PERFORMANCE
TEST REPORT
FOR
ST. JOHNS RIVER POWER PARK
UNIT 2
JACKSONVILLE, FL
December 19, 2000

Job # 00-131

Test Report Date: 1-17-01

GRACE CONSULTING, INC.
EMISSIONS TESTING SERVICES

January 17, 2001

I, Hal Stiles, hereby certify that the data obtained for St. Johns River Power Park, Unit 2 in Jacksonville, FL are in accordance with procedures set forth by the USEPA. This report accurately represents the data obtained from the testing procedures and analysis of this data.

Hal Stiles
Crew Chief

I, Carl Vineyard, hereby certify that I have reviewed this report and to the best of my knowledge, the data presented herein is complete and accurate.

Carl Vineyard, P.E.
Test Engineer

Grace Consulting, Inc.
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INTRODUCTION

This report presents the results of the Performance emissions tests performed for St. Johns River Power Park, Unit 2 in Jacksonville, FL.

The purpose of the tests was to determine the emissions of the unit. The results can be found in the Summary of Test Results section of this report.

The testing was performed by Grace Consulting, Inc., located at 510 Dickson Street - Wellington, OH 44090. Present during the testing were Hal Stiles, Scott Teague, Josh Nichols and Dennis Haynes from Grace Consulting, Inc. Mark Loechelt and Al Castro were present from St. Johns River Power Park.

The tests were performed on December 19, 2000. The testing was completed in accordance with USEPA test methods as published in the July 1, 2000 Federal Register, - "Standards of Performance for New Stationary Sources" and subsequent revisions.

The sampling and analytical procedures can be found in the Sampling and Analytical Procedures section of this report. The raw field data and the equations used to determine the final results are presented in the Appendix section.

SUMMARY OF TEST RESULTS

The following presents the results of the Performance emissions tests performed for St. Johns River Power Park, Unit 2 in Jacksonville, FL.

GASEOUS EMISSIONS

Run #	Average of RATA Test Run #'s	Test Date	NO_x PPM	NO_x lb/mmBtu	CO_2 %
1	1-3	12-19-00	309.66	.486	13.69
2	4-6	12-19-00	306.96	.481	13.71
3	7-9	12-19-00	305.58	.475	13.84
4	10-12	12-19-00	304.99	.475	13.80
AVG.			**306.80**	**.479**	**13.76**

Run #	Average of RATA Test Run #'s	Test Date	SO_2 PPM	SO_2 lb/mmBtu	CO_2 %
1	1-3	12-19-00	219.59	.480	13.67
2	4-6	12-19-00	223.43	.481	13.88
3	7-9	12-19-00	223.69	.484	13.82
AVG.			**222.24**	**.482**	**13.79**

The complete results can be found on the computer printouts following.

Grace Consulting, Inc.

Sampling System Bias Check and Measured Value Correction

St. Johns River Power Park
Jacksonville, FL - Unit 2

Date: 12/19/00
Pollutant: NOx
Monitor Span: 1000

Run Number	Average Measured Value	Initial Zero Gas Bias	Final Zero Gas Bias	Zero Gas Drift	Initial Upscale Gas Bias	Final Upscale Gas Bias	Upscale Gas Drift	Calibration Gas	Percent Moisture	Corrected Value, Dry Basis	Corrected Value, Wet Basis
1	300.65	-2.00	-0.30	0.17	553.70	559.80	0.61	558.00	12.77	301.85	263.32
2	314.71	-0.30	-0.10	0.02	559.80	561.40	0.16	558.00	12.77	313.34	273.33
3	314.64	-0.10	-1.20	-0.11	561.40	558.60	-0.28	558.00	12.89	313.80	273.35
4	304.21	-1.20	1.60	0.28	558.60	553.60	-0.50	558.00	12.89	305.16	265.83
5	305.89	1.60	1.20	-0.04	553.60	552.40	-0.12	558.00	11.94	308.02	271.24
6	307.39	1.20	2.70	0.15	552.40	559.30	0.69	558.00	11.94	307.70	270.96
7	305.46	2.70	1.30	-0.14	559.30	555.80	-0.35	558.00	12.54	304.80	266.56
8	309.01	1.30	2.10	0.08	555.80	560.40	0.46	558.00	12.54	308.19	269.53
9	306.32	2.10	2.30	0.02	560.40	561.40	0.10	558.00	12.68	303.74	265.22
10	300.31	2.30	2.00	-0.03	561.40	562.12	0.07	558.00	11.79	297.30	262.25
11	308.66	2.00	3.90	0.19	562.12	558.10	-0.40	558.00	12.44	306.17	268.07
12	314.45	3.90	3.20	-0.07	558.10	562.90	0.48	558.00	12.44	311.49	272.72

$$Cgas = (Cavg - Co) * Cma / (Cm - Co) \qquad \text{Eq. 6C-1}$$

where:
Cgas = Effluent gas concentration, dry basis, ppm
Cavg = Average gas concentraiton indicated by gas analyzer, dry basis, ppm
Co = Average of initial and final system calibration bias check responses for the zero gas, ppm
Cm = Average of initial and final system calibration bias check responses for the upscale calibration gas, ppm
Cma = Actual concentration of the upscale calibration gas, ppm

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Sampling System Bias Check and Measured Value Correction

St. Johns River Power Park
Jacksonville, FL - Unit 2

Date: 12/19/00
Pollutant: CO2
Monitor Span: 20

Run Number	Average Measured Percent	Initial Zero Gas Bias	Final Zero Gas Bias	Zero Gas Drift	Initial Upscale Gas Bias	Final Upscale Gas Bias	Upscale Gas Drift	Calibration Gas	Percent Moisture	Corrected Percent, Dry Basis	Corrected Percent, Wet Basis
1	13.71	0.09	0.07	-0.10	11.00	11.10	0.50	11.13	12.77	13.83	12.06
2	13.53	0.07	0.08	0.05	11.10	11.04	-0.30	11.13	12.77	13.62	11.88
3	13.51	0.08	0.09	0.05	11.04	11.08	0.20	11.13	12.89	13.61	11.86
4	13.73	0.09	0.12	0.15	11.08	11.10	0.10	11.13	12.89	13.80	12.03
5	13.44	0.12	0.09	-0.15	11.10	11.05	-0.25	11.13	11.94	13.53	11.91
6	13.71	0.09	0.12	0.15	11.05	11.09	0.20	11.13	11.94	13.81	12.16
7	13.55	0.12	0.13	0.05	11.09	11.04	-0.25	11.13	12.54	13.66	11.94
8	13.85	0.13	0.14	0.05	11.04	11.09	0.25	11.13	12.54	13.97	12.21
9	13.85	0.14	0.12	-0.10	11.09	11.14	0.25	11.13	12.68	13.90	12.14
10	13.78	0.12	0.10	-0.10	11.14	11.16	0.10	11.13	11.79	13.78	12.16
11	13.75	0.10	0.10	0.00	11.16	11.04	-0.60	11.13	12.44	13.81	12.09
12	13.65	0.10	0.11	0.05	11.04	11.02	-0.10	11.13	12.44	13.80	12.08

$$Cgas = (Cavg - Co) * Cma / (Cm - Co) \qquad \text{Eq. 6C-1}$$

where:

Cgas = Effluent gas concentration, dry basis, percent
Cavg = Average gas concentraiton indicated by gas analyzer, dry basis, percent
Co = Average of initial and final system calibration bias check responses for the zero gas, percent
Cm = Average of initial and final system calibration bias check responses for the upscale calibration gas, percent
Cma = Actual concentration of the upscale calibration gas, percent

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Sampling System Bias Check and Measured Value Correction

St. Johns River Power Park
Jacksonville, FL - Unit 2

Date: 12/19/00
Pollutant: SO2
Monitor Span: 500

Run Number	Average Measured Value	Initial Zero Gas Bias	Final Zero Gas Bias	Zero Gas Drift	Initial Upscale Gas Bias	Final Upscale Gas Bias	Upscale Gas Drift	Calibration Gas	Percent Moisture	Corrected Value, Dry Basis	Corrected Value, Wet Basis
1	221.57	3.50	2.10	-0.28	258.20	255.80	-0.48	257.10	11.94	221.27	194.84
2	222.34	2.10	2.60	0.10	255.80	256.28	0.10	257.10	11.94	222.95	196.32
3	214.75	2.60	1.50	-0.22	256.28	257.60	0.26	257.10	12.54	214.54	187.63
4	221.40	1.50	2.80	0.26	257.60	258.30	0.14	257.10	12.54	220.36	192.72
5	225.30	2.80	2.70	-0.02	258.30	259.20	0.18	257.10	12.68	223.51	195.17
6	228.08	2.70	2.00	-0.14	259.20	258.10	-0.22	257.10	11.79	226.43	199.74
7	226.74	2.00	2.90	0.18	258.10	260.10	0.40	257.10	12.44	224.68	196.72
8	225.43	2.90	3.40	0.10	260.10	258.20	-0.38	257.10	12.44	223.24	195.46
9	224.07	3.40	2.80	-0.12	258.20	257.20	-0.20	257.10	12.20	223.14	195.92
10	222.11	2.80	2.50	-0.06	257.20	258.10	0.18	257.10	12.20	221.27	194.27

$$Cgas = (Cavg - Co) * Cma / (Cm - Co) \qquad \text{Eq. 6C-1}$$

where:

Cgas = Effluent gas concentration, dry basis, ppm
Cavg = Average gas concentraiton indicated by gas analyzer, dry basis, ppm
Co = Average of initial and final system calibration bias check responses for the zero gas, ppm
Cm = Average of initial and final system calibration bias check responses for the upscale calibration gas, ppm
Cma = Actual concentration of the upscale calibration gas, ppm

Grace Consulting, Inc.

Sampling System Bias Check and Measured Value Correction

St. Johns River Power Park
Jacksonville, FL - Unit 2

Date: 12/19/00
Pollutant: CO2 For use with SO2
Monitor Span: 20

Run Number	Average Measured Percent	Initial Zero Gas Bias	Final Zero Gas Bias	Zero Gas Drift	Initial Upscale Gas Bias	Final Upscale Gas Bias	Upscale Gas Drift	Calibration Gas	Percent Moisture	Corrected Percent, Dry Basis	Corrected Percent, Wet Basis
1	13.44	0.12	0.09	-0.15	11.10	11.05	-0.25	11.13	11.94	13.53	11.91
2	13.71	0.09	0.12	0.15	11.05	11.09	0.20	11.13	11.94	13.81	12.16
3	13.55	0.12	0.13	0.05	11.09	11.04	-0.25	11.13	12.54	13.66	11.94
4	13.85	0.13	0.14	0.05	11.04	11.09	0.25	11.13	12.54	13.97	12.21
5	13.85	0.14	0.12	-0.10	11.09	11.14	0.25	11.13	12.68	13.90	12.14
6	13.78	0.12	0.10	-0.10	11.14	11.16	0.10	11.13	11.79	13.78	12.16
7	13.75	0.10	0.10	0.00	11.16	11.04	-0.60	11.13	12.44	13.81	12.09
8	13.65	0.10	0.11	0.05	11.04	11.02	-0.10	11.13	12.44	13.80	12.08
9	13.69	0.11	0.12	0.05	11.02	11.05	0.15	11.13	12.20	13.84	12.15
10	13.70	0.12	0.13	0.05	11.05	11.07	0.10	11.13	12.20	13.82	12.13
11											
12											

$$Cgas = (Cavg - Co) * Cma / (Cm - Co) \qquad \text{Eq. 6C-1}$$

where:
Cgas = Effluent gas concentration, dry basis, percent
Cavg = Average gas concentraiton indicated by gas analyzer, dry basis, percent
Co = Average of initial and final system calibration bias check responses for the zero gas, percent
Cm = Average of initial and final system calibration bias check responses for the upscale calibration gas, percent
Cma = Actual concentration of the upscale calibration gas, percent

Grace Consulting, Inc.

Sampling System Bias Check and Measured Value Correction

St. Johns River Power Park
Jacksonville, FL - Unit 2

Date: 12/19/00
Pollutant: O2
Monitor Span: 25

Run Number	Average Measured Percent	Initial Zero Gas Bias	Final Zero Gas Bias	Zero Gas Drift	Initial Upscale Gas Bias	Final Upscale Gas Bias	Upscale Gas Drift	Calibration Gas	Percent Moisture	Corrected Percent, Dry Basis	Corrected Percent, Wet Basis
1	6.69	0.07	0.10	0.12	11.98	11.97	-0.04	12.07	12.77	6.70	5.85
2	6.26	0.10	0.01	-0.36	11.97	11.97	0.00	12.07	12.77	6.29	5.48
3	6.25	0.01	0.01	0.00	11.97	11.98	0.04	12.07	12.89	6.29	5.48
4	6.23	0.01	0.01	0.00	11.98	11.99	0.04	12.07	12.89	6.27	5.46
5	6.26	0.01	0.04	0.12	11.99	11.96	-0.12	12.07	11.94	6.30	5.55
6	6.20	0.04	0.02	-0.08	11.96	11.95	-0.04	12.07	11.94	6.25	5.50
7	6.07	0.02	0.01	-0.04	11.95	11.91	-0.16	12.07	12.54	6.13	5.36
8	5.66	0.01	-0.02	-0.12	11.91	11.94	0.12	12.07	12.54	5.73	5.01
9	5.60	-0.02	-0.05	-0.12	11.94	11.92	-0.08	12.07	12.68	5.68	4.96
10	5.67	-0.05	-0.06	-0.04	11.92	11.90	-0.08	12.07	11.79	5.78	5.09
11	5.60	-0.06	0.02	0.32	11.90	11.87	-0.12	12.07	12.44	5.70	4.99
12	5.61	0.02	0.03	0.04	11.87	11.86	-0.04	12.07	12.44	5.69	4.98

$$Cgas = (Cavg - Co) * Cma / (Cm - Co) \qquad \text{Eq. 6C-1}$$

where:
Cgas = Effluent gas concentration, dry basis, percent
Cavg = Average gas concentraiton indicated by gas analyzer, dry basis, percent
Co = Average of initial and final system calibration bias check responses for the zero gas, percent
Cm = Average of initial and final system calibration bias check responses for the upscale calibration gas, percent
Cma = Actual concentration of the upscale calibration gas, percent

Grace Consulting, Inc.
Moisture Calculations (Runs 1 - 6)

Client: St. Johns River Power Park
Site: Jacksonville, FL - Unit 2
Date: 12/19/00
Unit Number: 2
Load: High

Run:	1	2	3
Volume of Condensate:	50.00	50.00	52.00
Weight of Silica Gel:	14.30	14.30	16.00
Volume Metered:	20.554	20.554	21.709
Meter Temperature:	76.83	76.83	82.00
Delta H:	1.70	1.70	1.70
Barometric Pressure:	29.13	29.13	29.13
Meter Correction Factor:	1.047	1.047	1.047
Volume Measured (DSCF):	20.69	20.69	21.64
Water Volume (SCF):	3.03	3.03	3.20
% Moisture in Flue Gas:	12.77	12.77	12.89

Run:	4	5	6
Volume of Condensate:	52.00	50.00	50.00
Weight of Silica Gel:	16.00	12.90	12.90
Volume Metered:	21.709	21.788	21.788
Meter Temperature:	82.00	79.00	79.00
Delta H:	1.70	1.70	1.70
Barometric Pressure:	29.13	29.13	29.13
Meter Correction Factor:	1.047	1.047	1.047
Volume Measured (DSCF):	21.64	21.84	21.84
Water Volume (SCF):	3.20	2.96	2.96
% Moisture in Flue Gas:	12.89	11.94	11.94

Grace Consulting, Inc.
Moisture Calculations (Runs 7 - 12)

Client: St. Johns River Power Park
Site: Jacksonville, FL - Unit 2
Date: 12/19/00
Unit Number: 2
Load: High

Run:	7	8	9
Volume of Condensate:	54.00	54.00	52.00
Weight of Silica Gel:	12.40	12.40	13.90
Volume Metered:	21.756	21.756	21.277
Meter Temperature:	79.33	79.33	78.00
Delta H:	1.70	1.70	1.70
Barometric Pressure:	29.13	29.13	29.13
Meter Correction Factor:	1.047	1.047	1.047
Volume Measured (DSCF):	21.80	21.80	21.37
Water Volume (SCF):	3.13	3.13	3.10
% Moisture in Flue Gas:	12.54	12.54	12.68

Run:	10	11	12
Volume of Condensate:	50.00	50.00	50.00
Weight of Silica Gel:	14.20	16.80	16.80
Volume Metered:	22.519	22.065	22.065
Meter Temperature:	78.00	78.67	78.67
Delta H:	1.70	1.70	1.70
Barometric Pressure:	29.13	29.13	29.13
Meter Correction Factor:	1.047	1.047	1.047
Volume Measured (DSCF):	22.62	22.13	22.13
Water Volume (SCF):	3.02	3.15	3.15
% Moisture in Flue Gas:	11.79	12.44	12.44

Grace Consulting, Inc.
Moisture Calculations (Runs 1 - 6)

Client: St. Johns River Power Park
Site: Jacksonville, FL - Unit 2
Date: 12/19/00
Unit Number: 2
Load: High
SO2 only

Run:	1	2	3
Volume of Condensate:	50.00	50.00	54.00
Weight of Silica Gel:	12.90	12.90	12.40
Volume Metered:	21.788	21.788	21.756
Meter Temperature:	79.00	79.00	79.33
Delta H:	1.70	1.70	1.70
Barometric Pressure:	29.13	29.13	29.13
Meter Correction Factor:	1.047	1.047	1.047
Volume Measured (DSCF):	21.84	21.84	21.80
Water Volume (SCF):	2.96	2.96	3.13
% Moisture in Flue Gas:	11.94	11.94	12.54

Run:	4	5	6
Volume of Condensate:	54.00	52.00	50.00
Weight of Silica Gel:	12.40	13.90	14.20
Volume Metered:	21.756	21.277	22.519
Meter Temperature:	79.33	78.00	78.00
Delta H:	1.70	1.70	1.70
Barometric Pressure:	29.13	29.13	29.13
Meter Correction Factor:	1.047	1.047	1.047
Volume Measured (DSCF):	21.80	21.37	22.62
Water Volume (SCF):	3.13	3.10	3.02
% Moisture in Flue Gas:	12.54	12.68	11.79

Grace Consulting, Inc.
Moisture Calculations (Runs 7 - 12)

Client: St. Johns River Power Park
Site: Jacksonville, FL - Unit 2
Date: 12/19/00
Unit Number: 2
Load: High
SO2 only

Run:	7	8	9
Volume of Condensate:	50.00	50.00	48.00
Weight of Silica Gel:	16.80	16.80	16.50
Volume Metered:	22.065	22.065	21.833
Meter Temperature:	78.67	78.67	79.67
Delta H:	1.70	1.70	1.70
Barometric Pressure:	29.13	29.13	29.13
Meter Correction Factor:	1.047	1.047	1.047
Volume Measured (DSCF):	22.13	22.13	21.86
Water Volume (SCF):	3.15	3.15	3.04
% Moisture in Flue Gas:	12.44	12.44	12.20

Run:	10
Volume of Condensate:	48.00
Weight of Silica Gel:	16.50
Volume Metered:	21.833
Meter Temperature:	79.67
Delta H:	1.70
Barometric Pressure:	29.13
Meter Correction Factor:	1.047
Volume Measured (DSCF):	21.86
Water Volume (SCF):	3.04
% Moisture in Flue Gas:	12.20

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EMISSION MEASUREMENT TECHNICAL INFORMATION CENTER
NSPS TEST METHOD
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Method 3A - Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure)

1. APPLICABILITY AND PRINCIPLE

1.1 Applicability. This method is applicable to the determination of oxygen (O_2) and carbon dioxide (CO_2) concentrations in emissions from stationary sources only when specified within the regulations.

1.2 Principle. A sample is continuously extracted from the effluent stream: a portion of the sample stream is conveyed to an instrumental analyzer(s) for determination of O_2 and CO_2 concentration(s). Performance specifications and test procedures are provided to ensure reliable data.

2. RANGE AND SENSITIVITY

Same as in Method 6C, Sections 2.1 and 2.2, except that the span of the monitoring system shall be selected such that the average O_2 or CO_2 concentration is not less than 20 percent of the span.

3. DEFINITIONS

3.1 Measurement System. The total equipment required for the determination of the O_2 or CO_2 concentration. The measurement system consists of the same major subsystems as defined in Method 6C, Sections 3.1.1, 3.1.2, and 3.1.3.

3.2 Span, Calibration Gas, Analyzer Calibration Error, Sampling System Bias, Zero Drift, Calibration Drift, Response Time, and Calibration Curve. Same as in Method 6C, Sections 3.2 through 3.8, and 3.10.

3.3 Interference Response. The output response of the measurement system to a component in the sample gas, other than the gas component being measured.

4. MEASUREMENT SYSTEM PERFORMANCE SPECIFICATIONS

Same as in Method 6C, Sections 4.1 through 4.4.

5. APPARATUS AND REAGENTS

5.1 Measurement System. Any measurement system for O_2 or CO_2 that meets the specifications of this method. A schematic of an acceptable measurement system is shown in Figure 6C-1 of Method 6C. The essential components of the measurement system are described below:

5.1.1 Sample Probe. A leak-free probe of sufficient length to traverse the sample points.

5.1.2 Sample Line. Tubing to transport the sample gas from the probe to the moisture removal system. A heated sample line is not required for systems that measure the O_2 or CO_2 concentration on a dry basis, or transport dry gases.

5.1.3 Sample Transport Line, Calibration Valve Assembly, Moisture Removal System, Particulate Filter, Sample Pump, Sample Flow Rate Control, Sample Gas Manifold, and Data Recorder. Same as in Method 6C, Sections 5.1.3 through 5.1.9, and 5.1.11, except that the requirements to use stainless steel, Teflon, and nonreactive glass filters do not apply.

5.1.4 Gas Analyzer. An analyzer to determine continuously the O_2 or CO_2 concentration in the sample gas stream. The analyzer must meet the applicable performance specifications of Section 4. A means of controlling the analyzer flow rate and a device for determining proper sample flow rate (e.g., precision rotameter, pressure gauge downstream of all flow controls, etc.) shall be provided at the analyzer. The requirements for measuring and controlling the analyzer for measuring and controlling the analyzer flow rate are not applicable if data are presented that demonstrate the analyzer is insensitive to flow variations over the range encountered during the test.

5.2 Calibration Gases. The calibration gases for CO_2 analyzers shall be CO_2 in N_2 or CO_2 in air. Alternatively, CO_2/SO_2, O_2/SO_2, or $O_2/CO_2/SO_2$ gas mixtures in N_2 may be used. Three calibration gases, as specified in Sections 5.3.1 through 5.3.4 of Method 6C, shall be used. For O_2 monitors that cannot analyze zero gas, a calibration gas concentration equivalent to less than 10 percent of the span may be used in place of zero gas.

6. MEASUREMENT SYSTEM PERFORMANCE TEST PROCEDURES

Perform the following procedures before measurement of emissions (Section 7).

6.1 Calibration Concentration Verification. Follow Section 6.1 of Method 6C, except if calibration gas analysis is required, use Method 3 and change the acceptance criteria for agreement among Method 3 results to 5 percent (or 0.2 percent by volume, whichever is greater).

6.2 Interference Response. Conduct an interference response test of the analyzer prior to its initial use in the field. Thereafter, recheck the measurement system if changes are made in the instrumentation that could alter

the interference response (e.g., changes in the type of gas detector). Conduct the interference response in accordance with Section 5.4 of Method 20.

6.3 Measurement System Preparation, Analyzer Calibration Error, Response Time, and Sampling System Bias Check. Follow Sections 6.2 through 6.4 of Method 6C.

7. EMISSION TEST PROCEDURE

7.1 Selection of Sampling Site and Sampling Points. Select a measurement site and sampling points using the same criteria that are applicable to tests performed using Method 3.

7.2 Sample Collection. Position the sampling probe at the first measurement point, and begin sampling at the same rate as that used during the response time test. Maintain constant rate sampling (i.e., ±10 percent) during the entire run. The sampling time per run shall be the same as for tests conducted using Method 3 plus twice the average system response time. For each run, use only those measurements obtained after twice the response time of the measurement system has elapsed to determine the average effluent concentration.

7.3 Zero and Calibration Drift Test. Follow Section 7.4 of Method 6C.

8. QUALITY CONTROL PROCEDURES

The following quality control procedures are recommended when the results of this method are used for an emission rate correction factor, or excess air determination. The tester should select one of the following options for validating measurement results:

8.1 If both O_2 and CQ are measured using Method 3A, the procedures described in Section 4.4 of Method 3 should be followed to validate the O_2 and CO_2 measurement results.

8.2 If only O_2 is measured using Method 3A, measurements of the sample stream CO_2 concentration should be obtained at the sample by-pass vent discharge using an Orsat or Fyrite analyzer, or equivalent. Duplicate samples should be obtained concurrent with at least one run. Average the duplicate Orsat or Fyrite analysis results for each run. Use the average CO_2 values for comparison with the O_2 measurements in accordance with the procedures described in Section 4.4 of Method 3.

8.3 If only CO_2 is measured using Method 3A, concurrent measurements of the sample stream CO_2 concentration should be obtained using an Orsat or Fyrite analyzer as described in Section 8.2. For each run, differences greater than 0.5 percent between the Method 3A results and the average of

the duplicate Fyrite analysis should be investigated.

9. EMISSION CALCULATION

9.1 For all CO_2 analyzers, and for O analyzers that can be calibrated with zero gas, follow Section 8 of Method 6C, except express all concentrations as percent, rather than ppm.

9.2 For O_2 analyzers that use a low-level calibration gas in place of a zero gas, calculate the effluent gas concentration using Equation 3A-1.

$$C_{gas} = \frac{C_{ma} - C_{oa}}{C_m - C_o} (\bar{C} - C_m) + C_{ma} \qquad \text{Eq. 3A-1}$$

Where:

C_{gas} = Effluent gas concentration, dry basis, percent.

C_{ma} = Actual concentration of the upscale calibration gas, percent.

C_{oa} = Actual concentration of the low-level calibration gas, percent.

C_m = Average of initial and final system calibration bias check responses for the upscale calibration gas, percent.

C_o = Average of initial and final system calibration bias check responses for the low level gas, percent.

$\bar{C}$ = Average gas concentration indicated by the gas analyzer, dry basis, percent.

10. BIBLIOGRAPHY

Same as in Bibliography of Method 6C.

Method 6C - Determination of Sulfur Dioxide Emissions from Stationary Sources (Instrumental Analyzer Procedure)

1. APPLICABILITY AND PRINCIPLE

1.1 Applicability. This method is applicable to the determination of sulfur dioxide (SO_2) concentrations in controlled and uncontrolled emissions from stationary sources only when specified within the regulations.

1.2 Principle. A gas sample is continuously extracted from a stack, and a portion of the sample is conveyed to an instrumental analyzer for determination of SO_2 gas concentration using an ultraviolet (UV), nondispersive infrared (NDIR), or fluorescence analyzer. Performance specifications and test procedures are provided to ensure reliable data.

2. RANGE AND SENSITIVITY

2.1 Analytical Range. The analytical range is determined by the instrumental design. For this method, a portion of the analytical range is selected by choosing the span of the monitoring system. The span of the monitoring system shall be selected such that the pollutant gas concentration equivalent to the emission standard is not less than 30 percent of the span. If at any time during a run the measured gas concentration exceeds the span, the run shall be considered invalid.

2.2 Sensitivity. The minimum detectable limit depends on the analytical range, span, and signal-to-noise ratio of the measurement system. For a well designed system, the minimum detectable limit should be less than 2 percent of the span.

3. DEFINITIONS

3.1 Measurement System. The total equipment required for the determination of gas concentration. The measurement system consists of the following major subsystems:

3.1.1 Sample Interface. That portion of a system used for one or more of the following: sample acquisition, sample transport, sample conditioning, or protection of the analyzers from the effects of the stack effluent.

3.1.2 Gas Analyzer. That portion of the system that senses the gas to be measured and generates an output proportional to its concentration.

3.1.3 Data Recorder. A strip chart recorder, analog computer, or digital recorder for recording measurement data from the analyzer output.

3.2 Span. The upper limit of the gas concentration measurement range displayed on the data recorder.

3.3 Calibration Gas. A known concentration of a gas in an appropriate diluent gas.

3.4 Analyzer Calibration Error. The difference between the gas concentration exhibited by the gas analyzer and the known concentration of the calibration gas when the calibration gas is introduced directly to the analyzer.

3.5 Sampling System Bias. The difference between the gas concentrations exhibited by the measurement system when a known concentration gas is introduced at the outlet of the sampling probe and when the same gas is introduced directly to the analyzer.

3.6 Zero Drift. The difference in the measurement system output reading from the initial calibration response at the zero concentration level after a stated period of operation during which no unscheduled maintenance, repair, or adjustment took place.

3.7 Calibration Drift. The difference in the measurement system output reading from the initial calibration response at a mid-range calibration value after a stated period of operation during which no unscheduled maintenance, repair, or adjustment took place.

3.8 Response Time. The amount of time required for the measurement system to display 95 percent of a step change in gas concentration on the data recorder.

3.9 Interference Check. A method for detecting analytical interferences and excessive biases through direct comparison of gas concentrations provided by the measurement system and by a modified Method 6 procedure. For this check, the modified Method 6 samples are acquired at the sample by-pass discharge vent.

3.10 Calibration Curve. A graph or other systematic method of establishing the relationship between the analyzer response and the actual gas concentration introduced to the analyzer.

4. MEASUREMENT SYSTEM PERFORMANCE SPECIFICATIONS

4.1 Analyzer Calibration Error. Less than ±2 percent of the span for the zero, mid-range, and high-range calibration gases.

4.2 Sampling System Bias. Less than ±5 percent of the span for the zero and mid-range calibration gases.

4.3 Zero Drift. Less than ±3 percent of the span over the period of each run.

4.4 Calibration Drift. Less than ±3 percent of the span over the period of each run.

4.5 Interference Check. Less than ±7 percent of the modified Method 6 result for each run.

5. APPARATUS AND REAGENTS

5.1 Measurement System. Use any measurement system for SO_2 that meets the specifications of this method. A schematic of an acceptable measurement system is shown in Figure 6C-1. The essential components of the measurement system are described below:

5.1.1 Sample Probe. Glass, stainless steel, or equivalent, of sufficient length to traverse the sample points. The sampling probe shall be heated to prevent condensation.

5.1.2 Sample Line. Heated (sufficient to prevent condensation) stainless steel or Teflon tubing, to transport the sample gas to the moisture removal system.

5.1.3 Sample Transport Lines. Stainless steel or Teflon tubing, to transport the sample from the moisture removal system to the sample pump, sample flow rate control, and sample gas manifold.

5.1.4 Calibration Valve Assembly. A three-way valve assembly, or equivalent, for blocking the sample gas flow and introducing calibration gases to the measurement system at the outlet of the sampling probe when in the calibration mode.

5.1.5 Moisture Removal System. A refrigerator-type condenser or similar device (e.g., permeation dryer), to remove condensate continuously from the sample gas while maintaining minimal contact between the condensate and the sample gas. The moisture removal system is not necessary for analyzers that can measure gas concentrations on a wet basis; for these analyzers, (1) heat the sample line and all interface components up to the inlet of the analyzer sufficiently to prevent condensation, and (2) determine the moisture content and correct the measured gas concentrations to a dry basis using appropriate methods, subject to the approval of the Administrator. The determination of sample moisture content is not necessary for pollutant analyzers that measure concentrations on a wet basis when (1) a wet basis CO_2 analyzer operated according to Method 3A is used to obtain simultaneous measurements, and (2) the pollutant/CO_2 measurements are used to determine emissions in units of the standard.

5.1.6 Particulate Filter. An in-stack or heated (sufficient to prevent water condensation) out-of-stack filter. The filter shall be borosilicate or quartz glass wool, or glass fiber mat. Additional filters at the inlet or outlet of the moisture removal system and inlet of the analyzer may be used to prevent accumulation of particulate material in the measurement system and extend the useful life of the components. All filters shall be fabricated of materials that are nonreactive to the gas being sampled.

5.1.7 Sample Pump. A leak-free pump, to pull the sample gas through the system at a flow rate sufficient to minimize the response time of the measurement system. The pump may be constructed of any material that is nonreactive to the gas being sampled.

5.1.8 Sample Flow Rate Control. A sample flow rate control valve and rotameter, or equivalent, to maintain a constant sampling rate within 10 percent. (Note: The tester may elect to install a back-pressure regulator to maintain the sample gas manifold at a constant pressure in order to protect the analyzer(s) from overpressurization, and to minimize the need for flow rate adjustments.)

5.1.9 Sample Gas Manifold. A sample gas manifold, to divert a portion of the sample gas stream to the analyzer and the remainder to the by-pass discharge vent. The sample gas manifold should also include provisions for introducing calibration gases directly to the analyzer. The manifold may be constructed of any material that is nonreactive to the gas being sampled.

5.1.10 Gas Analyzer. A UV or NDIR absorption or fluorescence analyzer, to determine continuously the SO_2 concentration in the sample gas stream. The analyzer shall meet the applicable performance specifications of Section 4. A

means of controlling the analyzer flow rate and a device for determining proper sample flow rate (e.g., precision rotameter, pressure gauge downstream of all flow controls, etc.) shall be provided at the analyzer. (Note: Housing the analyzer(s) in a clean, thermally-stable, vibration-free environment will minimize drift in the analyzer calibration.)

5.1.11 Data Recorder. A strip chart recorder, analog computer, or digital recorder, for recording measurement data. The data recorder resolution (i.e., readability) shall be 0.5 percent of span. Alternatively, a digital or analog meter having a resolution of 0.5 percent of span may be used to obtain the analyzer responses and the readings may be recorded manually. If this alternative is used, the readings shall be obtained at equally spaced intervals over the duration of the sampling run. For sampling run durations of less than 1 hour, measurements at 1-minute intervals or a minimum of 30 measurements, whichever is less restrictive, shall be obtained. For sampling run durations greater than 1 hour, measurements at 2-minute intervals or a minimum of 96 measurements, whichever is less restrictive, shall be obtained.

5.2 Method 6 Apparatus and Reagents. The apparatus and reagents described in Method 6 and shown by the schematic of the sampling train in Figure 6C-2 are used to conduct the interference check.

5.3 SO_2 Calibration Gases. The calibration gases for the gas analyzer shall be SO_2 in N_2 or SO_2 in air. Alternatively, SO_2/CO_2, SO_2/O_2, or $SO_2/CO_2/O_2$ gas mixtures in N_2 may be used. For fluorescence-based analyzers, the O_2 and CO concentrations of the calibration gases as introduced to the analyzer shall be within 1 percent (absolute) O_2 and 1 percent (absolute) CO_2 of the O_2 and CO concentrations of the effluent samples introduced to the analyzer. Alternatively, for fluorescence-based analyzers, use calibration blends of SO_2 in air and the nomographs provided by the vendor to determine the quenching correction factor (the effluent O_2 and CO_2 concentrations must be known). Use three calibration gases as specified below:

5.3.1 High-Range Gas. Concentration equivalent to 80 to 100 percent of the span.

5.3.2 Mid-Range Gas. Concentration equivalent to 40 to 60 percent of the span.

5.3.3 Zero Gas. Concentration of less than 0.25 percent of the span. Purified ambient air may be used for the zero gas by passing air through a charcoal filter or through one or more impingers containing a solution of 3 percent H_2O_2.

6. MEASUREMENT SYSTEM PERFORMANCE TEST PROCEDURES

Perform the following procedures before measurement of emissions (Section 7).

6.1 Calibration Gas Concentration Verification. There are two alternatives for establishing the concentrations of calibration gases. Alternative No. 1 is preferred.

6.1.1 Alternative No. 1--Use of calibration gases that are analyzed following the Environmental Protection Agency Traceability Protocol No. 1 (see Citation 1 in Bibliography). Obtain a certification from the gas manufacturer that Protocol No. 1 was followed.

6.1.2 Alternative No. 2--Use of calibration gases not prepared according to Protocol No. 1. If this alternative is chosen, obtain gas mixtures with a manufacturer's tolerance not to exceed ±2 percent of the tag value. Within

6 months before the emission test, analyze each of the calibration gases in triplicate using Method 6. Citation 2 in the Bibliography describes procedures and techniques that may be used for this analysis. Record the results on a data sheet (example is shown in Figure 6C-3). Each of the individual SO_2 analytical results for each calibration gas shall be within 5 percent (or 5 ppm, whichever is greater) of the triplicate set average; otherwise, discard the entire set and repeat the triplicate analyses. If the average of the triplicate analyses is within 5 percent of the calibration gas manufacturer's cylinder tag value, use the tag value; otherwise, conduct at least three additional analyses until the results of six consecutive runs agree within 5 percent (or 5 ppm, whichever is greater) of the average. Then use this average for the cylinder value.

6.2 Measurement System Preparation. Assemble the measurement system by following the manufacturer's written instructions for preparing and preconditioning the gas analyzer and, as applicable, the other system components. Introduce the calibration gases in any sequence, and make all necessary adjustments to calibrate the analyzer and the data recorder. Adjust system components to achieve correct sampling rates.

6.3 Analyzer Calibration Error. Conduct the analyzer calibration error check by introducing calibration gases to the measurement system at any point upstream of the gas analyzer as follows:

6.3.1 After the measurement system has been prepared for use, introduce the zero, mid-range, and high-range gases to the analyzer. During this check, make no adjustments to the system except those necessary to achieve the correct calibration gas flow rate at the analyzer. Record the analyzer responses to each calibration gas on a form similar to Figure 6C-4. Note: A calibration curve established prior to the analyzer calibration error check may be used to convert the analyzer response to the equivalent gas concentration introduced to the analyzer. However, the same correction procedure shall be used for all effluent and calibration measurements obtained during the test.

6.3.2 The analyzer calibration error check shall be considered invalid if the gas concentration displayed by the analyzer exceeds ±2 percent of the span for any of the calibration gases. If an invalid calibration is exhibited, take corrective action and repeat the analyzer calibration error check until acceptable performance is achieved.

6.4 Sampling System Bias Check. Perform the sampling system bias check by introducing calibration gases at the calibration valve installed at the outlet of the sampling probe. A zero gas and either the mid-range or high-range gas, whichever most closely approximates the effluent concentrations, shall be used for this check as follows:

6.4.1 Introduce the upscale calibration gas, and record the gas concentration displayed by the analyzer on a form similar to Figure 6C-5. Then introduce zero gas, and record the gas concentration displayed by the analyzer. During the sampling system bias check, operate the system at the normal sampling rate, and make no adjustments to the measurement system other than those necessary to achieve proper calibration gas flow rates at the analyzer. Alternately introduce the zero and upscale gases until a stable response is achieved. The tester shall determine the measurement system response time by observing the times required to achieve a stable response for both the zero and upscale gases. Note the longer of the two times as the response time.

6.4.2 The sampling system bias check shall be considered invalid if the difference between the gas concentrations displayed by the measurement system for

the analyzer calibration error check and for the sampling system bias check exceeds ±5 percent of the span for either the zero or upscale calibration gases. If an invalid calibration is exhibited, take corrective action, and repeat the sampling system bias check until acceptable performance is achieved. If adjustment to the analyzer is required, first repeat the analyzer calibration error check, then repeat the sampling system bias check.

7. EMISSION TEST PROCEDURE

7.1 Selection of Sampling Site and Sampling Points. Select a measurement site and sampling points using the same criteria that are applicable to Method 6.

7.2 Interference Check Preparation. For each individual analyzer, conduct an interference check for at least three runs per during the initial field test on a particular source category. Retain the results, and report them with each test performed on that source category. If an interference check is being performed, assemble the modified Method 6 train (flow control valve, two midget impingers containing 3 percent H_2O_2, and dry gas meter) as shown in Figure 6C-2. Install the sampling train to obtain a sample at the measurement system sample by-pass discharge vent. Record the initial dry gas meter reading.

7.3 Sample Collection. Position the sampling probe at the first measurement point, and begin sampling at the same rate as used during the sampling system bias check. Maintain constant rate sampling (i.e., ±10 percent) during the entire run. The sampling time per run shall be the same as for Method 6 plus twice the average system response time. For each run, use only those measurements obtained after twice the response time of the measurement system has elapsed to determine the average effluent concentration. If an interference check is being performed, open the flow control valve on the modified Method 6 train concurrent with the initiation of the sampling period, and adjust the flow to 1 liter per minute (±10 percent). (Note: If a pump is not used in the modified Method 6 train, caution should be exercised in adjusting the flow rate since over-pressurization of the impingers may cause leakage in the impinger train, resulting in positively biased results).

7.4 Zero and Calibration Drift Tests. Immediately preceding and following each run, or if adjustments are necessary for the measurement system during the run, repeat the sampling system bias check procedure described in Section 6.4. (Make no adjustments to the measurement system until after the drift checks are completed.) Record the analyzer's responses on a form similar to Figure 6C-5.

7.4.1 If either the zero or upscale calibration value exceeds the sampling system bias specification, then the run is considered invalid. Repeat both the analyzer calibration error check procedure (Section 6.3) and the sampling system bias check procedure (Section 6.4) before repeating the run.

7.4.2 If both the zero and upscale calibration values are within the sampling system bias specification, then use the average of the initial and final bias check values to calculate the gas concentration for the run. If the zero or upscale calibration drift value exceeds the drift limits, based on the difference between the sampling system bias check responses immediately before and after the run, repeat both the analyzer calibration error check procedure (Section 6.3) and the sampling system bias check procedure (Section 6.4) before conducting additional runs.

7.5 Interference Check (if performed). After completing the run, record the final dry gas meter reading, meter temperature, and barometric pressure. Recover and analyze the contents of the midget impingers, and determine the SO_2 gas

concentration using the procedures of Method 6. (It is not necessary to analyze EPA performance audit samples for Method 6.) Determine the average gas concentration exhibited by the analyzer for the run. If the gas concentrations provided by the analyzer and the modified Method 6 differ by more than 7 percent of the modified Method 6 result, the run is invalidated.

8. EMISSION CALCULATION

The average gas effluent concentration is determined from the average gas concentration displayed by the gas analyzer and is adjusted for the zero and upscale sampling system bias checks, as determined in accordance with Section 7.4. The average gas concentration displayed by the analyzer may be determined by integration of the area under the curve for chart recorders, or by averaging all of the effluent measurements. Alternatively, the average may be calculated from measurements recorded at equally spaced intervals over the entire duration of the run. For sampling run durations of less than 1 hour, measurements at 1-minute intervals or a minimum of 30 measurements, whichever is less restrictive, shall be used. For sampling run durations greater than 1 hour, measurements at 2-minute intervals or a minimum of 96 measurements, whichever is less restrictive, shall be used. Calculate the effluent gas concentration using Equation 6C-1.

$$C_{gas} = (\overline{C} - C_o) \frac{C_{ma}}{C_m - C_o} \qquad \text{Eq. 6C-1}$$

Where:

C_{gas} = Effluent gas concentration, dry basis, ppm.

C_{avg} = Average gas concentration indicated by gas analyzer, dry basis, ppm.

C_o = Average of initial and final system calibration bias check responses for the zero gas, ppm.

C_m = Average of initial and final system calibration bias check responses for the upscale calibration gas, ppm.

C_{ma} = Actual concentration of the upscale calibration gas, ppm.

BIBLIOGRAPHY

1. Traceability Protocol for Establishing True Concentrations of Gases Used for Calibrations and Audits of Continuous Source Emission Monitors: Protocol Number 1. U. S. Environmental Protection Agency, Quality Assurance Division. Research Triangle Park, N.C. June 1978.

2. Westlin, Peter R. and John W. Brown. Methods for Collecting and Analyzing Gas Cylinder Samples. Source Evaluation Society Newsletter. 3(3):5-15. September 1978.

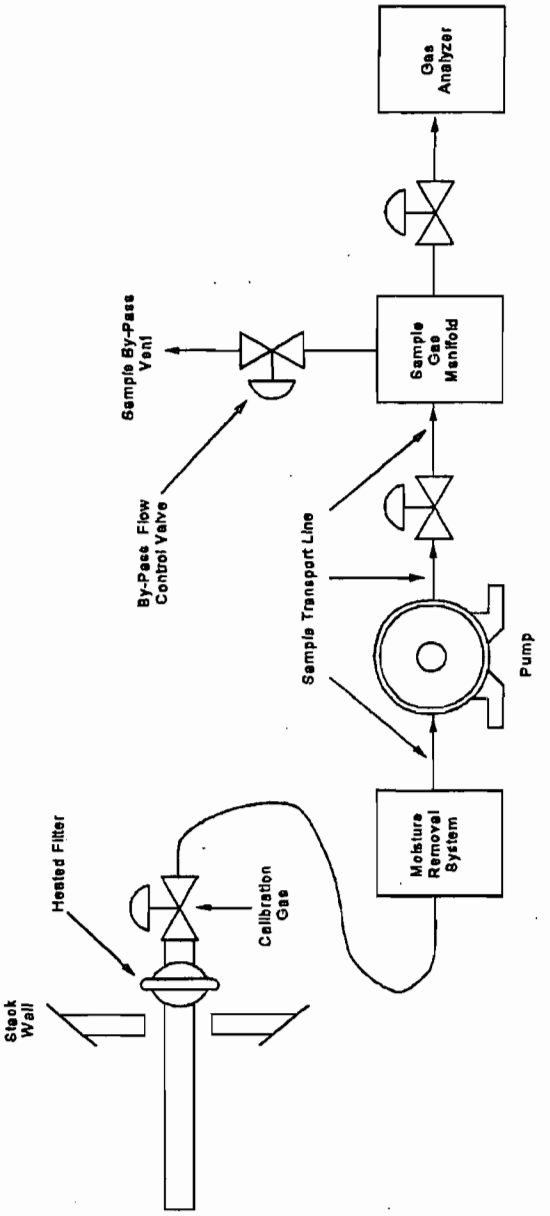

Figure 6C-1. Measurement System Schematic.

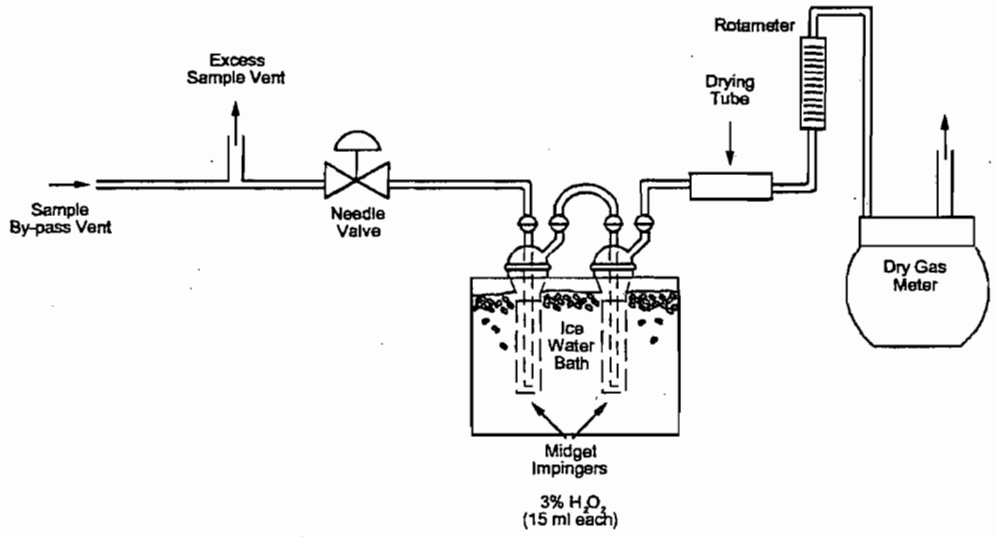

Figure 6C-2. Interference Check Sampling Train.

Figure 6C-3. Analysis of Calibration Gases.

Date			
Analytic Method Used			
	Gas Concentration (indicate units)		
	Zero [a]	Mid-Range [b]	High-range [c]
Sample Run:			
1			
2			
3			
Average			
Maximum Percent Deviation			

[a] Average must be less than 0.25 percent of span.
[b] Average must be 50 to 60 percent of span.
[c] Average must be 80 to 90 percent of span.

Figure 6C-4. Analyzer Calibration Data.

Source Identification:	Runs:
Test Personnel:	Span:
Date:	

Analyzer Calibration Data for Sampling

	Cylinder Value (indicate units)	Analyzer Calibration Response (indicate units)	Absolute Difference (indicate units)	Difference (percent of span)
Zero Gas				
Mid-Range Gas				
High-Range Gas				

Figure 6C-5. System Calibration Bias and Drift Data.

Source Identification:			Run Number:			
Test Personnel:			Span:			
Date:						
		Initial Values		Final Values		
	Analyzer Calibration Response	System Calibration Response	System cal. bias (percent of span)	System Calibration Response	System Cal. Bias (percent of span)	Drift (percent of span)
Zero Gas						
Upscale Gas						

$$\text{System Calibration Bias} = \frac{\text{System Cal. Response} - \text{Analyzer Cal. Response}}{\text{Span}} \times 100$$

$$\text{Drift} = \frac{\text{Final System Cal. Response} - \text{Initial System Cal. Response}}{\text{Span}} \times 100$$

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EMISSION MEASUREMENT TECHNICAL INFORMATION CENTER
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Method 7E - Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrumental Analyzer Procedure)

1. APPLICABILITY AND PRINCIPLE

1.1 Applicability. This method is applicable to the determination of nitrogen oxides (NO_x) concentrations in emissions from stationary sources only when specified within the regulations.

1.2 Principle. A sample is continuously extracted from the effluent stream; a portion of the sample stream is conveyed to an instrumental chemiluminescent analyzer for determination of NO_x concentration. Performance specifications and test procedures are provided to ensure reliable data.

2. RANGE AND SENSITIVITY

Same as in Method 6C, Sections 2.1 and 2.2.

3. DEFINITIONS

3.1 Measurement System. The total equipment required for the determination of NO_x concentration. The measurement system consists of the following major subsystems:

3.1.1 Sample Interface, Gas Analyzer, and Data Recorder. Same as in Method 6C, Sections 3.1.1, 3.1.2, and 3.1.3.

3.1.2 NO_2 to NO Converter. A device that converts the nitrogen dioxide (NO_2) in the sample gas to nitrogen oxide (NO).

3.2 Span, Calibration Gas, Analyzer Calibration Error, Sampling System Bias, Zero Drift, Calibration Drift, and Response Time. Same as in Method 6C, Sections 3.2 through 3.8.

3.3 Interference Response. The output response of the measurement system to a component in the sample gas, other than the gas component being measured.

4. MEASUREMENT SYSTEM PERFORMANCE SPECIFICATIONS

Same as in Method 6C, Sections 4.1 through 4.4.

5. APPARATUS AND REAGENTS

5.1 Measurement System. Use any measurement system for NO_x that meets the specifications of this method. A schematic of an acceptable measurement system is shown in Figure 6C-1 of Method 6C. The essential components of the measurement system are described below:

5.1.1 Sample Probe, Sample Line, Calibration Valve Assembly, Moisture Removal System, Particulate Filter, Sample Pump, Sample Flow Rate Control, Sample Gas Manifold, and Data Recorder. Same as in Method 6C, Sections 5.1.1 through 5.1.9, and 5.1.11.

5.1.2 NO_2 to NO Converter. That portion of the system that converts NO_2 in the sample gas to NO. A NO_2 to NO converter is not necessary if the NO_2 portion of the exhaust gas is less than 5 percent of the total NO_x concentration.

5.1.3 NO_x Analyzer. An analyzer based on the principles of chemiluminescence to determine continuously the NO_x concentration in the sample gas stream. The analyzer must meet the applicable performance specifications of Section 4. A means of controlling the analyzer flow rate and a device for determining proper sample flow rate (e.g., precision rotameter, pressure gauge downstream of all flow controls, etc.) must be provided at the analyzer.

5.2 NO_x Calibration Gases. The calibration gases for the NO_x analyzer shall be NO in N_2. Use four calibration gases as specified in Method 6C, Sections 5.3.1 through 5.3.3. Ambient air may be used for the zero gas.

6. MEASUREMENT SYSTEM PERFORMANCE TEST PROCEDURES

Perform the following procedures before measurement of emissions (Section 7).

6.1 Calibration Gas Concentration Verification. Same as in Method 6C, Section 6.1, except if calibration gas analysis is required, use Method 7, and change all 5 percent performance values to 10 percent (or 10 ppm, whichever is greater).

6.2 Interference Response. Conduct an interference response test of the analyzer prior to its initial use in the field. Thereafter, recheck the measurement system if changes are made in the instrumentation that could alter the interference response (e.g., changes in the gas detector). Conduct the interference response in accordance with Section 5.4 of Method 20.

6.3 Measurement System Preparation, Analyzer Calibration Error, Response Time, and Sample System Bias Check. Same as in Method 6C, Sections 6.2 through 6.4.

6.4 NO_2 to NO Conversion Efficiency. If the NO_2 concentration within the sample stream is greater than 5 percent of the NO_x concentration, conduct an NO_2 to NO conversion efficiency test in accordance with Section 5.6 of Method 20.

7. EMISSION TEST PROCEDURE

7.1 Selection of Sampling Site and Sampling Points. Select a measurement site and sampling points using the same criteria that are applicable to tests performed using Method 7.

7.2 Sample Collection. Position the sampling probe at the first measurement point, and begin sampling at the same rate as used during the response time test. Maintain constant rate sampling (i.e., ±10 percent) during the entire run. The sampling time per run shall be the same as the total time required to perform a run using Method 7 plus twice the average system response time. For each run, use only those measurements obtained after twice the response time of the measurement system has elapsed to determine the average effluent concentration.

7.3 Zero and Calibration Drift Test. Same as in Method 6C, Section 7.4.

8. EMISSION CALCULATION

Same as in Method 6C, Section 8.

BIBLIOGRAPHY

Same as the bibliography of Method 6C.

APPENDIX

NO_x CALCULATION
(CO_2 Based)

lb/dscf = $1.194 \times 10^{-7} \times PPM$

lb/mmBtu = lb/dscf x f-factor x $\frac{100}{\%CO_2}$

lb/hour = lb/dscf x dscfm x 60 min./hr

SO_2 CALCULATION
(CO_2 Based)

lb/dscf = 1.660×10^{-7} x PPM

lb/mmBtu = lb/dscf x f-factor x $\frac{100}{\%CO_2}$

lb/hour = lb/dscf x dscfm x 60 min./hr

GRACE CONSULTING, INC.

MOISTURE DATA SHEET

Client: St. Johns Power Park		Date: 12-19-00	
Project No.		Operator: Pitrone / Kinter	
Sampling Location: Unit 2 Outlet		Run No. 1 a2	
Barometric Pressure 29.13		Probe Number	
Condensate 50 mls.		Silica Gel 14.30	
Meter Corr. Factor 1.047		Meter Orifice 3.24084	Meter # Apex-11
Sample Pt. Time 5		Leak Test @ (in. HG)	After @(in. HG)

Sample Point		Delta H	Probe	Imp. Out	Meter In	Meter Out	Vac. Pr (in. HG)	Dry Gas Meter Reading in Cu. Ft.
	Start Time							
								455.689
5	10:25	1.7	247	56	7	5	1.5	459.120
10		1.7	245	50	7	5	1.5	462.610
15		1.7	245	55	7	6	1.5	466.150
20		1.7	244	56	7	8	1.5	469.630
25		1.7	243	57	7	8	1.5	472.840
30		1.7	241	58.	7	9	1.5	476.243
		—	—					
	10:55							
	Stop Time							
AVG.			244.167	54.333	76	833	1.5	26.554

GRACE CONSULTING, INC.

MOISTURE DATA SHEET

Client: St. Johns Power Park		Date: 12-19-00	
Project No.		Operator: Pitrone / Kinter	
Sampling Location Unit 2 Outlet		Run No. 3 & 4	
Barometric Pressure 29.13		Probe Number	
Condensate 52 mls.		Silica Gel 16	
Meter Corr. Factor 1.047		Meter Orifice 3.24084	Meter # Apex - 11
Sample Pt. Time 5		Leak Test @ (in. HG)	After @(in. HG)

Sample Point		Delta H	Probe	Imp. Out	Meter In	Meter Out	Vac. Pr (in. HG)	Dry Gas Meter Reading in Cu. Ft.
	Start Time							
								476.336
5	11:48	1.7	249	51	80		2.0	479.980
10		1.7	248	55	81		2.6	483 620
15		1.7	246	60	82		2.0	487.090
20		1.7	245	60	83		2.0	490,850
25		1.7	245	61	83		2.0	494.450
30		1.7	245	63.	83		2.0	498.045
	12:18							
	Stop Time							
AVG.			246.3~~38~~	~~333~~	82	600		21.709

GRACE CONSULTING, INC.

MOISTURE DATA SHEET

Client: St. Johns Power Park		Date: 12-19-00	
Project No.		Operator: Pitrone/Kinter	
Sampling Location Unit 2 Outlet		Run No. 5 & 6	
Barometric Pressure 29.13		Probe Number	
Condensate 50 mls.		Silica Gel 12.90	
Meter Corr. Factor 1.047		Meter Orifice 3.24084	Meter # Apex - 11
Sample Pt. Time 5		Leak Test @ (in. HG)	After @(in. HG)

Sample Point		Delta H	Probe	Imp. Out	Meter In	Meter Out	Vac. Pr (in. HG)	Dry Gas Meter Reading in Cu. Ft.
	Start Time							
								498.176
5	15:07	1.7	248	55	79		2.5	501.870
10		1.7	249	58	79		2.5	505.410
15		1.7	252	59	79		2.5	509.110
20		1.7	256	61	78		2.5	512.640
25		1.7	257	62	79		2.5	516.250
30		1.7	258	64	80		2.5	519.964
	15:37							
	Stop Time							
AVG.		1.7	253.333	59.833	79.000		2.5	21.788

GRACE CONSULTING, INC.

MOISTURE DATA SHEET

Client: St. Johns Power Park		Date: 12-19-00	
Project No.		Operator: Pitrone	
Sampling Location Unit 2 Outlet		Run No. 7 & 8	
Barometric Pressure 29.73		Probe Number	
Condensate 54		Silica Gel 12.40	
Meter Corr. Factor 1.049		Meter Orifice 3.24084	Meter # Apex-11
Sample Pt. Time 5		Leak Test @ (in. HG)	After @(in. HG)

Sample Point		Delta H	Probe	Imp. Out	Meter In	Meter Out	Vac. Pr (in. HG)	Dry Gas Meter Reading in Cu. Ft.
	Start Time							
								520.055
5	14:25	1.7	257	58	77		3.0	523.570
10		1.7	257	59	79		3.0	527.290
15		1.7	259	60	80		3.0	530.820
20		1.7	259	62	80		3.0	534.470
25		1.7	261	62	80		3.0	538.120
30		1.7	260	64	80		3.0	541.811
	14:55							
	Stop Time							
		—	—					
AVG.		1.7	258.833	60.833	79	333	3.0	21.756

GRACE CONSULTING, INC.

MOISTURE DATA SHEET

Client: St. Johns Power Park	Date: 12-19-00
Project No.	Operator: Pitrone/Kinter
Sampling Location Unit 2 Outlet	Run No. 9
Barometric Pressure 29.13	Probe Number
Condensate 52	Silica Gel 13.90
Meter Corr. Factor 1.049	Meter Orifice 3.24084 — Meter # Apex 11
Sample Pt. Time 5	Leak Test @ (in. HG) — After @(in. HG)

Sample Point		Delta H	Probe	Imp. Out	Meter In	Meter Out	Vac. Pr (in. HG)	Dry Gas Meter Reading in Cu. Ft.
	Start Time							
								542.001
5	15:50	1.7	255	57	7	5	3.0	545.480
10		1.7	257	59	7	7	3.0	548.960
15		1.7	258	61	7	8	3.0	552.770
20		1.7	259	61	7	9	3.0	556.290
25		1.7	259	63	8	0	3.0	559.810
30		1.7	261	64	8	0	3.0	563.278
	16:20							
	Stop Time							
AVG.					7	8		21.277

GRACE CONSULTING, INC.

MOISTURE DATA SHEET

Client: St. Johns Power Park	Date: 12-19-00
Project No.	Operator: Pitrone/Kinter
Sampling Location Unit 2 Outlet	Run No. 10
Barometric Pressure 29.13	Probe Number
Condensate 50	Silica Gel 14.2
Meter Corr. Factor 1.049	Meter Orifice 3.240 Meter # Apex L1
Sample Pt. Time 5	Leak Test @ (in. HG) After @(in. HG)

Sample Point		Delta H	Probe	Imp. Out	Meter In	Meter Out	Vac. Pr (in. HG)	Dry Gas Meter Reading in Cu. Ft.
	Start Time							
								563.348
5	16:32	1.7	250	50	75		3.0	566.870
10		1.7	253	50	76		3.0	570.710
15		1.7	253	51	77		3.0	574.750
20		1.7	256	51	79		3.0	578.280
25		1.7	258	51	80		3.0	582.048
30		1.7	260	52.	80		3.0	585.867
	17:02							
	Stop Time							
AVG.		1.7	255.00	50.833	77	83 3	3.0	22.519

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GRACE CONSULTING, INC.

MOISTURE DATA SHEET

Client: St. Johns River Power Park	Date: 12-19-00
Project No.	Operator: Pitrone / Kinter
Sampling Location Unit 2 Outlet	Run No. 11 of 12
Barometric Pressure 29.13	Probe Number
Condensate 50	Silica Gel 16.80
Meter Corr. Factor 1.049	Meter Orifice 3.24084 Meter # Apex 11
Sample Pt. Time 5	Leak Test @ (in. HG) After @(in. HG)

Sample Point		Delta H	Probe	Imp. Out	Meter In	Meter Out	Vac. Pr (in. HG)	Dry Gas Meter Reading in Cu. Ft.
	Start Time							
								586.216
5	17:19	1.7	255	50	7	8	2.0	589.700
10		1.7	257	50	7	8	2.0	593.220
15		1.7	250	51	7	8	2.0	587.100
20		1.7	247	51	7	9	2.0	600.750
25		1.7	245	52	7	9	2.0	604.450
30		1.7	245	53.	8	0	2.0	608.281
	17:49							
	Stop Time							
AVG.					78	667		22.065

GRACE CONSULTING, INC.

MOISTURE DATA SHEET

Client: St. Johns River Power Park		Date: 12-19	
Project No.		Operator: Pitrone, Peter	
Sampling Location Unit 2 Outlet		Run No. 13	
Barometric Pressure 29.13		Probe Number	
Condensate 48 mL		Silica Gel 16.5	
Meter Corr. Factor 1.049		Meter Orifice 3.24084	Meter # A Rex 11
Sample Pt. Time 5 min		Leak Test @ (in. HG)	After @(in. HG)

Sample Point		Delta H	Probe	Imp. Out	Meter In	Meter Out	Vac. Pr (in. HG)	Dry Gas Meter Reading in Cu. Ft.
	Start Time							
								608.522
5	18:35	1.7	245	60	78		3.0	612.220
10		1.7	245	60	79		3.0	615.870
15		1.7	248	60	80		3.0	619.530
20		1.7	249	61	80		3.0	623.160
25		1.7	251	62	80		3.0	626.690
30		1.7	252	64	81		3.0	630.355
	19:05							
	Stop Time							
AVG.		1.7	248.333	61.167	79.667		3.0	21.833

JEA - SJRPP
SJRPP
Jacksonville, Florida
Unit 2 Outlet
Run 1

Time	CO2	NOX	O2
12/19/00 10:25	13.77	284.59	6.78
12/19/00 10:26	13.77	284.42	6.78
12/19/00 10:27	13.67	277.91	6.66
12/19/00 10:28	13.70	277.75	6.74
12/19/00 10:29	13.68	283.45	6.74
12/19/00 10:30	13.76	284.51	6.74
12/19/00 10:31	13.68	276.61	6.78
12/19/00 10:32	13.68	280.44	6.72
12/19/00 10:33	13.74	303.39	6.79
12/19/00 10:34	13.68	306.07	6.74
12/19/00 10:35	13.65	309.00	6.74
12/19/00 10:36	13.66	308.68	6.72
12/19/00 10:37	13.73	311.28	6.63
12/19/00 10:38	13.71	311.44	6.64
12/19/00 10:39	13.76	309.33	6.68
12/19/00 10:40	13.72	315.35	6.72
12/19/00 10:41	13.68	316.98	6.66
12/19/00 10:42	13.67	313.31	6.65
12/19/00 10:43	13.69	316.08	6.64
12/19/00 10:44	13.73	316.08	6.61
12/19/00 10:45	13.71	318.60	6.55
12/19/00 10:46	13.72	309.00	6.57
	13.71	300.65	6.69

JEA - SJRPP
SJRPP
Jacksonville, Florida
Unit 2 Outlet
Run 2

Time	CO2	NOX	O2
12/19/00 11:07	13.44	317.87	6.35
12/19/00 11:08	13.49	313.80	6.25
12/19/00 11:09	13.58	324.79	6.12
12/19/00 11:10	13.50	327.07	6.37
12/19/00 11:11	13.48	320.07	6.42
12/19/00 11:12	13.53	318.20	6.31
12/19/00 11:13	13.48	314.78	6.22
12/19/00 11:14	13.60	321.37	6.08
12/19/00 11:15	13.54	318.52	6.21
12/19/00 11:16	13.53	305.18	6.39
12/19/00 11:17	13.59	300.29	6.32
12/19/00 11:18	13.59	296.63	6.33
12/19/00 11:19	13.59	305.91	6.34
12/19/00 11:20	13.54	313.56	6.27
12/19/00 11:21	13.57	307.21	6.16
12/19/00 11:22	13.52	311.12	6.25
12/19/00 11:23	13.51	312.99	6.22
12/19/00 11:24	13.54	310.22	6.18
12/19/00 11:25	13.55	312.83	6.17
12/19/00 11:26	13.51	316.98	6.22
12/19/00 11:27	13.50	323.49	6.34
12/19/00 11:28	13.55	330.81	6.28
	13.53	314.71	6.26

JEA - SJRPP
SJRPP
Jacksonville, Florida
Unit 2 Outlet
Run 3

Time	CO2	NOX	O2
12/19/00 11:48	13.35	325.11	6.34
12/19/00 11:49	13.42	321.37	6.33
12/19/00 11:50	13.44	318.44	6.22
12/19/00 11:51	13.42	316.33	6.23
12/19/00 11:52	13.56	320.72	6.30
12/19/00 11:53	13.41	318.12	6.25
12/19/00 11:54	13.45	319.34	6.22
12/19/00 11:55	13.51	315.67	6.12
12/19/00 11:56	13.54	318.28	6.16
12/19/00 11:57	13.44	317.14	6.20
12/19/00 11:58	13.37	313.64	6.27
12/19/00 11:59	13.56	314.45	6.31
12/19/00 12:00	13.43	317.22	6.23
12/19/00 12:01	13.41	311.04	6.21
12/19/00 12:02	13.47	310.38	6.27
12/19/00 12:03	13.50	312.26	6.41
12/19/00 12:04	13.67	307.94	6.16
12/19/00 12:05	13.64	314.86	6.30
12/19/00 12:06	13.58	309.65	6.31
12/19/00 12:07	13.62	310.71	6.26
12/19/00 12:08	13.64	303.55	6.28
12/19/00 12:09	13.70	305.83	6.21
	13.51	314.64	6.25

JEA - SJRPP
SJRPP
Jacksonville, Florida
Unit 2 Outlet
Run 4

Time	CO2	NOX	O2
12/19/00 12:25	13.84	307.62	6.12
12/19/00 12:26	13.86	306.40	6.03
12/19/00 12:27	13.84	310.64	6.21
12/19/00 12:28	13.73	308.76	6.34
12/19/00 12:29	13.68	302.81	6.35
12/19/00 12:30	13.70	306.48	6.24
12/19/00 12:31	13.59	303.61	6.39
12/19/00 12:32	13.72	301.31	6.26
12/19/00 12:33	13.78	305.06	6.20
12/19/00 12:34	13.76	301.68	6.21
12/19/00 12:35	13.73	304.99	6.24
12/19/00 12:36	13.73	299.48	6.24
12/19/00 12:37	13.74	302.08	6.23
12/19/00 12:38	13.75	304.53	6.20
12/19/00 12:39	13.78	302.99	6.18
12/19/00 12:40	13.64	306.15	6.29
12/19/00 12:41	13.69	305.18	6.29
12/19/00 12:42	13.78	304.04	6.17
12/19/00 12:43	13.70	303.30	6.19
12/19/00 12:44	13.68	301.19	6.25
12/19/00 12:45	13.74	302.25	6.21
12/19/00 12:46	13.62	302.17	6.28
	13.73	304.21	6.23

JEA - SJRPP
SJRPP
Jacksonville, Florida
Unit 2 Outlet
Run 5-1So2

Time	CO2	NOX	O2	SO2
12/19/00 13:07	13.41	311.44	6.28	224.57
12/19/00 13:08	13.35	307.21	6.33	224.01
12/19/00 13:09	13.36	305.83	6.34	223.06
12/19/00 13:10	13.49	305.83	6.24	224.70
12/19/00 13:11	13.42	305.75	6.24	225.65
12/19/00 13:12	13.37	300.62	6.32	223.28
12/19/00 13:13	13.37	308.34	6.32	221.08
12/19/00 13:14	13.42	309.32	6.22	219.14
12/19/00 13:15	13.44	309.24	6.24	220.65
12/19/00 13:16	13.52	304.60	6.19	221.47
12/19/00 13:17	13.48	303.46	6.19	222.46
12/19/00 13:18	13.51	300.69	6.19	221.60
12/19/00 13:19	13.60	307.03	6.09	222.89
12/19/00 13:20	13.49	303.69	6.22	223.11
12/19/00 13:21	13.38	304.75	6.34	220.17
12/19/00 13:22	13.47	308.57	6.25	219.48
12/19/00 13:23	13.48	304.59	6.20	219.83
12/19/00 13:24	13.45	304.75	6.27	220.09
12/19/00 13:25	13.35	308.08	6.36	219.01
12/19/00 13:26	13.37	309.05	6.31	216.38
12/19/00 13:27	13.44	304.09	6.30	219.87
12/19/00 13:28	13.42	302.74	6.32	222.11
	13.44	305.89	6.26	221.57

JEA - SJRPP
SJRPP
Jacksonville, Florida
Unit 2 Outlet
Run 6-2So2

Time	CO2	NOX	O2	SO2
12/19/00 13:47	13.66	305.37	6.31	225.48
12/19/00 13:48	13.75	303.42	6.14	228.02
12/19/00 13:49	13.74	302.12	6.30	228.73
12/19/00 13:50	13.66	305.22	6.16	227.10
12/19/00 13:51	13.72	305.79	6.28	225.33
12/19/00 13:52	13.69	309.70	6.17	223.96
12/19/00 13:53	13.65	310.14	6.28	221.27
12/19/00 13:54	13.61	309.50	6.33	219.85
12/19/00 13:55	13.62	310.96	6.33	216.50
12/19/00 13:56	13.79	309.01	6.14	209.19
12/19/00 13:57	13.76	307.06	6.10	217.46
12/19/00 13:58	13.68	305.11	6.23	218.07
12/19/00 13:59	13.68	304.54	6.24	217.36
12/19/00 14:00	13.65	305.28	6.26	218.88
12/19/00 14:01	13.65	306.01	6.25	220.97
12/19/00 14:02	13.67	310.56	6.24	222.13
12/19/00 14:03	13.68	311.78	6.21	222.59
12/19/00 14:04	13.88	309.58	6.07	224.01
12/19/00 14:05	13.91	308.60	5.97	227.31
12/19/00 14:06	13.78	306.01	6.07	226.04
12/19/00 14:07	13.73	307.15	6.15	225.94
12/19/00 14:08	13.68	309.71	6.25	225.38
	13.71	307.39	6.20	222.34

JEA - SJRPP
SJRPP
Jacksonville, Florida
Unit 2 Outlet
Run 7-3So2

Time	CO2	NOX	O2	SO2
12/19/00 14:25	13.64	305.02	5.90	219.58
12/19/00 14:26	13.55	302.34	6.06	219.53
12/19/00 14:27	13.48	303.80	6.17	215.06
12/19/00 14:28	13.47	303.23	6.14	214.60
12/19/00 14:29	13.36	303.47	6.34	212.22
12/19/00 14:30	13.35	306.97	6.32	208.21
12/19/00 14:31	13.50	304.13	6.11	207.50
12/19/00 14:32	13.47	306.49	6.18	206.13
12/19/00 14:33	13.54	301.11	6.10	208.46
12/19/00 14:34	13.56	302.01	6.06	211.41
12/19/00 14:35	13.58	304.53	6.05	210.49
12/19/00 14:36	13.64	303.72	5.99	210.80
12/19/00 14:37	13.65	304.45	5.95	213.34
12/19/00 14:38	13.60	310.23	6.04	214.71
12/19/00 14:39	13.56	312.51	6.05	217.39
12/19/00 14:40	13.57	308.11	6.18	217.60
12/19/00 14:41	13.61	308.35	5.96	216.33
12/19/00 14:42	13.68	304.04	5.97	219.02
12/19/00 14:43	13.55	309.90	6.10	220.54
12/19/00 14:44	13.59	308.59	6.02	217.29
12/19/00 14:45	13.64	305.26	5.97	218.97
12/19/00 14:46	13.58	303.22	5.99	218.36
12/19/00 14:47	13.55	304.02	6.07	217.65
12/19/00 14:48	13.57	305.54	6.03	218.76
	13.55	305.46	6.07	214.75

JEA - SJRPP
SJRPP
Jacksonville, Florida
Unit 2 Outlet
Run 8-4So2

Time	CO2	NOX	O2	SO2
12/19/00 15:02	13.67	307.61	5.94	214.58
12/19/00 15:03	13.70	309.15	5.95	217.77
12/19/00 15:04	13.75	306.22	5.89	221.00
12/19/00 15:05	13.79	307.69	5.86	221.74
12/19/00 15:06	13.64	315.66	5.53	220.51
12/19/00 15:07	13.89	307.94	5.71	224.87
12/19/00 15:08	13.62	309.15	5.96	227.72
12/19/00 15:09	14.09	306.48	5.56	222.91
12/19/00 15:10	14.13	306.31	5.41	225.07
12/19/00 15:11	14.09	307.78	5.51	222.07
12/19/00 15:12	13.79	307.37	5.55	222.81
12/19/00 15:13	13.86	308.59	5.52	223.79
12/19/00 15:14	13.86	311.19	5.52	225.06
12/19/00 15:15	13.99	313.30	5.64	220.51
12/19/00 15:16	13.91	313.71	5.66	225.02
12/19/00 15:17	13.78	310.54	5.90	220.16
12/19/00 15:18	13.84	307.93	5.61	218.45
12/19/00 15:19	13.82	308.58	5.53	219.72
12/19/00 15:20	13.81	309.88	5.75	217.32
12/19/00 15:21	13.92	309.97	5.69	219.28
12/19/00 15:22	13.89	304.43	5.37	217.96
12/19/00 15:23	13.87	308.83	5.51	222.61
	13.85	309.01	5.66	221.40

JEA - SJRPP
SJRPP
Jacksonville, Florida
Unit 2 Outlet
Run 9-5So2

Time	CO2	NOX	O2	SO2
12/19/00 15:50	14.27	306.07	5.42	223.09
12/19/00 15:51	14.23	308.51	5.59	223.42
12/19/00 15:52	14.12	312.09	5.56	220.07
12/19/00 15:53	14.14	311.20	5.73	217.24
12/19/00 15:54	14.26	306.40	5.55	221.03
12/19/00 15:55	14.15	305.09	5.62	222.42
12/19/00 15:56	14.03	303.47	5.78	220.40
12/19/00 15:57	14.06	302.17	5.76	220.98
12/19/00 15:58	14.13	304.53	5.72	219.40
12/19/00 15:59	13.62	298.10	5.64	225.82
12/19/00 16:00	13.70	300.78	5.47	229.32
12/19/00 16:01	13.56	308.19	5.63	226.69
12/19/00 16:02	13.66	304.93	5.55	230.57
12/19/00 16:03	13.60	304.69	5.63	231.14
12/19/00 16:04	13.62	306.89	5.58	227.16
12/19/00 16:05	13.60	308.68	5.63	228.03
12/19/00 16:06	13.60	311.85	5.60	225.39
12/19/00 16:07	13.63	306.64	5.57	226.40
12/19/00 16:08	13.67	304.44	5.56	229.23
12/19/00 16:09	13.66	306.15	5.56	229.80
12/19/00 16:10	13.66	309.81	5.55	228.99
12/19/00 16:11	13.66	308.27	5.57	230.09
	13.85	306.32	5.60	225.30

JEA - SJRPP
SJRPP
Jacksonville, Florida
Unit 2 Outlet
Run 10 -6so2

Time	CO2	NOX	O2	SO2
12/19/00 16:32	13.75	307.21	5.74	230.06
12/19/00 16:33	13.80	303.96	5.65	230.40
12/19/00 16:34	13.75	304.12	5.74	225.44
12/19/00 16:35	13.78	303.06	5.72	228.15
12/19/00 16:36	13.87	299.64	5.57	228.59
12/19/00 16:37	13.91	296.71	5.56	230.66
12/19/00 16:38	13.81	299.32	5.62	231.52
12/19/00 16:39	13.71	306.80	5.73	227.64
12/19/00 16:40	13.73	301.35	5.73	224.36
12/19/00 16:41	13.77	297.69	5.69	224.70
12/19/00 16:42	13.74	294.92	5.73	225.57
12/19/00 16:43	13.70	296.47	5.79	224.36
12/19/00 16:44	13.68	301.11	5.76	226.60
12/19/00 16:45	13.77	297.77	5.68	225.11
12/19/00 16:46	13.79	300.29	5.65	225.15
12/19/00 16:47	13.72	299.40	5.69	230.56
12/19/00 16:48	13.74	301.11	5.64	229.79
12/19/00 16:49	13.81	299.32	5.70	230.22
12/19/00 16:50	13.87	298.75	5.56	230.43
12/19/00 16:51	13.88	294.27	5.51	228.20
12/19/00 16:52	13.82	299.48	5.64	230.87
12/19/00 16:53	13.79	304.12	5.73	229.49
	13.78	300.31	5.67	228.08

JEA - SJRPP
SJRPP
Jacksonville, Florida
Unit 2 Outlet
Run11-7So2

Time	CO2	NOX	O2	SO2
12/19/00 17:19	13.75	299.48	5.65	220.06
12/19/00 17:20	13.89	303.39	5.47	222.65
12/19/00 17:21	13.84	311.61	5.48	224.28
12/19/00 17:22	13.83	309.57	5.53	226.37
12/19/00 17:23	13.78	315.35	5.60	224.65
12/19/00 17:24	13.68	317.46	5.67	222.97
12/19/00 17:25	13.68	318.36	5.70	224.15
12/19/00 17:26	13.75	313.72	5.62	224.15
12/19/00 17:27	13.77	313.40	5.59	225.15
12/19/00 17:28	13.69	305.58	5.63	228.93
12/19/00 17:29	13.77	312.17	5.55	228.99
12/19/00 17:30	13.78	309.57	5.59	229.54
12/19/00 17:31	13.77	306.64	5.58	229.48
12/19/00 17:32	13.79	307.70	5.56	226.34
12/19/00 17:33	13.72	311.61	5.64	228.84
12/19/00 17:34	13.67	305.01	5.64	227.29
12/19/00 17:35	13.70	305.99	5.67	229.60
12/19/00 17:36	13.72	304.69	5.71	226.68
12/19/00 17:37	13.67	306.80	5.69	227.31
12/19/00 17:38	13.78	302.82	5.57	230.49
12/19/00 17:39	13.74	304.77	5.61	231.26
12/19/00 17:40	13.81	304.77	5.53	229.22
	13.75	308.66	5.60	226.74

JEA - SJRPP
SJRPP
Jacksonville, Florida
Unit 2 Outlet
Run12-8So2

Time	CO2	NOX	O2	SO2
12/19/00 17:59	13.72	310.71	5.47	228.06
12/19/00 18:00	13.68	309.57	5.56	226.11
12/19/00 18:01	13.81	314.05	5.48	225.97
12/19/00 18:02	13.80	323.73	5.43	227.17
12/19/00 18:03	13.66	319.26	5.58	226.11
12/19/00 18:04	13.71	312.26	5.56	224.15
12/19/00 18:05	13.68	315.59	5.60	221.88
12/19/00 18:06	13.71	311.77	5.52	224.60
12/19/00 18:07	13.71	307.29	5.50	225.13
12/19/00 18:08	13.64	308.43	5.63	226.15
12/19/00 18:09	13.62	308.02	5.64	223.40
12/19/00 18:10	13.58	311.12	5.73	224.28
12/19/00 18:11	13.54	316.57	5.84	223.35
12/19/00 18:12	13.47	316.08	5.88	221.53
12/19/00 18:13	13.60	314.78	5.77	220.64
12/19/00 18:14	13.70	312.66	5.49	234.69
12/19/00 18:15	13.63	312.09	5.47	232.55
12/19/00 18:16	13.59	313.64	5.68	223.62
12/19/00 18:17	13.55	312.99	5.72	220.99
12/19/00 18:18	13.62	318.60	5.64	228.28
12/19/00 18:19	13.62	322.84	5.56	229.26
12/19/00 18:20	13.63	319.91	5.70	224.72
12/19/00 18:21	13.63	320.39	5.65	222.28
	13.65	314.45	5.61	225.43

JEA - SJRPP
SJRPP
Jacksonville, Florida
Unit 2 Outlet
Run 9 So2

Time	CO2	O2	SO2
12/19/00 18:35	13.60	5.65	222.71
12/19/00 18:36	13.74	5.56	225.91
12/19/00 18:37	13.69	5.60	226.66
12/19/00 18:38	13.69	5.63	225.77
12/19/00 18:39	13.73	5.57	223.78
12/19/00 18:40	13.76	5.57	224.75
12/19/00 18:41	13.76	5.52	226.05
12/19/00 18:42	13.71	5.57	223.36
12/19/00 18:43	13.70	5.65	222.53
12/19/00 18:44	13.64	5.69	224.26
12/19/00 18:45	13.65	5.64	223.65
12/19/00 18:46	13.65	5.71	223.00
12/19/00 18:47	13.65	5.68	223.47
12/19/00 18:48	13.68	5.65	223.14
12/19/00 18:49	13.66	5.69	223.56
12/19/00 18:50	13.81	5.51	225.46
12/19/00 18:51	13.67	5.63	225.69
12/19/00 18:52	13.58	5.78	225.18
12/19/00 18:53	13.68	5.62	223.51
12/19/00 18:54	13.79	5.46	225.60
12/19/00 18:55	13.75	5.59	225.28
12/19/00 18:56	13.69	5.58	221.61
12/19/00 18:57	13.64	5.72	218.64
	13.69	5.62	224.07

JEA - SJRPP
SJRPP
Jacksonville, Florida
Unit 2 Outlet
Run 10 So2

Time	CO2	SO2
12/19/00 19:13	13.75	218.82
12/19/00 19:14	13.75	219.05
12/19/00 19:15	13.73	222.14
12/19/00 19:16	13.73	222.41
12/19/00 19:17	13.76	224.72
12/19/00 19:18	13.70	223.14
12/19/00 19:19	13.70	224.82
12/19/00 19:20	13.70	223.18
12/19/00 19:21	13.63	222.59
12/19/00 19:22	13.57	220.14
12/19/00 19:23	13.62	220.64
12/19/00 19:24	13.68	222.91
12/19/00 19:25	13.67	221.86
12/19/00 19:26	13.76	220.73
12/19/00 19:27	13.83	223.86
12/19/00 19:28	13.76	224.86
12/19/00 19:29	13.71	222.82
12/19/00 19:30	13.61	221.59
12/19/00 19:31	13.63	223.36
12/19/00 19:32	13.69	222.64
12/19/00 19:33	13.69	218.96
12/19/00 19:34	13.65	221.10
	13.70	222.11

JEA - SJRPP
SJRPP
Jacksonville, Florida
Unit 2 Outlet
Run11-7So2

Time	CO2	NOX	O2	SO2
12/19/00 17:19	13.75	299.48	5.65	220.06
12/19/00 17:20	13.89	303.39	5.47	222.65
12/19/00 17:21	13.84	311.61	5.48	224.28
12/19/00 17:22	13.83	309.57	5.53	226.37
12/19/00 17:23	13.78	315.35	5.60	224.65
12/19/00 17:24	13.68	317.46	5.67	222.97
12/19/00 17:25	13.68	318.36	5.70	224.15
12/19/00 17:26	13.75	313.72	5.62	224.15
12/19/00 17:27	13.77	313.40	5.59	225.15
12/19/00 17:28	13.69	305.58	5.63	228.93
12/19/00 17:29	13.77	312.17	5.55	228.99
12/19/00 17:30	13.78	309.57	5.59	229.54
12/19/00 17:31	13.77	306.64	5.58	229.48
12/19/00 17:32	13.79	307.70	5.56	226.34
12/19/00 17:33	13.72	311.61	5.64	228.84
12/19/00 17:34	13.67	305.01	5.64	227.29
12/19/00 17:35	13.70	305.99	5.67	229.60
12/19/00 17:36	13.72	304.69	5.71	226.68
12/19/00 17:37	13.67	306.80	5.69	227.31
12/19/00 17:38	13.78	302.82	5.57	230.49
12/19/00 17:39	13.74	304.77	5.61	231.26
12/19/00 17:40	13.81	304.77	5.53	229.22
	13.75	308.66	5.60	226.74

Nox Cal Sheet 1

Client	SJRPP	Test Date	12/19/00
	Jacksonville	Project #	00-131
Source Identification	2	Operator	Teague

Calibration Data For Sampling Runs: 1- Gas Type: NOx Span: 1000	Cylinder Number	Cylinder Value % or PPM	Analyzer Response	Absolute Difference % or PPM	Difference % of Span	
Zero Gas		**0.00**	-1.50	-1.50	-0.15	
Mid-Range Gas		**558.00**	555.40	-2.60	-0.26	
High-Range Gas		**875.60**	876.90	1.30	0.13	

Run #: 1 Gas Type: NOx Span: 1000	Analyzer Response	Initial Values System Response	Initial Values System Cal. Bias % of Span	Final Values System Response	Final Values System Cal. Bias % of Span	Drift % of Span
Zero Gas	-1.50	-2.00	-0.05	-0.30	0.12	0.17
Upscale Gas	555.40	553.70	-0.17	559.80	0.44	0.61

Run #: 2 Gas Type: NOx Span: 1000	Analyzer Response	Initial Values System Response	Initial Values System Cal. Bias % of Span	Final Values System Response	Final Values System Cal. Bias % of Span	Drift % of Span
Zero Gas	-1.50	-0.30	0.12	-0.10	0.14	0.02
Upscale Gas	555.40	559.80	0.44	561.40	0.60	0.16

Run #: 3 Gas Type: NOx Span: 1000	Analyzer Response	Initial Values System Response	Initial Values System Cal. Bias % of Span	Final Values System Response	Final Values System Cal. Bias % of Span	Drift % of Span
Zero Gas	-1.50	-0.10	0.14	-1.20	0.03	-0.11
Upscale Gas	555.40	561.40	0.60	558.60	0.32	-0.28

Run #: 4 Gas Type: NOx Span: 1000	Analyzer Response	Initial Values System Response	Initial Values System Cal. Bias % of Span	Final Values System Response	Final Values System Cal. Bias % of Span	Drift % of Span
Zero Gas	-1.50	-1.20	0.03	1.60	0.31	0.28
Upscale Gas	555.40	558.60	0.32	553.60	-0.18	-0.50

Nox Cal Sheet 2

Client	SJRPP	Test Date	12/19/00
	Jacksonville	Project #	00-131
Source Identification	2	Operator	Teague

Run #:	5		Initial Values		Final Values		
Gas Type:	NOx	Analyzer	System	System	System	System	
Span:	1000	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		-1.50	1.60	0.31	1.20	0.27	-0.04
Upscale Gas		555.40	553.60	-0.18	552.40	-0.30	-0.12

Run #:	6		Initial Values		Final Values		
Gas Type:	NOx	Analyzer	System	System	System	System	
Span:	1000	Response	Response	Cal. Bias % of Span		Cal. Bias % of Span	Drift % of Span
Zero Gas		-1.50	1.20	0.27	2.70	0.42	0.15
Upscale Gas		555.40	552.40	-0.30	559.30	0.39	0.69

Run #:	7		Initial Values		Final Values		
Gas Type:	NOx	Analyzer	System	System	System	System	
Span:	1000	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		-1.50	2.70	0.42	1.30	0.28	-0.14
Upscale Gas		555.40	559.30	0.39	555.80	0.04	-0.35

Run #:	8		Initial Values		Final Values		
Gas Type:	NOx	Analyzer	System	System	System	System	
Span:	1000	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		-1.50	1.30	0.28	2.10	0.36	0.08
Upscale Gas		555.40	555.80	0.04	560.40	0.50	0.46

$$\text{System Calibration Bias} = \frac{\text{System Cal. Response - Analyzer Cal. Response}}{\text{Span}} \times 100$$

$$\text{Drift} = \frac{\text{Final System Cal. Response - Initial System Cal. Response}}{\text{Span}} \times 100$$

Nox Cal Sheet 3

Client	SJRPP	Test Date	12/19/00
	Jacksonville	Project #	00-131
Source Identification	2	Operator	Teague

Run #:	9		Initial Values		Final Values		
Gas Type:	NOx	Analyzer	System	System	System	System	
Span:	1000	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		-1.50	2.10	0.36	2.30	0.38	0.02
Upscale Gas		555.40	560.40	0.50	561.40	0.60	0.10

Run #:	10		Initial Values		Final Values		
Gas Type:	NOx	Analyzer	System	System	System	System	
Span:	1000	Response	Response	Cal. Bias % of Span		Cal. Bias % of Span	Drift % of Span
Zero Gas		-1.50	2.30	0.38	2.00	0.35	-0.03
Upscale Gas		555.40	561.40	0.60	562.12	0.67	0.07

Run #:	11		Initial Values		Final Values		
Gas Type:	NOx	Analyzer	System	System	System	System	
Span:	1000	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		-1.50	2.00	0.35	3.90	0.54	0.19
Upscale Gas		555.40	562.12	0.67	558.10	0.27	-0.40

Run #:	12		Initial Values		Final Values		
Gas Type:	NOx	Analyzer	System	System	System	System	
Span:	1000	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		-1.50	3.90	0.54	3.20	0.47	-0.07
Upscale Gas		555.40	558.10	0.27	562.90	0.75	0.48

$$\text{System Calibration Bias} = \frac{\text{System Cal. Response - Analyzer Cal. Response}}{\text{Span}} \times 100$$

$$\text{Drift} = \frac{\text{Final System Cal. Response - Initial System Cal. Response}}{\text{Span}} \times 100$$

Co2 Cal Sheet 1

Client	SJRPP	Test Date	12/19/00
	Jacksonville	Project #	00-131
Source Identification	2	Operator	Teague

Calibration Data For Sampling Runs: 1- Gas Type: CO2 Span: 20	Cylinder Number	Cylinder Value % or PPM	Analyzer Response	Absolute Difference % or PPM	Difference % of Span	
Zero Gas		**0.00**	0.05	0.05	0.25	
Low-Range Gas				0.00	0.00	
Mid-Range Gas		**11.13**	11.06	-0.07	-0.35	
High-Range Gas		**18.06**	18.10	0.04	0.20	

Run #: 1 Gas Type: CO2 Span: 20	Analyzer Response	Initial Values		Final Values		Drift % of Span
		System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	
Zero Gas	0.05	0.09	0.20	0.07	0.10	-0.10
Upscale Gas	11.06	11.00	-0.30	11.10	0.20	0.50

Run #: 2 Gas Type: CO2 Span: 20	Analyzer Response	Initial Values		Final Values		Drift % of Span
		System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	
Zero Gas	0.05	0.07	0.10	0.08	0.15	0.05
Upscale Gas	11.06	11.10	0.20	11.04	-0.10	-0.30

Run #: 3 Gas Type: CO2 Span: 20	Analyzer Response	Initial Values		Final Values		Drift % of Span
		System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	
Zero Gas	0.05	0.08	0.15	0.09	0.20	0.05
Upscale Gas	11.06	11.04	-0.10	11.08	0.10	0.20

Run #: 4 Gas Type: CO2 Span: 20	Analyzer Response	Initial Values		Final Values		Drift % of Span
		System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	
Zero Gas	0.05	0.09	0.20	0.12	0.35	0.15
Upscale Gas	11.06	11.08	0.10	11.10	0.20	0.10

Co2 Cal Sheet 2

Client	SJRPP	Test Date	12/19/00
	Jacksonville	Project #	00-131
Source Identification	2	Operator	Teague

Run #:	5		Initial Values		Final Values		
Gas Type:	CO2	Analyzer	System	System	System	System	
Span:	20	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		0.05	0.12	0.35	0.09	0.20	-0.15
Upscale Gas		11.06	11.10	0.20	11.05	-0.05	-0.25

Run #:	6		Initial Values		Final Values		
Gas Type:	CO2	Analyzer	System	System	System	System	
Span:	20	Response	Response	Cal. Bias % of Span		Cal. Bias % of Span	Drift % of Span
Zero Gas		0.05	0.09	0.20	0.12	0.35	0.15
Upscale Gas		11.06	11.05	-0.05	11.09	0.15	0.20

Run #:	7		Initial Values		Final Values		
Gas Type:	CO2	Analyzer	System	System	System	System	
Span:	20	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		0.05	0.12	0.35	0.13	0.40	0.05
Upscale Gas		11.06	11.09	0.15	11.04	-0.10	-0.25

Run #:	8		Initial Values		Final Values		
Gas Type:	CO2	Analyzer	System	System	System	System	
Span:	20	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		0.05	0.13	0.40	0.14	0.45	0.05
Upscale Gas		11.06	11.04	-0.10	11.09	0.15	0.25

$$\text{System Calibration Bias} = \frac{\text{System Cal. Response - Analyzer Cal. Response}}{\text{Span}} \times 100$$

$$\text{Drift} = \frac{\text{Final System Cal. Response - Initial System Cal. Response}}{\text{Span}} \times 100$$

Co2 Cal Sheet 3

Client	SJRPP	Test Date	12/19/00
	Jacksonville	Project #	00-131
Source Identification	2	Operator	Teague

Run #:	9		Initial Values		Final Values		
Gas Type:	CO2	Analyzer	System	System	System	System	
Span:	20	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		0.05	0.14	0.45	0.12	0.35	-0.10
Upscale Gas		11.06	11.09	0.15	11.14	0.40	0.25

Run #:	10		Initial Values		Final Values		
Gas Type:	CO2	Analyzer	System	System	System	System	
Span:	20	Response	Response	Cal. Bias % of Span		Cal. Bias % of Span	Drift % of Span
Zero Gas		0.05	0.12	0.35	0.10	0.25	-0.10
Upscale Gas		11.06	11.14	0.40	11.16	0.50	0.10

Run #:	11		Initial Values		Final Values		
Gas Type:	CO2	Analyzer	System	System	System	System	
Span:	20	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		0.05	0.10	0.25	0.10	0.25	0.00
Upscale Gas		11.06	11.16	0.50	11.04	-0.10	-0.60

Run #:	12		Initial Values		Final Values		
Gas Type:	CO2	Analyzer	System	System	System	System	
Span:	20	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		0.05	0.10	0.25	0.11	0.30	0.05
Upscale Gas		11.06	11.04	-0.10	11.02	-0.20	-0.10

$$\text{System Calibration Bias} = \frac{\text{System Cal. Response - Analyzer Cal. Response}}{\text{Span}} \times 100$$

$$\text{Drift} = \frac{\text{Final System Cal. Response - Initial System Cal. Response}}{\text{Span}} \times 100$$

O2 Cal Sheet 1

Client	SJRPP	Test Date	12/19/00
	Jacksonville	Project #	00-131
Source Identification	2	Operator	Teague

Calibration Data For Sampling Runs: 1- Gas Type: O2 Span: 25	Cylinder Number	Cylinder Value % or PPM	Analyzer Response	Absolute Difference % or PPM	Difference % of Span	
Zero Gas		**0.00**	0.20	0.20	0.80	
Low-Range Gas				0.00	0.00	
Mid-Range Gas		**12.07**	12.00	-0.07	-0.28	
High-Range Gas		**21.90**	21.75	-0.15	-0.60	

Run #: 1 Gas Type: O2 Span: 25	Analyzer Response	Initial Values		Final Values		Drift % of Span
		System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	
Zero Gas	0.20	0.07	-0.52	0.10	-0.40	0.12
Upscale Gas	12.00	11.98	-0.08	11.97	-0.12	-0.04

Run #: 2 Gas Type: O2 Span: 25	Analyzer Response	Initial Values		Final Values		Drift % of Span
		System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	
Zero Gas	0.20	0.10	-0.40	0.01	-0.76	-0.36
Upscale Gas	12.00	11.97	-0.12	11.97	-0.12	0.00

Run #: 3 Gas Type: O2 Span: 25	Analyzer Response	Initial Values		Final Values		Drift % of Span
		System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	
Zero Gas	0.20	0.01	-0.76	0.01	-0.76	0.00
Upscale Gas	12.00	11.97	-0.12	11.98	-0.08	0.04

Run #: 4 Gas Type: O2 Span: 25	Analyzer Response	Initial Values		Final Values		Drift % of Span
		System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	
Zero Gas	0.20	0.01	-0.76	0.01	-0.76	0.00
Upscale Gas	12.00	11.98	-0.08	11.99	-0.04	0.04

O2 Cal Sheet 2

Client	SJRPP	Test Date	12/19/00
	Jacksonville	Project #	00-131
Source Identification	2	Operator	Teague

Run #:	5		Initial Values		Final Values		
Gas Type:	O2	Analyzer	System	System	System	System	
Span:	25	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		0.20	0.01	-0.76	0.04	-0.64	0.12
Upscale Gas		12.00	11.99	-0.04	11.96	-0.16	-0.12

Run #:	6		Initial Values		Final Values		
Gas Type:	O2	Analyzer	System	System	System	System	
Span:	25	Response	Response	Cal. Bias % of Span		Cal. Bias % of Span	Drift % of Span
Zero Gas		0.20	0.04	-0.64	0.02	-0.72	-0.08
Upscale Gas		12.00	11.96	-0.16	11.95	-0.20	-0.04

Run #:	7		Initial Values		Final Values		
Gas Type:	O2	Analyzer	System	System	System	System	
Span:	25	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		0.20	0.02	-0.72	0.01	-0.76	-0.04
Upscale Gas		12.00	11.95	-0.20	11.91	-0.36	-0.16

Run #:	8		Initial Values		Final Values		
Gas Type:	O2	Analyzer	System	System	System	System	
Span:	25	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		0.20	0.01	-0.76	-0.02	-0.88	-0.12
Upscale Gas		12.00	11.91	-0.36	11.94	-0.24	0.12

$$\text{System Calibration Bias} = \frac{\text{System Cal. Response - Analyzer Cal. Response}}{\text{Span}} \times 100$$

$$\text{Drift} = \frac{\text{Final System Cal. Response - Initial System Cal. Response}}{\text{Span}} \times 100$$

O2 Cal Sheet 3

Client	SJRPP	Test Date	12/19/00
	Jacksonville	Project #	00-131
Source Identification	2	Operator	Teague

Run #:	9		Initial Values		Final Values		
Gas Type:	O2	Analyzer	System	System	System	System	
Span:	25	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		0.20	-0.02	-0.88	-0.05	-1.00	-0.12
Upscale Gas		12.00	11.94	-0.24	11.92	-0.32	-0.08

Run #:	10		Initial Values		Final Values		
Gas Type:	O2	Analyzer	System	System	System	System	
Span:	25	Response	Response	Cal. Bias % of Span		Cal. Bias % of Span	Drift % of Span
Zero Gas		0.20	-0.05	-1.00	-0.06	-1.04	-0.04
Upscale Gas		12.00	11.92	-0.32	11.90	-0.40	-0.08

Run #:	11		Initial Values		Final Values		
Gas Type:	O2	Analyzer	System	System	System	System	
Span:	25	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		0.20	-0.06	-1.04	0.02	-0.72	0.32
Upscale Gas		12.00	11.90	-0.40	11.87	-0.52	-0.12

Run #:	12		Initial Values		Final Values		
Gas Type:	O2	Analyzer	System	System	System	System	
Span:	25	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		0.20	0.02	-0.72	0.03	-0.68	0.04
Upscale Gas		12.00	11.87	-0.52	11.86	-0.56	-0.04

$$\text{System Calibration Bias} = \frac{\text{System Cal. Response - Analyzer Cal. Response}}{\text{Span}} \times 100$$

$$\text{Drift} = \frac{\text{Final System Cal. Response - Initial System Cal. Response}}{\text{Span}} \times 100$$

So2 Cal Sheet 1

Client	SJRPP	Test Date	12/19/00
	Jacksonville	Project #	00-131
Source Identification	2	Operator	Teague

Calibration Data For Sampling Runs: 1- Gas Type: SO2 Span: 500	Cylinder Number	Cylinder Value % or PPM	Analyzer Response	Absolute Difference % or PPM	Difference % of Span	
Zero Gas		**0.00**	1.30	1.30	0.26	
Low-Range Gas				0.00	0.00	
Mid-Range Gas		**257.10**	256.35	-0.75	-0.15	
High-Range Gas		**525.00**	522.40	-2.60	-0.52	

Run #: 1 Gas Type: SO2 Span: 500	Analyzer Response	Initial Values		Final Values		Drift % of Span
		System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	
Zero Gas	1.30	3.50	0.44	2.10	0.16	-0.28
Upscale Gas	256.35	258.20	0.37	255.80	-0.11	-0.48

Run #: 2 Gas Type: SO2 Span: 500	Analyzer Response	Initial Values		Final Values		Drift % of Span
		System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	
Zero Gas	1.30	2.10	0.16	2.60	0.26	0.10
Upscale Gas	256.35	255.80	-0.11	256.28	-0.01	0.10

Run #: 3 Gas Type: SO2 Span: 500	Analyzer Response	Initial Values		Final Values		Drift % of Span
		System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	
Zero Gas	1.30	2.60	0.26	1.50	0.04	-0.22
Upscale Gas	256.35	256.28	-0.01	257.60	0.25	0.26

Run #: 4 Gas Type: SO2 Span: 500	Analyzer Response	Initial Values		Final Values		Drift % of Span
		System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	
Zero Gas	1.30	1.50	0.04	2.80	0.30	0.26
Upscale Gas	256.35	257.60	0.25	258.30	0.39	0.14

So2 Cal Sheet 2

Client	SJRPP	Test Date	12/19/00
	Jacksonville	Project #	00-131
Source Identification	2	Operator	Teague

Run #:	5		Initial Values		Final Values		
Gas Type:	SO2	Analyzer	System	System	System	System	
Span:	500	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		1.30	2.80	0.30	2.70	0.28	-0.02
Upscale Gas		256.35	258.30	0.39	259.20	0.57	0.18

Run #:	6		Initial Values		Final Values		
Gas Type:	SO2	Analyzer	System	System	System	System	
Span:	500	Response	Response	Cal. Bias % of Span		Cal. Bias % of Span	Drift % of Span
Zero Gas		1.30	2.70	0.28	2.00	0.14	-0.14
Upscale Gas		256.35	259.20	0.57	258.10	0.35	-0.22

Run #:	7		Initial Values		Final Values		
Gas Type:	SO2	Analyzer	System	System	System	System	
Span:	500	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		1.30	2.00	0.14	2.90	0.32	0.18
Upscale Gas		256.35	258.10	0.35	260.10	0.75	0.40

Run #:	8		Initial Values		Final Values		
Gas Type:	SO2	Analyzer	System	System	System	System	
Span:	500	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		1.30	2.90	0.32	3.40	0.42	0.10
Upscale Gas		256.35	260.10	0.75	258.20	0.37	-0.38

$$\text{System Calibration Bias} = \frac{\text{System Cal. Response - Analyzer Cal. Response}}{\text{Span}} \times 100$$

$$\text{Drift} = \frac{\text{Final System Cal. Response - Initial System Cal. Response}}{\text{Span}} \times 100$$

So2 Cal Sheet 3

Client	SJRPP	Test Date	12/19/00
	Jacksonville	Project #	00-131
Source Identification	2	Operator	Teague

Run #: 9		Initial Values		Final Values		
Gas Type: SO2	Analyzer	System	System	System	System	
Span: 500	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas	1.30	3.40	0.42	2.80	0.30	-0.12
Upscale Gas	256.35	258.20	0.37	257.20	0.17	-0.20

Run #: 10		Initial Values		Final Values		
Gas Type: SO2	Analyzer	System	System	System	System	
Span: 500	Response	Response	Cal. Bias % of Span		Cal. Bias % of Span	Drift % of Span
Zero Gas	1.30	2.80	0.30	2.50	0.24	-0.06
Upscale Gas	256.35	257.20	0.17	258.10	0.35	0.18

Run #: 11		Initial Values		Final Values		
Gas Type: SO2	Analyzer	System	System	System	System	
Span: 500	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas	1.30	2.50	0.24	0.00	-0.26	-0.50
Upscale Gas	256.35	258.10	0.35	0.00	-51.27	-51.62

Run #: 12		Initial Values		Final Values		
Gas Type: SO2	Analyzer	System	System	System	System	
Span: 500	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas	1.30	0.00	-0.26	0.00	-0.26	0.00
Upscale Gas	256.35	0.00	-51.27	0.00	-51.27	0.00

$$\text{System Calibration Bias} = \frac{\text{System Cal. Response - Analyzer Cal. Response}}{\text{Span}} \times 100$$

$$\text{Drift} = \frac{\text{Final System Cal. Response - Initial System Cal. Response}}{\text{Span}} \times 100$$

Co2 Cal Sheet 1

Client	SJRPP	Test Date	12/19/00
	Jacksonville	Project #	00-131
Source Identification	2	Operator	Teague

For use with SO2

Calibration Data For Sampling Runs: 1- Gas Type: CO2 Span: 20	Cylinder Number	Cylinder Value % or PPM	Analyzer Response	Absolute Difference % or PPM	Difference % of Span	
Zero Gas		**0.00**	0.05	0.05	0.25	
Low-Range Gas				0.00	0.00	
Mid-Range Gas		**11.13**	11.06	-0.07	-0.35	
High-Range Gas		**18.06**	18.10	0.04	0.20	

Run #: 1 Gas Type: CO2 Span: 20	Analyzer Response	Initial Values		Final Values		Drift % of Span
		System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	
Zero Gas	0.05	0.12	0.35	0.09	0.20	-0.15
Upscale Gas	11.06	11.10	0.20	11.05	-0.05	-0.25

Run #: 2 Gas Type: CO2 Span: 20	Analyzer Response	Initial Values		Final Values		Drift % of Span
		System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	
Zero Gas	0.05	0.09	0.20	0.12	0.35	0.15
Upscale Gas	11.06	11.05	-0.05	11.09	0.15	0.20

Run #: 3 Gas Type: CO2 Span: 20	Analyzer Response	Initial Values		Final Values		Drift % of Span
		System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	
Zero Gas	0.05	0.12	0.35	0.13	0.40	0.05
Upscale Gas	11.06	11.09	0.15	11.04	-0.10	-0.25

Run #: 4 Gas Type: CO2 Span: 20	Analyzer Response	Initial Values		Final Values		Drift % of Span
		System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	
Zero Gas	0.05	0.13	0.40	0.14	0.45	0.05
Upscale Gas	11.06	11.04	-0.10	11.09	0.15	0.25

Co2 Cal Sheet 2

Client	SJRPP	Test Date	12/19/00
	Jacksonville	Project #	00-131
Source Identification	2	Operator	Teague

Run #:	5		Initial Values		Final Values		
Gas Type:	CO2	Analyzer	System	System	System	System	
Span:	20	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		0.05	0.14	0.45	0.12	0.35	-0.10
Upscale Gas		11.06	11.09	0.15	11.14	0.40	0.25

Run #:	6		Initial Values		Final Values		
Gas Type:	CO2	Analyzer	System	System	System	System	
Span:	20	Response	Response	Cal. Bias % of Span		Cal. Bias % of Span	Drift % of Span
Zero Gas		0.05	0.12	0.35	0.10	0.25	-0.10
Upscale Gas		11.06	11.14	0.40	11.16	0.50	0.10

Run #:	7		Initial Values		Final Values		
Gas Type:	CO2	Analyzer	System	System	System	System	
Span:	20	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		0.05	0.10	0.25	0.10	0.25	0.00
Upscale Gas		11.06	11.16	0.50	11.04	-0.10	-0.60

Run #:	8		Initial Values		Final Values		
Gas Type:	CO2	Analyzer	System	System	System	System	
Span:	20	Response	Response	Cal. Bias % of Span	Response	Cal. Bias % of Span	Drift % of Span
Zero Gas		0.05	0.10	0.25	0.11	0.30	0.05
Upscale Gas		11.06	11.04	-0.10	11.02	-0.20	-0.10

$$\text{System Calibration Bias} = \frac{\text{System Cal. Response - Analyzer Cal. Response}}{\text{Span}} \times 100$$

$$\text{Drift} = \frac{\text{Final System Cal. Response - Initial System Cal. Response}}{\text{Span}} \times 100$$

Co2 Cal Sheet 3

Client	SJRPP	Test Date	12/19/00
	Jacksonville	Project #	00-131
Source Identification	2	Operator	Teague

Run #: 9		Initial Values		Final Values		
Gas Type: CO2	Analyzer Response	System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	Drift % of Span
Span: 20						
Zero Gas	0.05	0.11	0.30	0.12	0.35	0.05
Upscale Gas	11.06	11.02	-0.20	11.05	-0.05	0.15

Run #: 10		Initial Values		Final Values		
Gas Type: CO2	Analyzer Response	System Response	System Cal. Bias % of Span	System	System Cal. Bias % of Span	Drift % of Span
Span: 20						
Zero Gas	0.05	0.12	0.35	0.13	0.40	0.05
Upscale Gas	11.06	11.05	-0.05	11.07	0.05	0.10

Run #: 11		Initial Values		Final Values		
Gas Type: CO2	Analyzer Response	System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	Drift % of Span
Span: 20						
Zero Gas	0.05	0.13	0.40	0.00	-0.25	-0.65
Upscale Gas	11.06	11.07	0.05	0.00	-55.30	-55.35

Run #: 12		Initial Values		Final Values		
Gas Type: CO2	Analyzer Response	System Response	System Cal. Bias % of Span	System Response	System Cal. Bias % of Span	Drift % of Span
Span: 20						
Zero Gas	0.05	0.00	-0.25	0.00	-0.25	0.00
Upscale Gas	11.06	0.00	-55.30	0.00	-55.30	0.00

$$\text{System Calibration Bias} = \frac{\text{System Cal. Response - Analyzer Cal. Response}}{\text{Span}} \times 100$$

$$\text{Drift} = \frac{\text{Final System Cal. Response - Initial System Cal. Response}}{\text{Span}} \times 100$$

Grace Consulting, Inc.
EPA Method 5
522 Series Meter Box Calibration
Calibration Orifice Method
English Meter Box Units, English K' Factor

Date:	12/14/00
Model:	Apex
Serial:	11

Barometric Pressure:	29.45	(in Hg)
Theoretical Critical Vacuum:	13.89	(in Hg)

IMPORTANT For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.
IMPORTANT The Critical Orifice Coefficient, K', must be entered in English units, (ft)^3*(deg R)^0.5/((in.Hg)*(min)).

DRY GAS METER READINGS							Critical Orifice Readings					
										AMBIENT TEMPERATURE		
dH (in H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Temp Initial (deg F)	Temp Final (deg F)	Orifice Serial #	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
0.62	10	414.5	418.814	4.314	60	61	48	0.3449	14	60	60	60
1.1	10	418.94	424.623	5.683	61	62	55	0.4595	14	60	60	60
1.8	10	425.033	432.415	7.382	62	63	63	0.5958	14	60	60	60
3.3	10	432.919	442.978	10.059	63	64	73	0.8215	12	60	60	60
4.9	10	443.008	455.402	12.394	64	65	81	1.0185	10	60	60	60

CORRECTED VOLUME		DRY GAS METER CALIBRATION FACTOR Y		ORIFICE CALIBRATION FACTOR dH@	
DRY GAS METER Vm(std) (cu ft)	ORIFICE Vcr(std) (cu ft)	Value	Variation	Value (in H20)	Variation (in H20)
4.312	4.454	1.033	-0.014	1.758	0.039
5.677	5.934	1.045	-0.002	1.757	0.039
7.373	7.695	1.044	-0.003	1.710	-0.008
10.064	10.609	1.054	0.0072	1.649	-0.069
12.426	13.154	1.059	0.0116	1.593	-0.125
		Average	1.047	Average	1.719

Orifice for Calc.
3.24084

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.

For Orifice Calibration Factor dH@, the orifice differential pressure in inches of H20 that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +-0.2.

SIGNED: [signature] Date: 12-14-00

$$V_{m(std)} = 17.64\,(V_m)\frac{P_b + \frac{\Delta H}{13.6}}{t_m + 460}$$

$$V_{cr(std)} = K'\frac{P_b\theta}{\sqrt{t_{amb} + 460}}$$

$$Y = \frac{V_{cr(std)}}{V_{m(std)}}$$

$$\Delta H_@ = \Delta H\left(\frac{.75\theta}{V_{cr(std)}}\right)^2$$

RATA CLASS

Dual-Analyzed Calibration Standard

INSTALLED 8/17/00

Scott Specialty Gases
1750 EAST CLUB BLVD,DURHAM,NC 27704 Phone: 919-220-0803 Fax: 919-220-0808

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

Assay Laboratory

SCOTT SPECIALTY GASES
1750 EAST CLUB BLVD
DURHAM,NC 27704

P.O. No.: 17556
Project No.: 12-38356-001

Customer
JEA 11201 NEW BERLIN ROAD

ATTEN OP DEPT BLDG1
ST JOHNS RIVER POWER PARK
PO BOX 4910
JACKSONVILLE FL 32201-4910

ANALYTICAL INFORMATION

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

Cylinder Number: ALM046485 **Certification Date:** 5/17/00 **Exp. Date:** 5/17/2002
Cylinder Pressure*:** 2015 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY**	TRACEABILITY
CARBON DIOXIDE	11.13	%	+/- 1%	Direct NIST and NMi
CARBON MONOXIDE	1,079.4	PPM	+/- 1%	Direct NIST and NMi
NITRIC OXIDE	558.0	PPM	+/- 1%	Direct NIST and NMi
SULFUR DIOXIDE *	1,978	PPM	+/- 1%	Direct NIST and NMi
NITROGEN - OXYGEN FREE		BALANCE		
TOTAL OXIDES OF NITROGEN	559.0	PPM		Reference Value Only

*** Do not use when cylinder pressure is below 150 psig.
** Analytical accuracy is based on the requirements of EPA Protocal procedure G1, September 1997.
Product certified as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.
* This Protocol has been certified using corrected NIST SO2 standard values, per EPA guidance dated 7/24/96 and will not correlate with uncorrected Protocols.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1800	1/01/04	A9806	18.05 %	CARBON DIOXIDE
NTRM 2637	4/03/03	ALM023773	2547. PPM	CARBON MONOXIDE
NTRM1687	3/01/03	ALM009632	1000. PPM	NO/N2
NTRM1696	8/01/02	ALM057905	3131. PPM	SO2/N2

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
VARIAN GC/3400/0160-CO2	05/17/00	GC / TCD
VARIAN/3400/16804-CO	05/02/00	GC
FTIR System/8220/AAB9400252	04/18/00	Scott Enhanced FTIR
FTIR System/8220/AAB9400252	04/18/00	Scott Enhanced FTIR

ANALYZER READINGS

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

CARBON DIOXIDE

First Triad Analysis

Date:05/17/00 Response Unit:PCT
Z1 = 0.0000 R1 = 941429 T1 = 580923
R2 = 943276 Z2 = 0.0000 T2 = 579935
Z3 = 0.0000 T3 = 582550 R3 = 942253
Avg. Concentration: 11.13 %

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 0.999990 1800
Constants: A = 0.000000
B = 1.000000 C = 0.000000
D = 0.000000 E = 0.000000

CARBON MONOXIDE

First Triad Analysis

Date:05/09/00 Response Unit:PPM
Z1 = 0.0000 R1 = 68819. T1 = 28974.
R2 = 68525. Z2 = 0.0000 T2 = 28804.
Z3 = 0.0000 T3 = 28857. R3 = 68462.
Avg. Concentration: 1072. PPM

Second Triad Analysis

Date:05/17/00 Response Unit: PPM
Z1 = 0.0000 R1 = 68252. T1 = 29099.
R2 = 68287. Z2 = 0.0000 T2 = 29169.
Z3 = 0.0000 T3 = 29159. R3 = 68399.
Avg. Concentration: 1087. PPM

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 0.999990 2637
Constants: A = 0.000000
B = 1.000000 C = 0.000000
D = 0.000000 E = 0.000000

NITRIC OXIDE

First Triad Analysis

Date:05/09/00 Response Unit:PPM
Z1 = 0.2318 R1 = 1000.4 T1 = 558.96
R2 = 1000.3 Z2 = 0.4172 T2 = 558.30
Z3 = 0.3187 T3 = 558.31 R3 = 999.27
Avg. Concentration: 558.5 PPM

Second Triad Analysis

Date:05/16/00 Response Unit: PPM
Z1 = 0.1548 R1 = 1000.5 T1 = 557.85
R2 = 997.39 Z2 = 0.3364 T2 = 556.90
Z3 = 0.5171 T3 = 557.93 R3 = 1002.1
Avg. Concentration: 557.6 PPM

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 0.999990
Constants: A = 0.000000
B = 1.000000 C = 0.000000
D = 0.000000 E = 0.000000

RATA CLASS

Dual-Analyzed Calibration Standard

Scott Specialty Gases
1750 EAST CLUB BLVD,DURHAM,NC 27704 Phone: 919-220-0803 Fax: 919-220-0808

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

Assay Laboratory

SCOTT SPECIALTY GASES
1750 EAST CLUB BLVD
DURHAM,NC 27704

P.O. No.: 17556
Project No.: 12-38356-001

Customer
JEA 11201 NEW BERLIN ROAD

ATTEN OP DEPT BLDG1
ST JOHNS RIVER POWER PARK
PO BOX 4910
JACKSONVILLE FL 32201-4910

ANALYTICAL INFORMATION

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

Cylinder Number: ALM046485 **Certification Date:** 5/17/00 **Exp. Date:** 5/17/2002
Cylinder Pressure*:** 2015 PSIG

ANALYZER READINGS

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

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

SULFUR DIOXIDE

First Triad Analysis			Second Triad Analysis			Calibration Curve	
Date:05/09/00	Response Unit:PPM		Date:05/16/00	Response Unit: PPM		Concentration = A + Bx + Cx2 + Dx3 + Ex4	
Z1 = 0.4468	R1 = 3134.7	T1 = 1980.6	Z1 = -0.415	R1 = 3138.4	T1 = 1977.9	r = 0.999990	
R2 = 3128.7	Z2 = 0.5359	T2 = 1980.9	R2 = 3126.8	Z2 = 4.9264	T2 = 1974.4	Constants:	A = 0.000000
Z3 = 3.1523	T3 = 1981.4	R3 = 3129.6	Z3 = 4.6126	T3 = 1974.5	R3 = 3127.7	B = 1.000000	C = 0.000000
Avg. Concentration:	1981.	PPM	Avg. Concentration:	1975.	PPM	D = 0.000000	E = 0.000000

APPROVED BY: _____
B. M. Becton

Scott Specialty Gases

1750 EAST CLUB BLVD,DURHAM,NC 27704 Phone: 919-220-0803 Fax: 919-220-0808

RATA CLASS

Dual-Analyzed Calibration Standard

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

Assay Laboratory

SCOTT SPECIALTY GASES
1750 EAST CLUB BLVD
DURHAM,NC 27704

P.O. No.: 17556
Project No.: 12-38356-002

Customer
JEA 11201 NEW BERLIN ROAD

ATTEN OP DEPT BLDG1
ST JOHNS RIVER POWER PARK
PO BOX 4910
JACKSONVILLE FL 32201-4910

ANALYTICAL INFORMATION

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

Cylinder Number: AAL9543 **Certification Date:** 5/17/00 **Exp. Date:** 5/17/2002
Cylinder Pressure*:** 2015 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY**	TRACEABILITY
CARBON DIOXIDE	18.06	%	+/- 1%	Direct NIST and NMi
CARBON MONOXIDE	1,687.00	PPM	+/- 1%	Direct NIST and NMi
NITRIC OXIDE	875.6	PPM	+/- 1%	Direct NIST and NMi
SULFUR DIOXIDE *	3,045	PPM	+/- 1%	Direct NIST and NMi
NITROGEN - OXYGEN FREE		BALANCE		
TOTAL OXIDES OF NITROGEN	876.0	PPM		Reference Value Only

*** Do not use when cylinder pressure is below 150 psig.
** Analytical accuracy is based on the requirements of EPA Protocol procedure G1, September 1997. Product certified es +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.
* This Protocol has been certified using corrected NIST SO2 standard values, per EPA guidance dated 7/24/96 and will not correlate with uncorrected Protocols.

EFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1800	1/01/04	A9806	18.05 %	CARBON DIOXIDE
NTRM 2637	4/03/03	ALM023773	2547. PPM	CARBON MONOXIDE
NTRM1687	3/01/03	ALM009632	1000. PPM	NO/N2
NTRM1696	8/01/02	ALM057905	3131. PPM	SO2/N2

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
VARIAN GC/3400/0160-CO2	05/17/00	GC / TCD
VARIAN/3400/16804-CO	05/02/00	GC
FTIR System/8220/AAB9400252	04/18/00	Scott Enhanced FTIR
FTIR System/8220/AAB9400252	04/18/00	Scott Enhanced 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

Date:05/17/00 Response Unit:PCT
Z1 = 0.0000 R1 = 941429 T1 = 943564
R2 = 943276 Z2 = 0.0000 T2 = 940880
Z3 = 0.0000 T3 = 944719 R3 = 942253
Avg. Concentration: 18.06 %

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 0.999990 1800
Constants: A = 0.000000
B = 1.000000 C = 0.000000
D = 0.000000 E = 0.000000

CARBON MONOXIDE

Date:05/09/00 Response Unit:PPM
Z1 = 0.0000 R1 = 68819. T1 = 45415.
R2 = 68525. Z2 = 0.0000 T2 = 45665.
Z3 = 0.0000 T3 = 45595. R3 = 68462.
Avg. Concentration: 1694. PPM

Date:05/16/00 Response Unit: PPM
Z1 = 0.0000 R1 = 68834. T1 = 45280.
R2 = 68675. Z2 = 0.0000 T2 = 45534.
Z3 = 0.0000 T3 = 45291. R3 = 68813.
Avg. Concentration: 1680. PPM

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 0.999990 2637
Constants: A = 0.000000
B = 1.000000 C = 0.000000
D = 0.000000 E = 0.000000

NITRIC OXIDE

Date:05/09/00 Response Unit:PPM
Z1 = 0.2318 R1 = 1000.4 T1 = 876.59
R2 = 1000.3 Z2 = 0.4172 T2 = 875.64
Z3 = 0.3187 T3 = 875.49 R3 = 999.27
Avg. Concentration: 875.9 PPM

Date:05/16/00 Response Unit: PPM
Z1 = 0.1548 R1 = 1000.5 T1 = 874.04
R2 = 997.39 Z2 = 0.3364 T2 = 875.02
Z3 = 0.5171 T3 = 877.09 R3 = 1002.1
Avg. Concentration: 875.4 PPM

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 0.999990
Constants: A = 0.000000
B = 1.000000 C = 0.000000
D = 0.000000 E = 0.000000

RATA CLASS

Dual-Analyzed Calibration Standard

Scott Specialty Gases
1750 EAST CLUB BLVD,DURHAM,NC 27704 Phone: 919-220-0803 Fax: 919-220-0808

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

Assay Laboratory

SCOTT SPECIALTY GASES
1750 EAST CLUB BLVD
DURHAM,NC 27704

P.O. No.: 17556
Project No.: 12-38356-002

Customer
JEA 11201 NEW BERLIN ROAD

ATTEN OP DEPT BLDG1
ST JOHNS RIVER POWER PARK
PO BOX 4910
JACKSONVILLE FL 32201-4910

ANALYTICAL INFORMATION

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

Cylinder Number: AAL9543 **Certification Date:** 5/17/00 **Exp. Date:** 5/17/2002
Cylinder Pressure*:** 2015 PSIG

ANALYZER READINGS

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

First Triad Analysis

SULFUR DIOXIDE *

Date:05/09/00 Response Unit:PPM
Z1 = 0.4468 R1 = 3134.7 T1 = 3043.8
R2 = 3128.7 Z2 = 0.5359 T2 = 3044.1
Z3 = 3.1523 T3 = 3042.9 R3 = 3129.6
Avg. Concentration: 3043. PPM

Second Triad Analysis

Date:05/16/00 Response Unit: PPM
Z1 = -0.415 R1 = 3138.4 T1 = 3047.4
R2 = 3126.8 Z2 = 4.9264 T2 = 3045.6
Z3 = 4.6126 T3 = 3048.2 R3 = 3127.7
Avg. Concentration: 3047. PPM

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 0.999990
Constants: A = 0.000000
B = 1.000000 C = 0.000000
D = 0.000000 E = 0.000000

APPROVED BY: B. M. Becton

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

1750 EAST CLUB BLVD,DURHAM,NC 27704 Phone: 919-220-0803 Fax: 919-220-0808

CERTIFICATE OF ACCURACY: Interference Free™ EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
1750 EAST CLUB BLVD
DURHAM,NC 27704

P.O. No.: PO 6893
Project No.: 12-33764-003

Customer

ST JOHNS RIVER POWER PARK

OPERATIONS DEPT BLDG 1
11201 NEW BERLIN RD
JACKSONVILLE FL 32226

ANALYTICAL INFORMATION

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

Cylinder Number: ALM055514 **Certification Date:** 4/27/99 **Exp. Date:** 4/27/2001
Cylinder Pressure*:** 1960 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
SULFUR DIOXIDE *	257.1	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.
Product certified as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

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

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM1661	10/02/02	ALM061003	488.5 PPM	SO2/N2

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AAB9400252	04/16/99	Scott Enhanced FTIR

ANALYZER READINGS

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

SULFUR DIOXIDE *

First Triad Analysis

Data:04/20/99	Response Unit:PPM	
Z1 = 0.2548	R1 = 488.27	T1 = 257.28
R2 = 488.56	Z2 = 0.4108	T2 = 257.61
Z3 = 0.4137	T3 = 257.38	R3 = 488.68
Avg. Concentration:	257.4	PPM

Second Triad Analysis

Data: 04/27/99	Response Unit: PPM	
Z1 = 0.5466	R1 = 487.93	T1 = 256.71
R2 = 488.85	Z2 = 0.6361	T2 = 256.96
Z3 = 0.6424	T3 = 256.77	R3 = 488.71
Avg. Concentration:	256.8	PPM

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = 0.999890	
Constants:	A = 0.000000
B = 1.000000	C = 0.000000
D = 0.000000	E = 0.000000

APPROVED BY: B. M. Becton
B.M. Becton

For Technical Information Call
1-800-752-1597

AIR PRODUCTS

Air Products and Chemicals, Inc. * 12722 S. Wentworth Avenue, Chicago, IL 60628

ISO CERTIFICATION: 9002

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS STANDARD

PERFORMED ACCORDING TO EPA TRACEABILITY PROTOCOL FOR ASSAY AND CERTIFICATION OF GASEOUS CALIBRATION STANDARDS (PROCEDURE #G1)

Customer:
AIR PRODUCTS & CHEMICALS, INC.
DORRAY JENSEN
5837 W. 5TH STREET
JACKSONVILLE FL 32254-1509

Order No: 833-079679-01
Batch No: 861-64595
PO:
Release:

Cylinder No: SG9156239BAL
Bar Code No: DEH884
Cylinder Pressure*: 2000 psig
Certification Date: 06/14/2000
Expiration Date: 06/14/2002

CERTIFIED CONCENTRATION		REFERENCE STANDARDS			ANALYTICAL INSTRUMENTATION			
Component	Certified Concentration	Cylinder Number	Standard Type	Standard Concentration	Instrument Make/Model	Serial Number	Last Calibration	Measurement Principal
CARBON DIOXIDE	10.5±.07 %	SG91689698AL	NTRM	19.73 %	NICOLET 550	9603604	06/10/00	FTIR
NITRIC OXIDE	266±3.0 PPM	SG91538148AL	NTRM	959.0 PPM	NICOLET 550	9603604	06/11/00	FTIR
SULFUR DIOXIDE	525±6.4 PPM	SG91285398AL	NTRM A1662	1019 PPM	NICOLET 550	9603604	06/10/00	FTIR

NO2 (Reference Value Only): .100 PPM
NITROGEN Balance Gas

*** STANDARD SHOULD NOT BE USED BELOW 150 PSIG**

The recertified value of this standard has been corrected to account for variations in the linearity of the multi-calibration curve due to the effect of CO2 on the FTIR method.

Analyst: Abbasi Husain
Abbasi Husain

Approved By: James Laas
James Laas

(16921)

Pub. No. 320-9702

BOC GASES

Assay Laboratory
BOC GASES
2009 Bellaire Avenue
Royal Oak,MI 48067
(248) 399 9150

CERTIFICATE OF ANALYSIS
EPA Protocol Gas

CUSTOMER
OE MEYER
3303 TIFFIN AVE
ROUTE 101
SANDUSKY, OH 44870
CUSTOMER PO NO: TSA STOCK
Previous Certification Date(s):

CYLINDER NO	:	CC18223
EXPIRATION DATE	:	04/19/03
CERTIFICATION DATE	:	04/19/00
CYLINDER PRESSURE	:	2000 psig
PRODUCT ID NO	:	03000279
LOT NUMBER	:	381891

ANALYTICAL INFORMATION

This calibration standard has been certified per the 1997 EPA Traceability Protocol, Document EPA-600/97/121, Using Procedure G1. All Values certified to be +/-1% NIST Traceable.

Do Not Use This Cylinder below 150 psig. i.e. 1.0 Megapascal

Analytical Results

Components	Requested Mixture	Certified Concentration	Analytical Uncertainty	Assay Dates
CARBON DIOXIDE	11.00 %	10.89 %	+/-1.00% NIST Traceable	04/19/00
XYGEN	12.00 %	12.07 %	+/-1.00% NIST Traceable	04/19/00
TROGEN	BALANCE GAS			

CALIBRATION STANDARDS USED IN ASSAY

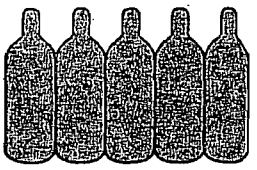
Type	LOT ID	Cylinder No	Concentration	Expiration
NTRM 81674	95031213	CC15192	7.06 +/- 0.08 % CO2/N2	04/12/01
NTRM 82658	011194	CC14036	9.72 +/- 0.11 % O2/N2	12/04/00

ANALYTICAL INSTRUMENTS USED IN ASSAY

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
Rosemount 880A L3 1000331	NonDispersive Infrared	04/17/00
Rosemount 755R L8 1000314	Paramagnetic	04/03/00

QA Approved L. Ziccarelli

SPECTRA GASES INC.
3434 Route 22 West • Branchburg, NJ 08876 USA Tel.: (908) 252-9300 • (800) 932-0624 • Fax: (908) 252-0811
Shipped From: 80 Industrial Drive • Alpha, NJ 08865



CERTIFICATE OF ANALYSIS

EPA PROTOCOL MIXTURE

PROCEDURE # : G1

CUSTOMER: Total Source Analysis
SGI ORDER # : 136262
ITEM# : 2
P.O.# : 3107

CYLINDER # : CC79887
CYLINDER PRES: 2000 PSIG
CGA OUTLET: 590

CERTIFICATION DATE: 10/6/98
EXPIRATION DATE: 10/6/2001

CERTIFICATION HISTORY

COMPONENT	DATE OF ASSAY	MEAN CONCENTRATION	CERTIFIED CONCENTRATION	ANALYTICAL ACCURACY
Carbon Dioxide	10/6/98	17.97 %	17.97 %	+/- 1%
Oxygen	10/6/98	21.9 %	21.9 %	+/- 1%

BALANCE Nitrogen

PREVIOUS CERTIFICATION DATES: None

REFERENCE STANDARDS

COMPONENT	SRM/NTRM#	CYLINDER#	CONCENTRATION
Carbon Dioxide	NTRM-82745x	CC79944	20.00 %
Oxygen	NTRM-82659X	CC83900	22.60 %

INSTRUMENTATION

COMPONENT	MAKE/MODEL	SERIAL #	DETECTOR	CALIBRATION DATE(S)
Carbon Dioxide	Horiba VIA-510	571417045	NDIR	10/2/98
Oxygen	Horiba MPA-510	570694081	PM	9/16/98

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

ANALYST: _____ DATE: 10/6/98
FRED PIKULA

636

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 630-953-9300 FAX: 630-953-9306

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ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 752
HENDERSON, KY 42419
TEL: (502) 827-1187
FAX: (502) 826-0719

December 28, 2000

ST. JOHNS RIVER POWER PARK
11201 NEW BERLIN RD
JACKSONVILLE FL 32226

Sample identification by
SJRPP

ID# 121800-1
Date: 12/18/00
Time: 03:50
Burn Date: 12/19/00
P.O. #2312

Kind of sample reported to us Coal/Pet Coke Blend

Sample taken at -----

Sample taken by -----

Date sampled December 18, 2000

Date received December 22, 2000

Analysis Report No. 63-33747

SHORT PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	10.71	xxxxx		
% Ash	9.05	10.13		
Btu/lb	11613	13006	MAF	14472
% Sulfur	0.69	0.77		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Henderson Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.

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FAX: (502) 826-0719

December 28, 2000

ST. JOHNS RIVER POWER PARK
11201 NEW BERLIN RD
JACKSONVILLE FL 32226

Sample identification by
SJRPP

ID# 121800-2
Date: 12/18/00
Time: 16:15
Burn Date: 12/19/00
P.O. #2312

Kind of sample reported to us: Coal/Pet Coke Blend

Sample taken at: -----

Sample taken by: -----

Date sampled: December 18, 2000

Date received: December 22, 2000

Analysis Report No. 63-33748

SHORT PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	10.53	xxxxx		
% Ash	5.91	6.61		
Btu/lb	12214	13651	MAF	14617
% Sulfur	0.72	0.81		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Henderson Laboratory

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COMMERCIAL TESTING & ENGINEERING CO.

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TEL: (502) 827-1187
FAX: (502) 826-0719

December 28, 2000

ST. JOHNS RIVER POWER PARK
11201 NEW BERLIN RD
JACKSONVILLE FL 32226

Sample identification by
SJRPP

ID# 121800-3
Date: 12/18/00
Time: 23:15
Burn Date: 12/19/00
P.O. #2312

Kind of sample reported to us Coal/Pet Coke Blend

Sample taken at -----

Sample taken by -----

Date sampled December 18, 2000

Date received December 22, 2000

Analysis Report No. 63-33749

SHORT PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	11.25	xxxxx		
% Ash	7.16	8.07		
Btu/lb	11935	13448	MAF	14629
% Sulfur	1.40	1.58		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Henderson Laboratory

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COMMERCIAL TESTING & ENGINEERING CO.

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TEL: (502) 827-1187
FAX: (502) 826-0718

December 28, 2000

ST. JOHNS RIVER POWER PARK
11201 NEW BERLIN RD
JACKSONVILLE FL 32226

Sample identification by
SJRPP

ID# 121900-1
Date: 12/19/00
Time: 04:30
Burn Date: 12/20/00
P.O. #2312

Kind of sample reported to us Coal/Pet Coke Blend

Sample taken at -----

Sample taken by -----

Date sampled December 19, 2000

Date received December 22, 2000

Analysis Report No. 63-33750

SHORT PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	11.37	xxxxx		
% Ash	12.20	13.76		
Btu/lb	11108	12533	MAF	14533
% Sulfur	1.20	1.35		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Henderson Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 630-953-9300 FAX: 630-953-9306

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ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 752
HENDERSON, KY 42419
TEL: (502) 827-1187
FAX: (502) 826-0719

December 28, 2000

ST. JOHNS RIVER POWER PARK
11201 NEW BERLIN RD
JACKSONVILLE FL 32226

Sample identification by
SJRPP

ID# 121900-2
Date: 12/19/00
Time: 11:50
Burn Date: 12/20/00
P.O. #2312

Kind of sample reported to us Coal/Pet Coke Blend

Sample taken at -----

Sample taken by -----

Date sampled December 19, 2000

Date received December 22, 2000

Analysis Report No. 63-33751

SHORT PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	11.58	xxxxx		
% Ash	7.86	8.89		
Btu/lb	11681	13211	MAF	14500
% Sulfur	0.61	0.69		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Henderson Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 630-953-9300 FAX: 630-953-9306

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ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 752
HENDERSON, KY 42419
TEL: (502) 827-1187
FAX: (502) 826-0719

December 28, 2000

ST. JOHNS RIVER POWER PARK
11201 NEW BERLIN RD
JACKSONVILLE FL 32226

Sample identification by
SJRPP

ID# 121900-3
Date: 12/19/00
Time: 16:50
Burn Date: 12/20/00
P.O. #2312

Kind of sample reported to us Coal/Pet Coke Blend

Sample taken at -----

Sample taken by -----

Date sampled December 19, 2000

Date received December 22, 2000

Analysis Report No. 63-33752

SHORT PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	12.10	xxxxx		
% Ash	5.66	6.44		
Btu/lb	11946	13591	MAF	14527
% Sulfur	0.64	0.73		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Henderson Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 630-953-9300 FAX: 630-953-9306

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ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 752
HENDERSON, KY 42419
TEL: (502) 827-1187
FAX: (502) 826-0719

December 28, 2000

ST. JOHNS RIVER POWER PARK
11201 NEW BERLIN RD
JACKSONVILLE FL 32226

Sample identification by
SJRPP

ID# 121900-4
Date: 12/19/00
Time: 23:00
Burn Date: 12/20/00
P.O. #2312

Kind of sample reported to us Coal/Pet Coke Blend

Sample taken at -----

Sample taken by -----

Date sampled December 19, 2000

Date received December 22, 2000

Analysis Report No. 63-33753

SHORT PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	11.47	xxxxx		
% Ash	6.21	7.01		
Btu/lb	12024	13582	MAF	14606
% Sulfur	0.87	0.98		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Henderson Laboratory

MEMBER ACIL

RUN # 1 OUTLET CO2/NOx/Flow/CO.

Enertec NTDAHS®
Average Values Report
12/19/00 11:38

Company: St. Johns Unit 2
10:25
Plant:
10:47
City/St:
Source: Unit 2

Period Start: 12/19/00
Period End: 12/19/00
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Average 2Unit_Load Period Start	Average 2outCO_C ppm	Average 2outCO_MM #/M	Average 2outCO2_C %	Average 2outNOX_MM #/M	Average 2outSO2_C ppm	Average 2outSO2_MM #/M	Average 2Stk_kscfh kscfh	Average MW
12/19/00 10:25	264.3	0.280	12.38	0.484	206.7	0.499	96552.0	681.9
12/19/00 10:26	291.1	0.307	12.41	0.480	207.5	0.500	96540.0	681.5
12/19/00 10:27	312.3	0.329	12.42	0.480	208.2	0.501	96648.0	682.2
12/19/00 10:28	407.7	0.431	12.37	0.477	210.4	0.508	96978.0	680.2
12/19/00 10:29	443.2	0.466	12.46	0.469	210.4	0.504	96966.0	680.2
12/19/00 10:30	461.0	0.484	12.35	0.476	210.0	0.508	96966.0	679.1
12/19/00 10:31	429.8	0.455	12.38	0.477	210.2	0.508	96966.0	679.5
12/19/00 10:32	480.1	0.507	12.39	0.473	209.5	0.505	96858.0	678.8
12/19/00 10:33	479.3	0.513	12.42	0.470	209.0	0.504	96750.0	679.0
12/19/00 10:34	376.4	0.398	12.40	0.470	206.9	0.499	96750.0	678.8
12/19/00 10:35	340.4	0.361	12.36	0.475	204.2	0.494	96846.0	681.0
12/19/00 10:36	334.2	0.353	12.39	0.471	205.9	0.497	96966.0	680.9
12/19/00 10:37	327.3	0.346	12.38	0.472	206.8	0.500	96978.0	682.2
12/19/00 10:38	407.5	0.430	12.40	0.473	208.9	0.504	96966.0	681.2
12/19/00 10:39	495.6	0.522	12.43	0.473	210.3	0.506	96924.0	680.8
12/19/00 10:40	344.5	0.373	12.42	0.474	209.5	0.504	96906.0	680.5
12/19/00 10:41	263.9	0.279	12.38	0.474	209.7	0.506	96924.0	679.8
12/19/00 10:42	225.9	0.239	12.39	0.478	209.4	0.506	96948.0	680.2
12/19/00 10:43	308.0	0.324	12.43	0.475	211.4	0.508	96966.0	680.2
12/19/00 10:44	372.9	0.391	12.40	0.473	211.4	0.509	96978.0	681.5
12/19/00 10:45	314.8	0.331	12.45	0.477	211.7	0.508	96984.0	681.8
12/19/00 10:46	327.3	0.344	12.45	0.476	212.8	0.511	97008.0	683.0
Final Average*	**364.0**	**0.385**	**12.40**	**0.475**	**209.1**	**0.504**	**96880.4**	**680.7**
Maximum*	**495.6**	**0.522**	**12.46**	**0.484**	**212.8**	**0.511**	**97008.0**	**683.0**
Minimum*	**225.9**	**0.239**	**12.35**	**0.469**	**204.2**	**0.494**	**96540.0**	**678.8**

*Does not include Invalid Averaging Periods ("N/A")

RUN#2 OUTLET CO2/NOx FLOW/CO/MW

Enertec NTDAHS®
Average Values Report
12/19/00 11:51

Company: St. Johns Unit 2
11:07
Plant:
11:29
City/St:
Source: Unit 2

Period Start: 12/19/00
Period End: 12/19/00
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

2Unit_Load Period Start	Average 2outCO_C ppm	Average 2outCO_MM #/M	Average 2outCO2_C %	Average 2outNOX_MM #/M	Average 2outSO2_C ppm	Average 2outSO2_MM #/M	Average 2Stk_kscfh kscfh	Average MW
12/19/00 11:07	221.4	0.233	12.45	0.480	207.2	0.498	96894.0	682.0
12/19/00 11:08	330.0	0.350	12.42	0.476	207.6	0.499	96912.0	681.5
12/19/00 11:09	430.2	0.453	12.43	0.470	209.2	0.503	96912.0	680.9
12/19/00 11:10	462.7	0.484	12.50	0.466	210.5	0.505	96906.0	679.7
12/19/00 11:11	327.8	0.342	12.52	0.474	210.2	0.501	96912.0	680.6
12/19/00 11:12	254.5	0.265	12.34	0.487	208.0	0.502	96948.0	682.3
12/19/00 11:13	322.9	0.342	12.34	0.482	207.7	0.503	96912.0	682.8
12/19/00 11:14	397.5	0.418	12.46	0.474	210.2	0.505	96924.0	682.4
12/19/00 11:15	370.9	0.388	12.50	0.466	209.9	0.500	96906.0	682.6
12/19/00 11:16	378.7	0.396	12.52	0.474	209.7	0.501	96912.0	682.4
12/19/00 11:17	385.8	0.405	12.46	0.479	208.7	0.501	96792.0	682.1
12/19/00 11:18	311.2	0.328	12.40	0.480	207.6	0.500	96750.0	681.0
12/19/00 11:19	269.1	0.284	12.41	0.474	207.3	0.499	96750.0	680.3
12/19/00 11:20	304.8	0.321	12.41	0.473	207.4	0.500	96672.0	681.3
12/19/00 11:21	328.8	0.347	12.39	0.482	207.0	0.499	96426.0	679.6
12/19/00 11:22	449.6	0.475	12.40	0.477	208.2	0.502	96438.0	680.4
12/19/00 11:23	427.5	0.448	12.49	0.467	209.5	0.501	96504.0	680.7
12/19/00 11:24	291.0	0.305	12.47	0.476	206.9	0.496	96714.0	681.4
12/19/00 11:25	416.1	0.437	12.47	0.473	205.4	0.492	96690.0	680.0
12/19/00 11:26	477.0	0.501	12.51	0.468	205.1	0.491	96702.0	679.8
12/19/00 11:27	384.3	0.404	12.48	0.469	205.2	0.492	96540.0	677.8
12/19/00 11:28	289.5	0.305	12.43	0.478	204.9	0.493	96486.0	678.6
Final Average*	**356.0**	**0.374**	**12.45**	**0.475**	**207.9**	**0.499**	**96754.6**	**680.9**
Maximum*	**477.0**	**0.501**	**12.52**	**0.487**	**210.5**	**0.505**	**96948.0**	**682.8**
Minimum*	**221.4**	**0.233**	**12.34**	**0.466**	**204.9**	**0.491**	**96426.0**	**677.8**

*Does not include Invalid Averaging Periods ("N/A")

TWN #3 OUTLET CO2/NOx/Flow/Co/MW

Enertec NTDAHS®
Average Values Report
12/19/00 13:09

Company: St. Johns Unit 2
Plant:
City/St:
Source: Unit 2

Period Start: 12/19/00 11:48
Period End: 12/19/00 12:10
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start	Average 2outCO_C ppm	Average 2outCO_MM #/M	Average 2outCO2_C %	Average 2outNOX_MM #/M	Average 2outSO2_C ppm	Average 2outSO2_MM #/M	Average 2Stk_kscfh kscfh	Average 2Unit_Load MW
12/19/00 11:48	432.4	0.456	12.41	0.484	209.1	0.503	95706.0	682.0
12/19/00 11:49	318.2	0.336	12.40	0.486	208.1	0.502	95340.0	682.3
12/19/00 11:50	226.1	0.238	12.43	0.487	208.1	0.501	95352.0	680.9
12/19/00 11:51	275.8	0.290	12.46	0.486	208.4	0.500	95340.0	680.5
12/19/00 11:52	324.3	0.341	12.47	0.477	208.6	0.500	95706.0	680.1
12/19/00 11:53	311.8	0.329	12.42	0.480	209.0	0.503	95826.0	680.7
12/19/00 11:54	287.2	0.303	12.38	0.483	207.8	0.502	95814.0	680.2
12/19/00 11:55	278.9	0.294	12.43	0.480	207.5	0.498	96012.0	681.8
12/19/00 11:56	336.0	0.353	12.46	0.479	207.8	0.498	96090.0	681.1
12/19/00 11:57	362.8	0.379	12.52	0.476	208.6	0.498	96102.0	681.3
12/19/00 11:58	289.8	0.303	12.51	0.479	209.7	0.501	96090.0	680.7
12/19/00 11:59	238.0	0.249	12.48	0.478	208.8	0.500	96474.0	680.7
12/19/00 12:00	220.6	0.234	12.33	0.479	205.3	0.498	96486.0	679.9
12/19/00 12:01	187.2	0.196	12.54	0.481	207.8	0.495	96474.0	679.6
12/19/00 12:02	293.3	0.308	12.45	0.482	205.3	0.493	96474.0	679.1
12/19/00 12:03	435.3	0.459	12.42	0.477	203.1	0.488	96354.0	679.1
12/19/00 12:04	396.8	0.419	12.40	0.478	199.4	0.481	96366.0	679.1
12/19/00 12:05	267.1	0.282	12.38	0.478	197.1	0.477	96354.0	677.4
12/19/00 12:06	254.8	0.268	12.45	0.472	195.6	0.470	96342.0	677.3
12/19/00 12:07	186.9	0.197	12.44	0.480	194.2	0.466	96000.0	676.5
12/19/00 12:08	196.5	0.208	12.38	0.478	192.6	0.465	N/A	677.3
12/19/00 12:09	245.0	0.258	12.41	0.476	192.6	0.464	N/A	677.6
Final Average*	289.3	0.305	12.44	0.480	204.3	0.491	96035.1	679.8
Maximum*	435.3	0.459	12.54	0.487	209.7	0.503	96486.0	682.3
Minimum*	186.9	0.196	12.33	0.472	192.6	0.464	95340.0	676.5

*Does not include Invalid Averaging Periods ("N/A")

TWN#4 OUTLET CO2/NOx/Flow/CO/MW

Enertec NTDAHS®
Average Values Report
12/19/00 13:12

Company: St. Johns Unit 2
12:25
Plant:
12:47
City/St:
Source: Unit 2

Period Start: 12/19/00
Period End: 12/19/00
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Average 2Unit_Load Period Start	Average 2outCO_C ppm	Average 2outCO_MM #/M	Average 2outCO2_C %	Average 2outNOX_MM #/M	Average 2outSO2_C ppm	Average 2outSO2_MM #/M	Average 2Stk_kscfh kscfh	Average MW
12/19/00 12:25	314.9	0.322	12.41	0.470	187.6	0.451	96660.0	677.5
12/19/00 12:26	340.8	0.361	12.45	0.462	189.5	0.455	96660.0	677.3
12/19/00 12:27	207.4	0.229	12.49	0.461	188.7	0.452	96636.0	676.1
12/19/00 12:28	131.2	0.140	12.52	0.456	188.1	0.448	96618.0	673.8
12/19/00 12:29	111.7	0.117	12.51	0.458	187.6	0.448	96618.0	673.5
12/19/00 12:30	397.2	0.342	12.43	0.469	185.7	0.446	96576.0	672.8
12/19/00 12:31	364.9	0.385	12.40	0.467	185.9	0.448	96528.0	673.0
12/19/00 12:32	282.2	0.299	12.34	0.470	185.7	0.450	96516.0	673.9
12/19/00 12:33	322.2	0.342	12.37	0.471	186.1	0.453	96696.0	674.7
12/19/00 12:34	301.8	0.326	12.36	0.467	187.7	0.453	96948.0	675.2
12/19/00 12:35	238.1	0.258	12.41	0.465	188.3	0.452	96912.0	675.1
12/19/00 12:36	221.4	0.227	12.44	0.464	188.1	0.453	96906.0	676.4
12/19/00 12:37	259.1	0.273	12.41	0.467	187.3	0.451	96816.0	676.3
12/19/00 12:38	268.1	0.283	12.40	0.469	186.8	0.450	96822.0	677.0
12/19/00 12:39	245.8	0.263	12.38	0.473	187.3	0.452	96804.0	675.9
12/19/00 12:40	267.2	0.281	12.43	0.469	188.5	0.453	97404.0	676.5
12/19/00 12:41	354.4	0.374	12.42	0.469	186.7	0.449	97392.0	676.0
12/19/00 12:42	273.1	0.286	12.38	0.473	185.5	0.448	97404.0	677.2
12/19/00 12:43	314.7	0.332	12.41	0.469	186.1	0.448	97404.0	677.1
12/19/00 12:44	356.0	0.376	12.39	0.465	186.5	0.450	97404.0	677.5
12/19/00 12:45	242.1	0.258	12.40	0.465	190.9	0.460	97404.0	675.8
12/19/00 12:46	216.5	0.222	12.42	0.464	200.4	0.483	97392.0	675.0
Final Average*	**274.1**	**0.286**	**12.42**	**0.467**	**188.0**	**0.452**	**96932.7**	**675.6**
Maximum*	**397.2**	**0.385**	**12.52**	**0.473**	**200.4**	**0.483**	**97404.0**	**677.5**
Minimum*	**111.7**	**0.117**	**12.34**	**0.456**	**185.5**	**0.446**	**96516.0**	**672.8**

*Does not include Invalid Averaging Periods ("N/A")

RUN #5 OUTLET CO_2/NO_x/Flow/CO/MW

Enertec NTDAHS®
Average Values Report
12/19/00 14:10

Company: St. Johns Unit 2
13:07
Plant:
13:29
City/St:
Source: Unit 2

Period Start: 12/19/00
Period End: 12/19/00
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start	Average 2outCO_C ppm	Average 2outCO_MM #/M	Average 2outCO2_C %	Average 2outNOX_MM #/M	Average 2outSO2_C ppm	Average 2outSO2_MM #/M	Average 2Stk_kscfh kscfh	Average 2Unit_Load MW
12/19/00 13:07	200.3	0.211	12.41	0.465	198.0	0.477	97362.0	678.3
12/19/00 13:08	159.9	0.169	12.38	0.470	197.6	0.477	97362.0	678.2
12/19/00 13:09	150.8	0.160	12.31	0.473	197.0	0.478	97362.0	677.4
12/19/00 13:10	161.1	0.171	12.33	0.468	198.0	0.480	97362.0	677.0
12/19/00 13:11	124.8	0.132	12.36	0.467	199.5	0.483	97350.0	676.4
12/19/00 13:12	197.5	0.209	12.36	0.465	198.0	0.479	97362.0	676.6
12/19/00 13:13	216.0	0.229	12.34	0.466	196.4	0.476	97362.0	674.7
12/19/00 13:14	222.7	0.236	12.38	0.465	195.3	0.472	97350.0	675.1
12/19/00 13:15	199.4	0.212	12.33	0.471	194.9	0.472	97350.0	674.3
12/19/00 13:16	195.6	0.207	12.34	0.471	194.4	0.471	97002.0	676.2
12/19/00 13:17	262.8	0.278	12.35	0.469	195.1	0.472	96870.0	676.8
12/19/00 13:18	278.3	0.295	12.36	0.469	195.4	0.473	96882.0	677.6
12/19/00 13:19	280.9	0.297	12.38	0.468	195.0	0.471	96870.0	677.5
12/19/00 13:20	331.8	0.349	12.46	0.459	194.5	0.467	96618.0	677.9
12/19/00 13:21	277.9	0.292	12.45	0.457	195.1	0.469	96528.0	677.6
12/19/00 13:22	277.0	0.291	12.37	0.461	194.7	0.470	96528.0	678.1
12/19/00 13:23	217.6	0.231	12.34	0.468	193.2	0.468	96498.0	678.1
12/19/00 13:24	204.7	0.216	12.41	0.465	192.9	0.465	96756.0	677.7
12/19/00 13:25	190.8	0.201	12.39	0.468	192.3	0.464	96822.0	677.7
12/19/00 13:26	147.7	0.156	12.37	0.468	192.4	0.465	96834.0	676.9
12/19/00 13:27	126.6	0.135	12.31	0.467	193.2	0.469	96936.0	676.6
12/19/00 13:28	118.2	0.125	12.35	0.462	193.1	0.467	97056.0	676.1
Final Average*	**206.5**	**0.218**	**12.37**	**0.466**	**195.3**	**0.472**	**97019.2**	**676.9**
Maximum*	**331.8**	**0.349**	**12.46**	**0.473**	**199.5**	**0.483**	**97362.0**	**678.3**
Minimum*	**118.2**	**0.125**	**12.31**	**0.457**	**192.3**	**0.464**	**96498.0**	**674.3**

*Does not include Invalid Averaging Periods ("N/A")

RUN #6 OUTLET

Enertec NTDAHS®
Average Values Report
12/19/00 14:45

Company: St. Johns Unit 2
13:47
Plant:
14:09
City/St:
Source: Unit 2

Period Start: 12/19/00
Period End: 12/19/00

Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

2Unit_Load Period Start	Average 2outCO_C ppm	Average 2outCO_MM #/M	Average 2outCO2_C %	Average 2outNOX_MM #/M	Average 2outSO2_C ppm	Average 2outSO2_MM #/M	Average 2Stk_kscfh kscfh	Average MW
12/19/00 13:47	233.2	0.246	12.38	0.463	192.0	0.463	96870.0	677.5
12/19/00 13:48	172.1	0.186	12.37	0.466	192.5	0.466	96948.0	678.1
12/19/00 13:49	195.6	0.206	12.42	0.461	193.0	0.464	97176.0	677.4
12/19/00 13:50	210.5	0.223	12.38	0.460	192.2	0.464	97188.0	677.9
12/19/00 13:51	210.2	0.224	12.27	0.468	190.5	0.464	97164.0	676.6
12/19/00 13:52	183.7	0.194	12.37	0.464	190.1	0.459	97134.0	675.2
12/19/00 13:53	243.5	0.258	12.36	0.463	188.2	0.455	97008.0	674.1
12/19/00 13:54	184.8	0.196	12.31	0.468	186.6	0.453	97008.0	675.5
12/19/00 13:55	194.0	0.207	12.26	0.470	187.0	0.456	96978.0	675.8
12/19/00 13:56	184.7	0.197	12.25	0.471	188.4	0.459	96912.0	675.7
12/19/00 13:57	381.1	0.404	12.36	0.462	191.0	0.462	96906.0	676.1
12/19/00 13:58	277.3	0.292	12.40	0.462	190.9	0.460	96906.0	675.5
12/19/00 13:59	143.7	0.154	12.24	0.471	189.4	0.463	96846.0	675.3
12/19/00 14:00	97.6	0.103	12.44	0.471	192.0	0.461	96804.0	674.5
12/19/00 14:01	127.5	0.136	12.27	0.476	190.8	0.465	96822.0	675.3
12/19/00 14:02	132.3	0.141	12.24	0.475	191.4	0.468	96792.0	676.7
12/19/00 14:03	182.8	0.195	12.30	0.468	191.9	0.466	96792.0	679.0
12/19/00 14:04	248.6	0.265	12.29	0.470	192.4	0.468	96792.0	679.4
12/19/00 14:05	295.6	0.312	12.39	0.459	193.6	0.467	96792.0	679.8
12/19/00 14:06	352.7	0.371	12.44	0.458	194.2	0.467	96792.0	678.9
12/19/00 14:07	268.8	0.284	12.38	0.467	193.3	0.467	96726.0	678.1
12/19/00 14:08	222.7	0.236	12.33	0.471	192.8	0.467	96714.0	
678.2								
Final Average*	**215.6**	**0.229**	**12.34**	**0.467**	**191.1**	**0.463**	**96912.3**	**676.8**
Maximum*	**381.1**	**0.404**	**12.44**	**0.476**	**194.2**	**0.468**	**97188.0**	**679.8**
Minimum*	**97.6**	**0.103**	**12.24**	**0.458**	**186.6**	**0.453**	**96714.0**	**674.1**

*Does not include Invalid Averaging Periods ("N/A")

RUN #7 OUTLET.

Enertec NTDAHS®
Average Values Report
12/19/00 15:32

Company: St. Johns Unit 2
14:25
Plant:
14:47
City/St:
Source: Unit 2

Period Start: 12/19/00

Period End: 12/19/00

Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start	Average 2outCO_C ppm	Average 2outCO_MM #/M	Average 2outCO2_C %	Average 2outNOX_MM #/M	Average 2outSO2_C ppm	Average 2outSO2_MM #/M	Average 2Stk_kscfh kscfh	Average 2Unit_Load MW
12/19/00 14:25	269.1	0.283	12.44	0.458	195.5	0.470	96042.0	679.0
12/19/00 14:26	249.8	0.264	12.38	0.463	196.0	0.473	96030.0	678.5
12/19/00 14:27	219.9	0.233	12.36	0.463	193.9	0.469	96066.0	677.2
12/19/00 14:28	185.0	0.197	12.29	0.467	192.6	0.469	96090.0	676.8
12/19/00 14:29	222.6	0.236	12.34	0.468	191.4	0.464	96102.0	676.6
12/19/00 14:30	201.4	0.215	12.30	0.469	189.7	0.461	96264.0	675.5
12/19/00 14:31	290.3	0.308	12.33	0.469	188.4	0.457	96780.0	676.6
12/19/00 14:32	205.2	0.217	12.38	0.467	186.8	0.451	96792.0	676.4
12/19/00 14:33	141.9	0.151	12.33	0.468	186.4	0.452	96792.0	677.7
12/19/00 14:34	154.4	0.164	12.34	0.463	187.6	0.455	96870.0	678.8
12/19/00 14:35	213.6	0.227	12.35	0.462	188.3	0.456	97122.0	681.0
12/19/00 14:36	237.6	0.252	12.32	0.463	189.1	0.459	97140.0	681.4
12/19/00 14:37	416.6	0.439	12.42	0.458	191.4	0.461	97128.0	681.0
12/19/00 14:38	335.0	0.351	12.50	0.457	193.6	0.463	97110.0	680.1
12/19/00 14:39	212.5	0.230	12.40	0.461	193.4	0.466	97098.0	680.8
12/19/00 14:40	254.3	0.269	12.36	0.465	192.3	0.465	97098.0	680.9
12/19/00 14:41	176.4	0.187	12.32	0.470	191.4	0.465	97098.0	679.7
12/19/00 14:42	203.2	0.215	12.38	0.462	192.3	0.464	97086.0	678.8
12/19/00 14:43	217.6	0.230	12.41	0.458	192.9	0.465	97110.0	678.9
12/19/00 14:44	171.3	0.182	12.34	0.465	191.8	0.465	97098.0	677.7
12/19/00 14:45	177.5	0.188	12.37	0.463	191.9	0.464	97020.0	675.7
12/19/00 14:46	281.1	0.297	12.40	0.458	192.3	0.464	97020.0	675.7
Final Average*	228.9	0.243	12.37	0.464	191.3	0.463	96770.7	678.4
Maximum*	416.6	0.439	12.50	0.470	196.0	0.473	97140.0	681.4
Minimum*	141.9	0.151	12.29	0.457	186.4	0.451	96030.0	675.5

*Does not include Invalid Averaging Periods ("N/A")

Run #8 outlet

Enertec NTDAHS®
Average Values Report
12/19/00 15:34

Company: St. Johns Unit 2
15:02
Plant:
15:24
City/St:
Source: Unit 2

Period Start: 12/19/00
Period End: 12/19/00
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

2Unit_Load Period Start	Average 2outCO_C ppm	Average 2outCO_MM #/M	Average 2outCO2_C %	Average 2outNOX_MM #/M	Average 2outSO2_C ppm	Average 2outSO2_MM #/M	Average 2Stk_kscfh kscfh	Average MW
12/19/00 15:02	260.6	0.275	12.41	0.468	192.9	0.465	96750.0	679.0
12/19/00 15:03	243.4	0.257	12.41	0.470	193.7	0.466	96774.0	680.2
12/19/00 15:04	184.8	0.194	12.44	0.469	196.7	0.472	96780.0	679.9
12/19/00 15:05	198.8	0.208	12.48	0.465	197.9	0.474	96792.0	679.3
12/19/00 15:06	289.8	0.304	12.48	0.465	197.1	0.473	96792.0	677.1
12/19/00 15:07	326.5	0.346	12.34	0.473	195.4	0.473	96966.0	678.3
12/19/00 15:08	220.2	0.234	12.34	0.476	194.7	0.472	96966.0	677.6
12/19/00 15:09	194.8	0.207	12.31	0.476	194.9	0.473	96966.0	678.7
12/19/00 15:10	378.0	0.398	12.40	0.469	196.6	0.474	96966.0	678.4
12/19/00 15:11	294.7	0.311	12.41	0.468	197.5	0.476	96978.0	678.6
12/19/00 15:12	225.1	0.239	12.33	0.474	197.5	0.479	96978.0	678.2
12/19/00 15:13	265.6	0.282	12.35	0.474	198.7	0.481	96966.0	678.3
12/19/00 15:14	277.6	0.292	12.44	0.473	201.0	0.483	96966.0	677.5
12/19/00 15:15	239.3	0.254	12.47	0.468	201.9	0.484	96996.0	677.3
12/19/00 15:16	184.2	0.195	12.33	0.472	201.6	0.488	96966.0	678.4
12/19/00 15:17	169.3	0.179	12.40	0.468	201.6	0.486	97284.0	677.7
12/19/00 15:18	161.3	0.171	12.35	0.474	203.2	0.492	97272.0	677.5
12/19/00 15:19	318.0	0.335	12.43	0.465	205.0	0.493	97272.0	676.8
12/19/00 15:20	276.9	0.290	12.48	0.467	205.4	0.492	97242.0	677.9
12/19/00 15:21	180.7	0.192	12.29	0.479	202.3	0.492	97140.0	677.3
12/19/00 15:22	203.6	0.216	12.36	0.474	201.5	0.487	97110.0	677.3
12/19/00 15:23	221.4	0.231	12.51	0.466	203.4	0.486	97074.0	675.8
Final Average*	**241.6**	**0.255**	**12.40**	**0.471**	**199.1**	**0.480**	**96999.8**	**678.1**
Maximum*	**378.0**	**0.398**	**12.51**	**0.479**	**205.4**	**0.493**	**97284.0**	**680.2**
Minimum*	**161.3**	**0.171**	**12.29**	**0.465**	**192.9**	**0.465**	**96750.0**	**675.8**

*Does not include Invalid Averaging Periods ("N/A")

PUN#9 OUTLET CO2/#/CO/F/MW/SO2

Enertec NTDAHS®
Average Values Report
12/19/00 16:21

Company: St. Johns Unit 2
15:50
Plant:
16:12
City/St:
Source: Unit 2

Period Start: 12/19/00
Period End: 12/19/00
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

2Unit_Load Period Start	Average 2outCO_C ppm	Average 2outCO_MM #/M	Average 2outCO2_C %	Average 2outNOX_MM #/M	Average 2outSO2_C ppm	Average 2outSO2_MM #/M	Average 2Stk_kscfh kscfh	Average MW
12/19/00 15:50	222.3	0.235	12.39	0.472	197.7	0.477	97800.0	678.8
12/19/00 15:51	393.0	0.413	12.46	0.463	199.5	0.479	97374.0	679.4
12/19/00 15:52	415.8	0.435	12.49	0.460	199.6	0.478	96966.0	679.4
12/19/00 15:53	304.1	0.319	12.45	0.469	199.8	0.480	96966.0	680.2
12/19/00 15:54	275.2	0.290	12.43	0.474	200.3	0.482	96978.0	678.0
12/19/00 15:55	291.1	0.305	12.50	0.466	201.9	0.483	96912.0	677.0
12/19/00 15:56	212.8	0.224	12.44	0.466	200.5	0.482	96750.0	675.7
12/19/00 15:57	141.4	0.150	12.33	0.471	199.5	0.484	96762.0	676.3
12/19/00 15:58	180.4	0.194	12.17	0.472	198.9	0.488	96750.0	676.1
12/19/00 15:59	143.8	0.151	12.49	0.474	203.8	0.488	96780.0	676.5
12/19/00 16:00	178.1	0.188	12.41	0.467	204.6	0.493	96780.0	677.0
12/19/00 16:01	225.0	0.237	12.42	0.465	206.8	0.498	96792.0	678.0
12/19/00 16:02	201.8	0.213	12.44	0.472	207.3	0.498	96846.0	678.0
12/19/00 16:03	163.7	0.172	12.43	0.472	210.0	0.505	96912.0	677.4
12/19/00 16:04	151.5	0.159	12.46	0.469	209.9	0.504	96924.0	677.3
12/19/00 16:05	128.0	0.135	12.40	0.474	209.6	0.505	96882.0	677.8
12/19/00 16:06	145.7	0.154	12.38	0.476	209.6	0.506	96750.0	679.1
12/19/00 16:07	195.4	0.207	12.39	0.479	209.9	0.507	96750.0	679.4
12/19/00 16:08	214.4	0.225	12.46	0.473	210.5	0.505	96750.0	679.5
12/19/00 16:09	221.2	0.231	12.53	0.464	211.5	0.505	96738.0	679.7
12/19/00 16:10	257.2	0.270	12.47	0.470	210.7	0.505	96750.0	681.0
12/19/00 16:11	218.8	0.230	12.44	0.471	210.1	0.505	96738.0	
681.0								
Final Average*	**221.9**	**0.234**	**12.43**	**0.470**	**205.1**	**0.494**	**96893.2**	**678.3**
Maximum*	**415.8**	**0.435**	**12.53**	**0.479**	**211.5**	**0.507**	**97800.0**	**681.0**
Minimum*	**128.0**	**0.135**	**12.17**	**0.460**	**197.7**	**0.477**	**96738.0**	**675.7**

*Does not include Invalid Averaging Periods ("N/A")

RUN # 10 OUTLET

Enertec NTDAHS®
Average Values Report
12/19/00 16:59

Company: St. Johns Unit 2
16:32
Plant:
16:54
City/St:
Source: Unit 2

Period Start: 12/19/00
Period End: 12/19/00
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start	Average 2outCO_C ppm	Average 2outCO_MM #/M	Average 2outCO2_C %	Average 2outNOX_MM #/M	Average 2outSO2_C ppm	Average 2outSO2_MM #/M	Average 2Stk_kscfh kscfh	Average 2Unit_Load MW
12/19/00 16:32	265.2	0.279	12.45	0.479	222.4	0.534	97188.0	679.4
12/19/00 16:33	242.6	0.255	12.45	0.479	223.1	0.535	97176.0	679.6
12/19/00 16:34	169.8	0.178	12.46	0.478	215.4	0.517	97278.0	678.9
12/19/00 16:35	130.4	0.137	12.45	0.475	207.4	0.498	97596.0	680.5
12/19/00 16:36	140.3	0.148	12.43	0.477	207.0	0.498	97584.0	682.2
12/19/00 16:37	270.7	0.285	12.42	0.477	207.6	0.499	97704.0	681.8
12/19/00 16:38	360.8	0.379	12.45	0.472	208.8	0.501	97758.0	679.9
12/19/00 16:39	349.6	0.365	12.53	0.466	209.4	0.499	97758.0	679.9
12/19/00 16:40	192.5	0.203	12.43	0.478	206.2	0.496	97758.0	678.6
12/19/00 16:41	172.7	0.182	12.37	0.486	203.7	0.492	97428.0	678.3
12/19/00 16:42	179.9	0.190	12.40	0.478	202.9	0.489	97332.0	676.2
12/19/00 16:43	189.3	0.200	12.41	0.472	203.5	0.490	97320.0	675.3
12/19/00 16:44	216.3	0.228	12.42	0.470	202.9	0.488	97176.0	675.8
12/19/00 16:45	218.4	0.230	12.41	0.476	201.6	0.486	97176.0	675.5
12/19/00 16:46	183.6	0.195	12.36	0.483	201.7	0.488	97164.0	674.8
12/19/00 16:47	166.6	0.176	12.40	0.479	202.5	0.488	97188.0	674.9
12/19/00 16:48	166.2	0.175	12.42	0.473	200.9	0.483	97140.0	676.5
12/19/00 16:49	137.3	0.145	12.41	0.474	198.9	0.479	97140.0	678.3
12/19/00 16:50	141.9	0.150	12.40	0.473	199.6	0.481	97140.0	679.9
12/19/00 16:51	179.9	0.189	12.48	0.468	200.3	0.480	97116.0	679.7
12/19/00 16:52	259.8	0.271	12.53	0.467	201.3	0.480	97086.0	680.8
12/19/00 16:53	275.3	0.287	12.55	0.467	201.1	0.479	97086.0	680.9
Final Average*	**209.5**	**0.220**	**12.44**	**0.475**	**205.8**	**0.495**	**97331.5**	**678.5**
Maximum*	**360.8**	**0.379**	**12.55**	**0.486**	**223.1**	**0.535**	**97758.0**	**682.2**
Minimum*	**130.4**	**0.137**	**12.36**	**0.466**	**198.9**	**0.479**	**97086.0**	**674.8**

*Does not include Invalid Averaging Periods ("N/A")

RUN #11 OUTLET

Enertec NTDAHS®
Average Values Report
12/19/00 18:07

Company: St. Johns Unit 2
17:19
Plant:
17:41
City/St:
Source: Unit 2

Period Start: 12/19/00
Period End: 12/19/00
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start	Average 2outCO_C ppm	Average 2outCO_MM #/M	Average 2outCO2_C %	Average 2outNOX_MM #/M	Average 2outSO2_C ppm	Average 2outSO2_MM #/M	Average 2Stk_kscfh kscfh	Average 2Unit_Load MW
12/19/00 17:19	146.3	0.155	12.38	0.478	202.7	0.490	96564.0	680.2
12/19/00 17:20	155.4	0.164	12.41	0.473	201.6	0.485	96498.0	680.9
12/19/00 17:21	243.7	0.256	12.44	0.465	203.0	0.488	96474.0	681.7
12/19/00 17:22	380.4	0.398	12.49	0.465	203.5	0.487	96486.0	681.0
12/19/00 17:23	312.9	0.328	12.49	0.472	204.9	0.490	96474.0	679.9
12/19/00 17:24	244.8	0.256	12.53	0.467	205.4	0.490	96378.0	679.1
12/19/00 17:25	267.8	0.281	12.48	0.476	205.3	0.492	96342.0	679.1
12/19/00 17:26	195.3	0.207	12.39	0.482	203.9	0.492	96366.0	679.3
12/19/00 17:27	135.8	0.144	12.39	0.484	204.6	0.493	96606.0	679.0
12/19/00 17:28	177.3	0.186	12.44	0.479	205.9	0.495	96870.0	679.4
12/19/00 17:29	211.4	0.221	12.50	0.478	207.6	0.496	96870.0	679.7
12/19/00 17:30	224.3	0.235	12.51	0.476	208.8	0.499	96870.0	680.8
12/19/00 17:31	209.3	0.220	12.48	0.479	208.9	0.501	96882.0	680.2
12/19/00 17:32	201.9	0.212	12.47	0.481	210.1	0.503	96882.0	680.4
12/19/00 17:33	261.9	0.275	12.50	0.474	211.3	0.505	96882.0	678.8
12/19/00 17:34	303.7	0.318	12.49	0.476	210.9	0.505	96882.0	679.4
12/19/00 17:35	223.9	0.236	12.44	0.483	208.9	0.502	96870.0	677.7
12/19/00 17:36	189.0	0.200	12.37	0.482	208.6	0.504	96870.0	677.5
12/19/00 17:37	226.6	0.240	12.39	0.482	209.4	0.505	96882.0	677.1
12/19/00 17:38	254.2	0.267	12.45	0.481	209.8	0.504	96432.0	675.7
12/19/00 17:39	197.0	0.208	12.43	0.483	209.9	0.505	96264.0	677.0
12/19/00 17:40	203.9	0.214	12.45	0.481	210.4	0.505	96264.0	677.3
Final Average*	**225.8**	**0.237**	**12.45**	**0.477**	**207.1**	**0.497**	**96632.2**	**679.1**
Maximum*	**380.4**	**0.398**	**12.53**	**0.484**	**211.3**	**0.505**	**96882.0**	**681.7**
Minimum*	**135.8**	**0.144**	**12.37**	**0.465**	**201.6**	**0.485**	**96264.0**	**675.7**

*Does not include Invalid Averaging Periods ("N/A")

RUN #12 OUTLET (#8 SO_2)

Enertec NTDAHS®
Average Values Report
12/19/00 18:50

Company: St. Johns Unit 2
17:59
Plant:
18:21
City/St:
Source: Unit 2

Period Start: 12/19/00
Period End: 12/19/00
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

2Unit_Load Period Start	Average 2outCO_C ppm	Average 2outCO_MM #/M	Average 2outCO2_C %	Average 2outNOX_MM #/M	Average 2outSO2_C ppm	Average 2outSO2_MM #/M	Average 2Stk_kscfh kscfh	Average MW
12/19/00 17:59	416.3	0.435	12.54	0.474	209.0	0.498	95970.0	682.3
12/19/00 18:00	337.2	0.352	12.51	0.477	207.8	0.497	95958.0	684.1
12/19/00 18:01	254.3	0.267	12.48	0.478	206.4	0.494	96066.0	683.4
12/19/00 18:02	252.7	0.265	12.49	0.477	206.7	0.495	96174.0	682.8
12/19/00 18:03	251.3	0.262	12.56	0.477	207.9	0.495	96174.0	681.8
12/19/00 18:04	264.6	0.277	12.49	0.479	205.6	0.493	96156.0	681.7
12/19/00 18:05	246.1	0.259	12.47	0.478	202.9	0.487	96174.0	680.8
12/19/00 18:06	263.7	0.277	12.47	0.478	202.6	0.486	96516.0	680.5
12/19/00 18:07	257.1	0.270	12.45	0.481	203.4	0.488	96528.0	679.7
12/19/00 18:08	324.3	0.341	12.45	0.478	204.0	0.489	96528.0	680.0
12/19/00 18:09	268.0	0.281	12.47	0.479	202.9	0.487	N/A	678.6
12/19/00 18:10	219.6	0.230	12.49	0.480	203.8	0.487	N/A	678.2
12/19/00 18:11	181.3	0.190	12.46	0.483	203.7	0.488	N/A	677.2
12/19/00 18:12	172.2	0.182	12.40	0.484	202.7	0.488	N/A	679.0
12/19/00 18:13	141.1	0.149	12.38	0.486	202.8	0.489	N/A	679.3
12/19/00 18:14	188.3	0.198	12.43	0.483	203.6	0.490	N/A	680.5
12/19/00 18:15	281.6	0.294	12.53	0.476	205.0	0.489	N/A	680.2
12/19/00 18:16	271.1	0.282	12.56	0.473	204.6	0.486	N/A	680.2
12/19/00 18:17	257.6	0.271	12.44	0.480	203.8	0.489	N/A	680.6
12/19/00 18:18	216.8	0.228	12.46	0.478	201.8	0.484	96306.0	681.0
12/19/00 18:19	205.5	0.217	12.45	0.475	199.3	0.478	96318.0	682.0
12/19/00 18:20	202.7	0.212	12.51	0.477	198.6	0.475	96288.0	
681.7								
Final Average*	**248.8**	**0.261**	**12.48**	**0.479**	**204.0**	**0.489**	**96242.8**	**680.7**
Maximum*	**416.3**	**0.435**	**12.56**	**0.486**	**209.0**	**0.498**	**96528.0**	**684.1**
Minimum*	**141.1**	**0.149**	**12.38**	**0.473**	**198.6**	**0.475**	**95958.0**	**677.2**

*Does not include Invalid Averaging Periods ("N/A")

Run #13 (#9 SO2)

Enertec NTDAHS®
Average Values Report
12/19/00 19:14

Company: St. Johns Unit 2
18:35
Plant:
18:57
City/St:
Source: Unit 2

Period Start: 12/19/00
Period End: 12/19/00
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start	Average 2outCO_C ppm	Average 2outCO_MM #/M	Average 2outCO2_C %	Average 2outNOX_MM #/M	Average 2outSO2_C ppm	Average 2outSO2_MM #/M	Average 2Stk_kscfh kscfh	Average 2Unit_Load MW
12/19/00 18:35	247.1	0.262	12.34	0.480	192.5	0.466	96924.0	678.8
12/19/00 18:36	180.6	0.191	12.36	0.481	192.2	0.465	96948.0	679.3
12/19/00 18:37	174.5	0.184	12.42	0.477	193.2	0.465	96966.0	678.0
12/19/00 18:38	219.4	0.230	12.45	0.473	193.4	0.464	97044.0	678.8
12/19/00 18:39	226.7	0.239	12.39	0.479	194.2	0.468	97068.0	678.2
12/19/00 18:40	214.1	0.225	12.45	0.478	193.7	0.465	97056.0	679.6
12/19/00 18:41	263.8	0.278	12.43	0.480	193.6	0.465	97056.0	678.9
12/19/00 18:42	333.7	0.350	12.48	0.473	194.1	0.465	97080.0	679.9
12/19/00 18:43	312.6	0.328	12.49	0.476	193.3	0.462	97056.0	678.6
12/19/00 18:44	224.0	0.239	12.41	0.481	192.1	0.462	97056.0	679.9
12/19/00 18:45	240.2	0.252	12.41	0.483	190.4	0.459	97068.0	679.1
12/19/00 18:46	318.6	0.337	12.38	0.481	189.3	0.457	97122.0	679.0
12/19/00 18:47	293.6	0.311	12.35	0.482	188.5	0.456	97140.0	677.7
12/19/00 18:48	255.1	0.273	12.37	0.478	189.6	0.458	97140.0	678.2
12/19/00 18:49	217.6	0.230	12.37	0.481	188.8	0.457	97116.0	678.2
12/19/00 18:50	265.1	0.285	12.36	0.480	188.8	0.457	97098.0	676.9
12/19/00 18:51	249.9	0.263	12.43	0.474	188.9	0.454	97098.0	676.6
12/19/00 18:52	270.3	0.282	12.52	0.472	189.9	0.453	97098.0	676.7
12/19/00 18:53	217.6	0.235	12.37	0.481	189.7	0.459	96558.0	677.3
12/19/00 18:54	133.2	0.143	12.34	0.485	188.7	0.457	96570.0	677.0
12/19/00 18:55	209.4	0.221	12.40	0.478	188.8	0.455	96570.0	677.3
12/19/00 18:56	281.4	0.299	12.44	0.471	187.4	0.451	96474.0	676.4
Final Average*	243.1	0.257	12.41	0.478	191.0	0.460	96968.5	678.2
Maximum*	333.7	0.350	12.52	0.485	194.2	0.468	97140.0	679.9
Minimum*	133.2	0.143	12.34	0.471	187.4	0.451	96474.0	676.4

*Does not include Invalid Averaging Periods ("N/A")

RUN # 14 OUTLET (#10 SO_2)

Enertec NTDAHS®
Average Values Report
12/19/00 19:41

Company: St. Johns Unit 2
19:13
Plant:
19:35
City/St:
Source: Unit 2

Period Start: 12/19/00
Period End: 12/19/00
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Average 2Unit_Load Period Start	Average 2outCO_C ppm	Average 2outCO_MM #/M	Average 2outCO2_C %	Average 2outNOX_MM #/M	Average 2outSO2_C ppm	Average 2outSO2_MM #/M	Average 2Stk_kscfh kscfh	Average MW
12/19/00 19:13	349.1	0.367	12.44	0.474	203.2	0.488	96486.0	679.8
12/19/00 19:14	322.1	0.339	12.48	0.470	201.5	0.482	96474.0	680.5
12/19/00 19:15	285.3	0.302	12.49	0.470	201.9	0.483	96486.0	680.4
12/19/00 19:16	266.0	0.279	12.48	0.470	201.4	0.482	96486.0	681.4
12/19/00 19:17	228.5	0.240	12.49	0.472	202.0	0.484	96486.0	680.7
12/19/00 19:18	330.0	0.346	12.48	0.471	203.9	0.488	96474.0	681.0
12/19/00 19:19	340.9	0.358	12.47	0.469	205.0	0.492	96486.0	680.3
12/19/00 19:20	233.7	0.246	12.45	0.473	204.4	0.491	96474.0	679.7
12/19/00 19:21	379.0	0.398	12.45	0.473	204.6	0.491	96348.0	678.9
12/19/00 19:22	373.4	0.392	12.48	0.474	205.1	0.491	96306.0	677.8
12/19/00 19:23	293.2	0.309	12.41	0.479	203.7	0.491	96318.0	678.3
12/19/00 19:24	198.4	0.210	12.38	0.483	202.2	0.488	96384.0	677.8
12/19/00 19:25	187.8	0.198	12.41	0.480	203.0	0.489	96486.0	679.1
12/19/00 19:26	217.5	0.230	12.38	0.482	203.8	0.492	96486.0	679.6
12/19/00 19:27	267.3	0.282	12.43	0.475	202.5	0.487	96486.0	680.8
12/19/00 19:28	272.3	0.279	12.49	0.470	203.7	0.487	96462.0	679.6
12/19/00 19:29	379.3	0.397	12.52	0.466	203.8	0.487	96264.0	678.8
12/19/00 19:30	332.6	0.348	12.50	0.467	203.8	0.487	96252.0	677.6
12/19/00 19:31	203.4	0.214	12.43	0.479	202.7	0.487	96252.0	677.3
12/19/00 19:32	165.3	0.174	12.38	0.486	201.8	0.487	96714.0	677.0
12/19/00 19:33	226.3	0.239	12.40	0.485	201.7	0.486	96882.0	677.6
12/19/00 19:34	214.0	0.227	12.37	0.484	202.2	0.488	96882.0	
677.7								
Final Average*	275.7	0.290	12.45	0.475	203.1	0.488	96471.6	679.2
Maximum*	379.3	0.398	12.52	0.486	205.1	0.492	96882.0	681.4
Minimum*	165.3	0.174	12.37	0.466	201.4	0.482	96252.0	677.0

*Does not include Invalid Averaging Periods ("N/A")

ST. JOHNS RIVER POWER PARK
BOILER CONTROL ROOM DATA

UNIT # 2 DATE: 12-19-00

PARAMETER	UNITS	Readings (30 minute intervals)					
Person Recording Data		MT	MT	MT	MT	MT	MT
Time		0800	0830	0900	0930	1000	1030
Steam Flow	Lb/Hr x 10^6	4.81	4.81	4.81	4.80	4.82	4.81
Air Flow	%	63.5	63.5	63.5	63.5	63.5	63.5
Generator Load (Gross)	Megawatts	678	681	683	684	684	682
Boiler Themal Demand	Megawatts	689	689	689	689	689	689
O2 Flue gas	%	2.71	2.69	2.8	2.8	2.76	2.78
Fuel Flow	%	103.8	103.8	103.8	103.8	103.8	103.8
Coal Totalizer	Tons						
A		45	45	45	45	45	45
B		45	45	45	45	45	45
C		45.5	45.5	46	46	45.5	45.7
D		o/s	o/s	o/s	o/s	o/s	o/s
E		42.5	42.5	42.5	43	43	43
F		45.3	45.2	45	45	45.1	45.3
G		40.5	41	40.5	40.5	40.7	40.7

ST. JOHNS RIVER POWER PARK
BOILER CONTROL ROOM DATA

UNIT # 2 DATE: 12-19-00

PARAMETER	UNITS	Readings (30 minute intervals)					
Person Recording Data		MT	MT	MT	MT	MT	MT
Time		1100	1130	1200	1230	1300	1330
Steam Flow	Lb/Hr x 10^6	4.81	4.81	4.81	4.78	4.82	4.81
Air Flow	%	63.5	63.5	63.5	63.7	63.7	63.7
Generator Load (Gross)	Megawatts	682	685	682	676	685	683
Boiler Themal Demand	Megawatts	689	690	689	689	690	689
O2 Flue gas	%	2.84	2.72	2.81	2.81	2.8	2.77
Fuel Flow	%	103.8	103.8	103.8	103.8	103.8	103.8
Coal Totalizer	Tons						
A		45	45	45	45	45	45
B		45	45	45	45	45.1	44.5
C		45.5	45.7	45.7	45.5	45.9	45.8
D		0/S	0/S	0/S	0/S	0/S	0/S
E		43	43	43	43	43	43
F		45	45.2	45.2	45.3	45.3	45.4
G		40.7	40.6	40.6	40.7	40.8	40.6

ST. JOHNS RIVER POWER PARK
BOILER CONTROL ROOM DATA

UNIT # 2 DATE: 12-15-00

PARAMETER	UNITS	Readings (30 minute intervals)					
Person Recording Data		MT	MT	MT	MT	MT	MT
Time		1400	1430	1500	1530	1600	1630
Steam Flow	Lb/Hr x 10^6	4.79	4.78	4.8	4.81	4.8	4.81
Air Flow	%	63.7	63.7	63.7	64	64	64
Generator Load (Gross)	Megawatts	682	680	682	684	690	689
Boiler Themal Demand	Megawatts	689	688	689	688	680	682
O2 Flue gas	%	2.76	2.86	2.75	2.5	2.82	2.77
Fuel Flow	%	103.8	103.8	103.8	103.8	103.8	103.8
Coal Totalizer	Tons						
A		45	45	45	45	45	45
B		45	45	45	45.4	45	45
C		46	45.8	45.8	45.7	46	45.7
D		O/S	O/S	O/S	O/S	O/S	O/S
E		43	43	43	43	43	43
F		45.7	45.2	45	45	45	45
G		40.6	40.7	40	39.5	39.7	39.5

ST. JOHNS RIVER POWER PARK
BOILER CONTROL ROOM DATA
UNIT # 2 DATE: 12-19-00

PARAMETER	UNITS	Readings (30 minute intervals)					
Person Recording Data		~~mft~~	~~mft~~	EA	EA	EA	EA
Time		1700	1730	1800	1830	1900	1930
Steam Flow	Lb/Hr x 10^6	4.8	4.81	4.79	4.79	4.80	4.81
Air Flow	%	63.7	63.9	64	64	63	63.7
Generator Load (Gross)	Megawatts	682	682	679	682	681	683
Boiler Themal Demand	Megawatts	689	689	689	689	689	689
O2 Flue gas	%	2.68	2.71	2.80	2.70	2.75	2.7
Fuel Flow	%	103.8	103.8	103.79	103.79	103.79	103.79
Coal Totalizer	Tons						
A		45	45	45	45	45	45
B		45	45	45	45	45	45
C		45.6	46	46	45.5	45.5	45.5
D		0/5	0/5	0/5	0/5	0/5	0/5
E		43	42.5	43	43	43	43
F		45.2	45.4	45	45	45.5	45.4
G		39.5	39.5	39.5	39.5	39.5	39.1

ST. JOHNS RIVER POWER PARK
FLUE GAS DESULFURIZATION
OPERATIONAL PARAMETERS

Date: 12/19/00

UNIT # Two

Initials: LCS

HOUR	PACKING DIFFERENTIAL PRESSURE (inches H2O column) A	B	C
0000			
0100			
0200			
0300			
0400			
0500			
0600			
0700			
0800	±9	±1	
0900	±9	±1	
1000	5.0	±2	
1100	5.0	±2	
1200	5.0	±2	
1300	5.0	±1	
1400	5.0	±1	
1500	4.9	±1	
1600	5.0	±1	
1700	5.0	±2	
1800	5.0	4.2	
1900	5.0	4.2	
2000			
2100			
2200			
2300			

Daily Water System Use: _____ (Total Gallons) / 1440 (min/day) = _____ GPM

COMMENTS: _____

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 08:00
Date: 12/19/00
Initials: R. R.

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamp	Sparks	COMMENTS
O/S 11						
12	20·0	12	38·8	51.0	0	
13	36	10	2.1	43.0	0	
14	203	12	40·8	51	0	
15	222	12	43·4	47	0	
O/S 16	~~180~~	~~10~~	~~38·9~~	~~39~~	0	
O/S 21						
O/S 22						
23	190	10	38·7	39	0	
O/S 24						
25	209	15	39·8	67	0	
26	226	15	41·9	67	0	
31	170	6·0	37·5	23	0	
32	214	15	40·0	67	0	
O/S 33	2					
34	210	15	39·9	67	0	
35	211	15	40·5	67	0	
36	208	15	41·9	67	0	
41	192	19	39·8	79	0	
42	199	20	34·7	79	0	
43	211	43	41·7	77	0	
44	195	20	38·6	83	0	
45	200	20	40·5	67	0	
46	192	20	38·4	83	0	
51	248	30	43·7	134	0	
52	231	30	41·9	130	0	
53	236	30	42·0	134	0	
54	215	30	39·0	126	0	
55	224	30	40·7	134	0	
O/S 56	~~244~~	~~35~~	~~43·3~~	~~180~~	0	
61	244	35	42·3	168	0	
62	242	35	42·3	158	0	
63	252	35	38	162	0	
64	219	35	40·5	158	0	
65	226	35	38·3	158	0	
66	225	35	41.0	154	0	
71	301	45	44.2	213	0	
72	243	45	40.5	217	0	
73	306	45	42·4	217	0	
74	162	18	33·0	71.0	0	
75	255	45	41·9	217	0	
76	282	45	41·8	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 08:00
Date: 12/19/80
Initials: R. R.

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
11	196	12	38	47	0	
12	200	12	39.8	47	0	
0/S 13						
14	205	12	36.1	51	0	
15	205	12	41.0	47	0	
0/S 16						
21	204	15	38.1	63	0	
22	205	15	38.6	67	0	
0/S 23						
24	225	15	41.6	63	0	
25	219	16	42.8	67	0	
26	225	15	41.7	63	0	
31	204	15	39.4	63	0	
32	211	15	40.0	61	0	
33	198	10	40.3	43	0	
34	215	15	41.4	63	0	
35	216	15	41.6	67	0	
36	227	15	41.9	63	0	
41	188	20	36.4	79	0	
42	201	20	41.0	79	0	
43	215	20	42.3	79	0	
44	205	20	41.9	79	0	
45	211	20	41.5	79	0	
46	208	20	41.2	79	0	
51	201	30	36.7	130	0	
52	214	30	37.8	134	0	
0/S 53						
54	249	31	44.8	134	0	
55	249	30	44.1	134	0	
56	119	19	33.0	71.0	0	
61	204	35	35.6	158	0	
62	221	35	37.2	162	0	
63	248	35	43.9	162	0	
64	246	35	42.6	166	0	
65	248	35	44.4	162	0	
66	239	35	45.5	154	0	
71	216	45	36.5	213	0	
72	233	45	37.4	219	0	
73	238	45	43.1	201	0	
74	254	45	41.0	213	0	
75	295	45	41.8	217	0	
76	321	45	44.4	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 09:00
Date: 12/19/00
Initials: R. R.

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamp	Sparks	COMMENTS
OF 11						
12	200	12	38.9	51	0	
13	45.0	9	10	27		
14	205	12	40.9	55	0	
15	32	7	6.6	55	0	
OF 16						
OF 21						
OF 22						
23	191	10	38.8	39	0	
OF 24						
25	211	15	40.1	67	0	
26	226	15	41.9	67	0	
31	170	6	37.3	27	0	
32	213	15	40.1	67	0	
OF 33						
34	220	15	41.4	67	0	
35	212	15	40.7	67	0	
36	209	15	40.2	67	0	
41	209	20	41.4	83	0	
42	200	20	34.9	83	0	
43	218	20	42.9	78	0	
44	197	20	39.1	83	0	
45	202	20	39.3	83	0	
46	194	20	38.8	83	0	
51	256	30	44.1	134	0	
52	232	30	42.3	130	0	
53	239	30	42.5	132	0	
54	219	30	39.5	130	0	
55	222	30	40.7	134	0	
OF 56						
61	246	35	42.8	162	0	
62	244	35	42.7	158	0	
63	254	35	383	162	0	
64	222	35	40.8	158	0	
65	228	35	38.5	158	0	
66	228	35	41.7	154	0	
71	306	45	44.8	217	0	
72	246	45	40.8	219		
73	309	45	42.7	213		
74	164	18	33.2	71		
75	256	45	38.5	158		
76	296	45	42.2	217		

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 09:00
Date: 12/14/10
Initials: R. R

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
11	252	21	42.8	98		
12	257	22	44.8	102		
13						
14	207	12	36.4	55		
15	204	12	40.8	47		
16						
21	258	25	43.1	122		
22	326	27	47.3	134		
23						
24	228	15	41.6	61.0		
25	218	15	43.0	63.0		
26	224	15	41.6	63.0		
31	303	25	45.9	118		
32	331	27	47.6	130		
33	239	18	43.1	86.0		
34	215	15	41.1	63.0		
35	219	15	41.7	67.0		
36	226	15	41.8	63.0		
41	261	36	44.1	166		
42	318	36	48.3	162		
43	332	36	48.4	166		
44	204	20	41.8	79.0		
45	211	20	41.7	67.0		
46	208	20	41.2	83.0		
51	252	45	41.9	217		
52	303	45	42.4	217		
53						
54	248	30	45.1	134		
55	249	30	44.2	134		
56	214	18	44.2	73		
61	234	45	38.7	213		
62	251	45	39.8	217		
63	324	45	46.7	217		
64	246	35	42.8	166		
65	247	35	44.8	158		
66	242	35	45.8	154		
71	217	45	36.6	217		
72	234	45	37.5	217		
73	237	45	43.0	201		
74	254	45	41.0	209		
75	296	45	41.9	217		
76	321	45	44.4	217		

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 10:00
Date: 12/19/00
Initials: A.B2

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamp	Sparks	COMMENTS
O/S 11						
12	200	12	39.1	49	0	
13	40	10	2.3	43	0	
14	204	12	40.8	55	0	
15	223	12	43.6	47	0	
O/S 16						
O/S 21						
O/S 22						
23	191	10	38.7	39	0	
O/S 24						
25	209	15	39.8	67	0	
26	226	15	42.0	67	0	
31	167	6	37.1	19	0	
32	212	15	39.7	67	0	
O/S 33						
34	214	15	40.8	67	0	
35	210	15	40.3	67	0	
36	214	15	40.2	67	0	
41	207	20	41.1	79	0	
42	197	20	34.4	77	0	
43	217	20	42.6	79	0	
44	195	20	38.8	83	0	
45	212	20	39.4	79	0	
46	193	20	38.6	83	0	
51	249	30	43.9	134	0	
52	231	30	42.0	130	0	
53	238	30	42.3	130	0	
54	218	30	39.4	130	0	
55	225	30	40.8	134	0	
O/S 56						
61	244	35	42.5	162	0	
62	242	35	42.3	154	0	
63	253	35	38.2	162	0	
64	220	35	40.5	158	0	
65	228	35	38.3	158	0	
66	228	35	41.6	154	0	
71	305	45	44.6	217	0	
72	246	45	40.8	219	0	
73	309	45	42.7	215	0	
74	163	18	33.1	71.	0	
75	256	45	42.1	217	0	
76	295	45	42.1	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 10.00
Date: 12/19/00
Initials: A.R.

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
11	194	12	37.6	47	0	
12	202	12	40.2	51	0	
13 OFF						
14	205	12	36.1	51	0	
15	201	12	40.5	47	0	
OFF 16	~~200~~	~~15~~	~~37.7~~	~~69~~	~~0~~	
21	202	15	37.7	67	0	
22	203	15	38.3	67	0	
OFF 23	2[illegible]					
24	220	15	41.4	63	0	
25	219	16	42.8	67	0	
26	224	15	41.6	59	0	
31	204	15	39.4	67	0	
32	212	15	40.0	59	0	
33	197	10	40.0	43	0	
34	212	15	40.8	63	0	
35	218	15	41.6	67	0	
36	225	15	41.5	63	0	
41	189	20	36.4	83	0	
42	201	20	41.1	79	0	
43	214	20	42.3	81	0	
44	204	20	41.7	79	0	
45	212	20	41.6	67	0	
46	209	20	41.3	79	0	
51	200	30	36.6	130	0	
52	215	30	37.9	134	0	
OFF 53	~~245~~	~~30~~	~~45.8~~	~~130~~	~~0~~	
54	245	30	44.8	130	0	
55	249	30	44.5	134	0	
56	108	6	25.8	27	0	
61	204	35	35.6	158	0	
62	220	35	37.1	158	0	
63	247	35	43.7	162	0	
64	246	35	42.6	166	0	
65	247	35	44.4	158	0	
66	239	35	45.3	164	0	
71	217	45	36.6	217		
72	234	45	37.6	217		
73	239	45	43.3	205		
74	254	45	48.5	217		
75	294	45	41.7	217		
76	321	45	44.4	217		

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # ____

Time: 11:00
Date: 12/19/00
Initials: R.R.

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
Of 11						
12	198	12	38.6	47	0	
13	48	8	9.3	23	0	
14	204	12	40.8	51	0	
15	217	12	42.3	47	0	
Of 16						
Of 21						
Of 22						
23	190	10	38.7	39	0	
Of 24						
25	212	15.0	41.1	71	0	
26	226	15.0	41.8	67	0	
31	167	6.0	36.5	19	0	
32	217	15	40.3	67	0	
Of 33	~~244~~	~~15~~	~~44.2~~	~~69~~	~~0~~	
34	216	15	41.2	67	0	
35	214	16	40.7	71	0	
36	212	15	40.1	67	0	
41	208	20	41.2	82	0	
42	200	20	34.8	79	0	
43	215	20	42.5	79	0	
44	196	20	39	83	0	
45	202	20	39.3	83	0	
46	193	20	38.5	79	0	
51	249	30	43.9	124	0	
52	231	30	42.1	130	0	
53	238	30	42.5	79	0	
54	217	30	39.4	126	0	
55	223	30	40.6	134	0	
Of 56	~~246~~	~~25~~	~~45.9~~	~~162~~	0	
61	246	35	42.7	162	0	
62	242	35	42.3	158	0	
63	254	35	38.2	162	0	
64	220	35	33.2	71.0	0	
65	226	35	38.3	158	0	
66	228	35	41.7	154	0	
71	304	45	44.5	217	0	
72	246	45	40.8	221	0	
73	307	45	42.6	213	0	
74	164	18	33.2	71.0	0	
75	256	45	42.1	217	0	
76	294	45	42.0	213	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 11.00
Date: 12/19/00
Initials: R. R.

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
11	198	12	38.3	47	0	
12	198	12	39.4	47		
13	~~203~~	~~12~~	~~35.6~~	~~55~~	0	
14	203	12	35.6	55	0	
15	201	12.0	40.7	47	0	
16	~~204~~	~~15~~	~~38.0~~	~~67~~	0	
21	204	15	38.0	67	0	
22	205	15	38.5	67	0	
23	~~212~~	~~15~~	~~40.0~~	~~63~~	0	
24	221	15	41.3	67	0	
25	214	15	42.6	67	0	
26	225	15	41.2	63	0	
31	204	15	39.4	67	0	
32	212	15	40.0	63	0	
33	195	10	39.8	47	0	
34	215	15	41.2	63	0	
35	215	15	67	41.3	0	
36	229	15	42.3	63	0	
41	189	20	36.5	83	0	
42	201	20	41.1	79	0	
43	214	20	42.2	79	0	
44	204	20	41.7	79	0	
45	212	20	41.1	79	0	
46	209	20	41.2	83	0	
51	202	30	36.9	134	0	
52	215	30	38.0	134	0	
53						
54	246	30	44.8	130	0	
55	249	30	44.1	134	0	
56	212	18	43.9	71.0	0	
61	204	35	35.6	158	0	
62	221	35	37.1	162	0	
63	248	35	44.1	158	0	
64	246	35	42.6	169	0	
65	248	35	44.4	158	0	
66	279	35	45.4	154	0	
71	216	45	36.5	213	0	
72	233	45	37.4	212	0	
73	237	45	43.0	201	0	
74	252	45	40.8	209	0	
75	294	45	41.8	217	0	
76	321	45	44.4	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 12:00
Date: 12/19/00
Initials: R. R.

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
O/S 11						
12	196	12.0	38.4	47	0	
13	46	10	2.9	43	0	
14	204	12	40.8	51.0	0	
15	219	12	42.8	47.0	0	
O/S 16						
O/S 21						
O/S 22						
23	188	10	38.3	43		
O/S 24						
25	209	15	40.8	67		
26	225	15	41.8	67		
31	168	6.0	36.5	23		
32	213	15	40.3	67		
O/S 33						
34	215	15	41.1	67		
35	211	15	40.5	67		
36	214	15	40.3	67		
41	208	20	41.2	83		
42	199	20	34.8	79		
43	216	20	42.6	75		
44	197	20	39.1	83		
45	202	20	39.3	83		
46	192	20	38.3	83		
51	248	30	43.7	134		
52	236	30	42.0	130		
53	239	30	42.5	134		
54	217	30	39.4	126		
55	223	30	40.7	134		
O/S 56						
61	245	35	42.6	158		
62	242	35	42.3	156		
63	254	35	38.3	162		
64	221	35	40.6	158		
65	228	35	38.5	158		
66	229	35	41.8	154		
71	305	45	44.6	217		
72	245	45	40.8	217		
73	307	45	42.7	213		
74	165	18	33.1	71		
75	256	45	42.2	217		
76	295	45	42.1	217		

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 12:00
Date: 12/19/00
Initials: B.R.

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamp	Sparks	COMMENTS
11	193	12	37.6	47	0	
12	198	12	38.4	47	0	
13						
14	204	12	35.9	51	0	
15	202	12	40.5	47	0	
16						
21	203	15	38.0	63	0	
22	203	15	38.3	67	0	
23						
24	220	15	41.2	63	0	
25	214	15	42.5	67	0	
26	224	15	41.7	63	0	
31	205	15	39.5	61	0	
32	215	15	40.2	63	0	
33	185	10	40.0	43	10	
34	212	15	40.7	63	0	
35	217	15	41.6	67	0	
36	226	15	41.7	63	0	
41	190	20	36.7	83	0	
42	202	20	41.2	79	0	
43	214	20	42.0	79	0	
44	202	20	41.6	75	0	
45	211	20	41.4	79	0	
46	207	20	41.1	83	0	
51	201	30	36.7	130	0	
52	215	30	38.0	134	0	
53	~~248~~	~~31~~	~~44.8~~	~~134~~	~~0~~	
54	248	31	44.8	134	0	
55	249	30	44.2	134	0	
56	146	8.0	29.3	31.0	0	
61	205	35	35.7	158	0	
62	221	35	37.1	162	0	
63	248	35	43.7	162	0	
64	246	35	42.7	166	0	
65	247	35	44.4	158	0	
66	241	35	45.9	154	0	
71	216	45	36.5	213	0	
72	230	45	37.4	217	0	
73	237	45	43.1	203	0	
74	253	45	40.8	205	0	
75	294	45	41.8	217	0	
76	321	45	44.4	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 13:00
Date: __/__/__
Initials: _____

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamp	Sparks	COMMENTS
O/S 11	~~215~~	~~12~~	~~41.6~~	~~51~~	~~0~~	
12	193	12	38.0	47	0	
13	63	6	~~23.2~~	11.2~~3~~	113	
14	203	12	40.9	51	0	
15	47	8	42	47	111	
O/S 16						
O/S 21						
O/S 22						
23	188	10	38.2	39	0	
O/S 24						
25	207	15	40.1	67	0	
26	226	15	41.8	67	0	
31	165	6	36.9	23	0	
32	214	15	39.6	67	0	
33	219	15	41.7	67	0	
34	221	15	41.5	67	0	
35	213	15	40.3	67	0	
36	215	15	40.1	63	0	
41	207	20	41.0	83	0	
42	199	20	35.1	79	0	
43	217	20	42.6	79	0	
44	197	20	39.1	83	0	
45	203	20	39.4	79	0	
46	195	20	38.7	83	0	
51	247	30	43.7	134	0	
52	233	30	42.3	130	0	
53	240	30	42.6	134	0	
54	217	30	39.4	126	0	
55	224	30	40.7	134	0	
O/S 56	212	28	40.9	130	0	
61	248	35	42.9	162	0	
62	243	35	42.6	158	0	
63	253	35	38.2	162	0	
64	221	35	40.6	158	0	
65	226	35	38.3	158	0	
66	229	35	41.8	154	0	
71	305	45	44.7	217	0	
72	246	45	40.8	217	0	
73	307	45	42.6	213	0	
74	164	18	33.0	161	0	
75	256	45	42.1	217	0	
76	294	45	42.1	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 13:00
Date: __/__/__
Initials: _____

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
11	194	12	37.1	45	0	
12	195	12	39.2	47	0	
0/S 13	201	12	35.5	51	0	
14	201	12	39.5	57	0	
15	201	12	40.3	47	0	
0/S 16						
21	202	15	37.7	67	0	
22	203	15	38.3	67	0	
23	221	14	43.0	63	0	
24	223	15	41.5	61	0	
25	218	15	42.6	63	0	
26	220	15	41.1	59	0	
31	205	15	39.6	63	0	
32	215	15	40.3	63	0	
33	193	10	39.7	43	0	
34	215	15	41.2	63	0	
35	218	15	41.6	67	0	
36	220	15	41.2	63	0	
41	191	20	36.7	83	0	
42	201	20	41.3	79	0	
43	215	20	42.3	83	0	
44	205	20	41.9	79	0	
45	213	20	41.7	79	0	
46	211	20	40.9	79	0	
51	204	30	37.0	130	0	
52	216	30	38.0	134	0	
53 0/S	247	30	45.2	130	0	
54	252	30	44.5	134		
55	248	30	45.1	134	0	
56	215	6	44.6	71	0	
61	207	35	35.9	162	0	
62	221	35	37.3	162	0	
63	249	35	44.1	162	0	
64	247	35	42.8	166	0	
65	249	35	44.5	158	0	
66	242	35	45.8	154	0	
71	216	45	36.5	213	0	
72	233	45	37.5	217	0	
73	237	45	43.3	201	0	
74	253	45	41.0	209	0	
75	297	45	41.9	217	0	
76	323	45	44.6	215	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 14:00
Date: 12/19/00
Initials: R.R.

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
OK 11						
12	195	12	38.0	47	8	
13	58	6	14.0	43	109	
14	202	12	41.6	51	0	
15	224	12	42.2	47	88	
OK 16						
OK 21						
OK 22						
23	190	10	38.2	39	0	
OK 24						
25	207	15	40.3	67	0	
26	227	15	41.6	67	0	
31	165	6	36.9	23	0	
32	214	15	40.1	71	0	
OK 33						
34	217	15	41.3	67	0	
35	209	15	40.1	67	0	
36	211	15	40.2	67	0	
41	207	21	42.4	83	1	
42	201	20	35.1	79	0	
43	215	20	42.6	79	6	
44	197	20	39.2	83	0	
45	202	20	39.4	79	0	
46	193	20	38.6	83	0	
51	249	30	43.7	134	0	
52	234	30	42.4	130	0	
53	239	30	42.6	134	0	
54	219	30	39.6	130	0	
55	225	30	40.9	134	0	
OK 56	~~240~~	~~35~~	~~42.9~~	~~162~~	~~0~~	
61	247	35	42.9	162	0	
62	244	35	42.6	158	0	
63	254	35	38.3	162	0	
64	221	35	40.6	158	0	
65	228	35	38.5	156	0	
66	231	35	42.1	154	0	
71	307	45	44.8	217	0	
72	246	45	40.8	217	0	
73	309	45	42.8	213	0	
74	163	18	33.1	71	0	
75	257	45	42.1	217	0	
76	295	45	42.2	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 14:00
Date: 12/19/00
Initials: R.K

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
11	192	12	37.3	47	0	
12	195	12	39.1	47	0	
0/S 13						
14	202	12	35.5	55	0	
15	200	12	40.1	47	0	
0/S 16						
21	204	15	38.0	67	0	
22	204	15	38.4	67	0	
0/S 23						
24	220	15	41.5	63	0	
25	217	15	42.6	67	0	
26	221	15	41.1	63	0	
31	205	15	39.5	63	0	
32	215	15	40.3	63	0	
33	192	10	39.9	43	0	
34	215	15	40.9	63	0	
35	217	15	41.6	67	0	
36	225	15	41.9	63	0	
41	191	20	36.6	83	0	
42	202	20	41.1	79	0	
43	214	20	42.1	79	0	
44	205	20	41.9	79	0	
45	213	20	41.7	79	0	
46	209	20	41.4	83	0	
51	298	30	36.9	130	0	
52	215	30	38.0	134	0	
0/S 53						
54	262	30	45.1	134	0	
55	251	30	44.4	134	0	
56	214	18	44.4	71	24	
61	205	35	35.7	158	0	
62	221	35	37.2	158	0	
63	249	35	44.1	162	0	
64	246	35	42.8	169	0	
65	247	35	44.5	158	0	
66	242	35	45.8	150	0	
71	215	45	36.5	213	0	
72	234	45	35.7	217	0	
73	238	45	43.1	201	0	
74	255	45	41.1	213	0	
75	296	45	41.9	217	0	
76	322	45	44.6	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 15:00
Date: 12/19/00
Initials: R.R.

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamp	Sparks	COMMENTS
11						
12	195	12	38.6	47	0	
13	52	12	8.3	35	108	
14	203	12	40.5	53	0	
15	217	12	41.9	47	107	
16						
21						
22						
23	188	10	37.6	43	0	
24						
25	207	15	40.3	67	0	
26	225	15	42.2	67	0	
31	167	6	36.8	23	0	
32	215	15	40.4	67	0	
33						
34	218	15	41.3	67	0	
35	209	15	40.4	71	0	
36	211	15	40.3	63	0	
41	207	20	41.0	79	0	
42	199	20	34.8	79	0	
43	215	20	42.3	79	0	
44	197	20	39.1	83	0	
45	202	20	39.3	83	0	
46	193	20	38.4	79	0	
51	247	30	43.6	134	0	
52	232	30	42.2	130	0	
53	239	30	42.6	130	0	
54	218	30	39.4	130	0	
55	225	30	40.9	134	0	
56						
61	246	35	42.8	102	0	
62	244	35	43.6	158	0	
63	254	35	38.2	162	0	
64	220	35	40.6	158	0	
65	228	35	38.4	162	0	
66	231	35	42.1	154	0	
71	306	45	44.8	217	0	
72	246	45	40.8	217	0	
73	308	45	42.8	213	0	
74	161	18	33.1	75	0	
75	256	45	42.1	217	0	
76	296	45	42.2	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 15:00
Date: 12/19/00
Initials: R. R.

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
11	191	12	37.3	47	D	
12	198	12	39.0	47	0	
O/S 13						
14	201	12	35.4	55	0	
15	200	12	40.3	47	0	
16	211	12	41.6	51	0	
21	202	15	37.8	63	0	
22	202	15	38.1	67	0	
O/S 23	?					
24	222	15	41.5	63	0	
25	215	15	42.3	71	0	
26	220	15	41.2	63	0	
31	204	15	39.5	63	0	
32	214	15	46.2	63	0	
33	195	10	39.4	43	0	
34	217	15	41.5	63	0	
35	219	15	41.5	67	0	
36	226	15	41.8	67	0	
41	~~190~~	20	41.9	79	0	
42	202	20	41.2	79	0	
43	217	20	41.9	83	0	
44	204	20	41.9	79	0	
45	212	20	41.6	79	0	
46	208	20	41.2	83	0	
51	202	30	36.9	130	0	
52	215	30	38.0	134	0	
O/S 53	~~[illegible]~~	~~34~~	~~[illegible]~~	~~134~~	~~0~~	
54	247	31	45.1	134	0	
55	251	30	44.3	134	0	
56	106	7	44.4	71	0	
61	204	35	35.8	158	0	
62	221	35	37.2	162	0	
63	248	35	43.8	158	0	
64	246	35	42.8	166	0	
65	248	35	44.4	158	0	
66	242	35	45.9	154	0	
71	217	45	36.6	217	0	
72	234	45	37.6	217	0	
73	238	45	43.3	203	0	
74	255	45	41.1	209	0	
75	296	45	41.9	217	0	
76	323	45	44.5	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 16.00
Date: 12/19/00
Initials: R.R

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamp	Sparks	COMMENTS
O/S 11						
12	198	12	38.5	51	0	
13	43	9	7.1	19	111	
14	202	12	41.2	51	0	
15	219	12	4.8	48	87	
O/S 16						
O/S 21						
O/S 22						
23	189	10	38.6	39	0	
O/S 24						
25	208	15	39.9	67	0	
26	225	15	41.6	67	0	
31	165	6	36.8	19	0	
32	212	15	40.0	67	0	
O/S 33						
34	217	15	41.2	67	0	
35	209	15	40.0	71	0	
36	213	16	40.1	63	0	
41	208	20	41.0	83.0	0	
42	199	20	34.7	83	0	
43	217	20	42.6	79	0	
44	197	20	39.1	83	0	
45	201	20	39.3	83	0	
46	193	20	38.4	83	0	
51	247	30	43.7	134	0	
52	231	30	42.2	130	0	
53	240	30	42.6	134	0	
54	216	35	42.8	182	6	
55	224	30	40.8	134	0	
O/S 56						
61	246	35	42.8	162	0	
62	244	35	42.6	158	0	
63	254	35	38.2	162	0	
64	221	35	40.6	158	0	
65	228	35	38.4	158	0	
66	231	35	42.0	154	0	
71	307	45	44.8	213	0	
72	246	45	40.8	217	0	
73	309	45	42.8	213	0	
74	161	18	33.0	71	0	
75	256	45	42.1	217	0	
76	245	45	42.2	217		

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 16.00
Date: 12/19/00
Initials: R. R

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
11	194	12	37.4	47	0	
12	195	12	39.0	47	0	
13						
14	201	12	35.6	51	0	
15	199	12	40.0	47	0	
16						
21	202	15	37.6	67	0	
22	204	15	38.3	67	0	
23						
24	217	15	42.6	67	0	
25	218	15	41.4	65	0	
26	224	15	41.6	63	0	
31	204	15	39.5	63	0	
32	212	15	40.1	59	0	
33	194	10	39.7	43	0	
34	215	15	41.3	63	0	
35	216	15	41.4	67	0	
36	224	15	41.5	63	0	
41	190	20	36.5	83	0	
42	202	20	41.2	79	0	
43	215	20	42.6	79	0	
44	204	20	41.7	79	0	
45	213	20	41.6	79	0	
46	209	20	41.3	79	0	
51	202	30	36.9	130	0	
52	215	30	38	130	0	
53	2					
54	246	30	45	130	0	
55	250	30	44.3	134	0	
56	214	18	44	71	0	
61	205	35	35.7	158	0	
62	224	35	37.2	158	0	
63	248	35	43.5	158	0	
64	246	35	42.7	166	0	
65	248	35	44.5	158	0	
66	241	35	45.8	154	0	
71	217	45	36.5	213	0	
72	234	45	37.6	217	0	
73	238	45	43.2	203	0	
74	255	45	41.0	213	0	
75	246	45	41.9	217	0	
76	322	45	45.5	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 17:00
Date: 12/A/00
Initials: R.R

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamp	Sparks	COMMENTS
Off 11	-					
12	215	12	41.6	51	0	
13	197	12	38.3	51	0	
14	202	12	41.4	51	0	
15	211	12	41.5	51	0	
Off 16						
Off 21						
Off 22						
23	188	10	38.7	39	0	
Off 24						
25	208	15	40.3	67	0	
26	225	15	41.8	67	0	
31	165	6	36.6	28	0	
32	217	15	40.4	63	0	
Off 33						
34	218	15	41.2	67	0	
35	209	15	40.3	67	0	
36	212	15	40.0	67	0	
41	207	20	41.4	79	0	
42	200	20	34.8	83	0	
43	215	20	42.5	79	0	
44	196	20	39.1	83	0	
45	202	20	39.3	79	0	
46	193	20	38.5	83	0	
51	247	30	43.7	134	0	
52	231	30	42.1	130	0	
53	239	30	42.5	134	0	
54	217	30	39.4	108	0	
55	222	30	40.6	134	0	
Off 56						
61	246	35	42.7	162	0	
62	244	35	42.6	162	0	
63	254	35	38.3	162	0	
64	222	35	40.8	158	0	
65	226	35	38.3	154	0	
66	231	35	41.4	154	0	
71	307	45	44.8	217	0	
72	245	45	40.8	217	0	
73	309	45	42.8	217	0	
74	164	18	33.1	71	0	
75	259	45	42.1	217	0	
76	296	45	423	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 17:00
Date: 12/19/00
Initials: R. R.

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
11	194	12	37.1	47	0	
12	198	12	39.1	47	0	
13						
14	201	12	35.5	51	0	
15	198	12	40.1	47	0	
16						
21	203	15	37.8	67	0	
22	204	15	38.4	71	0	
23						
24	221	15	41.4	63	0	
25	218	15	43.4	67	0	
26	222	15	41.2	61	0	
31	205	15	39.6	63	0	
32	215	15	40.4	63	0	
33	195	10	39.8	43	0	
34	213	15	41.0	63	0	
35	217	15	41.2	67	0	
36	225	15	41.6	63	0	
41	190	20	36.6	83	0	
42	202	20	41.2	79	0	
43	216	20	42.2	79	0	
44	204	20	41.8	79	0	
45	212	20	41.5	85	0	
46	210	20	41.5	79	0	
51	203	30	37	130	0	
52	216	30	38	134	0	
53						
54	248	30	45	134	0	
55	251	30	44.4	134	0	
56	209	18	44.3	71	0	
61	206	35	35.8	162	0	
62	221	35	37.2	158	0	
63	248	35	43.7	162	0	
64	246	35	42.7	166	0	
65	248	35	44.4	158	0	
66	241	35	45.6	154	0	
71	216	45	36.5	213	0	
72	233	45	37.4	217	0	
73	238	45	43.1	203	0	
74	254	45	41.9	213	0	
75	246	45	41.9	217	0	
76	321	45	44.4	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 18:00
Date: 12/19/00
Initials: R R.

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
E 11						
12	196	12	38.7	51	0	
13	49	9	10.3	15	116	
14	202	12	40.3	~~51~~	0	
15	217	12	42.0	51	116	
E 16						
E 21						
E 22						
23	189	10	38.6	39	0	
E 24						
25	208	15	40.5	65	0	
26	223	15	41.6	67	0	
31	~~166~~	~~96~~	41.1	67	0	
32	213	15	39.1	67	0	
E 33	~~208~~	~~15~~	~~44.6~~	~~67~~	~~0~~	
34	218	15	41.6	67	0	
35	209	15	40.2	71	0	
36	211	15	40.0	67	0	
41	208	20	41.2	83	0	
42	199	20	34.8	79	0	
43	216	20	42.5	79	0	
44	196	20	39.0	83	0	
45	202	20	39.2	83	0	
46	193	20	38.6	83	0	
51	248	30	43.7	134	0	
52	231	30	42.2	130	0	
53	239	30	42.6	134	0	
54	217	30	39.4	126	0	
55	222	30	40.7	134	0	
E 56						
61	246	31	42.8	162	0	
62	244	35	42.6	158	0	
63	254	35	38.3	168	0	
64	222	35	40.9	158	0	
65	226	35	38.3	158	0	
66	231	35	42.6	154	0	
71	306	45	44.6	217	0	
72	245	45	40.8	217	0	
73	310	45	42.9	213	0	
74	165	19	33.0	75	0	
75	257	45	42.2	217	0	
76	296	45	422	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # _____

Time: 10:00
Date: 12/19/00
Initials: R.A.

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
11	192	12	37.5	47	0	
12	197	12	39.1	47	0	
13						
14	201	12	35	51	0	
15	200	12	40	47	0	
16						
21	204	15	38	67	0	
22	204	15	38	67	0	
23						
24	221	15	41	63	0	
25	218	15	42	71	0	
26	224	15	41	63	0	
31	204	15	39	67	0	
32	215	15	40	63	0	
33	197	10	39	43	0	
34	214	15	40	63	0	
35	221	15	41	67	0	
36	226	15	41	67	0	
41	191	20	36	83	0	
42	202	20	41	79	0	
43	214	20	42	79	0	
44	204	20	41	79	0	
45	213	20	41	79	0	
46	207	20	41	79	0	
51	202	30	37	130	0	
52	216	30	38	134	0	
53						
54	252	31	45	134	0	
55	251	30	44	134	0	
56	156	15	44	71	0	
61	206	35	35	162	0	
62	221	35	37	162	0	
63	248	35	43	158	0	
64	248	35	42	169	0	
65	248	35	44	158	0	
66	241	35	45	154	0	
71	215	45	36	223	0	
72	234	45	37	217	0	
73	238	45	43	201	0	
74	255	45	41	213	0	
75	295	45	41	217	0	
76	322	45	44	213	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # 2

Time: 19:00
Date: 12/19/00
Initials: R.R.

A (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
OS 11						
12	200	12	39	51	0	
13	53	12	8.9	27	108	
14	209	12	41	51	0	
15	222	12	42	47	79	
OS 16						
OS 21						
OS 22						
23	191	10	39	39	0	
OS 24						
25	209	15	40	67	0	
26	229	15	42	67	0	
31	168	6	37	23	0	
32	215	15	40	67	0	
OS 33						
34	215	15	41	67	0	
35	212	15	40	67	0	
36	214	15	40	67	0	
41	208	20	41	83	0	
42	200	20	34	83	0	
43	218	20	42	79	0	
44	197	20	39	83	0	
45	202	20	39	79	0	
46	194	20	38	83	0	
51	248	30	44	134	0	
52	231	30	42	130	0	
53	240	30	42	134	0	
54	219	30	39	130	0	
55	225	30	40	134	0	
OS 56						
61	246	35	42	102	0	
62	241	35	42	158	0	
63	255	35	38	189	0	
64	222	35	40	158	0	
65	228	35	38	162	0	
66	231	35	42	154	0	
71	307	45	44	217	0	
72	247	45	40	221	0	
73	310	45	42	213	0	
74	163	18	33	71	0	
75	257	45	42	217	0	
76	296	45	42	217	0	

ST. JOHNS RIVER POWER PARK
PRECIPITATOR ELECTRICAL DATA
HOURLY INTERVALS
UNIT # 2

Time: 19:00
Date: 12/19/00
Initials: R. R.

B (A/B)

Rectifier Set	AC Volts	AC Amps	DC Kv	DC Milliamps	Sparks	COMMENTS
11	194	12	37	47	0	
12	200	12	39	47	0	
13						
14	202	12	36	51	0	
15	200	12	40	47	0	
16						
21	205	15	38	67	0	
22	204	15	38	67	0	
23						
24	222	15	41	63	0	
25	217	15	42	67	0	
26	221	15	41	59	0	
31	206	15	41	63	0	
32	217	15	40	63	0	
33	195	10	39	43	0	
34	217	15	41	63	0	
35	219	15	41	67	0	
36	226	15	~~41~~	~~63~~	0	
41	190	20	36	83	0	
42	202	20	41	79	0	
43	215	20	42	79	0	
44	204	20	41	79	0	
45	213	20	41	79	0	
46	209	20	41	79	0	
51	202	30	37	130	0	
52	216	30	38	134	0	
53	2					
54	248	30	45	134	0	
55	251	30	44	134	0	
56	214	18	44	71	0	
61	205	35	35	158	0	
62	222	35	37	162	0	
63	250	35	44	162	0	
64	248	35	42	169	0	
65	248	35	44	156	0	
66	245	35	45	154	0	
71	217	45	36	213	0	
72	233	45	37	217	0	
73	239	45	43	203	0	
74	254	45	41	209	0	
75	297	45	42	217	0	
76	323	45	44	217	0	


GCI