950	0.001	0.374
^SN70	1.565	1.565	1.565	0.000	0.616
^SN71	1.560	1.560	1.560	0.000	0.614
^SN72	0.950	0.950	0.948	0.001	0.374
^SN73	1.280	1.280	1.282	0.001	0.504
^SN74	1.243	1.242	1.243	0.000	0.489

Data Notations: All micometer readings are converted from cm to inches by multiplying by 0.393700787. Maximum Difference must be $\leq$ 0.004".

QA/QC Review by:  9-Jan-07

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

POST TEST NOZZLE CALIBRATION

Shared Resource

Calibration Date: 01/25/2007
Calibration Personnel: SEG
Test Designation: POLK SAP 1-18-07

Nozzle Identifier	Nozzle Diameter, D_n (cm)			Maximum Difference, "	Average D_n, inches
	D_1	D_2	D_3		
SN 74	1.245	1.245	1.240	0.002	0.490

Data Notations: All micometer readings are converted from cm to inches by multiplying by 0.393700787. Maximum Difference must be $\leq$ 0.004".

Quarterly (pre-test) value for nozzle ID SN 74 was 0.489

Difference (Pre-test/Post-test) is: -0.001

QA/QC Review by: 25-Jan-07

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

Red Team

Pyrometer Calibration

Pyrometer Under Test

Pyrometer Number: ^PY10
Labworks Sample # 0
Calibration Date: 01/03/2007

Calibrator Information

Calibrator Type/Manufacturer: Hart Scientific
Calibrator Serial Number: AOA024
Date of Last Calibration: 07/11/2006
Calibration Personnel (Typed and Signature): gdb

Calibration Data

Calibration Point	Reference Temperature	Pyrometer Indication	Difference
1	400	400	0
2	212	210	2
3	32	32	0

Reference temperatures must encompass the expected range of measurement. These three points should be ~ 32 degrees, ~212 degrees, and ~ 400 degrees Farenheit.
Difference is calculated as follows:

(reference temperature) – (pyrometer indication)

Qaulity Control Data

Calibration Point	Difference
1	Pass
2	Pass
3	Pass

Reviewer: 

9-Jan-07

TECO
TAMPA ELECTRIC

PITOT TUBE CALIBRATION DATA SHEET

Environmental Services
Air Services Group

Pitot Tube ID # PT05
Calibration Date 01/03/2007 Operating Quarter/Year: 07-Jan Red Team
Openings Damaged? ☐ Y ☑ N Repaired? ☐ Y ☑ N ☐ N/A

Labworks #: 0

Alpha and Beta Angle Determinations

α_1	0.5	degrees	*Pass*
α_2	1.6	degrees	*Pass*
β_1	1.8	degrees	*Pass*
β_2	1.9	degrees	*Pass*

Gamma, Theta, A, Z, and W Determination

ψ	0.4	degrees	
A	2.31	cm	
Z	0.016	cm	*Pass*
o	1.2	degrees	
W	0.048	cm	*Pass*

Acceptable Limits:
Dt 0.48 < Dt > 0.95 cm
α < 10 degrees
(α_1 measured across top impact openings)
(α_2 measured across bottom impact openings)
β_1 < 5 degrees (alongside top impact openings)
β_2 < 5 degrees (alongside bottom impact openings)
Z < 0.32 cm (Asinψ)
W < 0.08 cm (Asino)
A distance between tips
o angle of plane on side of pitots
ψ angle between tips

NOTES

All measurements are taken in accordance with the requirements of 40 CFR 60, Appendix A - Test Methods, Method 2, "Determination of stack gas velocity and volumetric flow rate (Type S pitot tube)". Measurement details are found in EPA/600/4-77/027b, "Quality Assurance Handbook for Air Pollution Measurement Systems: Stationary Source Specific Methods", sub-section 3.1.1, Procuement of Apparatus and Supplies.

Comments: REMOVABLE

Calibrated by: GDB

Quality Assurance Review / Approval: 5-Jan-07

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

BAROMETER CALIBRATION

Blue Team

Instrument Number: ^BR07
Calibration Date: 01/10/2007
Calibration Personnel: SEG
Labworks #:

Time	Barometer Reading Inches Mercury	Reference Reading Inches Mercury	Difference "Hg
8:30	30.32	30.34	-0.02
9:30	30.32	30.36	-0.04
10:30	30.35	30.39	-0.04
		Average Difference:	-0.033

Note: Barometric readings must agree within ± 0.1 "Hg.
Current Reference is National Weather Service, TIA.
Current Conditions at Tampa International Airport

Comments (Note any adjustments):
Adjusted barometer to bring into reference range of +/-0.1"Hg.

QA/QC Review by: [signature] Date: 16-Jan-07

APPENDIX D

INSTRUMENTAL REFERENCE METHOD TEST DATA – IGCC

OXYGEN, CARBON DIOXIDE, CARBON MONOXIDE DATA

Run averages corrected for bias

Operator: Ian DeVivi

Plant Name: TECO Polk Plant

Location: Unit 1

Run	O2 OT %	CO2 OT %	CO ppm
1	11.746	8.807	3.508
2	11.777	8.782	3.519
3	11.763	8.803	3.862

Calibration Error Test at Run 1 . STRATA Version 2.01

		O2 OT	CO2 OT	CO
		%	%	ppm
1/18/2007	7:55:10	0.018	0.059	-0.247
1/18/2007	7:56:09	0.018	0.134	0.033
1/18/2007	7:57:09	0.02	0.079	0.245
1/18/2007	7:58:09	0.06	0.08	0.068
1/18/2007	7:59:09	20.741	16.143	-0.579
1/18/2007	8:00:09	21.818	17.485	-1.939
1/18/2007	8:01:09	12.723	10.064	-1.983
1/18/2007	8:02:09	5.64	4.559	-0.792
1/18/2007	8:03:09	0.031	0.082	8.626
1/18/2007	8:04:09	0.028	0.07	14.82
1/18/2007	8:05:09	0.027	0.069	15.171
1/18/2007	8:06:09	0.027	0.069	15.491
1/18/2007	8:07:09	0.026	0.069	16.15
1/18/2007	8:08:10	0.027	0.069	15.717
1/18/2007	8:09:10	0.025	0.144	15.837
1/18/2007	8:10:10	0.096	0.091	15.993
1/18/2007	8:11:10	0.146	0.14	13.881
1/18/2007	8:12:09	0.026	0.089	9.529

Calibration Error Test at Run 1
Operator: Ian DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

Reference Cylinder Numbers

	Zero	Low-range	Mid-range	High-range
O2 OT	CC-136551		CC-107096	CC-250656
CO2 OT	CC-136551		CC-107096	CC-250656
CO	CC-136551		CC-165111	CC-150548

Date/Time	1/18/2007	8:12:40	PASSED
Analyte	O2 OT	CO2 OT	CO
Units	%	%	ppm
Zero Ref Cyl	0	0	0
Zero Avg	0.02	0.079	0.046
Zero Error%	0.1	0.4	0.3
Low Ref Cyl			
Low Avg			
Low Error%			
Mid Ref Cyl	12.5	9.81	9.28
Mid Avg	12.441	9.951	9.086
Mid Error%	0.2	0.7	1.2
High Ref Cyl	21.9	17.7	15.9
High Avg	21.86	17.492	15.961
High Error%	0.2	1	0.4

Initial System Bias Check for Run 1

Operator: Ian DeVivi

Plant Name: TECO Polk Plant

Location: Unit 1

Reference Cylinder Numbers

	Zero	Span
O2 OT	CC-136551	CC-107096
CO2 OT	CC-136551	CC-107096
CO	CC-136551	CC-165111

Date/Time	1/18/2007	8:32:15	PASSED
Analyte	O2 OT	CO2 OT	CO
Units	%	%	ppm
Zero Ref Cyl	0	0	0
Zero Cal	0.02	0.079	0.046
Zero Avg	0.02	0.109	0.131
Zero Bias%	0	0.2	0.5
Zero Drift%			
Span Ref Cyl	12.5	9.81	9.28
Span Cal	12.441	9.951	9.086
Span Avg	12.3	9.885	9.023
Span Bias%	0.6	0.3	0.4
Span Drift%			

Test Run 1 Begin. STRATA Version 2.01
Operator: Ian DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

		O2 OT %	CO2 OT %	CO ppm
Begin calculating run averages				
1/18/2007	13:50:45	11.546	8.932	3.524
1/18/2007	13:51:45	11.52	8.894	3.252
1/18/2007	13:52:45	11.469	8.926	3.472
1/18/2007	13:53:45	11.511	8.917	3.93
1/18/2007	13:54:46	11.523	8.923	3.667
1/18/2007	13:55:46	11.512	8.913	3.584
1/18/2007	13:56:46	11.448	8.919	3.713
1/18/2007	13:57:46	11.425	9.008	3.893
1/18/2007	13:58:46	11.478	8.951	4.057
1/18/2007	13:59:46	11.497	8.934	3.84
1/18/2007	14:00:46	11.521	8.928	3.661
1/18/2007	14:01:46	11.509	8.927	3.508
1/18/2007	14:02:46	11.523	8.914	3.234
1/18/2007	14:03:46	11.528	8.921	3.35
1/18/2007	14:04:46	11.547	8.906	3.377
1/18/2007	14:05:46	11.559	8.906	3.41
1/18/2007	14:06:45	11.471	8.89	3.38
1/18/2007	14:07:45	11.505	8.908	3.48
1/18/2007	14:08:45	11.544	8.899	2.984
1/18/2007	14:09:45	11.567	8.888	3.124
1/18/2007	14:10:45	11.553	8.953	3.295
1/18/2007	14:11:46	11.512	8.914	3.343
1/18/2007	14:12:46	11.513	8.908	3.3
1/18/2007	14:13:46	11.542	8.91	3.331
1/18/2007	14:14:46	11.57	8.908	3.296
1/18/2007	14:15:46	11.578	8.904	3.185
1/18/2007	14:16:46	11.525	8.871	3.225
1/18/2007	14:17:46	11.479	8.892	3.521
1/18/2007	14:18:45	11.542	8.87	3.143
1/18/2007	14:19:45	11.536	8.888	3.24
1/18/2007	14:20:45	11.552	8.885	3.459
1/18/2007	14:21:45	11.559	8.865	3.365
1/18/2007	14:22:45	11.554	8.916	3.242
1/18/2007	14:23:46	11.565	8.927	3.365
1/18/2007	14:24:46	11.57	8.91	3.322
1/18/2007	14:25:46	11.574	8.896	3.294
1/18/2007	14:26:46	11.479	8.901	3.416
1/18/2007	14:27:46	11.512	8.903	3.677
1/18/2007	14:28:46	11.549	8.911	3.538
1/18/2007	14:29:45	11.563	8.881	3.453
1/18/2007	14:30:45	11.557	8.883	3.159
1/18/2007	14:31:45	11.514	8.883	3.293
1/18/2007	14:32:45	11.495	8.883	3.339
1/18/2007	14:33:45	11.558	8.863	3.128
1/18/2007	14:34:45	11.566	8.873	2.899

Test Run 1 Begin. STRATA Version 2.01
Operator: Ian DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

		O2 OT	CO2 OT	CO
		%	%	ppm
1/18/2007	14:35:46	11.557	8.952	3.146
1/18/2007	14:36:46	11.514	8.905	3.23
1/18/2007	14:37:46	11.486	8.904	3.444
1/18/2007	14:38:46	11.535	8.907	3.563
1/18/2007	14:39:46	11.556	8.908	3.104
1/18/2007	14:40:46	11.551	8.926	3.375
1/18/2007	14:41:46	11.554	8.926	3.262
1/18/2007	14:42:45	11.549	8.914	3.171
1/18/2007	14:43:45	11.567	8.905	3.113
1/18/2007	14:44:45	11.567	8.917	3.192
1/18/2007	14:45:45	11.581	8.913	3.291
1/18/2007	14:46:46	11.501	8.906	3.22
1/18/2007	14:47:46	11.531	8.912	3.506
1/18/2007	14:48:46	11.572	8.967	3.454
1/18/2007	14:49:46	11.592	8.888	3.15
Average of Test Run		O2 OT	CO2 OT	CO
		%	%	ppm
1/18/2007	14:49:46	11.532	8.909	3.375

Test Run 1 End

Final System Bias Check for Run 1 . STRATA Version 2.01

		O2 OT	CO2 OT	CO
		%	%	ppm
1/18/2007	14:51:23	8.482	5.451	2.906
1/18/2007	14:52:23	0.006	0.281	1.125
1/18/2007	14:53:22	-0.012	0.247	-0.14
1/18/2007	14:54:22	-0.019	0.236	-0.16
1/18/2007	14:55:23	3.734	2.85	-0.388
1/18/2007	14:56:23	12.225	9.852	-1.311
1/18/2007	14:57:23	12.243	9.913	-1.871
1/18/2007	14:58:23	12.248	9.93	-1.837
1/18/2007	14:59:23	3.093	2.95	-0.557
1/18/2007	15:00:23	-0.004	0.278	6.069
1/18/2007	15:01:23	-0.015	0.248	8.242
1/18/2007	15:02:23	-0.018	0.235	8.301
1/18/2007	15:03:23	-0.021	0.228	8.676
1/18/2007	15:04:22	-0.023	0.219	8.601
1/18/2007	15:05:22	-0.023	0.219	8.665

Final System Bias Check for Run 1

Operator:	Ian DeVivi	
Plant Name:	TECO Polk Plant	
Location:	Unit 1	
	Reference Cylinder Numbers	
	Zero	Span
O2 OT	CC-136551	CC-107096
CO2 OT	CC-136551	CC-107096
CO	CC-136551	CC-165111

Date/Time	1/18/2007	15:05:51	PASSED
Analyte	O2 OT	CO2 OT	CO
Units	%	%	ppm
Zero Ref Cyl	0	0	0
Zero Cal	0.02	0.079	0.046
Zero Avg	-0.018	0.238	-0.107
Zero Bias%	0.2	0.8	1
Zero Drift%	-0.2	0.6	-1.5
Span Ref Cyl	12.5	9.81	9.28
Span Cal	12.441	9.951	9.086
Span Avg	12.245	9.924	8.795
Span Bias%	0.8	0.1	1.8
Span Drift%	-0.2	0.2	-1.4
Ini Zero Avg	0.02	0.109	0.131
Ini Span Avg	12.3	9.885	9.023
Run Avg	11.532	8.909	3.375
Co	0.001	0.174	0.012
Cm	12.273	9.904	8.909
Correct Avg	11.746	8.807	3.508

Test Run 2 Begin. STRATA Version 2.01
Operator: Ian DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

		O2 OT %	CO2 OT %	CO ppm
1/18/2007	15:06:51	-0.024	0.211	8.825
1/18/2007	15:07:52	10.604	7.864	7.229
1/18/2007	15:08:52	11.538	8.836	3.753
1/18/2007	15:09:52	11.569	8.827	3.147
1/18/2007	15:10:52	11.554	8.845	3.276
1/18/2007	15:11:52	11.5	8.841	3.245
1/18/2007	15:12:52	11.455	8.867	3.574
1/18/2007	15:13:52	11.519	8.856	3.544
1/18/2007	15:14:52	11.513	8.865	3.449
1/18/2007	15:15:52	11.54	8.866	3.206
1/18/2007	15:16:52	11.491	8.853	3.235
1/18/2007	15:17:52	11.44	8.87	3.42
1/18/2007	15:18:52	11.492	8.875	3.506
1/18/2007	15:19:52	11.511	8.87	3.441
1/18/2007	15:20:52	11.537	8.872	3.447
1/18/2007	15:21:51	11.527	8.85	3.119
1/18/2007	15:22:51	11.54	8.87	3.211
1/18/2007	15:23:51	11.568	8.865	3.152
1/18/2007	15:24:51	11.573	8.866	3.122
1/18/2007	15:25:51	11.582	8.861	2.985
1/18/2007	15:26:51	11.505	8.859	2.998
1/18/2007	15:27:52	11.534	8.863	3.038
Begin calculating run averages				
1/18/2007	15:29:13	11.562	8.875	3.02
1/18/2007	15:30:13	11.579	8.863	2.963
1/18/2007	15:31:13	11.551	8.872	2.893
1/18/2007	15:32:13	11.48	8.88	3.022
1/18/2007	15:33:13	11.503	8.869	3.363
1/18/2007	15:34:12	11.538	8.88	3.192
1/18/2007	15:35:12	11.559	8.875	3.067
1/18/2007	15:36:12	11.569	8.873	2.965
1/18/2007	15:37:12	11.464	8.885	3.088
1/18/2007	15:38:13	11.483	8.891	3.751
1/18/2007	15:39:13	11.522	8.891	3.578
1/18/2007	15:40:13	11.548	8.882	3.172
1/18/2007	15:41:12	11.557	8.886	3.095
1/18/2007	15:42:12	11.572	8.869	2.916
1/18/2007	15:43:12	11.56	8.871	2.734
1/18/2007	15:44:12	11.554	8.888	2.934
1/18/2007	15:45:13	11.574	8.886	3.145
1/18/2007	15:46:13	11.546	8.883	3.088
1/18/2007	15:47:13	11.471	8.894	3.273
1/18/2007	15:48:12	11.531	8.895	3.566
1/18/2007	15:49:12	11.556	8.894	3.299
1/18/2007	15:50:12	11.557	8.889	3.049
1/18/2007	15:51:12	11.554	8.895	2.945

Test Run 2 Begin. STRATA Version 2.01
Operator: Ian DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

		O2 OT	CO2 OT	CO
		%	%	ppm
1/18/2007	15:52:13	11.496	8.884	3.269
1/18/2007	15:53:13	11.501	8.897	3.375
1/18/2007	15:54:13	11.534	8.899	3.151
1/18/2007	15:55:12	11.548	8.895	3.395
1/18/2007	15:56:12	11.563	8.89	3.235
1/18/2007	15:57:12	11.471	8.902	3.134
1/18/2007	15:58:12	11.496	8.896	3.572
1/18/2007	15:59:13	11.53	8.918	3.448
1/18/2007	16:00:13	11.572	8.907	3.206
1/18/2007	16:01:13	11.568	8.921	2.908
1/18/2007	16:02:12	11.537	8.939	3.181
1/18/2007	16:03:12	11.566	8.927	3.19
1/18/2007	16:04:12	11.572	8.928	3.02
1/18/2007	16:05:12	11.582	8.923	3.068
1/18/2007	16:06:13	11.564	8.903	2.884
1/18/2007	16:07:13	11.472	8.923	3.104
1/18/2007	16:08:13	11.533	8.899	3.497
1/18/2007	16:09:12	11.531	8.92	2.991
1/18/2007	16:10:12	11.554	8.9	2.681
1/18/2007	16:11:12	11.539	8.906	3.002
1/18/2007	16:12:12	11.471	8.902	3.16
1/18/2007	16:13:13	11.492	8.908	3.428
1/18/2007	16:14:13	11.512	8.917	3.284
1/18/2007	16:15:13	11.548	8.903	3.136
1/18/2007	16:16:12	11.551	8.908	3.136
1/18/2007	16:17:12	11.477	8.899	3.042
1/18/2007	16:18:12	11.473	8.901	3.382
1/18/2007	16:19:12	11.532	8.9	3.363
1/18/2007	16:20:13	11.569	8.888	2.859
1/18/2007	16:21:13	11.566	8.899	2.729
1/18/2007	16:22:13	11.535	8.901	2.793
1/18/2007	16:23:12	11.539	8.91	3.208
1/18/2007	16:24:12	11.555	8.894	3.29
1/18/2007	16:25:12	11.562	8.891	2.91
1/18/2007	16:26:12	11.555	8.868	2.85
1/18/2007	16:27:13	11.458	8.891	2.917
1/18/2007	16:28:13	11.493	8.903	3.643
Average of Test Run		O2 OT	CO2 OT	CO
		%	%	ppm
1/18/2007	16:28:13	11.533	8.896	3.143

Test Run 2 End

Final System Bias Check for Run 2 . STRATA Version 2.01

		O2 OT	CO2 OT	CO
		%	%	ppm
1/18/2007	16:29:35	8.889	6.318	3.33
1/18/2007	16:30:35	0.008	0.302	1.317
1/18/2007	16:31:35	-0.013	0.262	-0.383
1/18/2007	16:32:34	-0.019	0.246	-0.401
1/18/2007	16:33:34	-0.022	0.24	-0.393
1/18/2007	16:34:34	-0.024	0.238	-0.49
1/18/2007	16:35:34	-0.025	0.23	-0.41
1/18/2007	16:36:35	-0.027	0.23	-0.407
1/18/2007	16:37:35	0.441	0.355	-0.408
1/18/2007	16:38:35	12.083	9.657	-0.852
1/18/2007	16:39:35	12.238	9.889	-1.872
1/18/2007	16:40:35	10.888	9.019	-2.015
1/18/2007	16:41:35	0.026	0.342	1.559
1/18/2007	16:42:34	-0.015	0.256	7.651
1/18/2007	16:43:34	-0.02	0.236	8.574

Final System Bias Check for Run 2

Operator: Ian DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

Reference Cylinder Numbers

	Zero	Span
O2 OT	CC-136551	CC-107096
CO2 OT	CC-136551	CC-107096
CO	CC-136551	CC-165111

Date/Time	1/18/2007	16:43:51	PASSED
Analyte	O2 OT	CO2 OT	CO
Units	%	%	ppm
Zero Ref Cyl	0	0	0
Zero Cal	0.02	0.079	0.046
Zero Avg	-0.027	0.23	-0.4
Zero Bias%	0.2	0.8	2.8
Zero Drift%	0	0	-1.8
Span Ref Cyl	12.5	9.81	9.28
Span Cal	12.441	9.951	9.086
Span Avg	12.241	9.897	8.612
Span Bias%	0.8	0.3	3
Span Drift%	0	-0.1	-1.1
Ini Zero Avg	-0.018	0.238	-0.107
Ini Span Avg	12.245	9.924	8.795
Run Avg	11.533	8.896	3.143
Co	-0.023	0.234	-0.254
Cm	12.243	9.91	8.704
Correct Avg	11.777	8.782	3.519

Test Run 3 Begin. STRATA Version 2.01
Operator: Ian DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

		O2 OT %	CO2 OT %	CO ppm
1/18/2007	16:44:52	0.733	0.582	8.581
1/18/2007	16:45:52	11.428	8.694	6.504
1/18/2007	16:46:52	11.458	8.837	3.343
Begin calculating run averages				
1/18/2007	16:47:55	11.488	8.863	3.245
1/18/2007	16:48:55	11.503	8.877	3.406
1/18/2007	16:49:55	11.52	8.869	3.386
1/18/2007	16:50:55	11.517	8.872	3.232
1/18/2007	16:51:55	11.474	8.879	3.068
1/18/2007	16:52:54	11.459	8.88	3.456
1/18/2007	16:53:55	11.507	8.886	3.38
1/18/2007	16:54:55	11.546	8.872	3.068
1/18/2007	16:55:55	11.541	8.887	3.088
1/18/2007	16:56:55	11.514	8.876	3.224
1/18/2007	16:57:55	11.464	8.88	3.185
1/18/2007	16:58:55	11.494	8.899	3.381
1/18/2007	16:59:55	11.535	8.899	3.42
1/18/2007	17:00:54	11.532	8.901	3.295
1/18/2007	17:01:54	11.546	8.88	3.125
1/18/2007	17:02:55	11.535	8.891	3.203
1/18/2007	17:03:55	11.557	8.883	3.101
1/18/2007	17:04:55	11.56	8.883	2.975
1/18/2007	17:05:55	11.541	8.896	3.176
1/18/2007	17:06:55	11.46	8.898	3.316
1/18/2007	17:07:54	11.499	8.892	3.657
1/18/2007	17:08:54	11.538	8.898	3.377
1/18/2007	17:09:55	11.549	8.901	2.897
1/18/2007	17:10:55	11.555	8.892	2.581
1/18/2007	17:11:55	11.511	8.89	3.051
1/18/2007	17:12:55	11.474	8.895	3.403
1/18/2007	17:13:55	11.512	8.908	3.659
1/18/2007	17:14:54	11.543	8.904	3.379
1/18/2007	17:15:54	11.554	8.906	3.174
1/18/2007	17:16:55	11.512	8.906	3.143
1/18/2007	17:17:55	11.451	8.94	3.553
1/18/2007	17:18:55	11.515	8.932	3.571
1/18/2007	17:19:55	11.53	8.947	3.405
1/18/2007	17:20:55	11.553	8.936	3.304
1/18/2007	17:21:54	11.529	8.943	3.267
1/18/2007	17:22:54	11.533	8.938	3.511
1/18/2007	17:23:54	11.551	8.934	3.297
1/18/2007	17:24:55	11.557	8.921	3.075
1/18/2007	17:25:55	11.556	8.92	3.019
1/18/2007	17:26:55	11.461	8.907	3.043
1/18/2007	17:27:55	11.487	8.908	3.565
1/18/2007	17:28:55	11.525	8.909	3.426

Test Run 3 Begin. STRATA Version 2.01
Operator: Ian DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

		O2 OT	CO2 OT	CO
		%	%	ppm
1/18/2007	17:29:54	11.543	8.901	3.297
1/18/2007	17:30:54	11.533	8.91	3.484
1/18/2007	17:31:55	11.508	8.902	3.435
1/18/2007	17:32:55	11.467	8.919	3.405
1/18/2007	17:33:55	11.517	8.921	3.659
1/18/2007	17:34:55	11.55	8.912	3.322
1/18/2007	17:35:55	11.555	8.906	3.165
1/18/2007	17:36:54	11.524	8.895	3.194
1/18/2007	17:37:54	11.44	8.918	3.381
1/18/2007	17:38:55	11.506	8.916	3.486
1/18/2007	17:39:55	11.549	8.908	3.372
1/18/2007	17:40:55	11.529	8.924	3.214
1/18/2007	17:41:55	11.534	8.914	3.365
1/18/2007	17:42:55	11.547	8.89	3.098
1/18/2007	17:43:54	11.565	8.906	3.187
1/18/2007	17:44:54	11.583	8.894	3.21
1/18/2007	17:45:55	11.577	8.91	3.038
1/18/2007	17:46:55	11.479	8.913	3.181
Average of Test Run		O2 OT	CO2 OT	CO
		%	%	ppm
1/18/2007	17:46:55	11.522	8.903	3.276

Test Run 3 End

Final System Bias Check for Run 3 . STRATA Version 2.01

		O2 OT	CO2 OT	CO
		%	%	ppm
1/18/2007	17:48:20	1.523	1.054	2.737
1/18/2007	17:49:20	-0.01	0.259	-0.141
1/18/2007	17:50:20	-0.017	0.242	-0.453
1/18/2007	17:51:20	9.82	7.644	-0.733
1/18/2007	17:52:20	12.25	9.894	-1.807
1/18/2007	17:53:20	6.801	5.839	-1.578
1/18/2007	17:54:20	-0.003	0.289	4.144
1/18/2007	17:55:21	-0.017	0.248	8.316
1/18/2007	17:56:21	-0.021	0.233	8.41

Final System Bias Check for Run 3

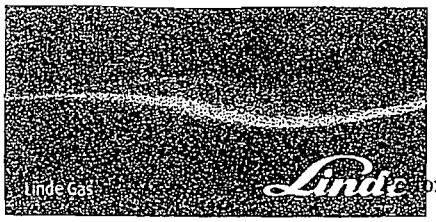
Operator: Ian DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

Reference Cylinder Numbers

	Zero	Span
O2 OT	CC-136551	CC-107096
CO2 OT	CC-136551	CC-107096
CO	CC-136551	CC-165111

Date/Time	1/18/2007	17:56:25	PASSED
Analyte	O2 OT	CO2 OT	CO
Units	%	%	ppm
Zero Ref Cyl	0	0	0
Zero Cal	0.02	0.079	0.046
Zero Avg	-0.014	0.251	-0.547
Zero Bias%	0.1	0.9	3.7
Zero Drift%	0.1	0.1	-0.9
Span Ref Cyl	12.5	9.81	9.28
Span Cal	12.441	9.951	9.086
Span Avg	12.249	9.89	8.459
Span Bias%	0.8	0.3	3.9
Span Drift%	0	0	-1
Ini Zero Avg	-0.027	0.23	-0.4
Ini Span Avg	12.241	9.897	8.612
Run Avg	11.522	8.903	3.276
Co	-0.02	0.241	-0.474
Cm	12.245	9.893	8.536
Correct Avg	11.763	8.803	3.862

CALIBRATION GAS CERTIFICATIONS



Certificate of Analysis

EPA Protocol

HiQ® Certificate

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	13968		**Blend Tolerance:**	5 % Relative
EPA 13 - 18 PPM CO/N2		A31	**Blend Type:**	GRAVIMETRIC
Production #:	100121715		**Cyl. Pressure:**	2000 psig
Lot #:	30499G6060DC		**Balance Gas:**	Nitrogen
Cylinder #:	CC150548		**CGA:**	350
Expiration Date:	7/19/2009		**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months		**Confidence:**	95 %

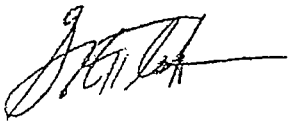
CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
630-08-0	Carbon Monoxide	13 to 18	15.9 +/- 0.18 ppm	07/19/2006
7727-37-9	Nitrogen		Balance	07/19/2006

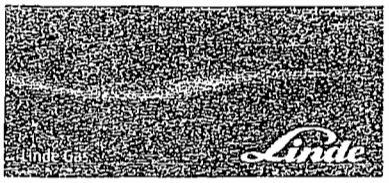
CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
630-08-0	Carbon Monoxide	CC180333 , NTRM	10.17 ppm	07/11/2009

Instrument	Serial #	Analytical Principle	Calibration Date
HORIBA MODEL VIA-510 CO	4345887002	NDIR	07/19/2006

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Greg Eccleston





Certificate of Analysis

EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Maumee Specialty Gas Plant
6421 Monclova Road
MAUMEE OH 43537
419-893-7226

Produced for customer:

MFD/HOLOX LTD
4236 STATESVILLE RD
CHARLOTTE NC 28269-4298
USA
704-596-6262

Material:	6132 EPA CO/N2 3-9.9 PPM A31	**Blend Tolerance:**	5 % Relative
Production #:	100065596	**Store/Use Temp:**	35 to 90 F
Lot #:	02499D3040GD	**Blend Type:**	EPA Protocol
Cylinder #:	CC165111	**Cyl. Pressure:**	2000 psig
Expiration Date:	11/16/2009	**Balance Gas:**	Nitrogen
Shelf Life:	36 months	**CGA:**	350
		Analytical Accuracy:	1.00 % Relative

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
630-08-0	Carbon Monoxide	9	9.28 +/- 0.1 ppm	11/16/2006
7727-37-9	Nitrogen		Balance	11/16/2006
630-08-0	Carbon Monoxide	9	9.26 +/- 0.18 ppm	04/15/2003
7727-37-9	Nitrogen		Balance	04/15/2003

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
630-08-0	Carbon Monoxide	CC180333 , NTRM	10.17 ppm	07/11/2009

Instrument	Serial #	Analytical Principle	Calibration Date
MCTa FTIR	AET0600294	FTIR	11/16/2006

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Linde Gas LLC

Analytical report reviewed by Greg Eccleston

6055 Rockside Woods Blvd.
Independence, OH 44131
USA

Phone: (216) 642-6600
Fax: (216) 642-6624
www.us.lindegas.com

HQ Analysis Certificate

Linde Gas

Certificate of Analysis

EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	18224		**Blend Tolerance:**	5 % Relative
EPA 10-15% O2/8-12% CO2/N2		A31	**Blend Type:**	EPA Protocol
Production #:	100118070		**Cyl. Pressure:**	2000 psig
Lot #:	30499E6010CC		**Balance Gas:**	Nitrogen
Cylinder #:	CC107096		**CGA:**	590
Expiration Date:	5/8/2009		**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months		**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
7782-44-7	Oxygen	10 to 15	12.5 +/- 0.09 %	05/08/2006
124-38-9	Carbon Dioxide	8 to 12	9.81 +/- 0.09 %	05/08/2006
7727-37-9	Nitrogen		Balance	

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
7782-44-7	Oxygen	112347 , GMIS	10.01 %	05/02/2009
124-38-9	Carbon Dioxide	HO2290685Y , GMIS	14.01 %	05/02/2009

Instrument	Serial #	Analytical Principle	Calibration Date
Teledyne 3000M	240141	Paramagnetic	05/08/2006
HORIBA MODEL VIA-510 CO2	4285416002	NDIR	05/08/2006

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Lance Crayton

HiQ Analysis Certificate

Certificate of Analysis

EPA Protocol

HiQ® Certificate formed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	18225		**Blend Tolerance:**	5 % Relative
EPA 20-25% O2/16-20% CO2/N2		A31	**Blend Type:**	EPA Protocol
Production #:	100124043		**Cyl. Pressure:**	2000 psig
Lot #:	30499H6210DC		**Balance Gas:**	Nitrogen
Cylinder #:	CC250656		**CGA:**	590
Expiration Date:	8/25/2009		**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months		**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
124-38-9	Carbon Dioxide	18	17.7 +/- 0.17 %	08/25/2006
7782-44-7	Oxygen	22	21.9 +/- 0.2 %	08/25/2006
7727-37-9	Nitrogen		Balance	

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
7782-44-7	Oxygen	AT9284 , GMIS	21.04 %	03/17/2009
124-38-9	Carbon Dioxide	CC234661 , GMIS	18.11 %	03/29/2009

Instrument	Serial #	Analytical Principle	Calibration Date
Teledyne 3000M	240141	Paramagnetic	05/24/2005
HORIBA MODEL VIA-510 CO2	4285416002	NDIR	11/22/2005

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Lance Crayton

HiQ certificate

NATIONAL SPECIALTY GASES

P. O. Box 12013
Research Triangle Park, N.C. 27709
Phone 919/544-3772

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS MIXTURE

Customer:	National Welders, Charlotte, NC	Reference #	88-94904
NSG PO#	4704164	Certification Date:	12/28/04
Customer PO#		Expiration Date:	12/28/07
Cylinder #	CC50737	Pressure, psig*	2000

ANALYTICAL INFORMATION

METHOD: This standard was analyzed according to EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards: Procedure G1 (September 1997)

ANALYZED CYLINDER

Components	Certified Concentration	Analytical Accuracy**
Carbon Monoxide	29.8 ppm	+/-1%
Balance - Nitrogen		

REFERENCE STANDARD

Type/SRM Sample #	Cylinder #	Concentration	
GMIS (Traceable to SRM # 1678c)	CC67177	50.2 ppm	CO/N2

INSTRUMENTATION

Instrument/Model/Serial #	Last Date Calibrated	Analytical Method
Rosemount 880A CO 00172	12/06/04	Non-dispersive Infrared

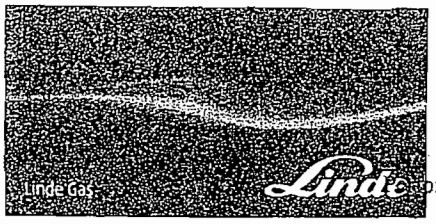
Analyst: Jeremy Kenworthy

This report states accurately the results of the investigation made upon the material submitted to the analytical laboratory. Every effort has been made to determine objectively the information requested. However, in connection with this report, National Specialty Gases shall have no liability in excess of established charge for this service. Assayed at National Specialty Gases, 630 United Drive, Durham, NC 27713 (919) 544-3772

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

**Analytical accuracy includes typical known error sources which, at least, include precision of the analytical instrument.

NSG 020149L



Certificate of Analysis

EPA Protocol

HiQ® Certificate

performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	13970		**Blend Tolerance:**	5 % Relative
EPA 43 - 47 PPM CO/N2		A31	**Blend Type:**	GRAVIMETRIC
Production #:	100121717		**Cyl. Pressure:**	2000 psig
Lot #:	30499G6060DB		**Balance Gas:**	Nitrogen
Cylinder #:	CC149754		**CGA:**	350
Expiration Date:	7/19/2009		**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months		**Confidence:**	95 %

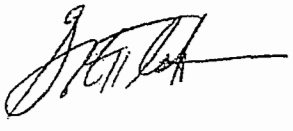
CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
630-08-0	Carbon Monoxide	43 to 47	46.3 +/- 0.3 ppm	07/19/2006
7727-37-9	Nitrogen		Balance	07/19/2006

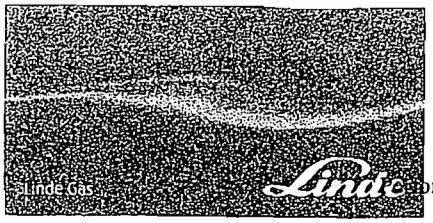
CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
630-08-0	Carbon Monoxide	CC179892 , NTRM	49.33 ppm	07/11/2009

Instrument	Serial #	Analytical Principle	Calibration Date
HORIBA MODEL VIA-510 CO	4345887002	NDIR	07/19/2006

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Greg Eccleston





Certificate of Analysis

EPA Protocol

HiQ® Certificate

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	18246		**Blend Tolerance:**	5 % Relative
EPA 60 PPM CO/N2 (+/-2%)		A31	**Blend Type:**	EPA Protocol
Production #:	100118386		**Cyl. Pressure:**	2000 psig
Lot #:	30499E6050DD		**Balance Gas:**	Nitrogen
Cylinder #:	CC174902		**CGA:**	350
Expiration Date:	7/12/2009		**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months		**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
630-08-0	Carbon Monoxide	60	61.7 ppm	07/12/2006
7727-37-9	Nitrogen		Balance	

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
630-08-0	Carbon Monoxide	CC179892 , NTRM	49.33 ppm	07/11/2009

Instrument	Serial #	Analytical Principle	Calibration Date
HORIBA MODEL VIA-510 CO	4345887002	NDIR	07/12/2006

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Analytical report approved by Lance Crayton

HiQ certificate

Linde Gas

Certificate of Analysis

EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	6198	**Blend Tolerance:**	5 % Relative
EPA CO/N2 100-999 PPM	A31	**Blend Type:**	EPA Protocol
Production #:	100117213	**Cyl. Pressure:**	2000 psig
Lot #:	30499D6060DD	**Balance Gas:**	Nitrogen
Cylinder #:	CC237798	**CGA:**	350
Expiration Date:	4/18/2009	**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months	**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
630-08-0	Carbon Monoxide	100	101 +/- 0.7 ppm	04/18/2006
7727-37-9	Nitrogen		Balance	

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
630-08-0	Carbon Monoxide	CC179992 ,,NTRM	99.49 ppm	07/11/2009

Instrument	Serial #	Analytical Principle	Calibration Date
HORIBA MODEL VIA-510 CO	4345887002	NDIR	04/18/2006

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Lance Crayton

Linde Gas

Certificate of Analysis

EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	2179		**Blend Tolerance:**	5 % Relative
MISC 3 COMPONENT EPA		A31	**Blend Type:**	EPA Protocol
Production #:	100115060		**Cyl. Pressure:**	2000 psig
Lot #:	30499B6100DB		**Balance Gas:**	Nitrogen
Cylinder #:	CC7551		**CGA:**	590
Expiration Date:	2/21/2009		**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months		**Confidence:**	95 %

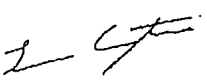
CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
630-08-0	Carbon Monoxide	100	101 +/- 0.7 ppm	02/21/2006
7782-44-7	Oxygen	11	11.0 +/- 0.08 %	02/14/2006
7727-37-9	Nitrogen		Balance	

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
7782-44-7	Oxygen	CC73289 , NTRM	9.90 %	06/13/2009
630-08-0	Carbon Monoxide	CC179992 , NTRM	99.49 ppm	07/11/2009

Instrument	Serial #	Analytical Principle	Calibration Date
Teledyne 3000M	240141	Paramagnetic	02/14/2006
HORIBA MODEL VIA-510 CO	4345887002	NDIR	02/21/2006

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Lance Crayton



NATIONAL SPECIALTY GASES

P. O. Box 12013
Research Triangle Park, N.C. 27709
Phone 919/544-3772

CERTIFICATE OF ANALYSIS

CERTIFIED MIXTURE

Customer: National Welders
Charlotte, NC

Reference #: 88-99088
Cylinder #: CC85291
Order #: 5031323
Date Reported: 8/8/2005
Expiration Date: 8/8/2008

Component	Specification	Concentration / *Cert. Accuracy	Analytical Method
Oxygen	12%	12.0% +/- 2%	Paramagnetic
Carbon Dioxide	10%	10.0% +/- 2%	Non-Dispersive Infrared
Balance - Nitrogen			

Carolyn S. Williams
Analyst Carolyn S. Williams

* CERTIFICATION ACCURACY IS A PERCENTAGE (+/-) OF THE COMPONENT

NSG020149K

APPENDIX E

INSTRUMENTAL REFERENCE METHOD TEST DATA – SULFURIC ACID PLANT

SULFUR DIOXIDE, OXYGEN, CARBON DIOXIDE SUMMARY

Polk Acid Plant - Report			
RUN 1			
01/18/2007	**13:37:07**		
Linearity Check - Calibration Error	O2	SO2	CO22
Analyzer Range	25	300	50
Units	%	%	%
Mid Level Certified Value (PPM or %)	6.04	152.2	25.07
High Level Certified Value (PPM or %)	13.7	269	45.1
Zero Level Observed	-0.047	0.004	-0.002
Mid Level Observed	6.118	152.084	24.78
High Level Observed	13.87	269.293	45.045
% Difference from Zero to Target	-0.19	0	0
% Difference from Mid to Target	0.31	-0.04	-0.58
% Difference from High to Target	0.68	0.1	-0.11
Analyzer Range	25	300	50
Units	%	%	%
Actual Zero From Linearity	-0.047	0.004	-0.002
Actual Span From Linearity	6.118	152.084	24.78
Initial Readings			
Zero	-0.047	2.788	-0.002
Span	6.057	153.988	25.024
Final Readings			
Zero	-0.047	1.762	-0.002
Span	6.057	154.574	25.024
Run Results			
Raw Results	6.4	159.82	20.04
Corrected Results (ppmv)	6.38	157.75	20.08

Polk Acid Plant - Report			
RUN 2			
01/18/2007	**15:14:28**		
Analyzer Range	25	300	50
Zero	-0.047	1.762	-0.002
Span	6.057	154.574	25.024
Final Readings			
Zero	-0.047	1.323	-0.002
Span	6.057	154.867	25.024
Run Results			
Raw Results	6.33	163.4	20.36
Corrected Results (ppmv)	6.31	160.82	20.4

Polk Acid Plant - Report			
RUN 3			
01/18/2007	**16:38:44**		
Analyzer Range	25	300	50
Units	%	%	%
Zero	-0.047	1.323	-0.002
Span	6.057	154.867	25.024
Final Readings			
Zero	-0.047	1.03	-0.002
Span	6.057	155.014	25.024
Run Results			
Raw Results	6.5	156.54	20.42
Corrected Results (ppmv)	6.48	153.78	20.46

QUALITY ASSURANCE ACTIVITIES

TECO
TAMPA ELECTRIC

POLK POWER STATION
EMISSIONS UNIT ID 004
INSTRUMENTAL REFERENCE METHOD QUALITY ASSURANCE CALCULATIONS

SULFURIC ACID PLANT
Analyzer Calibration Error

ACE = $((C_{Dir} - C_V) / CS) \times 100$ **Eq. 7E-1**

		O_2	SO_2	CO_2
Low-level gas	C_{Dir} =	n/a	n/a	n/a
	C_V =	n/a	n/a	n/a
	CS =	n/a	n/a	n/a
	$C_{Dir} - C_V$ =	n/a	n/a	n/a
	$(C_{Dir} - C_V) / CS$ =	n/a	n/a	n/a
	$((C_{Dir} - C_V) / CS) \times 100$ =	n/a	n/a	n/a

		O_2	SO_2	CO_2
Mid-level gas	C_{Dir} =	6.118	152.084	24.78
	C_V =	6.04	152.2	25.07
	CS =	13.7	269	45.1
	$C_{Dir} - C_V$ =	0.078	-0.116	-0.29
	$(C_{Dir} - C_V) / CS$ =	0.00569	-0.00043	-0.00643
	$((C_{Dir} - C_V) / CS) \times 100$ =	0.57	-0.04	-0.64

		O_2	SO_2	CO_2
High-level gas	C_{Dir} =	13.87	269.293	45.045
	C_V =	13.7	269	45.1
	CS =	13.7	269	45.1
	$C_{Dir} - C_V$ =	0.17	0.293	-0.055
	$(C_{Dir} - C_V) / CS$ =	0.01241	0.00109	-0.00122
	$((C_{Dir} - C_V) / CS) \times 100$ =	1.24	0.11	-0.12

Performance Specification is:

ACE ± 2% or $|C_{Dir} - C_V| \leq 0.5$ ppm or 0.5 % volume

TAMPA ELECTRIC

POLK POWER STATION
EMISSIONS UNIT ID 004
INSTRUMENTAL REFERENCE METHOD QUALITY ASSURANCE CALCULATIONS

COMBINED CYCLE COMBUSTION TURBINE - CT1A
System Bias Calculations

SB = (($C_S - C_{Dir}$) / CS) x 100 **Eq. 7E-2**

		O_2	SO_2	CO_2
Initial Zero	C_S =	-0.047	2.788	-0.002
	C_{Dir} =	-0.047	0.004	-0.002
	CS =	13.7	269	45.1
	($C_S - C_{Dir}$) =	0.000	2.784	0.000
	($C_S - C_{Dir}$) / CS =	0.00000	0.01035	0.00000
	(($C_S - C_{Dir}$) / CS) x 100 =	0.00	1.03	0.00

		O_2	SO_2	CO_2
Initial Span	C_S =	6.057	153.988	25.024
	C_{Dir} =	6.118	152.084	24.78
	CS =	20.9	269	45.1
	($C_S - C_{Dir}$) =	-0.061	1.904	0.244
	($C_S - C_{Dir}$) / CS =	-0.00292	0.00708	0.00541
	(($C_S - C_{Dir}$) / CS) x 100 =	-0.29	0.71	0.54

		O_2	SO_2	CO_2
Run 1 Post Run Zero	C_S =	-0.047	1.762	-0.002
	C_{Dir} =	-0.047	0.004	-0.002
	CS =	13.7	269	45.1
	($C_S - C_{Dir}$) =	0.000	1.758	0.000
	($C_S - C_{Dir}$) / CS =	0.00000	0.00654	0.00000
	(($C_S - C_{Dir}$) / CS) x 100 =	0.00	0.65	0.00

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POLK POWER STATION
EMISSIONS UNIT ID 004
INSTRUMENTAL REFERENCE METHOD QUALITY ASSURANCE CALCULATIONS

COMBINED CYCLE COMBUSTION TURBINE - CT1A
System Bias Calculations

		O_2	SO_2	CO_2
Run 1 Post Run Span	C_S =	6.057	154.574	25.024
	C_{Dir} =	6.118	152.084	24.78
	CS =	13.7	269	45.1
	$(C_S - C_{Dir})$ =	-0.061	2.490	0.244
	$(C_S - C_{Dir}) / CS$ =	-0.00445	0.00926	0.00541
	$((C_S - C_{Dir}) / CS) \times 100$ =	-0.45	0.93	0.54

		O_2	SO_2	CO_2
Run 2 Post Run Zero	C_S =	-0.047	1.323	-0.002
	C_{Dir} =	-0.047	0.004	-0.002
	CS =	13.7	269	45.1
	$(C_S - C_{Dir})$ =	0.000	1.319	0.000
	$(C_S - C_{Dir}) / CS$ =	0.00000	0.00490	0.00000
	$((C_S - C_{Dir}) / CS) \times 100$ =	0.00	0.49	0.00

		O_2	SO_2	CO_2
Run 2 Post Run Span	C_S =	6.057	154.867	25.024
	C_{Dir} =	6.118	152.084	24.78
	CS =	13.7	269	45.1
	$(C_S - C_{Dir})$ =	-0.061	2.783	0.244
	$(C_S - C_{Dir}) / CS$ =	-0.00445	0.01035	0.00541
	$((C_S - C_{Dir}) / CS) \times 100$ =	-0.45	1.03	0.54

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TAMPA ELECTRIC

POLK POWER STATION
EMISSIONS UNIT ID 004
INSTRUMENTAL REFERENCE METHOD QUALITY ASSURANCE CALCULATIONS

COMBINED CYCLE COMBUSTION TURBINE - CT1A
System Bias Calculations

		O_2	SO_2	CO_2
Run 3 Post Run Zero	C_S =	-0.047	1.03	-0.002
	C_{Dir} =	-0.047	0.004	-0.002
	CS =	13.7	269	45.1
	$(C_S - C_{Dir})$ =	0.000	1.026	0.000
	$(C_S - C_{Dir}) / CS$ =	0.00000	0.00381	0.00000
	$((C_S - C_{Dir}) / CS) \times 100$ =	0.00	0.38	0.00

		O_2	SO_2	CO_2
Run 3 Post Run Span	C_S =	6.057	155.014	25.024
	C_{Dir} =	6.118	152.084	24.78
	CS =	13.7	269	45.1
	$(C_S - C_{Dir})$ =	-0.061	2.930	0.244
	$(C_S - C_{Dir}) / CS$ =	-0.00445	0.01089	0.00541
	$((C_S - C_{Dir}) / CS) \times 100$ =	-0.45	1.09	0.54

Performance Specification is:
SB ± 5% or $|C_S - Cdir| \leq$ 0.5 ppm or 0.5 % volume

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TAMPA ELECTRIC

POLK POWER STATION
EMISSIONS UNIT ID 004
INSTRUMENTAL REFERENCE METHOD QUALITY ASSURANCE CALCULATIONS

COMBINED CYCLE COMBUSTION TURBINE - CT1A
Drift Assessment Calculations

$D = |SB_{final} - SB_i|$ Eq. 7E-4

		O_2	SO_2	CO_2
Run 1 Zero	SB_{final} =	0.00	0.65	0.00
	SB_i =	0.00	1.03	0.00
	$\|SB_{final} - SB_i\|$ =	0.00	0.38	0.00
		O_2	SO_2	CO_2
Run 1 Span	SB_{final} =	-0.45	0.93	0.54
	SB_i =	-0.29	0.71	0.54
	$\|SB_{final} - SB_i\|$ =	0.15	0.22	0.00
		O_2	SO_2	CO_2
Run 2 Zero	SB_{final} =	0.00	0.49	0.00
	SB_i =	0.00	0.65	0.00
	$\|SB_{final} - SB_i\|$ =	0.00	0.16	0.00
		O_2	SO_2	CO_2
Run 2 Span	SB_{final} =	-0.45	1.03	0.54
	SB_i =	-0.45	0.93	0.54
	$\|SB_{final} - SB_i\|$ =	0.00	0.11	0.00
		O_2	SO_2	CO_2
Run 3 Zero	SB_{final} =	0.00	0.38	0.00
	SB_i =	0.00	0.49	0.00
	$\|SB_{final} - SB_i\|$ =	0.00	0.11	0.00
		O_2	SO_2	CO_2
Run 3 Span	SB_{final} =	-0.45	1.09	0.54
	SB_i =	-0.45	1.03	0.54
	$\|SB_{final} - SB_i\|$ =	0.00	0.05	0.00

Performance Specification is:

D ± 3% of CS or $|C_{S\ post\text{-}run} - C_{S\ pre\text{-}run}| \leq$ 0.5 ppmv 0r 0.5 % volume

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TAMPA ELECTRIC

POLK POWER STATION
EMISSIONS UNIT ID 004
INSTRUMENTAL REFERENCE METHOD QUALITY ASSURANCE CALCULATIONS

COMBINED CYCLE COMBUSTION TURBINE - CT1A
Effluent Gas Concentration

$C_{Gas} = (C_{Avg} - C_0) \times (C_{MA} / (C_M - C_0))$ **Eq. 7E-5**

		O_2	SO_2	CO_2
Run 1	C_{Avg} =	6.4	159.82	20.04
	C_O =	-0.047	2.275	-0.002
	C_{MA} =	6.04	152.2	25.07
	C_M =	6.057	154.281	25.024
	$(C_{Avg} - C_0)$ =	6.447	157.545	20.042
	$(C_M - C_0)$ =	6.104	152.006	25.026
	$(C_{MA} / (C_M - C_0)$ =	0.98952	1.00128	1.00176
	$(C_{Avg} - C_0) \times (C_{MA} / (C_M - C_0))$ =	6.38	157.75	20.08

		O_2	SO_2	CO_2
Run 2	C_{Avg} =	6.33	163.4	20.36
	C_O =	-0.047	1.5425	-0.002
	C_{MA} =	6.04	152.2	25.07
	C_M =	6.057	154.721	25.024
	$(C_{Avg} - C_0)$ =	6.377	161.858	20.362
	$(C_M - C_0)$ =	6.104	153.178	25.026
	$(C_{MA} / (C_M - C_0)$ =	0.98952	0.99362	1.00176
	$(C_{Avg} - C_0) \times (C_{MA} / (C_M - C_0))$ =	6.31	160.82	20.40

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TAMPA ELECTRIC

POLK POWER STATION
EMISSIONS UNIT ID 004
INSTRUMENTAL REFERENCE METHOD QUALITY ASSURANCE CALCULATIONS

COMBINED CYCLE COMBUSTION TURBINE - CT1A
Effluent Gas Concentration

		O_2	SO_2	CO_2
Run 3	C_{Avg} =	6.5	156.54	20.42
	C_O =	-0.047	1.1765	-0.002
	C_{MA} =	6.04	152.2	25.07
	C_M =	6.057	154.941	25.024
	$(C_{Avg} - C_0)$ =	6.547	155.364	20.422
	$(C_M - C_0)$ =	6.104	153.764	25.026
	$(C_{MA} / (C_M - C_0)$ =	0.98952	0.98983	1.00176
	$(C_{Avg} - C_0) \times (C_{MA} / (C_M - C_0))$ =	6.48	153.78	20.46

RUN LOG

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	7:58:00 AM		21.32	-2.93	0
01/18/2007	7:58:30 AM		21.32	-3.07	0
01/18/2007	7:59:00 AM		21.26	-3.07	0
01/18/2007	7:59:30 AM		21.32	-3.07	0
01/18/2007	8:00:00 AM		21.26	-2.93	0
01/18/2007	8:00:30 AM		21.32	-2.78	0
01/18/2007	8:01:00 AM		11.12	-2.78	0.85
01/18/2007	8:01:30 AM		6.18	-2.93	0
01/18/2007	8:02:00 AM		6.18	-2.78	-0.12
01/18/2007	8:02:30 AM		16.68	-3.07	0
01/18/2007	8:03:00 AM		21.2	-2.78	0
01/18/2007	8:03:30 AM		21.07	-2.78	-0.12
01/18/2007	8:04:00 AM		21.01	-3.07	0
01/18/2007	8:04:30 AM		6.55	-2.78	-0.12
01/18/2007	8:05:00 AM		6.18	-0.14	-0.12
01/18/2007	8:05:30 AM	Linearity Check	6.18	0	-0.12
01/18/2007	8:06:00 AM	Linearity Check	6.18	0	0
01/18/2007	8:06:30 AM	Linearity Check	6.12	0	-0.12
01/18/2007	8:07:00 AM	Linearity Check	6.12	-0.14	0
01/18/2007	8:07:30 AM	Linearity Check	10.88	-0.14	0
01/18/2007	8:08:00 AM	Linearity Check	13.93	-0.14	0
01/18/2007	8:08:30 AM	Linearity Check	13.87	-0.14	-0.12
01/18/2007	8:09:00 AM	Linearity Check	13.81	26.23	-0.12
01/18/2007	8:09:30 AM	Linearity Check	1.72	233.84	10.5
01/18/2007	8:10:00 AM	Linearity Check	-0.05	265.63	17.58
01/18/2007	8:10:30 AM	Linearity Check	-0.05	268.56	17.94
01/18/2007	8:11:00 AM	Linearity Check	-0.05	269	17.94
01/18/2007	8:11:30 AM	Linearity Check	-0.05	269	18.07
01/18/2007	8:12:00 AM	Linearity Check	0.2	129.08	17.21
01/18/2007	8:12:30 AM	Linearity Check	-0.05	144.32	9.64
01/18/2007	8:13:00 AM	Linearity Check	-0.05	150.03	10.01
01/18/2007	8:13:30 AM	Linearity Check	-0.05	150.47	10.01
01/18/2007	8:14:00 AM	Linearity Check	-0.05	150.18	10.01
01/18/2007	8:14:30 AM	Linearity Check	-0.05	151.2	10.01
01/18/2007	8:15:00 AM	Linearity Check	7.52	26.52	7.32
01/18/2007	8:15:30 AM	Linearity Check	20.89	1.91	0.12
01/18/2007	8:16:00 AM	Linearity Check	11.06	0.59	18.92
01/18/2007	8:16:30 AM	Linearity Check	1.85	0.44	40.04
01/18/2007	8:17:00 AM	Linearity Check	-0.11	0.3	45.53
01/18/2007	8:17:30 AM	Linearity Check	-0.11	0.44	45.66
01/18/2007	8:18:00 AM	Linearity Check	-0.17	0.44	45.17
01/18/2007	8:18:30 AM	Linearity Check	9.66	0.3	25.39
01/18/2007	8:19:00 AM	Linearity Check	19.06	0.15	4.76
01/18/2007	8:19:30 AM	Linearity Check	20.83	0.15	0.12
01/18/2007	8:20:00 AM	Linearity Check	12.65	0.3	12.69
01/18/2007	8:20:30 AM	Linearity Check	0.56	0.3	23.93
01/18/2007	8:21:00 AM	Linearity Check	-0.11	0.15	24.9
01/18/2007	8:21:30 AM	Linearity Check	-0.11	0.15	24.9
01/18/2007	8:22:00 AM	Linearity Check	10.76	228.71	12.57
01/18/2007	8:22:30 AM	Linearity Check	6.12	163.66	19.65

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	8:23:00 AM	Linearity Check	7.16	63.59	5.12
01/18/2007	8:23:30 AM	Linearity Check	6.12	38.68	0.12
01/18/2007	8:24:00 AM	- ZERO	6.12	25.94	0
01/18/2007	8:24:30 AM	- ZERO	6.12	19.64	0
01/18/2007	8:25:00 AM	- ZERO	6.06	16.27	0
01/18/2007	8:25:30 AM	- ZERO	6.06	12.9	0
01/18/2007	8:26:00 AM	- ZERO	6.06	11.14	0
01/18/2007	8:26:30 AM	- ZERO	6.06	10.11	0
01/18/2007	8:27:00 AM	- ZERO	6.06	8.5	0
01/18/2007	8:27:30 AM	- ZERO	5.51	7.33	1.22
01/18/2007	8:28:00 AM	- ZERO	0.81	6.74	20.14
01/18/2007	8:28:30 AM	- ZERO	-0.05	6.3	24.66
01/18/2007	8:29:00 AM	- Span	-0.11	5.57	24.78
01/18/2007	8:29:30 AM	- ZERO	-0.05	5.28	24.78
01/18/2007	8:30:00 AM	- Span	-0.11	4.69	25.02
01/18/2007	8:30:30 AM	- ZERO	-0.11	4.4	25.02
01/18/2007	8:31:00 AM	- ZERO	-0.05	31.06	25.02
01/18/2007	8:31:30 AM	- ZERO	0.32	89.52	13.55
01/18/2007	8:32:00 AM	- ZERO	-0.05	116.19	10.01
01/18/2007	8:32:30 AM	- ZERO	-0.05	126.15	10.01
01/18/2007	8:33:00 AM	- ZERO	-0.05	130.69	10.01
01/18/2007	8:33:30 AM	- ZERO	-0.05	135.82	10.01
01/18/2007	8:34:00 AM	- ZERO	-0.05	139.19	10.01
01/18/2007	8:34:30 AM	- Span	-0.05	140.95	10.01
01/18/2007	8:35:00 AM	- Span	-0.05	142.27	10.01
01/18/2007	8:35:30 AM	- Span	-0.05	142.41	9.89
01/18/2007	8:36:00 AM	- Span	-0.05	144.32	9.89
01/18/2007	8:36:30 AM	- Span	-0.05	145.05	9.89
01/18/2007	8:37:00 AM	- Span	-0.05	148.86	10.01
01/18/2007	8:37:30 AM	- Span	-0.05	150.47	9.89
01/18/2007	8:38:00 AM	- Span	-0.05	150.33	9.89
01/18/2007	8:38:30 AM	- Span	-0.05	150.33	9.89
01/18/2007	8:39:00 AM	- Span	-0.05	159.26	9.89
01/18/2007	8:39:30 AM	- Span	3.49	219.33	16.6
01/18/2007	8:40:00 AM	- Span	5.02	229.44	20.38
01/18/2007	8:40:30 AM	- Span	4.96	235.74	20.51
01/18/2007	8:41:00 AM	- Span	4.71	238.67	20.63
01/18/2007	8:41:30 AM	- Span	4.47	241.02	21
01/18/2007	8:42:00 AM		4.35	244.53	21.12
01/18/2007	8:42:30 AM		4.1	245.41	21.36
01/18/2007	8:43:00 AM		3.86	248.2	21.36
01/18/2007	8:43:30 AM		3.74	253.18	21.48
01/18/2007	8:44:00 AM		3.68	256.69	21.61
01/18/2007	8:44:30 AM		3.62	259.18	21.48
01/18/2007	8:45:00 AM		3.68	262.26	21.48
01/18/2007	8:45:30 AM		3.68	266.66	21.24
01/18/2007	8:46:00 AM		3.74	270.17	21.12
01/18/2007	8:46:30 AM		3.86	273.69	21
01/18/2007	8:47:00 AM		3.92	277.5	20.87
01/18/2007	8:47:30 AM		4.04	280.87	20.63

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	8:48:00 AM		4.16	281.6	20.51
01/18/2007	8:48:30 AM		4.35	282.04	20.38
01/18/2007	8:49:00 AM		4.47	281.31	20.26
01/18/2007	8:49:30 AM		4.59	281.45	20.26
01/18/2007	8:50:00 AM		4.71	281.75	20.26
01/18/2007	8:50:30 AM		4.78	280.57	20.26
01/18/2007	8:51:00 AM		4.78	279.4	20.38
01/18/2007	8:51:30 AM		4.78	278.23	20.51
01/18/2007	8:52:00 AM		4.71	277.2	20.38
01/18/2007	8:52:30 AM		4.71	152.23	20.63
01/18/2007	8:53:00 AM		11.92	54.95	4.27
01/18/2007	8:53:30 AM		13.81	31.06	0.12
01/18/2007	8:54:00 AM		13.81	21.39	0.12
01/18/2007	8:54:30 AM		13.81	18.32	0
01/18/2007	8:55:00 AM		13.81	15.68	0
01/18/2007	8:55:30 AM		13.14	0.74	0.97
01/18/2007	8:56:00 AM		11	178.46	5.25
01/18/2007	8:56:30 AM		11.12	45.86	6.22
01/18/2007	8:57:00 AM		13.81	21.83	0.12
01/18/2007	8:57:30 AM		13.81	17.59	0
01/18/2007	8:58:00 AM		13.87	12.16	0
01/18/2007	8:58:30 AM		13.87	10.85	0
01/18/2007	8:59:00 AM		13.87	39.86	0
01/18/2007	8:59:30 AM		2.64	113.26	7.81
01/18/2007	9:00:00 AM		0.01	134.65	10.01
01/18/2007	9:00:30 AM		0.01	139.48	9.89
01/18/2007	9:01:00 AM		-0.05	143.88	9.89
01/18/2007	9:01:30 AM		-0.05	146.96	9.89
01/18/2007	9:02:00 AM		-0.05	147.98	10.01
01/18/2007	9:02:30 AM		-0.05	148.71	10.01
01/18/2007	9:03:00 AM		-0.05	149.45	9.89
01/18/2007	9:03:30 AM		0.38	218.45	10.37
01/18/2007	9:04:00 AM		4.23	255.67	19.16
01/18/2007	9:04:30 AM		4.78	259.77	20.26
01/18/2007	9:05:00 AM		4.71	262.26	20.38
01/18/2007	9:05:30 AM		4.71	262.11	20.51
01/18/2007	9:06:00 AM		4.59	261.09	20.75
01/18/2007	9:06:30 AM		4.53	262.7	20.87
01/18/2007	9:07:00 AM		4.35	263.14	21.12
01/18/2007	9:07:30 AM		4.1	264.46	21.12
01/18/2007	9:08:00 AM		3.98	266.22	21
01/18/2007	9:08:30 AM		3.92	267.53	21
01/18/2007	9:09:00 AM		3.92	268.85	21
01/18/2007	9:09:30 AM		3.92	270.17	21
01/18/2007	9:10:00 AM		3.98	271.93	20.87
01/18/2007	9:10:30 AM		4.04	272.81	20.75
01/18/2007	9:11:00 AM		4.1	272.52	20.75
01/18/2007	9:11:30 AM		4.1	273.69	20.63
01/18/2007	9:12:00 AM		4.29	274.13	20.51
01/18/2007	9:12:30 AM		4.35	274.86	20.38

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	9:13:00 AM		4.41	275.59	20.38
01/18/2007	9:13:30 AM		4.53	276.47	20.26
01/18/2007	9:14:00 AM		4.59	274.57	20.14
01/18/2007	9:14:30 AM		4.78	271.93	20.02
01/18/2007	9:15:00 AM		4.96	271.2	19.9
01/18/2007	9:15:30 AM		5.02	269.88	19.9
01/18/2007	9:16:00 AM		5.08	268.27	19.9
01/18/2007	9:16:30 AM		5.08	264.9	20.02
01/18/2007	9:17:00 AM		5.02	262.41	20.02
01/18/2007	9:17:30 AM		4.96	260.65	20.14
01/18/2007	9:18:00 AM		4.84	258.89	20.26
01/18/2007	9:18:30 AM		4.84	258.01	20.26
01/18/2007	9:19:00 AM		4.65	256.99	20.38
01/18/2007	9:19:30 AM		4.47	256.11	20.51
01/18/2007	9:20:00 AM		4.35	255.96	20.51
01/18/2007	9:20:30 AM		4.35	255.08	20.63
01/18/2007	9:21:00 AM		4.35	254.93	20.63
01/18/2007	9:21:30 AM		4.29	254.5	20.75
01/18/2007	9:22:00 AM		4.29	253.62	20.75
01/18/2007	9:22:30 AM		4.35	253.03	20.51
01/18/2007	9:23:00 AM		4.41	252.44	20.38
01/18/2007	9:23:30 AM		4.47	252.15	20.38
01/18/2007	9:24:00 AM		4.59	251.57	20.26
01/18/2007	9:24:30 AM		4.71	250.54	20.26
01/18/2007	9:25:00 AM		4.71	250.25	20.26
01/18/2007	9:25:30 AM		4.78	249.95	20.26
01/18/2007	9:26:00 AM		4.84	249.66	20.14
01/18/2007	9:26:30 AM		4.84	249.22	20.26
01/18/2007	9:27:00 AM		4.84	248.63	20.38
01/18/2007	9:27:30 AM		4.78	247.9	20.38
01/18/2007	9:28:00 AM		4.78	247.9	20.26
01/18/2007	9:28:30 AM		4.71	247.17	20.26
01/18/2007	9:29:00 AM		4.78	245.7	20.38
01/18/2007	9:29:30 AM		4.65	245.85	20.51
01/18/2007	9:30:00 AM		4.71	245.56	20.51
01/18/2007	9:30:30 AM		4.59	246	20.63
01/18/2007	9:31:00 AM		4.47	246.88	20.87
01/18/2007	9:31:30 AM		4.29	249.07	21.12
01/18/2007	9:32:00 AM		4.04	251.57	21.24
01/18/2007	9:32:30 AM		3.98	254.2	21.36
01/18/2007	9:33:00 AM		3.8	257.57	21.36
01/18/2007	9:33:30 AM		3.68	260.8	21.36
01/18/2007	9:34:00 AM		3.74	264.17	21.12
01/18/2007	9:34:30 AM		3.8	265.78	21
01/18/2007	9:35:00 AM		3.92	268.12	21
01/18/2007	9:35:30 AM		3.98	271.49	21
01/18/2007	9:36:00 AM		4.04	273.83	20.87
01/18/2007	9:36:30 AM		4.1	276.33	21
01/18/2007	9:37:00 AM		4.16	278.52	20.87
01/18/2007	9:37:30 AM		4.16	280.87	20.87

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	9:38:00 AM		4.16	282.77	20.75
01/18/2007	9:38:30 AM		4.29	284.82	20.63
01/18/2007	9:39:00 AM		4.35	285.7	20.63
01/18/2007	9:39:30 AM		4.41	284.68	20.51
01/18/2007	9:40:00 AM		4.53	284.38	20.38
01/18/2007	9:40:30 AM		4.59	284.38	20.38
01/18/2007	9:41:00 AM		4.53	284.24	20.63
01/18/2007	9:41:30 AM		4.53	284.09	20.63
01/18/2007	9:42:00 AM		4.47	284.53	20.75
01/18/2007	9:42:30 AM		4.35	283.65	20.75
01/18/2007	9:43:00 AM		4.23	282.19	20.87
01/18/2007	9:43:30 AM		4.1	285.12	20.87
01/18/2007	9:44:00 AM		4.04	285.85	21
01/18/2007	9:44:30 AM		4.04	285.41	20.87
01/18/2007	9:45:00 AM		4.04	284.82	20.87
01/18/2007	9:45:30 AM		4.1	284.82	20.87
01/18/2007	9:46:00 AM		4.1	285.56	20.87
01/18/2007	9:46:30 AM		4.1	286	20.87
01/18/2007	9:47:00 AM		4.1	287.31	21
01/18/2007	9:47:30 AM		4.04	288.19	21
01/18/2007	9:48:00 AM		4.35	287.75	20.87
01/18/2007	9:48:30 AM		4.59	284.24	20.75
01/18/2007	9:49:00 AM		4.78	281.16	20.75
01/18/2007	9:49:30 AM		4.96	277.06	20.75
01/18/2007	9:50:00 AM		5.2	274.86	20.75
01/18/2007	9:50:30 AM		5.32	271.64	20.63
01/18/2007	9:51:00 AM		5.32	268.27	20.63
01/18/2007	9:51:30 AM		5.63	264.46	20.51
01/18/2007	9:52:00 AM		5.75	259.92	20.51
01/18/2007	9:52:30 AM		5.94	254.5	20.51
01/18/2007	9:53:00 AM		6.12	249.66	20.38
01/18/2007	9:53:30 AM		6.36	243.65	20.26
01/18/2007	9:54:00 AM		6.79	236.62	20.02
01/18/2007	9:54:30 AM		6.91	230.17	20.14
01/18/2007	9:55:00 AM		7.22	223.87	20.02
01/18/2007	9:55:30 AM		7.52	217.28	20.02
01/18/2007	9:56:00 AM		7.77	210.1	19.9
01/18/2007	9:56:30 AM		8.01	204.1	19.9
01/18/2007	9:57:00 AM		8.01	198.97	20.02
01/18/2007	9:57:30 AM		7.77	194.86	20.14
01/18/2007	9:58:00 AM		7.77	191.5	20.14
01/18/2007	9:58:30 AM		7.83	187.1	20.14
01/18/2007	9:59:00 AM		7.77	182.7	20.14
01/18/2007	9:59:30 AM		7.77	178.02	20.14
01/18/2007	10:00:00 AM		7.89	173.62	20.02
01/18/2007	10:00:30 AM		7.83	170.1	20.14
01/18/2007	10:01:00 AM		7.83	167.03	20.02
01/18/2007	10:01:30 AM		7.89	164.24	20.02
01/18/2007	10:02:00 AM		7.95	160.29	19.9
01/18/2007	10:02:30 AM		7.95	157.8	19.9

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	10:03:00 AM		7.95	156.04	19.9
01/18/2007	10:03:30 AM		8.07	153.26	19.77
01/18/2007	10:04:00 AM		8.13	150.76	19.77
01/18/2007	10:04:30 AM		8.13	149.01	19.77
01/18/2007	10:05:00 AM		8.19	146.37	19.65
01/18/2007	10:05:30 AM		8.19	144.03	19.77
01/18/2007	10:06:00 AM		8.25	142.41	19.65
01/18/2007	10:06:30 AM		8.19	141.24	19.77
01/18/2007	10:07:00 AM		8.07	139.34	19.77
01/18/2007	10:07:30 AM		8.13	138.31	19.65
01/18/2007	10:08:00 AM		8.13	136.85	19.53
01/18/2007	10:08:30 AM		8.13	135.82	19.53
01/18/2007	10:09:00 AM		8.13	135.09	19.41
01/18/2007	10:09:30 AM		8.13	133.33	19.41
01/18/2007	10:10:00 AM		8.38	131.72	19.29
01/18/2007	10:10:30 AM		8.25	130.99	19.41
01/18/2007	10:11:00 AM		8.25	130.55	19.41
01/18/2007	10:11:30 AM		8.19	129.08	19.41
01/18/2007	10:12:00 AM		8.19	127.62	19.41
01/18/2007	10:12:30 AM		8.19	127.62	19.41
01/18/2007	10:13:00 AM		8.07	127.03	19.41
01/18/2007	10:13:30 AM		8.01	126.44	19.41
01/18/2007	10:14:00 AM		8.13	125.42	19.41
01/18/2007	10:14:30 AM		8.13	124.98	19.41
01/18/2007	10:15:00 AM		8.13	124.39	19.41
01/18/2007	10:15:30 AM		8.13	124.1	19.53
01/18/2007	10:16:00 AM		8.07	123.66	19.53
01/18/2007	10:16:30 AM		8.01	123.37	19.65
01/18/2007	10:17:00 AM		7.95	122.78	19.65
01/18/2007	10:17:30 AM		7.89	122.34	19.53
01/18/2007	10:18:00 AM		7.77	122.2	19.65
01/18/2007	10:18:30 AM		7.58	122.34	19.65
01/18/2007	10:19:00 AM		7.52	123.37	19.77
01/18/2007	10:19:30 AM		7.58	123.51	19.65
01/18/2007	10:20:00 AM		7.64	123.81	19.53
01/18/2007	10:20:30 AM		7.71	123.37	19.53
01/18/2007	10:21:00 AM		7.77	123.07	19.41
01/18/2007	10:21:30 AM		7.89	123.22	19.41
01/18/2007	10:22:00 AM		7.89	123.22	19.41
01/18/2007	10:22:30 AM		7.95	122.93	19.41
01/18/2007	10:23:00 AM		7.95	123.22	19.29
01/18/2007	10:23:30 AM		7.89	122.93	19.29
01/18/2007	10:24:00 AM		7.95	122.34	19.16
01/18/2007	10:24:30 AM		8.01	123.07	19.16
01/18/2007	10:25:00 AM		8.01	122.78	19.29
01/18/2007	10:25:30 AM		8.07	121.9	19.29
01/18/2007	10:26:00 AM		8.07	121.9	19.29
01/18/2007	10:26:30 AM		8.07	121.02	19.41
01/18/2007	10:27:00 AM		8.01	121.46	19.41
01/18/2007	10:27:30 AM		8.01	122.34	19.41

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	10:28:00 AM		7.95	122.34	19.41
01/18/2007	10:28:30 AM		7.95	121.46	19.41
01/18/2007	10:29:00 AM		7.89	121.32	19.41
01/18/2007	10:29:30 AM		7.95	120.58	19.29
01/18/2007	10:30:00 AM		7.95	121.32	19.41
01/18/2007	10:30:30 AM		7.77	120.73	19.41
01/18/2007	10:31:00 AM		7.64	120.88	19.53
01/18/2007	10:31:30 AM		7.64	120.73	19.53
01/18/2007	10:32:00 AM		7.52	121.02	19.65
01/18/2007	10:32:30 AM		7.46	121.76	19.53
01/18/2007	10:33:00 AM		7.46	122.49	19.53
01/18/2007	10:33:30 AM		7.46	122.78	19.41
01/18/2007	10:34:00 AM		7.46	122.93	19.41
01/18/2007	10:34:30 AM		7.58	122.34	19.41
01/18/2007	10:35:00 AM		7.58	122.05	19.41
01/18/2007	10:35:30 AM		7.71	121.76	19.41
01/18/2007	10:36:00 AM		7.77	121.9	19.29
01/18/2007	10:36:30 AM		7.77	121.9	19.29
01/18/2007	10:37:00 AM		7.77	121.76	19.29
01/18/2007	10:37:30 AM		7.83	121.76	19.16
01/18/2007	10:38:00 AM		7.77	122.05	19.29
01/18/2007	10:38:30 AM		7.89	121.76	19.16
01/18/2007	10:39:00 AM		7.89	121.76	19.29
01/18/2007	10:39:30 AM		7.95	122.05	19.16
01/18/2007	10:40:00 AM		8.01	121.17	19.16
01/18/2007	10:40:30 AM		7.95	120.44	19.16
01/18/2007	10:41:00 AM		7.95	121.02	19.16
01/18/2007	10:41:30 AM		7.95	121.17	19.16
01/18/2007	10:42:00 AM		7.89	120.88	19.29
01/18/2007	10:42:30 AM		7.77	121.32	19.29
01/18/2007	10:43:00 AM		7.71	120.58	19.41
01/18/2007	10:43:30 AM		7.71	120.88	19.29
01/18/2007	10:44:00 AM		7.71	120.73	19.29
01/18/2007	10:44:30 AM		7.71	120.58	19.41
01/18/2007	10:45:00 AM		7.64	121.02	19.29
01/18/2007	10:45:30 AM		7.64	120.88	19.41
01/18/2007	10:46:00 AM		7.64	120.44	19.41
01/18/2007	10:46:30 AM	travers - 1	7.64	120.29	19.41
01/18/2007	10:47:00 AM	travers - 1	7.64	120.58	19.41
01/18/2007	10:47:30 AM	travers - 1	7.64	120.73	19.41
01/18/2007	10:48:00 AM	travers - 1	7.58	121.46	19.41
01/18/2007	10:48:30 AM	travers - 1	7.4	121.61	19.41
01/18/2007	10:49:00 AM	travers - 1	7.46	122.05	19.29
01/18/2007	10:49:30 AM	travers - 1	7.64	121.46	19.16
01/18/2007	10:50:00 AM	travers - 1	7.83	120.88	19.04
01/18/2007	10:50:30 AM	travers - 1	7.83	120.58	19.04
01/18/2007	10:51:00 AM	travers - 1	7.77	121.32	19.29
01/18/2007	10:51:30 AM	travers - 1	7.71	121.76	19.29
01/18/2007	10:52:00 AM	travers - 1	7.58	122.34	19.53
01/18/2007	10:52:30 AM	travers - 1	7.34	123.51	19.65

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	10:53:00 AM	travers - 1	7.09	124.69	19.9
01/18/2007	10:53:30 AM	travers - 1	6.97	126.3	19.9
01/18/2007	10:54:00 AM	travers - 1	6.91	126.44	19.9
01/18/2007	10:54:30 AM	travers - 1	6.79	127.91	19.77
01/18/2007	10:55:00 AM	travers - 1	6.79	128.06	19.77
01/18/2007	10:55:30 AM	Run Paused	6.85	128.5	19.77
01/18/2007	10:56:00 AM	Run Paused	6.85	118.97	19.77
01/18/2007	10:56:30 AM	Run Paused	14.6	27.84	9.76
01/18/2007	10:57:00 AM	Run Paused	20.83	80.73	0.36
01/18/2007	10:57:30 AM	Run Paused	9.9	129.52	14.77
01/18/2007	10:58:00 AM	Run Paused	7.16	130.4	19.41
01/18/2007	10:58:30 AM	travers - 1	7.09	130.55	19.53
01/18/2007	10:59:00 AM	travers - 1	7.09	132.89	19.65
01/18/2007	10:59:30 AM	travers - 1	7.16	134.21	19.41
01/18/2007	11:00:00 AM	travers - 1	7.22	135.67	19.53
01/18/2007	11:00:30 AM	travers - 1	7.22	135.23	19.53
01/18/2007	11:01:00 AM	travers - 1	7.22	135.38	19.53
01/18/2007	11:01:30 AM	travers - 1	7.22	135.38	19.53
01/18/2007	11:02:00 AM	travers - 1	7.22	135.97	19.77
01/18/2007	11:02:30 AM	travers - 1	7.16	136.99	19.65
01/18/2007	11:03:00 AM	travers - 1	7.09	137.87	19.65
01/18/2007	11:03:30 AM	travers - 1	7.03	139.34	19.65
01/18/2007	11:04:00 AM	travers - 1	7.09	139.63	19.77
01/18/2007	11:04:30 AM	travers - 1	7.09	138.9	19.77
01/18/2007	11:05:00 AM	travers - 1	7.03	139.34	19.77
01/18/2007	11:05:30 AM	travers - 1	6.97	139.63	19.9
01/18/2007	11:06:00 AM	travers - 1	6.91	140.66	19.9
01/18/2007	11:06:30 AM	travers - 1	6.85	141.39	20.14
01/18/2007	11:07:00 AM	travers - 1	6.67	141.83	20.14
01/18/2007	11:07:30 AM	Run Paused	6.61	142.85	20.14
01/18/2007	11:08:00 AM	Run Paused	6.61	143.44	20.14
01/18/2007	11:08:30 AM	Run Paused	6.55	81.9	20.14
01/18/2007	11:09:00 AM	Run Paused	6	15.39	5.98
01/18/2007	11:09:30 AM	Run Paused	10.45	14.36	0.24
01/18/2007	11:10:00 AM	Run Paused	9.78	131.57	10.5
01/18/2007	11:10:30 AM	Run Paused	6.91	141.83	19.16
01/18/2007	11:11:00 AM	travers - 1	6.79	144.61	19.77
01/18/2007	11:11:30 AM	travers - 1	6.85	146.22	19.77
01/18/2007	11:12:00 AM	travers - 1	6.91	146.52	19.77
01/18/2007	11:12:30 AM	travers - 1	6.85	146.52	19.9
01/18/2007	11:13:00 AM	travers - 1	6.79	148.71	19.9
01/18/2007	11:13:30 AM	travers - 1	6.91	148.13	19.65
01/18/2007	11:14:00 AM	travers - 1	6.97	148.27	19.65
01/18/2007	11:14:30 AM	travers - 1	7.03	148.42	19.65
01/18/2007	11:15:00 AM	travers - 1	7.09	148.71	19.65
01/18/2007	11:15:30 AM	travers - 1	7.09	147.98	19.65
01/18/2007	11:16:00 AM	travers - 1	7.22	148.42	19.53
01/18/2007	11:16:30 AM	travers - 1	7.22	148.27	19.65
01/18/2007	11:17:00 AM	travers - 1	7.16	148.27	19.77
01/18/2007	11:17:30 AM	Run Paused	7.09	148.27	19.65

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	11:18:00 AM	travers - 1	7.03	148.27	19.77
01/18/2007	11:18:30 AM	travers - 1	6.85	148.57	20.02
01/18/2007	11:19:00 AM	travers - 1	6.61	149.74	20.26
01/18/2007	11:19:30 AM	travers - 1	6.48	150.62	20.26
01/18/2007	11:20:00 AM	travers - 1	6.36	151.2	20.26
01/18/2007	11:20:30 AM	travers - 1	6.36	151.94	20.38
01/18/2007	11:21:00 AM	Run Paused	6.36	152.67	20.26
01/18/2007	11:21:30 AM	Run Paused	9.05	27.69	13.67
01/18/2007	11:22:00 AM	Run Paused	13.57	37.36	1.1
01/18/2007	11:22:30 AM	Run Paused	9.05	143.88	12.45
01/18/2007	11:23:00 AM	Run Paused	6.85	149.89	19.41
01/18/2007	11:23:30 AM	travers - 1	6.97	150.33	19.53
01/18/2007	11:24:00 AM	travers - 1	7.22	150.33	19.41
01/18/2007	11:24:30 AM	travers - 1	7.34	150.03	19.29
01/18/2007	11:25:00 AM	travers - 1	7.4	150.33	19.41
01/18/2007	11:25:30 AM	travers - 1	7.46	150.03	19.41
01/18/2007	11:26:00 AM	travers - 1	7.46	150.62	19.41
01/18/2007	11:26:30 AM	travers - 1	7.52	149.45	19.41
01/18/2007	11:27:00 AM	travers - 1	7.4	149.89	19.41
01/18/2007	11:27:30 AM	travers - 1	7.34	149.89	19.53
01/18/2007	11:28:00 AM	travers - 1	7.22	150.03	19.53
01/18/2007	11:28:30 AM	travers - 1	7.03	149.59	19.77
01/18/2007	11:29:00 AM	travers - 1	6.91	150.33	19.9
01/18/2007	11:29:30 AM	travers - 1	6.85	150.18	19.9
01/18/2007	11:30:00 AM	travers - 1	6.73	150.18	20.02
01/18/2007	11:30:30 AM	travers - 1	6.67	151.35	20.26
01/18/2007	11:31:00 AM	travers - 1	6.67	152.23	20.26
01/18/2007	11:31:30 AM	travers - 1	6.55	152.52	20.26
01/18/2007	11:32:00 AM	travers - 2	6.61	152.08	20.26
01/18/2007	11:32:30 AM		6.48	153.26	20.14
01/18/2007	11:33:00 AM		6.48	154.43	20.14
01/18/2007	11:33:30 AM		6.48	154.87	20.02
01/18/2007	11:34:00 AM		5.39	122.34	14.89
01/18/2007	11:34:30 AM		0.01	150.91	10.01
01/18/2007	11:35:00 AM		-0.05	153.26	10.13
01/18/2007	11:35:30 AM		-0.05	153.26	10.01
01/18/2007	11:36:00 AM		-0.05	141.39	10.01
01/18/2007	11:36:30 AM		3.19	16.71	5.12
01/18/2007	11:37:00 AM		6	7.48	0.12
01/18/2007	11:37:30 AM		6.06	4.99	0
01/18/2007	11:38:00 AM		6.06	108.13	0.12
01/18/2007	11:38:30 AM		6.97	146.52	15.26
01/18/2007	11:39:00 AM		7.03	150.03	19.65
01/18/2007	11:39:30 AM		6.97	151.2	19.77
01/18/2007	11:40:00 AM		6.97	154.28	19.65
01/18/2007	11:40:30 AM		6.91	154.13	19.77
01/18/2007	11:41:00 AM		6.85	153.84	19.77
01/18/2007	11:41:30 AM		6.85	153.55	19.77
01/18/2007	11:42:00 AM		6.85	153.7	19.9
01/18/2007	11:42:30 AM		6.79	153.99	19.9

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	11:43:00 AM		6.67	154.57	20.02
01/18/2007	11:43:30 AM		6.61	154.87	20.02
01/18/2007	11:44:00 AM		6.61	154.57	20.02
01/18/2007	11:44:30 AM		6.61	154.43	20.02
01/18/2007	11:45:00 AM		6.61	154.87	19.9
01/18/2007	11:45:30 AM		6.67	155.16	19.9
01/18/2007	11:46:00 AM		6.85	154.72	19.9
01/18/2007	11:46:30 AM		6.85	154.43	19.77
01/18/2007	11:47:00 AM		6.85	153.7	19.77
01/18/2007	11:47:30 AM	Traverse2 - 1	6.91	153.55	19.77
01/18/2007	11:48:00 AM	Traverse2 - 1	6.97	153.26	19.65
01/18/2007	11:48:30 AM	Traverse2 - 1	6.97	153.7	19.65
01/18/2007	11:49:00 AM	Traverse2 - 1	6.97	152.96	19.53
01/18/2007	11:49:30 AM	Traverse2 - 1	7.03	152.67	19.53
01/18/2007	11:50:00 AM	Traverse2 - 1	7.16	152.52	19.53
01/18/2007	11:50:30 AM	Traverse2 - 1	7.09	152.67	19.65
01/18/2007	11:51:00 AM	Traverse2 - 1	6.97	152.82	19.65
01/18/2007	11:51:30 AM	Traverse2 - 1	6.91	152.82	19.77
01/18/2007	11:52:00 AM	Traverse2 - 1	6.85	152.23	19.77
01/18/2007	11:52:30 AM	Traverse2 - 1	6.85	152.08	19.77
01/18/2007	11:53:00 AM	Traverse2 - 1	6.79	152.52	19.77
01/18/2007	11:53:30 AM	Traverse2 - 1	6.79	152.52	19.77
01/18/2007	11:54:00 AM	Traverse2 - 1	6.97	151.64	19.53
01/18/2007	11:54:30 AM	Traverse2 - 1	7.03	150.91	19.53
01/18/2007	11:55:00 AM	Traverse2 - 1	7.03	150.62	19.53
01/18/2007	11:55:30 AM	Traverse2 - 1	7.03	150.18	19.53
01/18/2007	11:56:00 AM	Traverse2 - 1	7.03	150.18	19.65
01/18/2007	11:56:30 AM	Traverse2 - 1	7.03	150.03	19.65
01/18/2007	11:57:00 AM	Traverse2 - 1	7.09	150.47	19.53
01/18/2007	11:57:30 AM	Traverse2 - 1	7.03	150.03	19.53
01/18/2007	11:58:00 AM	Traverse2 - 1	7.03	149.3	19.65
01/18/2007	11:58:30 AM	Traverse2 - 1	6.97	149.45	19.65
01/18/2007	11:59:00 AM	Traverse2 - 1	6.91	149.3	19.65
01/18/2007	11:59:30 AM	Traverse2 - 1	6.79	149.89	19.77
01/18/2007	12:00:00 PM	Traverse2 - 1	6.67	150.33	19.9
01/18/2007	12:00:30 PM	Traverse2 - 1	6.67	151.2	19.77
01/18/2007	12:01:00 PM	Traverse2 - 1	6.61	151.94	19.9
01/18/2007	12:01:30 PM	Traverse2 - 1	6.55	152.82	20.02
01/18/2007	12:02:00 PM	Traverse2 - 1	6.61	153.26	19.9
01/18/2007	12:02:30 PM	Traverse2 - 1	6.55	153.4	19.9
01/18/2007	12:03:00 PM	Traverse2 - 1	6.48	153.99	19.9
01/18/2007	12:03:30 PM	Traverse2 - 1	6.42	154.87	19.9
01/18/2007	12:04:00 PM	Traverse2 - 1	6.55	155.75	19.9
01/18/2007	12:04:30 PM	Traverse2 - 1	6.61	155.89	19.77
01/18/2007	12:05:00 PM	Traverse2 - 1	6.73	155.75	19.53
01/18/2007	12:05:30 PM		6.85	155.31	19.53
01/18/2007	12:06:00 PM		6.91	137.87	19.16
01/18/2007	12:06:30 PM		0.62	153.55	10.74
01/18/2007	12:07:00 PM	- ZERO	-0.05	154.72	10.01
01/18/2007	12:07:30 PM	- Span	-0.05	155.75	9.89

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	12:08:00 PM	- Span	-0.05	154.28	10.01
01/18/2007	12:08:30 PM	- Span	-0.05	151.06	10.01
01/18/2007	12:09:00 PM	- Span	2.82	15.68	5.86
01/18/2007	12:09:30 PM	- Span	6	6.3	0.12
01/18/2007	12:10:00 PM	- ZERO	6.06	4.25	0
01/18/2007	12:10:30 PM	- ZERO	6.06	2.93	0.12
01/18/2007	12:11:00 PM	- ZERO	4.71	2.93	4.51
01/18/2007	12:11:30 PM	- ZERO	0.5	2.2	21.61
01/18/2007	12:12:00 PM	- ZERO	-0.05	2.06	25.02
01/18/2007	12:12:30 PM	- Span	-0.05	2.06	24.9
01/18/2007	12:13:00 PM	- Span	-0.05	113.26	25.02
01/18/2007	12:13:30 PM	- Span	6.18	147.69	20.14
01/18/2007	12:14:00 PM	- Span	6.61	152.67	19.65
01/18/2007	12:14:30 PM	- Span	6.67	153.11	19.65
01/18/2007	12:15:00 PM	- Span	6.67	153.11	19.77
01/18/2007	12:15:30 PM	- Span	6.73	154.57	19.77
01/18/2007	12:16:00 PM	- Span	6.73	156.04	19.65
01/18/2007	12:16:30 PM	- Span	6.73	155.6	19.9
01/18/2007	12:17:00 PM	- Span	6.73	155.6	19.9
01/18/2007	12:17:30 PM	- Span	6.73	155.31	19.77
01/18/2007	12:18:00 PM	- Span	6.73	155.31	19.77
01/18/2007	12:18:30 PM	- Span	6.67	155.45	19.77
01/18/2007	12:19:00 PM	- Span	6.67	155.01	19.77
01/18/2007	12:19:30 PM	- Span	6.67	154.87	19.77
01/18/2007	12:20:00 PM	- Span	6.73	155.01	19.65
01/18/2007	12:20:30 PM	- Span	6.73	154.57	19.77
01/18/2007	12:21:00 PM	- Span	6.67	155.01	19.65
01/18/2007	12:21:30 PM	- Span	6.73	155.75	19.65
01/18/2007	12:22:00 PM	- Span	6.67	155.45	19.77
01/18/2007	12:22:30 PM	- Span	6.73	154.43	19.65
01/18/2007	12:23:00 PM	- Span	6.73	154.43	19.65
01/18/2007	12:23:30 PM	- Span	6.67	154.72	19.77
01/18/2007	12:24:00 PM	- Span	6.73	154.72	19.65
01/18/2007	12:24:30 PM	- Span	6.79	154.28	19.65
01/18/2007	12:25:00 PM	- Span	6.79	153.55	19.65
01/18/2007	12:25:30 PM	- Span	6.79	154.28	19.77
01/18/2007	12:26:00 PM	- Span	6.79	153.7	19.65
01/18/2007	12:26:30 PM	- Span	6.85	153.26	19.77
01/18/2007	12:27:00 PM	- Span	6.73	153.55	19.9
01/18/2007	12:27:30 PM	- Span	6.61	153.99	19.9
01/18/2007	12:28:00 PM	- Span	6.55	154.43	19.9
01/18/2007	12:28:30 PM	- Span	6.48	155.16	20.02
01/18/2007	12:29:00 PM	- Span	6.42	155.45	20.02
01/18/2007	12:29:30 PM	- Span	6.42	154.57	20.02
01/18/2007	12:30:00 PM	- Span	6.42	154.87	20.02
01/18/2007	12:30:30 PM	- Span	6.55	155.16	19.77
01/18/2007	12:31:00 PM	- Span	6.61	155.6	19.9
01/18/2007	12:31:30 PM	- Span	6.67	155.01	19.9
01/18/2007	12:32:00 PM	- Span	6.67	154.57	19.77
01/18/2007	12:32:30 PM	- Span	6.67	154.57	19.9

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	12:33:00 PM	- Span	6.61	155.75	20.02
01/18/2007	12:33:30 PM	- Span	6.48	157.36	20.14
01/18/2007	12:34:00 PM	- Span	6.42	158.09	20.02
01/18/2007	12:34:30 PM	- Span	6.3	159.12	20.14
01/18/2007	12:35:00 PM	- Span	6.24	159.12	20.14
01/18/2007	12:35:30 PM	- Span	6.12	160.58	20.14
01/18/2007	12:36:00 PM	- Span	6.12	161.61	20.14
01/18/2007	12:36:30 PM	- Span	6.18	163.07	20.14
01/18/2007	12:37:00 PM	- Span	6.24	162.93	20.14
01/18/2007	12:37:30 PM	- Span	6.24	163.07	20.14
01/18/2007	12:38:00 PM	- Span	6.36	162.78	20.02
01/18/2007	12:38:30 PM	- Span	6.42	163.36	19.9
01/18/2007	12:39:00 PM	- Span	6.42	164.1	19.9
01/18/2007	12:39:30 PM	- Span	6.48	164.39	19.9
01/18/2007	12:40:00 PM	- Span	6.55	164.39	19.77
01/18/2007	12:40:30 PM	- Span	6.55	164.39	19.77
01/18/2007	12:41:00 PM	- Span	6.55	164.54	19.9
01/18/2007	12:41:30 PM	- Span	6.55	165.56	20.02
01/18/2007	12:42:00 PM	- Span	6.55	165.56	19.9
01/18/2007	12:42:30 PM	- Span	6.55	165.56	20.02
01/18/2007	12:43:00 PM	- Span	6.42	166.59	20.02
01/18/2007	12:43:30 PM	- Span	6.36	166.15	20.02
01/18/2007	12:44:00 PM	- Span	6.3	166.3	19.9
01/18/2007	12:44:30 PM	- Span	6.48	165.71	19.77
01/18/2007	12:45:00 PM	- Span	6.61	165.71	19.77
01/18/2007	12:45:30 PM	- Span	6.61	165.27	19.9
01/18/2007	12:46:00 PM	- Span	6.61	165.27	19.9
01/18/2007	12:46:30 PM	- Span	6.67	164.54	19.9
01/18/2007	12:47:00 PM	- Span	6.67	164.68	19.9
01/18/2007	12:47:30 PM	- Span	6.55	165.27	20.14
01/18/2007	12:48:00 PM	- Span	6.42	164.39	20.14
01/18/2007	12:48:30 PM	- Span	6.42	165.12	20.14
01/18/2007	12:49:00 PM	- Span	6.42	164.54	20.02
01/18/2007	12:49:30 PM	- Span	6.36	164.1	20.14
01/18/2007	12:50:00 PM	- Span	6.48	163.36	20.14
01/18/2007	12:50:30 PM	- Span	6.48	162.78	20.14
01/18/2007	12:51:00 PM	- Span	6.42	163.22	20.26
01/18/2007	12:51:30 PM	- Span	6.36	163.8	20.38
01/18/2007	12:52:00 PM	- Span	6.24	164.1	20.38
01/18/2007	12:52:30 PM	- Span	6.24	164.1	20.26
01/18/2007	12:53:00 PM	- Span	6.12	164.68	20.26
01/18/2007	12:53:30 PM	- Span	6.18	165.42	20.14
01/18/2007	12:54:00 PM	- Span	6.24	165.42	20.02
01/18/2007	12:54:30 PM	- Span	6.18	165.56	20.14
01/18/2007	12:55:00 PM	- Span	6.24	165.86	20.14
01/18/2007	12:55:30 PM	- Span	6.3	166.44	20.02
01/18/2007	12:56:00 PM	- Span	6.42	165.12	19.77
01/18/2007	12:56:30 PM	- Span	6.61	163.95	19.65
01/18/2007	12:57:00 PM	- Span	6.67	164.24	19.77
01/18/2007	12:57:30 PM	- Span	6.61	164.54	19.77

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	12:58:00 PM	- Span	6.67	164.39	19.65
01/18/2007	12:58:30 PM	- Span	6.73	163.95	19.53
01/18/2007	12:59:00 PM	- Span	6.73	163.51	19.53
01/18/2007	12:59:30 PM	- Span	6.67	162.93	19.65
01/18/2007	1:00:00 PM	- Span	6.73	162.63	19.53
01/18/2007	1:00:30 PM	- Span	6.73	162.93	19.65
01/18/2007	1:01:00 PM	- Span	6.73	162.19	19.65
01/18/2007	1:01:30 PM	- Span	6.73	161.31	19.65
01/18/2007	1:02:00 PM	- Span	6.67	160.73	19.77
01/18/2007	1:02:30 PM	- Span	6.67	160.29	19.77
01/18/2007	1:03:00 PM	- Span	6.61	160.87	19.77
01/18/2007	1:03:30 PM	- Span	6.48	161.46	19.9
01/18/2007	1:04:00 PM	- Span	6.67	160.87	19.53
01/18/2007	1:04:30 PM	- Span	6.85	158.82	19.53
01/18/2007	1:05:00 PM	- Span	7.03	157.06	19.53
01/18/2007	1:05:30 PM	- Span	6.97	156.33	19.65
01/18/2007	1:06:00 PM	- Span	6.97	156.48	19.65
01/18/2007	1:06:30 PM	- Span	6.97	156.48	19.77
01/18/2007	1:07:00 PM	- Span	6.85	156.48	19.9
01/18/2007	1:07:30 PM	- Span	6.67	156.77	19.77
01/18/2007	1:08:00 PM	- Span	6.73	156.19	19.9
01/18/2007	1:08:30 PM	- Span	6.67	155.45	19.77
01/18/2007	1:09:00 PM	- Span	6.67	155.75	19.65
01/18/2007	1:09:30 PM	- Span	6.67	155.31	19.65
01/18/2007	1:10:00 PM	- Span	6.67	155.31	19.77
01/18/2007	1:10:30 PM	- Span	6.61	155.75	19.9
01/18/2007	1:11:00 PM	- Span	6.42	156.19	20.02
01/18/2007	1:11:30 PM	- Span	6.3	157.21	20.14
01/18/2007	1:12:00 PM	- Span	6.3	157.94	20.02
01/18/2007	1:12:30 PM	- Span	6.24	158.38	20.14
01/18/2007	1:13:00 PM	- Span	6.18	158.68	20.02
01/18/2007	1:13:30 PM	- Span	6.24	158.97	20.02
01/18/2007	1:14:00 PM	- Span	6.36	158.68	19.9
01/18/2007	1:14:30 PM	- Span	6.48	158.53	19.77
01/18/2007	1:15:00 PM	- Span	6.61	159.12	19.65
01/18/2007	1:15:30 PM	- Span	6.73	158.97	19.65
01/18/2007	1:16:00 PM	- Span	6.79	159.26	19.53
01/18/2007	1:16:30 PM	- Span	6.79	158.97	19.65
01/18/2007	1:17:00 PM	- Span	6.85	159.12	19.65
01/18/2007	1:17:30 PM	- Span	6.73	159.85	19.65
01/18/2007	1:18:00 PM	- Span	6.79	159.85	19.65
01/18/2007	1:18:30 PM	- Span	6.79	159.26	19.53
01/18/2007	1:19:00 PM	- Span	6.73	158.53	19.53
01/18/2007	1:19:30 PM	- Span	6.73	157.65	19.53
01/18/2007	1:20:00 PM	- Span	6.73	157.65	19.53
01/18/2007	1:20:30 PM	- Span	6.73	158.24	19.65
01/18/2007	1:21:00 PM	- Span	6.79	157.5	19.65
01/18/2007	1:21:30 PM	- Span	6.85	156.33	19.65
01/18/2007	1:22:00 PM	- Span	6.85	155.75	19.65
01/18/2007	1:22:30 PM	- Span	6.91	155.16	19.65

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	1:23:00 PM	- Span	6.85	155.16	19.65
01/18/2007	1:23:30 PM	- Span	6.79	154.72	19.65
01/18/2007	1:24:00 PM	- Span	6.91	153.84	19.41
01/18/2007	1:24:30 PM	- Span	6.91	153.11	19.53
01/18/2007	1:25:00 PM	- Span	6.91	152.52	19.65
01/18/2007	1:25:30 PM	- Span	6.85	152.23	19.9
01/18/2007	1:26:00 PM	- Span	6.67	152.96	20.02
01/18/2007	1:26:30 PM	- Span	6.55	152.82	20.02
01/18/2007	1:27:00 PM	- Span	6.42	152.96	20.14
01/18/2007	1:27:30 PM	- Span	6.24	153.4	20.26
01/18/2007	1:28:00 PM	- Span	6.12	154.72	20.26
01/18/2007	1:28:30 PM	- Span	6.06	155.75	20.26
01/18/2007	1:29:00 PM	- Span	6.06	155.75	20.14
01/18/2007	1:29:30 PM	- Span	6.12	155.01	20.26
01/18/2007	1:30:00 PM	- Span	6.24	155.31	20.02
01/18/2007	1:30:30 PM	- Span	6.3	155.75	20.02
01/18/2007	1:31:00 PM	- Span	6.36	156.48	20.02
01/18/2007	1:31:30 PM	- Span	6.42	156.04	19.9
01/18/2007	1:32:00 PM	- Span	6.61	156.04	19.77
01/18/2007	1:32:30 PM	- Span	6.73	155.31	19.65
01/18/2007	1:33:00 PM	- Span	6.73	155.31	19.65
01/18/2007	1:33:30 PM	- Span	6.79	155.89	19.41
01/18/2007	1:34:00 PM	- Span	6.85	155.6	19.29
01/18/2007	1:34:30 PM	- Span	6.91	154.87	19.29
01/18/2007	1:35:00 PM	- Span	7.03	154.13	19.41
01/18/2007	1:35:30 PM	- Span	7.03	153.4	19.41
01/18/2007	1:36:00 PM	- Span	7.03	152.67	19.41
01/18/2007	1:36:30 PM	- Span	6.97	152.23	19.53
01/18/2007	1:37:00 PM	- Span	6.91	151.64	19.65
01/18/2007	1:37:30 PM	Run 1 - 1	6.79	152.23	19.77
01/18/2007	1:38:00 PM	Run 1 - 1	6.61	152.82	19.9
01/18/2007	1:38:30 PM	Run 1 - 1	6.48	153.4	20.02
01/18/2007	1:39:00 PM	Run 1 - 1	6.3	154.13	20.14
01/18/2007	1:39:30 PM	Run 1 - 1	6.18	155.16	20.14
01/18/2007	1:40:00 PM	Run 1 - 1	6.18	155.45	20.02
01/18/2007	1:40:30 PM	Run 1 - 1	6.12	155.16	20.14
01/18/2007	1:41:00 PM	Run 1 - 1	6.12	156.33	20.14
01/18/2007	1:41:30 PM	Run 1 - 1	6.18	157.06	20.14
01/18/2007	1:42:00 PM	Run 1 - 1	6.24	157.36	20.14
01/18/2007	1:42:30 PM	Run 1 - 1	6.24	157.21	20.14
01/18/2007	1:43:00 PM	Run 1 - 1	6.36	157.21	19.9
01/18/2007	1:43:30 PM	Run 1 - 1	6.42	157.94	19.9
01/18/2007	1:44:00 PM	Run 1 - 1	6.61	158.09	19.77
01/18/2007	1:44:30 PM	Run 1 - 1	6.79	157.8	19.65
01/18/2007	1:45:00 PM	Run 1 - 1	6.85	157.36	19.65
01/18/2007	1:45:30 PM	Run 1 - 1	6.91	156.63	19.53
01/18/2007	1:46:00 PM	Run 1 - 1	6.91	156.04	19.65
01/18/2007	1:46:30 PM	Run 1 - 1	6.91	156.92	19.53
01/18/2007	1:47:00 PM	Run 1 - 1	6.85	157.36	19.77
01/18/2007	1:47:30 PM	Run 1 - 1	6.85	157.36	19.65

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	1:48:00 PM	Run 1 - 1	6.85	156.33	19.65
01/18/2007	1:48:30 PM	Run 1 - 1	6.85	155.75	19.77
01/18/2007	1:49:00 PM	Run 1 - 1	6.73	156.19	19.77
01/18/2007	1:49:30 PM	Run 1 - 1	6.55	157.21	20.02
01/18/2007	1:50:00 PM	Run 1 - 1	6.48	157.5	20.02
01/18/2007	1:50:30 PM	Run 1 - 1	6.42	157.65	20.14
01/18/2007	1:51:00 PM	Run 1 - 1	6.3	157.5	20.26
01/18/2007	1:51:30 PM	Run 1 - 1	6.18	157.5	20.26
01/18/2007	1:52:00 PM	Run 1 - 1	6.12	159.26	20.26
01/18/2007	1:52:30 PM	Run 1 - 1	6	160.73	20.38
01/18/2007	1:53:00 PM	Run 1 - 1	5.94	160.87	20.51
01/18/2007	1:53:30 PM	Run 1 - 1	5.94	161.17	20.38
01/18/2007	1:54:00 PM	Run 1 - 1	6.06	161.02	20.26
01/18/2007	1:54:30 PM	Run 1 - 1	6.18	161.17	20.02
01/18/2007	1:55:00 PM	Run 1 - 1	6.24	161.46	20.02
01/18/2007	1:55:30 PM	Run 1 - 1	6.36	162.34	19.77
01/18/2007	1:56:00 PM	Run 1 - 1	6.48	162.34	19.77
01/18/2007	1:56:30 PM	Run 1 - 1	6.55	161.02	19.77
01/18/2007	1:57:00 PM	Run 1 - 1	6.61	160.73	19.77
01/18/2007	1:57:30 PM	Run 1 - 1	6.61	161.46	19.9
01/18/2007	1:58:00 PM	Run 1 - 1	6.73	161.46	19.77
01/18/2007	1:58:30 PM	Run 1 - 1	6.67	161.9	19.77
01/18/2007	1:59:00 PM	Run 1 - 1	6.61	161.02	19.65
01/18/2007	1:59:30 PM	Run 1 - 1	6.73	159.85	19.65
01/18/2007	2:00:00 PM	Run 1 - 1	6.79	158.53	19.65
01/18/2007	2:00:30 PM	Run 1 - 1	6.79	158.38	19.65
01/18/2007	2:01:00 PM	Run 1 - 1	6.85	158.38	19.77
01/18/2007	2:01:30 PM	Run 1 - 1	6.85	157.5	19.65
01/18/2007	2:02:00 PM	Run 1 - 1	6.85	156.19	19.77
01/18/2007	2:02:30 PM	Run 1 - 1	6.85	155.16	19.77
01/18/2007	2:03:00 PM	Run 1 - 1	6.67	154.87	19.9
01/18/2007	2:03:30 PM	Run 1 - 1	6.61	155.45	19.9
01/18/2007	2:04:00 PM	Run 1 - 1	6.55	155.31	20.02
01/18/2007	2:04:30 PM	Run 1 - 1	6.55	155.31	19.9
01/18/2007	2:05:00 PM	Run 1 - 1	6.42	154.28	20.14
01/18/2007	2:05:30 PM	Run 1 - 1	6.42	154.28	20.14
01/18/2007	2:06:00 PM	Run 1 - 1	6.36	154.72	20.14
01/18/2007	2:06:30 PM	Run 1 - 1	6.3	155.45	20.14
01/18/2007	2:07:00 PM	Run 1 - 1	6.24	155.45	20.26
01/18/2007	2:07:30 PM	Run 1 - 1	6.18	155.6	20.14
01/18/2007	2:08:00 PM	Run 1 - 1	6.18	155.01	20.14
01/18/2007	2:08:30 PM	Run 1 - 1	6.06	155.6	20.26
01/18/2007	2:09:00 PM	Run 1 - 1	6.12	156.63	20.14
01/18/2007	2:09:30 PM	Run 1 - 1	6.18	156.48	20.14
01/18/2007	2:10:00 PM	Run 1 - 1	6.3	156.19	20.02
01/18/2007	2:10:30 PM	Run 1 - 1	6.42	156.77	19.9
01/18/2007	2:11:00 PM	Run 1 - 1	6.48	156.77	19.77
01/18/2007	2:11:30 PM	Run 1 - 1	6.61	156.48	19.77
01/18/2007	2:12:00 PM	Run 1 - 1	6.85	155.75	19.65
01/18/2007	2:12:30 PM	Run 1 - 1	6.79	156.33	19.77

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	2:13:00 PM	Run 1 - 1	6.73	156.48	19.77
01/18/2007	2:13:30 PM	Run 1 - 1	6.67	156.33	19.77
01/18/2007	2:14:00 PM	Run 1 - 1	6.61	156.04	19.9
01/18/2007	2:14:30 PM	Run 1 - 1	6.61	156.04	19.9
01/18/2007	2:15:00 PM	Run 1 - 1	6.61	156.48	19.9
01/18/2007	2:15:30 PM	Run 1 - 1	6.55	157.06	20.02
01/18/2007	2:16:00 PM	Run 1 - 1	6.55	157.5	20.14
01/18/2007	2:16:30 PM	Run 1 - 1	6.42	157.06	20.38
01/18/2007	2:17:00 PM	Run 1 - 1	6.3	157.5	20.51
01/18/2007	2:17:30 PM	Run 1 - 1	6.12	159.12	20.51
01/18/2007	2:18:00 PM	Run 1 - 1	6	160.87	20.63
01/18/2007	2:18:30 PM	Run 1 - 1	5.87	161.9	20.63
01/18/2007	2:19:00 PM	Run 1 - 1	5.75	162.63	20.63
01/18/2007	2:19:30 PM	Run 1 - 1	5.75	163.07	20.63
01/18/2007	2:20:00 PM	Run 1 - 1	5.75	163.8	20.51
01/18/2007	2:20:30 PM	Run 1 - 1	5.81	165.56	20.38
01/18/2007	2:21:00 PM	Run 1 - 1	5.87	166.3	20.26
01/18/2007	2:21:30 PM	Run 1 - 1	6	166.73	20.26
01/18/2007	2:22:00 PM	Run 1 - 1	6.18	166.73	20.14
01/18/2007	2:22:30 PM	Run 1 - 1	6.3	166.15	20.02
01/18/2007	2:23:00 PM	Run 1 - 1	6.48	166.44	19.9
01/18/2007	2:23:30 PM	Run 1 - 1	6.73	165.86	19.65
01/18/2007	2:24:00 PM	Run 1 - 1	6.85	165.12	19.53
01/18/2007	2:24:30 PM	Run 1 - 1	6.91	164.83	19.53
01/18/2007	2:25:00 PM	Run 1 - 1	6.97	164.39	19.65
01/18/2007	2:25:30 PM	Run 1 - 1	6.91	163.8	19.65
01/18/2007	2:26:00 PM	Run 1 - 1	6.85	162.93	19.9
01/18/2007	2:26:30 PM	Run 1 - 1	6.79	163.22	19.9
01/18/2007	2:27:00 PM	Run 1 - 1	6.73	162.63	20.02
01/18/2007	2:27:30 PM	Run 1 - 1	6.61	163.22	20.14
01/18/2007	2:28:00 PM	Run 1 - 1	6.42	163.66	20.26
01/18/2007	2:28:30 PM	Run 1 - 1	6.24	164.1	20.38
01/18/2007	2:29:00 PM	Run 1 - 1	5.94	164.1	20.63
01/18/2007	2:29:30 PM	Run 1 - 1	5.81	165.42	20.63
01/18/2007	2:30:00 PM	Run 1 - 1	5.75	165.86	20.63
01/18/2007	2:30:30 PM	Run 1 - 1	5.69	166.44	20.63
01/18/2007	2:31:00 PM	Run 1 - 1	5.69	166.73	20.75
01/18/2007	2:31:30 PM	Run 1 - 1	5.75	166.88	20.63
01/18/2007	2:32:00 PM	Run 1 - 1	5.81	166.3	20.63
01/18/2007	2:32:30 PM	Run 1 - 1	5.87	167.61	20.51
01/18/2007	2:33:00 PM	Run 1 - 1	5.94	168.05	20.38
01/18/2007	2:33:30 PM	Run 1 - 1	6	167.61	20.26
01/18/2007	2:34:00 PM	Run 1 - 1	6.18	167.91	20.14
01/18/2007	2:34:30 PM	Run 1 - 1	6.3	167.61	20.02
01/18/2007	2:35:00 PM	Run 1 - 1	6.36	167.17	20.02
01/18/2007	2:35:30 PM	Run 1 - 1	6.42	167.03	19.9
01/18/2007	2:36:00 PM	Run 1 - 1	6.61	166.15	19.9
01/18/2007	2:36:30 PM	Run 1 - 1	6.61	165.27	19.9
01/18/2007	2:37:00 PM	Run 1 - 1	6.61	164.83	20.02
01/18/2007	2:37:30 PM		6.61	165.27	19.9

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	2:38:00 PM		6	126.74	19.41
01/18/2007	2:38:30 PM		0.32	153.4	10.74
01/18/2007	2:39:00 PM	- Span	-0.05	155.01	10.01
01/18/2007	2:39:30 PM	- Span	-0.05	155.6	10.13
01/18/2007	2:40:00 PM	- Span	-0.05	141.1	10.01
01/18/2007	2:40:30 PM	- Span	3.19	7.33	5.12
01/18/2007	2:41:00 PM	- Span	6	2.2	0.12
01/18/2007	2:41:30 PM	- ZERO	6.06	1.76	0.12
01/18/2007	2:42:00 PM	- ZERO	6.06	1.76	0
01/18/2007	2:42:30 PM	- ZERO	1.36	1.47	18.07
01/18/2007	2:43:00 PM	- ZERO	-0.05	1.18	24.78
01/18/2007	2:43:30 PM	- Span	-0.05	1.18	25.02
01/18/2007	2:44:00 PM	- Span	-0.11	83.96	25.15
01/18/2007	2:44:30 PM	- Span	5.32	155.01	21.12
01/18/2007	2:45:00 PM	- Span	6.12	157.8	20.51
01/18/2007	2:45:30 PM	- Span	6.06	159.7	20.51
01/18/2007	2:46:00 PM	Run 2 - 1	6.06	160.58	20.51
01/18/2007	2:46:30 PM	Run 2 - 1	6.06	160.58	20.51
01/18/2007	2:47:00 PM	Run 2 - 1	6	161.46	20.63
01/18/2007	2:47:30 PM	Run 2 - 1	6.06	161.17	20.38
01/18/2007	2:48:00 PM	Run 2 - 1	6.18	160.87	20.38
01/18/2007	2:48:30 PM	Run 2 - 1	6.18	162.34	20.38
01/18/2007	2:49:00 PM	Run 2 - 1	6.3	162.78	20.26
01/18/2007	2:49:30 PM	Run 2 - 1	6.42	163.07	20.14
01/18/2007	2:50:00 PM	Run 2 - 1	6.48	162.63	20.14
01/18/2007	2:50:30 PM	Run 2 - 1	6.48	162.34	20.14
01/18/2007	2:51:00 PM		6.55	162.34	20.14
01/18/2007	2:51:30 PM		6.48	163.07	20.14
01/18/2007	2:52:00 PM		6.42	163.36	20.14
01/18/2007	2:52:30 PM		6.42	163.8	20.14
01/18/2007	2:53:00 PM		6.36	163.07	20.26
01/18/2007	2:53:30 PM		6.36	163.51	20.14
01/18/2007	2:54:00 PM		6.36	164.39	20.14
01/18/2007	2:54:30 PM		6.36	164.24	20.26
01/18/2007	2:55:00 PM		6.36	164.24	20.26
01/18/2007	2:55:30 PM		6.42	164.1	20.14
01/18/2007	2:56:00 PM		6.48	163.95	20.14
01/18/2007	2:56:30 PM		6.42	163.51	20.26
01/18/2007	2:57:00 PM		6.48	163.51	20.26
01/18/2007	2:57:30 PM		6.48	164.39	20.14
01/18/2007	2:58:00 PM		6.42	164.68	20.26
01/18/2007	2:58:30 PM		6.48	163.95	20.26
01/18/2007	2:59:00 PM		6.36	163.36	20.26
01/18/2007	2:59:30 PM		6.36	163.51	20.26
01/18/2007	3:00:00 PM		6.3	164.39	20.26
01/18/2007	3:00:30 PM		6.24	164.24	20.26
01/18/2007	3:01:00 PM		6.24	164.54	20.26
01/18/2007	3:01:30 PM		6.24	164.39	20.38
01/18/2007	3:02:00 PM		6.3	164.39	20.26
01/18/2007	3:02:30 PM		6.36	164.1	20.26

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	3:03:00 PM		6.36	164.68	20.26
01/18/2007	3:03:30 PM		6.36	164.54	20.26
01/18/2007	3:04:00 PM		6.42	163.8	20.14
01/18/2007	3:04:30 PM		6.48	162.93	20.02
01/18/2007	3:05:00 PM		6.55	162.63	20.14
01/18/2007	3:05:30 PM		6.48	162.49	20.14
01/18/2007	3:06:00 PM		6.55	162.93	20.02
01/18/2007	3:06:30 PM		6.61	162.78	20.02
01/18/2007	3:07:00 PM		6.61	161.75	20.02
01/18/2007	3:07:30 PM		6.55	159.85	20.02
01/18/2007	3:08:00 PM		6.61	160.14	20.02
01/18/2007	3:08:30 PM		6.61	160.14	20.14
01/18/2007	3:09:00 PM		6.55	160.14	20.14
01/18/2007	3:09:30 PM		6.55	159.7	20.14
01/18/2007	3:10:00 PM		6.55	159.56	20.14
01/18/2007	3:10:30 PM		6.42	159.26	20.14
01/18/2007	3:11:00 PM		6.3	158.82	20.38
01/18/2007	3:11:30 PM		6.24	159.41	20.38
01/18/2007	3:12:00 PM		6.12	159.85	20.51
01/18/2007	3:12:30 PM		6.06	159.41	20.63
01/18/2007	3:13:00 PM		6	160	20.63
01/18/2007	3:13:30 PM		5.87	161.17	20.51
01/18/2007	3:14:00 PM		5.94	161.61	20.38
01/18/2007	3:14:30 PM	Run 2 - 1	6.06	161.46	20.26
01/18/2007	3:15:00 PM	Run 2 - 1	6.12	161.46	20.26
01/18/2007	3:15:30 PM	Run 2 - 1	6.24	161.46	20.26
01/18/2007	3:16:00 PM	Run 2 - 1	6.36	160.73	20.14
01/18/2007	3:16:30 PM	Run 2 - 1	6.36	160.43	20.14
01/18/2007	3:17:00 PM	Run 2 - 1	6.42	160.29	20.14
01/18/2007	3:17:30 PM	Run 2 - 1	6.42	161.61	20.14
01/18/2007	3:18:00 PM	Run 2 - 1	6.48	161.75	20.02
01/18/2007	3:18:30 PM	Run 2 - 1	6.55	161.61	20.14
01/18/2007	3:19:00 PM	Run 2 - 1	6.55	161.02	20.02
01/18/2007	3:19:30 PM	Run 2 - 1	6.67	161.02	19.9
01/18/2007	3:20:00 PM	Run 2 - 1	6.73	160	19.9
01/18/2007	3:20:30 PM	Run 2 - 1	6.85	158.97	19.9
01/18/2007	3:21:00 PM	Run 2 - 1	6.85	158.68	19.9
01/18/2007	3:21:30 PM	Run 2 - 1	6.85	157.8	19.9
01/18/2007	3:22:00 PM	Run 2 - 1	6.79	158.09	20.02
01/18/2007	3:22:30 PM	Run 2 - 1	6.73	158.09	20.02
01/18/2007	3:23:00 PM	Run 2 - 1	6.73	157.21	20.02
01/18/2007	3:23:30 PM	Run 2 - 1	6.73	156.77	20.02
01/18/2007	3:24:00 PM	Run 2 - 1	6.73	156.33	20.02
01/18/2007	3:24:30 PM	Run 2 - 1	6.61	156.48	20.14
01/18/2007	3:25:00 PM	Run 2 - 1	6.55	156.77	20.26
01/18/2007	3:25:30 PM	Run 2 - 1	6.42	157.06	20.26
01/18/2007	3:26:00 PM	Run 2 - 1	6.48	157.65	20.26
01/18/2007	3:26:30 PM	Run 2 - 1	6.36	157.21	20.38
01/18/2007	3:27:00 PM	Run 2 - 1	6.36	157.06	20.26
01/18/2007	3:27:30 PM	Run 2 - 1	6.36	156.33	20.38

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	3:28:00 PM	Run 2 - 1	6.36	157.21	20.26
01/18/2007	3:28:30 PM	Run 2 - 1	6.3	157.65	20.38
01/18/2007	3:29:00 PM	Run 2 - 1	6.18	158.53	20.38
01/18/2007	3:29:30 PM	Run 2 - 1	6.18	158.97	20.38
01/18/2007	3:30:00 PM	Run 2 - 1	6.18	159.26	20.26
01/18/2007	3:30:30 PM	Run 2 - 1	6.24	159.26	20.26
01/18/2007	3:31:00 PM	Run 2 - 1	6.24	160.14	20.38
01/18/2007	3:31:30 PM	Run 2 - 1	6.18	161.31	20.26
01/18/2007	3:32:00 PM	Run 2 - 1	6.18	161.9	20.38
01/18/2007	3:32:30 PM	Run 2 - 1	6.24	161.9	20.38
01/18/2007	3:33:00 PM	Run 2 - 1	6.24	162.93	20.38
01/18/2007	3:33:30 PM	Run 2 - 1	6.24	162.93	20.26
01/18/2007	3:34:00 PM	Run 2 - 1	6.36	162.78	20.14
01/18/2007	3:34:30 PM	Run 2 - 1	6.42	163.07	20.14
01/18/2007	3:35:00 PM	Run 2 - 1	6.42	162.78	20.26
01/18/2007	3:35:30 PM	Run 2 - 1	6.48	162.49	20.14
01/18/2007	3:36:00 PM	Run 2 - 1	6.61	161.75	20.14
01/18/2007	3:36:30 PM	Run 2 - 1	6.61	161.61	20.26
01/18/2007	3:37:00 PM	Run 2 - 1	6.55	162.34	20.26
01/18/2007	3:37:30 PM	Run 2 - 1	6.48	162.19	20.38
01/18/2007	3:38:00 PM	Run 2 - 1	6.48	162.34	20.38
01/18/2007	3:38:30 PM	Run 2 - 1	6.36	163.36	20.38
01/18/2007	3:39:00 PM	Run 2 - 1	6.24	162.93	20.51
01/18/2007	3:39:30 PM	Run 2 - 1	6.24	163.36	20.38
01/18/2007	3:40:00 PM	Run 2 - 1	6.24	163.95	20.38
01/18/2007	3:40:30 PM	Run 2 - 1	6.24	163.22	20.38
01/18/2007	3:41:00 PM	Run 2 - 1	6.24	162.93	20.38
01/18/2007	3:41:30 PM	Run 2 - 1	6.24	162.63	20.38
01/18/2007	3:42:00 PM	Run 2 - 1	6.3	161.61	20.26
01/18/2007	3:42:30 PM	Run 2 - 1	6.36	161.75	20.26
01/18/2007	3:43:00 PM	Run 2 - 1	6.3	162.49	20.38
01/18/2007	3:43:30 PM	Run 2 - 1	6.36	162.49	20.38
01/18/2007	3:44:00 PM	Run 2 - 1	6.42	161.61	20.26
01/18/2007	3:44:30 PM	Run 2 - 1	6.48	160.58	20.26
01/18/2007	3:45:00 PM	Run 2 - 1	6.42	160.73	20.26
01/18/2007	3:45:30 PM	Run 2 - 1	6.42	161.31	20.26
01/18/2007	3:46:00 PM	Run 2 - 1	6.36	160.87	20.26
01/18/2007	3:46:30 PM	Run 2 - 1	6.36	160.43	20.51
01/18/2007	3:47:00 PM	Run 2 - 1	6.24	161.17	20.51
01/18/2007	3:47:30 PM	Run 2 - 1	6.18	161.31	20.63
01/18/2007	3:48:00 PM	Run 2 - 1	6.12	161.9	20.51
01/18/2007	3:48:30 PM	Run 2 - 1	6.06	162.05	20.51
01/18/2007	3:49:00 PM	Run 2 - 1	6	162.49	20.51
01/18/2007	3:49:30 PM	Run 2 - 1	6	162.63	20.51
01/18/2007	3:50:00 PM	Run 2 - 1	6.24	161.61	20.38
01/18/2007	3:50:30 PM	Run 2 - 1	6.3	161.61	20.26
01/18/2007	3:51:00 PM	Run 2 - 1	6.3	161.61	20.26
01/18/2007	3:51:30 PM	Run 2 - 1	6.3	162.34	20.38
01/18/2007	3:52:00 PM	Run 2 - 1	6.36	162.63	20.38
01/18/2007	3:52:30 PM	Run 2 - 1	6.3	163.22	20.51

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	3:53:00 PM	Run 2 - 1	6.18	164.1	20.63
01/18/2007	3:53:30 PM	Run 2 - 1	6.12	164.68	20.51
01/18/2007	3:54:00 PM	Run 2 - 1	6.12	164.68	20.51
01/18/2007	3:54:30 PM	Run 2 - 1	6.12	164.39	20.51
01/18/2007	3:55:00 PM	Run 2 - 1	6.18	165.12	20.38
01/18/2007	3:55:30 PM	Run 2 - 1	6.18	164.39	20.51
01/18/2007	3:56:00 PM	Run 2 - 1	6.3	164.1	20.51
01/18/2007	3:56:30 PM	Run 2 - 1	6.24	164.24	20.51
01/18/2007	3:57:00 PM	Run 2 - 1	6.24	164.68	20.51
01/18/2007	3:57:30 PM	Run 2 - 1	6.24	165.27	20.51
01/18/2007	3:58:00 PM	Run 2 - 1	6.24	166	20.38
01/18/2007	3:58:30 PM	Run 2 - 1	6.3	166.15	20.38
01/18/2007	3:59:00 PM	Run 2 - 1	6.24	166.59	20.38
01/18/2007	3:59:30 PM	Run 2 - 1	6.3	166.15	20.38
01/18/2007	4:00:00 PM	Run 2 - 1	6.36	166.15	20.26
01/18/2007	4:00:30 PM	Run 2 - 1	6.42	166.3	20.26
01/18/2007	4:01:00 PM	Run 2 - 1	6.36	166.59	20.38
01/18/2007	4:01:30 PM	Run 2 - 1	6.42	167.61	20.38
01/18/2007	4:02:00 PM	Run 2 - 1	6.42	166.73	20.51
01/18/2007	4:02:30 PM	Run 2 - 1	6.3	166.59	20.51
01/18/2007	4:03:00 PM	Run 2 - 1	6.24	166.73	20.75
01/18/2007	4:03:30 PM	Run 2 - 1	6.06	167.61	20.75
01/18/2007	4:04:00 PM	Run 2 - 1	6.12	169.08	20.63
01/18/2007	4:04:30 PM	Run 2 - 1	6.06	169.52	20.75
01/18/2007	4:05:00 PM	Run 2 - 1	6.06	169.96	20.75
01/18/2007	4:05:30 PM	Run 2 - 1	6.12	169.52	20.75
01/18/2007	4:06:00 PM	Run 2 - 1	6.18	169.08	20.75
01/18/2007	4:06:30 PM	Run 2 - 1	6.24	169.52	20.63
01/18/2007	4:07:00 PM	Run 2 - 1	6.18	169.66	20.75
01/18/2007	4:07:30 PM	Run 2 - 1	6.12	170.98	20.87
01/18/2007	4:08:00 PM	Run 2 - 1	6.06	171.57	20.75
01/18/2007	4:08:30 PM	Run 2 - 1	6.06	171.28	20.63
01/18/2007	4:09:00 PM	Run 2 - 1	6	171.72	20.63
01/18/2007	4:09:30 PM	Run 2 - 1	6.18	172.01	20.63
01/18/2007	4:10:00 PM	Run 2 - 1	6.24	172.01	20.51
01/18/2007	4:10:30 PM	Run 2 - 1	6.36	171.13	20.51
01/18/2007	4:11:00 PM	Run 2 - 1	6.36	171.42	20.51
01/18/2007	4:11:30 PM	Run 2 - 1	6.3	170.98	20.51
01/18/2007	4:12:00 PM	Run 2 - 1	6.42	170.4	20.51
01/18/2007	4:12:30 PM	Run 2 - 1	6.36	170.84	20.63
01/18/2007	4:13:00 PM	Run 2 - 1	6.36	171.13	20.51
01/18/2007	4:13:30 PM	Run 2 - 1	6.36	171.13	20.51
01/18/2007	4:14:00 PM	Run 2 - 1	6.36	169.96	20.63
01/18/2007	4:14:30 PM	Run 2 - 2	6.42	169.81	20.51
01/18/2007	4:15:00 PM		6.42	169.52	20.51
01/18/2007	4:15:30 PM		6.36	168.93	20.51
01/18/2007	4:16:00 PM		6.42	128.2	20.63
01/18/2007	4:16:30 PM		0.99	153.84	12.21
01/18/2007	4:17:00 PM	- Span	-0.05	154.57	10.13
01/18/2007	4:17:30 PM	- Span	-0.05	154.13	10.13

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	4:18:00 PM	- Span	-0.05	156.04	10.01
01/18/2007	4:18:30 PM	- Span	-0.05	119.12	10.01
01/18/2007	4:19:00 PM	- Span	3.62	5.72	4.39
01/18/2007	4:19:30 PM	- Span	6	1.76	0.12
01/18/2007	4:20:00 PM	- ZERO	6.06	4.25	0.12
01/18/2007	4:20:30 PM	- ZERO	3.19	1.47	11.11
01/18/2007	4:21:00 PM	- ZERO	0.14	0.88	23.68
01/18/2007	4:21:30 PM	- Span	-0.05	0.88	24.9
01/18/2007	4:22:00 PM	- Span	-0.05	42.35	25.02
01/18/2007	4:22:30 PM	- Span	4.47	158.97	22.34
01/18/2007	4:23:00 PM	- Span	6.42	162.34	20.51
01/18/2007	4:23:30 PM	- Span	6.42	161.9	20.51
01/18/2007	4:24:00 PM	- Span	6.48	161.75	20.38
01/18/2007	4:24:30 PM	- Span	6.42	162.34	20.38
01/18/2007	4:25:00 PM	- Span	6.42	163.22	20.51
01/18/2007	4:25:30 PM	- Span	6.48	161.31	20.38
01/18/2007	4:26:00 PM	- Span	6.55	161.46	20.38
01/18/2007	4:26:30 PM	- Span	6.61	161.46	20.38
01/18/2007	4:27:00 PM	- Span	6.55	161.31	20.38
01/18/2007	4:27:30 PM	- Span	6.61	161.9	20.38
01/18/2007	4:28:00 PM	- Span	6.55	161.31	20.38
01/18/2007	4:28:30 PM	- Span	6.55	161.02	20.38
01/18/2007	4:29:00 PM	- Span	6.55	161.61	20.38
01/18/2007	4:29:30 PM	- Span	6.42	160.87	20.51
01/18/2007	4:30:00 PM	- Span	6.36	160.73	20.63
01/18/2007	4:30:30 PM	- Span	6.36	160.73	20.75
01/18/2007	4:31:00 PM	- Span	6.24	161.31	20.75
01/18/2007	4:31:30 PM	- Span	6.24	161.9	20.75
01/18/2007	4:32:00 PM	- Span	6.3	162.78	20.63
01/18/2007	4:32:30 PM	- Span	6.3	162.78	20.63
01/18/2007	4:33:00 PM	- Span	6.24	162.78	20.63
01/18/2007	4:33:30 PM	- Span	6.36	162.49	20.38
01/18/2007	4:34:00 PM	- Span	6.55	162.19	20.14
01/18/2007	4:34:30 PM	- Span	6.61	161.61	20.14
01/18/2007	4:35:00 PM	- Span	6.67	161.61	20.14
01/18/2007	4:35:30 PM	- Span	6.85	160.73	20.14
01/18/2007	4:36:00 PM	- Span	6.97	159.85	20.02
01/18/2007	4:36:30 PM	- Span	6.97	158.97	20.14
01/18/2007	4:37:00 PM	- Span	6.97	157.94	20.02
01/18/2007	4:37:30 PM	- Span	6.97	158.38	20.02
01/18/2007	4:38:00 PM	- Span	7.03	158.09	20.02
01/18/2007	4:38:30 PM	- Span	6.97	157.21	20.14
01/18/2007	4:39:00 PM	Run 3 - 1	6.97	157.21	20.02
01/18/2007	4:39:30 PM	Run 3 - 1	6.91	157.21	20.02
01/18/2007	4:40:00 PM	Run 3 - 1	6.91	155.89	20.02
01/18/2007	4:40:30 PM	Run 3 - 1	6.85	155.01	20.02
01/18/2007	4:41:00 PM	Run 3 - 1	6.85	154.43	20.14
01/18/2007	4:41:30 PM	Run 3 - 1	6.85	153.84	20.02
01/18/2007	4:42:00 PM	Run 3 - 1	6.85	152.08	20.14
01/18/2007	4:42:30 PM	Run 3 - 1	6.85	151.64	20.14

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	4:43:00 PM	Run 3 - 1	6.79	152.08	20.26
01/18/2007	4:43:30 PM	Run 3 - 1	6.67	152.08	20.38
01/18/2007	4:44:00 PM	Run 3 - 1	6.61	152.67	20.38
01/18/2007	4:44:30 PM	Run 3 - 1	6.55	152.23	20.38
01/18/2007	4:45:00 PM	Run 3 - 1	6.42	152.52	20.51
01/18/2007	4:45:30 PM	Run 3 - 1	6.42	152.23	20.51
01/18/2007	4:46:00 PM	Run 3 - 1	6.42	152.38	20.51
01/18/2007	4:46:30 PM	Run 3 - 1	6.3	153.11	20.51
01/18/2007	4:47:00 PM	Run 3 - 1	6.24	153.4	20.51
01/18/2007	4:47:30 PM	Run 3 - 1	6.18	154.13	20.51
01/18/2007	4:48:00 PM	Run 3 - 1	6.3	153.26	20.51
01/18/2007	4:48:30 PM	Run 3 - 1	6.36	152.96	20.26
01/18/2007	4:49:00 PM	Run 3 - 1	6.42	153.11	20.14
01/18/2007	4:49:30 PM	Run 3 - 1	6.48	153.4	20.14
01/18/2007	4:50:00 PM	Run 3 - 1	6.61	152.82	20.02
01/18/2007	4:50:30 PM	Run 3 - 1	6.61	152.96	20.14
01/18/2007	4:51:00 PM	Run 3 - 1	6.61	152.82	20.14
01/18/2007	4:51:30 PM	Run 3 - 1	6.67	152.38	20.14
01/18/2007	4:52:00 PM	Run 3 - 1	6.79	152.82	20.02
01/18/2007	4:52:30 PM	Run 3 - 1	6.85	152.23	20.02
01/18/2007	4:53:00 PM	Run 3 - 1	6.73	151.2	20.14
01/18/2007	4:53:30 PM	Run 3 - 1	6.73	150.76	20.14
01/18/2007	4:54:00 PM	Run 3 - 1	6.73	151.5	20.02
01/18/2007	4:54:30 PM	Run 3 - 1	6.61	151.35	20.14
01/18/2007	4:55:00 PM	Run 3 - 1	6.61	151.5	20.14
01/18/2007	4:55:30 PM	Run 3 - 1	6.55	151.06	20.26
01/18/2007	4:56:00 PM	Run 3 - 1	6.55	150.76	20.26
01/18/2007	4:56:30 PM	Run 3 - 1	6.3	151.2	20.63
01/18/2007	4:57:00 PM	Run 3 - 1	6.18	152.23	20.63
01/18/2007	4:57:30 PM	Run 3 - 1	6.12	153.7	20.63
01/18/2007	4:58:00 PM	Run 3 - 1	6.06	154.43	20.51
01/18/2007	4:58:30 PM	Run 3 - 1	6	154.28	20.63
01/18/2007	4:59:00 PM	Run 3 - 1	5.94	154.43	20.63
01/18/2007	4:59:30 PM	Run 3 - 1	6	154.43	20.63
01/18/2007	5:00:00 PM	Run 3 - 1	6.06	155.16	20.51
01/18/2007	5:00:30 PM	Run 3 - 1	6.18	155.6	20.26
01/18/2007	5:01:00 PM	Run 3 - 1	6.18	155.75	20.38
01/18/2007	5:01:30 PM	Run 3 - 1	6.36	154.87	20.26
01/18/2007	5:02:00 PM	Run 3 - 1	6.42	154.43	20.26
01/18/2007	5:02:30 PM	Run 3 - 1	6.42	155.16	20.26
01/18/2007	5:03:00 PM	Run 3 - 1	6.42	156.77	20.26
01/18/2007	5:03:30 PM	Run 3 - 1	6.48	157.21	20.02
01/18/2007	5:04:00 PM	Run 3 - 1	6.67	156.19	20.02
01/18/2007	5:04:30 PM	Run 3 - 1	6.67	155.45	20.14
01/18/2007	5:05:00 PM	Run 3 - 1	6.73	156.04	20.02
01/18/2007	5:05:30 PM	Run 3 - 1	6.73	156.19	20.02
01/18/2007	5:06:00 PM	Run 3 - 1	6.79	156.48	20.02
01/18/2007	5:06:30 PM	Run 3 - 1	6.67	156.04	20.14
01/18/2007	5:07:00 PM	Run 3 - 1	6.61	155.75	20.26
01/18/2007	5:07:30 PM	Run 3 - 1	6.48	156.04	20.38

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	5:08:00 PM	Run 3 - 1	6.42	156.33	20.38
01/18/2007	5:08:30 PM	Run 3 - 1	6.3	157.36	20.51
01/18/2007	5:09:00 PM	Run 3 - 1	6.12	158.38	20.75
01/18/2007	5:09:30 PM	Run 3 - 1	6.06	159.41	20.75
01/18/2007	5:10:00 PM	Run 3 - 1	6.06	159.85	20.75
01/18/2007	5:10:30 PM	Run 3 - 1	6.06	159.56	20.75
01/18/2007	5:11:00 PM	Run 3 - 1	6.06	160.43	20.75
01/18/2007	5:11:30 PM	Run 3 - 1	6	161.31	20.75
01/18/2007	5:12:00 PM	Run 3 - 1	6	161.75	20.87
01/18/2007	5:12:30 PM	Run 3 - 1	6	162.19	20.87
01/18/2007	5:13:00 PM	Run 3 - 1	5.94	162.78	20.87
01/18/2007	5:13:30 PM	Run 3 - 1	5.94	163.51	20.87
01/18/2007	5:14:00 PM	Run 3 - 1	6	165.12	20.75
01/18/2007	5:14:30 PM	Run 3 - 1	6	165.86	20.63
01/18/2007	5:15:00 PM	Run 3 - 1	6.18	165.86	20.51
01/18/2007	5:15:30 PM	Run 3 - 1	6.36	165.42	20.51
01/18/2007	5:16:00 PM	Run 3 - 1	6.48	164.83	20.26
01/18/2007	5:16:30 PM	Run 3 - 1	6.61	164.24	20.38
01/18/2007	5:17:00 PM	Run 3 - 1	6.73	163.8	20.38
01/18/2007	5:17:30 PM	Run 3 - 1	6.79	163.36	20.26
01/18/2007	5:18:00 PM	Run 3 - 1	6.85	162.19	20.26
01/18/2007	5:18:30 PM	Run 3 - 1	6.91	162.19	20.26
01/18/2007	5:19:00 PM	Run 3 - 1	6.91	161.46	20.26
01/18/2007	5:19:30 PM	Run 3 - 1	6.85	161.31	20.38
01/18/2007	5:20:00 PM	Run 3 - 1	6.85	160.58	20.26
01/18/2007	5:20:30 PM	Run 3 - 1	6.85	160.43	20.38
01/18/2007	5:21:00 PM	Run 3 - 1	6.73	160.29	20.38
01/18/2007	5:21:30 PM	Run 3 - 1	6.61	159.85	20.63
01/18/2007	5:22:00 PM	Run 3 - 1	6.48	159.7	20.87
01/18/2007	5:22:30 PM	Run 3 - 1	6.36	160.43	20.87
01/18/2007	5:23:00 PM	Run 3 - 1	6.24	160.29	21
01/18/2007	5:23:30 PM	Run 3 - 1	6.12	160.43	21
01/18/2007	5:24:00 PM	Run 3 - 1	6.12	160.14	20.87
01/18/2007	5:24:30 PM	Run 3 - 1	6.12	160.43	21
01/18/2007	5:25:00 PM	Run 3 - 1	6.06	159.26	21
01/18/2007	5:25:30 PM	Run 3 - 1	6.18	159.85	20.75
01/18/2007	5:26:00 PM	Run 3 - 1	6.24	160.43	20.75
01/18/2007	5:26:30 PM	Run 3 - 1	6.36	159.7	20.75
01/18/2007	5:27:00 PM	Run 3 - 1	6.3	160.14	20.75
01/18/2007	5:27:30 PM	Run 3 - 1	6.42	159.85	20.63
01/18/2007	5:28:00 PM	Run 3 - 1	6.42	159.12	20.63
01/18/2007	5:28:30 PM	Run 3 - 1	6.42	159.7	20.51
01/18/2007	5:29:00 PM	Run 3 - 1	6.48	160.14	20.51
01/18/2007	5:29:30 PM	Run 3 - 1	6.55	159.12	20.38
01/18/2007	5:30:00 PM	Run 3 - 1	6.67	157.8	20.38
01/18/2007	5:30:30 PM	Run 3 - 1	6.85	157.5	20.26
01/18/2007	5:31:00 PM	Run 3 - 1	6.85	156.92	20.26
01/18/2007	5:31:30 PM	Run 3 - 1	6.85	156.33	20.26
01/18/2007	5:32:00 PM	Run 3 - 1	6.91	156.04	20.26
01/18/2007	5:32:30 PM	Run 3 - 1	6.85	155.45	20.26

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	5:33:00 PM	Run 3 - 1	6.79	154.87	20.38
01/18/2007	5:33:30 PM	Run 3 - 1	6.85	155.45	20.38
01/18/2007	5:34:00 PM	Run 3 - 1	6.79	155.31	20.38
01/18/2007	5:34:30 PM	Run 3 - 1	6.79	154.28	20.38
01/18/2007	5:35:00 PM	Run 3 - 1	6.73	153.55	20.38
01/18/2007	5:35:30 PM	Run 3 - 1	6.79	152.38	20.38
01/18/2007	5:36:00 PM	Run 3 - 1	6.85	152.52	20.38
01/18/2007	5:36:30 PM	Run 3 - 1	6.85	152.82	20.51
01/18/2007	5:37:00 PM	Run 3 - 1	6.79	152.52	20.51
01/18/2007	5:37:30 PM	Run 3 - 1	6.79	151.64	20.51
01/18/2007	5:38:00 PM	Run 3 - 1	6.73	151.35	20.63
01/18/2007	5:38:30 PM	Run 3 - 1	6.48	152.23	20.87
01/18/2007	5:39:00 PM		6.36	153.99	21
01/18/2007	5:39:30 PM		6.18	133.92	20.87
01/18/2007	5:40:00 PM		0.56	155.01	11.72
01/18/2007	5:40:30 PM	- ZERO	-0.05	155.31	10.01
01/18/2007	5:41:00 PM	- Span	-0.05	155.6	10.01
01/18/2007	5:41:30 PM	- Span	-0.05	124.69	10.01
01/18/2007	5:42:00 PM	- Span	3.62	5.28	4.51
01/18/2007	5:42:30 PM	- ZERO	6	1.47	0.12
01/18/2007	5:43:00 PM	- ZERO	6.06	0.88	0.12
01/18/2007	5:43:30 PM	- ZERO	5.14	1.03	2.56
01/18/2007	5:44:00 PM	- ZERO	0.56	0.59	21.36
01/18/2007	5:44:30 PM	- ZERO	-0.05	0.74	24.9
01/18/2007	5:45:00 PM	- Span	-0.11	0.74	25.02
01/18/2007	6:19:00 PM		19.79	0.3	0
01/18/2007	6:19:30 PM		19.85	0.15	0
01/18/2007	6:20:00 PM		19.79	0.15	0
01/18/2007	6:20:30 PM		19.79	0.15	0
01/18/2007	6:21:00 PM		19.79	0.3	0
01/18/2007	6:21:30 PM		19.79	0.15	0

CALIBRATION GAS CERTIFICATIONS

GR304

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1,PLUMSTEADVILLE,PA 18949-0310 Phone: 800-331-4953 Fax: 215-766-7226

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
6141 EASTON ROAD, BLDG 1
PLUMSTEADVILLE,PA 18949-0310

P.O. No.: E-N06925
Project No.: 01-57183-001

Customer

TAMPA ELECTRIC COMPANY

5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

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

Cylinder Number: ALM017173 **Certification Date:** 22Sep2006 **Exp. Date:** 21Sep2009
Cylinder Pressure***: 1200 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
OXYGEN	6.04 %	+/- 1%	Direct NIST and NMi
NITROGEN	BALANCE		

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

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

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2658	02Oct2006	ALM065248	9.930 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
BECKMAN/755/2002571	11Sep2006	PARAMAGNETIC

ANALYZER READINGS

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

First Triad Analysis

OXYGEN

Date: 21Sep2006	Response Unit:VOLTS	
Z1 = 0.00050	R1 = 0.95870	T1 = 0.58510
R2 = 0.95890	Z2 = 0.00040	T2 = 0.58420
Z3 = 0.00070	T3 = 0.58430	R3 = 0.95840
Avg. Concentration:	6.040 %	

Second Triad Analysis

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = .999993712	2658
Constants:	A = -.010468
B = 10.366340	C =
D =	E =

Special Notes: RECERT OF CYL ALM017173

APPROVED BY: JESSICA BRAY

GR505

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD BLDG 1 PLUMSTEADVILLE PA 18949-0310 Phone 800-331-4953 Fax: 215-766-7226

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

P.O. No.: E-N06925

Project No.: 01 32815-003

SCOTT SPECIALTY GASES
6141 EASTON ROAD BLDG 1
PLUMSTEADVILLE,PA 18949-0310

Customer

TAMPA ELECTRIC COMPANY
CHARLES DUFENY
5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards, Procedure G1, September, 1997

Cylinder Number: AAL 16025 Certification Date: 05Jul2005 Exp. Date: 04Jul2008

Cylinder Pressure*** 2015 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
OXYGEN	[illegible]	+/- 1%	Direct NIST and NMi
NITROGEN	BALANCE		

*** [illegible]

** [illegible] September 1997

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
[illegible]	[illegible]	[illegible]	[illegible]	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
BECKMAN/755/[illegible]	15Jun2005	PARAMAGNETIC

ANALYZER READINGS

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

First Triad Analysis | Second Triad Analysis | Calibration Curve

OXYGEN

First Triad Analysis:

Date: 05Jul2005	Response Unit: VOLTS	
Z1 = 0.00100	R1 = [illegible]	T1 = [illegible]
R2 = 0.95250	Z2 = 0.00310	T2 = 0.55930
Z3 = 0.00100	T3 = 0.55950	R3 = 0.95250
Avg. Concentration:	13.70	%

Calibration Curve:

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = 0.999963	7350
Constants:	A = -4.2596E-02
B = 2.4648E+01	C =
D =	E =

APPROVED BY: JOE SMITH

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1,PLUMSTEADVILLE,PA 18949-0310 Phone: 800-331-4953 Fax: 215-766-7226

CERTIFICATE OF ACCURACY: Interference Free™ Multi-Component EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
6141 EASTON ROAD, BLDG 1
PLUMSTEADVILLE,PA 18949-0310

P.O. No.: E-N06925
Project No.: 01-52729-001

Customer

TAMPA ELECTRIC COMPANY

5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

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

Cylinder Number: ALM009682 **Certification Date:** 27Jun2006 **Exp. Date:** 26Jun2008
Cylinder Pressure*:** 1999 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	10.21	%	+/- 1%	Direct NIST and NMi
SULFUR DIOXIDE *	152.2	PPM	+/- 1%	Direct NIST and NMi
NITROGEN		BALANCE		

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

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

* This Protocol has been certified using corrected NIST SO2 standard values, per EPA guidance dated 7/24/96 and will not correlate with uncorrected fro

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1675	04Jul2008	K012148	13.93 %	CARBON DIOXIDE
NTRM 0260	02Oct2006	ALM057284	266.6 PPM	SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//000928781	08Jun2006	FTIR
FTIR//000928781	08Jun2006	FTIR

ANALYZER READINGS

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

First Triad Analysis **Second Triad Analysis** **Calibration Curve**

CARBON DIOXIDE

First Triad Analysis		
Date: 20Jun2006	Response Unit:%	
Z1 = -0.00878	R1 = 13.97749	T1 = 10.24188
R2 = 13.98411	Z2 = -0.00769	T2 = 10.24781
Z3 = -0.00535	T3 = 10.25074	R3 = 13.99919
Avg. Concentration:	10.21	%

Second Triad Analysis		
Z1 = 0.00000	R1 = 0.00000	T1 = 0.00000
R2 = 0.00000	Z2 = 0.00000	T2 = 0.00000
Z3 = 0.00000	T3 = 0.00000	R3 = 0.00000
Avg. Concentration:	0.000	

Calibration Curve	
Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = 9.99997E-1	
Constants:	A = 0.00000E+0
B = 9.73447E-1	C = 3.63400E-3
D = 1.70000E-5	E = 0.00000E+0

SULFUR DIOXIDE *

First Triad Analysis		
Date: 20Jun2006	Response Unit:PPM	
Z1 = -0.03225	R1 = 266.0084	T1 = 151.8536
R2 = 266.1603	Z2 = -0.01621	T2 = 151.9421
Z3 = 0.01808	T3 = 152.0154	R3 = 266.2468
Avg. Concentration:	152.2	PPM

Second Triad Analysis		
Date: 27Jun2006	Response Unit: PPM	
Z1 = -0.05180	R1 = 265.8178	T1 = 151.7932
R2 = 265.9785	Z2 = -0.04659	T2 = 151.8102
Z3 = 0.06517	T3 = 151.8972	R3 = 266.0725
Avg. Concentration:	152.2	PPM

Calibration Curve	
Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = 9.99998E-1	
Constants:	A = 0.00000E+0
B = 9.98458E-1	C = 1.00000E-5
D = 0.00000E+0	E = 0.00000E+0

APPROVED BY: Michael A. Kuhns
Michael A. Kuhns

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1,PLUMSTEADVILLE,PA 18949-0310 Phone: 800-331-4953 Fax: 215-766-7226

CERTIFICATE OF ACCURACY: Interference Free™ Multi-Component EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
6141 EASTON ROAD, BLDG 1
PLUMSTEADVILLE,PA 18949-0310

P.O. No.: E-N06925
Project No.: 01-67073-002

Customer

TAMPA ELECTRIC COMPANY
CHARLES DUFENY
5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

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

Cylinder Number: ALM029767 **Certification Date:** 18Dec2006 **Exp. Date:** 17Dec2008
Cylinder Pressure*:** 1297 PSIG **Prev Certification Date:** 27Dec2004

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	18.00	%	+/- 1%	Direct NIST and NMi
SULFUR DIOXIDE *	269	PPM	+/- 1%	Direct NIST and NMi
NITROGEN		BALANCE		

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

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

* This Protocol has been certified using corrected NIST SO2 standard values, per EPA guidance dated 7/24/96 and will not correlate with uncorrected [illegible]

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1675	04Jul2008	K012148	13.93 %	CARBON DIOXIDE
NTRM 0260	01May2008	ALM040460	254.4 PPM	SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//000928781	22Nov2006	FTIR
FTIR//000928781	15Dec2006	FTIR

ANALYZER READINGS

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

First Triad Analysis | **Second Triad Analysis** | **Calibration Curve**

CARBON DIOXIDE

First Triad Analysis		
Date: 24Dec2004	Response Unit:%	
Z1 = 0.00000	R1 = 0.00000	T1 = 0.00000
R2 = 0.00000	Z2 = 0.00000	T2 = 0.00000
Z3 = 0.00000	T3 = 0.00000	R3 = 0.00000
Avg. Concentration:	17.97	%

Second Triad Analysis		
Date: 18Dec2006	Response Unit: %	
Z1 = 0.00106	R1 = 13.83801	T1 = 17.90717
R2 = 13.84798	Z2 = 0.00117	T2 = 17.92890
Z3 = 0.00389	T3 = 17.94814	R3 = 13.85742
Avg. Concentration:	18.03	%

Calibration Curve	
Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = 9.99994E-1	
Constants:	A = 0.00000E + 0
B = 9.13972E-1	C = 1.20020E-2
D = 0.00000E + 0	E = 0.00000E + 0

SULFUR DIOXIDE *

First Triad Analysis		
Date: 24Dec2004	Response Unit:PPM	
Z1 = 0.00000	R1 = 0.00000	T1 = 0.00000
R2 = 0.00000	Z2 = 0.00000	T2 = 0.00000
Z3 = 0.00000	T3 = 0.00000	R3 = 0.00000
Avg. Concentration:	269.1	PPM

Second Triad Analysis		
Date: 18Dec2006	Response Unit: PPM	
Z1 = 0.00262	R1 = 255.4631	T1 = 270.2870
R2 = 255.5427	Z2 = 0.02165	T2 = 270.3383
Z3 = 0.05771	T3 = 270.3940	R3 = 255.8316
Avg. Concentration:	269.1	PPM

Calibration Curve	
Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = 9.99999E-1	
Constants:	A = 0.00000E + 0
B = 9.96541E-1	C = 3.40000E-5
D = 0.00000E + 0	E = 0.00000E + 0

APPROVED BY: Michael A. Kuhns
Michael A. Kuhns

Best Available Copy

BL S01

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083 Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
1290 COMBERMERE STREET
TROY, MI 48083

P.O. No.: E-1105925
Project No.: 05-27508-004

Customer

TAMPA ELECTRIC COMPANY
CHARLES DUFENY
5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

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

Cylinder Number: ALM042687 Certification Date: 07Feb2005 Exp. Date: 07Feb2008

Cylinder Pressure***: 1850 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	[illegible]	+/- 1%	Direct NIST and NMi
NITROGEN	BALANCE		

*** [illegible]

** [illegible]

[illegible]

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
[illegible]	[illegible]	[illegible]	[illegible]	CARBON DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
[illegible]	25Jan2005	THERMAL CONDUCTIVITY

ANALYZER READINGS

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

First Triad Analysis / Second Triad Analysis / Calibration Curve

CARBON DIOXIDE

Date: 07Feb2005 Response Unit: Area

Z1 = 0.00000	R1 = 1214806	T1 = 1303909
R2 = 1213947	Z2 = 0.00000	T2 = 1304206
Z3 = 0.00000	T3 = 1304309	R3 = 1214512

Avg. Concentration: 25.07

Concentration = A + Bx + Cx2 + Dx3 + Ex4

r = .999999

Constants: A = -.025098232

B = 1.94E-05 C = 0

D = 0 E = 0

APPROVED BY:

DAVID LABCOCK

Best Available Copy

BL502

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET TROY MI [illegible]

Phone 248 589 2950 Fax 248 589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
1290 COMBERMERE STREET
TROY MI 48083

P.O. No. E-106925
Project No. 05-27508-005

Customer

TAMPA ELECTRIC COMPANY
CHARLES DUFENY
[illegible] CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

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

Cylinder Number: ALM016344 Certification Date: 07Feb2005 Exp. Date: 07Feb2008

Cylinder Pressure***: 1850 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	[illegible]	+/- 1%	Direct NIST and NMi
NITROGEN	BALANCE		

*** [illegible]

** Analytical accuracy [illegible] September 1997

[illegible]

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
[illegible]	[illegible]	[illegible]	[illegible]	CARBON DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
[illegible]	[illegible]	THERMAL CONDUCTIVITY

ANALYZER READINGS

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

First Triad Analysis — Second Triad Analysis — Calibration Curve

CARBON DIOXIDE

Date: 07Feb2005 Response Unit: [illegible]

Z1 = 0.00000	R1 = 1214000	T1 = 2344788
R2 = 1213747	Z2 = 0.00000	T2 = 2345045
Z3 = 0.00000	T3 = 2345065	R3 = 1214512

Avg. Concentration: 45.10

Concentration = A + Bx + Cx2 + Dx3 + Ex4

r = 999999

Constants: A = -.025098732

B = 1.94E-05 C = 0

D = 0 E = 0

APPROVED BY:

APPENDIX F

FUEL ANALYSIS

SYNTHETIC GAS ANALYSIS – NOVEMBER 8, 2006

UNIT 1 STACK TEST 01/18/07
CT & ACID PLANT

Calibration Standard Check

	% CO2	% O2	% N2	% CH4	% CO	Calc. % H2	% H2S/COS
True Value	15.00	1.020	3.02	0.1000	44.86	36.00	N.A.
Std. 1	15.25	1.020	3.02	0.1014	44.96	35.65	N.A.
Std. 2	15.07	1.010	2.95	0.1034	44.85	36.02	N.A.
Std. 3	15.00	1.020	2.98	0.0997	44.81	36.09	N.A.
Avg.	15.11	1.017	2.98	0.1015	44.87	35.92	N.A.

Clean Syngas Sampled @ 1355 01/18/07

	% CO2	% O2	% N2	% CH4	% CO	Calc. % H2	% H2S/COS
1st Bomb	14.44	0.849	3.94	0.0280	47.34	33.40	N.A.
2nd Bomb	14.50	0.850	4.41	0.0282	46.81	33.40	N.A.
Avg.	14.47	0.85	4.18	0.0281	47.08	33.40	N.A.

Clean Syngas Sampled @ 1555 01/18/07

	% CO2	% O2	% N2	% CH4	% CO	Calc. % H2	% H2S/COS
1st Bomb	14.44	0.832	3.8	0.0287	47.38	33.52	N.A.
2nd Bomb	14.42	0.841	4.25	0.0281	47.40	33.06	N.A.
Avg.	14.43	0.84	4.03	0.0284	47.39	33.29	N.A.

Clean Syngas Sampled @ 1715 01/18/07

	% CO2	% O2	% N2	% CH4	% CO	Calc. % H2	% H2S/COS
1st Bomb	14.48	0.854	3.48	0.0277	48.01	33.18	N.A.
2nd Bomb	14.07	0.873	5.22	0.0261	46.88	32.96	N.A.
Avg.	14.28	0.86	4.35	0.0269	47.45	33.07	N.A.

Average for All Syngas Samples Using all Results

	% CO2	% O2	% N2	% CH4	% CO	Calc. % H2	% H2S/COS
Avg.	14.39	0.85	4.18	0.0278	47.30	33.25	0

TECO TAMPA ELECTRIC

Coal Derived Gas and Heating Value Calculations

Customer: Tampa Electric Company **Sample ID: Polk GC**

Facility: Polk Power Station **Analysis Date: 01/18/2007**

Source: Unit 1

CALCULATION OF DENSITY AND HEATING VALUE @ 60°F and 30 in Hg

Component	% Volume	Molecular Wt.	Density * (lb/ft^3)	% volume x Density	weight %	Component Gross Btu/lb	Weight Fract. Btu	Gross * Heating Value (Btu/SCF)	Volume Fract. Btu
Hydrogen	33.2530	2.016	0.0053	0.00176	3.0678	61100	1874.44	325.0	108.0723
Oxygen	0.8498	32.000	0.0846	0.00072	1.2515	0	0.00	0.0	0
Argon	0.0000	39.948	0.1065	0.00000	0.0000	0	0.00	0.0	0
Nitrogen	4.1833	28.016	0.0744	0.00311	5.4177	0	0.00	0.0	0
CO2	14.3917	44.010	0.1170	0.01684	29.3103	0	0.00	0.0	0
CO	47.3033	28.010	0.0740	0.03500	60.9322	4347	2648.72	322.0	152.3167
COS	0.0000	60.070	0.1602	0.00000	0.0000	0	0.00	0.0	0
Methane	0.0278	16.041	0.0424	0.00001	0.0205	23879	4.90	1013.0	0.281614
Ethane	0.000	30.067	0.0803	0.00000	0.0000	22320	0.00	1792.0	0
Ethylene	0.000	28.051	0.0746	0.00000	0.0000	21644	0.00	1614.0	0
Propane	0.000	44.092	0.1196	0.00000	0.0000	21661	0.00	2590.0	0
propylene	0.000	42.077	0.1110	0.00000	0.0000	21041	0.00	2336.0	0
Isobutane	0.000	58.118	0.1582	0.00000	0.0000	21257	0.00	3363.0	0
n-butane	0.000	58.118	0.1582	0.00000	0.0000	21308	0.00	3370.0	0
Isobutene	0.000	56.102	0.1480	0.00000	0.0000	20730	0.00	3068.0	0
Isopentane	0.000	72.144	0.1904	0.00000	0.0000	21052	0.00	4008.0	0
n-pentane		72.144	0.1904	0.00000	0.0000	21091	0.00	4016.0	0
n-hexane		86.169	0.2274	0.00000	0.0000	20940	0.00	4762.0	0
H2S		34.076	0.0911	0.00000	0.0000	7100	0.00	647.0	0
Total:	100.01				100.0000				

Average Density	0.05745
Specific Gravity	0.75096

Gross Heating Value			
Btu/lb	**4528**	**Btu/SCF**	**260.67**
Net Heating Values			
Btu/lb	**4243**	**Btu/SCF**	**244**

* Density (lb/ft^3) and Gross Heating Value (Btu/scf) data from Perry's Chemical Engineering Hanbook.

Net Heating Value (Lower Heating Value), Btu/lb, calculated as Gross Heating Value (Higher Heating Value) - 10.30 (%H_2 x 8.94)

TECO
TAMPA ELECTRIC

Coal Derived Gas and Heating Value Calculations

Customer: Tampa Electric Company **Sample ID:** Polk GC
Facility: Polk Power Station **Analysis Date:** 01/18/2007
Source: Unit 1

CALCULATION OF F FACTORS

Component	Mol. Wt.	C Factor	H Factor	% volume	Fract. Wt.	Weight Percents			
						Carbon	Hydrogen	Nitrogen	Oxygen
Hydrogen	2.016	0	1	33.253	67.0381		3.0889964		
Oxygen	32.000	0	0	0.850	27.1941				1.2530577
Argon	39.948	0	0	0.000	0.0000				
Nitrogen	28.016	0	0	4.183	117.2003			5.400381372	
CO2	44.010	0.272273	0	14.392	633.3773	7.94626176			21.217426
CO	28.010	0.42587	0	47.303	1324.9664	26.0002625			35.086648
COS	60.070	0.1998	0	0.000	0.0000	0			0
Methane	16.041	0.75	0.25	0.028	0.4459	0.01541109	0.005137		
Ethane	30.067	0.8	0.2	0.000	0.0000	0	0		
Ethylene	28.051	0.85714	0.14286	0.000	0.0000	0	0		
Propane	44.092	0.81818	0.181818	0.000	0.0000	0	0		
Propene	42.077	0.85714	0.14286	0.000	0.0000	0	0		
Isobutane	58.118	0.82759	0.17247	0.000	0.0000	0	0		
n-butane	58.118	0.82759	0.17247	0.000	0.0000	0	0		
Isobutene	56.102	0.85714	0.14286	0.000	0.0000	0	0		
Isopentane	72.144	0.83333	0.16667	0.000	0.0000	0	0		
n-pentane	72.144	0.83333	0.16667	0.000	0.0000	0	0		
n-hexane	86.169	0.83721	0.16279	0.000	0.0000	0	0		
H2S	34.076	0	0.0586923	0.000	0.0000	0	0		
Totals				100.00897	2170.2220	33.9619353	3.09	5.400381372	57.557132

CALCULATED VALUES		
O2 F Factor (dry), Fd	**8283**	DSCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
O2 F Factor (wet), Fw	**9601**	SCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
Moisture F Factor	**1319**	SCF of Water/MM Btu of Fuel Burned @ 0% excess air
Combust. Moisture	**13.74**	volume % water in flue gas @ 0% excess air
CO2 F Factor, Fc	**2408**	DSCF of CO2/MM Btu of Fuel Burned @ 0% excess air
Carbon Dioxide	**29.07**	volume % CO2 in flue gas @ 0% O2
Predicted Fo Factor	**0.72**	EPA Method 3a Fo value

APPENDIX G

PLANT OPERATIONS DATA

IGCC

Plant Information

Plant Information Source: polk-1pisrv
Start Time: 01/18/2007 13:49
End Time: 01/18/2007 18:03
Time Interval: 1 Min

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
Run Average:	180.052477	6822.07003	75.7639348	4.643568
18-Jan-07 13:49:00	181.437057	6777.04053	71.6138687	4.67468023
18-Jan-07 13:50:00	177.651001	6825.29443	72.0222855	4.67682362
18-Jan-07 13:51:00	179.979736	6826.34277	72.2511139	4.67896748
18-Jan-07 13:52:00	181.124115	6839.76074	72.4200821	4.68111086
18-Jan-07 13:53:00	181.05687	6835.06836	72.5890427	4.68325472
18-Jan-07 13:54:00	180.117599	6797.77881	72.7580109	4.6853981
18-Jan-07 13:55:00	179.915573	6857.22363	72.6530228	4.68754148
18-Jan-07 13:56:00	180.266785	6928.5918	72.884964	4.68968534
18-Jan-07 13:57:00	180.617996	6882.20703	73.1169052	4.69182873
18-Jan-07 13:58:00	180.63533	6844.47168	73.3488464	4.69397259
18-Jan-07 13:59:00	179.949799	6830.78613	73.2444077	4.69611597
18-Jan-07 14:00:00	179.958649	6863.78125	73.4497299	4.69825935
18-Jan-07 14:01:00	180.79805	6812.8125	73.6550598	4.70040321
18-Jan-07 14:02:00	179.775925	6836.28027	73.7508774	4.7025466
18-Jan-07 14:03:00	179.374954	6808.4126	74.1216278	4.70469046
18-Jan-07 14:04:00	179.956757	6810.24609	74.2368851	4.70683384
18-Jan-07 14:05:00	180.01059	6896.44043	74.3521423	4.70281839
18-Jan-07 14:06:00	180.436554	6853.6499	74.4673996	4.69869852
18-Jan-07 14:07:00	181.390518	6815.11035	74.5826645	4.69457817
18-Jan-07 14:08:00	180.956009	6816.57715	74.6979218	4.6904583
18-Jan-07 14:09:00	179.68924	6796.8501	74.813179	4.68633842
18-Jan-07 14:10:00	179.459305	6877.34863	74.9284363	4.68221855
18-Jan-07 14:11:00	180.468277	6852.09961	74.6560211	4.6780982
18-Jan-07 14:12:00	180.447357	6820.66992	74.55336	4.67397833
18-Jan-07 14:13:00	179.709808	6789.24023	74.4506989	4.66985846
18-Jan-07 14:14:00	179.689926	6776.19385	74.5488281	4.66573858
18-Jan-07 14:15:00	178.863998	6868.45215	75.0288849	4.66161823
18-Jan-07 14:16:00	179.943649	6918.70996	75.1309891	4.65749836
18-Jan-07 14:17:00	181.157166	6820.87939	75.2330933	4.65337849
18-Jan-07 14:18:00	181.032532	6819.85449	75.3441467	4.64925861
18-Jan-07 14:19:00	179.707458	6811.05273	75.4951019	4.64513826
18-Jan-07 14:20:00	179.854614	6787.18115	75.8922729	4.64101839
18-Jan-07 14:21:00	179.725952	6815.19922	75.6414261	4.63689852
18-Jan-07 14:22:00	179.200394	6831.2583	75.7954254	4.63277864
18-Jan-07 14:23:00	180.103348	6800.05029	75.6291351	4.62865829
18-Jan-07 14:24:00	180.819122	6784.69629	75.752739	4.62453842
18-Jan-07 14:25:00	180.376724	6872.28809	75.8763351	4.62335348
18-Jan-07 14:26:00	180.862152	6840.22217	75.999939	4.62221861
18-Jan-07 14:27:00	180.957809	6831.22021	76.1235352	4.62108326
18-Jan-07 14:28:00	178.302414	6817.21875	76.247139	4.61994839
18-Jan-07 14:29:00	181.012299	6789.82373	76.8425751	4.61881304

Plant Information

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
18-Jan-07 14:30:00	178.959061	6862.97949	76.7245178	4.61767769
18-Jan-07 14:31:00	179.829529	6840.00244	76.5705261	4.61654282
18-Jan-07 14:32:00	180.749542	6854.83057	76.7327881	4.61540747
18-Jan-07 14:33:00	181.037811	6762.70801	76.5794296	4.61427259
18-Jan-07 14:34:00	180.772858	6786.43604	76.4260635	4.61313725
18-Jan-07 14:35:00	180.008636	6873.79102	76.2726974	4.61200237
18-Jan-07 14:36:00	179.573532	6872.32324	76.6353073	4.61086702
18-Jan-07 14:37:00	180.015686	6804.99658	77.1011047	4.60973215
18-Jan-07 14:38:00	179.920242	6818.20898	76.8733749	4.6085968
18-Jan-07 14:39:00	178.990875	6788.30029	76.8733749	4.60746193
18-Jan-07 14:40:00	179.778076	6837.20996	76.8733749	4.60632658
18-Jan-07 14:41:00	180.346237	6857.98779	76.8733749	4.60519123
18-Jan-07 14:42:00	179.836731	6807.75244	76.8733749	4.60405636
18-Jan-07 14:43:00	179.504639	6767.93115	76.6654816	4.60292101
18-Jan-07 14:44:00	179.711304	6777.0249	76.8194809	4.60178614
18-Jan-07 14:45:00	179.690857	6865.33496	77.1865005	4.60065079
18-Jan-07 14:46:00	180.209808	6840.92676	76.9675674	4.59951591
18-Jan-07 14:47:00	180.660721	6815.77686	77.1203079	4.59838057
18-Jan-07 14:48:00	179.378769	6777.68604	77.0119705	4.59724569
18-Jan-07 14:49:00	180.315704	6791.78613	77.0485153	4.59611034
18-Jan-07 14:50:00	180.582443	6847.76025	76.9281311	4.59497547
18-Jan-07 14:51:00	180.44751	6867.28906	77.0307922	4.59384012
18-Jan-07 14:52:00	180.709869	6838.83447	77.133461	4.59270477
18-Jan-07 14:53:00	180.56517	6812.97168	77.332962	4.5915699
18-Jan-07 14:54:00	179.848953	6802.50928	77.2224274	4.59043455
18-Jan-07 14:55:00	179.17691	6870.72363	76.8066483	4.58929968
18-Jan-07 14:56:00	179.632263	6888.72168	76.6526489	4.58816433
18-Jan-07 14:57:00	179.951965	6805.99268	76.633934	4.58702946
18-Jan-07 14:58:00	179.554489	6788.2876	76.8181229	4.58589411
18-Jan-07 14:59:00	179.55101	6759.72949	77.0023117	4.58475924
18-Jan-07 15:00:00	179.851196	6772.19678	77.1865005	4.58362389
18-Jan-07 15:01:00	180.06012	6791.79004	77.3706894	4.58248901
18-Jan-07 15:02:00	180.666412	6826.45313	77.7254715	4.58135366
18-Jan-07 15:03:00	181.047089	6789.94434	77.5804214	4.58021879
18-Jan-07 15:04:00	179.051971	6787.0874	77.7765045	4.57908344
18-Jan-07 15:05:00	179.56633	6855.00537	77.6212463	4.57794809
18-Jan-07 15:06:00	180.602478	6835.54688	77.2481003	4.57681322
18-Jan-07 15:07:00	179.621857	6789.83398	77.480896	4.57567787
18-Jan-07 15:08:00	179.415573	6762.25977	77.3787994	4.58121252
18-Jan-07 15:09:00	179.061142	6769.07568	77.2766953	4.58697701
18-Jan-07 15:10:00	180.323608	6813.34473	77.2043915	4.59274197
18-Jan-07 15:11:00	180.105438	6834.24512	77.3577576	4.59850645
18-Jan-07 15:12:00	180.102448	6837.41162	77.5111237	4.60427094
18-Jan-07 15:13:00	180.099442	6802.48584	77.6644821	4.61003542
18-Jan-07 15:14:00	180.522552	6791.34619	77.8058929	4.61580038
18-Jan-07 15:15:00	179.700577	6888.55811	77.6005707	4.62156487
18-Jan-07 15:16:00	180.200378	6904.33594	77.3952484	4.62732935
18-Jan-07 15:17:00	180.665436	6833.90625	77.1899261	4.63309383

Plant Information

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	ºF	% H2O
18-Jan-07 15:18:00	179.080475	6828.98926	77.4844666	4.63885832
18-Jan-07 15:19:00	180.952866	6830.30518	77.2070313	4.64462328
18-Jan-07 15:20:00	180.83667	6807.7041	77.4739532	4.65038776
18-Jan-07 15:21:00	179.382095	6791.73779	77.2218552	4.65615225
18-Jan-07 15:22:00	179.63446	6819.58545	77.4677734	4.66191673
18-Jan-07 15:23:00	179.563187	6763.18262	77.4534225	4.66768169
18-Jan-07 15:24:00	178.991531	6787.23682	77.7614059	4.67344618
18-Jan-07 15:25:00	179.586533	6887.09033	78.5955353	4.67921066
18-Jan-07 15:26:00	180.335617	6815.02539	78.376358	4.67866564
18-Jan-07 15:27:00	180.669754	6809.3291	78.299675	4.6779027
18-Jan-07 15:28:00	180.094193	6823.62988	78.2229919	4.67714024
18-Jan-07 15:29:00	180.863983	6832.00049	78.1463089	4.6763773
18-Jan-07 15:30:00	180.172836	6832.72314	77.7023773	4.67561436
18-Jan-07 15:31:00	180.614944	6855.55029	77.5483856	4.67485189
18-Jan-07 15:32:00	180.02417	6811.63916	77.6048431	4.67408895
18-Jan-07 15:33:00	179.622223	6802.83887	77.7588425	4.67332649
18-Jan-07 15:34:00	180.803543	6786.57666	77.6157761	4.67256355
18-Jan-07 15:35:00	180.862762	6854.99121	77.8794708	4.67180061
18-Jan-07 15:36:00	180.948212	6908.75342	78.003334	4.67103815
18-Jan-07 15:37:00	180.213226	6850.70117	77.7991257	4.67027521
18-Jan-07 15:38:00	179.831223	6808.55908	77.5949173	4.66951275
18-Jan-07 15:39:00	179.861252	6792.48291	77.4996185	4.66874981
18-Jan-07 15:40:00	180.338531	6799.21436	77.1467209	4.66798687
18-Jan-07 15:41:00	179.894714	6825.71973	77.0697174	4.66722441
18-Jan-07 15:42:00	180.016144	6813.43848	76.9927216	4.66646147
18-Jan-07 15:43:00	180.046387	6764.66797	76.9157257	4.66569901
18-Jan-07 15:44:00	178.552658	6779.15137	76.9193192	4.66493607
18-Jan-07 15:45:00	178.665329	6869.53809	77.021431	4.6641736
18-Jan-07 15:46:00	180.379822	6849.25488	77.1235352	4.66341066
18-Jan-07 15:47:00	180.627609	6821.01318	77.1269836	4.66264772
18-Jan-07 15:48:00	180.341599	6797.40039	76.9717102	4.66188526
18-Jan-07 15:49:00	180.769241	6780.42041	76.560257	4.66112232
18-Jan-07 15:50:00	180.503525	6860.56494	76.8539352	4.66035986
18-Jan-07 15:51:00	180.567078	6862.76367	76.7925339	4.65959692
18-Jan-07 15:52:00	181.249069	6845.71338	76.7311401	4.65883398
18-Jan-07 15:53:00	180.551147	6827.48682	76.6697464	4.65807152
18-Jan-07 15:54:00	179.940491	6785.70654	76.6083527	4.65730858
18-Jan-07 15:55:00	179.054779	6819.89111	76.5824966	4.65654612
18-Jan-07 15:56:00	180.057983	6857.66992	76.6851654	4.65578318
18-Jan-07 15:57:00	179.648117	6837.79688	76.7878265	4.65502024
18-Jan-07 15:58:00	179.859146	6793.51709	76.8477097	4.65425777
18-Jan-07 15:59:00	179.496521	6766.66016	76.693718	4.65349483
18-Jan-07 16:00:00	179.919342	6785.36768	76.8552628	4.65273237
18-Jan-07 16:01:00	179.340591	6801.93848	76.6999969	4.65196943
18-Jan-07 16:02:00	178.342865	6790.61914	76.2599716	4.65120697
18-Jan-07 16:03:00	180.430923	6797.03955	76.4139633	4.65044403
18-Jan-07 16:04:00	180.366684	6789.51611	76.5526199	4.64968109
18-Jan-07 16:05:00	181.629379	6906.45264	76.3998795	4.64891863

Plant Information

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
18-Jan-07 16:06:00	181.672104	6854.24756	76.247139	4.64815569
18-Jan-07 16:07:00	178.836823	6792.39063	76.0943985	4.64739323
18-Jan-07 16:08:00	179.598801	6795.3833	75.941658	4.64663029
18-Jan-07 16:09:00	179.197357	6800.65234	76.2266083	4.64586735
18-Jan-07 16:10:00	179.61615	6872.6875	76.1513214	4.64510489
18-Jan-07 16:11:00	179.734116	6872.82617	76.0486603	4.64434195
18-Jan-07 16:12:00	180.506195	6843.4917	75.9459915	4.64357948
18-Jan-07 16:13:00	180.24231	6787.50537	75.8433304	4.64281654
18-Jan-07 16:14:00	179.528366	6791.06689	75.7406693	4.6420536
18-Jan-07 16:15:00	180.791962	6871.30762	75.6380081	4.64129114
18-Jan-07 16:16:00	179.779358	6934.36719	75.7513657	4.6405282
18-Jan-07 16:17:00	179.50621	6800.17773	75.9079285	4.63976574
18-Jan-07 16:18:00	179.537643	6771.76904	75.6713638	4.6390028
18-Jan-07 16:19:00	180.901093	6790.83643	75.7331696	4.63824034
18-Jan-07 16:20:00	179.947266	6805.86963	75.7949677	4.6374774
18-Jan-07 16:21:00	180.145386	6795.5293	75.8567734	4.63671446
18-Jan-07 16:22:00	181.233246	6824.29297	75.9185715	4.635952
18-Jan-07 16:23:00	180.628967	6796.9751	75.706749	4.63518906
18-Jan-07 16:24:00	180.663788	6784.09912	75.8416214	4.63442659
18-Jan-07 16:25:00	179.982803	6857.80029	75.7184296	4.63366365
18-Jan-07 16:26:00	179.263596	6833.45654	75.9859924	4.63441372
18-Jan-07 16:27:00	179.043854	6798.73438	76.063942	4.63524342
18-Jan-07 16:28:00	179.623703	6817.01123	76.1418991	4.63607359
18-Jan-07 16:29:00	179.545013	6823.97803	76.2198563	4.63690329
18-Jan-07 16:30:00	178.937134	6830.94482	75.846756	4.63773298
18-Jan-07 16:31:00	179.58342	6839.92871	75.8192062	4.63856268
18-Jan-07 16:32:00	180.160538	6838.18701	75.6835175	4.63939285
18-Jan-07 16:33:00	179.283432	6799.13574	75.7850723	4.64022255
18-Jan-07 16:34:00	179.552673	6786.58301	75.8866272	4.64105225
18-Jan-07 16:35:00	179.980164	6860.25098	75.7724075	4.64188194
18-Jan-07 16:36:00	180.137711	6947.56787	75.7748947	4.64271164
18-Jan-07 16:37:00	180.223114	6844.94824	75.7851563	4.64354181
18-Jan-07 16:38:00	179.508347	6815.0127	75.7902908	4.64437151
18-Jan-07 16:39:00	180.594681	6797.77881	75.7572556	4.64520121
18-Jan-07 16:40:00	180.506638	6820.10352	75.8056946	4.6460309
18-Jan-07 16:41:00	179.692551	6789.51025	75.7440948	4.64686108
18-Jan-07 16:42:00	179.301727	6817.10303	75.6773605	4.64769077
18-Jan-07 16:43:00	179.691833	6804.95947	75.8313599	4.64852047
18-Jan-07 16:44:00	179.788513	6807.26953	75.7281723	4.64935017
18-Jan-07 16:45:00	181.199066	6893.40918	75.5807953	4.65018034
18-Jan-07 16:46:00	180.923096	6882.26221	75.460495	4.65101004
18-Jan-07 16:47:00	181.252777	6843.39404	75.3401947	4.65183973
18-Jan-07 16:48:00	180.527054	6811.45605	75.2198944	4.65181398
18-Jan-07 16:49:00	180.07666	6835.97607	75.0995941	4.65167522
18-Jan-07 16:50:00	179.433884	6824.60156	75.065979	4.65153646
18-Jan-07 16:51:00	179.59169	6871.82959	75.2538528	4.65139771
18-Jan-07 16:52:00	180.360733	6830.23145	75.3062439	4.65125895
18-Jan-07 16:53:00	180.003418	6735.85596	75.2448502	4.65112019

Plant Information

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
18-Jan-07 16:54:00	180.197922	6808.35693	75.1834488	4.65098143
18-Jan-07 16:55:00	179.804504	6821.84033	75.1220551	4.65084314
18-Jan-07 16:56:00	180.751587	6900.50928	75.0606613	4.65070438
18-Jan-07 16:57:00	179.019043	6822.77734	75.0114059	4.65056562
18-Jan-07 16:58:00	178.433182	6799.12646	75.1320953	4.65042686
18-Jan-07 16:59:00	179.584778	6779.74414	75.2527847	4.65028811
18-Jan-07 17:00:00	179.519943	6783.74268	75.3734741	4.65014935
18-Jan-07 17:01:00	179.941101	6798.26807	75.4941711	4.65001059
18-Jan-07 17:02:00	181.763062	6851.13379	75.6148605	4.64987183
18-Jan-07 17:03:00	179.689621	6791.81006	75.4786682	4.64973307
18-Jan-07 17:04:00	180.374115	6779.49072	75.328949	4.64959431
18-Jan-07 17:05:00	180.082092	6864.17236	75.59095	4.64945555
18-Jan-07 17:06:00	179.406265	6843.36523	75.5712738	4.64931679
18-Jan-07 17:07:00	179.502243	6785.83398	75.5161362	4.6491785
18-Jan-07 17:08:00	178.420822	6807.66113	75.4609985	4.64903975
18-Jan-07 17:09:00	179.763535	6782.15869	75.4058609	4.64890099
18-Jan-07 17:10:00	179.97467	6831.88037	75.3507233	4.64876223
18-Jan-07 17:11:00	180.966522	6886.14893	75.2955856	4.64862347
18-Jan-07 17:12:00	180.394302	6841.08398	75.240448	4.64848471
18-Jan-07 17:13:00	181.073242	6825.35303	75.1853104	4.64834595
18-Jan-07 17:14:00	180.812073	6807.69775	75.1301727	4.64820719
18-Jan-07 17:15:00	180.100342	6852.35791	75.0750351	4.64806843
18-Jan-07 17:16:00	180.149841	6901.39404	75.0198975	4.64792967
18-Jan-07 17:17:00	180.993988	6823.28174	75.2480316	4.64779091
18-Jan-07 17:18:00	180.340897	6781.64453	75.1453705	4.64765215
18-Jan-07 17:19:00	179.954681	6766.45557	75.0427094	4.64751339
18-Jan-07 17:20:00	178.584213	6787.05371	75.2691879	4.64737511
18-Jan-07 17:21:00	179.046997	6765.43799	75.1925049	4.64723635
18-Jan-07 17:22:00	179.839935	6820.78809	75.1158218	4.64709759
18-Jan-07 17:23:00	180.601669	6778.63818	75.0391388	4.64695883
18-Jan-07 17:24:00	180.829178	6822.27295	75.0854874	4.64682007
18-Jan-07 17:25:00	180.096741	6901.78271	75.2394791	4.64668131
18-Jan-07 17:26:00	179.671005	6847.83398	75.0033569	4.64654255
18-Jan-07 17:27:00	179.615768	6812.84277	75.1715622	4.64640379
18-Jan-07 17:28:00	179.90036	6789.80322	74.8610306	4.64626503
18-Jan-07 17:29:00	179.230209	6752.28564	74.8728943	4.64612627
18-Jan-07 17:30:00	179.59201	6794.0166	75.1245651	4.64598751
18-Jan-07 17:31:00	180.115204	6830.07764	75.2595444	4.64584875
18-Jan-07 17:32:00	179.651169	6809.47607	75.1042786	4.64571047
18-Jan-07 17:33:00	181.21373	6807.27588	74.7419968	4.64557171
18-Jan-07 17:34:00	180.978302	6805.07568	74.8972626	4.64543295
18-Jan-07 17:35:00	180.742859	6864.0957	74.690239	4.64529419
18-Jan-07 17:36:00	179.29776	6884.81641	74.690239	4.64515543
18-Jan-07 17:37:00	179.136978	6799.6123	74.690239	4.64501667
18-Jan-07 17:38:00	179.453568	6785.67822	74.690239	4.64487791
18-Jan-07 17:39:00	181.460098	6816.84619	74.3549957	4.64473915
18-Jan-07 17:40:00	180.946503	6862.68115	74.2528915	4.64460039
18-Jan-07 17:41:00	180.289902	6782.146	74.1507874	4.64446163

Plant Information

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
18-Jan-07 17:42:00	179.382599	6796.18994	74.3587646	4.64432287
18-Jan-07 17:43:00	180.220871	6782.07275	74.2363663	4.64418411
18-Jan-07 17:44:00	179.331131	6787.08057	74.1139755	4.64404535
18-Jan-07 17:45:00	181.188995	6900.10986	73.9915848	4.64390707
18-Jan-07 17:46:00	179.915817	6832.31299	73.869194	4.64376831
18-Jan-07 17:47:00	180.27153	6780.48779	73.7611465	4.64362955
18-Jan-07 17:48:00	179.759216	6771.19873	74.0605545	4.64349079
18-Jan-07 17:49:00	179.192596	6761.90918	73.8541031	4.64335203
18-Jan-07 17:50:00	180.389725	6826.6748	73.6476517	4.64321327
18-Jan-07 17:51:00	181.065125	6861.14111	73.4412003	4.64307451
18-Jan-07 17:52:00	179.252182	6796.13184	73.60215	4.64293575
18-Jan-07 17:53:00	180.710175	6832.90137	73.4455872	4.64279699
18-Jan-07 17:54:00	180.453064	6826.71924	73.5212555	4.64265823
18-Jan-07 17:55:00	181.37912	6874.71484	73.6986923	4.64251947
18-Jan-07 17:56:00	181.033966	6953.51611	73.4795074	4.64238071
18-Jan-07 17:57:00	179.930115	6815.36719	73.5857773	4.64224243
18-Jan-07 17:58:00	178.969864	6770.64453	73.6986923	4.64210367
18-Jan-07 17:59:00	179.130829	6804.42773	73.7508774	4.64196491
18-Jan-07 18:00:00	179.365784	6764.45313	73.3769455	4.64182615
18-Jan-07 18:01:00	179.546173	6788.97852	73.2993088	4.64168739
18-Jan-07 18:02:00	180.959579	6839.58057	73.2216797	4.64154863
18-Jan-07 18:03:00	180.483566	6779.48193	73.144043	4.64140987

SULFURIC ACID PLANT

Ops Run 1

Polk Power Station

Acid Plant

Run No. 1

Start	Jan-18-2007 1:37:00 PM
End	Jan-18-2007 2:37:00 PM
Interval	1m

PI TAG	1SRGAI455	1SRGFI487	1SRGAI446b
PI DESCRIPTOR	SA MAIN CPRSR OUT SO2 A Inlet Converter	SA PROD CLR ACID OUT FLOW Product Acid Flow	SA FINAL TOWER ACID CONC Acid Concentration
UNITS	AVG. %	TOTAL GAL.	AVG. %
	8.723260082	**1238.51348**	**93.80122551**
18-Jan-07 13:37:00	8.773928642	27.26086235	93.71781158
18-Jan-07 13:38:00	8.711556435	20.16388512	93.73345184
18-Jan-07 13:39:00	8.649184227	22.52708435	93.73262024
18-Jan-07 13:40:00	8.586812019	25.96585274	93.67735291
18-Jan-07 13:41:00	8.555253983	25.78673363	93.70661163
18-Jan-07 13:42:00	8.580018997	25.50248718	93.73587799
18-Jan-07 13:43:00	8.701479912	25.5593586	93.75906372
18-Jan-07 13:44:00	8.824579239	24.5785923	93.75517273
18-Jan-07 13:45:00	8.854716301	24.55545044	93.75128174
18-Jan-07 13:46:00	8.884853363	23.9530468	93.75060272
18-Jan-07 13:47:00	8.858370781	21.72422028	93.76425934
18-Jan-07 13:48:00	8.831888199	19.19555473	93.77791595
18-Jan-07 13:49:00	8.746949196	17.18718529	93.7915802
18-Jan-07 13:50:00	8.661020279	18.80977821	93.80523682
18-Jan-07 13:51:00	8.575090408	17.15021896	93.81889343
18-Jan-07 13:52:00	8.58265686	9.214301109	93.83255005
18-Jan-07 13:53:00	8.590224266	5.07805109	93.84620667
18-Jan-07 13:54:00	8.656559944	12.02893543	93.86141205
18-Jan-07 13:55:00	8.723891258	13.26462173	93.8835144
18-Jan-07 13:56:00	8.791222572	11.33843708	93.90561676
18-Jan-07 13:57:00	8.858553886	12.80968666	93.92095947
18-Jan-07 13:58:00	8.883562088	12.48088741	93.90621185
18-Jan-07 13:59:00	8.880360603	14.09997845	93.8914566
18-Jan-07 14:00:00	8.826105118	12.9258213	93.87670898
18-Jan-07 14:01:00	8.714713097	12.62161636	93.86195374
18-Jan-07 14:02:00	8.679998398	14.51176929	93.84719849
18-Jan-07 14:03:00	8.645283699	14.99649048	93.83245087
18-Jan-07 14:04:00	8.655039787	17.23777008	93.81769562
18-Jan-07 14:05:00	8.624191284	17.04543877	93.80294037
18-Jan-07 14:06:00	8.592656136	17.49536133	93.78819275
18-Jan-07 14:07:00	8.561120033	16.46214104	93.7734375
18-Jan-07 14:08:00	8.610125542	18.35634995	93.76063538
18-Jan-07 14:09:00	8.660496712	18.40565872	93.75562286
18-Jan-07 14:10:00	8.710867882	20.84628677	93.75061035
18-Jan-07 14:11:00	8.761238098	20.64054489	93.74559784
18-Jan-07 14:12:00	8.811609268	21.58944511	93.74058533
18-Jan-07 14:13:00	8.816527367	21.54782295	93.73557281
18-Jan-07 14:14:00	8.821445465	21.47445869	93.7305603
18-Jan-07 14:15:00	8.74382019	23.15139198	93.72554779
18-Jan-07 14:16:00	8.664796829	20.71321869	93.72053528
18-Jan-07 14:17:00	8.585772514	23.03228188	93.71552277
18-Jan-07 14:18:00	8.603130341	23.4849472	93.71051025
18-Jan-07 14:19:00	8.620487213	23.31295967	93.70549774
18-Jan-07 14:20:00	8.637844086	23.10102463	93.70785522
18-Jan-07 14:21:00	8.655201912	24.11206436	93.74307251
18-Jan-07 14:22:00	8.752827644	22.82151222	93.77828979
18-Jan-07 14:23:00	8.850452423	25.07057381	93.80913544
18-Jan-07 14:24:00	8.948078156	23.59930229	93.82248688

18-Jan-07 14:25:00	8.95962429	23.5420742	93.83583069
18-Jan-07 14:26:00	8.910031319	24.22231293	93.84918213
18-Jan-07 14:27:00	8.789643288	24.4573822	93.86252594
18-Jan-07 14:28:00	8.669255257	22.90867424	93.87587738
18-Jan-07 14:29:00	8.548867226	23.0666523	93.87779236
18-Jan-07 14:30:00	8.523786545	23.9881382	93.85066986
18-Jan-07 14:31:00	8.500320435	23.9051857	93.8992691
18-Jan-07 14:32:00	8.555853844	23.78456116	93.86209869
18-Jan-07 14:33:00	8.666646004	22.326231	93.87773895
18-Jan-07 14:34:00	8.845179558	23.42074394	93.88623047
18-Jan-07 14:35:00	8.935972214	24.11455917	93.86288452
18-Jan-07 14:36:00	8.964964867	25.77875519	93.85494995
18-Jan-07 14:37:00	8.932157516	24.20674706	93.89582825

Ops Run 2

Polk Power Station

Acid Plant

Run No. 2

Start	Jan-18-2007 3:14:00 PM
End	Jan-18-2007 4:14:00 PM
Interval	1m

PI TAG	1SRGAI455	1SRGFI487	1SRGAI446b
PI DESCRIPTOR	SA MAIN CPRSR OUT SO2 A	SA PROD CLR ACID OUT FLOW	SA FINAL TOWER ACID CONC
	Inlet Converter	Product Acid Flow	Acid Concentration
UNITS	AVG. %	TOTAL GAL.	AVG. %
Average	**8.253863026**	**1317.565655**	**93.786021**
18-Jan-07 15:14:00	8.611713409	18.19468307	93.81713867
18-Jan-07 15:15:00	0.491996527	19.07899475	93.78877258
18-Jan-07 15:16:00	0.305632144	19.6541481	93.76040649
18-Jan-07 15:17:00	1.264229298	18.64557266	93.73204041
18-Jan-07 15:18:00	7.200760365	18.78254128	93.72019196
18-Jan-07 15:19:00	8.370409966	21.06273079	93.7591095
18-Jan-07 15:20:00	8.599586487	21.81538391	93.70677948
18-Jan-07 15:21:00	8.595314026	21.59692383	93.67552185
18-Jan-07 15:22:00	8.591041565	22.34549904	93.72666168
18-Jan-07 15:23:00	8.586769104	23.18616486	93.72692871
18-Jan-07 15:24:00	8.582496643	23.29233742	93.72719574
18-Jan-07 15:25:00	8.539040565	23.96549797	93.72746277
18-Jan-07 15:26:00	8.506134987	22.19926071	93.7277298
18-Jan-07 15:27:00	8.517388344	23.10691071	93.72799683
18-Jan-07 15:28:00	8.528641701	24.69391441	93.72826385
18-Jan-07 15:29:00	8.539896011	23.8584938	93.73170471
18-Jan-07 15:30:00	8.578842163	24.09835243	93.74927521
18-Jan-07 15:31:00	8.622407913	25.06279182	93.7668457
18-Jan-07 15:32:00	8.646059036	23.71296501	93.78440857
18-Jan-07 15:33:00	8.669711113	23.78590965	93.80197906
18-Jan-07 15:34:00	8.69336319	22.24692535	93.81954956
18-Jan-07 15:35:00	8.704203606	23.05459023	93.83712006
18-Jan-07 15:36:00	8.703059196	23.27900696	93.85468292
18-Jan-07 15:37:00	8.701913834	23.19428062	93.86806488
18-Jan-07 15:38:00	8.700769424	23.55304146	93.86279297
18-Jan-07 15:39:00	8.676170349	23.09034348	93.85751343
18-Jan-07 15:40:00	8.629630089	22.83707619	93.85223389
18-Jan-07 15:41:00	8.583088875	23.24434662	93.84696198
18-Jan-07 15:42:00	8.575968742	22.91619492	93.84168243
18-Jan-07 15:43:00	8.605724335	24.63017082	93.83641052
18-Jan-07 15:44:00	8.64434433	26.4765625	93.83113098
18-Jan-07 15:45:00	8.691256523	25.47376823	93.82585144
18-Jan-07 15:46:00	8.708228111	26.25392914	93.82057953
18-Jan-07 15:47:00	8.695257187	25.12504959	93.80342865
18-Jan-07 15:48:00	8.682287216	24.35501289	93.75920105
18-Jan-07 15:49:00	8.669317245	26.10894394	93.8032608
18-Jan-07 15:50:00	8.656346321	24.82056999	93.73754883
18-Jan-07 15:51:00	8.652576447	25.03166389	93.76600647
18-Jan-07 15:52:00	8.68725872	23.63864517	93.74650574
18-Jan-07 15:53:00	8.749304771	25.67834663	93.72701263
18-Jan-07 15:54:00	8.798561096	25.39846611	93.70751953
18-Jan-07 15:55:00	8.785107613	24.59548187	93.69374847
18-Jan-07 15:56:00	8.724952698	23.58881378	93.70546722
18-Jan-07 15:57:00	8.692547798	24.73843956	93.71718597
18-Jan-07 15:58:00	8.711017609	22.41628075	93.72890472
18-Jan-07 15:59:00	8.751120567	24.00570679	93.74062347
18-Jan-07 16:00:00	8.755912781	21.84301186	93.75234985
18-Jan-07 16:01:00	8.725395203	21.19373131	93.7640686
18-Jan-07 16:02:00	8.711788177	21.73589325	93.77578735
18-Jan-07 16:03:00	8.715094566	19.17164993	93.7875061

18-Jan-07 16:04:00	8.718400955	17.94050407	93.79922485
18-Jan-07 16:05:00	8.713706017	16.67744827	93.81076813
18-Jan-07 16:06:00	8.701011658	16.98095703	93.82151031
18-Jan-07 16:07:00	8.694875717	14.23188782	93.83224487
18-Jan-07 16:08:00	8.740653992	17.45080948	93.84298706
18-Jan-07 16:09:00	8.792592049	12.98478699	93.85372162
18-Jan-07 16:10:00	8.807470322	12.87972641	93.86446381
18-Jan-07 16:11:00	8.790233612	13.55677986	93.87520599
18-Jan-07 16:12:00	8.777403831	13.86528873	93.88594055
18-Jan-07 16:13:00	8.799020767	12.44225502	93.89668274
18-Jan-07 16:14:00	8.820637703	12.720191	93.9074173

Polk Power Station

Acid Plant

Run No. 3

Start	Jan-18-2007 4:38:00 PM
End	Jan-18-2007 5:38:00 PM
Interval	1m

PI TAG	1SRGAI455	1SRGFI487	1SRGAI446b
PI DESCRIPTOR	SA MAIN CPRSR OUT SO2 A	SA PROD CLR ACID OUT FLOW	SA FINAL TOWER ACID CONC
	Inlet Converter	Product Acid Flow	Acid Concentration
UNITS	AVG. %	TOTAL GAL.	AVG. %
Average	**8.641542325**	**1265.052129**	**93.79841826**
18-Jan-07 16:38:00	8.754687309	24.1359787	93.76309967
18-Jan-07 16:39:00	8.7115345	24.41686821	93.77189636
18-Jan-07 16:40:00	8.634983063	23.89207649	93.78068542
18-Jan-07 16:41:00	8.558433533	23.86766434	93.78948212
18-Jan-07 16:42:00	8.516088486	24.5595417	93.79827881
18-Jan-07 16:43:00	8.507949829	25.64723587	93.80706787
18-Jan-07 16:44:00	8.499812126	25.38169479	93.81501007
18-Jan-07 16:45:00	8.498428345	24.84002495	93.81867981
18-Jan-07 16:46:00	8.503798485	25.59339714	93.82234955
18-Jan-07 16:47:00	8.509168625	24.87428856	93.82601929
18-Jan-07 16:48:00	8.533288002	25.81416512	93.82968903
18-Jan-07 16:49:00	8.57494545	25.49937439	93.83335876
18-Jan-07 16:50:00	8.616603851	25.76708221	93.8370285
18-Jan-07 16:51:00	8.658261299	26.11922836	93.84069824
18-Jan-07 16:52:00	8.699918747	25.67964745	93.84023285
18-Jan-07 16:53:00	8.701288223	26.04335213	93.81634521
18-Jan-07 16:54:00	8.664969444	24.64255142	93.79244995
18-Jan-07 16:55:00	8.623409271	24.6503334	93.76855469
18-Jan-07 16:56:00	8.576608658	25.80988503	93.74466705
18-Jan-07 16:57:00	8.529807091	24.24565887	93.72431183
18-Jan-07 16:58:00	8.511238098	25.98790359	93.72167969
18-Jan-07 16:59:00	8.519078255	25.14238358	93.71904755
18-Jan-07 17:00:00	8.526918411	23.96827888	93.72676086
18-Jan-07 17:01:00	8.57469368	24.55529785	93.77950287
18-Jan-07 17:02:00	8.662402153	25.4346714	93.75537109
18-Jan-07 17:03:00	8.720365524	22.20782852	93.73124695
18-Jan-07 17:04:00	8.750501633	21.58080482	93.71191406
18-Jan-07 17:05:00	8.737757683	22.70477867	93.71974945
18-Jan-07 17:06:00	8.684898376	22.10534286	93.72759247
18-Jan-07 17:07:00	8.63203907	21.56857491	93.73542786
18-Jan-07 17:08:00	8.610652924	20.81369972	93.74327087
18-Jan-07 17:09:00	8.57287693	19.4421978	93.75110626
18-Jan-07 17:10:00	8.522562027	19.3272953	93.75894165
18-Jan-07 17:11:00	8.504481316	15.91479206	93.76678467
18-Jan-07 17:12:00	8.528559685	18.49615479	93.77748871
18-Jan-07 17:13:00	8.592076302	16.56672859	93.80255127
18-Jan-07 17:14:00	8.655592918	13.59569073	93.8276062
18-Jan-07 17:15:00	8.719109535	13.38557053	93.85266876
18-Jan-07 17:16:00	8.755599022	14.06716347	93.87772369
18-Jan-07 17:17:00	8.766806602	14.32721901	93.90278625
18-Jan-07 17:18:00	8.778013229	12.76143742	93.92246246
18-Jan-07 17:19:00	8.789219856	13.58246136	93.91521454
18-Jan-07 17:20:00	8.754959106	13.46144772	93.90796661
18-Jan-07 17:21:00	8.675229073	13.83693981	93.90071869
18-Jan-07 17:22:00	8.622013092	12.24547577	93.89347076
18-Jan-07 17:23:00	8.595309258	12.80190468	93.88622284
18-Jan-07 17:24:00	8.568605423	13.5616436	93.87897491
18-Jan-07 17:25:00	8.55868721	14.72022152	93.87172699
18-Jan-07 17:26:00	8.605863571	16.28833961	93.86447906
18-Jan-07 17:27:00	8.693349838	17.82143593	93.85723114
18-Jan-07 17:28:00	8.780836105	18.04128456	93.84998322

18-Jan-07 17:29:00	8.831254959	16.54061127	93.83249664
18-Jan-07 17:30:00	8.844607353	19.37309074	93.76863098
18-Jan-07 17:31:00	8.82972908	19.92652702	93.76295471
18-Jan-07 17:32:00	8.786622047	20.24382973	93.75728607
18-Jan-07 17:33:00	8.755149841	19.3617382	93.7516098
18-Jan-07 17:34:00	8.735312462	20.04261017	93.74594116
18-Jan-07 17:35:00	8.692777634	21.25166512	93.74026489
18-Jan-07 17:36:00	8.627544403	21.73005676	93.73458862
18-Jan-07 17:37:00	8.594164848	21.35845566	93.72891998
18-Jan-07 17:38:00	8.592638969	23.42852592	93.72324371

APPENDIX H

VISIBLE EMISSIONS OBSERVATIONS

IGCC

TAMPA ELECTRIC
A TECOENERGYCOMPANY

VISIBLE EMISSION OBSERVATION

E-498 R 10/85

SOURCE NAME	SOURCE LOCATION
UNIT 1	~~HOOT~~ POLK

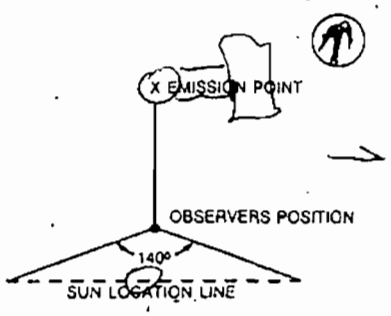
OBSERVATION DATE	START TIME	STOP TIME
01-18-07	1530	1600

TYPE OF FACILITY: POWER PLANT

DISTANCE FROM OBSERVER: 120 MTS

SKY CONDITIONS/PLUME BACKGROUND: CLOUDY / WHITE

SOURCE LAYOUT SKETCH — DRAW NORTH ARROW



SUN → WIND →

AVERAGE OPACITY -

WIND SPEED (EST.)	WIND DIRECTION (EST.)
~ 0-5	~ W

OBSERVER'S NAME (PRINT): JORGE A. VARGAS

OBSERVER'S SIGNATURE: [signature] — DATE: 1-18-07

COMMENTS

COPY OF VISIBLE EMISSIONS CERTIFICATION CARD

SEC. MIN	0	15	30	45	SEC MIN	0	15	30	45
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
8	0	0	0	0	38				
9	0	0	0	0	39				
10	0	0	0	0	40				
11	0	0	0	0	41				
12	0	0	0	0	42				
13	0	0	0	0	43				
14	0	0	0	0	44				
15	0	0	0	0	45				
16	0	0	0	0	46				
17	0	0	0	0	47				
18	0	0	0	0	48				
19	0	0	0	0	49				
20	0	0	0	0	50				
21	0	0	0	0	51				
22	0	0	0	0	52				
23	0	0	0	0	53				
24	0	0	0	0	54				
25	0	0	0	0	55				
26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				
30	0	0	0	0	60				

VISIBLE EMISSIONS EVALUATOR

This is to certify that

Jorge Varino

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

342385	*Orlando, Florida*	*August 9, 2006*
Certificate Number	Location	Date of Issue

Thomas Hoel
President

Michael W. Sandford
Director of Training

SULFURIC ACID PLANT

TAMPA ELECTRIC
A TECO ENERGY COMPANY

VISIBLE EMISSION OBSERVATION

E-498 R 10/85

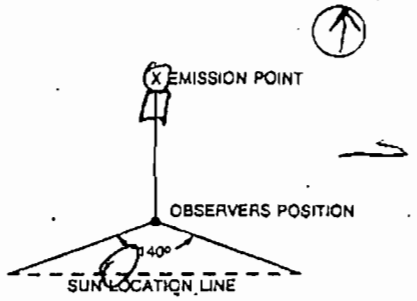
SOURCE NAME	SOURCE LOCATION	OBSERVATION DATE	START TIME	STOP TIME
ACID STACK	POLK POWER STATION	01-08-07	1530	1600

TYPE OF FACILITY: ACID PLANT

DISTANCE FROM OBSERVER: 120 ~~FEET~~

SKY CONDITIONS/PLUME BACKGROUND: CLOUDY / WHITE

SOURCE LAYOUT SKETCH — DRAW NORTH ARROW



SUN ○ WIND →

AVERAGE OPACITY:

WIND SPEED (EST.): ~ 0-5

WIND DIRECTION (EST.): ~ W

OBSERVER'S NAME (PRINT): JORGE A. VARGO

OBSERVER'S SIGNATURE:

DATE: 1-18-07

COMMENTS

COPY OF VISIBLE EMISSIONS CERTIFICATION CARD

SEC. MIN	0	15	30	45	SEC MIN	0	15	30	45
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
8	0	0	0	0	38				
9	0	0	0	0	39				
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26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				
30	0	0	0	0	60				

VISIBLE EMISSIONS EVALUATOR

This is to certify that

Jorge Varino

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

342385	*Orlando, Florida*	*August 9, 2006*
Certificate Number	Location	Date of Issue

Thomas Hoke	*Michael W. Sumsford*
President	Director of Training

APPENDIX I

CHAIN OF CUSTODY

TECO
TAMPA ELECTRIC

ANALYSIS REQUEST & CHAIN OF CUSTODY

ENVIRONMENTAL SERVICES

5012 CAUSEWAY BLVD., TAMPA, FL, 33619 PHONE (813)228-4111

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	REQUIRED ANALYSIS	DUE DATE
POLK ACID PLANT		POLK	EM 8	☐ EMAIL RESULTS
SAMPLER'S PRINTED NAME: JORGE A. VARINO	SAMPLER'S SIGNATURE			☐ FAX RESULTS
P.O. NUMBER	CONTRACT NO.	SITE		☐ MAIL RESULTS
CLIENT NAME	CLIENT PHONE	CLIENT FAX	PRESERVATIVE	NUMBER OF COOLERS SUBMITTED PER SHIPMENT
CLIENT EMAIL	CLIENT ADDRESS			

SAMPLE ID	SAMPLE DESCRIPTION	SAMPLING DATE	SAMPLING TIME	* MATRIX	NUMBER OF CONTAINERS SUBMITTED	REMARKS
RU1	808 IPP FILTER	1/19/07		A	1	
RUN 2	"	"		"	1	
RUN 3	"	"		"	1	
BLANK	"	"		"	1	

* GW - GROUND WATER SW - SURFACE WATER DW - DRINKING WATER WW - WASTE WATER C - COAL O - OIL SO - SOLID/SOIL SL - SLUDGE W - WASTE SAMPLE A - AIR

CONTAINERS/SEALS INTACT ☐ Yes ☐ No

ON ICE/ 4°C ☑ Yes ☐ No

SAMPLE TRANSFERS

RELINQUISHED BY:	RECEIVED BY:	DATE	TIME
PERSON'S NAME: [signature]	PERSON'S NAME: [signature]	1/19/07	
FACILITY NAME: TWF	FACILITY NAME:		
PERSON'S NAME:	PERSON'S NAME:		
FACILITY NAME:	FACILITY NAME:		
PERSON'S NAME:	PERSON'S NAME:		
FACILITY NAME:	FACILITY NAME:		
PERSON'S NAME:	PERSON'S NAME:		
FACILITY NAME:	FACILITY NAME:		

Trigon Engineering Consultants, Inc. *Chain of Custody* **Sampler's Signature** [signature]

Company: TECO	Laboratory: TECO	No. of Containers: 6	Sampling Methods: M8
City, State: Tampa FL	Project No. 046-06-121		
Contact: David Smith	Purchase Order No.		

Sample Description	Sample ID	Date	Time	Sample Disposition and Remarks
Unit 1 Run 1	6121-01	1/18/07		80% IPA, 3% H_2O_2
Run 2	6121-02	1/18/07		" "
Run 3	6121-03	1/18/07		" "
Blanks	6121-05	1/18/07		80% IPA Blank, 3% H_2O_2 blank

Relinquished By: [signature]	Date/Time 18:57 / 1/18/07	Received By: [signature]	Date/Time 1-18-07 / 1900
Relinquished By:	Date/Time /	Received By:	Date/Time /
Received for Laboratory By: Mary Ann	Date/Time /	Analyze for the Following Compounds:	
	/		

APPENDIX J

PROJECT PARTICIPANTS

TEST PARTICIPANTS

ENVIRONMENTAL SERVICES, AIR SERVICES GROUP

Test Team

Charles Dufeny	Environmental Technician, Test Team Lead
Jorge Varino	Environmental Technician
Scott Given	Associate Technician
Gary Barber	Associate Technician

TRIGON ENGINEERING CONSULTANTS, INC

Test Team

Ian DeVivi	Team Lead
Jamie Bell	Technician
Larry Reynolds	Technician

Process Data

Raymond A. McDarby	Senior Environmental Technician

Fuel Analysis

Bret Nicholas	Senior Environmental Technician - PPS
Raymond A. McDarby	Senior Environmental Technician

Report Preparation

Raymond A. McDarby	Senior Environmental Technician

Quality Assurance/Quality Control Review

Raymond A. McDarby	Senior Environmental Technician

Test Coordination

David A. Smith	Coordinator, Air Services Group
Michael Perkins	Environmental Coordinator – PPS
Paul Jenkins	Program Manager – Trigon Engineering Consultants, Inc.