

**CONTINUOUS EMISSIONS MONITORING SYSTEM  
CERTIFICATION TEST REPORT  
OXIDES OF NITROGEN,  
CARBON DIOXIDE, and CARBON MONOXIDE  
DECEMBER 20, 2003  
BAYSIDE POWER STATION  
UNIT No. 2  
FACILITY ID NUMBER: 0570040  
EMISSION UNIT ID NOS: -023, -024, -025, -026**

Prepared For:  
Tampa Electric Company  
P.O. Box 111  
Tampa, Florida 33601

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BUREAU OF AIR REGULATION

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

0570040-023-AV



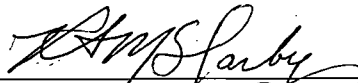
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Tampa, Florida 33619-6130

## REPORT CERTIFICATION

---

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

Date: 2/2/2004

Signature: 

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

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

Date: 2/2/2004

Signature: 

Robert A. Barthelette, Jr.  
Environmental Technician  
Test Team Lead  
Air Services Group  
Environmental Services  
Tampa Electric Company

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

Date: 2/2/04

Signature: 

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

Testing and subsequent data analysis for this report was conducted at my direction. I have reviewed the testing details and results submitted in this report, and hereby certify that this test report is authentic and accurate to the best of my knowledge.

Date: 2/2/2004

Signature: 

Ted Wenning  
Coordinator – CEM Program  
Environmental Services  
Tampa Electric Company

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- 7-DAY DRIFT DATA
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## **1.0 INTRODUCTION**

On December 20, 2003, Tampa Electric Company's Environmental, Health, and Safety, Air Services Group completed the 40 CFR 75 Continuous Emissions Monitoring Systems (CEMS) certification activities for Bayside Power Station Unit No. 2. 40 CFR 60 CEMS certification activities were completed on January 19, 2004.

Bayside Power Station Unit No. 2, Facility ID 05700400, consists of 4 natural gas fired combined cycle combustion turbines (Emissions Unit No. 023, 024, 025, and 026) equipped with dry low - NO<sub>x</sub> combustors for initial control of NO<sub>x</sub> emissions. Further control of NO<sub>x</sub> emissions is provided by a selective catalytic reduction (SCR) system employing ammonia injection.

Each of the 4 combined cycle combustion turbines' CEMS consists of an extractive system, consisting of a heated sample probe and umbilical line delivering the sample to an environmentally controlled shelter. The shelter houses individual instrument racks that include a Thermo Environmental Instruments model 42CLS, dual range, Chemiluminescent, NO<sub>x</sub> analyzer ; a Siemens Ultramat 6E, Infra-red, CO<sub>2</sub> analyzer; a Thermo Environmental Instruments model 48C dual range, Non-Dispersive Infra-red, CO analyzer; and a shared Data Acquisition and Handling System (DAHS).

## 2.0 SUMMARY OF RESULTS

Unit Identifier: CT2A		Completion Date: November 22, 2003		Performance		
Test Name	Applicable Rule	Parameter	Results	Specification	Pass/Fail	
Linearity Check	40CFR75	NO <sub>x</sub>	2.00%	5% of Certified Calibration Gas Value, or 5 ppmv NO <sub>x</sub> <sup>1</sup>	Pass	
Linearity Check	40CFR75	CO <sub>2</sub>	1.30%	5% of Certified Calibration Gas Value, or 0.5% volume CO <sub>2</sub> <sup>1</sup>	Pass	
Cycle Time Test	40CFR75	NO <sub>x</sub> & CO <sub>2</sub>	2 minutes	≤ 15 minutes	Pass	
7-day Drift	40CFR75	NO <sub>x</sub> - low range	2.00%	≤ 2.5% Of Analyzer Span or ≤ 5 ppmv NO <sub>x</sub> <sup>1</sup>	Pass - APS	
7-day Drift	40CFR75	NO <sub>x</sub> - high range	2.40%	≤ 2.5% Of Analyzer Span or ≤ 5 ppmv NO <sub>x</sub> <sup>1</sup>	Pass	
7-day Drift	40CFR75	CO <sub>2</sub>	0.20%	≤ 0.5% Volume	Pass	
7-day Drift	40CFR60	CO - low range	1.50%	≤ ± 5% Of Span Value 6 Out Of 7 Days	Pass	
7-day Drift	40CFR60	CO - high range	2.90%	≤ ± 5% Of Span Value 6 Out Of 7 Days	Pass	
RATA	40CFR75	NO <sub>x</sub> - diluent	3.31%	≤ 10% Relative Accuracy or ± 0.02 lb/mmBtu <sup>1</sup>	Pass	
Bias	40CFR75	NO <sub>x</sub> - diluent	1.000	Bias Adjustment Factor	Pass	
RATA	40CFR60	CO	1.87%	≤ 10% of mean Reference Method or ≤ 5% of Applicable Standard <sup>2</sup>	Pass - AS	
RATA	40CFR60	CO <sub>2</sub>	0.08%	≤ 1.0% Volume CO <sub>2</sub> Absolute Difference	Pass	

<sup>1</sup> Alternate Performance Specification (APS)

<sup>2</sup> Applicable Standard (AS)

Unit Identifier: CT2B		Completion Date: December 16, 2003		Performance		
Test Name	Applicable Rule	Parameter	Results	Specification	Pass/Fail	
Linearity Check	40CFR75	NO <sub>x</sub>	1.70%	5% of Certified Calibration Gas Value, or 5 ppmv NO <sub>x</sub> <sup>1</sup>	Pass	
Linearity Check	40CFR75	CO <sub>2</sub>	1.30%	5% of Certified Calibration Gas Value, or 0.5% volume CO <sub>2</sub> <sup>1</sup>	Pass	
Cycle Time Test	40CFR75	NO <sub>x</sub> & CO <sub>2</sub>	2 minutes	≤ 15 minutes	Pass	
7-day Drift	40CFR75	NO <sub>x</sub> - low range	2.00%	≤ 2.5% Of Analyzer Span or ≤ 5 ppmv NO <sub>x</sub> <sup>1</sup>	Pass - APS	
7-day Drift	40CFR75	NO <sub>x</sub> - high range	1.50%	≤ 2.5% Of Analyzer Span or ≤ 5 ppmv NO <sub>x</sub> <sup>1</sup>	Pass	
7-day Drift	40CFR75	CO <sub>2</sub>	0.20%	≤ 0.5% Volume	Pass	
7-day Drift	40CFR60	CO - low range	-4.00%	≤ ± 5% Of Span Value 6 Out Of 7 Days	Pass	
7-day Drift	40CFR60	CO - high range	-3.00%	≤ ± 5% Of Span Value 6 Out Of 7 Days	Pass	
RATA	40CFR75	NO <sub>x</sub> - diluent	8.31%	≤ 10% Relative Accuracy or ± 0.02 lb/mmBtu <sup>1</sup>	Pass	
Bias	40CFR75	NO <sub>x</sub> - diluent	1.051	Bias Adjustment Factor	Fail	
RATA	40CFR60	CO	4.28%	≤ 10% of mean Reference Method or ≤ 5% of Applicable Standard <sup>1</sup>	Pass - AS	
RATA	40CFR60	CO <sub>2</sub>	0.24%	≤ 1.0% Volume CO <sub>2</sub> Absolute Difference	Pass	

<sup>1</sup> Alternate Performance Specification (APS)

<sup>2</sup> Applicable Standard (AS)

Unit Identifier: CT2C		Completion Date: December 20, 2003		Performance	
Test Name	Applicable Rule	Parameter	Results	Specification	Pass/Fail
Linearity Check	40CFR75	NO <sub>x</sub>	2.10%	5% of Certified Calibration Gas Value, or 5 ppmv NO <sub>x</sub> <sup>1</sup>	Pass
Linearity Check	40CFR75	CO <sub>2</sub>	1.30%	5% of Certified Calibration Gas Value, or 0.5% volume CO <sub>2</sub> <sup>1</sup>	Pass
Cycle Time Test	40CFR75	NO <sub>x</sub> & CO <sub>2</sub>	2 minutes	≤ 15 minutes	Pass
7-day Drift	40CFR75	NO <sub>x</sub> - low range	2.00%	≤ 2.5% Of Analyzer Span or ≤ 5 ppmv NO <sub>x</sub> <sup>1</sup>	Pass - APS
7-day Drift	40CFR75	NO <sub>x</sub> - high range	1.80%	≤ 2.5% Of Analyzer Span or ≤ 5 ppmv NO <sub>x</sub> <sup>1</sup>	Pass
7-day Drift	40CFR75	CO <sub>2</sub>	0.40%	≤ 0.5% Volume	Pass
7-day Drift	40CFR60	CO - low range	8.00%	≤ ± 5% Of Span Value 6 Out Of 7 Days	Pass <sup>3</sup>
7-day Drift	40CFR60	CO - high range	1.10%	≤ ± 5% Of Span Value 6 Out Of 7 Days	Pass
RATA	40CFR75	NO <sub>x</sub> - diluent	6.33%	≤ 10% Relative Accuracy or ± 0.02 lb/mmBtu <sup>1</sup>	Pass
Bias	40CFR75	NO <sub>x</sub> - diluent	1.000	Bias Adjustment Factor	Pass
RATA	40CFR60	CO	2.24%	≤ 10% of mean Reference Method or ≤ 5% of Applicable Standard <sup>1</sup>	Pass - AS
RATA	40CFR60	CO <sub>2</sub>	0.08%	≤ 1.0% Volume CO <sub>2</sub> Absolute Difference	Pass

<sup>1</sup> Alternate Performance Specification (APS)

<sup>3</sup> Single Occurrence During Test Period

<sup>2</sup> Applicable Standard (AS)

Unit Identifier: CT2D		Completion Date: December 17, 2003		Performance	
Test Name	Applicable Rule	Parameter	Results	Specification	Pass/Fail
Linearity Check	40CFR75	NO <sub>x</sub>	0.90%	5% of Certified Calibration Gas Value, or 5 ppmv NO <sub>x</sub> <sup>1</sup>	Pass
Linearity Check	40CFR75	CO <sub>2</sub>	1.30%	5% of Certified Calibration Gas Value, or 0.5% volume CO <sub>2</sub> <sup>1</sup>	Pass
Cycle Time Test	40CFR75	NO <sub>x</sub> & CO <sub>2</sub>	2 minutes	≤ 15 minutes	Pass
7-day Drift	40CFR75	NO <sub>x</sub> - low range	2.00%	≤ 2.5% Of Analyzer Span or ≤ 5 ppmv NO <sub>x</sub> <sup>1</sup>	Pass - APS
7-day Drift	40CFR75	NO <sub>x</sub> - high range	1.70%	≤ 2.5% Of Analyzer Span or ≤ 5 ppmv NO <sub>x</sub> <sup>1</sup>	Pass
7-day Drift	40CFR75	CO <sub>2</sub>	0.50%	≤ 0.5% Volume	Pass
7-day Drift	40CFR60	CO - low range	-4.00%	≤ ± 5% Of Span Value 6 Out Of 7 Days	Pass
7-day Drift	40CFR60	CO - high range	1.70%	≤ ± 5% Of Span Value 6 Out Of 7 Days	Pass
RATA	40CFR75	NO <sub>x</sub> - diluent	9.63%	≤ 10% Relative Accuracy or ± 0.02 lb/mmBtu <sup>1</sup>	Pass
Bias	40CFR75	NO <sub>x</sub> - diluent	1.081	Bias Adjustment Factor	Fail
RATA	40CFR60	CO	1.32%	≤ 10% of mean Reference Method or ≤ 5% of Applicable Standard <sup>1</sup>	Pass - AS
RATA	40CFR60	CO <sub>2</sub>	0.01%	≤ 1.0% Volume CO <sub>2</sub> Absolute Difference	Pass

<sup>1</sup> Alternate Performance Specification (APS)

<sup>2</sup> Applicable Standard (AS)



3.0 USEPA MONITORING DATA CHECKING SOFTWARE –  
TEST EVALUATION AND DETAIL REPORTS

MONITORING DATA CHECKING SOFTWARE 4.1  
QA TEST DATA EVALUATION REPORT

01/27/2004  
PAGE 1

ORIS Code: 7873  
Facility Name: BAYSIDE

State: FL  
County: HILLSBOROUGH

EVALUATION OF TEST DATA FOR UNIT CT2A

Test Type	Sys ID	Comp ID	Test Date/Time	Test Num	Problem Number	Description
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Based on the evaluation criteria in this version, the software has not identified any errors for this unit.

ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2A System ID: 113 Parameter: NOX  
 Test End Date/Time: 11/22/2003 1510 Test No.: 1 # of Op. Levels: 1 Units of Measure: LB/MMBTU  
 Reason for Test: C  
 Performance Spec: <= 10.0% Next RATA: Four Op Qtrs  
 Recalc. Results: Pass % RA: 3.31 Mean Diff: 0.000 BAF: 1.000  
 Reported Results: Pass % RA: 3.31 Mean Diff: 0.000 BAF: 1.000

Operating Level: H								
Run	Start Date	Start Time	End Date	End Time	Run Status	Reference Method	Monitoring Value	Gross Load or Velocity
1	11/22/2003	1000	11/22/2003	1044	1	0.012	0.011	164
2	11/22/2003	1100	11/22/2003	1121	1	0.011	0.011	163
3	11/22/2003	1140	11/22/2003	1201	1	0.011	0.011	162
4	11/22/2003	1210	11/22/2003	1231	1	0.011	0.011	161
5	11/22/2003	1240	11/22/2003	1301	1	0.011	0.011	161
6	11/22/2003	1312	11/22/2003	1333	1	0.011	0.011	160
7	11/22/2003	1343	11/22/2003	1404	1	0.011	0.011	159
8	11/22/2003	1419	11/22/2003	1440	1	0.011	0.011	159
9	11/22/2003	1449	11/22/2003	1510	1	0.011	0.011	159

Summary Statistics	Reported	Recalculated
Mean of Monitoring System	0.011	0.011
Mean of Reference Method Values	0.011	0.011
Mean of Difference	0.000	0.000
Standard Deviation of Difference	0.000	0.000
Confidence Coefficient	0.000	0.000
T-Value	2.306	2.306
Relative Accuracy:	3.31	3.31
Bias Adjustment Factor	1.000	1.000
APS Flag	0	0
Indicator of Normal Op. Level	N	N
Gross Unit Load or Velocity	161	161
Reference Method Used	7E, 3A	

MONITORING DATA CHECKING SOFTWARE 4.1  
 CYCLE TIME TESTS (RT 621)

01/27/2004  
 PAGE 3

ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2A System ID: 113 Parameter: NOX  
 Test End Date/Time: 10/09/2003 1437 Test No.: 1 Reason for Test: C  
 Calculated Result: Pass System Time: 2  
 Reported Result: Pass System Time: 2

Date	Start Time	End Time	Component ID	Component Type	Gas Level	Calibration Gas Value	Reported Cycle Time	Calculated Cycle Time	Stable Starting Monitor Value	Stable Ending Monitor Value
031009	1426	1428	103	NOXA	Z	0.000	2	2	0.160	32.400
031009	1426	1428	105	CO2	Z	0.000	2	2	0.100	2.070
031009	1435	1437	103	NOXA	H	130.000	2	2	130.700	38.600
031009	1435	1437	105	CO2	H	8.900	2	2	8.980	2.910

MONITORING DATA CHECKING SOFTWARE 4.1  
 7-DAY CALIBRATION ERROR TESTS (RT-600)

01/27/2004  
 PAGE 4

ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2A Comp/Sys ID: 103/113 Parameter: NOX  
 Test End Date/Hour: 10/31/2003 01 Test No.: 1 Component Type: NOXA  
 Calculated Results: Pass Span Scale: High Reason for Test: C  
 Reported Results: Pass  
 Performance Spec: CE <= 2.5% of span or |R-A| <= 5 ppm

Date	Hour	Gas Level	Span Value	Reference Value	Measured Value	Ref. Value as % of Span	Reported Result	APS	Recalculated Result	APS
031010	01	M	150.000	84.000	85.600	56.0%	1.1	0	1.1	0
031010	01	Z	150.000	0.000	0.000	0.0%	0.0	0	0.0	0
031014	01	M	150.000	84.000	85.500	56.0%	1.0	0	1.0	0
031014	01	Z	150.000	0.000	0.000	0.0%	0.0	0	0.0	0
031015	01	M	150.000	82.000	82.300	54.7%	0.2	0	0.2	0
031015	01	Z	150.000	0.000	0.000	0.0%	0.0	0	0.0	0
031028	01	M	150.000	82.000	84.600	54.7%	1.7	0	1.7	0
031028	01	Z	150.000	0.000	-0.100	0.0%	0.1	0	0.1	0
031029	01	M	150.000	82.000	84.900	54.7%	1.9	0	1.9	0
031029	01	Z	150.000	0.000	-0.100	0.0%	0.1	0	0.1	0
031030	01	M	150.000	82.000	85.400	54.7%	2.3	0	2.3	0
031030	01	Z	150.000	0.000	0.800	0.0%	0.5	0	0.5	0
031031	01	M	150.000	82.000	85.600	54.7%	2.4	0	2.4	0
031031	01	Z	150.000	0.000	0.000	0.0%	0.0	0	0.0	0

MONITORING DATA CHECKING SOFTWARE 4.1  
 7-DAY CALIBRATION ERROR TESTS (RT 600)

01/27/2004  
 PAGE 5

ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2A Comp/Sys ID: 103/113 Parameter: NOX  
 Test End Date/Hour: 10/31/2003 01 Test No.: 2 Component Type: NOXA  
 Calculated Results: Pass-APS Span Scale: Low Reason for Test: C  
 Reported Results: Pass-APS  
 Performance Spec: CE <= 2.5% of span or |R-A| <= 5 ppm

Date	Hour	Gas Level	Span Value	Reference Value	Measured Value	Ref. Value as % of Span	Reported Result	APS	Recalculated Result	APS
031010	01	M	10.000	5.500	5.400	55.0%	1.0	0	1.0	0
031010	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031014	01	M	10.000	5.500	5.600	55.0%	1.0	0	1.0	0
031014	01	Z	10.000	0.000	-0.100	0.0%	1.0	0	1.0	0
031015	01	M	10.000	5.500	5.600	55.0%	1.0	0	1.0	0
031015	01	Z	10.000	0.000	-0.100	0.0%	1.0	0	1.0	0
031028	01	M	10.000	5.500	5.700	55.0%	2.0	0	2.0	0
031028	01	Z	10.000	0.000	-0.100	0.0%	1.0	0	1.0	0
031029	01	M	10.000	5.500	5.700	55.0%	2.0	0	2.0	0
031029	01	Z	10.000	0.000	-0.100	0.0%	1.0	0	1.0	0
031030	01	M	10.000	5.500	6.900	55.0%	1.0	1	1.0	1
031030	01	Z	10.000	0.000	0.800	0.0%	1.0	1	1.0	1
031031	01	M	10.000	5.500	5.800	55.0%	0.0	1	0.0	1
031031	01	Z	10.000	0.000	-0.100	0.0%	1.0	0	1.0	0

ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2A Comp/Sys ID: 103/113 Parameter: NOX  
 Test End Date/Time: 10/09/2003 1416 Test No.: 1 Component Type: NOXA  
 Performance Spec: LE <= 5.0% or | R - A | <= 5 ppm  
 Recalc.: Pass Highest Linearity Error: 2.0 Scale: High  
 Reported Results: Pass Highest Linearity Error: 2.0 Reason for Test: C

Date	Time	Gas Level	Span Value	Reference Value	Measured Value	Indicator of Aborted Test	Ref. Value as % of Span
031009	1350	L	150.000	37.100	37.300		24.7%
031009	1353	M	150.000	84.000	83.900		56.0%
031009	1356	H	150.000	134.000	131.500		89.3%
031009	1359	L	150.000	37.100	37.500		24.7%
031009	1402	M	150.000	84.000	83.900		56.0%
031009	1406	H	150.000	134.000	131.400		89.3%
031009	1410	L	150.000	37.100	37.400		24.7%
031009	1412	M	150.000	84.000	83.700		56.0%
031009	1416	H	150.000	134.000	131.200		89.3%

Summary Statistics                      Reported                      Recalculated

High - Reference Value:	134.000	134.000
High - Mean CEM Value:	131.367	131.367
High - Alt. Perf. Flag:	0	0
High - Results:	2.0	2.0
Low - Reference Value:	37.100	37.100
Low - Mean CEM Value:	37.400	37.400
Low - Alt. Perf. Flag:	0	0
Low - Results:	0.8	0.8
Mid - Reference Value:	84.000	84.000
Mid - Mean CEM Value:	83.833	83.833
Mid - Alt. Perf. Flag:	0	0
Mid - Results:	0.2	0.2

MONITORING DATA CHECKING SOFTWARE 4.1  
 7-DAY CALIBRATION ERROR TESTS (RT 600)

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ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2A Comp/Sys ID: 105/113 Parameter: NOX  
 Test End Date/Hour: 10/31/2003 01 Test No.: 1 Component Type: CO2  
 Calculated Results: Pass Span Scale: Reason for Test: C  
 Reported Results: Pass  
 Performance Spec: CE <= 2.5% of span or |R-A| <= 5 ppm

Date	Hour	Gas Level	Span Value	Reference Value	Measured Value	Ref. Value as % of Span	Reported Result	APS	Recalculated Result	APS
031010	01	M	10.000	5.500	5.400	55.0%	0.1	0	0.1	0
031010	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031014	01	M	10.000	5.500	5.300	55.0%	0.2	0	0.2	0
031014	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031015	01	M	10.000	5.500	5.600	55.0%	0.1	0	0.1	0
031015	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031028	01	M	10.000	5.500	5.700	55.0%	0.2	0	0.2	0
031028	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031029	01	M	10.000	5.500	5.500	55.0%	0.0	0	0.0	0
031029	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031030	01	M	10.000	5.500	5.500	55.0%	0.0	0	0.0	0
031030	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031031	01	M	10.000	5.500	5.500	55.0%	0.0	0	0.0	0
031031	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0



MONITORING DATA CHECKING SOFTWARE 4.1  
 LINEARITY REPORT (RT 601/602)

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ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2A Comp/Sys ID: 105/113 Parameter: NOX  
 Test End Date/Time: 10/09/2003 1416 Test No.: 1 Component Type: CO2  
 Performance Spec: LE <= 5.0% or | R - A | <= 5 ppm  
 Recalc.: Pass Highest Linearity Error: 1.3 Scale:  
 Reported Results: Pass Highest Linearity Error: 1.3 Reason for Test: C

Date	Time	Gas Level	Span Value	Reference Value	Measured Value	Indicator of Aborted Test	Ref. Value as % of Span
031009	1350	L	10.000	2.500	2.500		25.0%
031009	1353	M	10.000	5.500	5.500		55.0%
031009	1356	H	10.000	9.000	8.900		90.0%
031009	1359	L	10.000	2.500	2.500		25.0%
031009	1402	M	10.000	5.500	5.500		55.0%
031009	1406	H	10.000	9.000	9.000		90.0%
031009	1410	L	10.000	2.500	2.600		25.0%
031009	1412	M	10.000	5.500	5.500		55.0%
031009	1416	H	10.000	9.000	9.000		90.0%

Summary Statistics	Reported	Recalculated
High - Reference Value:	9.000	9.000
High - Mean CEM Value:	8.967	8.967
High - Alt. Perf. Flag:	0	0
High - Results:	0.4	0.4
Low - Reference Value:	2.500	2.500
Low - Mean CEM Value:	2.533	2.533
Low - Alt. Perf. Flag:	0	0
Low - Results:	1.3	1.3
Mid - Reference Value:	5.500	5.500
Mid - Mean CEM Value:	5.500	5.500
Mid - Alt. Perf. Flag:	0	0
Mid - Results:	0.0	0.0

ORIS Code: 7873  
Facility Name: BAYSIDE

State: FL  
County: HILLSBOROUGH

## EVALUATION OF TEST DATA FOR UNIT CT2B

Test Type	Sys ID	Comp ID	Test Date/Time	Test Num	Problem Number	Description
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Based on the evaluation criteria in this version, the software has not identified any errors for this unit.

ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2B System ID: 213 Parameter: NOX  
 Test End Date/Time: 12/16/2003 1503 Test No.: 2 # of Op. Levels: 1 Units of Measure: LB/MMBTU  
 Reason for Test: C  
 Performance Spec: <= 10.0% Next RATA: Four Op Qtrs  
 Recalc. Results: Pass-APS % RA: 9.20 Mean Diff: -0.001 BAF: 1.000  
 Reported Results: Pass-APS % RA: 9.20 Mean Diff: -0.001 BAF: 1.000

Operating Level: H

Run	Start Date	Start Time	End Date	End Time	Run Status	Reference Method	Monitoring Value	Gross Load or Velocity
1	12/16/2003	0931	12/16/2003	0952	1	0.011	0.011	166
2	12/16/2003	1031	12/16/2003	1052	1	0.011	0.011	164
3	12/16/2003	1108	12/16/2003	1129	1	0.011	0.011	163
4	12/16/2003	1145	12/16/2003	1206	1	0.011	0.011	161
5	12/16/2003	1220	12/16/2003	1241	1	0.010	0.011	161
6	12/16/2003	1253	12/16/2003	1314	1	0.010	0.011	160
7	12/16/2003	1329	12/16/2003	1350	1	0.010	0.011	161
8	12/16/2003	1407	12/16/2003	1428	1	0.010	0.011	161
9	12/16/2003	1442	12/16/2003	1503	1	0.010	0.011	160

Summary Statistics	Reported	Recalculated
Mean of Monitoring System	0.011	0.011
Mean of Reference Method Values	0.010	0.010
Mean of Difference	-0.001	-0.001
Standard Deviation of Difference	0.001	0.001
Confidence Coefficient	0.000	0.000
T-Value	2.306	2.306
Relative Accuracy:	9.20	9.20
Bias Adjustment Factor	1.000	1.000
APS Flag	1	1
Indicator of Normal Op. Level	N	N
Gross Unit Load or Velocity	162	162
Reference Method Used	7E, 3A	

MONITORING DATA CHECKING SOFTWARE 4.1  
 CYCLE TIME TESTS (RT 621)

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ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2B System ID: 213 Parameter: NOX  
 Test End Date/Time: 09/05/2003 1337 Test No.: 1 Reason for Test: C  
 Calculated Result: Pass System Time: 2  
 Reported Result: Pass System Time: 2

Date	Start Time	End Time	Component ID	Component Type	Gas Level	Calibration Gas Value	Reported Cycle Time	Calculated Cycle Time	Stable Starting Monitor Value	Stable Ending Monitor Value
030905	1329	1331	203	NOXA	Z	0.000	2	2	0.100	34.800
030905	1329	1331	205	CO2	Z	0.000	2	2	0.000	2.120
030905	1335	1337	203	NOXA	H	134.000	2	2	132.100	37.700
030905	1335	1337	205	CO2	H	9.120	2	2	9.020	2.180

MONITORING DATA CHECKING SOFTWARE 4.1  
 7-DAY CALIBRATION ERROR TESTS (RT 600)

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ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2B Comp/Sys ID: 203/213 Parameter: NOX  
 Test End Date/Hour: 11/10/2003 01 Test No.: 1 Component Type: NOXA  
 Calculated Results: Pass Span Scale: High Reason for Test: C  
 Reported Results: Pass  
 Performance Spec: CE <= 2.5% of span or |R-A| <= 5 ppm

Date	Hour	Gas Level	Span Value	Reference Value	Measured Value	Ref. Value as % of Span	Reported Result	APS	Recalculated Result	APS
031104	01	M	150.000	82.000	83.800	54.7%	1.2	0	1.2	0
031104	01	Z	150.000	0.000	-0.300	0.0%	0.2	0	0.2	0
031105	01	M	150.000	82.000	82.400	54.7%	0.3	0	0.3	0
031105	01	Z	150.000	0.000	-0.200	0.0%	0.1	0	0.1	0
031106	01	M	150.000	82.000	84.200	54.7%	1.5	0	1.5	0
031106	01	Z	150.000	0.000	-0.300	0.0%	0.2	0	0.2	0
031107	01	M	150.000	82.000	82.600	54.7%	0.4	0	0.4	0
031107	01	Z	150.000	0.000	-0.300	0.0%	0.2	0	0.2	0
031108	01	M	150.000	82.000	84.200	54.7%	1.5	0	1.5	0
031108	01	Z	150.000	0.000	-0.300	0.0%	0.2	0	0.2	0
031109	01	M	150.000	82.000	82.000	54.7%	0.0	0	0.0	0
031109	01	Z	150.000	0.000	-0.300	0.0%	0.2	0	0.2	0
031110	01	M	150.000	82.000	83.800	54.7%	1.2	0	1.2	0
031110	01	Z	150.000	0.000	-0.300	0.0%	0.2	0	0.2	0

MONITORING DATA CHECKING SOFTWARE 4.1  
 7-DAY CALIBRATION ERROR TESTS (RT 600)

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ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2B Comp/Sys ID: 203/213 Parameter: NOX  
 Test End Date/Hour: 11/10/2003 01 Test No.: 2 Component Type: NOXA  
 Calculated Results: Pass-APS Span Scale: Low Reason for Test: C  
 Reported Results: Pass-APS  
 Performance Spec: CE <= 2.5% of span or |R-A| <= 5 ppm

Date	Hour	Gas Level	Span Value	Reference Value	Measured Value	Ref. Value as % of Span	Reported Result	APS	Recalculated Result	APS
031104	01	M	10.000	5.500	5.600	55.0%	1.0	0	1.0	0
031104	01	Z	10.000	0.000	-0.200	0.0%	2.0	0	2.0	0
031105	01	M	10.000	5.500	5.500	55.0%	0.0	0	0.0	0
031105	01	Z	10.000	0.000	-0.200	0.0%	2.0	0	2.0	0
031106	01	M	10.000	5.500	5.600	55.0%	1.0	0	1.0	0
031106	01	Z	10.000	0.000	-0.200	0.0%	2.0	0	2.0	0
031107	01	M	10.000	5.500	5.400	55.0%	1.0	0	1.0	0
031107	01	Z	10.000	0.000	-0.200	0.0%	2.0	0	2.0	0
031108	01	M	10.000	5.500	5.500	55.0%	0.0	0	0.0	0
031108	01	Z	10.000	0.000	-0.200	0.0%	2.0	0	2.0	0
031109	01	M	10.000	5.500	5.200	55.0%	0.0	1	0.0	1
031109	01	Z	10.000	0.000	-0.200	0.0%	2.0	0	2.0	0
031110	01	M	10.000	5.500	5.400	55.0%	1.0	0	1.0	0
031110	01	Z	10.000	0.000	-0.200	0.0%	2.0	0	2.0	0

MONITORING DATA CHECKING SOFTWARE 4.1  
 LINEARITY REPORT (RT 601/602)

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ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2B Comp/Sys ID: 203/213 Parameter: NOX  
 Test End Date/Time: 09/05/2003 1051 Test No.: 1 Component Type: NOXA  
 Performance Spec: LE <= 5.0% or | R - A | <= 5 ppm  
 Recalc.: Pass Highest Linearity Error: 1.7 Scale: High  
 Reported Results: Pass Highest Linearity Error: 1.7 Reason for Test: C

Date	Time	Gas Level	Span Value	Reference Value	Measured Value	Indicator of Aborted Test	Ref. Value as % of Span
030905	1020	L	150.000	37.100	36.800		24.7%
030905	1024	M	150.000	84.000	84.000		56.0%
030905	1029	H	150.000	134.000	131.400		89.3%
030905	1032	L	150.000	37.100	36.700		24.7%
030905	1037	M	150.000	84.000	83.800		56.0%
030905	1040	H	150.000	134.000	131.700		89.3%
030905	1043	L	150.000	37.100	37.000		24.7%
030905	1047	M	150.000	84.000	83.300		56.0%
030905	1051	H	150.000	134.000	132.200		89.3%

Summary Statistics	Reported	Recalculated
High - Reference Value:	134.000	134.000
High - Mean CEM Value:	131.767	131.767
High - Alt. Perf. Flag:	0	0
High - Results:	1.7	1.7
Low - Reference Value:	37.100	37.100
Low - Mean CEM Value:	36.833	36.833
Low - Alt. Perf. Flag:	0	0
Low - Results:	0.7	0.7
Mid - Reference Value:	84.000	84.000
Mid - Mean CEM Value:	83.700	83.700
Mid - Alt. Perf. Flag:	0	0
Mid - Results:	0.4	0.4

MONITORING DATA CHECKING SOFTWARE 4.1  
 7-DAY CALIBRATION ERROR TESTS (RT 600)

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ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2B Comp/Sys ID: 205/213 Parameter: NOX  
 Test End Date/Hour: 11/10/2003 01 Test No.: 1 Component Type: CO2  
 Calculated Results: Pass Span Scale: Reason for Test: C  
 Reported Results: Pass  
 Performance Spec: CE <= 2.5% of span or |R-A| <= 5 ppm

Date	Hour	Gas Level	Span Value	Reference Value	Measured Value	Ref. Value as % of Span	Reported Result	APS	Recalculated Result	APS
031104	01	M	10.000	5.500	5.600	55.0%	0.1	0	0.1	0
031104	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031105	01	M	10.000	5.500	5.700	55.0%	0.2	0	0.2	0
031105	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031106	01	M	10.000	5.500	5.500	55.0%	0.0	0	0.0	0
031106	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031107	01	M	10.000	5.500	5.700	55.0%	0.2	0	0.2	0
031107	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031108	01	M	10.000	5.500	5.500	55.0%	0.0	0	0.0	0
031108	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031109	01	M	10.000	5.500	5.700	55.0%	0.2	0	0.2	0
031109	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031110	01	M	10.000	5.500	5.600	55.0%	0.1	0	0.1	0
031110	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0



ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2B Comp/Sys ID: 205/213 Parameter: NOX  
 Test End Date/Time: 09/05/2003 1051 Test No.: 1 Component Type: CO2  
 Performance Spec: LE <= 5.0% or | R - A | <= 5 ppm  
 Recalc.: Pass Highest Linearity Error: 1.3 Scale:  
 Reported Results: Pass Highest Linearity Error: 1.3 Reason for Test: C

Date	Time	Gas Level	Span Value	Reference Value	Measured Value	Indicator of Aborted Test	Ref. Value as % of Span
030905	1020	L	10.000	2.500	2.500		25.0%
030905	1024	M	10.000	5.500	5.500		55.0%
030905	1029	H	10.000	9.120	9.000		91.2%
030905	1032	L	10.000	2.500	2.500		25.0%
030905	1037	M	10.000	5.500	5.500		55.0%
030905	1040	H	10.000	9.120	9.000		91.2%
030905	1043	L	10.000	2.500	2.500		25.0%
030905	1047	M	10.000	5.500	5.500		55.0%
030905	1051	H	10.000	9.120	9.000		91.2%

Summary Statistics                      Reported                      Recalculated

High - Reference Value:	9.120	9.120
High - Mean CEM Value:	9.000	9.000
High - Alt. Perf. Flag:	0	0
High - Results:	1.3	1.3
Low - Reference Value:	2.500	2.500
Low - Mean CEM Value:	2.500	2.500
Low - Alt. Perf. Flag:	0	0
Low - Results:	0.0	0.0
Mid - Reference Value:	5.500	5.500
Mid - Mean CEM Value:	5.500	5.500
Mid - Alt. Perf. Flag:	0	0
Mid - Results:	0.0	0.0

MONITORING DATA CHECKING SOFTWARE 4.1  
QA TEST DATA EVALUATION REPORT

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ORIS Code: 7873  
Facility Name: BAYSIDE

State: FL  
County: HILLSBOROUGH

EVALUATION OF TEST DATA FOR UNIT CT2C

Test Type	Sys ID	Comp ID	Test Date/Time	Test Num	Problem Number	Description
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Based on the evaluation criteria in this version, the software has not identified any errors for this unit.

ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2C System ID: 313 Parameter: NOX  
 Test End Date/Time: 12/20/2003 1549 Test No.: 1 # of Op. Levels: 1 Units of Measure: LB/MMBTU  
 Reason for Test: C  
 Performance Spec: <= 10.0% Next RATA: Four Op Qtrs  
 Recalc. Results: Pass % RA: 6.33 Mean Diff: 0.000 BAF: 1.000  
 Reported Results: Pass % RA: 6.33 Mean Diff: 0.000 BAF: 1.000

Operating Level: H

Run	Start Date	Start Time	End Date	End Time	Run Status	Reference Method	Monitoring Value	Gross Load or Velocity
1	12/20/2003	1051	12/20/2003	1112	1	0.012	0.011	176
2	12/20/2003	1130	12/20/2003	1151	1	0.012	0.011	176
3	12/20/2003	1205	12/20/2003	1226	1	0.012	0.011	175
4	12/20/2003	1244	12/20/2003	1305	1	0.011	0.011	175
5	12/20/2003	1324	12/20/2003	1345	1	0.011	0.011	174
6	12/20/2003	1355	12/20/2003	1416	1	0.011	0.011	174
7	12/20/2003	1426	12/20/2003	1447	1	0.011	0.011	174
8	12/20/2003	1457	12/20/2003	1518	1	0.011	0.011	174
9	12/20/2003	1528	12/20/2003	1549	1	0.011	0.011	174

Summary Statistics

	Reported	Recalculated
Mean of Monitoring System	0.011	0.011
Mean of Reference Method Values	0.011	0.011
Mean of Difference	0.000	0.000
Standard Deviation of Difference	0.001	0.001
Confidence Coefficient	0.000	0.000
T-Value	2.306	2.306
Relative Accuracy:	6.33	6.33
Bias Adjustment Factor	1.000	1.000
APS Flag	0	0
Indicator of Normal Op. Level	N	N
Gross Unit Load or Velocity	175	175
Reference Method Used	7E, 3A	

ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2C System ID: 313 Parameter: NOX  
 Test End Date/Time: 11/18/2003 1626 Test No.: 1 Reason for Test: C  
 Calculated Result: Pass System Time: 2  
 Reported Result: Pass System Time: 2

Date	Start Time	End Time	Component ID	Component Type	Gas Level	Calibration Gas Value	Reported Cycle Time	Calculated Cycle Time	Stable Starting Monitor Value	Stable Ending Monitor Value
031118	1614	1616	303	NOXA	Z	0.000	2	2	0.700	30.900
031118	1614	1616	305	CO2	Z	0.000	2	2	0.400	1.640
031118	1624	1626	303	NOXA	H	130.000	2	2	130.700	32.400
031118	1624	1626	305	CO2	H	9.000	2	2	8.960	1.880

MONITORING DATA CHECKING SOFTWARE 4.1  
 7-DAY CALIBRATION ERROR TESTS (RT 600)

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ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2C Comp/Sys ID: 303/313 Parameter: NOX  
 Test End Date/Hour: 12/19/2003 01 Test No.: 1 Component Type: NOXA  
 Calculated Results: Pass Span Scale: High Reason for Test: C  
 Reported Results: Pass  
 Performance Spec: CE <= 2.5% of span or |R-A| <= 5 ppm

Date	Hour	Gas Level	Span Value	Reference Value	Measured Value	Ref. Value as % of Span	Reported Result	APS	Recalculated Result	APS
031209	14	M	150.000	81.700	81.900	54.5%	0.1	0	0.1	0
031209	14	Z	150.000	0.000	0.000	0.0%	0.0	0	0.0	0
031214	10	M	150.000	81.700	84.400	54.5%	1.8	0	1.8	0
031214	10	Z	150.000	0.000	0.200	0.0%	0.1	0	0.1	0
031215	01	M	150.000	81.700	84.200	54.5%	1.7	0	1.7	0
031215	01	Z	150.000	0.000	0.000	0.0%	0.0	0	0.0	0
031216	01	M	150.000	81.700	83.500	54.5%	1.2	0	1.2	0
031216	01	Z	150.000	0.000	-0.200	0.0%	0.1	0	0.1	0
031217	01	M	150.000	81.700	84.100	54.5%	1.6	0	1.6	0
031217	01	Z	150.000	0.000	-0.200	0.0%	0.1	0	0.1	0
031218	01	M	150.000	81.700	83.500	54.5%	1.2	0	1.2	0
031218	01	Z	150.000	0.000	-0.200	0.0%	0.1	0	0.1	0
031219	01	M	150.000	81.700	79.900	54.5%	1.2	0	1.2	0
031219	01	Z	150.000	0.000	-0.200	0.0%	0.1	0	0.1	0

MONITORING DATA CHECKING SOFTWARE 4.1  
 7-DAY CALIBRATION ERROR TESTS (RT 600)

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ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2C Comp/Sys ID: 303/313 Parameter: NOX  
 Test End Date/Hour: 12/19/2003 01 Test No.: 2 Component Type: NOXA  
 Calculated Results: Pass-APS Span Scale: Low Reason for Test: C  
 Reported Results: Pass-APS  
 Performance Spec: CE <= 2.5% of span or |R-A| <= 5 ppm

Date	Hour	Gas Level	Span Value	Reference Value	Measured Value	Ref. Value as % of Span	Reported Result	APS	Recalculated Result	APS
031209	14	M	10.000	5.500	5.000	55.0%	1.0	1	1.0	1
031209	14	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031214	10	M	10.000	5.500	5.300	55.0%	2.0	0	2.0	0
031214	10	Z	10.000	0.000	0.200	0.0%	2.0	0	2.0	0
031215	01	M	10.000	5.500	5.200	55.0%	0.0	1	0.0	1
031215	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031216	01	M	10.000	5.500	4.700	55.0%	1.0	1	1.0	1
031216	01	Z	10.000	0.000	-0.100	0.0%	1.0	0	1.0	0
031217	01	M	10.000	5.500	4.700	55.0%	1.0	1	1.0	1
031217	01	Z	10.000	0.000	-0.100	0.0%	1.0	0	1.0	0
031218	01	M	10.000	5.500	4.500	55.0%	1.0	1	1.0	1
031218	01	Z	10.000	0.000	-0.100	0.0%	1.0	0	1.0	0
031219	01	M	10.000	5.500	4.500	55.0%	1.0	1	1.0	1
031219	01	Z	10.000	0.000	-0.100	0.0%	1.0	0	1.0	0

MONITORING DATA CHECKING SOFTWARE 4.1  
 LINEARITY REPORT (RT 601/602)

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ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2C Comp/Sys ID: 303/313 Parameter: NOX  
 Test End Date/Time: 11/18/2003 1551 Test No.: 1 Component Type: NOXA  
 Performance Spec: LE <= 5.0% or | R - A | <= 5 ppm  
 Recalc.: Pass Highest Linearity Error: 2.1 Scale: High  
 Reported Results: Pass Highest Linearity Error: 2.1 Reason for Test: C

Date	Time	Gas Level	Span Value	Reference Value	Measured Value	Indicator of Aborted Test	Ref. Value as % of Span
031118	1523	L	150.000	37.100	37.700		24.7%
031118	1528	M	150.000	82.000	81.600		54.7%
031118	1531	H	150.000	134.000	131.500		89.3%
031118	1535	L	150.000	37.100	38.000		24.7%
031118	1537	M	150.000	82.000	81.600		54.7%
031118	1540	H	150.000	134.000	131.100		89.3%
031118	1543	L	150.000	37.100	37.900		24.7%
031118	1546	M	150.000	82.000	81.600		54.7%
031118	1551	H	150.000	134.000	131.100		89.3%

Summary Statistics                      Reported                      Recalculated

High - Reference Value:	134.000	134.000
High - Mean CEM Value:	131.233	131.233
High - Alt. Perf. Flag:	0	0
High - Results:	2.1	2.1
Low - Reference Value:	37.100	37.100
Low - Mean CEM Value:	37.867	37.867
Low - Alt. Perf. Flag:	0	0
Low - Results:	2.1	2.1
Mid - Reference Value:	82.000	82.000
Mid - Mean CEM Value:	81.600	81.600
Mid - Alt. Perf. Flag:	0	0
Mid - Results:	0.5	0.5

MONITORING DATA CHECKING SOFTWARE 4.1  
 7-DAY CALIBRATION ERROR TESTS (RT 600)

01/27/2004  
 PAGE 7

ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2C Comp/Sys ID: 305/313 Parameter: NOX  
 Test End Date/Hour: 12/19/2003 01 Test No.: 1 Component Type: CO2  
 Calculated Results: Pass Span Scale: Reason for Test: C  
 Reported Results: Pass  
 Performance Spec: CE <= 2.5% of span or |R-A| <= 5 ppm

Date	Hour	Gas Level	Span Value	Reference Value	Measured Value	Ref. Value as % of Span	Reported Result	APS	Recalculated Result	APS
031209	14	M	10.000	5.500	5.600	55.0%	0.1	0	0.1	0
031209	14	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031214	10	M	10.000	5.500	5.700	55.0%	0.2	0	0.2	0
031214	10	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031215	01	M	10.000	5.500	5.500	55.0%	0.0	0	0.0	0
031215	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031216	01	M	10.000	5.500	5.500	55.0%	0.0	0	0.0	0
031216	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031217	01	M	10.000	5.500	5.300	55.0%	0.2	0	0.2	0
031217	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031218	01	M	10.000	5.500	5.300	55.0%	0.2	0	0.2	0
031218	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031219	01	M	10.000	5.500	5.100	55.0%	0.4	0	0.4	0
031219	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0



MONITORING DATA CHECKING SOFTWARE 4.1  
 LINEARITY REPORT (RT 601/602)

01/27/2004  
 PAGE 8

ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2C Comp/Sys ID: 305/313 Parameter: NOX  
 Test End Date/Time: 11/18/2003 1551 Test No.: 1 Component Type: CO2  
 Performance Spec: LE <= 5.0% or | R - A | <= 5 ppm  
 Recalc.: Pass Highest Linearity Error: 1.3 Scale:  
 Reported Results: Pass Highest Linearity Error: 1.3 Reason for Test: C

Date	Time	Gas Level	Span Value	Reference Value	Measured Value	Indicator of Aborted Test	Ref. Value as % of Span
031118	1523	L	10.000	2.540	2.600		25.4%
031118	1528	M	10.000	5.500	5.500		55.0%
031118	1531	H	10.000	9.120	9.000		91.2%
031118	1535	L	10.000	2.540	2.500		25.4%
031118	1537	M	10.000	5.500	5.500		55.0%
031118	1540	H	10.000	9.120	9.000		91.2%
031118	1543	L	10.000	2.540	2.500		25.4%
031118	1546	M	10.000	5.500	5.500		55.0%
031118	1551	H	10.000	9.120	9.000		91.2%

Summary Statistics                      Reported                      Recalculated

High - Reference Value:	9.120	9.120
High - Mean CEM Value:	9.000	9.000
High - Alt. Perf. Flag:	0	0
High - Results:	1.3	1.3
Low - Reference Value:	2.540	2.540
Low - Mean CEM Value:	2.533	2.533
Low - Alt. Perf. Flag:	0	0
Low - Results:	0.3	0.3
Mid - Reference Value:	5.500	5.500
Mid - Mean CEM Value:	5.500	5.500
Mid - Alt. Perf. Flag:	0	0
Mid - Results:	0.0	0.0

MONITORING DATA CHECKING SOFTWARE 4.1  
QA TEST DATA EVALUATION REPORT

01/27/2004  
PAGE 1

ORIS Code: 7873  
Facility Name: BAYSIDE

State: FL  
County: HILLSBOROUGH

EVALUATION OF TEST DATA FOR UNIT CT2D

Test Type	Sys ID	Comp ID	Test Date/Time	Test Num	Problem Number	Description
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Based on the evaluation criteria in this version, the software has not identified any errors for this unit.

MONITORING DATA CHECKING SOFTWARE 4.1  
 RATA REPORT (RT 610/611)

01/27/2004  
 PAGE 2

ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2D System ID: 413 Parameter: NOX  
 Test End Date/Time: 12/17/2003 1509 Test No.: 1 # of Op. Levels: 1 Units of Measure: LB/MMBTU  
 Reason for Test: C  
 Performance Spec: <= 10.0% Next RATA: Four Op Qtrs  
 Recalc. Results: Pass-APS % RA: 9.63 Mean Diff: 0.001 BAF: 1.081  
 Reported Results: Pass-APS % RA: 9.63 Mean Diff: 0.001 BAF: 1.081

Operating Level: H

Run	Start Date	Start Time	End Date	End Time	Run Status	Reference Method	Monitoring Value	Gross Load or Velocity
1	12/17/2003	0932	12/17/2003	0953	1	0.012	0.011	172
2	12/17/2003	1046	12/17/2003	1107	1	0.012	0.011	173
3	12/17/2003	1123	12/17/2003	1144	1	0.011	0.011	173
4	12/17/2003	1155	12/17/2003	1216	1	0.012	0.011	172
5	12/17/2003	1231	12/17/2003	1252	1	0.012	0.011	172
6	12/17/2003	1305	12/17/2003	1326	1	0.012	0.011	173
7	12/17/2003	1342	12/17/2003	1403	1	0.012	0.011	173
8	12/17/2003	1415	12/17/2003	1436	1	0.012	0.011	173
9	12/17/2003	1448	12/17/2003	1509	1	0.012	0.011	173

Summary Statistics

	Reported	Recalculated
Mean of Monitoring System	0.011	0.011
Mean of Reference Method Values	0.012	0.012
Mean of Difference	0.001	0.001
Standard Deviation of Difference	0.000	0.000
Confidence Coefficient	0.000	0.000
T-Value	2.306	2.306
Relative Accuracy:	9.63	9.63
Bias Adjustment Factor	1.081	1.081
APS Flag	1	1
Indicator of Normal Op. Level	N	N
Gross Unit Load or Velocity	173	173
Reference Method Used	7E, 3A	

MONITORING DATA CHECKING SOFTWARE 4.1  
 CYCLE TIME TESTS (RT 621)

01/27/2004  
 PAGE 3

ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2D System ID: 413 Parameter: NOX  
 Test End Date/Time: 11/16/2003 1216 Test No.: 1 Reason for Test: C  
 Calculated Result: Pass System Time: 2  
 Reported Result: Pass System Time: 2

Date	Start Time	End Time	Component ID	Component Type	Gas Level	Calibration Gas Value	Reported Cycle Time	Calculated Cycle Time	Stable Starting Monitor Value	Stable Ending Monitor Value
031116	1203	1205	403	NOXA	Z	0.000	2	2	0.400	31.600
031116	1203	1205	405	CO2	Z	0.000	2	2	0.120	1.520
031116	1214	1216	403	NOXA	H	132.600	2	2	132.600	33.500
031116	1214	1216	405	CO2	H	9.000	2	2	8.950	1.880

MONITORING DATA CHECKING SOFTWARE 4.1  
 7-DAY CALIBRATION ERROR TESTS (RT 600)

01/27/2004  
 PAGE 4

ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2D Comp/Sys ID: 403/413 Parameter: NOX  
 Test End Date/Hour: 12/17/2003 01 Test No.: 1 Component Type: NOXA  
 Calculated Results: Pass Span Scale: High Reason for Test: C  
 Reported Results: Pass  
 Performance Spec: CE <= 2.5% of span or |R-A| <= 5 ppm

Date	Hour	Gas Level	Span Value	Reference Value	Measured Value	Ref. Value as % of Span	Reported Result	APS	Recalculated Result	APS
031209	15	M	150.000	81.700	83.800	54.5%	1.4	0	1.4	0
031209	15	Z	150.000	0.000	2.000	0.0%	1.3	0	1.3	0
031210	09	Z	150.000	0.000	0.700	0.0%	0.5	0	0.5	0
031210	10	M	150.000	81.700	84.200	54.5%	1.7	0	1.7	0
031211	10	M	150.000	81.700	84.300	54.5%	1.7	0	1.7	0
031211	10	Z	150.000	0.000	1.900	0.0%	1.3	0	1.3	0
031212	01	M	150.000	81.700	82.600	54.5%	0.6	0	0.6	0
031212	01	Z	150.000	0.000	0.100	0.0%	0.1	0	0.1	0
031215	16	M	150.000	81.700	83.700	54.5%	1.3	0	1.3	0
031215	16	Z	150.000	0.000	0.900	0.0%	0.6	0	0.6	0
031216	01	M	150.000	81.700	83.000	54.5%	0.9	0	0.9	0
031216	01	Z	150.000	0.000	0.000	0.0%	0.0	0	0.0	0
031217	01	M	150.000	81.700	83.700	54.5%	1.3	0	1.3	0
031217	01	Z	150.000	0.000	0.000	0.0%	0.0	0	0.0	0

MONITORING DATA CHECKING SOFTWARE 4.1  
 7-DAY CALIBRATION ERROR TESTS (RT 600)

01/27/2004  
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ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2D Comp/Sys ID: 403/413 Parameter: NOX  
 Test End Date/Hour: 12/17/2003 01 Test No.: 2 Component Type: NOXA  
 Calculated Results: Pass-APS Span Scale: Low Reason for Test: C  
 Reported Results: Pass-APS  
 Performance Spec: CE <= 2.5% of span or |R-A| <= 5 ppm

Date	Hour	Gas Level	Span Value	Reference Value	Measured Value	Ref. Value as % of Span	Reported Result	APS	Recalculated Result	APS
031209	15	M	10.000	5.500	7.700	55.0%	2.0	1	2.0	1
031209	15	Z	10.000	0.000	2.000	0.0%	2.0	1	2.0	1
031210	09	Z	10.000	0.000	0.700	0.0%	1.0	1	1.0	1
031210	10	M	10.000	5.500	6.000	55.0%	1.0	1	1.0	1
031211	10	M	10.000	5.500	7.700	55.0%	2.0	1	2.0	1
031211	10	Z	10.000	0.000	2.000	0.0%	2.0	1	2.0	1
031212	01	M	10.000	5.500	5.300	55.0%	2.0	0	2.0	0
031212	01	Z	10.000	0.000	0.200	0.0%	2.0	0	2.0	0
031215	16	M	10.000	5.500	6.300	55.0%	1.0	1	1.0	1
031215	16	Z	10.000	0.000	1.000	0.0%	1.0	1	1.0	1
031216	01	M	10.000	5.500	5.300	55.0%	2.0	0	2.0	0
031216	01	Z	10.000	0.000	0.100	0.0%	1.0	0	1.0	0
031217	01	M	10.000	5.500	5.200	55.0%	0.0	1	0.0	1
031217	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0

MONITORING DATA CHECKING SOFTWARE 4.1  
 LINEARITY REPORT (RT 601/602)

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ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2D Comp/Sys ID: 403/413 Parameter: NOX  
 Test End Date/Time: 11/16/2003 1133 Test No.: 1 Component Type: NOXA  
 Performance Spec: LE <= 5.0% or | R - A | <= 5 ppm  
 Recalc.: Pass Highest Linearity Error: 0.9 Scale: High  
 Reported Results: Pass Highest Linearity Error: 0.9 Reason for Test: C

Date	Time	Gas Level	Span Value	Reference Value	Measured Value	Indicator of Aborted Test	Ref. Value as % of Span
031116	1059	L	150.000	37.100	37.200		24.7%
031116	1103	M	150.000	82.000	81.900		54.7%
031116	1107	H	150.000	134.000	132.400		89.3%
031116	1110	L	150.000	37.100	37.100		24.7%
031116	1114	M	150.000	82.000	81.900		54.7%
031116	1117	H	150.000	134.000	133.100		89.3%
031116	1120	L	150.000	37.100	37.100		24.7%
031116	1129	M	150.000	82.000	82.300		54.7%
031116	1133	H	150.000	134.000	132.700		89.3%

Summary Statistics

	Reported	Recalculated
High - Reference Value:	134.000	134.000
High - Mean CEM Value:	132.733	132.733
High - Alt. Perf. Flag:	0	0
High - Results:	0.9	0.9
Low - Reference Value:	37.100	37.100
Low - Mean CEM Value:	37.133	37.133
Low - Alt. Perf. Flag:	0	0
Low - Results:	0.1	0.1
Mid - Reference Value:	82.000	82.000
Mid - Mean CEM Value:	82.033	82.033
Mid - Alt. Perf. Flag:	0	0
Mid - Results:	0.0	0.0

MONITORING DATA CHECKING SOFTWARE 4.1  
 7-DAY CALIBRATION ERROR TESTS (RT 600)

01/27/2004  
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ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2D Comp/Sys ID: 405/413 Parameter: NOX  
 Test End Date/Hour: 12/17/2003 01 Test No.: 1 Component Type: CO2  
 Calculated Results: Pass Span Scale: Reason for Test: C  
 Reported Results: Pass  
 Performance Spec: CE <= 2.5% of span or |R-A| <= 5 ppm

Date	Hour	Gas Level	Span Value	Reference Value	Measured Value	Ref. Value as % of Span	Reported Result	APS	Recalculated Result	APS
031209	15	M	10.000	5.500	5.300	55.0%	0.2	0	0.2	0
031209	15	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031210	09	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031210	10	M	10.000	5.500	5.300	55.0%	0.2	0	0.2	0
031211	10	M	10.000	5.500	5.500	55.0%	0.0	0	0.0	0
031211	10	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031212	01	M	10.000	5.500	5.500	55.0%	0.0	0	0.0	0
031212	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031215	16	M	10.000	5.500	5.200	55.0%	0.3	0	0.3	0
031215	16	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031216	01	M	10.000	5.500	5.100	55.0%	0.4	0	0.4	0
031216	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0
031217	01	M	10.000	5.500	5.000	55.0%	0.5	0	0.5	0
031217	01	Z	10.000	0.000	0.000	0.0%	0.0	0	0.0	0



MONITORING DATA CHECKING SOFTWARE 4.1  
 LINEARITY REPORT (RT 601/602)

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ORIS Code: 7873 Facility: BAYSIDE State: FL  
 Unit/Stack ID: CT2D Comp/Sys ID: 405/413 Parameter: NOX  
 Test End Date/Time: 11/16/2003 1133 Test No.: 1 Component Type: CO2  
 Performance Spec: LE <= 5.0% or | R - A | <= 5 ppm  
 Recalc.: Pass Highest Linearity Error: 1.3 Scale:  
 Reported Results: Pass Highest Linearity Error: 1.3 Reason for Test: C

Date	Time	Gas Level	Span Value	Reference Value	Measured Value	Indicator of Aborted Test	Ref. Value as % of Span
031116	1059	L	10.000	2.540	2.500		25.4%
031116	1103	M	10.000	5.500	5.500		55.0%
031116	1107	H	10.000	9.120	9.000		91.2%
031116	1110	L	10.000	2.540	2.500		25.4%
031116	1114	M	10.000	5.500	5.500		55.0%
031116	1117	H	10.000	9.120	9.000		91.2%
031116	1120	L	10.000	2.540	2.600		25.4%
031116	1129	M	10.000	5.500	5.500		55.0%
031116	1133	H	10.000	9.120	9.000		91.2%

Summary Statistics                      Reported                      Recalculated

High - Reference Value:	9.120	9.120
High - Mean CEM Value:	9.000	9.000
High - Alt. Perf. Flag:	0	0
High - Results:	1.3	1.3
Low - Reference Value:	2.540	2.540
Low - Mean CEM Value:	2.533	2.533
Low - Alt. Perf. Flag:	0	0
Low - Results:	0.3	0.3
Mid - Reference Value:	5.500	5.500
Mid - Mean CEM Value:	5.500	5.500
Mid - Alt. Perf. Flag:	0	0
Mid - Results:	0.0	0.0

**4.0 40CFR60 CARBON MONOXIDE / CARBON DIOXIDE**  
**CERTIFICATION INFORMATION**



Calibration Drift Test

Customer: Tampa Electric Company  
 Facility: Bayside Power Station  
 Unit: CT - 2A  
 ORIS Code: 7873

CO Monitor (Low Range)

Manufacturer: Thermo Environmental Instruments  
 Model Number: 48C  
 Serial Number: 48C-74349-376  
 Range Span: 20 ppm

Daily Zero Results		ppm, CO			Calibration Drift
Date	Time	Reference	Measured	Difference	
10/10/2003	1:14	0.00	-0.20	0.20	1.0
10/14/2003	10:09	0.00	-0.30	0.30	1.5
10/15/2003	1:14	0.00	-0.10	0.10	0.5
10/28/2003	9:41	0.00	0.30	-0.30	-1.5
10/29/2003	18:30	0.00	0.20	-0.20	-1.0
10/30/2003	1:14	0.00	0.20	-0.20	-1.0
10/31/2003	1:14	0.00	0.30	-0.30	-1.5

Daily Span Results		ppm, CO			Calibration Drift
Date	Time	Reference	Measured	Difference	
10/10/2003	1:04	11.00	10.80	0.20	1.0
10/14/2003	10:00	11.00	11.30	-0.30	-1.5
10/15/2003	1:04	11.30	11.10	0.20	1.0
10/28/2003	9:31	11.30	11.60	-0.30	-1.5
10/29/2003	18:20	11.30	11.50	-0.20	-1.0
10/30/2003	1:04	11.30	11.50	-0.20	-1.0
10/31/2003	1:04	11.30	11.60	-0.30	-1.5

Difference = Reference - Measured

Calibration Error = (Difference / Range Span) x100



Calibration Drift Test

Customer: Tampa Electric Company  
 Facility: Bayside Power Station  
 Unit: CT - 2A  
 ORIS Code: 7873

CO Monitor (High Range)

Manufacturer: Thermo Environmental Instruments  
 Model Number: 48C  
 Serial Number: 48C-74349-376  
 Range Span: 1000 ppm

Daily Zero Results		ppm, CO			Calibration Drift
Date	Time	Reference	Measured	Difference	
10/10/2003	1:14	0.00	-0.20	0.20	0.0
10/14/2003	10:09	0.00	-0.30	0.30	0.0
10/15/2003	1:14	0.00	-0.30	0.30	0.0
10/28/2003	9:41	0.00	-0.20	0.20	0.0
10/29/2003	18:30	0.00	-0.30	0.30	0.0
10/30/2003	1:14	0.00	-0.30	0.30	0.0
10/31/2003	1:14	0.00	-0.30	0.30	0.0

Daily Span Results		ppm, CO			Calibration Drift
Date	Time	Reference	Measured	Difference	
10/10/2003	1:09	542.00	550.30	-8.30	-0.8
10/14/2003	10:05	542.00	558.70	-16.70	-1.7
10/15/2003	1:09	555.00	525.90	29.10	2.9
10/28/2003	9:36	555.00	553.50	1.50	0.2
10/29/2003	18:25	555.00	543.20	11.80	1.2
10/30/2003	1:09	555.00	544.90	10.10	1.0
10/31/2003	1:09	555.00	554.90	0.10	0.0

Difference = Reference - Measured

Calibration Error = (Difference / Range Span) x100



Environmental Services  
Air Services Group

**40CFR60 - APPENDIX B, PERFORMANCE SPECIFICATION 4  
RELATIVE ACCURACY TEST AUDIT**

Customer: Tampa Electric Company  
Facility: Bayside Power Station  
Source: CT-2A  
Test Date: 11/22/03

Applicable Standard: 7.8 ppmvd CO @ 15% O<sub>2</sub>

Run Number	Run Times		Unit Load	Air Services Group - Test Data			Continuous Emissions Monitor		Difference	Run Flag
	Start	Stop		RM -10 CO ppmvd	RM - 3A O <sub>2</sub> %v, dry	CO ppmvd @ 15% O <sub>2</sub>	CO ppmvd	CO ppmvd @ 15% O <sub>2</sub>	CO ppmvd @ 15% O <sub>2</sub>	
1	10:00	10:44	164	0.83	14.16	0.723	0.80	0.698	0.025	1
2	11:00	11:21	163	0.90	14.19	0.792	0.76	0.643	0.149	1
3	11:40	12:01	162	0.90	14.19	0.792	0.82	0.686	0.106	1
4	12:10	12:31	161	0.90	14.17	0.789	0.77	0.650	0.139	1
5	12:40	13:01	161	0.80	14.16	0.701	0.76	0.641	0.060	1
6	13:12	13:33	160	1.00	14.16	0.876	0.83	0.705	0.171	1
7	13:43	14:04	159	0.92	14.16	0.801	0.83	0.700	0.101	1
8	14:19	14:40	159	0.92	14.16	0.802	0.85	0.709	0.093	1
9	14:49	15:10	159	1.00	14.16	0.876	0.90	0.732	0.144	1
Means:			161			0.795		0.685	0.110	

Standard Deviation of Differences: 0.047  
 Number of Valid Runs Included in Data Set: 9  
 t-value for Data Set: 2.306  
 2.5% Error Confidence Coefficient (CC) for Data Set: 0.036  
 Relative Accuracy (RA), Calculated Against Mean Reference Method Value: 18.32 %  
 Relative Accuracy (RA), Calculated Against Applicable Standard: 1.87 %



Environmental Services  
Air Services Group

40CFR75 - APPENDIX A  
RELATIVE ACCURACY TEST AUDIT

Customer: Tampa Electric Company  
Facility: Bayside Power Station  
Source: CT-2A  
Test Date: 11/22/03

Run Number	Run Times Start	Run Times Stop	Unit Load	Air Services Group - Test Data RM - 3A CO <sub>2</sub> , % volume dry	Continuous Emissions Monitor CO <sub>2</sub> , % volume dry	Difference CO <sub>2</sub> , % volume dry	Run Flag
1	10:00	10:44	164	4.00	4.052	-0.057	1
2	11:00	11:21	163	3.98	4.050	-0.066	1
3	11:40	12:01	162	3.98	4.048	-0.069	1
4	12:10	12:31	161	3.97	4.050	-0.079	1
5	12:40	13:01	161	3.97	4.050	-0.075	1
6	13:12	13:33	160	3.97	4.052	-0.079	1
7	13:43	14:04	159	3.98	4.053	-0.078	1
8	14:19	14:40	159	3.98	4.060	-0.085	1
9	14:49	15:10	159	3.98	4.060	-0.085	1
Means:			161	3.978	4.053	-0.075	

Standard Deviation of Differences: 0.009  
 Number of Valid Runs Included in Data Set: 9  
 t-value for Data Set: 2.306  
 2.5% Error Confidence Coefficient (CC) for Data Set: 0.007  
 Relative Accuracy (RA): 2.06



Calibration Drift Test

Customer: Tampa Electric Company  
 Facility: Bayside Power Station  
 Unit: CT - 2B  
 ORIS Code: 7873

CO Monitor (Low Range)

Manufacturer: Thermo Environmental Instruments  
 Model Number: 48C  
 Serial Number: 48C-74342-376  
 Range Span: 20 ppm

Daily Zero Results		ppm, CO			Calibration Drift
Date	Time	Reference	Measured	Difference	
10/29/2003	14:59	0.00	0.30	-0.30	-1.5
11/04/2003	10:43	0.00	0.50	-0.50	-2.5
11/05/2003	1:24	0.00	0.30	-0.30	-1.5
11/06/2003	1:24	0.00	0.60	-0.60	-3.0
11/07/2003	1:24	0.00	0.50	-0.50	-2.5
11/08/2003	1:24	0.00	0.70	-0.70	-3.5
11/09/2003	1:24	0.00	0.40	-0.40	-2.0

Daily Span Results		ppm, CO			Calibration Drift
Date	Time	Reference	Measured	Difference	
10/29/2003	14:53	11.30	11.70	-0.40	-2.0
11/04/2003	10:37	11.30	12.10	-0.80	-4.0
11/05/2003	1:18	11.30	11.70	-0.40	-2.0
11/06/2003	1:18	11.30	12.10	-0.80	-4.0
11/07/2003	1:18	11.30	11.80	-0.50	-2.5
11/08/2003	1:18	11.30	12.10	-0.80	-4.0
11/09/2003	1:18	11.30	11.80	-0.50	-2.5

Difference = Reference - Measured

Calibration Error = (Difference / Range Span) x100



Calibration Drift Test

Customer: Tampa Electric Company  
 Facility: Bayside Power Station  
 Unit: CT - 2B  
 ORIS Code: 7873

CO Monitor (High Range)

Manufacturer: Thermo Environmental Instruments  
 Model Number: 48C  
 Serial Number: 48C-74342-376  
 Range Span: 1000 ppm

Daily Zero Results		ppm, CO			Calibration
Date	Time	Reference	Measured	Difference	Drift
10/29/2003	14:59	0.00	-0.30	0.30	0.0
11/04/2003	10:43	0.00	0.30	-0.30	0.0
11/05/2003	1:24	0.00	-0.20	0.20	0.0
11/06/2003	1:24	0.00	0.50	-0.50	-0.1
11/07/2003	1:24	0.00	0.10	-0.10	0.0
11/08/2003	1:24	0.00	0.50	-0.50	-0.1
11/09/2003	1:24	0.00	-0.20	0.20	0.0

Daily Span Results		ppm, CO			Calibration
Date	Time	Reference	Measured	Difference	Drift
10/29/2003	14:56	555.00	569.80	-14.80	-1.5
11/04/2003	10:40	555.00	582.60	-27.60	-2.8
11/05/2003	1:21	555.00	571.00	-16.00	-1.6
11/06/2003	1:21	555.00	584.70	-29.70	-3.0
11/07/2003	1:21	555.00	575.30	-20.30	-2.0
11/08/2003	1:21	555.00	585.20	-30.20	-3.0
11/09/2003	1:21	555.00	570.10	-15.10	-1.5

Difference = Reference - Measured

Calibration Error = (Difference / Range Span) x100





Environmental Services  
Air Services Group

**40CFR60 - APPENDIX B, PERFORMANCE SPECIFICATION 4  
RELATIVE ACCURACY TEST AUDIT**

Customer: Tampa Electric Company  
Facility: Bayside Power Station  
Source: CT-2B  
Test Date: 12/16/03

Applicable Standard: 7.8 ppmvd CO @ 15% O<sub>2</sub>

Run Number	Run Times		Unit Load	Air Services Group - Test Data			Continuous Emissions Monitor		Difference CO ppmvd @ 15% O <sub>2</sub>	Run Flag
	Start	Stop		RM -10 CO ppmvd	RM - 3A O <sub>2</sub> %v, dry	CO ppmvd @ 15% O <sub>2</sub>	CO ppmvd	CO ppmvd @ 15% O <sub>2</sub>		
1	09:31	09:52	166	1.05	13.87	0.881	1.32	1.165	-0.284	1
2	10:31	10:52	164	1.14	13.86	0.955	1.41	1.214	-0.259	1
3	11:08	11:29	163	0.93	13.85	0.778	1.18	1.055	-0.277	1
4	11:45	12:06	161	1.11	13.85	0.929	1.36	1.159	-0.230	1
5	12:20	12:41	161	1.27	13.84	1.061	1.54	1.332	-0.271	1
6	12:53	13:14	160	1.18	13.84	0.986	1.51	1.300	-0.314	1
7	13:29	13:50	161	1.12	13.80	0.931	1.48	1.283	-0.352	1
8	14:07	14:28	161	1.03	13.80	0.856	1.40	1.209	-0.353	1
9	14:42	15:03	160	0.90	13.81	0.749	1.30	1.100	-0.351	1
Means:			162			0.903		1.202	-0.299	

Standard Deviation of Differences: 0.045  
 Number of Valid Runs Included in Data Set: 9  
 t-value for Data Set: 2.306  
 2.5% Error Confidence Coefficient (CC) for Data Set: 0.035  
 Relative Accuracy (RA), Calculated Against Mean Reference Method Value: 36.98 %  
 Relative Accuracy (RA), Calculated Against Applicable Standard: 4.28 %



Environmental Services  
Air Services Group

40CFR75 - APPENDIX A  
RELATIVE ACCURACY TEST AUDIT

Customer: Tampa Electric Company  
Facility: Bayside Power Station  
Source: CT-2B  
Test Date: 12/16/03

Run Number	Run Times Start	Run Times Stop	Unit Load	Air Services Group - Test Data RM - 3A CO <sub>2</sub> , % volume dry	Continuous Emissions Monitor CO <sub>2</sub> , % volume dry	Difference CO <sub>2</sub> , % volume dry	Run Flag
1	09:31	09:52	166	4.080	3.814	0.266	1
2	10:31	10:52	164	4.080	3.832	0.248	1
3	11:08	11:29	163	4.090	3.848	0.242	1
4	11:45	12:06	161	4.080	3.851	0.229	1
5	12:20	12:41	161	4.100	3.839	0.261	1
6	12:53	13:14	160	4.080	3.818	0.262	1
7	13:29	13:50	161	4.070	3.820	0.250	1
8	14:07	14:28	161	4.040	3.820	0.220	1
9	14:42	15:03	160	4.040	3.820	0.220	1
Means:			162	4.073	3.829	0.244	

Standard Deviation of Differences: 0.018  
 Number of Valid Runs Included in Data Set: 9  
 t-value for Data Set: 2.306  
 2.5% Error Confidence Coefficient (CC) for Data Set: 0.014  
 Relative Accuracy (RA): 6.33



Calibration Drift Test

Customer: Tampa Electric Company  
 Facility: Bayside Power Station  
 Unit: CT - 2C  
 ORIS Code: 7873

CO Monitor (Low Range)

Manufacturer: Thermo Environmental Instruments  
 Model Number: 48C  
 Serial Number: 48C-74343-376  
 Range Span: 20 ppm

Daily Zero Results		ppm, CO			Calibration
Date	Time	Reference	Measured	Difference	Drift
01/12/2004	6:31	0.00	0.20	-0.20	-1.0
01/14/2004	6:50	0.00	0.30	-0.30	-1.5
01/15/2004	1:44	0.00	0.40	-0.40	-2.0
01/16/2004	7:40	0.00	0.20	-0.20	-1.0
01/17/2004	1:44	0.00	1.00	-1.00	-5.0
01/18/2004	1:44	0.00	0.30	-0.30	-1.5
01/19/2004	1:44	0.00	0.40	-0.40	-2.0

Daily Span Results		ppm, CO			Calibration
Date	Time	Reference	Measured	Difference	Drift
01/12/2004	6:22	11.50	11.60	-0.10	-0.5
01/14/2004	6:41	11.50	11.90	-0.40	-2.0
01/15/2004	1:34	11.50	12.20	-0.70	-3.5
01/16/2004	7:30	11.50	11.40	0.10	0.5
01/17/2004	1:34	11.50	9.90	1.60	8.0
01/18/2004	1:34	11.50	11.60	-0.10	-0.5
01/19/2004	1:34	11.50	11.90	-0.40	-2.0

Difference = Reference - Measured  
 Calibration Error = (Difference / Range Span) x100



Calibration Drift Test

Customer: Tampa Electric Company  
 Facility: Bayside Power Station  
 Unit: CT - 2C  
 ORIS Code: 7873

CO Monitor (High Range)

Manufacturer: Thermo Environmental Instruments  
 Model Number: 48C  
 Serial Number: 48C-74343-376  
 Range Span: 1000 ppm

Daily Zero Results		ppm, CO			Calibration
Date	Time	Reference	Measured	Difference	Drift
01/12/2004	6:31	0.00	-0.90	0.90	0.1
01/14/2004	6:50	0.00	-0.90	0.90	0.1
01/15/2004	1:44	0.00	-0.70	0.70	0.1
01/16/2004	7:40	0.00	-0.90	0.90	0.1
01/17/2004	1:44	0.00	-0.20	0.20	0.0
01/18/2004	1:44	0.00	-0.90	0.90	0.1
01/19/2004	1:44	0.00	-0.90	0.90	0.1

Daily Span Results		ppm, CO			Calibration
Date	Time	Reference	Measured	Difference	Drift
01/12/2004	6:26	553.00	550.80	2.20	0.2
01/14/2004	6:45	553.00	558.80	-5.80	-0.6
01/15/2004	1:39	553.00	564.00	-11.00	-1.1
01/16/2004	7:35	554.00	548.70	5.30	0.5
01/17/2004	1:39	554.00	557.00	-3.00	-0.3
01/18/2004	1:39	554.00	553.50	0.50	0.1
01/19/2004	1:39	554.00	559.60	-5.60	-0.6

Difference = Reference - Measured

Calibration Error = (Difference / Range Span) x100



Environmental Services  
Air Services Group

**40CFR60 - APPENDIX B, PERFORMANCE SPECIFICATION 4  
RELATIVE ACCURACY TEST AUDIT**

Customer: Tampa Electric Company  
Facility: Bayside Power Station  
Source: CT-2C  
Test Date: 12/20/03

Applicable Standard: 7.8 ppmvd CO @ 15% O<sub>2</sub>

Run Number	Run Times		Unit Load	Air Services Group - Test Data			Continuous Emissions Monitor		Difference	Run Flag
	Start	Stop		RM -10 CO ppmvd	RM - 3A O <sub>2</sub> %v, dry	CO ppmvd @ 15% O <sub>2</sub>	CO ppmvd	CO ppmvd @ 15% O <sub>2</sub>	CO ppmvd @ 15% O <sub>2</sub>	
1	10:51	11:12	176	0.94	14.01	0.805	0.90	0.800	0.005	1
2	11:30	11:51	176	0.96	14.03	0.824	0.90	0.800	0.024	1
3	12:05	12:26	175	0.87	14.02	0.746	0.90	0.800	-0.054	1
4	12:44	13:05	175	0.77	14.00	0.658	0.90	0.800	-0.142	1
5	13:24	13:45	174	0.69	13.94	0.585	0.89	0.791	-0.206	1
6	13:55	14:16	174	0.70	13.89	0.589	0.89	0.791	-0.202	1
7	14:26	14:47	174	0.70	13.92	0.592	0.89	0.786	-0.194	1
8	14:57	15:18	174	0.73	13.96	0.621	0.85	0.755	-0.134	1
9	15:28	15:49	174	0.77	13.96	0.655	0.81	0.712	-0.057	1
Means:			175			0.675		0.782	-0.107	

Standard Deviation of Differences: 0.089  
 Number of Valid Runs Included in Data Set: 9  
 t-value for Data Set: 2.306  
 2.5% Error Confidence Coefficient (CC) for Data Set: 0.068  
 Relative Accuracy (RA), Calculated Against Mean Reference Method Value: 25.94 %  
 Relative Accuracy (RA), Calculated Against Applicable Standard: 2.24 %



Environmental Services  
Air Services Group

40CFR75 - APPENDIX A  
RELATIVE ACCURACY TEST AUDIT

Customer: Tampa Electric Company  
Facility: Bayside Power Station  
Source: CT-2C  
Test Date: 12/20/03

Run Number	Run Times Start	Run Times Stop	Unit Load	Air Services Group - Test Data RM - 3A CO <sub>2</sub> , % volume dry	Continuous Emissions Monitor CO <sub>2</sub> , % volume dry	Difference CO <sub>2</sub> , % volume dry	Run Flag
1	10:51	11:12	176	4.090	3.999	0.091	1
2	11:30	11:51	176	4.080	4.000	0.080	1
3	12:05	12:26	175	4.080	4.010	0.070	1
4	12:44	13:05	175	4.080	4.007	0.073	1
5	13:24	13:45	174	4.090	4.010	0.080	1
6	13:55	14:16	174	4.090	4.019	0.071	1
7	14:26	14:47	174	4.090	4.020	0.070	1
8	14:57	15:18	174	4.090	4.022	0.068	1
9	15:28	15:49	174	4.090	4.020	0.070	1
Means:			175	4.087	4.012	0.075	

Standard Deviation of Differences: 0.007  
 Number of Valid Runs Included in Data Set: 9  
 t-value for Data Set: 2.306  
 2.5% Error Confidence Coefficient (CC) for Data Set: 0.006  
 Relative Accuracy (RA): 1.97



Calibration Drift Test

Customer: Tampa Electric Company  
 Facility: Bayside Power Station  
 Unit: CT - 2D  
 ORIS Code: 7873

CO Monitor (Low Range)

Manufacturer: Thermo Environmental Instruments  
 Model Number: 48C  
 Serial Number: 48C-73683-374  
 Range Span: 20 ppm

Daily Zero Results		ppm, CO			Calibration
Date	Time	Reference	Measured	Difference	Drift
12/20/2003	1:46	0.00	0.60	-0.60	-3.0
12/21/2003	1:46	0.00	0.70	-0.70	-3.5
12/22/2003	9:45	0.00	0.80	-0.80	-4.0
12/23/2003	1:46	0.00	0.80	-0.80	-4.0
01/05/2004	15:34	0.00	0.50	-0.50	-2.5
01/12/2004	4:30	0.00	0.60	-0.60	-3.0
01/13/2004	1:45	0.00	0.60	-0.60	-3.0

Daily Span Results		ppm, CO			Calibration
Date	Time	Reference	Measured	Difference	Drift
12/20/2003	1:36	11.30	11.40	-0.10	-0.5
12/21/2003	1:36	11.30	11.70	-0.40	-2.0
12/22/2003	9:36	11.30	12.00	-0.70	-3.5
12/23/2003	1:36	11.30	11.80	-0.50	-2.5
01/05/2004	15:25	11.50	11.50	0.00	0.0
01/12/2004	4:21	11.50	11.60	-0.10	-0.5
01/13/2004	1:36	11.50	11.80	-0.30	-1.5

Difference = Reference - Measured  
 Calibration Error = (Difference / Range Span) x100



Calibration Drift Test

Customer: Tampa Electric Company  
 Facility: Bayside Power Station  
 Unit: CT - 2D  
 ORIS Code: 7873

CO Monitor (High Range)

Manufacturer: Thermo Environmental Instruments  
 Model Number: 48C  
 Serial Number: 48C-73683-374  
 Range Span: 1000 ppm

Daily Zero Results		ppm, CO			Calibration
Date	Time	Reference	Measured	Difference	Drift
12/20/2003	1:46	0.00	0.20	-0.20	0.0
12/21/2003	1:46	0.00	0.30	-0.30	0.0
12/22/2003	9:45	0.00	0.20	-0.20	0.0
12/23/2003	1:46	0.00	0.20	-0.20	0.0
01/05/2004	15:34	0.00	0.10	-0.10	0.0
01/12/2004	4:30	0.00	0.30	-0.30	0.0
01/13/2004	1:45	0.00	0.30	-0.30	0.0

Daily Span Results		ppm, CO			Calibration
Date	Time	Reference	Measured	Difference	Drift
12/20/2003	1:41	552.00	534.70	17.30	1.7
12/21/2003	1:41	552.00	539.60	12.40	1.2
12/22/2003	9:41	552.00	534.70	17.30	1.7
12/23/2003	1:41	552.00	540.80	11.20	1.1
01/05/2004	15:29	553.00	559.80	-6.80	-0.7
01/12/2004	4:26	553.00	554.00	-1.00	-0.1
01/13/2004	1:40	553.00	558.50	-5.50	-0.6

Difference = Reference - Measured

Calibration Error = (Difference / Range Span) x100





Environmental Services  
Air Services Group

**40CFR60 - APPENDIX B, PERFORMANCE SPECIFICATION 4  
RELATIVE ACCURACY TEST AUDIT**

Customer: Tampa Electric Company

Facility: Bayside Power Station

Source: CT-2D

Test Date: 12/17/03

Applicable Standard: 7.8 ppmvd CO @ 15% O<sub>2</sub>

Run Number	Run Times		Unit Load	Air Services Group - Test Data			Continuous Emissions Monitor		Difference	Run Flag
	Start	Stop		RM -10 CO ppmvd	RM - 3A O <sub>2</sub> %v, dry	CO ppmvd @ 15% O <sub>2</sub>	CO ppmvd	CO ppmvd @ 15% O <sub>2</sub>	CO ppmvd @ 15% O <sub>2</sub>	
1	09:32	09:53	172	0.87	13.84	0.727	0.95	0.781	-0.054	1
2	10:46	11:07	173	0.82	13.83	0.684	0.96	0.773	-0.089	1
3	11:23	11:44	173	0.87	13.85	0.728	0.96	0.777	-0.049	1
4	11:55	12:16	172	0.83	13.85	0.695	0.98	0.786	-0.091	1
5	12:31	12:52	172	0.96	13.84	0.802	0.96	0.764	0.038	1
6	13:05	13:26	173	0.99	13.87	0.831	0.90	0.709	0.122	1
7	13:42	14:03	173	0.93	13.89	0.783	0.85	0.700	0.083	1
8	14:15	14:36	173	0.93	13.89	0.783	0.80	0.686	0.097	1
9	14:48	15:09	173	0.96	13.88	0.807	0.80	0.627	0.180	1
Means:			173			0.760		0.734	0.026	

Standard Deviation of Differences: 0.100  
 Number of Valid Runs Included in Data Set: 9  
 t-value for Data Set: 2.306  
 2.5% Error Confidence Coefficient (CC) for Data Set: 0.077  
 Relative Accuracy (RA), Calculated Against Mean Reference Method Value: 13.60 %  
 Relative Accuracy (RA), Calculated Against Applicable Standard: 1.32 %



Environmental Services  
Air Services Group

**40CFR75 - APPENDIX A  
RELATIVE ACCURACY TEST AUDIT**

Customer: Tampa Electric Company  
Facility: Bayside Power Station  
Source: CT-2D  
Test Date: 12/17/03

Run Number	Run Times Start	Run Times Stop	Unit Load	Air Services Group - Test Data RM - 3A CO <sub>2</sub> , % volume dry	Continuous Emissions Monitor CO <sub>2</sub> , % volume dry	Difference CO <sub>2</sub> , % volume dry	Run Flag
1	09:32	09:53	172	4.150	4.084	0.066	1
2	10:46	11:07	173	4.140	4.080	0.060	1
3	11:23	11:44	173	4.110	4.071	0.039	1
4	11:55	12:16	172	4.090	4.075	0.015	1
5	12:31	12:52	172	4.090	4.071	0.019	1
6	13:05	13:26	173	4.090	4.089	0.001	1
7	13:42	14:03	173	4.100	4.119	-0.019	1
8	14:15	14:36	173	4.100	4.140	-0.040	1
9	14:48	15:09	173	4.100	4.146	-0.046	1
Means:			173	4.108	4.097	0.011	

Standard Deviation of Differences: 0.041  
 Number of Valid Runs Included in Data Set: 9  
 t-value for Data Set: 2.306  
 2.5% Error Confidence Coefficient (CC) for Data Set: 0.031  
 Relative Accuracy (RA): 1.02

LINEARITY DATA

Start Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 End Date: \_\_\_\_\_ Time: \_\_\_\_\_

Analyzer NOx	LOW	MID	HIGH
REF GAS VALUE	37.100	84.000	134.000
DATE 1, TIME 1	10/09/2003 13:50	10/09/2003 13:53	10/09/2003 13:56
RUN 1	37.300	83.900	131.500
DATE 2, TIME 2	10/09/2003 13:59	10/09/2003 14:02	10/09/2003 14:06
RUN 2	37.500	83.900	131.400
DATE 3, TIME 3	10/09/2003 14:10	10/09/2003 14:12	10/09/2003 14:16
RUN 3	37.400	83.700	131.200
AVERAGE=SUM/3	37.400	83.833	131.367
% Error (Eqn A-4)	0.8	0.2	2.0
APS Error (R-A)	0.3	0.2	2.6
Final Value, *=APS	0.8	0.2	2.0
OUT OF CONTROL	NO	NO	NO
SERIAL NUMBER	ALM019353	ALM060212	ALM003262
EXPIRATION DATE	09/01/2005	08/29/2005	09/02/2005

Analyzer CO2	LOW	MID	HIGH
REF GAS VALUE	2.500	5.500	9.000
DATE 1, TIME 1	10/09/2003 13:50	10/09/2003 13:53	10/09/2003 13:56
RUN 1	2.500	5.500	8.900
DATE 2, TIME 2	10/09/2003 13:59	10/09/2003 14:02	10/09/2003 14:06
RUN 2	2.500	5.500	9.000
DATE 3, TIME 3	10/09/2003 14:10	10/09/2003 14:12	10/09/2003 14:16
RUN 3	2.600	5.500	9.000
AVERAGE=SUM/3	2.533	5.500	8.967
% Error (Eqn A-4)	1.3	0.0	0.4
APS Error (R-A)	0.0	0.0	0.0
Final Value, *=APS	1.3	0.0	0.4
OUT OF CONTROL	NO	NO	NO
SERIAL NUMBER	ALM019353	ALM060212	ALM003262
EXPIRATION DATE	09/01/2005	08/29/2005	09/02/2005

Signature: \_\_\_\_\_

CYCLE RESPONSE TIME DATA

CT2A 14:20 - 14:40 NOXH, NOXL & CO2\*

Record#	DATE	TIME	CO211	NOXH12	NOX13
1	10/09/2003	142000	2.490	38.100	9.980
2	10/09/2003	142100	2.480	37.800	9.980
3	10/09/2003	142200	2.470	37.700	9.980
4	10/09/2003	142300	2.450	37.700	9.980
5	10/09/2003	142400	3.260	41.300	7.090
6	10/09/2003	142500	0.130	-0.300	-0.190
7	10/09/2003	142600	0.020	-0.500	-0.220
8	10/09/2003	142700	0.000	-0.600	-0.220
9	10/09/2003	142800	0.710	18.200	5.350
10	10/09/2003	142900	2.410	37.500	9.980
11	10/09/2003	143000	2.440	37.500	9.980
12	10/09/2003	143100	2.440	37.600	9.980
13	10/09/2003	143200	2.440	37.400	9.980
14	10/09/2003	143300	4.130	75.800	9.980
15	10/09/2003	143400	8.850	130.400	9.980
16	10/09/2003	143500	8.970	130.600	9.980
17	10/09/2003	143600	8.980	130.800	9.980
18	10/09/2003	143700	6.730	82.600	9.980
19	10/09/2003	143800	2.540	38.500	9.980
20	10/09/2003	143900	2.500	38.700	9.980
21	10/09/2003	144000	2.490	38.600	9.980
22	/ /				
23	/ /	AVE	3.282	48.829	8.166

7-DAY DRIFT DATA

=====  
Daily Calibration Summary  
Tampa Electric Company  
Bayside ~~GT2A~~  
=====

Report Period  
Day: 10/10/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:09	0.00	0.000P	0.00	1:14	85.60	1.600P	84.00
NOx Low	1:09	0.00	0.000P	0.00	1:04	5.40	0.100P	5.50
CO2	1:09	0.00	0.000P	0.00	1:14	5.40	0.100P	5.50
CO High	1:14	-0.20	0.040P	0.00	1:09	550.30	1.660P	542.00
CO Low	1:14	-0.20	0.200P	0.00	1:04	10.80	0.200P	11.00

①

Today's Date: 10/15/2003  
Time: 13:32:54

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed



=====  
 Daily Calibration Summary  
 Tampa Electric Company  
 Bayside ~~CD2A~~  
 =====

Report Period  
 Day: 10/14/2003\*

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:09	0.00	0.000P	0.00	1:14	85.50	1.500P	84.00
	10:05	0.00	0.000P	0.00	10:09	85.30	1.300P	84.00
	19:01	0.00	0.000P	0.00	18:54	83.80	1.800P	82.00
NOx Low	1:09	-0.10	0.100P	0.00	1:04	5.60	0.100P	5.50
	10:05	0.10	0.100P	0.00	10:00	5.80	0.300P	5.50
	19:01	0.00	0.000P	0.00	19:04	5.80	0.300P	5.50
					19:06	6.00	0.500P	5.50
CO2	1:09	0.00	0.000P	0.00	1:14	5.30	0.200P	5.50
	10:05	0.00	0.000P	0.00	10:09	5.40	0.100P	5.50
	19:01	0.00	0.000P	0.00	18:54	5.40	0.100P	5.50
CO High	1:14	-0.20	0.040P	0.00	1:09	560.10	3.620P	542.00
	10:09	-0.30	0.060P	0.00	10:05	558.70	3.340P	542.00
	18:54	-0.20	0.040P	0.00	19:01	541.30	2.740P	555.00
CO Low	1:14	-0.10	0.100P	0.00	1:04	11.30	0.300P	11.00
	10:09	-0.10	0.100P	0.00	10:00	11.30	0.300P	11.00
	18:54	-0.20	0.200P	0.00	19:04	11.80	0.500P	11.30
					19:06	10.60	0.700P	11.30

(2)

=====  
 Today's Date: 10/15/2003  
 Time: 13:33:29

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

=====  
 Daily Calibration Summary  
 Tampa Electric Company  
 Bayside ~~GT2A~~  
 =====

Report Period  
 Day: ~~10/15/2003~~

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:09	0.00	0.000P	0.00	1:14	82.30	0.300P	82.00
NOx Low	1:09	-0.10	0.100P	0.00	1:04	5.60	0.100P	5.50
CO2	1:09	0.00	0.000P	0.00	1:14	5.60	0.100P	5.50
CO High	1:14	-0.30	0.060P	0.00	1:09	525.90	5.820P	555.00
CO Low	1:14	-0.10	0.100P	0.00	1:04	11.10	0.200P	11.30

3

Today's Date: 10/15/2003  
 Time: 13:33:56

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

=====  
 Daily Calibration Summary  
 Tampa Electric Company  
 Bayside ~~GT2A~~  
 =====

Report Period

Day: ~~10/28/2003~~ 10/28/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:09	-0.10	0.100P	0.00	1:14	84.60	2.600P	82.00
	9:36	0.50	0.500P	0.00	9:41	86.20	4.200P	82.00
NOx Low	1:09	-0.10	0.100P	0.00	1:04	5.70	0.200P	5.50
	9:36	0.50	0.500P	0.00	9:31	6.70	1.200P	5.50
CO2	1:09	0.00	0.000P	0.00	1:14	5.50	0.000P	5.50
	9:36	0.00	0.000P	0.00	9:41	5.40	0.100P	5.50
CO High	1:14	-0.40	0.080P	0.00	1:09	544.40	2.120P	555.00
	9:41	-0.20	0.040P	0.00	9:36	553.50	0.300P	555.00
CO Low	1:14	0.10	0.100P	0.00	1:04	11.50	0.200P	11.30
	9:41	0.30	0.300P	0.00	9:31	11.60	0.300P	11.30

Today's Date: 10/28/2003  
 Time: 14:58:07

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

5

=====  
 Daily Calibration Summary  
 Tampa Electric Company  
 Bayside ~~CT2A~~  
 =====

Report Period

Day: ~~10/29/2003~~

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:09	-0.10	0.100P	0.00	1:14	84.90	2.900P	82.00
	18:25	0.70	0.700P	0.00	18:30	85.10	3.100P	82.00
NOx Low	1:09	-0.10	0.100P	0.00	1:04	5.70	0.200P	5.50
	18:25	0.80	0.800P	0.00	18:20	6.90	1.400P	5.50
CO2	1:09	0.00	0.000P	0.00	1:14	5.50	0.000P	5.50
	18:25	0.00	0.000P	0.00	18:30	5.60	0.100P	5.50
CO High	1:14	-0.30	0.060P	0.00	1:09	549.90	1.020P	555.00
	18:30	-0.30	0.060P	0.00	18:25	543.00	2.400P	555.00
CO Low	1:14	0.20	0.200P	0.00	1:04	11.60	0.300P	11.30
	18:30	0.20	0.200P	0.00	18:20	11.50	0.200P	11.30

Today's Date: 10/31/2003  
Time: 08:43:41

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

6

=====  
Daily Calibration Summary  
Tampa Electric Company  
Bayside @T2A  
=====

Report Period  
Day: 10/30/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:09	0.80	0.800P	0.00	1:14	85.40	3.400P	82.00
NOx Low	1:09	0.80	0.800P	0.00	1:04	6.90	1.400P	5.50
CO2	1:09	0.00	0.000P	0.00	1:14	5.50	0.000P	5.50
CO High	1:14	-0.30	0.060P	0.00	1:09	544.90	2.020P	555.00
CO Low	1:14	0.20	0.200P	0.00	1:04	11.50	0.200P	11.30

Today's Date: 10/31/2003  
Time: 08:44:27

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

7

=====  
 Daily Calibration Summary  
 Tampa Electric Company  
 Bayside ~~012A~~  
 =====

Report Period  
 Day: ~~10/31/2003~~ 10/31/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:09	0.00	0.000P	0.00	1:14	85.60	3.600P	82.00
NOx Low	1:09	-0.10	0.100P	0.00	1:04	5.80	0.300P	5.50
CO2	1:09	0.00	0.000P	0.00	1:14	5.40	0.100P	5.50
CO High	1:14	-0.30	0.060P	0.00	1:09	554.90	0.020P	555.00
CO Low	1:14	0.30	0.300P	0.00	1:04	11.60	0.300P	11.30

Today's Date: 10/31/2003  
 Time: 08:13:42

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

CIT 1 day usage

=====  
 Daily Gas Emission Report  
 Tampa Electric Company  
 Bayside CT2A  
 =====

REPORT PERIOD  
10/09/2003 to 11/03/2003

Page 1

Date: 10/09/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
12	Gas	18.4	1.9	0.00114	0.10	0.00
13	Gas	2964.0	302.3	0.18138	18.00	14.00
14	Gas	3420.8	348.9	0.20934	20.70	19.70
15	Gas	3415.0	348.3	0.20898	20.70	19.10
16	Gas	5273.6	537.9	0.32274	32.00	59.40
17	Gas	6404.4	653.2	0.39192	38.80	84.70
18	Gas	6398.6	652.7	0.39162	38.80	84.60
19	Gas	6000.8	612.1	0.36726	36.40	74.80
20	Gas	6570.3	670.2	0.40212	39.80	89.50
21	Gas	8343.4	851.0	0.51060	50.60	134.30
22	Gas	7749.0	790.4	0.47424	47.00	118.40
23	Gas	6956.3	709.5	0.42570	42.20	99.00

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	63514.6	6478.4	3.88704	385.10

Generation Daily Total: 797.50 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	

Date: 10/10/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
0	Gas	9552.5	974.4	0.58464	57.90	163.00
1	Gas	8577.2	874.9	0.52494	52.00	138.70
2	Gas	6391.8	652.0	0.39120	38.70	85.00
3	Gas	4659.5	475.3	0.28518	28.20	54.40

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	.29181.0	2976.6	1.78596	176.80

Generation Daily Total: 441.10 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	



Date: 10/14/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
8	Gas	2421.6	247.0	0.14820	14.70	13.70
9	Gas	5473.2	558.3	0.33498	33.20	64.70
10	Gas	6172.3	629.6	0.37776	37.40	80.50
11	Gas	7036.6	717.7	0.43062	42.70	103.20
12	Gas	7911.7	807.0	0.48420	48.00	126.00
13	Gas	9232.1	941.7	0.56502	56.00	156.10
14	Gas	9279.4	946.5	0.56790	56.20	157.00
15	Gas	9200.7	938.5	0.56310	55.80	155.40
16	Gas	9228.9	941.3	0.56478	55.90	155.00
17	Gas	9247.6	943.3	0.56598	56.10	156.30
18	Gas	9264.8	945.0	0.56700	56.20	156.80
19	Gas	9276.5	946.2	0.56772	56.20	157.30
20	Gas	7495.0	764.5	0.45870	45.40	114.10
21	Gas	6880.0	701.8	0.42108	41.70	99.10
22	Gas	6897.3	703.5	0.42210	41.80	99.70
23	Gas	6914.8	705.3	0.42318	41.90	99.80

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	121932.5	12437.2	7.46232	739.20

Generation Daily Total: 1894.70 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	

Date: 10/15/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
0	Gas	6904.9	704.3	0.42258	41.90	100.00
1	Gas	6892.9	703.1	0.42186	41.80	99.50
2	Gas	6896.8	703.5	0.42210	41.80	99.40
3	Gas	6921.4	706.0	0.42360	42.00	100.10
4	Gas	6929.5	706.8	0.42408	42.00	99.80
5	Gas	6922.5	706.1	0.42366	42.00	99.40
6	Gas	6960.9	710.0	0.42600	42.20	100.40
7	Gas	9593.2	978.5	0.58710	58.20	164.80
8	Gas	9626.0	981.9	0.58914	58.40	165.70
9	Gas	9642.1	983.5	0.59010	58.40	166.00
10	Gas	9650.2	984.3	0.59058	58.50	165.70
11	Gas	8912.6	909.1	0.54546	54.00	149.00
12	Gas	7093.5	723.5	0.43410	43.00	104.50
13	Gas	3884.9	396.3	0.23778	23.60	35.00

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	106831.4	10896.9	6.53814	647.80

Generation Daily Total: 1649.30 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	

Date: 10/28/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
7	Gas	201.3	20.5	0.01230	1.20	0.00
8	Gas	2780.6	283.6	0.17016	16.90	9.10
9	Gas	2786.2	284.2	0.17052	16.90	9.80
10	Gas	2818.0	287.4	0.17244	17.10	10.20
11	Gas	2809.8	286.6	0.17196	17.00	10.30
12	Gas	2755.2	281.0	0.16860	16.70	9.30
13	Gas	1875.8	191.3	0.11478	11.40	6.00

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	16026.9	1634.6	0.98076	97.20

Generation Daily Total: 54.70 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	

Date: 10/29/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
16	Gas	1016.2	103.7	0.06222	6.20	2.50
17	Gas	2794.8	285.1	0.17106	16.90	9.50
18	Gas	2775.5	283.1	0.16986	16.80	9.20
19	Gas	2758.4	281.4	0.16884	16.70	8.60
20	Gas	2797.2	285.3	0.17118	17.00	9.30
21	Gas	2818.4	287.5	0.17250	17.10	9.70
22	Gas	2808.7	286.5	0.17190	17.00	9.40
23	Gas	2821.3	287.8	0.17268	17.10	9.70

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	20590.5	2100.4	1.26024	124.80

Generation Daily Total: 67.90 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	

Date: 10/30/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
0	Gas	2793.1	284.9	0.17094	16.90	9.20
1	Gas	2798.9	285.5	0.17130	17.00	9.50
2	Gas	2809.2	286.5	0.17190	17.00	9.40
3	Gas	2803.4	285.9	0.17154	17.00	9.50
4	Gas	2826.7	288.3	0.17298	17.10	9.80
5	Gas	2790.9	284.7	0.17082	16.90	9.20
6	Gas	2798.6	285.5	0.17130	17.00	9.40
7	Gas	2776.5	283.2	0.16992	16.80	8.90
8	Gas	2814.3	287.1	0.17226	17.10	9.60
9	Gas	2806.2	286.2	0.17172	17.00	9.70
10	Gas	3677.0	375.1	0.22506	22.30	25.20
11	Gas	3895.9	397.4	0.23844	23.60	29.20
12	Gas	3904.4	398.2	0.23892	23.70	29.30
13	Gas	3955.0	403.4	0.24204	24.00	30.40
14	Gas	3943.1	402.2	0.24132	23.90	29.90
15	Gas	5590.4	570.2	0.34212	33.90	67.30
16	Gas	9171.6	935.5	0.56130	55.60	152.80
17	Gas	9448.7	963.8	0.57828	57.30	159.10
18	Gas	9494.4	968.4	0.58104	57.60	160.60
19	Gas	9570.4	976.2	0.58572	58.00	162.20
20	Gas	9628.4	982.1	0.58926	58.40	163.40
21	Gas	9681.0	987.5	0.59250	58.70	164.40
22	Gas	9725.2	992.0	0.59520	59.00	165.60
23	Gas	9727.2	992.2	0.59532	59.00	165.80

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	129430.5	13202.0	7.92120	784.80

Generation Daily Total: 1599.40 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	

Date: 10/31/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
0	Gas	9715.8	991.0	0.59460	58.90	165.40
1	Gas	9727.8	992.2	0.59532	59.00	165.80
2	Gas	9726.4	992.1	0.59526	59.00	165.90
3	Gas	9744.3	993.9	0.59634	59.10	166.40
4	Gas	9770.2	996.6	0.59796	59.20	166.90
5	Gas	9771.6	996.7	0.59802	59.20	167.10
6	Gas	9757.0	995.2	0.59712	59.10	166.50
7	Gas	9745.5	994.0	0.59640	59.10	166.30
8	Gas	9650.2	984.3	0.59058	58.50	164.10
9	Gas	9566.2	975.8	0.58548	58.00	161.70
10	Gas	9497.0	968.7	0.58122	57.60	160.00
11	Gas	9439.1	962.8	0.57768	57.20	158.70
12	Gas	9444.9	963.4	0.57804	57.30	158.60
13	Gas	9380.0	956.8	0.57408	56.90	157.70
14	Gas	9367.5	955.5	0.57330	56.80	157.30
15	Gas	9385.8	957.4	0.57444	56.90	157.70
16	Gas	9398.9	958.7	0.57522	57.00	158.00
17	Gas	9441.3	963.0	0.57780	57.20	159.30
18	Gas	9495.0	968.5	0.58110	57.60	160.70
19	Gas	9541.4	973.2	0.58392	57.80	161.80
20	Gas	9578.6	977.0	0.58620	58.10	162.60
21	Gas	9636.2	982.9	0.58974	58.40	163.90
22	Gas	9676.9	987.0	0.59220	58.70	164.70
23	Gas	9691.9	988.6	0.59316	58.80	165.30

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	230149.5	23475.3	14.08518	1395.40

Generation Daily Total: 3902.40 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	

Date: 11/01/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GEN
			mmBtu	lbs/hr	ton/hr	Mw
0	Gas	9716.7	991.1	0.59466	58.90	165.80
1	Gas	9716.8	991.1	0.59466	58.90	165.80
2	Gas	9719.6	991.4	0.59484	58.90	166.10
3	Gas	9729.4	992.4	0.59544	59.00	166.30
4	Gas	9740.0	993.5	0.59610	59.00	166.30
5	Gas	9752.5	994.8	0.59688	59.10	166.40
6	Gas	9750.3	994.5	0.59670	59.10	166.30
7	Gas	9740.9	993.6	0.59616	59.00	166.10
8	Gas	9702.4	989.6	0.59376	58.80	164.80
9	Gas	9703.2	989.7	0.59382	58.80	164.80
10	Gas	9713.9	990.8	0.59448	58.90	164.50
11	Gas	9712.8	990.7	0.59442	58.90	164.50
12	Gas	9684.8	987.8	0.59268	58.70	164.20
13	Gas	9359.3	954.6	0.57276	56.70	156.40
14	Gas	3574.9	364.6	0.21876	21.70	33.80

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	139317.5	14210.2	8.52612	844.40

Generation Daily Total: 2342.10 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	

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TOTALS

REPORT DATE: 11/03/2003

REPORT PERIOD

10/09/2003 to 11/03/2003

\* = replaced data, GAS units = 100scfh, OIL units = lb/hr

FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs	tons
Gas	856974.4	87411.6	52.44696	5195.50

% used for a fuel = 100\*(#hrs fuel used)/(#hrs in period)

% used for Gas = 100\*(124/609) = 20.36

Total % used = 100\*(#hrs online)/(#hrs in period)

Total % used = 100\*(124/609) = 20.36

Total # hours in this period = 609

Total # hours online = 124

Total Generation for period = 12749.10 Mw

% availability for a fuel = 100\*(#hrs fuel source=1)/(#hrs fuel used)

% availability for Gas = 100\*(124)/(124) = 100.00

Total % availability =

100\*(total #hrs each fuel source=1)/(total #hrs each fuel used)

Total % availability = 100\*124/124 = 100.00

RATA REFERENCE METHOD QA/QC REPORT



Linearity Check		CO2	NOx	CO	O2
Analyzer Range (ppm), O2 & CO2 in %		20.00	15.00	10.00	25.00
Low Level Certified Value (PPM or %)		5.50	4.49	3.00	6.41
Mid Level Certified Value (PPM or %)		11.00	8.24	6.00	12.70
High Level Certified Value (PPM or %)		18.10	12.50	-	21.00
Zero Observed		0.02	0.10	0.00	0.02
Low Level Observed		5.50	4.50	3.00	6.47
Mid Level Observed		11.08	8.30	6.00	12.72
High Level Observed		18.24	12.60	-	21.03
%Diff. From Zero to Target <2%		0.02	0.10	0.00	0.02
%Diff. From Low to Target <2%		0.00	0.22	0.00	0.94
%Diff. From Mid to Target <2%		0.73	0.73	0.00	0.16
%Diff. From High to Target <2%		0.77	0.80	-	0.14
Run 1		CO2	NOx	CO	O2
Analyzer Range (ppm), O2 & CO2 in %		20.00	15.00	10.00	25.00
Span Gas Certified Value (ppm or %)		11.00	4.49	3.00	12.70
Actual Zero from Linearity		0.02	0.10	0.00	0.02
Actual Span from Linearity		11.08	4.50	3.00	12.72
Initial Readings					
Zero		0.02	0.00	0.00	0.03
Span		11.03	4.50	3.00	12.71
Final Readings					
Zero		0.06	0.10	0.00	0.03
Span		11.02	4.50	3.00	12.68
Bias and Drift Calculations					
Zero Bias (Run-System Cal) <5%		0.20	0.00	0.00	0.04
Span Bias <5%		-0.30	0.00	0.00	-0.16
Zero Drift (Run-Run) <3%		0.20	0.67	0.00	0.00
Span Drift <3%		-0.05	0.00	0.00	-0.12
Run Results					
Raw Results		4.03	3.60	0.83	14.16
Corrected Results (ppmv)		4.00	3.58	0.83	14.16
Run 2		CO2	NOx	CO	O2
Analyzer Range (ppm), O2 & CO2 in %		20.00	15.00	10.00	25.00
Span Gas Certified Value (ppm or %)		11.00	4.49	3.00	12.70
Actual Zero from Linearity		0.02	0.10	0.00	0.02
Actual Span from Linearity		11.08	4.50	3.00	12.72
Initial Readings					
Zero		0.06	0.10	0.00	0.03
Span		11.02	4.50	3.00	12.68
Final Readings					
Zero		0.04	0.10	0.00	0.00
Span		11.00	4.50	3.00	12.68
Bias and Drift Calculations					
Zero Bias (Run-System Cal) <5%		0.10	0.00	0.00	-0.08
Span Bias <5%		-0.40	0.00	0.00	-0.16
Zero Drift (Run-Run) <3%		-0.10	0.00	0.00	-0.12
Span Drift <3%		-0.10	0.00	0.00	0.00
Run Results					
Raw Results		4.02	3.50	0.90	14.17
Corrected Results (ppmv)		3.98	3.47	0.90	14.19

Run 3	CO2	NOx	CO	O2
Analyzer Range (ppm), O2 & CO2 in %	20.00	15.00	10.00	25.00
Span Gas Certified Value (ppm or %)	11.00	4.49	3.00	12.70
Actual Zero from Linearity	0.02	0.10	0.00	0.02
Actual Span from Linearity	11.08	4.50	3.00	12.72
<b>Initial Readings</b>				
Zero	0.04	0.10	0.00	0.00
Span	11.00	4.50	3.00	12.68
<b>Final Readings</b>				
Zero	0.05	0.10	0.00	0.02
Span	11.01	4.50	3.00	12.70
<b>Bias and Drift Calculations</b>				
Zero Bias (Run-System Cal) <5%	0.15	0.00	0.00	0.00
Span Bias <5%	-0.35	0.00	0.00	-0.08
Zero Drift (Run-Run) <3%	0.05	0.00	0.00	0.08
Span Drift <3%	0.05	0.00	0.00	0.08
<b>Run Results</b>				
Raw Results	4.01	3.50	0.90	14.18
Corrected Results (ppmv)	3.98	3.47	0.90	14.19
Run 4	CO2	NOx	CO	O2
Analyzer Range (ppm), O2 & CO2 in %	20.00	15.00	10.00	25.00
Span Gas Certified Value (ppm or %)	11.00	4.49	3.00	12.70
Actual Zero from Linearity	0.02	0.10	0.00	0.02
Actual Span from Linearity	11.08	4.50	3.00	12.72
<b>Initial Readings</b>				
Zero	0.05	0.10	0.00	0.02
Span	11.01	4.50	3.00	12.70
<b>Final Readings</b>				
Zero	0.04	0.10	0.00	0.02
Span	10.99	4.50	3.00	12.69
<b>Bias and Drift Calculations</b>				
Zero Bias (Run-System Cal) <5%	0.10	0.00	0.00	0.00
Span Bias <5%	-0.45	0.00	0.00	-0.12
Zero Drift (Run-Run) <3%	-0.05	0.00	0.00	0.00
Span Drift <3%	-0.10	0.00	0.00	-0.04
<b>Run Results</b>				
Raw Results	4.00	3.50	0.90	14.16
Corrected Results (ppmv)	3.97	3.47	0.90	14.17
Run 5	CO2	NOx	CO	O2
Analyzer Range (ppm), O2 & CO2 in %	20.00	15.00	10.00	25.00
Span Gas Certified Value (ppm or %)	11.00	4.49	3.00	12.70
Actual Zero from Linearity	0.02	0.10	0.00	0.02
Actual Span from Linearity	11.08	4.50	3.00	12.72
<b>Initial Readings</b>				
Zero	0.04	0.10	0.00	0.02
Span	10.99	4.50	3.00	12.69
<b>Final Readings</b>				
Zero	0.05	0.10	0.00	0.02
Span	10.99	4.50	3.00	12.71
<b>Bias and Drift Calculations</b>				
Zero Bias (Run-System Cal) <5%	0.15	0.00	0.00	0.00
Span Bias <5%	-0.45	0.00	0.00	-0.04
Zero Drift (Run-Run) <3%	0.05	0.00	0.00	0.00
Span Drift <3%	0.00	0.00	0.00	0.08
<b>Run Results</b>				
Raw Results	4.00	3.50	0.80	14.16
Corrected Results (ppmv)	3.97	3.47	0.80	14.16

Run 6	CO2	NOx	CO	O2
Analyzer Range (ppm), O2 & CO2 in %	20.00	15.00	10.00	25.00
Span Gas Certified Value (ppm or %)	11.00	4.49	3.00	12.70
Actual Zero from Linearity	0.02	0.10	0.00	0.02
Actual Span from Linearity	11.08	4.50	3.00	12.72
<b>Initial Readings</b>				
Zero	0.05	0.10	0.00	0.02
Span	10.99	4.50	3.00	12.71
<b>Final Readings</b>				
Zero	0.05	0.10	0.00	0.02
Span	10.98	4.50	3.00	12.71
<b>Bias and Drift Calculations</b>				
Zero Bias (Run-System Cal) <5%	0.15	0.00	0.00	0.00
Span Bias <5%	-0.50	0.00	0.00	-0.04
Zero Drift (Run-Run) <3%	0.00	0.00	0.00	0.00
Span Drift <3%	-0.05	0.00	0.00	0.00
<b>Run Results</b>				
Raw Results	4.00	3.50	1.00	14.17
Corrected Results (ppmv)	3.97	3.47	1.00	14.16
Run 7	CO2	NOx	CO	O2
Analyzer Range (ppm), O2 & CO2 in %	20.00	15.00	10.00	25.00
Span Gas Certified Value (ppm or %)	11.00	4.49	3.00	12.70
Actual Zero from Linearity	0.02	0.10	0.00	0.02
Actual Span from Linearity	11.08	4.50	3.00	12.72
<b>Initial Readings</b>				
Zero	0.05	0.10	0.00	0.02
Span	10.98	4.50	3.00	12.71
<b>Final Readings</b>				
Zero	0.05	0.10	0.00	0.02
Span	10.98	4.50	2.90	12.70
<b>Bias and Drift Calculations</b>				
Zero Bias (Run-System Cal) <5%	0.15	0.00	0.00	0.00
Span Bias <5%	-0.50	0.00	-1.00	-0.08
Zero Drift (Run-Run) <3%	0.00	0.00	0.00	0.00
Span Drift <3%	0.00	0.00	-1.00	-0.04
<b>Run Results</b>				
Raw Results	4.00	3.50	0.90	14.16
Corrected Results (ppmv)	3.98	3.47	0.92	14.16
Run 8	CO2	NOx	CO	O2
Analyzer Range (ppm), O2 & CO2 in %	20.00	15.00	10.00	25.00
Span Gas Certified Value (ppm or %)	11.00	4.49	3.00	12.70
Actual Zero from Linearity	0.02	0.10	0.00	0.02
Actual Span from Linearity	11.08	4.50	3.00	12.72
<b>Initial Readings</b>				
Zero	0.05	0.10	0.00	0.02
Span	10.98	4.50	2.90	12.70
<b>Final Readings</b>				
Zero	0.05	0.10	0.00	0.02
Span	10.98	4.50	3.00	12.68
<b>Bias and Drift Calculations</b>				
Zero Bias (Run-System Cal) <5%	0.15	0.00	0.00	0.00
Span Bias <5%	-0.50	0.00	0.00	-0.16
Zero Drift (Run-Run) <3%	0.00	0.00	0.00	0.00
Span Drift <3%	0.00	0.00	1.00	-0.08
<b>Run Results</b>				
Raw Results	4.00	3.50	0.90	14.15
Corrected Results (ppmv)	3.98	3.47	0.92	14.16

Run 9	CO2	NOx	CO	O2
Analyzer Range (ppm), O2 & CO2 in %	20.00	15.00	10.00	25.00
Span Gas Certified Value (ppm or %)	11.00	4.49	3.00	12.70
Actual Zero from Linearity	0.02	0.10	0.00	0.02
Actual Span from Linearity	11.08	4.50	3.00	12.72
<b>Initial Readings</b>				
Zero	0.05	0.10	0.00	0.02
Span	10.98	4.50	3.00	12.68
<b>Final Readings</b>				
Zero	0.05	0.10	0.00	0.02
Span	10.98	4.50	3.00	12.68
<b>Bias and Drift Calculations</b>				
Zero Bias (Run-System Cal) <5%	0.15	0.00	0.00	0.00
Span Bias <5%	-0.50	0.00	0.00	-0.16
Zero Drift (Run-Run) <3%	0.00	0.00	0.00	0.00
Span Drift <3%	0.00	0.00	0.00	0.00
<b>Run Results</b>				
Raw Results	4.00	3.50	1.00	14.14
Corrected Results (ppmv)	3.98	3.47	1.00	14.16

RATA REFERENCE METHOD DATA LOG

CALIBRATION SUMMARY

SOURCE: Baysise <sup>217</sup> LA RATA

REASON: Linearity

DATE : 11-22-2003      TIME: 08:27 - 08:54

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	%CO2	0.00	0.02
1	STACK	%CO2	5.50	5.50
1	STACK	%CO2	11.00	11.03
1	STACK	%CO2	18.10	18.24
5	STACK	ppmNOX	0.0	0.1
5	STACK	ppmNOX	4.5	4.5
5	STACK	ppmNOX	8.2	8.3
5	STACK	ppmNOX	12.5	12.6
2	STACK	ppm CO	0.0	0.0
2	STACK	ppm CO	3.0	3.0
2	STACK	ppm CO	6.0	6.0
0	Stack	%O2	0.00	0.02
0	Stack	%O2	6.41	6.47
0	Stack	%O2	12.70	12.72
0	Stack	%O2	21.00	21.03

BEST AVAILABLE COPY

Baysise <sup>2A</sup> ~~1A~~ RATA

11-22-2003

TIME	CHAN 1 STACK %CO2	CHAN 5 STACK ppmNOX	CHAN 2 STACK ppm CO	CHAN 0 Stack %O2	STACK ppmNOX @15%O2	STACK lb NOX MM-BTU
<del>10:14</del>	4.02	3.7	0.8	14.20	3.2	0.000
10:15	4.03	3.6	0.8	14.15	3.2	0.000
10:16	4.02	3.6	0.8	14.15	3.2	0.000
10:17	4.03	3.6	0.9	14.15	3.2	0.000
10:18	4.03	3.6	0.9	14.15	3.2	0.000
10:19	4.03	3.6	0.9	14.15	3.2	0.000
AVERAGE VALUES FOR THE LAST 6 MINUTES						
<del>10:19</del>	4.03	3.6	0.9	14.16	3.2	0.000

COMMENTS <sup>S</sup> East

Baysise <sup>2A</sup> RATA

11-22-2003

TIME	CHAN 1 STACK %CO2	CHAN 5 STACK ppmNOX	CHAN 2 STACK ppm CO	CHAN 0 Stack %O2	STACK ppmNOX @15%O2	STACK lb NOX MM-BTU
1019 10:23	4.03	3.7	0.9	14.15	3.2	0.000
10:24	4.03	3.7	0.9	14.15	3.2	0.000
10:25	4.03	3.8	0.8	14.15	3.3	0.000
10:26	4.03	3.8	0.8	14.15	3.3	0.000
10:27	4.03	3.8	0.8	14.15	3.3	0.000
10:28	4.03	3.8	0.8	14.14	3.3	0.000

AVERAGE VALUES FOR THE LAST 6 MINUTES

1024 10:23	4.03	3.8	0.8	14.15	3.3	0.000
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COMMENTS: north east



BEST AVAILABLE COPY

Baysise <sup>2A</sup> 1A RATA

11-22-2003

TIME	CHAN 1 STACK %CO2	CHAN 5 STACK ppmNOX	CHAN 2 STACK ppm CO	CHAN 0 Stack %O2	STACK ppmNOX @15%O2	STACK lb NOX MM-BTU
1030 10:34	4.02	3.6	0.9	14.16	3.1	0.000
10:35	4.03	3.6	0.8	14.16	3.1	0.000
10:36	4.03	3.5	0.8	14.15	3.1	0.000
10:37	4.03	3.5	0.8	14.15	3.1	0.000
10:38	4.03	3.5	0.8	14.15	3.0	0.000
10:39	4.03	3.5	0.8	14.15	3.0	0.000

AVERAGE VALUES FOR THE LAST 6 MINUTES

1035 <del>10:39</del>	4.03	3.5	0.8	14.15	3.1	0.000
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COMMENTS: Nort west

Baysise <sup>2A</sup> RATA 11-22-2003

TIME	CHAN 1 STACK %CO2	CHAN 5 STACK ppmNOX	CHAN 2 STACK ppm CO	CHAN 0 Stack %O2	STACK ppmNOX @15%O2	STACK lb NOX MM-BTU
<del>10:43</del>	4.03	3.6	0.9	14.16	3.1	0.000
10:44	4.03	3.6	0.8	14.16	3.1	0.000
10:45	4.03	3.5	0.8	14.16	3.1	0.000
10:46	4.03	3.5	0.8	14.16	3.1	0.000
10:47	4.02	3.6	0.8	14.16	3.1	0.000
10:48	4.03	3.5	0.8	14.15	3.1	0.000

AVERAGE VALUES FOR THE LAST 6 MINUTES

<del>10:48</del>	4.03	3.5	0.8	14.16	3.1	0.000
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COMMENTS: south west

BPS2A

11-22-2003

TIME	CHAN 1 STACK %CO2	CHAN 5 STACK ppmNOX	CHAN 2 STACK ppm CO	CHAN 0 Stack %O2	STACK ppmNOX @15%O2	Stack lb NOX MM-BTU
1101 <del>11:05</del>	4.03	3.5	0.8	14.16	3.1	0.011
11:06	4.03	3.5	0.9	14.16	3.1	0.011
11:07	4.02	3.6	0.9	14.17	3.1	0.011
11:08	4.02	3.6	0.9	14.17	3.1	0.012
11:09	4.02	3.6	0.9	14.17	3.1	0.012
11:10	4.03	3.6	0.9	14.17	3.1	0.012
11:11	4.02	3.6	0.9	14.17	3.1	0.012
11:12	4.02	3.5	0.9	14.17	3.1	0.011
11:13	4.02	3.5	0.9	14.17	3.1	0.011
11:14	4.02	3.5	0.9	14.17	3.1	0.011
11:15	4.02	3.5	0.8	14.17	3.1	0.011
11:16	4.02	3.5	0.9	14.17	3.1	0.011
11:17	4.02	3.5	0.9	14.17	3.1	0.011
11:18	4.02	3.5	0.9	14.17	3.1	0.011
11:19	4.02	3.5	0.9	14.17	3.1	0.011
11:20	4.02	3.5	0.9	14.17	3.1	0.011
11:21	4.02	3.5	0.9	14.17	3.1	0.011
11:22	4.02	3.5	0.9	14.17	3.1	0.011
11:23	4.02	3.5	0.9	14.17	3.1	0.011
11:24	4.02	3.5	0.9	14.17	3.1	0.011
11:25	4.01	3.6	0.9	14.18	3.1	0.012

AVERAGE VALUES FOR THE LAST 21 MINUTES

1121 <del>11:25</del>	4.02	3.5	0.9	14.17	3.1	0.011
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COMMENTS: run 2

**BEST AVAILABLE COPY**

BPS2A

11-22-2003

TIME	CHAN 1 STACK %CO2	CHAN 5 STACK ppmNOX	CHAN 2 STACK ppm CO	CHAN 0 Stack %O2	STACK ppmNOX @15302	Stack lb NOX MM-RTU
11:41	4.01	3.5	0.7	14.17	3.1	0.011
11:42	4.00	3.5	0.9	14.17	3.0	
11:43	4.01	3.5	0.8	14.17	3.1	
11:44	4.01	3.5	0.8	14.17	3.1	0.011
11:45	4.01	3.5	0.8	14.17	3.1	0.011
11:46	4.01	3.5			3.1	
11:47	4.01			14.18		
11:48			1.0	14.18		
11:49			1.0	14.18		
11:50		3.5	1.0			
11:51	4.01	3.5				
11:52	4.01	3.5				
11:53	4.01	3.5				0.011
11:54	4.01	3.5			3.1	0.011
11:55	4.01	3.5	1.1	14.18	3.1	0.011
11:56	4.01	3.5	1.0	14.19	3.1	0.011
11:57	4.01	3.5	1.0	14.19	3.1	0.011
11:58	4.00	3.5	1.0	14.19	3.1	0.011
11:59	4.01	3.5	1.0	14.19	3.1	0.011
12:00	4.00	3.5	1.0	14.19	3.1	0.011
12:01	4.00	3.5	1.0	14.19	3.1	0.011
AVERAGE VALUES FOR THE LAST 21 MINUTES						
12:01	4.01	3.5	0.9	14.18	3.1	0.011

COMMENTS: run3

BEST AVAILABLE COPY

BPS2A

11-22-2003

TIME	CHAN 1 STACK %CO2	CHAN 5 STACK ppmNOX	CHAN 2 STACK ppm CO	CHAN 0 Stack %O2	STACK ppmNOX @15%O2	Stack lb NOX MM-BTU
12:11	4.00	3.6	0.9	14.15	3.1	0.011
12:12	4.00	3.5	1.0	14.16	3.1	0.011
12:13	4.00	3.5	0.9	14.16	3.1	0.011
12:14	4.00	3.5	0.9	14.16	3.1	0.011
12:15	4.00	3.5	0.9	14.16	3.1	0.011
12:16	4.00	3.5	0.9	14.16	3.1	0.011
12:17	4.00	3.5	0.8	14.16	3.1	0.011
12:18	4.00	3.5	0.8	14.16	3.1	0.011
12:19	4.00	3.5	0.8	14.16	3.1	0.011
12:20	4.01	3.5	0.8	14.16	3.1	0.011
12:21	4.00	3.5	0.9	14.16	3.1	0.011
12:22	4.00	3.5	1.0	14.16	3.1	0.011
12:23	4.00	3.5	0.9	14.16	3.1	0.011
12:24	4.00	3.5	1.0	14.16	3.1	0.011
12:25	4.00	3.5	1.0	14.16	3.1	0.011
12:26	4.00	3.5	0.9	14.16	3.1	0.011
12:27	4.00	3.5	0.9	14.16	3.1	0.011
12:28	4.00	3.5	0.9	14.16	3.1	0.011
12:29	4.00	3.5	0.9	14.16	3.1	0.011
12:30	4.00	3.5	0.9	14.16	3.1	0.011
12:31	4.00	3.5	0.9	14.16	3.1	0.011

AVERAGE VALUES FOR THE LAST 21 MINUTES

12:31	4.00	3.5	0.9	14.16	3.1	0.011
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COMMENTS: run4

BPS2A

11-22-2003

TIME	CHAN 1 STACK %CO2	CHAN 5 STACK ppmNOX	CHAN 2 STACK ppm CO	CHAN 0 Stack %O2	STACK ppmNOX @15%O2	Stack lb NOX MM-BTU
12:41	4.00	3.5	0.9	14.15	3.1	0.011
12:42	4.00	3.5	0.9	14.16	3.1	0.011
12:43	4.00	3.5	0.9	14.16	3.0	0.011
12:44	4.00	3.5	0.9	14.16	3.0	0.011
12:45	4.00	3.5	0.9	14.16	3.0	0.011
12:46	4.00	3.5	0.8	14.16	3.0	0.011
12:47	4.01	3.5	0.8	14.16	3.0	0.011
12:48	4.01	3.5	0.8	14.16	3.1	0.011
12:49	4.01	3.5	0.8	14.17	3.1	0.011
12:50	4.01	3.5	0.9	14.16	3.1	0.011
12:51	4.00	3.5	0.8	14.17	3.1	0.011
12:52	4.00	3.5	0.8	14.16	3.1	0.011
12:53	4.01	3.5	0.8	14.16	3.1	0.011
12:54	4.01	3.5	0.8	14.16	3.1	0.011
12:55	4.00	3.5	0.8	14.16	3.1	0.011
12:56	4.00	3.5	0.8	14.16	3.1	0.011
12:57	4.01	3.5	0.8	14.16	3.1	0.011
12:58	4.00	3.5	0.8	14.16	3.1	0.011
12:59	4.01	3.5	0.8	14.16	3.1	0.011
13:00	4.00	3.5	0.8	14.16	3.1	0.011
13:01	4.01	3.5	0.9	14.16	3.1	0.011

AVERAGE VALUES FOR THE LAST 21 MINUTES

13:01	4.00	3.5	0.8	14.16	3.1	0.011
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COMMENTS: run5

BPS2A

11-22-2003

TIME	CHAN 1 STACK %CO2	CHAN 5 STACK ppmNOX	CHAN 2 STACK ppm CO	CHAN 0 Stack %O2	STACK ppmNOX @15%O2	Stack lb NOX MM-BTU
13:13	4.00	3.5	0.9	14.15	3.1	0.011
13:14	4.01	3.5	0.9	14.16	3.1	0.011
13:15	4.00	3.5	0.9	14.16	3.1	0.011
13:16	4.00	3.5	0.9	14.17	3.1	0.011
13:17	4.00	3.5	0.9	14.17	3.1	0.011
13:18	4.00	3.5	0.9	14.17	3.1	0.011
13:19	4.00	3.5	1.1	14.17	3.0	0.011
13:20	4.00	3.5	1.0	14.17	3.0	0.011
13:21	4.00	3.5	1.0	14.17	3.0	0.011
13:22	4.00	3.5	1.0	14.17	3.1	0.011
13:23	4.00	3.5	1.0	14.17	3.0	0.011
13:24	4.00	3.5	1.0	14.17	3.1	0.011
13:25	4.00	3.5	1.0	14.17	3.1	0.011
13:26	4.00	3.5	0.9	14.17	3.1	0.011
13:27	4.00	3.5	0.9	14.17	3.1	0.011
13:28	4.00	3.5	1.0	14.17	3.1	0.011
13:29	4.00	3.5	0.9	14.17	3.1	0.011
13:30	4.00	3.5	0.9	14.17	3.1	0.011
13:31	4.00	3.5	0.9	14.17	3.1	0.011
13:32	4.00	3.5	1.0	14.18	3.1	0.011
13:33	4.00	3.5	1.0	14.18	3.1	0.011

AVERAGE VALUES FOR THE LAST 21 MINUTES

13:33	4.00	3.5	1.0	14.17	3.1	0.011
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COMMENTS: run6

BEST AVAILABLE COPY

BPS2A		11-22-2003					
	CHAN 1	CHAN 5	CHAN 2	CHAN 0	STACK	Stack	
	STACK	STACK	STACK	Stack	ppmNOX	lb NOX	
TIME	%CO2	ppmNOX	ppm CO	%O2	@15%O2	MM-BTU	
13:44	4.00	3.5	1.0	14.14	3.1	0.011	
13:45	4.00	3.5	1.0	14.14	3.0	0.011	
13:46	3.99	3.5	0.9	14.15	3.0	0.011	
13:47	4.00	3.5	0.9	14.15	3.1	0.011	
13:48	4.00	3.5	0.9	14.15	3.1	0.011	
13:49	4.00	3.5	0.9	14.15	3.1	0.011	
13:50	4.00	3.5	0.9	14.15	3.0	0.011	
13:51	4.00	3.5	1.0	14.15	3.0	0.011	
13:52	4.00	3.5	0.9	14.15	3.0	0.011	
13:53	4.00	3.5	0.9	14.15	3.1	0.011	
13:54	4.00	3.5	0.9	14.15	3.1	0.011	
13:55	4.00	3.5	0.9	14.19	3.1	0.011	
13:56	3.99	3.5	0.9	14.16	3.1	0.011	
13:57	4.00	3.5	0.8	14.16	3.1	0.011	
13:58	4.00	3.5	0.8	14.16	3.1	0.011	
13:59	3.99	3.5	0.9	14.16	3.1	0.011	
14:00	3.99	3.5	0.9	14.17	3.1	0.011	
14:01	3.99	3.5	0.8	14.16	3.0	0.011	
14:02	3.99	3.5	0.8	14.16	3.0	0.011	
14:03	3.99	3.5	0.8	14.16	3.0	0.011	
14:04	4.00	3.5	0.8	14.16	3.1	0.011	

AVERAGE VALUES FOR THE LAST 21 MINUTES

14:04	4.00	3.5	0.9	14.16	3.1	0.011
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COMMENTS: End Run 7



BPS2A

11-22-2003

TIME	CHAN 1 STACK %CO2	CHAN 5 STACK ppmNOX	CHAN 2 STACK ppm CO	CHAN 0 Stack %O2	STACK ppmNOX @15%O2	Stack lb NOX MM-BTU
14:20	4.01	3.4	0.9	14.14	3.0	0.011
14:21	4.00	3.5	0.9	14.14	3.0	0.011
14:22	4.00	3.5	0.8	14.14	3.1	0.011
14:23	4.00	3.5	0.9	14.15	3.1	0.011
14:24	4.00	3.5	0.9	14.15	3.1	0.011
14:25	4.00	3.5	0.9	14.15	3.1	0.011
14:26	4.00	3.5	0.9	14.15	3.1	0.011
14:27	4.00	3.5	0.9	14.15	3.1	0.011
14:28	4.00	3.5	1.0	14.15	3.1	0.011
14:29	4.00	3.5	1.1	14.15	3.1	0.011
14:30	4.00	3.5	1.0	14.15	3.0	0.011
14:31	4.00	3.5	1.0	14.15	3.1	0.011
14:32	4.00	3.5	0.9	14.16	3.1	0.011
14:33	3.99	3.5	0.9	14.16	3.1	0.011
14:34	3.99	3.5	1.0	14.16	3.1	0.011
14:35	4.00	3.5	0.9	14.16	3.1	0.011
14:36	4.00	3.5	0.9	14.15	3.1	0.011
14:37	4.00	3.5	0.8	14.15	3.1	0.011
14:38	4.00	3.5	1.0	14.15	3.1	0.011
14:39	4.00	3.5	0.9	14.15	3.1	0.011
14:40	4.00	3.5	0.9	14.15	3.1	0.011

AVERAGE VALUES FOR THE LAST 21 MINUTES

14:40	4.00	3.5	0.9	14.15	3.1	0.011
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COMMENTS: run8

BPS2A

11-22-2003

TIME	CHAN 1 STACK %CO2	CHAN 5 STACK ppmNOX	CHAN 2 STACK ppm CO	CHAN 0 Stack %O2	STACK ppmNOX @15%O2	Stack lb NOX MM-BTU
14:50	4.00	3.5	1.0	14.12	3.0	0.011
14:51	3.99	3.5	0.9	14.13	3.0	0.011
14:52	3.99	3.5	0.8	14.13	3.0	0.011
14:53	3.99	3.5	0.9	14.13	3.0	0.011
14:54	4.00	3.5	0.9	14.13	3.0	0.011
14:55	4.00	3.5	1.1	14.13	3.0	0.011
14:56	4.00	3.5	0.9	14.14	3.0	0.011
14:57	4.00	3.5	0.9	14.14	3.0	0.011
14:58	4.00	3.5	0.9	14.14	3.0	0.011
14:59	4.00	3.5	1.0	14.14	3.0	0.011
15:00	4.00	3.5	1.0	14.14	3.0	0.011
15:01	3.99	3.5	1.0	14.14	3.0	0.011
15:02	4.00	3.5	1.0	14.14	3.0	0.011
15:03	4.00	3.5	1.1	14.14	3.0	0.011
15:04	3.99	3.5	1.0	14.14	3.0	0.011
15:05	4.00	3.5	1.1	14.14	3.0	0.011
15:06	3.99	3.5	1.0	14.14	3.1	0.011
15:07	3.99	3.5	1.1	14.14	3.1	0.011
15:08	3.99	3.5	1.2	14.14	3.1	0.011
15:09	3.99	3.5	1.0	14.15	3.1	0.011
15:10	4.00	3.5	1.0	14.15	3.1	0.011

AVERAGE VALUES FOR THE LAST 21 MINUTES

15:10	4.00	3.5	1.0	14.14	3.0	0.011
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COMMENTS: run9

# BEST AVAILABLE COPY

## CALIBRATION SUMMARY

SOURCE: Bayside <sup>29</sup> RATA

REASON: Initial Run :

DATE : 11-22-2003 TIME: 09:40 - 09:50

GAS	MONITOR DESCRIPTION	UNIT	GAS VALUE	MONITOR RESPONSE
	STACK	%O2	0.00	0.02
1	STACK	%CO2	11.00	11.03
	STACK	ppmNOX	0.0	0.0
5	STACK	ppmNOX	4.5	4.5
2	STACK	ppm CO	0.0	-0.0
2	STACK	ppm CO	3.0	3.0
0	Stack	%O2	0.00	0.03
0	Stack	%O2	12.70	12.71

## CALIBRATION SUMMARY

SOURCE: Baysise <sup>2A</sup> RATA

REASON: Final Run 1

DATE : 11-22-2003      TIME: 10:48 - 10:55

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	%CO2	0.00	0.06
1	STACK	%CO2	11.00	11.02
5	STACK	ppmNOX	0.0	0.1
5	STACK	ppmNOX	4.5	4.5
2	STACK	ppm CO	0.0	0.0
2	STACK	ppm CO	3.0	3.0
0	Stack	%O2	0.00	0.03
0	Stack	%O2	12.70	12.68

BEST AVAILABLE COPY

CALIBRATION SUMMARY

SOURCE: BPS2A

REASON: Final run2

DATE : 11-22-2003 TIME: 11:30 - 11:37

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	%CO2	0.00	0.04
1	STACK	%CO2	11.00	11.00
5	STACK	ppmNOX	0.0	0.1
5	STACK	ppmNOX	4.5	4.5
2	STACK	ppm CO	0.0	0.0
2	STACK	ppm CO	3.0	3.0
0	Stack	%O2	0.00	0.00
0	Stack	%O2	17.20	17.20

## CALIBRATION SUMMARY

SOURCE: BPS2A

REASON: final run3

DATE : 11-22-2003      TIME: 12:01 - 12:07

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	%CO2	0.00	0.05
1	STACK	%CO2	11.00	11.01
5	STACK	ppmNOX	0.0	0.1
5	STACK	ppmNOX	4.5	4.5
2	STACK	ppm CO	0.0	0.0
2	STACK	ppm CO	3.0	3.0
0	Stack	%O2	0.00	0.02
0	Stack	%O2	12.70	12.70

## CALIBRATION SUMMARY

SOURCE: BPS2A

REASON: final run4

DATE : 11-22-2003      TIME: 12:31 - 12:38

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	%CO2	0.00	0.04
1	STACK	%CO2	11.00	10.99
5	STACK	ppmNOX	0.0	0.1
5	STACK	ppmNOX	4.5	4.5
2	STACK	ppm CO	0.0	0.0
2	STACK	ppm CO	3.0	3.0
0	Stack	%O2	0.00	0.02
0	Stack	%O2	12.70	12.69

# CALIBRATION SUMMARY

SOURCE: BPS2A

REASON: final run5

DATE : 11-22-2003      TIME: 13:01 - 13:09

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	%CO2	0.00	0.05
1	STACK	%CO2	11.00	10.99
5	STACK	ppmNOX	0.0	0.1
5	STACK	ppmNOX	4.5	4.5
2	STACK	ppm CO	0.0	0.0
2	STACK	ppm CO	3.0	3.0
0	Stack	%O2	0.00	0.02
0	Stack	%O2	12.70	12.71



## CALIBRATION SUMMARY

SOURCE: BPS2A

REASON: final run6

DATE : 11-22-2003      TIME: 13:33 - 13:40

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	%CO2	0.00	0.05
1	STACK	%CO2	11.00	10.98
5	STACK	ppmNOX	0.0	0.1
5	STACK	ppmNOX	4.5	4.5
2	STACK	ppm CO	0.0	0.0
2	STACK	ppm CO	3.0	3.0
0	Stack	%O2	0.00	0.02
0	Stack	%O2	12.70	12.71

## CALIBRATION SUMMARY

SOURCE: BPS2A

REASON: Final run7

DATE : 11-22-2003      TIME: 14:04 - 14:16

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	%CO2	0.00	0.05
1	STACK	%CO2	11.00	10.98
5	STACK	ppmNOX	0.0	0.1
5	STACK	ppmNOX	4.5	4.5
2	STACK	ppm CO	0.0	0.0
2	STACK	ppm CO	3.0	2.9
0	Stack	%O2	0.00	0.02
0	Stack	%O2	12.70	12.70

# CALIBRATION SUMMARY

SOURCE: BPS2A

REASON: final run8

DATE : 11-22-2003 TIME: 14:40 - 14:46

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	%CO2	0.00	0.05
1	STACK	%CO2	11.00	10.98
5	STACK	ppmNOX	0.0	0.1
5	STACK	ppmNOX	4.5	4.5
2	STACK	ppm CO	0.0	0.0
2	STACK	ppm CO	3.0	3.0
0	Stack	%O2	0.00	0.02
0	Stack	%O2	12.70	12.68

## CALIBRATION SUMMARY

SOURCE: BPS2A

REASON: final run9

DATE : 11-22-2003      TIME: 15:10 - 15:16

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	%CO2	0.00	0.05
1	STACK	%CO2	11.00	10.98
5	STACK	ppmNOX	0.0	0.1
5	STACK	ppmNOX	4.5	4.5
2	STACK	ppm CO	0.0	0.0
2	STACK	ppm CO	3.0	3.0
0	Stack	%O2	0.00	0.02
0	Stack	%O2	12.70	12.68

RATA CEM DATA

run1

Record#	DATE	TIME	GEN11	GAS12	NOX13	NOXD14	NOXRT15	CO216	COL17	COLD18
1	11/22/2003	100000	164.6	20.623	3.54	2.9	0.011	4.05	0.8	0.7
2	11/22/2003	100100	164.5	20.623	3.53	2.9	0.011	4.05	0.8	0.7
3	11/22/2003	100200	164.5	20.627	3.54	2.9	0.011	4.05	0.8	0.7
4	11/22/2003	100300	164.7	20.623	3.55	3	0.011	4.06	0.8	0.7
5	11/22/2003	100400	164.6	20.623	3.6	3	0.011	4.05	0.8	0.7
6	11/22/2003	100500	164.6	20.621	3.58	3	0.011	4.05	0.8	0.7
7	11/22/2003	100600	164.6	20.623	3.58	3	0.011	4.05	0.8	0.7
8	11/22/2003	100700	164.4	20.621	3.58	3	0.011	4.05	0.8	0.7
9	11/22/2003	100800	164.6	20.675	3.56	3	0.011	4.05	0.8	0.7
10	11/22/2003	100900	164.7	20.635	3.56	3	0.011	4.05	0.8	0.7
11	11/22/2003	101000	164.7	20.623	3.54	2.9	0.011	4.05	0.8	0.7
12	11/22/2003	101100	164.5	20.623	3.53	3	0.011	4.05	0.8	0.7
13	11/22/2003	101200	164.5	20.567	3.5	2.9	0.011	4.05	0.8	0.7
14	11/22/2003	101300	164.5	20.609	3.5	2.9	0.011	4.05	0.8	0.7
15	11/22/2003	101400	164.2	20.569	3.5	2.9	0.011	4.05	0.8	0.7
16	11/22/2003	101500	164.2	20.617	3.5	2.9	0.011	4.05	0.8	0.7
17	11/22/2003	101600	164	20.621	3.49	2.9	0.011	4.06	0.8	0.7
18	11/22/2003	101700	164.2	20.617	3.5	2.9	0.011	4.05	0.8	0.7
19	11/22/2003	101800	164.3	20.569	3.49	2.9	0.011	4.05	0.8	0.7
20	11/22/2003	101900	164.1	20.561	3.5	2.9	0.011	4.05	0.8	0.7
21	11/22/2003	102000	164.1	20.563	3.48	2.9	0.011	4.05	0.8	0.7
22	11/22/2003	102100	163.8	20.563	3.47	2.9	0.011	4.05	0.8	0.7
23	11/22/2003	102200	163.7	20.567	3.46	2.9	0.011	4.06	0.8	0.7
24	11/22/2003	102300	164.1	20.565	3.44	2.9	0.011	4.05	0.8	0.7

25	11/22/2003	102400	163.8	20.561	3.47	2.9	0.011	4.05	0.8	0.7
26	11/22/2003	102500	163.7	20.52	3.47	2.9	0.011	4.05	0.8	0.7
27	11/22/2003	102600	163.8	20.557	3.46	2.9	0.011	4.05	0.8	0.7
28	11/22/2003	102700	163.9	20.563	3.48	2.9	0.011	4.05	0.8	0.7
29	11/22/2003	102800	164.1	20.561	3.49	2.9	0.011	4.05	0.8	0.7
30	11/22/2003	102900	163.9	20.561	3.5	2.9	0.011	4.05	0.8	0.7
31	11/22/2003	103000	163.9	20.563	3.51	2.9	0.011	4.05	0.8	0.7
32	11/22/2003	103100	163.7	20.559	3.51	2.9	0.011	4.05	0.8	0.7
33	11/22/2003	103200	163.6	20.563	3.51	2.9	0.011	4.06	0.8	0.7
34	11/22/2003	103300	163.7	20.563	3.5	2.9	0.011	4.05	0.8	0.7
35	11/22/2003	103400	163.7	20.52	3.51	2.9	0.011	4.06	0.8	0.6
36	11/22/2003	103500	163.7	20.553	3.52	2.9	0.011	4.05	0.8	0.7
37	11/22/2003	103600	163.5	20.518	3.52	2.9	0.011	4.06	0.8	0.7
38	11/22/2003	103700	163.6	20.508	3.53	2.9	0.011	4.05	0.8	0.7
39	11/22/2003	103800	163.6	20.512	3.52	2.9	0.011	4.05	0.8	0.7
40	11/22/2003	103900	163.6	20.512	3.52	2.9	0.011	4.05	0.8	0.7
41	11/22/2003	104000	163.6	20.514	3.54	2.9	0.011	4.05	0.8	0.7
42	11/22/2003	104100	163.5	20.514	3.56	3	0.011	4.05	0.8	0.7
43	11/22/2003	104200	163.4	20.51	3.54	2.9	0.011	4.06	0.8	0.7
44	11/22/2003	104300	163.2	20.512	3.55	3	0.011	4.05	0.8	0.7
45	11/22/2003	104400	163.3	20.512	3.54	2.9	0.011	4.05	0.8	0.7
46	/ /									
47	/ /	AVE	164.033	20.573	3.517	2.922	0.011	4.052	0.8	0.698

run2

Record#	DATE	TIME	GEN11	GAS12	NOX13	NOXD14	NOXRT15	CO216	COL17	COLD18
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1	11/22/2003	110100	163.1	20.45	3.51	2.9	0.011	4.05	0.8	0.6
2	11/22/2003	110200	162.8	20.454	3.5	2.9	0.011	4.05	0.8	0.7
3	11/22/2003	110300	162.8	20.502	3.51	2.9	0.011	4.05	0.8	0.7
4	11/22/2003	110400	162.9	20.458	3.49	2.9	0.011	4.05	0.7	0.6
5	11/22/2003	110500	163	20.452	3.52	2.9	0.011	4.05	0.7	0.6
6	11/22/2003	110600	162.7	20.45	3.5	2.9	0.011	4.05	0.7	0.6
7	11/22/2003	110700	162.7	20.454	3.51	2.9	0.011	4.05	0.7	0.6
8	11/22/2003	110800	163	20.452	3.51	2.9	0.011	4.05	0.7	0.6
9	11/22/2003	110900	162.6	20.45	3.53	2.9	0.011	4.05	0.8	0.6
10	11/22/2003	111000	162.6	20.454	3.54	2.9	0.011	4.05	0.7	0.6
11	11/22/2003	111100	162.5	20.45	3.53	2.9	0.011	4.05	0.8	0.7
12	11/22/2003	111200	162.7	20.452	3.55	3	0.011	4.05	0.8	0.7
13	11/22/2003	111300	162.6	20.45	3.57	3	0.011	4.05	0.8	0.7
14	11/22/2003	111400	162.6	20.454	3.56	3	0.011	4.05	0.8	0.7
15	11/22/2003	111500	162.9	20.45	3.55	3	0.011	4.05	0.8	0.7
16	11/22/2003	111600	162.7	20.502	3.51	2.9	0.011	4.05	0.8	0.7
17	11/22/2003	111700	162.5	20.413	3.54	2.9	0.011	4.05	0.8	0.7
18	11/22/2003	111800	162.4	20.448	3.52	2.9	0.011	4.05	0.7	0.6
19	11/22/2003	111900	162.2	20.407	3.54	2.9	0.011	4.05	0.7	0.6
20	11/22/2003	112000	162.1	20.442	3.52	2.9	0.011	4.05	0.8	0.6
21	11/22/2003	112100	162.2	20.4	3.53	2.9	0.011	4.05	0.8	0.6

22 / /

23 / / AVE 162.648 20.45 3.526 2.919 0.011 4.05 0.762 0.643

run3

Record#	DATE	TIME	GEN11	GAS12	NOX13	NOXD14	NOXRT15	CO216	COL17	COLD18
1	11/22/2003	114000	162.2	20.394	3.49	2.9	0.011	4.04	0.7	0.6



2	11/22/2003	114100	161.9	20.342	3.5	2.9	0.011	4.05	0.7	0.6
3	11/22/2003	114200	162	20.343	3.5	2.9	0.011	4.04	0.7	0.6
4	11/22/2003	114300	162.1	20.339	3.49	2.9	0.011	4.05	0.8	0.6
5	11/22/2003	114400	162.1	20.39	3.49	2.9	0.011	4.05	0.8	0.7
6	11/22/2003	114500	161.9	20.345	3.49	2.9	0.011	4.05	0.8	0.6
7	11/22/2003	114600	161.9	20.39	3.47	2.9	0.011	4.05	0.7	0.6
8	11/22/2003	114700	161.9	20.347	3.49	2.9	0.011	4.05	0.8	0.7
9	11/22/2003	114800	161.9	20.336	3.49	2.9	0.011	4.05	0.9	0.7
10	11/22/2003	114900	161.7	20.343	3.48	2.9	0.011	4.05	0.8	0.7
11	11/22/2003	115000	161.8	20.341	3.48	2.9	0.011	4.05	0.9	0.7
12	11/22/2003	115100	161.5	20.336	3.48	2.9	0.011	4.05	0.9	0.7
13	11/22/2003	115200	161.9	20.341	3.51	2.9	0.011	4.05	0.8	0.7
14	11/22/2003	115300	161.9	20.343	3.51	2.9	0.011	4.05	0.8	0.7
15	11/22/2003	115400	161.4	20.283	3.49	2.9	0.011	4.05	0.8	0.7
16	11/22/2003	115500	161.5	20.275	3.48	2.9	0.011	4.05	0.9	0.8
17	11/22/2003	115600	160.9	20.238	3.5	2.9	0.011	4.05	0.9	0.7
18	11/22/2003	115700	160.9	20.228	3.5	2.9	0.011	4.05	1	0.8
19	11/22/2003	115800	160.9	20.269	3.53	2.9	0.011	4.05	0.9	0.7
20	11/22/2003	115900	160.9	20.277	3.53	2.9	0.011	4.04	0.9	0.8
21	11/22/2003	120000	161	20.234	3.51	2.9	0.011	4.05	0.8	0.7
22	11/22/2003	120100	161.2	20.271	3.51	2.9	0.011	4.04	0.8	0.7

23 / /

24 / / AVE 161.609 20.318 3.496 2.9 0.011 4.048 0.823 0.686

Run 4

Record# DATE TIME GEN11 GAS12 NOX13 NOXD14 NOXRT15 CO216 COL17 COLD18

1	11/22/2003	121000	161.4	20.285	3.55	3	0.011	4.05	0.7	0.6
2	11/22/2003	121100	161	20.279	3.53	2.9	0.011	4.05	0.8	0.7
3	11/22/2003	121200	160.9	20.271	3.53	2.9	0.011	4.05	0.8	0.7
4	11/22/2003	121300	161.2	20.279	3.53	2.9	0.011	4.05	0.8	0.7
5	11/22/2003	121400	161.5	20.279	3.53	2.9	0.011	4.05	0.7	0.6
6	11/22/2003	121500	161.6	20.328	3.52	2.9	0.011	4.05	0.8	0.7
7	11/22/2003	121600	161.7	20.296	3.52	2.9	0.011	4.05	0.8	0.7
8	11/22/2003	121700	161.5	20.277	3.53	2.9	0.011	4.05	0.8	0.6
9	11/22/2003	121800	161.3	20.279	3.54	2.9	0.011	4.05	0.7	0.6
10	11/22/2003	121900	161.4	20.326	3.53	2.9	0.011	4.05	0.7	0.6
11	11/22/2003	122000	161.3	20.341	3.53	2.9	0.011	4.05	0.7	0.6
12	11/22/2003	122100	160.8	20.283	3.51	2.9	0.011	4.05	0.8	0.6
13	11/22/2003	122200	161	20.281	3.47	2.9	0.011	4.05	0.8	0.7
14	11/22/2003	122300	161.1	20.281	3.49	2.9	0.011	4.05	0.9	0.7
15	11/22/2003	122400	160.5	20.236	3.5	2.9	0.011	4.05	0.9	0.7
16	11/22/2003	122500	161.1	20.271	3.48	2.9	0.011	4.05	0.8	0.7
17	11/22/2003	122600	161.1	20.277	3.48	2.9	0.011	4.05	0.8	0.7
18	11/22/2003	122700	161.3	20.283	3.49	2.9	0.011	4.05	0.8	0.7
19	11/22/2003	122800	161.4	20.277	3.5	2.9	0.011	4.05	0.7	0.6
20	11/22/2003	122900	161.4	20.277	3.51	2.9	0.011	4.05	0.7	0.6
21	11/22/2003	123000	161.3	20.281	3.53	2.9	0.011	4.05	0.7	0.6
22	11/22/2003	123100	161.2	20.279	3.52	2.9	0.011	4.05	0.7	0.6
23	/ /									
24	/ /	AVE	161.227	20.285	3.515	2.905	0.011	4.05	0.768	0.65

Run 5

Record# DATE TIME GEN11 GAS12 NOX13 NOXD14 NOXRT15 CO216 COL17 COLD18

1	11/22/2003	124000	160.4	20.228	3.53	2.9	0.011	4.05	0.8	0.7
2	11/22/2003	124100	160.4	20.228	3.52	2.9	0.011	4.05	0.9	0.7
3	11/22/2003	124200	160.5	20.23	3.5	2.9	0.011	4.05	0.8	0.7
4	11/22/2003	124300	160.6	20.226	3.5	2.9	0.011	4.05	0.8	0.7
5	11/22/2003	124400	160.4	20.23	3.49	2.9	0.011	4.05	0.8	0.7
6	11/22/2003	124500	160.3	20.172	3.47	2.9	0.011	4.05	0.8	0.7
7	11/22/2003	124600	160.6	20.222	3.48	2.9	0.011	4.05	0.8	0.7
8	11/22/2003	124700	160.6	20.232	3.47	2.9	0.011	4.05	0.7	0.6
9	11/22/2003	124800	160.9	20.23	3.5	2.9	0.011	4.05	0.7	0.6
10	11/22/2003	124900	161	20.269	3.5	2.9	0.011	4.05	0.7	0.6
11	11/22/2003	125000	160.9	20.232	3.51	2.9	0.011	4.05	0.8	0.7
12	11/22/2003	125100	160.9	20.269	3.49	2.9	0.011	4.05	0.8	0.7
13	11/22/2003	125200	161.3	20.277	3.51	2.9	0.011	4.05	0.7	0.6
14	11/22/2003	125300	161.2	20.277	3.51	2.9	0.011	4.05	0.7	0.6
15	11/22/2003	125400	160.9	20.279	3.52	2.9	0.011	4.05	0.7	0.6
16	11/22/2003	125500	161.1	20.279	3.5	2.9	0.011	4.05	0.7	0.6
17	11/22/2003	125600	161.4	20.279	3.52	2.9	0.011	4.05	0.7	0.6
18	11/22/2003	125700	161	20.281	3.53	2.9	0.011	4.05	0.7	0.6
19	11/22/2003	125800	160.9	20.277	3.54	2.9	0.011	4.05	0.7	0.6
20	11/22/2003	125900	160.5	20.234	3.53	2.9	0.011	4.05	0.7	0.6
21	11/22/2003	130000	160.5	20.234	3.52	2.9	0.011	4.05	0.8	0.6
22	11/22/2003	130100	159.9	20.226	3.56	3	0.011	4.05	0.8	0.6
23	/ /									
24	/ /	AVE	160.736	20.246	3.509	2.905	0.011	4.05	0.755	0.641

Run 6

Record#	DATE	TIME	GEN11	GAS12	NOX13	NOXD14	NOXRT15	CO216	COL17	COLD18
1	11/22/2003	131200	160.2	20.164	3.54	2.9	0.011	4.05	0.8	0.7
2	11/22/2003	131300	160.1	20.17	3.55	3	0.011	4.05	0.8	0.7
3	11/22/2003	131400	159.9	20.128	3.57	3	0.011	4.05	0.8	0.7
4	11/22/2003	131500	159.7	20.157	3.55	3	0.011	4.05	0.9	0.7
5	11/22/2003	131600	159.7	20.172	3.54	3	0.011	4.05	0.8	0.7
6	11/22/2003	131700	159.6	20.128	3.54	2.9	0.011	4.05	0.8	0.7
7	11/22/2003	131800	159.4	20.122	3.53	2.9	0.011	4.05	0.8	0.7
8	11/22/2003	131900	159.7	20.124	3.49	2.9	0.011	4.05	0.9	0.7
9	11/22/2003	132000	160	20.162	3.5	2.9	0.011	4.05	0.9	0.7
10	11/22/2003	132100	159.6	20.174	3.49	2.9	0.011	4.05	0.9	0.7
11	11/22/2003	132200	159.4	20.176	3.48	2.9	0.011	4.05	0.8	0.7
12	11/22/2003	132300	159.7	20.174	3.51	2.9	0.011	4.05	0.8	0.7
13	11/22/2003	132400	159.6	20.131	3.48	2.9	0.011	4.05	0.8	0.7
14	11/22/2003	132500	159.6	20.168	3.51	2.9	0.011	4.05	0.9	0.8
15	11/22/2003	132600	160	20.168	3.52	2.9	0.011	4.06	0.8	0.7
16	11/22/2003	132700	160.1	20.166	3.54	2.9	0.011	4.06	0.8	0.7
17	11/22/2003	132800	159.9	20.164	3.52	2.9	0.011	4.06	0.9	0.7
18	11/22/2003	132900	159.6	20.129	3.53	2.9	0.011	4.06	0.8	0.7
19	11/22/2003	133000	159.4	20.124	3.52	2.9	0.011	4.06	0.8	0.7
20	11/22/2003	133100	159.2	20.073	3.53	2.9	0.011	4.05	0.8	0.7
21	11/22/2003	133200	159.3	20.112	3.52	2.9	0.011	4.05	0.8	0.7
22	11/22/2003	133300	159.6	20.124	3.51	2.9	0.011	4.05	0.9	0.7
23	/ /									
24	/ /	AVE	159.695	20.146	3.521	2.918	0.011	4.052	0.832	0.705

run7

Record#	DATE	TIME	GEN11	GAS12	NOX13	NOXD14	NOXRT15	CO216	COL17	COLD18
1	11/22/2003	134300	159.2	20.129	3.56	3	0.011	4.06	0.9	0.8
2	11/22/2003	134400	159	20.12	3.55	3	0.011	4.05	0.9	0.7
3	11/22/2003	134500	158.6	20.075	3.52	2.9	0.011	4.05	0.9	0.7
4	11/22/2003	134600	159	20.065	3.53	2.9	0.011	4.05	0.8	0.7
5	11/22/2003	134700	159.2	20.065	3.52	2.9	0.011	4.05	0.8	0.7
6	11/22/2003	134800	159.1	20.114	3.52	2.9	0.011	4.05	0.8	0.7
7	11/22/2003	134900	159.1	20.073	3.52	2.9	0.011	4.05	0.8	0.7
8	11/22/2003	135000	159.2	20.114	3.53	2.9	0.011	4.05	0.8	0.7
9	11/22/2003	135100	159.3	20.129	3.52	2.9	0.011	4.05	0.9	0.7
10	11/22/2003	135200	158.8	20.129	3.49	2.9	0.011	4.06	0.8	0.7
11	11/22/2003	135300	158.9	20.077	3.5	2.9	0.011	4.05	0.8	0.7
12	11/22/2003	135400	159	20.069	3.5	2.9	0.011	4.05	0.9	0.7
13	11/22/2003	135500	158.6	20.065	3.5	2.9	0.011	4.05	0.8	0.7
14	11/22/2003	135600	158.9	20.071	3.51	2.9	0.011	4.05	0.8	0.7
15	11/22/2003	135700	158.7	20.065	3.53	2.9	0.011	4.05	0.8	0.7
16	11/22/2003	135800	158.9	20.069	3.56	3	0.011	4.06	0.8	0.7
17	11/22/2003	135900	158.7	20.12	3.55	2.9	0.011	4.06	0.9	0.7
18	11/22/2003	140000	158.8	20.071	3.53	2.9	0.011	4.05	0.9	0.7
19	11/22/2003	140100	158.8	20.112	3.5	2.9	0.011	4.05	0.8	0.7
20	11/22/2003	140200	159.3	20.126	3.5	2.9	0.011	4.05	0.8	0.7
21	11/22/2003	140300	159.1	20.124	3.49	2.9	0.011	4.06	0.8	0.6
22	11/22/2003	140400	159.3	20.122	3.49	2.9	0.011	4.06	0.8	0.7
23	/ /									
24	/ /	AVE	158.977	20.096	3.519	2.914	0.011	4.053	0.832	0.7

run8

Record#	DATE	TIME	GEN11	GAS12	NOX13	NOXD14	NOXRT15	CO216	COL17	COLD18
1	11/22/2003	141900	159	20.127	3.47	2.9	0.011	4.06	0.8	0.7
2	11/22/2003	142000	159.1	20.124	3.47	2.9	0.011	4.06	0.8	0.7
3	11/22/2003	142100	159.1	20.122	3.49	2.9	0.011	4.06	0.8	0.7
4	11/22/2003	142200	159.2	20.131	3.51	2.9	0.011	4.06	0.8	0.7
5	11/22/2003	142300	159.1	20.126	3.52	2.9	0.011	4.06	0.8	0.7
6	11/22/2003	142400	159	20.124	3.54	2.9	0.011	4.06	0.8	0.7
7	11/22/2003	142500	159.7	20.126	3.53	2.9	0.011	4.06	0.9	0.7
8	11/22/2003	142600	159.4	20.128	3.53	2.9	0.011	4.06	0.8	0.7
9	11/22/2003	142700	159.3	20.124	3.53	2.9	0.011	4.06	0.8	0.7
10	11/22/2003	142800	159.4	20.126	3.52	2.9	0.011	4.06	0.9	0.7
11	11/22/2003	142900	159.3	20.122	3.52	2.9	0.011	4.06	1	0.8
12	11/22/2003	143000	159.2	20.131	3.5	2.9	0.011	4.06	0.9	0.7
13	11/22/2003	143100	158.8	20.12	3.54	2.9	0.011	4.06	0.9	0.8
14	11/22/2003	143200	158.7	20.077	3.54	2.9	0.011	4.06	0.8	0.7
15	11/22/2003	143300	158.8	20.114	3.53	2.9	0.011	4.06	0.8	0.7
16	11/22/2003	143400	159.2	20.077	3.55	2.9	0.011	4.06	0.9	0.7
17	11/22/2003	143500	159.6	20.114	3.55	3	0.011	4.06	0.9	0.7
18	11/22/2003	143600	159.8	20.12	3.55	2.9	0.011	4.06	0.9	0.7
19	11/22/2003	143700	159.6	20.122	3.55	2.9	0.011	4.06	0.8	0.7
20	11/22/2003	143800	159.1	20.073	3.55	3	0.011	4.06	0.9	0.7
21	11/22/2003	143900	159.4	20.114	3.55	2.9	0.011	4.06	0.9	0.7
22	11/22/2003	144000	159.4	20.126	3.55	2.9	0.011	4.06	0.8	0.7
23	/ /									
24	/ /	AVE	159.236	20.117	3.527	2.909	0.011	4.06	0.85	0.709

Run 9

Record#	DATE	TIME	GEN11	GAS12	NOX13	NOXD14	NOXRT15	CO216	COL17	COLD18
1	11/22/2003	144900	159.6	20.166	3.52	2.9	0.011	4.06	0.8	0.7
2	11/22/2003	145000	159.3	20.139	3.5	2.9	0.011	4.06	0.9	0.7
3	11/22/2003	145100	159.3	20.126	3.5	2.9	0.011	4.06	0.8	0.7
4	11/22/2003	145200	159.4	20.129	3.53	2.9	0.011	4.06	0.8	0.7
5	11/22/2003	145300	159.6	20.122	3.51	2.9	0.011	4.06	0.8	0.7
6	11/22/2003	145400	159.7	20.124	3.51	2.9	0.011	4.06	0.8	0.7
7	11/22/2003	145500	159.6	20.122	3.48	2.9	0.011	4.06	1	0.8
8	11/22/2003	145600	159.6	20.122	3.47	2.9	0.011	4.06	0.9	0.7
9	11/22/2003	145700	159.2	20.129	3.48	2.9	0.011	4.06	0.9	0.7
10	11/22/2003	145800	159.5	20.126	3.5	2.9	0.011	4.06	0.8	0.7
11	11/22/2003	145900	159.4	20.126	3.49	2.9	0.011	4.06	0.9	0.7
12	11/22/2003	150000	159.3	20.126	3.5	2.9	0.011	4.06	0.9	0.7
13	11/22/2003	150100	159.4	20.124	3.48	2.9	0.011	4.06	0.9	0.7
14	11/22/2003	150200	159.2	20.124	3.51	2.9	0.011	4.06	0.9	0.7
15	11/22/2003	150300	159.2	20.071	3.48	2.9	0.011	4.06	1	0.8
16	11/22/2003	150400	158.9	20.12	3.49	2.9	0.011	4.06	0.9	0.8
17	11/22/2003	150500	158.6	20.126	3.48	2.9	0.011	4.06	0.9	0.7
18	11/22/2003	150600	158.7	20.071	3.51	2.9	0.011	4.06	1	0.8
19	11/22/2003	150700	158.9	20.069	3.53	2.9	0.011	4.06	0.9	0.7
20	11/22/2003	150800	158.9	20.069	3.53	2.9	0.011	4.06	1.1	0.9
21	11/22/2003	150900	158.8	20.116	3.54	3	0.011	4.06	1	0.8
22	11/22/2003	151000	158.6	20.073	3.56	3	0.011	4.06	0.9	0.7
23	/ /									
24	/ /	AVE	159.214	20.115	3.505	2.909	0.011	4.06	0.9	0.732

RATA REFERENCE METHOD CYLINDER GAS CERTIFICATES



A

**CERTIFIED MASTER CLASS**

*Single-Certified Calibration Standard*



**Scott Specialty Gases**

3141 EASTON ROAD, BLDG 1, PEGUMSTEADVILLE, PA 18948-0310 Phone: 800-331-4953 Fax: 215-766-7226

**RDS04**

**CERTIFICATE OF ACCURACY: Certified Master Class Calibration Standard**

**Product Information**

Project No.: 01-95261-006  
Item No.: 01020000840PAL  
P.O. No.: E-N06925

**Customer**

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA, FL 33619

Cylinder Number: ALM026412  
Cylinder Size: AL  
Certification Date: 21Aug2003  
Expiration Date: 19Feb2004

**CERTIFIED CONCENTRATION**

<u>Component Name</u>	<u>Concentration (Moles)</u>	<u>Accuracy (+/-%)</u>
CARBON MONOXIDE	3.00 PPM	2
NITROGEN	BALANCE	

**TRACEABILITY**

Traceable To

NIST

APPROVED BY:

JOHN C. FITZ

DATE:

8/21/03

## SPECIFICATIONS

<u>Component Name</u>	<u>Requested Concentration (Moles)</u>	<u>Certified Concentration (Moles)</u>	<u>Blend Tolerance Result (+/- %)</u>	<u>Certified Accuracy Result (+/- %)</u>
CARBON MONOXIDE	3. PPM	3.00 PPM	.0	2.00
NITROGEN	BAL	BAL		

## TRACEABILITY

Traceable To  
NIST

## PHYSICAL PROPERTIES

Cylinder Size: AL                      Pressure: 2000 PSIG  
Expiration Date: 19Feb2004

Min. Cyl. Pressure: 150 PSIG

## SPECIAL HANDLING INSTRUCTIONS

Do not use or store cylinder at or below the stated dew point temperature. Possible condensation of heavier components could result. In the event the cylinder has been exposed to temperatures at or below the dew point, place cylinder in heated area for 24 hours and then roll cylinder for 15 minutes to re-mix.

Use of calibration standards at or below dew point temperature may result in calibration error.

**COMPLIANCE CLASS****Scott Specialty Gases***Dual-Analyzed Calibration Standard*

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**RD505****CERTIFICATE OF ACCURACY: EPA Protocol Gas**Assay LaboratorySCOTT SPECIALTY GASES  
6141 EASTON ROAD, BLDG 1  
PLUMSTEADVILLE, PA 18949-0310P.O. No.: E-N06925  
Project No.: 01-95261-011CustomerTAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA FL 33619ANALYTICAL INFORMATION

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

Cylinder Number: ALM005846      Certification Date: 20Aug2003      Exp. Date: 18Feb2004  
Cylinder Pressure\*\*\*: 2000 PSIGCOMPONENTCARBON MONOXIDE  
NITROGENCERTIFIED CONCENTRATION (Moles)6.07 PPM  
BALANCEANALYTICALACCURACY\*\*  
+/- 2%TRACEABILITY  
NIST and NMI

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

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

REFERENCE STANDARD

<u>TYPE/SRM NO.</u>	<u>EXPIRATION DATE</u>	<u>CYLINDER NUMBER</u>	<u>CONCENTRATION</u>	<u>COMPONENT</u>
NTRM 2635	01May2007	ALM019380	25.78 PPM	CARBON MONOXIDE

INSTRUMENTATIONINSTRUMENT/MODEL/SERIAL#  
SIEMENS/6E/KN-240DATE LAST CALIBRATED  
25Jul2003ANALYTICAL PRINCIPLE  
NDIR

APPROVED BY:

JOHN C. FITZ



# Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**RATA CLASS RDS10**  
**Dual-Analyzed Calibration Standard**

## CERTIFICATE OF ACCURACY: EPA Protocol Gas

### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-95261-008

### Customer

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

### ANALYTICAL INFORMATION

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

Cylinder Number: AAL6536 Certification Date: 26Aug2003 Exp. Date: 25Feb2004  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	4.49 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	4.49 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2627	15Jan2004	AAL069671	5.180 PPM	NITRIC OXIDE

### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
TECO/10/9741111S	04Aug2003	CHEMILUMINESCENT

### ANALYZER READINGS

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

#### NITRIC OXIDE

Date: 19Aug2003	Response Unit: VOLTS		
Z1 = 0.00030	R1 = 0.86910	T1 = 0.75290	
R2 = 0.87010	Z2 = 0.00020	T2 = 0.75390	
Z3 = 0.00020	T3 = 0.75400	R3 = 0.86910	
Avg. Concentration:	4.490	PPM	

Date: 26Aug2003	Response Unit: VOLTS		
Z1 = 0.00020	R1 = 0.87080	T1 = 0.75390	
R2 = 0.87070	Z2 = 0.00020	T2 = 0.75410	
Z3 = 0.00020	T3 = 0.75380	R3 = 0.86970	
Avg. Concentration:	4.490	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999995	2627
Constants:	A = .007701
B = 5.948957	C =
D =	E =

APPROVED BY:

  
KIMBERLY NILES

RATA CLASS **ROSI**

Dual-Analyzed Calibration Standard



Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

**Assay Laboratory**

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

P.O. No.: E-N06925  
Project No.: 01-95261-009

**Customer**

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: AAL15823 Certification Date: 26Aug2003 Exp. Date: 25Aug2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	8.21 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	8.24 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
HORIBA/CLA220/5708850B10	21Aug2003	CHEMILUMINESCENCE

**ANALYZER READINGS**

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

**NITRIC OXIDE**

Date: 19Aug2003	Response Unit: VOLTS		
Z1 = 0.00460	R1 = 3.94120	T1 = 1.79530	
R2 = 3.93760	Z2 = 0.00380	T2 = 1.79320	
Z3 = 0.00490	T3 = 1.79150	R3 = 3.92910	
Avg. Concentration:	8.200	PPM	

Date: 26Aug2003	Response Unit: VOLTS		
Z1 = 0.00520	R1 = 3.78620	T1 = 1.72780	
R2 = 3.78260	Z2 = 0.00820	T2 = 1.72900	
Z3 = 0.00720	T3 = 1.72740	R3 = 3.77760	
Avg. Concentration:	8.230	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999998	2629
Constants:	A = -0.016438
	B = 4.632947
	C =
	D =
	E =

APPROVED BY:

KIMBERLY NILES



# Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**RATA CLASS** *R0512*  
**Dual-Analyzed Calibration Standard**

## CERTIFICATE OF ACCURACY: EPA Protocol Gas

### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-95261-012

### Customer

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

### ANALYTICAL INFORMATION

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

Cylinder Number: AAL9355 Certification Date: 26Aug2003 Exp. Date: 25Aug2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	12.5 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	12.5 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
HORIBA/CLA220/5708850810	21Aug2003	CHEMILUMINESCENCE

### ANALYZER READINGS

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

#### NITRIC OXIDE

Date: 19Aug2003	Response Unit: VOLTS		
Z1=0.00710	R1=3.92820	T1=2.71940	
R2=3.93490	Z2=0.00720	T2=2.72370	
Z3=0.00440	T3=2.71900	R3=3.92940	
Avg. Concentration:		12.48	PPM

Date: 26Aug2003	Response Unit: VOLTS		
Z1=0.00490	R1=3.79000	T1=2.62460	
R2=3.78830	Z2=0.00560	T2=2.62270	
Z3=0.00460	T3=2.62210	R3=3.79020	
Avg. Concentration:		12.49	PPM

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999998	2629
Constants:	A = -0.016438
B = 4.632947	C =
D =	E =

APPROVED BY:

  
KIMBERLY NILES

**RATA CLASS STOCK 8**  
**Dual-Analyzed Calibration Standard**



**Scott Specialty Gases**

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N75516  
 Project No.: 01-62472-008

Customer

TAMPA ELECTRIC COMPANY  
 6010 CAUSEWAY BLVD  
 TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: ALM031470      Certification Date: 11/05/01      Exp. Date: 11/04/2004  
 Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	18.1 %	+/- 1%	Direct NIST and NMI
OXYGEN	6.41 %	+/- 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.

**REFERENCE STANDARD**

TYPE/BRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1800	1/01/04	H049491	18.05 %	CARBON DIOXIDE
NTRM 2658	10/01/02	ALM065041	9.930 %	OXYGEN

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
MTI/M200/170927	11/05/01	GC-TCD
MTI/M200/170927	11/05/01	GC-TCD

**ANALYZER READINGS**

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

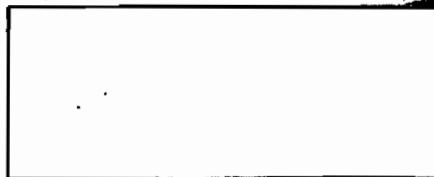
First Triad Analysis

Second Triad Analysis

Calibration Curve

**CARBON DIOXIDE**

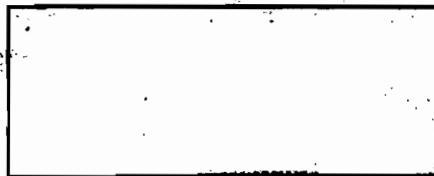
Date: 11/05/01      Response Unit: AREA		
Z1 = 0.00000	R1 = 801872.0	T1 = 802880.0
R2 = 800871.0	Z2 = 0.00000	T2 = 800330.0
Z3 = 0.00000	T3 = 802848.0	R3 = 801064.0
Avg. Concentration: 18.10 %		



Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = 0.999998	1800
Constants:	A = 2.188446-03
	B = 2.25448-06
	C =
	D =
	E =

**OXYGEN**

Date: 11/05/01      Response Unit: AREA		
Z1 = 0.00000	R1 = 283829.0	T1 = 183848.0
R2 = 283482.0	Z2 = 0.00000	T2 = 183065.0
Z3 = 0.00000	T3 = 182868.0	R3 = 283570.0
Avg. Concentration: 6.410 %		



Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = 0.99998	2658
Constants:	A = -3.80478-02
	B = 3.51885-05
	C =
	D =
	E =

APPROVED BY: \_\_\_\_\_



# Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

RATA CLASS

**BLD03**

Dual-Analyzed Calibration Standard

## CERTIFICATE OF ACCURACY: EPA Protocol Gas

### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-95261-001

### Customer

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

### ANALYTICAL INFORMATION

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

Cylinder Number: ALM059566 Certification Date: 21Aug2003 Exp. Date: 20Aug2006  
Cylinder Pressure\*\*\*: 2000 PSIG

### COMPONENT

### CERTIFIED CONCENTRATION (Moles)

### ANALYTICAL ACCURACY\*\*

### TRACEABILITY

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	11.0 %	+/- 1%	Direct NIST and NMI
OXYGEN	12.7 %	+/- 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.

### REFERENCE STANDARD

PE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
IRM 1675	01Jun2004	K001509	13.93 %	CARBON DIOXIDE
NTRM 2659	01Jun2004	K012946	20.85 %	OXYGEN

### INSTRUMENTATION

#### INSTRUMENT/MODEL/SERIAL#

MTI/M200/170927  
BECKMAN/755/2002571

#### DATE LAST CALIBRATED

18Aug2003  
30Jul2003

#### ANALYTICAL PRINCIPLE

GC-TCD  
PARAMAGNETIC

### ANALYZER READINGS

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

First Triad Analysis

Second Triad Analysis

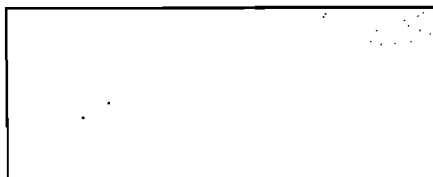
Calibration Curve

#### CARBON DIOXIDE

Date: 21Aug2003 Response Unit: VOLTS

Z1 = 0.00000 R1 = 637781.0 T1 = 503737.0  
 R2 = 937313.0 Z2 = 0.00000 T2 = 503218.0  
 Z3 = 0.00000 T3 = 503572.0 R3 = 637698.0

Avg. Concentration: 11.00 %



Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>  
 r = .999997 1675  
 Constants: A = 7.7433E-03  
 B = 2.1753E-05 C =  
 D = E =

#### OXYGEN

Date: 21Aug2003 Response Unit: VOLTS

Z1 = 0.00030 R1 = 0.84260 T1 = 0.49750  
 R2 = 0.84320 Z2 = 0.00070 T2 = 0.49760  
 Z3 = 0.00080 T3 = 0.49740 R3 = 0.84320

Avg. Concentration: 12.70 %



Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>  
 r = .999998 2659  
 Constants: A = -1.4608E-02  
 B = -2.1461E+00 C = 2.6702E+01  
 D = E =

APPROVED BY:

*Bradley C. Millman*  
BRADLEY C. MILLMAN



# Airgas

*YLS2*

Airgas South  
5837 West 5th Street  
Jacksonville, FL 32254  
(904) 783-2563 Fax: (904) 883-0126  
www.airgas.com

## CERTIFICATE OF PURE GAS BATCH ANALYSIS

**PURE GAS PRODUCT:** Air

**Date:** June 27, 2003

**Reference Number:** 55-03101-1

**Customer Name:** Airgas South  
**Address:**

**Purchase Order #:**

**Grade of Product:** CEM

<u>Cylinder Number</u> (Analyzed Cylinder)	<u>Impurity</u>	<u>Specification</u>	<u>Actual Level</u>
CC165812	Oxygen	20-21	21.0 %
	THC	0.1	<0.1 ppm
	Water	2.0	0.6 ppm
	Carbon Dioxide	1.0	<0.1 ppm
	Carbon Monoxide	0.5	<0.1 ppm
	NOX	0.1	0.08 ppm
	SO2	0.1	0.05 ppm

**Cylinder Numbers in Batch:**

CC31215	CC165812	CC165854	CC165643
CC165836	892228		

**Delivery Ticket #:**

*E. Edward Henderson*  
Approval Signature

LINEARITY DATA

Start Date: 9-5-03 Time: 10:20  
End Date: 9-5-03 Time: 10:51

Analyzer NOx	LOW	MID	HIGH
REF GAS VALUE	37.100	84.000	134.000
DATE 1, TIME 1	09/05/2003 10:20	09/05/2003 10:24	09/05/2003 10:29
RUN 1	36.800	84.000	131.400
DATE 2, TIME 2	09/05/2003 10:32	09/05/2003 10:37	09/05/2003 10:40
RUN 2	36.700	83.800	131.700
DATE 3, TIME 3	09/05/2003 10:43	09/05/2003 10:47	09/05/2003 10:51
RUN 3	37.000	83.300	132.200
AVERAGE=SUM/3	36.833	83.700	131.767
% Error (Eqn A-4)	0.7	0.4	1.7
APS Error (R-A)	0.3	0.3	2.2
Final Value, *=APS	0.7	0.4	1.7
OUT OF CONTROL	NO	NO	NO
SERIAL NUMBER	ALM-019353	ALM-060212	ALM-003262
EXPIRATION DATE	09/01/2005	08/29/2005	09/02/2005

Analyzer CO2	LOW	MID	HIGH
REF GAS VALUE	2.500	5.500	9.120
DATE 1, TIME 1	09/05/2003 10:20	09/05/2003 10:24	09/05/2003 10:29
RUN 1	2.500	5.500	9.000
DATE 2, TIME 2	09/05/2003 10:32	09/05/2003 10:37	09/05/2003 10:40
RUN 2	2.500	5.500	9.000
DATE 3, TIME 3	09/05/2003 10:43	09/05/2003 10:47	09/05/2003 10:51
RUN 3	2.500	5.500	9.000
AVERAGE=SUM/3	2.500	5.500	9.000
% Error (Eqn A-4)	0.0	0.0	1.3
APS Error (R-A)	0.0	0.0	0.1
Final Value, *=APS	0.0	0.0	1.3
OUT OF CONTROL	NO	NO	NO
SERIAL NUMBER	ALM-019353	ALM-060212	ALM-003262
EXPIRATION DATE	09/01/2005	08/29/2005	09/02/2005

Signature: M. W. Salter

CYCLE RESPONSE TIME DATA

TIME RESPONSE PART 75

Record#	DATE	TIME	CO221	NOXH22	NOX23	NOXRT44
1	09/05/2003	132000	1.940	12.700	9.990	0.000
2	09/05/2003	132010	2.040	13.100	9.990	0.000
3	09/05/2003	132020	2.110	13.500	9.990	0.000
4	09/05/2003	132030	2.160	13.800	9.990	0.000
5	09/05/2003	132040	2.180	14.000	9.990	0.000
6	09/05/2003	132050	2.200	14.600	9.990	0.000
7	09/05/2003	132100	2.200	15.300	9.990	0.000
8	09/05/2003	132110	2.200	15.900	9.990	0.000
9	09/05/2003	132120	2.190	16.400	9.990	0.000
10	09/05/2003	132130	2.190	16.800	9.990	0.000
11	09/05/2003	132140	2.180	17.600	9.990	0.000
12	09/05/2003	132150	2.180	18.300	9.990	0.000
13	09/05/2003	132200	2.160	18.600	9.990	0.000
14	09/05/2003	132210	2.150	18.900	9.990	0.000
15	09/05/2003	132220	2.130	19.000	9.990	0.000
16	09/05/2003	132230	2.120	19.200	9.990	0.000
17	09/05/2003	132240	2.120	19.900	9.990	0.000
18	09/05/2003	132250	2.140	20.600	9.990	0.000
19	09/05/2003	132300	2.160	21.400	9.990	0.000
20	09/05/2003	132310	2.190	22.300	9.990	0.000
21	09/05/2003	132320	2.220	22.900	9.990	0.000
22	09/05/2003	132330	2.260	23.700	9.990	0.000
23	09/05/2003	132340	2.270	24.500	9.990	0.000
24	09/05/2003	132350	2.290	25.700	9.990	0.000
25	09/05/2003	132400	2.310	29.600	9.990	0.000
26	09/05/2003	132410	2.200	27.600	9.990	0.000
27	09/05/2003	132420	2.100	26.700	9.990	0.000
28	09/05/2003	132430	2.120	30.600	9.990	0.000
29	09/05/2003	132440	2.070	29.300	9.990	0.000
30	09/05/2003	132450	1.990	27.800	9.990	0.000
31	09/05/2003	132500	1.970	27.900	9.990	0.000
32	09/05/2003	132510	1.970	28.100	9.990	0.000
33	09/05/2003	132520	1.960	28.100	9.990	0.000
34	09/05/2003	132530	1.960	28.100	9.990	0.000
35	09/05/2003	132540	2.370	34.300	9.990	0.000
36	09/05/2003	132550	2.380	43.900	9.990	0.000
37	09/05/2003	132600	0.990	14.500	3.770	0.000
38	09/05/2003	132610	0.250	0.600	0.670	0.000
39	09/05/2003	132620	0.070	0.400	0.410	0.000
40	09/05/2003	132630	0.030	0.300	0.330	0.000
41	09/05/2003	132640	0.010	0.300	0.280	0.000
42	09/05/2003	132650	0.010	0.300	0.260	0.000
43	09/05/2003	132700	0.000	0.300	0.240	0.000
44	09/05/2003	132710	0.010	0.100	0.220	0.000
45	09/05/2003	132720	0.000	0.100	0.200	0.000
46	09/05/2003	132730	0.000	0.100	0.190	0.000
47	09/05/2003	132740	0.000	0.100	0.190	0.000
48	09/05/2003	132750	0.000	0.100	0.180	0.000
49	09/05/2003	132800	0.000	0.100	0.170	0.000
50	09/05/2003	132810	0.000	0.100	0.170	0.000
51	09/05/2003	132820	0.000	0.100	0.160	0.000
52	09/05/2003	132830	-0.010	0.100	0.160	0.000
53	09/05/2003	132840	0.000	0.100	0.150	0.000
54	09/05/2003	132850	0.000	0.100	0.150	0.000
55	09/05/2003	132900	0.000	0.100	0.150	0.000
56	09/05/2003	132910	0.020	0.100	0.150	0.000

57	09/05/2003	132920	0.670	6.600	6.680	0.000
58	09/05/2003	132930	1.370	28.100	9.610	0.000
59	09/05/2003	132940	1.830	34.200	9.990	0.000
60	09/05/2003	132950	2.050	34.400	9.990	0.000
61	09/05/2003	133000	2.110	34.400	9.990	0.000
62	09/05/2003	133010	2.110	34.500	9.990	0.000
63	09/05/2003	133020	2.120	34.400	9.990	0.000
64	09/05/2003	133030	2.120	34.500	9.990	0.000
65	09/05/2003	133040	2.120	34.600	9.990	0.000
66	09/05/2003	133050	2.130	34.700	9.990	0.000
67	09/05/2003	133100	2.120	34.800	9.990	0.000
68	09/05/2003	133110	2.130	34.700	9.990	0.000
69	09/05/2003	133120	2.120	34.700	9.990	0.000
70	09/05/2003	133130	2.120	34.600	9.990	0.000
71	09/05/2003	133140	2.120	34.600	9.990	0.000
72	09/05/2003	133150	2.110	34.700	9.990	0.000
73	09/05/2003	133200	2.090	34.700	9.990	0.000
74	09/05/2003	133210	2.210	26.400	9.990	0.000
75	09/05/2003	133220	5.080	57.500	9.990	0.000
76	09/05/2003	133230	7.240	86.100	9.990	0.000
77	09/05/2003	133240	8.110	99.300	9.990	0.000
78	09/05/2003	133250	8.560	111.900	9.990	0.000
79	09/05/2003	133300	8.770	123.600	9.990	0.000
80	09/05/2003	133310	8.890	129.100	9.990	0.000
81	09/05/2003	133320	8.960	130.900	9.990	0.000
82	09/05/2003	133330	8.980	131.300	9.990	0.000
83	09/05/2003	133340	8.990	131.500	9.990	0.000
84	09/05/2003	133350	9.000	131.800	9.990	0.000
85	09/05/2003	133400	9.010	131.800	9.990	0.000
86	09/05/2003	133410	9.010	131.900	9.990	0.000
87	09/05/2003	133420	9.020	132.000	9.990	0.000
88	09/05/2003	133430	9.020	132.100	9.990	0.000
89	09/05/2003	133440	9.020	132.100	9.990	0.000
90	09/05/2003	133450	9.020	132.100	9.990	0.000
91	09/05/2003	133500	9.020	132.100	9.990	0.000
92	09/05/2003	133510	8.790	132.000	9.990	0.000
93	09/05/2003	133520	5.840	83.900	9.990	0.000
94	09/05/2003	133530	3.070	43.600	9.990	0.000
95	09/05/2003	133540	2.480	37.700	9.990	0.000
96	09/05/2003	133550	2.270	37.600	9.990	0.000
97	09/05/2003	133600	2.210	37.600	9.990	0.000
98	09/05/2003	133610	2.190	37.500	9.990	0.000
99	09/05/2003	133620	2.190	37.500	9.990	0.000
100	09/05/2003	133630	2.190	37.500	9.990	0.000
101	09/05/2003	133640	2.190	37.700	9.990	0.000
102	09/05/2003	133650	2.190	37.700	9.990	0.000
103	09/05/2003	133700	2.180	37.700	9.990	0.000
104	09/05/2003	133710	2.180	37.700	9.990	0.000
105	09/05/2003	133720	2.190	37.800	9.990	0.000
106	09/05/2003	133730	2.400	37.700	9.990	0.000
107	09/05/2003	133740	3.840	73.100	9.990	0.000
108	09/05/2003	133750	2.920	41.500	9.990	0.000
109	09/05/2003	133800	1.000	13.400	8.230	0.000
110	09/05/2003	133810	0.250	7.200	7.280	0.000
111	09/05/2003	133820	0.090	7.000	7.080	0.000
112	09/05/2003	133830	0.040	7.000	7.020	0.000
113	09/05/2003	133840	0.030	7.000	7.010	0.000
114	09/05/2003	133850	0.020	7.000	6.990	0.000
115	09/05/2003	133900	0.020	6.800	6.960	0.000
116	09/05/2003	133910	0.020	6.800	6.950	0.000

117	09/05/2003	133920	0.010	6.800	6.930	0.000	
118	09/05/2003	133930	0.010	6.800	6.910	0.000	
119	09/05/2003	133940	0.010	6.800	6.890	0.000	
120	09/05/2003	133950	0.010	6.800	6.880	0.000	
121	09/05/2003	134000	0.010	6.800	6.870	0.000	
122	09/05/2003	134010	0.010	6.800	6.860	0.000	
123	09/05/2003	134020	0.000	6.800	6.840	0.000	
124	09/05/2003	134030	0.000	6.800	6.830	0.000	
125	09/05/2003	134040	0.230	6.800	6.850	0.000	
126	09/05/2003	134050	1.070	27.200	9.680	0.000	
127	09/05/2003	134100	1.640	35.500	9.990	0.000	
128	09/05/2003	134110	1.970	37.400	9.990	0.000	
129	09/05/2003	134120	2.100	37.400	9.990	0.000	
130	09/05/2003	134130	2.120	37.300	9.990	0.000	
131	09/05/2003	134140	2.130	37.400	9.990	0.000	
132	09/05/2003	134150	2.130	37.500	9.990	0.000	
133	09/05/2003	134200	2.140	37.400	9.990	0.000	
134	09/05/2003	134210	2.140	37.500	9.990	0.000	
135	09/05/2003	134220	2.140	37.400	9.990	0.000	
136	09/05/2003	134230	2.140	37.000	9.990	0.000	
137	09/05/2003	134240	2.140	37.000	9.990	0.000	
138	09/05/2003	134250	2.120	36.800	9.990	0.000	
139	09/05/2003	134300	1.580	32.400	9.990	0.000	
140	/	/					
141	/	/	AVE	2.451	35.322	8.220	0.000

7-DAY DRIFT DATA



Daily Calibration Summary  
 Tampa Electric Company  
 Bayside

Report Period  
 Day: 11/04/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:21	-0.30	0.300P	0.00	1:24	83.80	1.800P	82.00
	10:40	0.80	0.800P	0.00	10:43	85.30	3.300P	82.00
NOx Low	1:21	-0.20	0.200P	0.00	1:18	5.60	0.100P	5.50
	10:40	0.90	0.900P	0.00	10:37	7.00	1.500P	5.50
CO2	1:21	0.00	0.000P	0.00	1:24	5.60	0.100P	5.50
	10:40	0.00	0.000P	0.00	10:43	5.60	0.100P	5.50
CO High	1:24	0.20	0.040P	0.00	1:21	582.10	5.420P	555.00
	10:43	0.30	0.060P	0.00	10:40	582.60	5.520P	555.00
CO Low	1:24	0.50	0.500P	0.00	1:18	12.00	0.700P	11.30
	10:43	0.50	0.500P	0.00	10:37	12.10	0.800P	11.30

Today's Date: 11/05/2003  
 Time: 08:25:09

%CE = Percent Calibration Error

P - Calibration Passed    F - Calibration Failed

BEST AVAILABLE COPY

3

Daily Calibration Summary  
Tampa Electric Company  
Bayside

Report Period  
Day: 11/05/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:21	-0.20	0.200P	0.00	1:24	82.40	0.400P	82.00
NOx Low	1:21	-0.20	0.200P	0.00	1:18	5.50	0.000P	5.50
CO2	1:21	0.00	0.000P	0.00	1:24	5.70	0.200P	5.50
CO High	1:24	-0.20	0.040P	0.00	1:21	571.00	3.200P	555.00
CO Low	1:24	0.30	0.300P	0.00	1:18	11.70	0.400P	11.30

Today's Date: 11/05/2003  
Time: 08:25:55

%CE = Percent Calibration Error

P - Calibration Passed    F - Calibration Failed

BEST AVAILABLE COPY

4

Daily Calibration Summary  
Tampa Electric Company  
Bayside

Report Period  
Day: 11/06/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:21	-0.30	0.300P	0.00	1:24	84.20	2.200P	82.00
NOx Low	1:21	-0.20	0.200P	0.00	1:18	5.60	0.100P	5.50
CO2	1:21	0.00	0.000P	0.00	1:24	5.50	0.000P	5.50
CO High	1:24	0.50	0.100P	0.00	1:21	584.70	5.940P	555.00
CO Low	1:24	0.60	0.600P	0.00	1:18	12.10	0.800P	11.30

Today's Date: 11/06/2003  
Time: 08:14:09

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

Daily Calibration Summary  
Tampa Electric Company  
Bayside

Report Period  
Day: 11/07/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:21	-0.30	0.300P	0.00	1:24	82.60	0.600P	82.00
Ox Low	1:21	-0.20	0.200P	0.00	1:18	5.40	0.100P	5.50
CO2	1:21	0.00	0.000P	0.00	1:24	5.70	0.200P	5.50
SO High	1:24	0.10	0.020P	0.00	1:21	575.30	4.060P	555.00
SO Low	1:24	0.50	0.500P	0.00	1:18	11.80	0.500P	11.30

Today's Date: 11/07/2003  
Time: 07:39:52

%CE = Percent Calibration Error

P - Calibration Passed    F - Calibration Failed

=====  
 Daily Calibration Summary  
 Tampa Electric Company  
 Bayside ~~GT2B~~  
 =====

Report Period  
 Day: 11/08/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:21	-0.30	0.300P	0.00	1:24	84.20	2.200P	82.00
Ox Low	1:21	-0.20	0.200P	0.00	1:18	5.50	0.000P	5.50
CO2	1:21	0.00	0.000P	0.00	1:24	5.50	0.000P	5.50
CO High	1:24	0.50	0.100P	0.00	1:21	585.20	6.040P	555.00
CO Low	1:24	0.70	0.700P	0.00	1:18	12.10	0.800P	11.30

Today's Date: 11/10/2003  
 Time: 07:20:14

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

BEST AVAILABLE COPY

7

Daily Calibration Summary  
Tampa Electric Company  
Bayside

Report Period

Day: 11/09/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:21	-0.30	0.300P	0.00	1:24	82.00	0.000P	82.00
NOx Low	1:21	-0.20	0.200P	0.00	1:18	5.20	0.300P	5.50
CO2	1:21	0.00	0.000P	0.00	1:24	5.70	0.200P	5.50
CO High	1:24	-0.20	0.040P	0.00	1:21	570.10	3.020P	555.00
CO Low	1:24	0.40	0.400P	0.00	1:18	11.80	0.500P	11.30

Today's Date: 11/10/2003  
Time: 07:20:31

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

=====  
Daily Calibration Summary  
Tampa Electric Company  
Bayside CT2B  
=====

Report Period

Day: 11/10/2003

ZERO CAL

SPAN CAL

=====  
=====

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:21	-0.30	0.200P	0.00	1:24	83.80	1.200P	82.00
NOx Low	1:21	-0.20	0.200P	0.00	1:18	5.40	0.100P	5.50
CO2	1:21	0.00	0.000P	0.00	1:24	5.60	0.100P	5.50
CO High	1:24	0.50	0.100P	0.00	1:21	582.70	5.540P	555.00
CO Low	1:24	0.60	0.600P	0.00	1:18	12.00	0.700P	11.30

=====  
=====

Today's Date: 01/30/2004  
Time: 05:46:04

%CE = Percent Calibration Error

P - Calibration Passed    F - Calibration Failed

Daily Gas Emission Report  
 Tampa Electric Company  
 Bayside

REPORT PERIOD

Page 1

10/11/2003 to 11/10/2003

Date: 10/29/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
13	Gas	3876.3	395.4	0.23724	23.50	5.70
14	Gas	4749.0	484.4	0.29064	28.80	10.40
15	Gas	4695.9	479.0	0.28740	28.50	10.30
16	Gas	4680.3	477.4	0.28644	28.40	10.10
17	Gas	4729.7	482.4	0.28944	28.70	10.30
18	Gas	2750.6	280.6	0.16836	16.70	4.70

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	25481.8	2599.2	1.55952	154.60

Generation Daily Total: 51.50 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	



Date: 11/04/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
9	Gas	4189.9	427.4	0.25644	25.40	7.00
10	Gas	4721.4	481.6	0.28896	28.60	10.20
11	Gas	4659.7	475.3	0.28518	28.20	9.70
12	Gas	4734.5	482.9	0.28974	28.70	10.50
13	Gas	5233.7	533.8	0.32028	31.70	15.20
14	Gas	6580.0	671.2	0.40272	39.90	29.20
15	Gas	5258.5	536.4	0.32184	31.90	15.80
16	Gas	4362.3	445.0	0.26700	26.40	6.50
17	Gas	4525.0	461.6	0.27696	27.40	8.20
18	Gas	4591.5	468.3	0.28098	27.80	8.90
19	Gas	4500.8	459.1	0.27546	27.30	7.80
20	Gas	4471.0	456.0	0.27360	27.10	7.40
21	Gas	4777.2	487.3	0.29238	29.00	10.30
22	Gas	4932.3	503.1	0.30186	29.90	11.90
23	Gas	11804.0	1204.0	0.72240	71.60	96.70

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	79341.8	8093.0	4.85580	480.90

Generation Daily Total: 255.30 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	

Date: 11/05/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
0	Gas	16532.8	1686.3	1.01178	100.20	158.90
1	Gas	16548.9	1688.0	1.01280	100.30	159.10
2	Gas	16561.8	1689.3	1.01358	100.40	159.40
3	Gas	16615.2	1694.8	1.01688	100.70	160.20
4	Gas	16664.2	1699.7	1.01982	101.00	160.90
5	Gas	16706.6	1704.1	1.02246	101.30	161.50
6	Gas	16730.3	1706.5	1.02390	101.40	161.70
7	Gas	16689.4	1702.3	1.02138	101.20	161.00
8	Gas	16583.7	1691.5	1.01490	100.50	159.50
9	Gas	16548.1	1687.9	1.01274	100.30	158.90
10	Gas	16565.9	1689.7	1.01382	100.40	159.10
11	Gas	16550.8	1688.2	1.01292	100.30	158.90
12	Gas	16536.6	1686.7	1.01202	100.20	158.70
13	Gas	16515.3	1684.6	1.01076	100.10	158.50
14	Gas	16491.5	1682.1	1.00926	100.00	158.40
15	Gas	16206.1	1653.0	0.99180	98.20	154.70
16	Gas	16254.1	1657.9	0.99474	98.50	155.40
17	Gas	16659.3	1699.2	1.01952	101.00	160.50
18	Gas	16696.9	1703.1	1.02186	101.20	161.00
19	Gas	16696.9	1703.1	1.02186	101.20	161.10
20	Gas	16705.6	1704.0	1.02240	101.30	161.30
21	Gas	16714.0	1704.8	1.02288	101.30	161.40
22	Gas	16717.1	1705.1	1.02306	101.30	161.50
23	Gas	16730.5	1706.5	1.02390	101.40	161.60

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	398221.6	40618.4	24.37104	2413.70

Generation Daily Total: 3833.20 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	

Date: 11/06/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
0	Gas	16721.1	1705.6	1.02336	101.40	161.50
1	Gas	16714.4	1704.9	1.02294	101.30	161.50
2	Gas	16747.8	1708.3	1.02498	101.50	161.80
3	Gas	16754.1	1708.9	1.02534	101.60	161.90
4	Gas	16760.1	1709.5	1.02570	101.60	161.90
5	Gas	16742.6	1707.7	1.02462	101.50	161.70
6	Gas	16742.5	1707.7	1.02462	101.50	161.80
7	Gas	16762.6	1709.8	1.02588	101.60	161.90
8	Gas	16745.2	1708.0	1.02480	101.50	161.70
9	Gas	16727.6	1706.2	1.02372	101.40	161.40
10	Gas	16684.2	1701.8	1.02108	101.10	160.80
11	Gas	16602.4	1693.4	1.01604	100.60	159.50
12	Gas	16356.5	1668.4	1.00104	99.20	156.20
13	Gas	16257.2	1658.2	0.99492	98.50	155.10
14	Gas	16456.5	1678.6	1.00716	99.80	157.70
15	Gas	16580.1	1691.2	1.01472	100.50	159.30
16	Gas	16595.1	1692.7	1.01562	100.60	159.60
17	Gas	16610.8	1694.3	1.01658	100.70	160.00
18	Gas	16619.1	1695.1	1.01706	100.70	160.10
19	Gas	16616.9	1694.9	1.01694	100.70	160.10
20	Gas	16596.2	1692.8	1.01568	100.60	159.90
21	Gas	16666.8	1700.0	1.02000	101.00	160.80
22	Gas	16660.2	1699.3	1.01958	101.00	160.70
23	Gas	16707.4	1704.2	1.02252	101.30	161.30

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	399427.4	40741.5	24.44490	2421.20

Generation Daily Total: 3848.20 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	

Date: 11/07/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
0	Gas	16726.5	1706.1	1.02366	101.40	161.60
1	Gas	16742.3	1707.7	1.02462	101.50	161.80
2	Gas	16774.9	1711.0	1.02660	101.70	162.20
3	Gas	16783.8	1711.9	1.02714	101.70	162.30
4	Gas	16784.4	1712.0	1.02720	101.70	162.40
5	Gas	16837.6	1717.4	1.03044	102.10	163.00
6	Gas	16838.7	1717.5	1.03050	102.10	162.90
7	Gas	16841.1	1717.8	1.03068	102.10	162.80
8	Gas	16808.8	1714.5	1.02870	101.90	162.30
9	Gas	16765.3	1710.1	1.02606	101.60	161.60
10	Gas	16673.1	1700.7	1.02042	101.10	160.60
11	Gas	16645.6	1697.9	1.01874	100.90	160.70
12	Gas	16652.6	1698.6	1.01916	100.90	160.50
13	Gas	16636.6	1696.9	1.01814	100.80	160.40
14	Gas	16640.3	1697.3	1.01838	100.90	160.20
15	Gas	16312.2	1663.8	0.99828	98.90	155.80
16	Gas	16207.1	1653.1	0.99186	98.20	154.60
17	Gas	16269.2	1659.5	0.99570	98.60	155.50
18	Gas	16327.6	1665.4	0.99924	99.00	156.20
19	Gas	16389.2	1671.7	1.00302	99.30	157.00
20	Gas	16475.6	1680.5	1.00830	99.90	158.10
21	Gas	16560.0	1689.1	1.01346	100.40	159.10
22	Gas	16579.9	1691.1	1.01466	100.50	159.40
23	Gas	16610.3	1694.3	1.01658	100.70	159.70

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	398882.7	40685.9	24.41154	2417.90

Generation Daily Total: 3840.70 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	

Date: 11/08/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
0	Gas	16628.7	1696.1	1.01766	100.80	160.10
1	Gas	16629.4	1696.2	1.01772	100.80	160.10
2	Gas	16629.2	1696.2	1.01772	100.80	160.10
3	Gas	16659.5	1699.3	1.01958	101.00	160.60
4	Gas	16681.1	1701.5	1.02090	101.10	160.90
5	Gas	16717.3	1705.2	1.02312	101.30	161.40
6	Gas	16764.0	1709.9	1.02594	101.60	161.90
7	Gas	16782.7	1711.8	1.02708	101.70	162.20
8	Gas	16697.7	1703.2	1.02192	101.20	161.00
9	Gas	16553.7	1688.5	1.01310	100.30	158.90
10	Gas	16444.6	1677.3	1.00638	99.70	157.60
11	Gas	16640.7	1697.4	1.01844	100.90	160.20
12	Gas	16571.7	1690.3	1.01418	100.50	159.10
13	Gas	16653.1	1698.6	1.01916	100.90	160.40
14	Gas	16617.7	1695.0	1.01700	100.70	159.90
15	Gas	16300.2	1662.6	0.99756	98.80	155.70
16	Gas	16318.9	1664.5	0.99870	98.90	155.90
17	Gas	16344.8	1667.2	1.00032	99.10	156.30
18	Gas	16420.6	1674.9	1.00494	99.50	157.50
19	Gas	16473.4	1680.3	1.00818	99.90	158.10
20	Gas	16537.2	1686.8	1.01208	100.20	158.80
21	Gas	16601.0	1693.3	1.01598	100.60	159.70
22	Gas	16615.1	1694.7	1.01682	100.70	160.10
23	Gas	16669.7	1700.3	1.02018	101.00	160.70

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	397952.0	40591.1	24.35466	2412.00

Generation Daily Total: 3827.20 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	

Date: 11/09/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
0	Gas	16700.0	1703.4	1.02204	101.20	161.20
1	Gas	16731.9	1706.7	1.02402	101.40	161.50
2	Gas	16708.5	1704.3	1.02258	101.30	161.20
3	Gas	16701.2	1703.5	1.02210	101.20	161.00
4	Gas	16710.2	1704.4	1.02264	101.30	161.20
5	Gas	16741.8	1707.7	1.02462	101.50	161.60
6	Gas	16731.4	1706.6	1.02396	101.40	161.60
7	Gas	16715.0	1704.9	1.02294	101.30	161.30
8	Gas	16732.9	1706.8	1.02408	101.40	161.50
9	Gas	16746.0	1708.1	1.02486	101.50	161.50
10	Gas	16613.7	1694.6	1.01676	100.70	159.60
11	Gas	16641.7	1697.5	1.01850	100.90	160.20
12	Gas	16692.7	1702.7	1.02162	101.20	160.90
13	Gas	16724.3	1705.9	1.02354	101.40	161.60
14	Gas	16780.9	1711.7	1.02702	101.70	162.00
15	Gas	16800.2	1713.6	1.02816	101.80	162.30
16	Gas	16820.1	1715.7	1.02942	102.00	162.70
17	Gas	16882.3	1722.0	1.03320	102.30	163.60
18	Gas	16919.8	1725.8	1.03548	102.60	164.20
19	Gas	16942.9	1728.2	1.03692	102.70	164.30
20	Gas	16974.0	1731.3	1.03878	102.90	164.70
21	Gas	16972.4	1731.2	1.03872	102.90	164.70
22	Gas	16937.8	1727.7	1.03662	102.70	164.20
23	Gas	16898.2	1723.6	1.03416	102.40	163.80

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	402819.9	41087.9	24.65274	2441.70

Generation Daily Total: 3892.40 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	

Date: 11/10/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
0	Gas	16892.6	1723.0	1.03380	102.40	163.60
1	Gas	16923.0	1726.1	1.03566	102.60	164.10
2	Gas	16959.8	1729.9	1.03794	102.80	164.60
3	Gas	17006.4	1734.7	1.04082	103.10	165.20
4	Gas	17043.6	1738.4	1.04304	103.30	165.70
5	Gas	17072.7	1741.4	1.04484	103.50	166.00
6	Gas	17058.9	1740.0	1.04400	103.40	165.90

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	118957.0	12133.5	7.28010	721.10

Generation Daily Total: 1155.10 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	

TOTALS

REPORT DATE: 11/10/2003

REPORT PERIOD

10/11/2003 to 11/10/2003

\* = replaced data, GAS units = 100scfh, OIL units = lb/hr

FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs	tons
Gas	2221084.2	226550.5	135.93030	13463.10

% used for a fuel = 100\*(#hrs fuel used)/(#hrs in period)

% used for Gas = 100\*(148/728) = 20.33

Total % used = 100\*(#hrs online)/(#hrs in period)

Total % used = 100\*(148/728) = 20.33

Total # hours in this period = 728

Total # hours online = 148

Total Generation for period = 20703.60 Mw

% availability for a fuel = 100\*(#hrs fuel source=1)/(#hrs fuel used)

% availability for Gas = 100\*(148)/(148) = 100.00

Total % availability =

100\*(total #hrs each fuel source=1)/(total #hrs each fuel used)

Total % availability = 100\*148/148 = 100.00

RATA REFERENCE METHOD QA/QC REPORT



Bayside 2B - Report				
RUN 1				
12/16/2003				
9:31				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.063	0.042	-0.006	0.025
Low Level Observed	-	-	-	4.457
Mid Level Observed	13.677	10.052	3.017	8.303
High Level Observed	20.88	18.012	6.304	12.588
% Difference from Zero to Target	0.25	0.21	-0.06	0.17
% Difference from Low to Target	0	0	0	-0.09
% Difference from Mid to Target	0.11	0.21	0.17	0.29
% Difference from High to Target	-0.08	0.06	0.14	-0.08
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.063	0.042	-0.006	0.025
Actual Span From Linearity	13.677	10.052	3.017	4.457
Initial Readings				
Zero	0.063	0.042	-0.006	0.135
Span	13.616	9.955	3.042	4.457
Final Readings				
Zero	0.063	0.042	0.053	0.135
Span	13.616	9.955	3.042	4.457
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	0	0.73
Span Bias	-0.24	-0.48	0.25	0
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	0.59	0.73
Span Bias	-0.24	-0.48	0.25	0
Calculated Drift				
Zero Drift (Run-Run)	0	0	0.59	0
Span Drift	0	0	0	0
Run Results				
Raw Results	13.83	4.08	1.08	3.5
Corrected Results (ppmv)	13.87	4.08	1.05	3.48

<b>Bayside 2B - Report</b>				
<b>RUN 2</b>				
12/16/2003				
10:31				
<b>Linearity Check - Calibration Error</b>	<b>O2</b>	<b>CO2</b>	<b>CO</b>	<b>NOX</b>
<b>Analyzer Range</b>	25	20	10	15
<b>Units</b>	%	%	PPM	PPM
<b>Low Level Certified Value (PPM or %)</b>				4.47
<b>Mid Level Certified Value (PPM or %)</b>	13.65	10.01	3	8.26
<b>High Level Certified Value (PPM or %)</b>	20.9	18	6.29	12.6
<b>Zero Level Observed</b>	0.063	0.042	-0.006	0.025
<b>Low Level Observed</b>	-	-	-	4.457
<b>Mid Level Observed</b>	13.677	10.052	3.017	8.303
<b>High Level Observed</b>	20.88	18.012	6.304	12.588
<b>% Difference from Zero to Target</b>	0.25	0.21	-0.06	0.17
<b>% Difference from Low to Target</b>	0	0	0	-0.09
<b>% Difference from Mid to Target</b>	0.11	0.21	0.17	0.29
<b>% Difference from High to Target</b>	-0.08	0.06	0.14	-0.08
<b>Analyzer Range</b>	25	20	10	15
<b>Units</b>	%	%	PPM	PPM
<b>Actual Zero From Linearity</b>	0.063	0.042	-0.006	0.025
<b>Actual Span From Linearity</b>	13.677	10.052	3.017	4.457
<b>Initial Readings</b>				
<b>Zero</b>	0.063	0.042	0.053	0.135
<b>Span</b>	13.616	9.955	3.042	4.457
<b>Final Readings</b>				
<b>Zero</b>	0.063	0.042	0.043	0.099
<b>Span</b>	13.616	9.955	3.056	4.457
<b>Initial Sampling System Bias</b>				
<b>Zero Bias (Run-System Cal)</b>	0	0	0.59	0.73
<b>Span Bias</b>	-0.24	-0.48	0.25	0
<b>Final Sampling System Bias</b>				
<b>Zero Bias (Run-System Cal)</b>	0	0	0.49	0.49
<b>Span Bias</b>	-0.24	-0.48	0.39	0
<b>Calculated Drift</b>				
<b>Zero Drift (Run-Run)</b>	0	0	-0.1	-0.24
<b>Span Drift</b>	0	0	0.14	0
<b>Run Results</b>				
<b>Raw Results</b>	13.82	4.08	1.19	3.44
<b>Corrected Results (ppmv)</b>	13.86	4.08	1.14	3.42

Bayside 2B - Report				
RUN 3				
12/16/2003				
11:08				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.063	0.042	-0.006	0.025
Low Level Observed	-	-	-	4.457
Mid Level Observed	13.677	10.052	3.017	8.303
High Level Observed	20.88	18.012	6.304	12.588
% Difference from Zero to Target	0.25	0.21	-0.06	0.17
% Difference from Low to Target	0	0	0	-0.09
% Difference from Mid to Target	0.11	0.21	0.17	0.29
% Difference from High to Target	-0.08	0.06	0.14	-0.08
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.063	0.042	-0.006	0.025
Actual Span From Linearity	13.677	10.052	3.017	4.457
Initial Readings				
Zero	0.063	0.042	0.043	0.099
Span	13.616	9.955	3.056	4.457
Final Readings				
Zero	0.063	0.042	0.057	0.099
Span	13.616	9.955	3.032	4.384
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	0.49	0.49
Span Bias	-0.24	-0.48	0.39	0
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	0.63	0.49
Span Bias	-0.24	-0.48	0.15	-0.49
Calculated Drift				
Zero Drift (Run-Run)	0	0	0.14	0
Span Drift	0	0	-0.24	-0.49
Run Results				
Raw Results	13.81	4.09	0.98	3.41
Corrected Results (ppmv)	13.85	4.09	0.93	3.42

Bayside 2B - Report				
RUN 4				
12/16/2003				
11:45				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.063	0.042	-0.006	0.025
Low Level Observed	-	-	-	4.457
Mid Level Observed	13.677	10.052	3.017	8.303
High Level Observed	20.88	18.012	6.304	12.588
% Difference from Zero to Target	0.25	0.21	-0.06	0.17
% Difference from Low to Target	0	0	0	-0.09
% Difference from Mid to Target	0.11	0.21	0.17	0.29
% Difference from High to Target	-0.08	0.06	0.14	-0.08
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.063	0.042	-0.006	0.025
Actual Span From Linearity	13.677	10.052	3.017	4.457
Initial Readings				
Zero	0.063	0.042	0.057	0.099
Span	13.616	9.955	3.032	4.384
Final Readings				
Zero	0.063	0.042	0.057	0.099
Span	13.616	9.906	3.037	4.457
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	0.63	0.49
Span Bias	-0.24	-0.48	0.15	-0.49
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	0.63	0.49
Span Bias	-0.24	-0.73	0.2	0
Calculated Drift				
Zero Drift (Run-Run)	0	0	0	0
Span Drift	0	-0.24	0.05	0.49
Run Results				
Raw Results	13.81	4.07	1.16	3.41
Corrected Results (ppmv)	13.85	4.08	1.11	3.42

Bayside 2B - Report				
RUN 5				
12/16/2003				
12:20				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.063	0.042	-0.006	0.025
Low Level Observed	-	-	-	4.457
Mid Level Observed	13.677	10.052	3.017	8.303
High Level Observed	20.88	18.012	6.304	12.588
% Difference from Zero to Target	0.25	0.21	-0.06	0.17
% Difference from Low to Target	0	0	0	-0.09
% Difference from Mid to Target	0.11	0.21	0.17	0.29
% Difference from High to Target	-0.08	0.06	0.14	-0.08
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.063	0.042	-0.006	0.025
Actual Span From Linearity	13.677	10.052	3.017	4.457
Initial Readings				
Zero	0.063	0.042	0.057	0.099
Span	13.616	9.906	3.037	4.457
Final Readings				
Zero	0.063	0.042	0.043	0.099
Span	13.616	9.906	3.027	4.457
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	0.63	0.49
Span Bias	-0.24	-0.73	0.2	0
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	0.49	0.49
Span Bias	-0.24	-0.73	0.1	0
Calculated Drift				
Zero Drift (Run-Run)	0	0	-0.14	0
Span Drift	0	0	-0.1	0
Run Results				
Raw Results	13.8	4.08	1.31	3.37
Corrected Results (ppmv)	13.84	4.1	1.27	3.36

Bayside 2B - Report				
RUN 6				
12/16/2003				
12:53				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.063	0.042	-0.006	0.025
Low Level Observed	-	-	-	4.457
Mid Level Observed	13.677	10.052	3.017	8.303
High Level Observed	20.88	18.012	6.304	12.588
% Difference from Zero to Target	0.25	0.21	-0.06	0.17
% Difference from Low to Target	0	0	0	-0.09
% Difference from Mid to Target	0.11	0.21	0.17	0.29
% Difference from High to Target	-0.08	0.06	0.14	-0.08
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.063	0.042	-0.006	0.025
Actual Span From Linearity	13.677	10.052	3.017	4.457
Initial Readings				
Zero	0.063	0.042	0.043	0.099
Span	13.616	9.906	3.027	4.457
Final Readings				
Zero	0.063	0.042	0.038	0.099
Span	13.616	9.955	3.032	4.457
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	0.49	0.49
Span Bias	-0.24	-0.73	0.1	0
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	0.44	0.49
Span Bias	-0.24	-0.48	0.15	0
Calculated Drift				
Zero Drift (Run-Run)	0	0	-0.05	0
Span Drift	0	0.24	0.05	0
Run Results				
Raw Results	13.8	4.07	1.22	3.32
Corrected Results (ppmv)	13.84	4.08	1.18	3.3

Bayside 2B - Report				
RUN 7				
12/16/2003				
13:29				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.063	0.042	-0.006	0.025
Low Level Observed	-	-	-	4.457
Mid Level Observed	13.677	10.052	3.017	8.303
High Level Observed	20.88	18.012	6.304	12.588
% Difference from Zero to Target	0.25	0.21	-0.06	0.17
% Difference from Low to Target	0	0	0	-0.09
% Difference from Mid to Target	0.11	0.21	0.17	0.29
% Difference from High to Target	-0.08	0.06	0.14	-0.08
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.063	0.042	-0.006	0.025
Actual Span From Linearity	13.677	10.052	3.017	4.457
Initial Readings				
Zero	0.063	0.042	0.038	0.099
Span	13.616	9.955	3.032	4.457
Final Readings				
Zero	0.063	0.042	0.023	0.062
Span	13.616	9.955	3.032	4.457
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	0.44	0.49
Span Bias	-0.24	-0.48	0.15	0
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	0.29	0.25
Span Bias	-0.24	-0.48	0.15	0
Calculated Drift				
Zero Drift (Run-Run)	0	0	-0.15	-0.25
Span Drift	0	0	0	0
Run Results				
Raw Results	13.76	4.07	1.15	3.33
Corrected Results (ppmv)	13.8	4.07	1.12	3.32

Bayside 2B - Report				
RUN 8				
12/16/2003				
14:07				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.063	0.042	-0.006	0.025
Low Level Observed	-	-	-	4.457
Mid Level Observed	13.677	10.052	3.017	8.303
High Level Observed	20.88	18.012	6.304	12.588
% Difference from Zero to Target	0.25	0.21	-0.06	0.17
% Difference from Low to Target	0	0	0	-0.09
% Difference from Mid to Target	0.11	0.21	0.17	0.29
% Difference from High to Target	-0.08	0.06	0.14	-0.08
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.063	0.042	-0.006	0.025
Actual Span From Linearity	13.677	10.052	3.017	4.457
Initial Readings				
Zero	0.063	0.042	0.023	0.062
Span	13.616	9.955	3.032	4.457
Final Readings				
Zero	0.063	0.042	0.023	0.062
Span	13.616	9.955	3.032	4.421
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	0.29	0.25
Span Bias	-0.24	-0.48	0.15	0
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	0.29	0.25
Span Bias	-0.24	-0.48	0.15	-0.24
Calculated Drift				
Zero Drift (Run-Run)	0	0	0	0
Span Drift	0	0	0	-0.24
Run Results				
Raw Results	13.76	4.04	1.06	3.38
Corrected Results (ppmv)	13.8	4.04	1.03	3.39



Bayside 2B - Report				
RUN 9				
12/16/2003				
14:42				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.063	0.042	-0.006	0.025
Low Level Observed	-	-	-	4.457
Mid Level Observed	13.677	10.052	3.017	8.303
High Level Observed	20.88	18.012	6.304	12.588
% Difference from Zero to Target	0.25	0.21	-0.06	0.17
% Difference from Low to Target	0	0	0	-0.09
% Difference from Mid to Target	0.11	0.21	0.17	0.29
% Difference from High to Target	-0.08	0.06	0.14	-0.08
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.063	0.042	-0.006	0.025
Actual Span From Linearity	13.677	10.052	3.017	4.457
Initial Readings				
Zero	0.063	0.042	0.023	0.062
Span	13.616	9.955	3.032	4.421
Final Readings				
Zero	0.063	0.042	0.023	0.025
Span	13.616	9.955	3.027	4.421
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	0.29	0.25
Span Bias	-0.24	-0.48	0.15	-0.24
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	0.29	0
Span Bias	-0.24	-0.48	0.1	-0.24
Calculated Drift				
Zero Drift (Run-Run)	0	0	0	-0.25
Span Drift	0	0	-0.05	0
Run Results				
Raw Results	13.77	4.04	0.92	3.39
Corrected Results (ppmv)	13.81	4.04	0.9	3.42

RATA REFERENCE METHOD DATA LOG

Date	Time	O2 (%)	CO2 (%)	CO (PPM)	NOX (PPM)	Status
12/16/2003	7:52:01 AM	20.76	-0.06	1.72	0.1	
12/16/2003	7:52:31 AM	20.7	-0.06	5.25	0.1	
12/16/2003	7:53:01 AM	20.76	-0.01	5.13	0.1	
12/16/2003	7:53:31 AM	20.58	4.1	2.53	3.5	
12/16/2003	7:54:01 AM	20.7	-0.01	1.08	0.9	
12/16/2003	7:54:31 AM	17.58	-0.06	0.63	0.03	
12/16/2003	7:55:01 AM	2.08	-0.01	0.42	0.03	Linearity Check
12/16/2003	7:55:31 AM	0.31	-0.01	0.18	0.03	Linearity Check
12/16/2003	7:56:01 AM	0.12	-0.01	-0.04	0.03	Linearity Check
12/16/2003	7:56:31 AM	0.06	-0.01	-0.05	0.03	Linearity Check
12/16/2003	7:57:01 AM	0.12	0.04	-0.02	1.86	Linearity Check
12/16/2003	7:57:31 AM	0.12	-0.01	-0.1	10.21	Linearity Check
12/16/2003	7:58:01 AM	0.06	-0.01	-0.25	12.66	Linearity Check
12/16/2003	7:58:31 AM	-0.06	-0.01	-0.29	12.66	Linearity Check
12/16/2003	7:59:01 AM	0	-0.01	-0.28	12.59	Linearity Check
12/16/2003	7:59:31 AM	0	-0.01	-0.32	12.59	Linearity Check
12/16/2003	8:00:01 AM	0	-0.01	-0.32	12.66	Linearity Check
12/16/2003	8:00:31 AM	0.12	-0.01	-0.38	5.85	Linearity Check
12/16/2003	8:01:01 AM	0	0.04	-0.32	9	Linearity Check
12/16/2003	8:01:31 AM	-0.06	-0.01	-0.32	9.04	Linearity Check
12/16/2003	8:02:01 AM	0	-0.01	-0.33	8.93	Linearity Check
12/16/2003	8:02:31 AM	-0.06	0.04	-0.37	8.85	Linearity Check
12/16/2003	8:03:01 AM	-0.06	-0.01	-0.35	8.82	Linearity Check
12/16/2003	8:03:31 AM	-0.06	0.04	-0.3	8.78	Linearity Check
12/16/2003	8:04:01 AM	-0.06	0.04	-0.31	8.71	Linearity Check
12/16/2003	8:04:31 AM	-0.06	-0.01	-0.32	8.3	Linearity Check
12/16/2003	8:05:01 AM	-0.06	0.04	-0.3	8.3	Linearity Check
12/16/2003	8:05:31 AM	-0.06	-0.01	-0.29	6.36	Linearity Check
12/16/2003	8:06:02 AM	0	0.04	-0.26	4.31	Linearity Check
12/16/2003	8:06:31 AM	-0.06	-0.01	-0.29	4.64	Linearity Check
12/16/2003	8:07:01 AM	-0.06	-0.01	-0.29	4.53	Linearity Check
12/16/2003	8:07:31 AM	-0.06	0.04	-0.28	4.46	Linearity Check
12/16/2003	8:08:01 AM	-0.06	-0.01	-0.34	4.46	Linearity Check
12/16/2003	8:08:31 AM	-0.06	-0.01	-0.28	4.49	Linearity Check
12/16/2003	8:09:01 AM	-0.06	-0.01	-0.25	4.42	Linearity Check
12/16/2003	8:09:31 AM	-0.06	-0.01	-0.28	4.49	Linearity Check
12/16/2003	8:10:01 AM	-0.06	-0.01	-0.24	4.49	Linearity Check
12/16/2003	8:10:31 AM	0.06	-0.01	2.05	0.1	Linearity Check
12/16/2003	8:11:01 AM	-0.06	-0.01	4.84	0.1	Linearity Check
12/16/2003	8:11:31 AM	-0.06	0.04	5.26	0.03	Linearity Check
12/16/2003	8:12:01 AM	-0.06	-0.01	5.33	0.03	Linearity Check
12/16/2003	8:12:31 AM	-0.06	0.04	5.35	0.03	Linearity Check

12/16/2003	8:13:01 AM	-0.06	-0.01	6.3	0.03 Linearity Check
12/16/2003	8:13:31 AM	-0.06	-0.01	5.98	0.28 Linearity Check
12/16/2003	8:14:01 AM	0	-0.01	3.81	0.06 Linearity Check
12/16/2003	8:14:31 AM	0	-0.01	2.98	0.03 Linearity Check
12/16/2003	8:15:01 AM	-0.06	-0.01	2.93	0.03 Linearity Check
12/16/2003	8:15:31 AM	-0.06	-0.01	2.9	0.03 Linearity Check
12/16/2003	8:16:01 AM	-0.06	0.04	2.88	0.03 Linearity Check
12/16/2003	8:16:31 AM	-0.06	-0.01	2.88	0.03 Linearity Check
12/16/2003	8:17:01 AM	-0.06	0.04	4.54	-0.01 Linearity Check
12/16/2003	8:17:31 AM	-0.06	0.04	6.06	0.03 Linearity Check
12/16/2003	8:18:01 AM	-0.06	0.04	6.29	-0.01 Linearity Check
12/16/2003	8:18:31 AM	-0.06	-0.01	5.84	0.03 Linearity Check
12/16/2003	8:19:01 AM	-0.06	-0.01	3.78	0.03 Linearity Check
12/16/2003	8:19:31 AM	-0.06	-0.01	3.07	-0.01 Linearity Check
12/16/2003	8:20:01 AM	-0.06	-0.01	2.97	0.03 Linearity Check
12/16/2003	8:20:31 AM	-0.06	0.04	2.9	0.03 Linearity Check
12/16/2003	8:21:01 AM	-0.06	0.09	1.9	0.14 Linearity Check
12/16/2003	8:21:31 AM	4.7	0.04	0.7	0.14 Linearity Check
12/16/2003	8:22:01 AM	17.22	0.09	0.59	0.14 Linearity Check
12/16/2003	8:22:31 AM	13.62	0.19	0.67	0.06 Linearity Check
12/16/2003	8:23:01 AM	20.03	0.19	0.75	0.06 Linearity Check
12/16/2003	8:23:31 AM	20.58	0.19	0.74	0.06 Linearity Check
12/16/2003	8:24:01 AM	20.88	0.19	0.75	0.06 Linearity Check
12/16/2003	8:24:31 AM	20.94	0.04	0.73	0.06 Linearity Check
12/16/2003	8:25:01 AM	20.76	-0.01	0.55	0.1 Linearity Check
12/16/2003	8:25:31 AM	14.71	-0.01	0.1	0.03 Linearity Check
12/16/2003	8:26:01 AM	13.74	-0.01	-0.11	0.03 Linearity Check
12/16/2003	8:26:31 AM	13.68	-0.01	-0.16	0.03 Linearity Check
12/16/2003	8:27:01 AM	13.74	0.09	0.02	0.06 Linearity Check
12/16/2003	8:27:31 AM	13.74	0.04	0.41	0.1 Linearity Check
12/16/2003	8:28:01 AM	18.87	0.04	0.52	0.1 Linearity Check
12/16/2003	8:28:31 AM	14.17	9.66	0.48	9.8 Linearity Check
12/16/2003	8:29:01 AM	0.98	10.35	-0.05	0.68 Linearity Check
12/16/2003	8:29:31 AM	0.06	10.39	-0.32	0.57 Linearity Check
12/16/2003	8:30:01 AM	2.08	13.86	-0.46	0.03 Linearity Check
12/16/2003	8:30:31 AM	5.74	17.77	-0.46	0.03 Linearity Check
12/16/2003	8:31:01 AM	6.23	11.03	-0.46	0.03 Linearity Check
12/16/2003	8:31:31 AM	2.51	10.1	-0.46	0.79 Linearity Check
12/16/2003	8:32:01 AM	0.12	10.05	-0.46	0.43 Linearity Check
12/16/2003	8:32:32 AM	0	4.14	-0.3	3.43 Linearity Check
12/16/2003	8:33:02 AM	0	4.14	-0.3	3.43 Linearity Check
12/16/2003	8:33:31 AM	13.62	4.19	0.83	3.8 Converter Check - 1
12/16/2003	8:34:01 AM	13.74	4.14	0.85	3.83 Converter Check - 1

12/16/2003	8:34:31 AM	13.8	4.14	0.88	3.83 Converter Check - 1
12/16/2003	8:35:01 AM	13.8	4.19	0.83	3.87 Converter Check - 1
12/16/2003	8:35:31 AM	13.8	4.14	0.8	3.87 Converter Check - 1
12/16/2003	8:36:01 AM	13.8	4.19	0.87	3.87 Converter Check - 1
12/16/2003	8:36:31 AM	13.8	4.19	0.92	3.87 Converter Check - 1
12/16/2003	8:37:01 AM	13.8	4.19	0.83	3.87 Converter Check - 1
12/16/2003	8:37:31 AM	13.8	4.14	0.84	3.87 Converter Check - 1
12/16/2003	8:38:01 AM	13.8	4.19	0.88	3.91 Converter Check - 1
12/16/2003	8:38:31 AM	13.86	4.19	0.82	3.87 Converter Check - 1
12/16/2003	8:39:01 AM	13.8	4.14	0.86	3.83 Converter Check - 1
12/16/2003	8:39:31 AM	13.8	1.9	0.87	3.87 Converter Check - 1
12/16/2003	8:40:01 AM	10.75	0.14	1.38	3.91 Converter Check - 1
12/16/2003	8:40:31 AM	1.04	0.09	2.81	3.87 Converter Check - 1
12/16/2003	8:41:01 AM	0.12	0.04	3.12	3.87 Converter Check - 1
12/16/2003	8:41:31 AM	0.06	3.75	3.02	3.91 Converter Check - 1
12/16/2003	8:42:01 AM	9.04	4.14	1.89	3.87 Converter Check - 1
12/16/2003	8:42:31 AM	13.49	3.22	1.13	3.87 Converter Check - 1
12/16/2003	8:43:01 AM	4.4	10.05	0.75	3.87 Converter Check - 1
12/16/2003	8:43:31 AM	0.25	10	-0.15	3.91 Converter Check - 1
12/16/2003	8:44:01 AM	0	10	-0.35	3.91 Converter Check - 1
12/16/2003	8:44:31 AM	0	7.46	-0.3	3.91 Converter Check - 1
12/16/2003	8:45:01 AM	1.47	0.09	1.15	3.87 Converter Check - 1
12/16/2003	8:45:31 AM	0.06	0.09	2.94	3.91 Converter Check - 1
12/16/2003	8:46:01 AM	0	0.04	2.39	3.91 Converter Check - 1
12/16/2003	8:46:31 AM	-0.06	0.04	0.59	3.87 Converter Check - 1
12/16/2003	8:47:01 AM	-0.06	-0.01	0.15	3.87 Converter Check - 1
12/16/2003	8:47:31 AM	-0.06	-0.01	0.07	3.87 Converter Check - 1
12/16/2003	8:48:01 AM	0	-0.01	0.04	3.91 Converter Check - 1
12/16/2003	8:48:31 AM	-0.06	-0.01	-0.04	3.87 Converter Check - 1
12/16/2003	8:49:01 AM	-0.06	-0.01	1.15	3.87 Converter Check - 1
12/16/2003	8:49:31 AM	1.04	0.04	2.74	3.91 Converter Check - 1
12/16/2003	8:50:01 AM	0.49	-0.01	3.04	3.87 Converter Check - 1
12/16/2003	8:50:31 AM	0	-0.01	3.01	3.91 Converter Check - 1
12/16/2003	8:51:01 AM	0.37	-0.01	2.82	3.87 Converter Check - 1
12/16/2003	8:51:31 AM	10.93	-0.06	1.05	3.87 Converter Check - 1
12/16/2003	8:52:01 AM	13.37	-0.01	0.11	3.87 Converter Check - 1
12/16/2003	8:52:31 AM	13.55	-0.01	0.03	3.87 Converter Check - 1
12/16/2003	8:53:01 AM	13.55	-0.01	-0.03	3.91 Converter Check - 1
12/16/2003	8:53:31 AM	13.62	3.95	0.13	3.87 Converter Check - 1
12/16/2003	8:54:01 AM	13.68	0.04	0.61	3.87 Converter Check - 1
12/16/2003	8:54:31 AM	3.05	4.05	0.47	3.87 Converter Check - 1
12/16/2003	8:55:01 AM	12.58	4.05	0.78	3.87 Converter Check - 1
12/16/2003	8:55:31 AM	13.68	4.05	0.82	3.87 Converter Check - 1

12/16/2003	8:56:01 AM	13.8	4.1	0.82	3.87 Converter Check - 1
12/16/2003	8:56:31 AM	13.8	4.05	0.86	3.87 Converter Check - 1
12/16/2003	8:57:01 AM	13.8	4.1	0.86	3.87 Converter Check - 1
12/16/2003	8:57:31 AM	13.8	4.1	0.84	3.91 Converter Check - 1
12/16/2003	8:58:01 AM	13.8	4.1	0.82	3.87 Converter Check - 1
12/16/2003	8:58:31 AM	13.8	4.05	0.77	3.87 Converter Check - 1
12/16/2003	8:59:01 AM	13.8	4.05	0.81	3.87 Converter Check - 1
12/16/2003	8:59:31 AM	13.74	4.1	0.89	3.91 Converter Check - 1
12/16/2003	9:00:01 AM	13.8	4.05	0.84	3.87 Converter Check - 1
12/16/2003	9:00:31 AM	13.8	4.05	0.81	3.87 Converter Check - 1
12/16/2003	9:01:01 AM	13.8	4.05	0.85	3.91 Converter Check - 1
12/16/2003	9:01:31 AM	13.8	4.05	0.85	3.87 Converter Check - 1
12/16/2003	9:02:01 AM	13.8	4.1	0.83	3.91 Converter Check - 1
12/16/2003	9:02:31 AM	13.8	4.05	0.84	3.87 Converter Check - 1
12/16/2003	9:03:01 AM	13.8	4.1	0.8	3.87 Converter Check - 1
12/16/2003	9:03:31 AM	13.8	4.1	0.81	3.87 Converter Check - 2
12/16/2003	9:04:01 AM	13.8	4.1	0.85	3.83
12/16/2003	9:04:31 AM	13.8	4.05	0.81	3.47
12/16/2003	9:05:01 AM	13.8	0.09	0.74	0.17
12/16/2003	9:05:31 AM	2.38	0.04	0.37	0.1 Initial Span - Zero
12/16/2003	9:06:01 AM	0.31	0.04	0.16	0.1 Initial Span - Zero
12/16/2003	9:06:31 AM	0.12	-0.01	0.02	0.06 Initial Span - Zero
12/16/2003	9:07:01 AM	0.06	0.04	0.02	0.1 Initial Span - Zero
12/16/2003	9:07:31 AM	0.06	-0.01	0.06	0.06 Initial Span - Zero
12/16/2003	9:08:01 AM	0.06	0.04	-0.01	0.06 Initial Span - Zero
12/16/2003	9:08:31 AM	0	-0.01	-0.01	0.06 Initial Span - Zero
12/16/2003	9:09:01 AM	5.68	-0.01	-0.04	0.06 Initial Span - Zero
12/16/2003	9:09:31 AM	12.88	0.04	0.01	0.06 Initial Span - Zero
12/16/2003	9:10:01 AM	13.55	-0.01	-0.01	0.06 Initial Span - Zero
12/16/2003	9:10:31 AM	13.55	-0.01	0.02	0.06 Initial Span - Span
12/16/2003	9:11:01 AM	13.62	-0.01	0.13	0.06 Initial Span - Span
12/16/2003	9:11:31 AM	6.53	-0.01	1.7	0.06 Initial Span - Span
12/16/2003	9:12:01 AM	0.55	-0.01	2.88	0.1 Initial Span - Span
12/16/2003	9:12:31 AM	0.06	-0.01	6.32	0.06 Initial Span - Span
12/16/2003	9:13:01 AM	0.06	0.04	3.05	0.06 Initial Span - Span
12/16/2003	9:13:31 AM	0	-0.01	3.08	0.06 Initial Span - Span
12/16/2003	9:14:01 AM	0	0.77	3.06	0.21 Initial Span - Span
12/16/2003	9:14:31 AM	0.61	-0.01	2.28	3.43 Initial Span - Span
12/16/2003	9:15:01 AM	0.06	-0.01	0.29	4.46 Initial Span - Span
12/16/2003	9:15:31 AM	-0.06	-0.01	-0.19	4.42 Initial Span - Span
12/16/2003	9:16:01 AM	-0.06	9.17	-0.06	2.88 Initial Span - Span
12/16/2003	9:16:31 AM	-0.06	9.86	-0.01	0.54 Initial Span - Span
12/16/2003	9:17:01 AM	-0.06	9.91	-0.3	0.39 Initial Span - Span

12/16/2003	9:17:31 AM	-0.06	9.95	-0.28	0.32 Initial Span - Span
12/16/2003	9:18:01 AM	-0.06	9.95	-0.4	0.32 Initial Span - Span
12/16/2003	9:18:31 AM	-0.06	4.14	-0.16	3.39 Initial Span - Span
12/16/2003	9:19:01 AM	11.11	4.14	0.46	3.39 Initial Span - Span
12/16/2003	9:19:31 AM	13.55	4.1	0.76	3.36 Initial Span - Span
12/16/2003	9:20:01 AM	13.68	4.1	0.86	3.39 Initial Span - Span
12/16/2003	9:20:31 AM	13.74	4.1	0.86	3.43 Initial Span - Span
12/16/2003	9:21:01 AM	12.39	0.09	0.7	0.1 Initial Span - Span
12/16/2003	9:21:31 AM	1.41	0.04	0.36	0.03 Initial Span - Span
12/16/2003	9:22:01 AM	0.19	0.04	0.27	0.03 Initial Span - Span
12/16/2003	9:22:31 AM	0.06	0.04	0.11	0.03 Initial Span - Span
12/16/2003	9:23:01 AM	0	-0.01	0.06	0.06 Initial Span - Span
12/16/2003	9:23:31 AM	0	0.04	-0.01	0.03 Initial Span - Span
12/16/2003	9:24:01 AM	1.41	4.05	0.39	3.32 Initial Span - Span
12/16/2003	9:24:31 AM	12.03	4.05	0.76	3.36 Initial Span - Span
12/16/2003	9:25:01 AM	13.62	4.1	0.89	3.47 Initial Span - Span
12/16/2003	9:25:31 AM	13.68	4.1	0.86	3.39 Initial Span - Span
12/16/2003	9:26:01 AM	13.74	4.05	0.81	3.43 Initial Span - Span
12/16/2003	9:26:31 AM	13.68	4.1	0.88	3.43 Initial Span - Span
12/16/2003	9:27:01 AM	13.74	4.05	0.89	3.43 Initial Span - Span
12/16/2003	9:27:31 AM	13.74	4.1	0.96	3.47 Initial Span - Span
12/16/2003	9:28:01 AM	13.8	4.1	0.92	3.43 Initial Span - Span
12/16/2003	9:28:31 AM	13.74	4.1	0.93	3.47 Initial Span - Span
12/16/2003	9:29:01 AM	13.74	4.1	0.93	3.47 Initial Span - Span
12/16/2003	9:29:31 AM	13.8	4.05	0.89	3.47 Initial Span - Span
12/16/2003	9:30:01 AM	13.8	4.1	0.97	3.47 Initial Span - Span
12/16/2003	9:30:31 AM	13.8	4.1	0.88	3.47 Initial Span - Span
12/16/2003	9:31:01 AM	13.8	4.1	0.97	3.47 Initial Span - Span
12/16/2003	9:31:32 AM	13.8	4.1	0.99	3.47 Initial Span - Span
12/16/2003	9:32:02 AM	13.8	4.1	0.99	3.47 Initial Span - Span
12/16/2003	9:32:32 AM	13.8	4.1	0.99	3.47 Initial Span - Span
12/16/2003	9:33:02 AM	13.8	4.1	0.99	3.47 Initial Span - Span
12/16/2003	9:33:32 AM	13.8	4.1	0.99	3.47 Initial Span - Span
12/16/2003	9:34:02 AM	13.8	4.1	0.99	3.47 Initial Span - Span
12/16/2003	9:34:31 AM	13.8	4.05	0.96	3.54 Strat Test (Run 1) - 1
12/16/2003	9:35:01 AM	13.86	4.14	0.96	3.54 Strat Test (Run 1) - 1
12/16/2003	9:35:31 AM	13.8	4.1	0.92	3.5 Strat Test (Run 1) - 1
12/16/2003	9:36:01 AM	13.86	4.1	0.92	3.5 Strat Test (Run 1) - 1
12/16/2003	9:36:31 AM	13.86	4.14	0.98	3.5 Strat Test (Run 1) - 1
12/16/2003	9:37:01 AM	13.8	4.1	1.02	3.54 Strat Test (Run 1) - 1
12/16/2003	9:37:31 AM	13.8	4.1	1.01	3.5 Strat Test (Run 1) - 1
12/16/2003	9:38:01 AM	13.8	4.1	0.97	3.47 Strat Test (Run 1) - 1
12/16/2003	9:38:31 AM	13.8	4.1	0.99	3.43 Strat Test (Run 1) - 1

12/16/2003	9:39:01 AM	13.86	4.14	0.94	3.47 Strat Test (Run 1) - 1
12/16/2003	9:39:31 AM	13.8	4.05	0.92	3.43 Strat Test (Run 1) - 1
12/16/2003	9:40:01 AM	13.86	4.1	0.91	3.47 Run Paused
12/16/2003	9:40:31 AM	13.86	4.1	0.92	3.43 Run Paused
12/16/2003	9:41:01 AM	13.86	4.1	0.95	3.36 Run Paused
12/16/2003	9:41:31 AM	13.86	4.1	0.9	3.39 Run Paused
12/16/2003	9:42:01 AM	13.86	4.1	0.86	3.39 Run Paused
12/16/2003	9:42:31 AM	13.86	3.46	0.85	3.32 Run Paused
12/16/2003	9:43:01 AM	16.3	0.29	0.66	0.21 Run Paused
12/16/2003	9:43:31 AM	18.56	4.05	0.58	3.47 Run Paused
12/16/2003	9:44:01 AM	14.29	4.05	0.88	3.5 Run Paused
12/16/2003	9:44:31 AM	13.86	4.1	0.9	3.5 Run Paused
12/16/2003	9:45:01 AM	13.86	4.1	0.95	3.5 Strat Test (Run 1) - 1
12/16/2003	9:45:31 AM	13.86	4.1	1.04	3.5 Strat Test (Run 1) - 1
12/16/2003	9:46:01 AM	13.8	4.05	1.03	3.5 Strat Test (Run 1) - 1
12/16/2003	9:46:31 AM	13.8	4.05	0.91	3.5 Strat Test (Run 1) - 1
12/16/2003	9:47:01 AM	13.8	4.1	1.11	3.58 Strat Test (Run 1) - 1
12/16/2003	9:47:31 AM	13.8	4.05	1.34	3.54 Strat Test (Run 1) - 1
12/16/2003	9:48:01 AM	13.8	4.1	1.17	3.54 Strat Test (Run 1) - 1
12/16/2003	9:48:31 AM	13.8	4.1	1.13	3.54 Strat Test (Run 1) - 1
12/16/2003	9:49:01 AM	13.8	4.1	0.96	3.54 Strat Test (Run 1) - 1
12/16/2003	9:49:31 AM	13.8	4.1	0.87	3.54 Strat Test (Run 1) - 1
12/16/2003	9:50:01 AM	13.8	4.05	0.96	3.58 Strat Test (Run 1) - 1
12/16/2003	9:50:31 AM	13.8	4.05	1.16	3.58 Strat Test (Run 1) - 1
12/16/2003	9:51:01 AM	13.86	4.1	1.2	3.61 Strat Test (Run 1) - 1
12/16/2003	9:51:31 AM	13.8	4.1	1.14	3.61 Run Paused
12/16/2003	9:52:01 AM	13.86	3.61	1.18	3.65 Run Paused
12/16/2003	9:52:31 AM	16.3	0.09	0.76	0.21 Run Paused
12/16/2003	9:53:01 AM	20.51	0.09	0.48	0.17 Run Paused
12/16/2003	9:53:31 AM	20.94	0.04	0.42	0.17 Run Paused
12/16/2003	9:54:01 AM	21	0.24	0.41	0.14 Run Paused
12/16/2003	9:54:31 AM	18.87	4.05	0.86	3.5 Run Paused
12/16/2003	9:55:01 AM	14.35	4.05	1.21	3.54 Run Paused
12/16/2003	9:55:31 AM	13.86	4.1	1.01	3.54 Run Paused
12/16/2003	9:56:01 AM	13.86	4.1	1.19	3.5 Strat Test (Run 1) - 1
12/16/2003	9:56:31 AM	13.86	4.1	1.06	3.5 Strat Test (Run 1) - 1
12/16/2003	9:57:01 AM	13.86	4.1	1.13	3.5 Strat Test (Run 1) - 1
12/16/2003	9:57:31 AM	13.86	4.1	1.21	3.5 Strat Test (Run 1) - 1
12/16/2003	9:58:01 AM	13.86	4.1	1.15	3.5 Strat Test (Run 1) - 1
12/16/2003	9:58:31 AM	13.8	4.1	1.2	3.5 Strat Test (Run 1) - 1
12/16/2003	9:59:02 AM	13.8	4.05	1.19	3.5 Strat Test (Run 1) - 1
12/16/2003	9:59:31 AM	13.8	4.1	1.04	3.5 Strat Test (Run 1) - 1
12/16/2003	10:00:01 AM	13.86	4.1	0.96	3.54 Strat Test (Run 1) - 1



12/16/2003	10:00:31 AM	13.8	4.1	0.96	3.5 Strat Test (Run 1) - 1
12/16/2003	10:01:01 AM	13.8	4.1	0.93	3.54 Strat Test (Run 1) - 1
12/16/2003	10:01:31 AM	13.8	4.05	1.01	3.5 Strat Test (Run 1) - 1
12/16/2003	10:02:01 AM	13.86	4.1	1.07	3.47 Strat Test (Run 1) - 1
12/16/2003	10:02:31 AM	13.86	4.1	1	3.47 Run Paused
12/16/2003	10:03:01 AM	13.86	4.1	0.97	3.43 Run Paused
12/16/2003	10:03:31 AM	13.8	0.14	1.02	0.54 Run Paused
12/16/2003	10:04:01 AM	19.23	0.09	0.64	0.14 Run Paused
12/16/2003	10:04:31 AM	20.88	0.09	0.43	0.14 Run Paused
12/16/2003	10:05:01 AM	21	0.04	0.35	0.14 Run Paused
12/16/2003	10:05:31 AM	20.51	4.05	0.53	3.39 Run Paused
12/16/2003	10:06:01 AM	14.71	4.05	1.05	3.43 Run Paused
12/16/2003	10:06:31 AM	13.98	4.1	1.24	3.47 Run Paused
12/16/2003	10:07:01 AM	13.92	4.1	1.25	3.43 Run Paused
12/16/2003	10:07:31 AM	13.92	4.05	1.29	3.47 Strat Test (Run 1) - 1
12/16/2003	10:08:01 AM	13.86	4.1	1.24	3.47 Strat Test (Run 1) - 1
12/16/2003	10:08:31 AM	13.86	4.05	1.31	3.47 Strat Test (Run 1) - 1
12/16/2003	10:09:01 AM	13.8	4.05	1.22	3.47 Strat Test (Run 1) - 1
12/16/2003	10:09:31 AM	13.86	4.1	1.23	3.47 Strat Test (Run 1) - 1
12/16/2003	10:10:01 AM	13.86	4.05	1.21	3.5 Strat Test (Run 1) - 1
12/16/2003	10:10:31 AM	13.86	4.05	1.3	3.47 Strat Test (Run 1) - 1
12/16/2003	10:11:01 AM	13.86	4.1	1.38	3.5 Strat Test (Run 1) - 1
12/16/2003	10:11:31 AM	13.8	4.1	1.37	3.43 Strat Test (Run 1) - 1
12/16/2003	10:12:01 AM	13.8	4.05	1.48	3.43 Strat Test (Run 1) - 1
12/16/2003	10:12:31 AM	13.86	4.1	1.37	3.47 Strat Test (Run 1) - 1
12/16/2003	10:13:01 AM	13.86	4.1	1.28	3.47 Strat Test (Run 1) - 2
12/16/2003	10:13:31 AM	13.86	4.1	1.37	3.43
12/16/2003	10:14:01 AM	13.86	4.1	1.49	3.43
12/16/2003	10:14:31 AM	13.49	0.09	1.29	0.21
12/16/2003	10:15:01 AM	2.08	0.04	0.65	0.14
12/16/2003	10:15:31 AM	0.25	0.04	0.27	0.1 Run 1 Span - Zero
12/16/2003	10:16:01 AM	0.12	0.04	0.16	0.1 Run 1 Span - Zero
12/16/2003	10:16:31 AM	0.06	-0.01	0.13	0.14 Run 1 Span - Zero
12/16/2003	10:17:01 AM	0.06	-0.01	0.07	0.1 Run 1 Span - Zero
12/16/2003	10:17:31 AM	0	-0.01	0.13	0.1 Run 1 Span - Zero
12/16/2003	10:18:01 AM	0.06	-0.01	0.04	3.5 Run 1 Span - Zero
12/16/2003	10:18:31 AM	0	0.04	-0.09	4.46 Run 1 Span - Span
12/16/2003	10:19:01 AM	0	-0.01	-0.22	4.46 Run 1 Span - Span
12/16/2003	10:19:31 AM	0	-0.01	-0.03	3.8 Run 1 Span - Span
12/16/2003	10:20:01 AM	0.19	-0.01	1.82	0.1 Run 1 Span - Span
12/16/2003	10:20:31 AM	0	-0.01	2.97	0.1 Run 1 Span - Span
12/16/2003	10:21:01 AM	0	0.04	3.07	0.1 Run 1 Span - Span
12/16/2003	10:21:31 AM	-0.06	-0.01	3.03	0.06 Run 1 Span - Span

12/16/2003	10:22:01 AM	-0.06	9.22	2.32	1.01 Run 1 Span - Span
12/16/2003	10:22:31 AM	-0.06	9.91	0.42	0.39 Run 1 Span - Span
12/16/2003	10:23:01 AM	-0.06	9.95	-0.22	0.36 Run 1 Span - Span
12/16/2003	10:23:31 AM	-0.06	9.95	-0.28	0.32 Run 1 Span - Span
12/16/2003	10:24:01 AM	0.67	0.14	-0.14	0.06 Run 1 Span - Span
12/16/2003	10:24:31 AM	11.78	0.04	0.19	0.06 Run 1 Span - Span
12/16/2003	10:25:01 AM	13.43	0.04	0.31	0.06 Run 1 Span - Span
12/16/2003	10:25:31 AM	13.55	-0.01	0.25	0.06 Run 1 Span - Span
12/16/2003	10:26:01 AM	13.62	-0.01	0.13	0.06 Run 1 Span - Span
12/16/2003	10:26:31 AM	13.62	4	0.36	2.99 Run 1 Span - Span
12/16/2003	10:27:01 AM	13.74	4.05	1.09	3.32 Run 1 Span - Span
12/16/2003	10:27:31 AM	13.8	4.05	1.27	3.32 Run 1 Span - Span
12/16/2003	10:28:01 AM	13.8	4.1	1.02	3.36 Run 1 Span - Span
12/16/2003	10:28:31 AM	13.8	4.05	0.9	3.32 Run 1 Span - Span
12/16/2003	10:29:01 AM	13.8	4.05	0.83	3.36 Run 1 Span - Span
12/16/2003	10:29:31 AM	13.8	4.1	0.83	3.36 Run 1 Span - Span
12/16/2003	10:30:01 AM	13.8	4.05	0.96	3.32 Run 1 Span - Span
12/16/2003	10:30:31 AM	13.8	4.1	1.27	3.32 Run 1 Span - Span
12/16/2003	10:31:01 AM	13.8	4.05	1.07	3.36 Run 1 Span - Span
12/16/2003	10:31:31 AM	13.8	4.1	1.03	3.36 Run 1 Span - Span
12/16/2003	10:32:01 AM	13.8	4.1	1.03	3.36 Run 1 Span - Span
12/16/2003	10:32:31 AM	13.8	4.05	1.21	3.39 Run 2 - 1
12/16/2003	10:33:01 AM	13.8	4.05	1.35	3.39 Run 2 - 1
12/16/2003	10:33:31 AM	13.8	4.1	1.44	3.43 Run 2 - 1
12/16/2003	10:34:01 AM	13.8	4.05	1.44	3.43 Run 2 - 1
12/16/2003	10:34:31 AM	13.8	4.1	1.22	3.47 Run 2 - 1
12/16/2003	10:35:01 AM	13.8	4.1	1.15	3.43 Run 2 - 1
12/16/2003	10:35:31 AM	13.8	4.1	1.02	3.47 Run 2 - 1
12/16/2003	10:36:01 AM	13.8	4.05	1.08	3.47 Run 2 - 1
12/16/2003	10:36:31 AM	13.86	4.1	1.07	3.47 Run 2 - 1
12/16/2003	10:37:01 AM	13.8	4.1	1.2	3.5 Run 2 - 1
12/16/2003	10:37:31 AM	13.8	4.05	1.28	3.47 Run 2 - 1
12/16/2003	10:38:01 AM	13.8	4.05	1.24	3.47 Run 2 - 1
12/16/2003	10:38:31 AM	13.8	4.1	1.21	3.5 Run 2 - 1
12/16/2003	10:39:01 AM	13.86	4.1	1.15	3.43 Run 2 - 1
12/16/2003	10:39:31 AM	13.86	4.1	1.21	3.47 Run 2 - 1
12/16/2003	10:40:01 AM	13.86	4.14	1.34	3.47 Run 2 - 1
12/16/2003	10:40:31 AM	13.86	4.1	1.31	3.39 Run 2 - 1
12/16/2003	10:41:01 AM	13.8	4.1	1.25	3.43 Run 2 - 1
12/16/2003	10:41:31 AM	13.8	4.1	1.22	3.47 Run 2 - 1
12/16/2003	10:42:01 AM	13.86	4.1	1.34	3.43 Run 2 - 1
12/16/2003	10:42:31 AM	13.86	4.1	1.62	3.43 Run 2 - 1
12/16/2003	10:43:01 AM	13.8	4.05	1.58	3.43 Run 2 - 1

12/16/2003	10:43:31 AM	13.86	4.1	1.29	3.43 Run 2 - 1
12/16/2003	10:44:01 AM	13.86	4.1	1.19	3.43 Run 2 - 1
12/16/2003	10:44:33 AM	13.86	4.05	1.17	3.43 Run 2 - 1
12/16/2003	10:45:01 AM	13.92	4.1	1.09	3.39 Run 2 - 1
12/16/2003	10:45:31 AM	13.86	4.05	1.01	3.43 Run 2 - 1
12/16/2003	10:46:01 AM	13.86	4.1	1.14	3.39 Run 2 - 1
12/16/2003	10:46:31 AM	13.8	4.05	1.09	3.43 Run 2 - 1
12/16/2003	10:47:01 AM	13.8	4.1	1.15	3.43 Run 2 - 1
12/16/2003	10:47:31 AM	13.86	4.05	1.14	3.39 Run 2 - 1
12/16/2003	10:48:01 AM	13.86	4.1	1.15	3.43 Run 2 - 1
12/16/2003	10:48:31 AM	13.8	4.05	1.22	3.39 Run 2 - 1
12/16/2003	10:49:01 AM	13.86	4.1	1.13	3.39 Run 2 - 1
12/16/2003	10:49:31 AM	13.86	4.1	1.01	3.43 Run 2 - 1
12/16/2003	10:50:01 AM	13.86	4.1	1.04	3.43 Run 2 - 1
12/16/2003	10:50:31 AM	13.8	4.05	1.13	3.39 Run 2 - 1
12/16/2003	10:51:01 AM	13.8	4.05	1.12	3.47 Run 2 - 1
12/16/2003	10:51:31 AM	13.8	4.1	1.01	3.47 Run 2 - 1
12/16/2003	10:52:01 AM	13.86	4.1	0.98	3.43 Run 2 - 1
12/16/2003	10:52:31 AM	13.8	4.1	1.05	3.47 Run 2 - 1
12/16/2003	10:53:01 AM	13.8	4.1	0.94	3.47 Run 2 - 1
12/16/2003	10:53:31 AM	13.86	4.1	0.99	3.47
12/16/2003	10:54:01 AM	13.86	0.09	0.88	0.21
12/16/2003	10:54:31 AM	3.67	0.04	0.56	0.14 Run 2 Span - Zero
12/16/2003	10:55:01 AM	0.37	0.04	0.19	0.1 Run 2 Span - Zero
12/16/2003	10:55:31 AM	0.12	0.04	0.08	0.1 Run 2 Span - Zero
12/16/2003	10:56:01 AM	0.06	-0.01	0.07	0.1 Run 2 Span - Zero
12/16/2003	10:56:31 AM	0	-0.01	0.13	0.1 Run 2 Span - Zero
12/16/2003	10:57:01 AM	0	-0.01	0.15	0.21 Run 2 Span - Zero
12/16/2003	10:57:31 AM	0	-0.01	-0.02	4.49 Run 2 Span - Zero
12/16/2003	10:58:01 AM	0.06	-0.01	-0.1	4.42 Run 2 Span - Span
12/16/2003	10:58:31 AM	0	-0.01	-0.19	4.42 Run 2 Span - Span
12/16/2003	10:59:01 AM	0	-0.01	1.05	0.17 Run 2 Span - Span
12/16/2003	10:59:31 AM	0	0.04	2.81	0.1 Run 2 Span - Span
12/16/2003	11:00:01 AM	0	-0.01	3.09	0.1 Run 2 Span - Span
12/16/2003	11:00:31 AM	0	0.04	3.12	0.06 Run 2 Span - Span
12/16/2003	11:01:01 AM	0	-0.01	3.02	0.1 Run 2 Span - Span
12/16/2003	11:01:31 AM	8.24	-0.01	1.25	0.06 Run 2 Span - Span
12/16/2003	11:02:01 AM	13.13	-0.01	0.17	0.1 Run 2 Span - Span
12/16/2003	11:02:31 AM	13.55	-0.01	0.06	0.1 Run 2 Span - Span
12/16/2003	11:03:01 AM	13.62	-0.01	0.06	0.06 Run 2 Span - Span
12/16/2003	11:03:31 AM	13.62	-0.06	0.1	0.06 Run 2 Span - Span
12/16/2003	11:04:01 AM	13.37	9.56	0.06	0.61 Run 2 Span - Span
12/16/2003	11:04:31 AM	2.02	9.91	-0.14	0.32 Run 2 Span - Span

12/16/2003	11:05:01 AM	0.12	9.91	-0.27	0.36	Run 2 Span - Span
12/16/2003	11:05:31 AM	-0.06	9.91	-0.28	0.32	Run 2 Span - Span
12/16/2003	11:06:01 AM	-0.06	9.91	-0.32	0.28	Run 2 Span - Span
12/16/2003	11:06:31 AM	-0.06	4.24	-0.24	0.94	Run 2 Span - Span
12/16/2003	11:07:01 AM	9.34	4.1	0.5	3.43	Run 2 Span - Span
12/16/2003	11:07:31 AM	13.37	4.1	0.97	3.43	Run 2 Span - Span
12/16/2003	11:08:01 AM	13.68	4.1	0.98	3.47	Run 2 Span - Span
12/16/2003	11:08:32 AM	13.74	4.1	0.99	3.43	Run 2 Span - Span
12/16/2003	11:09:01 AM	13.74	4.1	0.99	3.43	Run 3 - 1
12/16/2003	11:09:31 AM	13.74	4.1	0.97	3.39	Run 3 - 1
12/16/2003	11:10:01 AM	13.8	4.1	0.93	3.39	Run 3 - 1
12/16/2003	11:10:31 AM	13.8	4.1	0.94	3.43	Run 3 - 1
12/16/2003	11:11:01 AM	13.74	4.1	0.93	3.39	Run 3 - 1
12/16/2003	11:11:31 AM	13.8	4.1	0.94	3.39	Run 3 - 1
12/16/2003	11:12:01 AM	13.8	4.1	0.95	3.43	Run 3 - 1
12/16/2003	11:12:31 AM	13.8	4.1	0.92	3.36	Run 3 - 1
12/16/2003	11:13:01 AM	13.8	4.05	0.96	3.39	Run 3 - 1
12/16/2003	11:13:31 AM	13.8	4.1	0.93	3.39	Run 3 - 1
12/16/2003	11:14:01 AM	13.8	4.1	0.92	3.43	Run 3 - 1
12/16/2003	11:14:31 AM	13.86	4.1	0.9	3.39	Run 3 - 1
12/16/2003	11:15:01 AM	13.86	4.1	0.88	3.36	Run 3 - 1
12/16/2003	11:15:31 AM	13.8	4.05	0.92	3.43	Run 3 - 1
12/16/2003	11:16:01 AM	13.86	4.1	0.93	3.39	Run 3 - 1
12/16/2003	11:16:31 AM	13.86	4.1	0.9	3.39	Run 3 - 1
12/16/2003	11:17:01 AM	13.8	4.05	0.93	3.43	Run 3 - 1
12/16/2003	11:17:31 AM	13.8	4.05	0.9	3.43	Run 3 - 1
12/16/2003	11:18:01 AM	13.86	4.1	0.93	3.47	Run 3 - 1
12/16/2003	11:18:31 AM	13.86	4.1	0.93	3.43	Run 3 - 1
12/16/2003	11:19:01 AM	13.86	4.1	0.91	3.47	Run 3 - 1
12/16/2003	11:19:31 AM	13.8	4.05	0.89	3.43	Run 3 - 1
12/16/2003	11:20:01 AM	13.8	4.05	0.9	3.43	Run 3 - 1
12/16/2003	11:20:31 AM	13.8	4.05	0.9	3.43	Run 3 - 1
12/16/2003	11:21:01 AM	13.8	4.05	0.97	3.43	Run 3 - 1
12/16/2003	11:21:31 AM	13.8	4.1	0.88	3.39	Run 3 - 1
12/16/2003	11:22:01 AM	13.8	4.1	0.9	3.43	Run 3 - 1
12/16/2003	11:22:31 AM	13.8	4.1	0.92	3.43	Run 3 - 1
12/16/2003	11:23:01 AM	13.8	4.1	0.97	3.43	Run 3 - 1
12/16/2003	11:23:31 AM	13.86	4.1	1.13	3.39	Run 3 - 1
12/16/2003	11:24:01 AM	13.8	4.1	1.19	3.39	Run 3 - 1
12/16/2003	11:24:31 AM	13.8	4.1	1.07	3.39	Run 3 - 1
12/16/2003	11:25:01 AM	13.8	4.1	1.22	3.43	Run 3 - 1
12/16/2003	11:25:31 AM	13.8	4.1	1.27	3.39	Run 3 - 1
12/16/2003	11:26:01 AM	13.8	4.05	1.2	3.39	Run 3 - 1

12/16/2003	11:26:31 AM	13.8	4.1	1.06	3.39 Run 3 - 1
12/16/2003	11:27:01 AM	13.86	4.1	1.03	3.43 Run 3 - 1
12/16/2003	11:27:31 AM	13.8	4.05	1.01	3.32 Run 3 - 1
12/16/2003	11:28:01 AM	13.8	4.05	0.98	3.39 Run 3 - 1
12/16/2003	11:28:31 AM	13.86	4.1	0.98	3.36 Run 3 - 1
12/16/2003	11:29:01 AM	13.86	4.1	1.01	3.39 Run 3 - 1
12/16/2003	11:29:31 AM	13.8	4.05	1.22	3.39 Run 3 - 1
12/16/2003	11:30:01 AM	13.8	4.05	1.33	3.32 Run 3 - 1
12/16/2003	11:30:31 AM	13.86	4.05	1.3	3.32
12/16/2003	11:31:01 AM	12.46	0.09	0.9	0.17
12/16/2003	11:31:31 AM	1.47	0.09	0.44	0.1 Run 3 Span - Zero
12/16/2003	11:32:01 AM	0.19	-0.01	0.28	0.1 Run 3 Span - Zero
12/16/2003	11:32:31 AM	0.12	0.04	0.17	0.06 Run 3 Span - Zero
12/16/2003	11:33:01 AM	0.06	-0.01	0.13	0.06 Run 3 Span - Zero
12/16/2003	11:33:31 AM	0.12	-0.01	0.11	0.06 Run 3 Span - Zero
12/16/2003	11:34:01 AM	0	0.04	0.07	1.38 Run 3 Span - Zero
12/16/2003	11:34:31 AM	0.06	0.04	-0.05	4.42 Run 3 Span - Zero
12/16/2003	11:35:01 AM	0.06	0.04	-0.18	4.38 Run 3 Span - Span
12/16/2003	11:35:31 AM	0	-0.01	-0.16	4.35 Run 3 Span - Span
12/16/2003	11:36:01 AM	0	8.59	-0.13	3.39 Run 3 Span - Span
12/16/2003	11:36:31 AM	-0.06	9.81	-0.16	0.39 Run 3 Span - Span
12/16/2003	11:37:01 AM	-0.06	9.91	-0.24	0.36 Run 3 Span - Span
12/16/2003	11:37:31 AM	-0.06	9.91	-0.27	0.32 Run 3 Span - Span
12/16/2003	11:38:01 AM	-0.06	9.91	-0.31	0.32 Run 3 Span - Span
12/16/2003	11:38:31 AM	-0.06	0.24	-0.19	0.1 Run 3 Span - Span
12/16/2003	11:39:01 AM	10.75	0.09	0.14	0.06 Run 3 Span - Zero
12/16/2003	11:39:31 AM	13.31	0.04	0.29	0.06 Run 3 Span - Zero
12/16/2003	11:40:01 AM	13.55	0.04	0.3	0.06 Run 3 Span - Zero
12/16/2003	11:40:31 AM	13.55	0.04	0.23	0.03 Run 3 Span - Span
12/16/2003	11:41:01 AM	13.55	-0.01	0.15	0.03 Run 3 Span - Span
12/16/2003	11:41:31 AM	13.62	0.04	0.21	0.03 Run 3 Span - Span
12/16/2003	11:42:01 AM	7.63	-0.01	1.7	0.06 Run 3 Span - Span
12/16/2003	11:42:31 AM	0.67	-0.01	3.01	0.03 Run 3 Span - Span
12/16/2003	11:43:01 AM	0.06	-0.01	3.16	0.03 Run 3 Span - Span
12/16/2003	11:43:31 AM	0	3.95	3.07	2.92 Run 3 Span - Span
12/16/2003	11:44:01 AM	8.85	4.05	1.89	3.43 Run 3 Span - Span
12/16/2003	11:44:31 AM	13.31	4.1	1.15	3.5 Run 3 Span - Span
12/16/2003	11:45:01 AM	13.68	4.1	1.14	3.5 Run 3 Span - Span
12/16/2003	11:45:32 AM	13.68	4.05	1.14	3.5 Run 3 Span - Span
12/16/2003	11:46:02 AM	13.68	4.05	1.14	3.5 Run 3 Span - Span
12/16/2003	11:46:31 AM	13.8	4.05	1.18	3.43 Run 4 - 1
12/16/2003	11:47:01 AM	13.8	4.05	1.17	3.39 Run 4 - 1
12/16/2003	11:47:31 AM	13.8	4.1	1.14	3.43 Run 4 - 1

12/16/2003 11:48:01 AM	13.8	4.05	1.2	3.43 Run 4 - 1
12/16/2003 11:48:31 AM	13.86	4.1	1.18	3.39 Run 4 - 1
12/16/2003 11:49:01 AM	13.8	4.05	1.32	3.32 Run 4 - 1
12/16/2003 11:49:31 AM	13.8	4.05	1.33	3.36 Run 4 - 1
12/16/2003 11:50:01 AM	13.8	4.1	1.32	3.36 Run 4 - 1
12/16/2003 11:50:31 AM	13.8	4.05	1.29	3.36 Run 4 - 1
12/16/2003 11:51:01 AM	13.8	4.1	1.08	3.36 Run 4 - 1
12/16/2003 11:51:31 AM	13.86	4.1	0.98	3.32 Run 4 - 1
12/16/2003 11:52:01 AM	13.8	4.1	0.93	3.39 Run 4 - 1
12/16/2003 11:52:31 AM	13.86	4.1	0.89	3.36 Run 4 - 1
12/16/2003 11:53:01 AM	13.8	4.05	1.08	3.36 Run 4 - 1
12/16/2003 11:53:31 AM	13.8	4.1	1.3	3.39 Run 4 - 1
12/16/2003 11:54:01 AM	13.8	4.05	1.14	3.39 Run 4 - 1
12/16/2003 11:54:31 AM	13.8	4.1	1.22	3.47 Run 4 - 1
12/16/2003 11:55:01 AM	13.8	4.05	1.19	3.39 Run 4 - 1
12/16/2003 11:55:31 AM	13.86	4.1	1.27	3.43 Run 4 - 1
12/16/2003 11:56:01 AM	13.86	4.1	1.28	3.47 Run 4 - 1
12/16/2003 11:56:31 AM	13.8	4.1	1.25	3.47 Run 4 - 1
12/16/2003 11:57:01 AM	13.8	4.05	1.19	3.5 Run 4 - 1
12/16/2003 11:57:31 AM	13.86	4.1	1.13	3.47 Run 4 - 1
12/16/2003 11:58:01 AM	13.8	4.05	1.11	3.47 Run 4 - 1
12/16/2003 11:58:31 AM	13.86	4.1	1.14	3.47 Run 4 - 1
12/16/2003 11:59:01 AM	13.8	4.05	1.13	3.43 Run 4 - 1
12/16/2003 11:59:31 AM	13.8	4.05	1.1	3.39 Run 4 - 1
12/16/2003 12:00:01 PM	13.8	4.05	1.06	3.47 Run 4 - 1
12/16/2003 12:00:31 PM	13.86	4.1	1.03	3.47 Run 4 - 1
12/16/2003 12:01:01 PM	13.8	4.1	1.08	3.47 Run 4 - 1
12/16/2003 12:01:31 PM	13.86	4.05	1.04	3.43 Run 4 - 1
12/16/2003 12:02:01 PM	13.86	4.1	1.03	3.43 Run 4 - 1
12/16/2003 12:02:31 PM	13.8	4.05	1.08	3.43 Run 4 - 1
12/16/2003 12:03:01 PM	13.8	4.05	1.11	3.43 Run 4 - 1
12/16/2003 12:03:31 PM	13.8	4.05	1.12	3.36 Run 4 - 1
12/16/2003 12:04:01 PM	13.8	4.05	1.23	3.43 Run 4 - 1
12/16/2003 12:04:31 PM	13.86	4.1	1.25	3.43 Run 4 - 1
12/16/2003 12:05:01 PM	13.86	4.1	1.28	3.43 Run 4 - 1
12/16/2003 12:05:31 PM	13.86	4.1	1.28	3.39 Run 4 - 1
12/16/2003 12:06:01 PM	13.8	4.1	1.21	3.39 Run 4 - 1
12/16/2003 12:06:31 PM	13.8	4.05	1.11	3.36 Run 4 - 1
12/16/2003 12:07:01 PM	13.8	4.1	1.06	3.32 Run 4 - 1
12/16/2003 12:07:31 PM	13.8	0.58	1.08	1.49
12/16/2003 12:08:01 PM	5.8	0.04	1.16	0.06 Run 4 Span - Zero
12/16/2003 12:08:31 PM	0.55	0.04	0.44	0.06 Run 4 Span - Zero
12/16/2003 12:09:01 PM	0.12	-0.01	0.22	0.06 Run 4 Span - Zero

12/16/2003	12:09:31 PM	0.12	0.04	0.15	0.1	Run 4 Span - Zero
12/16/2003	12:10:01 PM	0.06	-0.01	0.17	0.06	Run 4 Span - Zero
12/16/2003	12:10:31 PM	0.06	-0.01	0.15	0.36	Run 4 Span - Zero
12/16/2003	12:11:01 PM	0	-0.01	0.01	4.57	Run 4 Span - Zero
12/16/2003	12:11:31 PM	0.06	0.04	-0.09	4.42	Run 4 Span - Span
12/16/2003	12:12:01 PM	0.06	-0.01	-0.13	4.42	Run 4 Span - Span
12/16/2003	12:12:31 PM	0.06	0.04	0.72	0.14	Run 4 Span - Zero
12/16/2003	12:13:01 PM	0	-0.01	2.62	0.14	Run 4 Span - Zero
12/16/2003	12:13:31 PM	0	-0.01	3.1	0.06	Run 4 Span - Span
12/16/2003	12:14:01 PM	0	2.19	3.13	0.1	Run 4 Span - Span
12/16/2003	12:14:31 PM	0	9.81	1.85	0.5	Run 4 Span - Span
12/16/2003	12:15:01 PM	-0.06	9.86	-0.03	0.36	Run 4 Span - Span
12/16/2003	12:15:31 PM	-0.06	9.91	-0.26	0.28	Run 4 Span - Span
12/16/2003	12:16:01 PM	0	9.91	-0.31	0.28	Run 4 Span - Span
12/16/2003	12:16:31 PM	0.25	0.14	-0.12	0.06	Run 4 Span - Span
12/16/2003	12:17:01 PM	11.54	0.04	0.17	0.06	Run 4 Span - Span
12/16/2003	12:17:31 PM	13.43	0.04	0.31	0.03	Run 4 Span - Span
12/16/2003	12:18:01 PM	13.55	-0.01	0.32	0.06	Run 4 Span - Span
12/16/2003	12:18:31 PM	13.55	-0.01	0.21	0.03	Run 4 Span - Span
12/16/2003	12:19:01 PM	13.62	4.05	0.4	3.21	Run 4 Span - Span
12/16/2003	12:19:31 PM	13.74	4.1	1.28	3.39	Run 4 Span - Span
12/16/2003	12:20:01 PM	13.8	4.1	1.44	3.36	Run 4 Span - Span
12/16/2003	12:20:32 PM	13.74	4.05	1.43	3.36	Run 4 Span - Span
12/16/2003	12:21:01 PM	13.74	4.05	1.38	3.39	Run 5 - 1
12/16/2003	12:21:31 PM	13.74	4.1	1.24	3.43	Run 5 - 1
12/16/2003	12:22:01 PM	13.8	4.1	1.33	3.43	Run 5 - 1
12/16/2003	12:22:31 PM	13.74	4.05	1.24	3.39	Run 5 - 1
12/16/2003	12:23:01 PM	13.74	4.05	1.26	3.36	Run 5 - 1
12/16/2003	12:23:31 PM	13.74	4.05	1.33	3.32	Run 5 - 1
12/16/2003	12:24:01 PM	13.8	4.1	1.34	3.39	Run 5 - 1
12/16/2003	12:24:31 PM	13.8	4.1	1.49	3.36	Run 5 - 1
12/16/2003	12:25:01 PM	13.8	4.1	1.38	3.32	Run 5 - 1
12/16/2003	12:25:31 PM	13.8	4.05	1.37	3.32	Run 5 - 1
12/16/2003	12:26:01 PM	13.8	4.1	1.38	3.36	Run 5 - 1
12/16/2003	12:26:31 PM	13.8	4.1	1.35	3.32	Run 5 - 1
12/16/2003	12:27:01 PM	13.8	4.1	1.37	3.32	Run 5 - 1
12/16/2003	12:27:31 PM	13.8	4.05	1.35	3.32	Run 5 - 1
12/16/2003	12:28:01 PM	13.8	4.05	1.27	3.36	Run 5 - 1
12/16/2003	12:28:31 PM	13.8	4.1	1.26	3.36	Run 5 - 1
12/16/2003	12:29:01 PM	13.86	4.1	1.24	3.36	Run 5 - 1
12/16/2003	12:29:31 PM	13.8	4.1	1.15	3.36	Run 5 - 1
12/16/2003	12:30:01 PM	13.8	4.05	1.29	3.36	Run 5 - 1
12/16/2003	12:30:31 PM	13.8	4.05	1.24	3.36	Run 5 - 1

12/16/2003	12:31:01 PM	13.8	4.05	1.32	3.39 Run 5 - 1
12/16/2003	12:31:31 PM	13.86	4.1	1.44	3.39 Run 5 - 1
12/16/2003	12:32:01 PM	13.8	4.05	1.22	3.36 Run 5 - 1
12/16/2003	12:32:31 PM	13.8	4.1	1.2	3.39 Run 5 - 1
12/16/2003	12:33:01 PM	13.8	4.1	1.14	3.39 Run 5 - 1
12/16/2003	12:33:31 PM	13.8	4.05	1.13	3.39 Run 5 - 1
12/16/2003	12:34:01 PM	13.8	4.1	1.34	3.43 Run 5 - 1
12/16/2003	12:34:31 PM	13.8	4.1	1.56	3.39 Run 5 - 1
12/16/2003	12:35:01 PM	13.8	4.05	1.36	3.43 Run 5 - 1
12/16/2003	12:35:31 PM	13.8	4.1	1.35	3.39 Run 5 - 1
12/16/2003	12:36:01 PM	13.74	4.05	1.33	3.32 Run 5 - 1
12/16/2003	12:36:31 PM	13.8	4.1	1.38	3.36 Run 5 - 1
12/16/2003	12:37:01 PM	13.8	4.1	1.17	3.36 Run 5 - 1
12/16/2003	12:37:31 PM	13.8	4.05	1.16	3.36 Run 5 - 1
12/16/2003	12:38:01 PM	13.8	4.1	1.44	3.39 Run 5 - 1
12/16/2003	12:38:31 PM	13.74	4.05	1.37	3.39 Run 5 - 1
12/16/2003	12:39:01 PM	13.8	4.1	1.31	3.39 Run 5 - 1
12/16/2003	12:39:31 PM	13.8	4.05	1.26	3.36 Run 5 - 1
12/16/2003	12:40:01 PM	13.86	4.1	1.37	3.36 Run 5 - 1
12/16/2003	12:40:31 PM	13.8	4.05	1.44	3.36 Run 5 - 1
12/16/2003	12:41:01 PM	13.86	4.1	1.24	3.39 Run 5 - 1
12/16/2003	12:41:31 PM	13.8	4.05	1.18	3.36 Run 5 - 1
12/16/2003	12:42:01 PM	13.8	4.05	1.28	3.29 Run 5 - 1
12/16/2003	12:42:31 PM	13.8	4.05	1.18	3.32
12/16/2003	12:43:01 PM	13.86	4	1.09	3.29
12/16/2003	12:43:31 PM	9.34	0.04	0.87	0.1 Run 5 Span - Zero
12/16/2003	12:44:01 PM	0.67	-0.01	0.57	0.06 Run 5 Span - Zero
12/16/2003	12:44:31 PM	0.06	-0.01	0.31	0.1 Run 5 Span - Zero
12/16/2003	12:45:01 PM	0.06	-0.01	0.13	0.1 Run 5 Span - Zero
12/16/2003	12:45:31 PM	0.06	0.04	0.18	1.93 Run 5 Span - Zero
12/16/2003	12:46:01 PM	0.06	0.04	-0.07	4.46 Run 5 Span - Span
12/16/2003	12:46:31 PM	0	-0.01	-0.09	4.46 Run 5 Span - Span
12/16/2003	12:47:01 PM	0.06	0.04	0.73	0.14 Run 5 Span - Span
12/16/2003	12:47:31 PM	0	-0.01	2.83	0.1 Run 5 Span - Span
12/16/2003	12:48:01 PM	0	-0.01	3.21	0.06 Run 5 Span - Span
12/16/2003	12:48:31 PM	0	9.61	2.5	0.46 Run 5 Span - Span
12/16/2003	12:49:01 PM	-0.06	9.86	0.53	0.28 Run 5 Span - Span
12/16/2003	12:49:31 PM	-0.06	9.91	-0.14	0.32 Run 5 Span - Span
12/16/2003	12:50:01 PM	1.1	0.09	-0.15	0.03 Run 5 Span - Span
12/16/2003	12:50:31 PM	12.7	0.04	0.21	0.06 Run 5 Span - Span
12/16/2003	12:51:01 PM	13.49	0.04	0.33	0.06 Run 5 Span - Span
12/16/2003	12:51:31 PM	13.62	0.04	0.25	0.06 Run 5 Span - Span
12/16/2003	12:52:01 PM	13.62	-0.01	0.14	-0.01 Run 5 Span - Span



12/16/2003	12:52:31 PM	13.68	4.05	0.72	3.29 Run 5 Span - Span
12/16/2003	12:53:01 PM	13.74	4.1	1.28	3.29 Run 5 Span - Span
12/16/2003	12:53:32 PM	13.74	4.1	1.35	3.29 Run 5 Span - Span
12/16/2003	12:54:01 PM	13.74	4.1	1.35	3.29 Run 6 - 1
12/16/2003	12:54:31 PM	13.74	4.05	1.21	3.29 Run 6 - 1
12/16/2003	12:55:01 PM	13.74	4.05	1.18	3.32 Run 6 - 1
12/16/2003	12:55:31 PM	13.8	4.05	1.19	3.25 Run 6 - 1
12/16/2003	12:56:01 PM	13.86	4.1	1.15	3.32 Run 6 - 1
12/16/2003	12:56:31 PM	13.86	4.1	1.22	3.32 Run 6 - 1
12/16/2003	12:57:01 PM	13.8	4.05	1.36	3.32 Run 6 - 1
12/16/2003	12:57:31 PM	13.8	4.05	1.38	3.36 Run 6 - 1
12/16/2003	12:58:01 PM	13.8	4.05	1.31	3.32 Run 6 - 1
12/16/2003	12:58:31 PM	13.8	4.05	1.23	3.36 Run 6 - 1
12/16/2003	12:59:01 PM	13.8	4.05	1.35	3.39 Run 6 - 1
12/16/2003	12:59:31 PM	13.8	4.1	1.22	3.36 Run 6 - 1
12/16/2003	1:00:01 PM	13.74	4.05	1.06	3.39 Run 6 - 1
12/16/2003	1:00:31 PM	13.8	4.1	1.11	3.39 Run 6 - 1
12/16/2003	1:01:01 PM	13.8	4.05	1.15	3.36 Run 6 - 1
12/16/2003	1:01:31 PM	13.8	4.1	1.2	3.39 Run 6 - 1
12/16/2003	1:02:01 PM	13.8	4.05	1.18	3.36 Run 6 - 1
12/16/2003	1:02:31 PM	13.8	4.1	1.25	3.39 Run 6 - 1
12/16/2003	1:03:01 PM	13.8	4.05	1.24	3.36 Run 6 - 1
12/16/2003	1:03:31 PM	13.8	4.05	1.21	3.36 Run 6 - 1
12/16/2003	1:04:01 PM	13.8	4.1	1.19	3.36 Run 6 - 1
12/16/2003	1:04:31 PM	13.8	4.1	1.22	3.32 Run 6 - 1
12/16/2003	1:05:01 PM	13.8	4.05	1.34	3.32 Run 6 - 1
12/16/2003	1:05:31 PM	13.8	4.1	1.35	3.32 Run 6 - 1
12/16/2003	1:06:01 PM	13.8	4.05	1.28	3.29 Run 6 - 1
12/16/2003	1:06:31 PM	13.8	4.05	1.17	3.29 Run 6 - 1
12/16/2003	1:07:01 PM	13.8	4.1	1.09	3.29 Run 6 - 1
12/16/2003	1:07:31 PM	13.8	4.05	1.14	3.29 Run 6 - 1
12/16/2003	1:08:01 PM	13.8	4.05	1.19	3.29 Run 6 - 1
12/16/2003	1:08:31 PM	13.86	4.1	1.24	3.25 Run 6 - 1
12/16/2003	1:09:01 PM	13.86	4.1	1.28	3.29 Run 6 - 1
12/16/2003	1:09:31 PM	13.8	4.05	1.28	3.36 Run 6 - 1
12/16/2003	1:10:01 PM	13.8	4.1	1.28	3.29 Run 6 - 1
12/16/2003	1:10:31 PM	13.86	4.1	1.23	3.32 Run 6 - 1
12/16/2003	1:11:01 PM	13.8	4.05	1.2	3.25 Run 6 - 1
12/16/2003	1:11:31 PM	13.8	4.05	1.29	3.32 Run 6 - 1
12/16/2003	1:12:01 PM	13.8	4.1	1.18	3.32 Run 6 - 1
12/16/2003	1:12:31 PM	13.8	4.05	1.11	3.29 Run 6 - 1
12/16/2003	1:13:01 PM	13.74	4.05	1.19	3.32 Run 6 - 1
12/16/2003	1:13:31 PM	13.8	4.05	1.14	3.29 Run 6 - 1

12/16/2003	1:14:01 PM	13.8	4.1	1.14	3.32 Run 6 - 1
12/16/2003	1:14:31 PM	13.8	4.1	1.31	3.32 Run 6 - 1
12/16/2003	1:15:01 PM	13.8	4.1	1.42	3.29 Run 6 - 1
12/16/2003	1:15:31 PM	13.74	2	1.33	3.29
12/16/2003	1:16:01 PM	11.85	0.04	0.87	0.1 Run 6 Span - Zero
12/16/2003	1:16:31 PM	1.41	-0.01	0.38	0.06 Run 6 Span - Zero
12/16/2003	1:17:01 PM	0.19	0.04	0.25	0.1 Run 6 Span - Zero
12/16/2003	1:17:31 PM	0.06	-0.01	0.21	0.06 Run 6 Span - Zero
12/16/2003	1:18:01 PM	0.12	0.04	0.17	0.06 Run 6 Span - Zero
12/16/2003	1:18:31 PM	0	-0.01	0.13	0.03 Run 6 Span - Zero
12/16/2003	1:19:01 PM	0.06	0.04	-0.01	4.46 Run 6 Span - Span
12/16/2003	1:19:31 PM	0	-0.01	-0.11	4.42 Run 6 Span - Span
12/16/2003	1:20:01 PM	0	-0.01	0.19	1.56 Run 6 Span - Span
12/16/2003	1:20:31 PM	0	-0.01	2.28	0.1 Run 6 Span - Span
12/16/2003	1:21:01 PM	0	-0.01	3.08	0.06 Run 6 Span - Span
12/16/2003	1:21:31 PM	0	0.04	3.08	0.06 Run 6 Span - Span
12/16/2003	1:22:01 PM	0	9.76	2.51	0.54 Run 6 Span - Span
12/16/2003	1:22:31 PM	-0.06	9.91	0.36	0.32 Run 6 Span - Span
12/16/2003	1:23:01 PM	-0.06	9.86	-0.24	0.28 Run 6 Span - Span
12/16/2003	1:23:31 PM	-0.06	9.91	-0.35	0.28 Run 6 Span - Span
12/16/2003	1:24:01 PM	-0.06	9.91	-0.28	0.25 Run 6 Span - Span
12/16/2003	1:24:31 PM	-0.06	9.91	-0.26	0.28 Run 6 Span - Span
12/16/2003	1:25:01 PM	6.9	0.09	-0.12	0.03 Run 6 Span - Span
12/16/2003	1:25:31 PM	13.25	0.04	0.21	-0.01 Run 6 Span - Span
12/16/2003	1:26:01 PM	13.55	-0.01	0.3	0.03 Run 6 Span - Span
12/16/2003	1:26:31 PM	13.62	0.04	0.2	-0.01 Run 6 Span - Span
12/16/2003	1:27:01 PM	13.55	3.7	0.34	0.06 Run 6 Span - Span
12/16/2003	1:27:31 PM	13.68	4.05	0.9	3.21 Run 6 Span - Span
12/16/2003	1:28:01 PM	13.74	4.1	1.23	3.21
12/16/2003	1:28:31 PM	13.68	4.05	1.29	3.25
12/16/2003	1:29:01 PM	13.74	4.05	1.26	3.25
12/16/2003	1:29:32 PM	13.68	4.1	1.09	3.29
12/16/2003	1:30:01 PM	13.68	4.1	1.09	3.29 Run 7 - 1
12/16/2003	1:30:31 PM	13.74	4.1	1.2	3.25 Run 7 - 1
12/16/2003	1:31:01 PM	13.74	4.05	1.17	3.32 Run 7 - 1
12/16/2003	1:31:31 PM	13.74	4.1	1.27	3.25 Run 7 - 1
12/16/2003	1:32:01 PM	13.74	4.05	1.35	3.29 Run 7 - 1
12/16/2003	1:32:31 PM	13.74	4.1	1.28	3.32 Run 7 - 1
12/16/2003	1:33:01 PM	13.74	4.1	1.22	3.29 Run 7 - 1
12/16/2003	1:33:31 PM	13.74	4.05	1.22	3.32 Run 7 - 1
12/16/2003	1:34:01 PM	13.74	4.05	1.2	3.32 Run 7 - 1
12/16/2003	1:34:31 PM	13.8	4.1	1.21	3.29 Run 7 - 1
12/16/2003	1:35:01 PM	13.8	4.1	1.17	3.29 Run 7 - 1

12/16/2003	1:35:31 PM	13.8	4.1	1.21	3.29 Run 7 - 1
12/16/2003	1:36:01 PM	13.74	4.05	1.07	3.29 Run 7 - 1
12/16/2003	1:36:31 PM	13.8	4.1	1.11	3.29 Run 7 - 1
12/16/2003	1:37:01 PM	13.8	4.1	1.18	3.29 Run 7 - 1
12/16/2003	1:37:31 PM	13.74	4.1	1.14	3.36 Run 7 - 1
12/16/2003	1:38:01 PM	13.8	4.1	1.57	3.32 Run 7 - 1
12/16/2003	1:38:31 PM	13.74	4.05	1.67	3.36 Run 7 - 1
12/16/2003	1:39:01 PM	13.74	4.1	1.59	3.36 Run 7 - 1
12/16/2003	1:39:31 PM	13.8	4.1	1.33	3.32 Run 7 - 1
12/16/2003	1:40:01 PM	13.74	4.05	1.22	3.36 Run 7 - 1
12/16/2003	1:40:31 PM	13.74	4.1	1.2	3.36 Run 7 - 1
12/16/2003	1:41:01 PM	13.74	4.05	1.05	3.39 Run 7 - 1
12/16/2003	1:41:31 PM	13.74	4.1	1.09	3.39 Run 7 - 1
12/16/2003	1:42:01 PM	13.74	4.05	1.09	3.39 Run 7 - 1
12/16/2003	1:42:31 PM	13.8	4.05	1.12	3.36 Run 7 - 1
12/16/2003	1:43:01 PM	13.74	4.1	1.07	3.39 Run 7 - 1
12/16/2003	1:43:31 PM	13.74	4.1	1.13	3.36 Run 7 - 1
12/16/2003	1:44:01 PM	13.8	4.1	1.22	3.39 Run 7 - 1
12/16/2003	1:44:31 PM	13.8	4.1	1.15	3.36 Run 7 - 1
12/16/2003	1:45:01 PM	13.74	4	1.1	3.36 Run 7 - 1
12/16/2003	1:45:31 PM	13.74	4.05	1.03	3.39 Run 7 - 1
12/16/2003	1:46:01 PM	13.74	4.05	1.04	3.36 Run 7 - 1
12/16/2003	1:46:31 PM	13.8	4.05	0.99	3.36 Run 7 - 1
12/16/2003	1:47:01 PM	13.8	4.05	0.92	3.39 Run 7 - 1
12/16/2003	1:47:31 PM	13.8	4.05	0.9	3.36 Run 7 - 1
12/16/2003	1:48:01 PM	13.8	4.1	0.91	3.36 Run 7 - 1
12/16/2003	1:48:31 PM	13.8	4.05	0.87	3.36 Run 7 - 1
12/16/2003	1:49:01 PM	13.8	4.05	0.86	3.36 Run 7 - 1
12/16/2003	1:49:31 PM	13.8	4.05	0.86	3.36 Run 7 - 1
12/16/2003	1:50:01 PM	13.8	4.1	0.94	3.36 Run 7 - 1
12/16/2003	1:50:31 PM	13.8	4.05	1.21	3.32 Run 7 - 1
12/16/2003	1:51:01 PM	13.8	4.05	1.1	3.36 Run 7 - 1
12/16/2003	1:51:31 PM	13.74	4.05	1.19	3.36
12/16/2003	1:52:01 PM	13.37	0.04	0.97	0.1 Run 7 Span - Zero
12/16/2003	1:52:31 PM	1.65	-0.01	0.47	0.06 Run 7 Span - Zero
12/16/2003	1:53:01 PM	0.19	-0.01	0.25	0.06 Run 7 Span - Zero
12/16/2003	1:53:31 PM	0.06	-0.01	0.19	0.06 Run 7 Span - Zero
12/16/2003	1:54:01 PM	0.06	-0.01	0.14	0.06 Run 7 Span - Zero
12/16/2003	1:54:31 PM	0	-0.01	0.06	3.8 Run 7 Span - Zero
12/16/2003	1:55:01 PM	0	-0.01	-0.17	4.46 Run 7 Span - Span
12/16/2003	1:55:31 PM	0	-0.01	-0.21	4.46 Run 7 Span - Span
12/16/2003	1:56:01 PM	0	0.04	1.22	0.1 Run 7 Span - Span
12/16/2003	1:56:31 PM	0	-0.01	3.05	0.06 Run 7 Span - Span

12/16/2003	1:57:01 PM	0	-0.01	3.13	0.06 Run 7 Span - Span
12/16/2003	1:57:31 PM	0	9.61	2.29	0.39
12/16/2003	1:58:01 PM	-0.06	9.81	0.29	0.32
12/16/2003	1:58:31 PM	-0.06	9.86	-0.26	0.32
12/16/2003	1:59:01 PM	0	9.86	-0.34	0.28
12/16/2003	1:59:31 PM	-0.06	9.86	-0.28	0.25
12/16/2003	2:00:01 PM	-0.06	9.86	-0.34	0.25
12/16/2003	2:00:31 PM	0	9.91	-0.35	0.25 Run 7 Span - Span
12/16/2003	2:01:01 PM	-0.06	9.91	-0.32	0.25 Run 7 Span - Span
12/16/2003	2:01:31 PM	-0.06	9.91	-0.29	0.28 Run 7 Span - Span
12/16/2003	2:02:01 PM	-0.06	9.91	-0.29	0.25 Run 7 Span - Span
12/16/2003	2:02:31 PM	-0.06	9.86	-0.27	0.25 Run 7 Span - Span
12/16/2003	2:03:01 PM	-0.06	0.14	-0.26	0.17 Run 7 Span - Span
12/16/2003	2:03:31 PM	12.21	0.09	0.08	0.03 Run 7 Span - Span
12/16/2003	2:04:01 PM	13.49	0.04	0.33	0.03 Run 7 Span - Span
12/16/2003	2:04:31 PM	13.55	0.04	0.26	0.03 Run 7 Span - Span
12/16/2003	2:05:01 PM	13.62	-0.01	0.2	0.03 Run 7 Span - Span
12/16/2003	2:05:31 PM	13.62	4.05	0.52	3.25 Run 7 Span - Span
12/16/2003	2:06:01 PM	13.68	4.05	0.9	3.36 Run 7 Span - Span
12/16/2003	2:06:31 PM	13.68	4.05	0.95	3.43 Run 7 Span - Span
12/16/2003	2:07:01 PM	13.68	4.05	0.9	3.43 Run 7 Span - Span
12/16/2003	2:07:32 PM	13.74	4.05	0.9	3.39 Run 7 Span - Span
12/16/2003	2:08:02 PM	13.68	4.05	1.09	3.36 Run 8 - 1
12/16/2003	2:08:31 PM	13.68	4.05	1.2	3.36 Run 8 - 1
12/16/2003	2:09:01 PM	13.68	4.05	1.35	3.39 Run 8 - 1
12/16/2003	2:09:31 PM	13.74	4.05	1.32	3.39 Run 8 - 1
12/16/2003	2:10:01 PM	13.74	4.05	1.19	3.39 Run 8 - 1
12/16/2003	2:10:31 PM	13.74	4.05	1.07	3.39 Run 8 - 1
12/16/2003	2:11:01 PM	13.74	4.05	1.04	3.39 Run 8 - 1
12/16/2003	2:11:31 PM	13.8	4.05	1.05	3.39 Run 8 - 1
12/16/2003	2:12:01 PM	13.74	4.05	1.01	3.39 Run 8 - 1
12/16/2003	2:12:31 PM	13.74	4.05	1.01	3.39 Run 8 - 1
12/16/2003	2:13:01 PM	13.74	4.05	0.96	3.36 Run 8 - 1
12/16/2003	2:13:31 PM	13.8	4.05	0.91	3.36 Run 8 - 1
12/16/2003	2:14:01 PM	13.8	4.05	0.94	3.39 Run 8 - 1
12/16/2003	2:14:31 PM	13.8	4.05	0.86	3.39 Run 8 - 1
12/16/2003	2:15:01 PM	13.74	4	0.93	3.39 Run 8 - 1
12/16/2003	2:15:31 PM	13.74	4.05	0.94	3.43 Run 8 - 1
12/16/2003	2:16:01 PM	13.8	4	0.95	3.39 Run 8 - 1
12/16/2003	2:16:31 PM	13.74	4	0.91	3.39 Run 8 - 1
12/16/2003	2:17:01 PM	13.74	4.05	0.94	3.43 Run 8 - 1
12/16/2003	2:17:31 PM	13.8	4.05	0.97	3.39 Run 8 - 1
12/16/2003	2:18:01 PM	13.74	4.05	0.99	3.39 Run 8 - 1

12/16/2003	2:18:31 PM	13.74	4.05	0.95	3.39 Run 8 - 1
12/16/2003	2:19:01 PM	13.8	4.05	1.01	3.36 Run 8 - 1
12/16/2003	2:19:31 PM	13.8	4.05	0.98	3.32 Run 8 - 1
12/16/2003	2:20:01 PM	13.74	4.05	1.19	3.36 Run 8 - 1
12/16/2003	2:20:31 PM	13.74	4.05	1.09	3.39 Run 8 - 1
12/16/2003	2:21:01 PM	13.74	4.05	0.99	3.43 Run 8 - 1
12/16/2003	2:21:31 PM	13.74	4.05	1.03	3.39 Run 8 - 1
12/16/2003	2:22:01 PM	13.74	4.05	1.16	3.32 Run 8 - 1
12/16/2003	2:22:31 PM	13.8	4.05	1.18	3.39 Run 8 - 1
12/16/2003	2:23:01 PM	13.8	4.05	1.14	3.39 Run 8 - 1
12/16/2003	2:23:31 PM	13.8	4.05	1.21	3.36 Run 8 - 1
12/16/2003	2:24:01 PM	13.74	4.05	1.31	3.36 Run 8 - 1
12/16/2003	2:24:31 PM	13.8	4.05	1.21	3.39 Run 8 - 1
12/16/2003	2:25:01 PM	13.74	4.05	1.15	3.39 Run 8 - 1
12/16/2003	2:25:31 PM	13.8	4.05	1.04	3.36 Run 8 - 1
12/16/2003	2:26:01 PM	13.8	4.05	1.1	3.36 Run 8 - 1
12/16/2003	2:26:31 PM	13.8	4	1.09	3.36 Run 8 - 1
12/16/2003	2:27:01 PM	13.8	4.05	1.04	3.39 Run 8 - 1
12/16/2003	2:27:31 PM	13.8	4	1.01	3.39 Run 8 - 1
12/16/2003	2:28:01 PM	13.8	4.05	1.03	3.39 Run 8 - 1
12/16/2003	2:28:31 PM	13.8	4.05	1.02	3.32 Run 8 - 1
12/16/2003	2:29:01 PM	13.8	4.05	1.15	3.43 Run 8 - 1
12/16/2003	2:29:31 PM	13.8	0.19	1.11	0.43
12/16/2003	2:30:01 PM	7.39	0.04	0.63	0.1 Run 8 Span - Zero
12/16/2003	2:30:31 PM	0.73	-0.01	0.31	0.1 Run 8 Span - Zero
12/16/2003	2:31:02 PM	0.12	0.04	0.19	0.1 Run 8 Span - Zero
12/16/2003	2:31:31 PM	0.06	-0.01	0.18	0.1 Run 8 Span - Zero
12/16/2003	2:32:01 PM	0.06	-0.01	0.12	0.06 Run 8 Span - Zero
12/16/2003	2:32:31 PM	0.06	0.04	0.16	1.12 Run 8 Span - Zero
12/16/2003	2:33:01 PM	0.06	0.04	0.01	4.53 Run 8 Span - Zero
12/16/2003	2:33:31 PM	0	-0.01	-0.13	4.49 Run 8 Span - Zero
12/16/2003	2:34:01 PM	0	-0.01	0.4	0.25 Run 8 Span - Zero
12/16/2003	2:34:31 PM	0	0.04	2.37	0.1 Run 8 Span - Zero
12/16/2003	2:35:01 PM	0	-0.01	3.1	0.1 Run 8 Span - Span
12/16/2003	2:35:31 PM	0	-0.01	3.16	0.06 Run 8 Span - Span
12/16/2003	2:36:01 PM	0	9.66	2.43	0.57 Run 8 Span - Span
12/16/2003	2:36:31 PM	0	9.86	0.45	0.32 Run 8 Span - Span
12/16/2003	2:37:01 PM	0	9.91	-0.18	0.28 Run 8 Span - Span
12/16/2003	2:37:31 PM	-0.06	9.81	-0.28	0.28 Run 8 Span - Span
12/16/2003	2:38:01 PM	-0.06	0.14	-0.16	0.06 Run 8 Span - Span
12/16/2003	2:38:31 PM	10.5	0.04	0.15	0.06 Run 8 Span - Span
12/16/2003	2:39:01 PM	13.25	0.04	0.33	0.03 Run 8 Span - Span
12/16/2003	2:39:31 PM	13.55	-0.01	0.28	0.03 Run 8 Span - Span

12/16/2003	2:40:01 PM	13.62	0.04	0.18	0.03 Run 8 Span - Span
12/16/2003	2:40:31 PM	13.62	4	0.49	3.14 Run 8 Span - Span
12/16/2003	2:41:01 PM	13.74	4.05	0.92	3.36 Run 8 Span - Span
12/16/2003	2:41:31 PM	13.74	4	0.95	3.36 Run 8 Span - Span
12/16/2003	2:42:01 PM	13.74	4.05	0.98	3.36 Run 8 Span - Span
12/16/2003	2:42:31 PM	13.68	4.05	0.94	3.39 Run 8 Span - Span
12/16/2003	2:43:01 PM	13.68	4.05	0.9	3.36 Run 8 Span - Span
12/16/2003	2:43:31 PM	13.74	4.05	1.02	3.32 Run 9 - 1
12/16/2003	2:44:01 PM	13.74	4.05	0.95	3.39 Run 9 - 1
12/16/2003	2:44:31 PM	13.8	4.05	0.91	3.36 Run 9 - 1
12/16/2003	2:45:01 PM	13.74	4.05	0.96	3.39 Run 9 - 1
12/16/2003	2:45:31 PM	13.74	4.05	0.95	3.36 Run 9 - 1
12/16/2003	2:46:01 PM	13.74	4.05	0.92	3.39 Run 9 - 1
12/16/2003	2:46:31 PM	13.74	4.05	0.94	3.39 Run 9 - 1
12/16/2003	2:47:01 PM	13.74	4.05	0.93	3.43 Run 9 - 1
12/16/2003	2:47:31 PM	13.74	4.05	0.92	3.43 Run 9 - 1
12/16/2003	2:48:01 PM	13.74	4.05	0.92	3.43 Run 9 - 1
12/16/2003	2:48:31 PM	13.74	4.05	0.98	3.47 Run 9 - 1
12/16/2003	2:49:01 PM	13.74	4.05	0.99	3.39 Run 9 - 1
12/16/2003	2:49:31 PM	13.74	4.05	0.96	3.43 Run 9 - 1
12/16/2003	2:50:01 PM	13.8	4.05	1.02	3.39 Run 9 - 1
12/16/2003	2:50:31 PM	13.74	4.05	0.97	3.39 Run 9 - 1
12/16/2003	2:51:01 PM	13.8	4.05	0.99	3.43 Run 9 - 1
12/16/2003	2:51:31 PM	13.8	4.05	0.97	3.43 Run 9 - 1
12/16/2003	2:52:01 PM	13.74	4	0.93	3.43 Run 9 - 1
12/16/2003	2:52:31 PM	13.74	4.05	0.94	3.43 Run 9 - 1
12/16/2003	2:53:01 PM	13.74	4.05	0.91	3.43 Run 9 - 1
12/16/2003	2:53:31 PM	13.8	4.05	0.9	3.39 Run 9 - 1
12/16/2003	2:54:01 PM	13.74	4.05	0.85	3.39 Run 9 - 1
12/16/2003	2:54:31 PM	13.8	4.05	0.83	3.43 Run 9 - 1
12/16/2003	2:55:01 PM	13.8	4.05	0.86	3.36 Run 9 - 1
12/16/2003	2:55:31 PM	13.74	4	0.89	3.36 Run 9 - 1
12/16/2003	2:56:01 PM	13.8	4.05	0.89	3.39 Run 9 - 1
12/16/2003	2:56:31 PM	13.74	4.05	0.88	3.36 Run 9 - 1
12/16/2003	2:57:01 PM	13.8	4.05	0.85	3.39 Run 9 - 1
12/16/2003	2:57:31 PM	13.74	4.05	0.93	3.39 Run 9 - 1
12/16/2003	2:58:01 PM	13.74	4.05	0.89	3.39 Run 9 - 1
12/16/2003	2:58:31 PM	13.74	4	0.84	3.36 Run 9 - 1
12/16/2003	2:59:01 PM	13.74	4.05	0.89	3.36 Run 9 - 1
12/16/2003	2:59:31 PM	13.8	4.05	0.92	3.36 Run 9 - 1
12/16/2003	3:00:01 PM	13.8	4.05	0.9	3.39 Run 9 - 1
12/16/2003	3:00:31 PM	13.74	4	0.96	3.39 Run 9 - 1
12/16/2003	3:01:01 PM	13.8	4.05	0.97	3.39 Run 9 - 1

12/16/2003	3:01:31 PM	13.8	4.1	0.84	3.39 Run 9 - 1
12/16/2003	3:02:01 PM	13.8	4.05	1	3.39 Run 9 - 1
12/16/2003	3:02:31 PM	13.8	4.05	0.94	3.39 Run 9 - 1
12/16/2003	3:03:01 PM	13.8	4.05	0.92	3.39 Run 9 - 1
12/16/2003	3:03:31 PM	13.8	4.05	0.9	3.36 Run 9 - 1
12/16/2003	3:04:01 PM	13.74	4.05	0.88	3.39 Run 9 - 1
12/16/2003	3:04:31 PM	13.8	0.19	0.91	1.09
12/16/2003	3:05:01 PM	6.66	-0.01	0.63	0.1 Run 9 Span - Zero
12/16/2003	3:05:31 PM	0.61	0.04	0.33	0.06 Run 9 Span - Zero
12/16/2003	3:06:01 PM	0.12	-0.01	0.21	0.06 Run 9 Span - Zero
12/16/2003	3:06:31 PM	0.06	-0.01	0.17	0.03 Run 9 Span - Zero
12/16/2003	3:07:01 PM	0.06	-0.01	0.11	0.06 Run 9 Span - Zero
12/16/2003	3:07:31 PM	0.06	-0.01	0.09	3.61 Run 9 Span - Zero
12/16/2003	3:08:01 PM	0	-0.01	-0.05	4.46 Run 9 Span - Span
12/16/2003	3:08:31 PM	0.06	-0.01	-0.13	4.42 Run 9 Span - Span
12/16/2003	3:09:01 PM	0	-0.01	-0.14	4.46 Run 9 Span - Span
12/16/2003	3:09:31 PM	0	-0.01	1.34	0.14 Run 9 Span - Span
12/16/2003	3:10:01 PM	-0.06	-0.01	2.88	0.1 Run 9 Span - Span
12/16/2003	3:10:31 PM	0	-0.01	3.14	0.06 Run 9 Span - Span
12/16/2003	3:11:01 PM	-0.06	2.43	3.16	0.83 Run 9 Span - Span
12/16/2003	3:11:31 PM	0.61	9.76	1.78	0.54 Run 9 Span - Span
12/16/2003	3:12:01 PM	0	9.91	0.03	0.28 Run 9 Span - Span
12/16/2003	3:12:31 PM	-0.06	9.95	-0.15	0.28 Run 9 Span - Span
12/16/2003	3:13:01 PM	-0.06	9.91	-0.17	0.25 Run 9 Span - Span
12/16/2003	3:13:31 PM	-0.06	3.07	-0.2	0.25 Run 9 Span - Span
12/16/2003	3:14:01 PM	9.28	0.09	0	0.03 Run 9 Span - Span
12/16/2003	3:14:31 PM	13.37	0.09	0.32	-0.01 Run 9 Span - Span
12/16/2003	3:15:01 PM	13.55	0.04	0.42	0.03 Run 9 Span - Span
12/16/2003	3:15:31 PM	13.62	0.04	0.27	-0.01 Run 9 Span - Span
12/16/2003	3:16:01 PM	13.62	4.05	0.41	3.25 Run 9 Span - Span
12/16/2003	3:16:31 PM	13.68	4.1	0.85	3.43 Run 9 Span - Span
12/16/2003	3:17:01 PM	13.68	4.1	0.95	3.39 Run 9 Span - Span
12/16/2003	3:17:31 PM	13.74	4.1	0.86	3.43 Run 9 Span - Span
12/16/2003	3:18:01 PM	13.68	4.1	0.9	3.43 Run 9 Span - Span
12/16/2003	3:18:31 PM	13.68	4.1	0.91	3.43 Run 9 Span - Span
12/16/2003	3:19:01 PM	13.8	4.1	0.87	3.39 Run 9 Span - Span
12/16/2003	3:19:32 PM	13.74	4.05	0.82	3.39 Run 9 Span - Span
12/16/2003	3:20:01 PM	13.74	4.05	0.84	3.36 Run 9 Span - Span
12/16/2003	3:20:31 PM	13.74	4.05	0.88	3.39 Run 9 Span - Span
12/16/2003	3:21:01 PM	13.74	4.1	0.9	3.36 Run 9 Span - Span
12/16/2003	3:21:31 PM	13.8	4.1	0.87	3.39 Run 9 Span - Span
12/16/2003	3:22:01 PM	13.74	4.05	0.83	3.36 Run 9 Span - Span
12/16/2003	3:22:31 PM	13.74	4.1	0.9	3.36 Run 9 Span - Span

12/16/2003	3:23:01 PM	13.74	4.1	0.96	3.36 Run 9 Span - Span
12/16/2003	3:23:31 PM	13.8	4.14	0.94	3.39 Run 9 Span - Span
12/16/2003	3:24:01 PM	13.74	4.1	0.85	3.39 Run 9 Span - Span
12/16/2003	3:24:31 PM	13.74	4.1	0.97	3.36 Run 9 Span - Span
12/16/2003	3:25:01 PM	13.68	4.05	0.95	3.36 Run 9 Span - Span
12/16/2003	3:25:31 PM	13.74	4.05	0.89	3.36 Run 9 Span - Span
12/16/2003	3:26:01 PM	13.74	4.1	0.83	3.39 Run 9 Span - Span
12/16/2003	3:26:31 PM	13.8	4.1	0.88	3.32 Run 9 Span - Span
12/16/2003	3:27:01 PM	13.74	4.1	0.82	3.36 Run 9 Span - Span
12/16/2003	3:27:31 PM	13.74	4.1	0.86	3.36 Run 9 Span - Span
12/16/2003	3:28:01 PM	13.74	4.05	0.93	3.36 Run 9 Span - Span
12/16/2003	3:28:31 PM	13.8	4.1	0.9	3.36 Run 9 Span - Span
12/16/2003	3:29:01 PM	13.74	4.1	0.93	3.39 Run 9 Span - Span
12/16/2003	3:29:31 PM	13.74	4.1	0.9	3.36 Run 9 Span - Span
12/16/2003	3:30:01 PM	13.8	4.1	0.9	3.32 Run 9 Span - Span
12/16/2003	3:30:31 PM	13.74	4.05	0.93	3.39 Run 9 Span - Span
12/16/2003	3:31:01 PM	13.8	4.1	0.93	3.36 Run 9 Span - Span
12/16/2003	3:31:31 PM	13.8	4.1	0.86	3.39 Run 9 Span - Span
12/16/2003	3:32:01 PM	13.8	4.1	0.93	3.39 Run 9 Span - Span



RATA CEM DATA

RUN1

DATE	TIME	CO221	COL22	COLD23	CORT24	GAS25	GEN26	NOX27	NOXD28	NOXRT29
11/12/2003	121800	3.910	0.700	0.600	0.002	20.607	164.100	3.440	3.000	0.011
11/12/2003	121900	3.920	0.700	0.600	0.001	20.551	164.100	3.420	2.900	0.011
11/12/2003	122000	3.910	0.700	0.600	0.001	20.611	164.400	3.440	3.000	0.011
11/12/2003	122100	3.900	0.700	0.600	0.001	20.609	164.300	3.450	3.000	0.011
11/12/2003	122200	3.900	0.700	0.600	0.001	20.615	164.400	3.460	3.000	0.011
11/12/2003	122300	3.900	0.700	0.600	0.001	20.609	164.400	3.450	3.000	0.011
11/12/2003	122400	3.900	0.700	0.600	0.001	20.605	164.200	3.490	3.000	0.011
11/12/2003	122500	3.910	0.700	0.600	0.001	20.607	163.900	3.490	3.000	0.011
11/12/2003	122600	3.910	0.700	0.600	0.001	20.609	164.200	3.490	3.000	0.011
11/12/2003	122700	3.910	0.700	0.600	0.001	20.664	164.800	3.520	3.000	0.011
11/12/2003	122800	3.910	0.800	0.700	0.002	20.664	164.800	3.580	3.100	0.011
11/12/2003	122900	3.910	0.800	0.700	0.002	20.611	164.600	3.580	3.100	0.011
11/12/2003	123000	3.920	0.800	0.700	0.002	20.613	164.400	3.580	3.100	0.011
11/12/2003	123100	3.920	0.800	0.700	0.002	20.654	164.500	3.580	3.100	0.011
11/12/2003	123200	3.920	0.700	0.600	0.002	20.605	164.400	3.560	3.100	0.011
11/12/2003	123300	3.930	0.700	0.600	0.001	20.609	164.400	3.510	3.000	0.011
11/12/2003	123400	3.920	0.700	0.600	0.001	20.607	164.400	3.480	3.000	0.011
11/12/2003	123500	3.920	0.700	0.600	0.001	20.609	164.400	3.470	3.000	0.011
11/12/2003	123600	3.910	0.700	0.600	0.001	20.609	164.400	3.460	3.000	0.011
11/12/2003	123700	3.920	0.700	0.600	0.001	20.605	164.300	3.460	3.000	0.011
11/12/2003	123800	3.920	0.700	0.600	0.001	20.611	164.200	3.460	3.000	0.011
<b>Average</b>		<b>3.913</b>	<b>0.719</b>	<b>0.619</b>	<b>0.001</b>	<b>20.614</b>	<b>164.362</b>	<b>3.494</b>	<b>3.019</b>	<b>0.011</b>

RUN 2

DATE	TIME	CO221	COL22	COLD23	CORT24	GAS25	GEN26	NOX27	NOXD28	NOXRT29
11/12/2003	124800	3.930	0.700	0.700	0.002	20.549	163.900	3.450	3.000	0.011
11/12/2003	124900	3.930	0.700	0.600	0.001	20.609	163.900	3.430	2.900	0.011
11/12/2003	125000	3.930	0.700	0.600	0.002	20.545	164.000	3.440	3.000	0.011
11/12/2003	125100	3.930	0.700	0.600	0.001	20.549	164.000	3.450	3.000	0.011
11/12/2003	125200	3.930	0.700	0.600	0.001	20.605	163.900	3.470	3.000	0.011
11/12/2003	125300	3.930	0.700	0.600	0.001	20.605	164.100	3.470	3.000	0.011
11/12/2003	125400	3.930	0.700	0.600	0.001	20.607	164.200	3.480	3.000	0.011
11/12/2003	125500	3.930	0.700	0.600	0.001	20.609	164.500	3.480	3.000	0.011
11/12/2003	125600	3.930	0.700	0.600	0.001	20.609	164.700	3.530	3.000	0.011
11/12/2003	125700	3.940	0.700	0.600	0.001	20.611	164.500	3.530	3.000	0.011
11/12/2003	125800	3.930	0.700	0.600	0.001	20.615	164.500	3.560	3.000	0.011
11/12/2003	125900	3.940	0.800	0.700	0.002	20.675	164.400	3.570	3.100	0.011
11/12/2003	130000	3.940	0.700	0.600	0.001	20.660	164.600	3.580	3.100	0.011
11/12/2003	130100	3.940	0.800	0.700	0.002	20.609	164.400	3.560	3.000	0.011
11/12/2003	130200	3.940	0.800	0.700	0.002	20.611	164.400	3.560	3.000	0.011
11/12/2003	130300	3.940	0.800	0.700	0.002	20.609	164.400	3.540	3.000	0.011
11/12/2003	130400	3.940	0.800	0.700	0.002	20.605	164.100	3.560	3.000	0.011
11/12/2003	130500	3.950	0.800	0.600	0.002	20.613	164.600	3.560	3.000	0.011
11/12/2003	130600	3.940	0.700	0.600	0.001	20.607	164.600	3.560	3.000	0.011
11/12/2003	130700	3.940	0.700	0.600	0.001	20.660	164.800	3.560	3.000	0.011
11/12/2003	130800	3.950	0.700	0.600	0.001	20.669	164.700	3.570	3.000	0.011
<b>Average</b>		<b>3.936</b>	<b>0.729</b>	<b>0.629</b>	<b>0.001</b>	<b>20.611</b>	<b>164.343</b>	<b>3.520</b>	<b>3.005</b>	<b>0.011</b>

## Run 3

DATE	TIME	CO221	COL22	COLD23	CORT24	GAS25	GEN26	NOX27	NOXD28	NOXRT29
11/12/2003	131700	3.960	0.800	0.700	0.002	20.555	164.200	3.540	3.000	0.011
11/12/2003	131800	3.950	0.800	0.700	0.002	20.615	164.400	3.540	3.000	0.011
11/12/2003	131900	3.950	0.800	0.700	0.002	20.656	164.500	3.560	3.000	0.011
11/12/2003	132000	3.950	0.800	0.700	0.002	20.664	164.400	3.570	3.000	0.011
11/12/2003	132100	3.950	0.800	0.700	0.002	20.658	164.600	3.580	3.000	0.011
11/12/2003	132200	3.960	0.800	0.600	0.002	20.611	164.200	3.550	3.000	0.011
11/12/2003	132300	3.960	0.700	0.600	0.001	20.607	164.200	3.540	3.000	0.011
11/12/2003	132400	3.960	0.700	0.600	0.001	20.605	164.200	3.530	3.000	0.011
11/12/2003	132500	3.960	0.700	0.600	0.001	20.549	163.800	3.540	3.000	0.011
11/12/2003	132600	3.960	0.700	0.600	0.001	20.549	164.100	3.510	3.000	0.011
11/12/2003	132700	3.960	0.700	0.600	0.001	20.545	163.800	3.500	3.000	0.011
11/12/2003	132800	3.960	0.700	0.600	0.001	20.603	164.100	3.450	2.900	0.011
11/12/2003	132900	3.960	0.700	0.600	0.001	20.547	163.800	3.460	3.000	0.011
11/12/2003	133000	3.960	0.700	0.600	0.002	20.549	163.600	3.470	3.000	0.011
11/12/2003	133100	3.960	0.700	0.600	0.001	20.549	163.600	3.470	3.000	0.011
11/12/2003	133200	3.960	0.700	0.600	0.001	20.547	163.600	3.490	3.000	0.011
11/12/2003	133300	3.960	0.700	0.600	0.001	20.543	163.600	3.480	3.000	0.011
11/12/2003	133400	3.960	0.700	0.600	0.001	20.549	164.000	3.480	3.000	0.011
11/12/2003	133500	3.960	0.700	0.600	0.001	20.500	163.700	3.480	3.000	0.011
11/12/2003	133600	3.960	0.700	0.600	0.001	20.545	163.600	3.470	3.000	0.011
11/12/2003	133700	3.960	0.800	0.700	0.002	20.549	163.400	3.480	3.000	0.011
<b>Average</b>		<b>3.958</b>	<b>0.733</b>	<b>0.629</b>	<b>0.001</b>	<b>20.576</b>	<b>163.971</b>	<b>3.509</b>	<b>2.995</b>	<b>0.011</b>

## Run 4

DATE	TIME	CO221	COL22	COLD23	CORT24	GAS25	GEN26	NOX27	NOXD28	NOXRT29
11/12/2003	134500	3.960	0.800	0.700	0.002	20.547	163.500	3.530	3.000	0.011
11/12/2003	134600	3.960	0.700	0.600	0.001	20.549	164.000	3.540	3.000	0.011
11/12/2003	134700	3.970	0.700	0.600	0.001	20.549	163.800	3.540	3.000	0.011
11/12/2003	134800	3.970	0.700	0.600	0.001	20.551	163.700	3.550	3.000	0.011
11/12/2003	134900	3.970	0.700	0.600	0.001	20.545	164.000	3.540	3.000	0.011
11/12/2003	135000	3.970	0.700	0.600	0.001	20.543	163.700	3.550	3.000	0.011
11/12/2003	135100	3.970	0.700	0.600	0.001	20.549	163.800	3.590	3.000	0.011
11/12/2003	135200	3.970	0.700	0.600	0.001	20.547	163.700	3.590	3.100	0.011
11/12/2003	135300	3.970	0.700	0.600	0.001	20.551	164.100	3.590	3.000	0.011
11/12/2003	135400	3.970	0.700	0.600	0.001	20.609	163.900	3.600	3.100	0.011
11/12/2003	135500	3.970	0.800	0.600	0.001	20.605	163.800	3.600	3.100	0.011
11/12/2003	135600	3.970	0.700	0.600	0.001	20.545	164.100	3.580	3.000	0.011
11/12/2003	135700	3.970	0.700	0.600	0.001	20.607	164.100	3.560	3.000	0.011
11/12/2003	135800	3.970	0.700	0.600	0.001	20.543	163.800	3.540	3.000	0.011
11/12/2003	135900	3.970	0.800	0.700	0.002	20.541	163.600	3.540	3.000	0.011
11/12/2003	140000	3.970	0.800	0.700	0.002	20.543	163.500	3.530	3.000	0.011
11/12/2003	140100	3.970	0.800	0.600	0.002	20.543	163.500	3.510	3.000	0.011
11/12/2003	140200	3.970	0.700	0.600	0.002	20.506	163.700	3.520	3.000	0.011
11/12/2003	140300	3.970	0.700	0.600	0.001	20.609	163.800	3.510	3.000	0.011
11/12/2003	140400	3.970	0.700	0.600	0.001	20.547	164.000	3.520	3.000	0.011
11/12/2003	140500	3.970	0.700	0.600	0.001	20.543	163.800	3.510	3.000	0.011
<b>Average</b>		<b>3.969</b>	<b>0.724</b>	<b>0.614</b>	<b>0.001</b>	<b>20.556</b>	<b>163.805</b>	<b>3.550</b>	<b>3.014</b>	<b>0.011</b>

## Run 5

DATE	TIME	CO221	COL22	COLD23	CORT24	GAS25	GEN26	NOX27	NOXD28	NOXRT29
11/12/2003	141300	3.980	0.800	0.700	0.002	20.543	164.000	3.570	3.000	0.011
11/12/2003	141400	3.980	0.800	0.700	0.002	20.508	163.800	3.570	3.000	0.011
11/12/2003	141500	3.980	0.800	0.700	0.002	20.607	164.000	3.570	3.000	0.011
11/12/2003	141600	3.980	0.800	0.700	0.002	20.607	164.200	3.580	3.000	0.011
11/12/2003	141700	3.980	0.800	0.700	0.002	20.551	164.100	3.600	3.000	0.011
11/12/2003	141800	3.980	0.800	0.700	0.002	20.547	163.800	3.590	3.000	0.011
11/12/2003	141900	3.980	0.800	0.700	0.002	20.547	163.600	3.600	3.000	0.011
11/12/2003	142000	3.980	0.700	0.600	0.001	20.547	163.600	3.580	3.000	0.011
11/12/2003	142100	3.980	0.700	0.600	0.001	20.543	163.600	3.570	3.000	0.011
11/12/2003	142200	3.980	0.700	0.600	0.001	20.497	163.700	3.560	3.000	0.011
11/12/2003	142300	3.980	0.800	0.700	0.002	20.504	163.600	3.550	3.000	0.011
11/12/2003	142400	3.980	0.700	0.600	0.001	20.547	163.700	3.580	3.000	0.011
11/12/2003	142500	3.980	0.700	0.600	0.001	20.549	163.900	3.560	3.000	0.011
11/12/2003	142600	3.980	0.700	0.600	0.001	20.605	163.900	3.580	3.000	0.011
11/12/2003	142700	3.980	0.700	0.600	0.001	20.551	163.800	3.600	3.000	0.011
11/12/2003	142800	3.980	0.700	0.600	0.001	20.607	164.100	3.610	3.100	0.011
11/12/2003	142900	3.980	0.700	0.600	0.002	20.547	164.100	3.610	3.000	0.011
11/12/2003	143000	3.980	0.700	0.600	0.001	20.543	163.900	3.600	3.000	0.011
11/12/2003	143100	3.980	0.700	0.600	0.001	20.543	164.000	3.580	3.000	0.011
11/12/2003	143200	3.980	0.700	0.600	0.001	20.549	163.800	3.600	3.000	0.011
11/12/2003	143300	3.980	0.800	0.700	0.002	20.547	163.700	3.590	3.000	0.011
<b>Average</b>		<b>3.980</b>	<b>0.743</b>	<b>0.643</b>	<b>0.001</b>	<b>20.552</b>	<b>163.852</b>	<b>3.583</b>	<b>3.005</b>	<b>0.011</b>

## Run 6

DATE	TIME	CO221	COL22	COLD23	CORT24	GAS25	GEN26	NOX27	NOXD28	NOXRT29
11/12/2003	144400	3.990	0.700	0.600	0.001	20.502	163.700	3.550	3.000	0.011
11/12/2003	144500	3.980	0.700	0.600	0.001	20.543	163.800	3.560	3.000	0.011
11/12/2003	144600	3.980	0.700	0.600	0.001	20.545	163.700	3.590	3.000	0.011
11/12/2003	144700	3.990	0.700	0.600	0.001	20.547	163.600	3.590	3.000	0.011
11/12/2003	144800	3.980	0.700	0.600	0.001	20.547	163.600	3.620	3.100	0.011
11/12/2003	144900	3.990	0.800	0.700	0.002	20.545	163.400	3.620	3.100	0.011
11/12/2003	145000	3.990	0.800	0.600	0.002	20.543	163.400	3.630	3.100	0.011
11/12/2003	145100	3.990	0.800	0.700	0.002	20.545	163.500	3.620	3.100	0.011
11/12/2003	145200	3.990	0.800	0.700	0.002	20.547	163.700	3.590	3.000	0.011
11/12/2003	145300	3.980	0.800	0.700	0.002	20.545	163.700	3.590	3.000	0.011
11/12/2003	145400	3.990	0.800	0.600	0.002	20.500	163.600	3.580	3.000	0.011
11/12/2003	145500	3.990	0.800	0.700	0.002	20.547	163.700	3.570	3.000	0.011
11/12/2003	145600	3.980	0.800	0.600	0.002	20.543	163.700	3.560	3.000	0.011
11/12/2003	145700	3.980	0.800	0.700	0.002	20.545	163.700	3.550	3.000	0.011
11/12/2003	145800	3.980	0.800	0.600	0.001	20.547	163.600	3.560	3.000	0.011
11/12/2003	145900	3.990	0.800	0.700	0.002	20.545	163.600	3.560	3.000	0.011
11/12/2003	150000	3.980	0.700	0.600	0.001	20.543	163.300	3.540	3.000	0.011
11/12/2003	150100	3.980	0.700	0.600	0.001	20.493	163.500	3.550	3.000	0.011
11/12/2003	150200	3.980	0.700	0.600	0.002	20.497	163.500	3.550	3.000	0.011
11/12/2003	150300	3.980	0.700	0.600	0.001	20.502	163.300	3.530	3.000	0.011
11/12/2003	150400	3.980	0.800	0.600	0.002	20.547	163.500	3.520	3.000	0.011
<b>Average</b>		<b>3.984</b>	<b>0.757</b>	<b>0.633</b>	<b>0.002</b>	<b>20.534</b>	<b>163.576</b>	<b>3.573</b>	<b>3.019</b>	<b>0.011</b>

## Run 7

DATE	TIME	CO221	COL22	COLD23	CORT24	GAS25	GEN26	NOX27	NOXD28	NOXRT29
11/12/2003	151300	3.980	0.800	0.700	0.002	20.495	163.200	3.540	3.000	0.011
11/12/2003	151400	3.990	0.800	0.600	0.002	20.500	163.500	3.530	3.000	0.011
11/12/2003	151500	3.980	0.700	0.600	0.001	20.495	163.200	3.560	3.000	0.011
11/12/2003	151600	3.990	0.700	0.600	0.001	20.495	163.200	3.560	3.000	0.011
11/12/2003	151700	3.990	0.700	0.600	0.001	20.500	163.500	3.550	3.000	0.011
11/12/2003	151800	3.980	0.700	0.600	0.001	20.497	163.200	3.550	3.000	0.011
11/12/2003	151900	3.990	0.700	0.600	0.001	20.502	163.100	3.560	3.000	0.011
11/12/2003	152000	3.990	0.700	0.600	0.001	20.495	163.200	3.570	3.000	0.011
11/12/2003	152100	3.990	0.800	0.600	0.001	20.500	163.100	3.580	3.000	0.011
11/12/2003	152200	3.990	0.700	0.600	0.001	20.502	163.400	3.590	3.000	0.011
11/12/2003	152300	3.980	0.700	0.600	0.002	20.500	163.500	3.580	3.000	0.011
11/12/2003	152400	3.990	0.700	0.600	0.001	20.549	163.300	3.600	3.000	0.011
11/12/2003	152500	3.990	0.800	0.700	0.002	20.497	163.100	3.560	3.000	0.011
11/12/2003	152600	3.990	0.800	0.700	0.002	20.491	162.900	3.560	3.000	0.011
11/12/2003	152700	3.990	0.800	0.700	0.002	20.435	162.900	3.560	3.000	0.011
11/12/2003	152800	3.990	0.700	0.600	0.002	20.500	162.900	3.550	3.000	0.011
11/12/2003	152900	3.990	0.800	0.600	0.002	20.500	163.100	3.540	3.000	0.011
11/12/2003	153000	3.990	0.700	0.600	0.001	20.502	163.300	3.560	3.000	0.011
11/12/2003	153100	3.990	0.700	0.600	0.001	20.500	163.100	3.560	3.000	0.011
11/12/2003	153200	3.990	0.700	0.600	0.001	20.493	163.000	3.570	3.000	0.011
11/12/2003	153300	3.990	0.700	0.600	0.001	20.500	163.300	3.560	3.000	0.011
<b>Average</b>		<b>3.988</b>	<b>0.733</b>	<b>0.619</b>	<b>0.001</b>	<b>20.498</b>	<b>163.190</b>	<b>3.561</b>	<b>3.000</b>	<b>0.011</b>

## Run 8

DATE	TIME	CO221	COL22	COLD23	CORT24	GAS25	GEN26	NOX27	NOXD28	NOXRT29
11/12/2003	154200	3.990	0.800	0.700	0.002	20.549	163.500	3.600	3.000	0.011
11/12/2003	154300	3.990	0.800	0.600	0.002	20.547	163.500	3.610	3.000	0.011
11/12/2003	154400	3.990	0.800	0.700	0.002	20.547	163.400	3.630	3.100	0.011
11/12/2003	154500	3.990	0.700	0.600	0.002	20.495	163.300	3.600	3.000	0.011
11/12/2003	154600	3.990	0.700	0.600	0.001	20.500	163.400	3.590	3.000	0.011
11/12/2003	154700	3.990	0.700	0.600	0.001	20.504	163.200	3.590	3.000	0.011
11/12/2003	154800	3.990	0.700	0.600	0.001	20.543	163.400	3.570	3.000	0.011
11/12/2003	154900	3.990	0.700	0.600	0.001	20.497	163.500	3.580	3.000	0.011
11/12/2003	155000	3.990	0.700	0.600	0.001	20.502	163.400	3.590	3.000	0.011
11/12/2003	155100	3.990	0.700	0.600	0.001	20.549	163.500	3.590	3.000	0.011
11/12/2003	155200	3.990	0.800	0.600	0.001	20.541	163.400	3.580	3.000	0.011
11/12/2003	155300	3.990	0.800	0.600	0.002	20.502	163.500	3.590	3.000	0.011
11/12/2003	155400	3.990	0.800	0.700	0.002	20.500	163.400	3.620	3.000	0.011
11/12/2003	155500	3.990	0.800	0.700	0.002	20.502	163.600	3.620	3.100	0.011
11/12/2003	155600	3.990	0.800	0.700	0.002	20.497	163.300	3.640	3.100	0.011
11/12/2003	155700	3.990	0.800	0.600	0.002	20.549	163.800	3.630	3.100	0.011
11/12/2003	155800	3.990	0.800	0.600	0.002	20.547	163.900	3.620	3.100	0.011
11/12/2003	155900	3.990	0.800	0.700	0.002	20.545	163.800	3.620	3.100	0.011
11/12/2003	160000	3.990	0.800	0.700	0.002	20.500	163.600	3.620	3.000	0.011
11/12/2003	160100	3.990	0.700	0.600	0.001	20.547	163.600	3.590	3.000	0.011
11/12/2003	160200	3.990	0.700	0.600	0.001	20.543	163.500	3.570	3.000	0.011
<b>Average</b>		<b>3.990</b>	<b>0.757</b>	<b>0.633</b>	<b>0.002</b>	<b>20.524</b>	<b>163.500</b>	<b>3.602</b>	<b>3.029</b>	<b>0.011</b>

Run 9

DATE	TIME	CO221	COL22	COLD23	CORT24	GAS25	GEN26	NOX27	NOXD28	NOXRT29
11/12/2003	161100	4.000	0.800	0.700	0.002	20.541	163.500	3.590	3.000	0.011
11/12/2003	161200	4.000	0.800	0.700	0.002	20.506	163.700	3.600	3.000	0.011
11/12/2003	161300	4.000	0.800	0.700	0.002	20.547	163.500	3.570	3.000	0.011
11/12/2003	161400	4.000	0.800	0.600	0.002	20.551	163.500	3.590	3.000	0.011
11/12/2003	161500	4.000	0.700	0.600	0.001	20.495	163.700	3.560	3.000	0.011
11/12/2003	161600	3.990	0.700	0.600	0.001	20.495	163.500	3.530	3.000	0.011
11/12/2003	161700	4.000	0.700	0.600	0.001	20.502	163.700	3.530	3.000	0.011
11/12/2003	161800	4.000	0.700	0.600	0.001	20.547	163.500	3.550	3.000	0.011
11/12/2003	161900	4.000	0.700	0.600	0.001	20.545	163.600	3.540	3.000	0.011
11/12/2003	162000	4.000	0.700	0.600	0.001	20.493	163.500	3.500	2.900	0.011
11/12/2003	162100	4.000	0.800	0.600	0.002	20.497	163.200	3.520	3.000	0.011
11/12/2003	162200	4.000	0.800	0.700	0.002	20.493	163.100	3.520	3.000	0.011
11/12/2003	162300	4.000	0.800	0.600	0.002	20.493	163.100	3.520	3.000	0.011
11/12/2003	162400	4.000	0.800	0.700	0.002	20.500	163.500	3.520	3.000	0.011
11/12/2003	162500	4.000	0.800	0.700	0.002	20.500	163.200	3.530	3.000	0.011
11/12/2003	162600	4.000	0.800	0.700	0.002	20.504	163.100	3.520	3.000	0.011
11/12/2003	162700	4.000	0.800	0.700	0.002	20.495	163.100	3.520	3.000	0.011
11/12/2003	162800	4.000	0.800	0.700	0.002	20.500	163.100	3.500	3.000	0.011
11/12/2003	162900	4.000	0.800	0.700	0.002	20.502	163.500	3.520	3.000	0.011
11/12/2003	163000	4.000	0.700	0.600	0.002	20.497	163.600	3.530	3.000	0.011
11/12/2003	163100	4.000	0.700	0.600	0.001	20.504	163.300	3.540	3.000	0.011
<b>Average</b>		<b>4.000</b>	<b>0.762</b>	<b>0.648</b>	<b>0.002</b>	<b>20.510</b>	<b>163.405</b>	<b>3.538</b>	<b>2.995</b>	<b>0.011</b>

RATA REFERENCE METHOD CYLINDER GAS CERTIFICATES

B

**CERTIFIED MASTER CLASS**

*Single-Certified Calibration Standard*



**Scott Specialty Gases**

3141 EASTON ROAD, BLDG 1, PEUMSTEADVILLE, PA 19049-0210 Phone: 800-331-4953 Fax: 215-766-7226

**RDS04**

**CERTIFICATE OF ACCURACY: Certified Master Class Calibration Standard**

**Product Information**

Project No.: 01-95261-006  
Item No.: 01020000840PAL  
P.O. No.: E-N06925

**Customer**

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA, FL 33619

Cylinder Number: ALM026412  
Cylinder Size: AL  
Certification Date: 21Aug2003  
Expiration Date: 19Feb2004

**CERTIFIED CONCENTRATION**

<u>Component Name</u>	<u>Concentration (Moles)</u>	<u>Accuracy (+/-%)</u>
CARBON MONOXIDE	3.00 PPM	2
NITROGEN	BALANCE	

**TRACEABILITY**

Traceable To

NIST

APPROVED BY:

JOHN C. FITZ

DATE:

8/21/03



## SPECIFICATIONS

<u>Component Name</u>	<u>Requested Concentration (Moles)</u>	<u>Certified Concentration (Moles)</u>	<u>Blend Tolerance Result (+/- %)</u>	<u>Certified Accuracy Result (+/- %)</u>
CARBON MONOXIDE	3. PPM	3.00 PPM	.0	2.00
NITROGEN	BAL	BAL		

## TRACEABILITY

Traceable To  
NIST

## PHYSICAL PROPERTIES

Cylinder Size: AL

Pressure: 2000 PSIG  
Expiration Date: 19Feb2004

Min. Cyl. Pressure: 150 PSIG

## SPECIAL HANDLING INSTRUCTIONS

Do not use or store cylinder at or below the stated dew point temperature. Possible condensation of heavier components could result. In the event the cylinder has been exposed to temperatures at or below the dew point, place cylinder in heated area for 24 hours and then roll cylinder for 15 minutes to re-mix.

Use of calibration standards at or below dew point temperature may result in calibration error.

RATA CLASS CES HARD 5



# Scott Specialty Gases

Dual-Analyzed Calibration Standard *re-cert.*

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

## CERTIFICATE OF ACCURACY: EPA Protocol Gas

### Assay Laboratory

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

P.O. No.: EN-75516  
Project No.: 01-84921-001

### Customer

TAMPA ELECTRIC COMPANY  
DAVID SMITH  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

### ANALYTICAL INFORMATION

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

Cylinder Number: ALM063413      Certification Date: 13Feb2003      Exp. Date: 12Feb2004  
Cylinder Pressure\*\*\*: 1250 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	6.29 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.

### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTFRM 2635	03Apr2003	ALM020670	25.78 PPM	CARBON MONOXIDE

### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS/6E/KN-240	30Jan2003	NDIR

### ANALYZER READINGS

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

#### CARBON MONOXIDE

Date: 06Aug2002	Response Unit: VOLTS		
Z1 = -0.00400	R1 = 2.54380	T1 = 0.60600	
R2 = 2.54240	Z2 = -0.00340	T2 = 0.60320	
Z3 = -0.00700	T3 = 0.60060	R3 = 2.54390	
Avg. Concentration:	6.230	PPM	

Date: 13Feb2003	Response Unit: VOLTS		
Z1 = -0.00310	R1 = 2.53330	T1 = 0.60820	
R2 = 2.53100	Z2 = -0.00100	T2 = 0.60910	
Z3 = -0.00540	T3 = 0.60930	R3 = 2.53000	
Avg. Concentration:	6.290	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999951	2635
Constants:	A = 6.6140E-02
B = 1.0194E+01	C =
D =	E =

APPROVED BY:

JOHN C. FITZ



**Scott Specialty Gases**

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

*Dual-Analyzed Calibration Standard*

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-01495-001

Customer

TAMPA ELECTRIC COMPANY  
CHARLES DUFENY  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: AAL3073      Certification Date: 13Nov2003      Exp. Date: 12Nov2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	4.46 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	4.47 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2627	15Jan2004	AAL069671	5.180 PPM	NITRIC OXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
TECO/10/9741111S	06Nov2003	CHEMILUMINESCENT

**ANALYZER READINGS**

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

First Triad Analysis      Second Triad Analysis      Calibration Curve

**NITRIC OXIDE**

Date: 26Aug2003    Response Unit: VOLTS		
Z1=0.00020	R1=0.87080	T1=0.74970
R2=0.87070	Z2=0.00020	T2=0.74980
Z3=0.00020	T3=0.75070	R3=0.86970
Avg. Concentration:	4.460	PPM

Date: 13Nov2003    Response Unit: VOLTS		
Z1=0.00030	R1=0.86580	T1=0.74680
R2=0.86610	Z2=0.00030	T2=0.74670
Z3=0.00030	T3=0.74710	R3=0.86770
Avg. Concentration:	4.460	PPM

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999992	2627
Constants:	A = 0.001488
B = 5.993653	C =
D =	E =

APPROVED BY:

KIMBERLY NILES



**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-95261-009

Customer

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: AAL15968      Certification Date: 26Aug2003      Exp. Date: 25Aug2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	8.24 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	8.26 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

**REFERENCE STANDARD**

PE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
HORIBA/CLA220/5708850810	21Aug2003	CHEMILUMINESCENCE

**ANALYZER READINGS**

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

**NITRIC OXIDE**

Date: 19Aug2003	Response Unit: VOLTS	
Z1=0.00460	R1=3.94120	T1=1.80100
R2=3.93760	Z2=0.00380	T2=1.79720
Z3=0.00490	T3=1.79740	R3=3.92910
Avg. Concentration:	8.220	PPM

Date: 26Aug2003	Response Unit: VOLTS	
Z1=0.00520	R1=3.78620	T1=1.73250
R2=3.78260	Z2=0.00820	T2=1.73300
Z3=0.00720	T3=1.73030	R3=3.77760
Avg. Concentration:	8.250	PPM

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999998	2629
Constants:	A = -0.016438
B = 4.632947	C =
D =	E =

APPROVED BY:

  
KIMBERLY NILES



# Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**RATA CLASS** **RDS12**  
*Dual-Analyzed Calibration Standard*

## CERTIFICATE OF ACCURACY: EPA Protocol Gas

### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-95261-012

### Customer

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

### ANALYTICAL INFORMATION

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

Cylinder Number: AAL6916 Certification Date: 26Aug2003 Exp. Date: 25Aug2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	12.5 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	12.6 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
HORIBA/CLA220/5708850810	21Aug2003	CHEMILUMINESCENCE

### ANALYZER READINGS

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

#### NITRIC OXIDE

Date: 19Aug2003	Response Unit: VOLTS		
Z1 = 0.00710	R1 = 3.92820	T1 = 2.72460	
R2 = 3.93490	Z2 = 0.00720	T2 = 2.72850	
Z3 = 0.00440	T3 = 2.72410	R3 = 3.92940	
Avg. Concentration:	12.50	PPM	

Date: 26Aug2003	Response Unit: VOLTS		
Z1 = 0.00490	R1 = 3.79000	T1 = 2.82890	
R2 = 3.78830	Z2 = 0.00560	T2 = 2.82770	
Z3 = 0.00460	T3 = 2.62820	R3 = 3.79020	
Avg. Concentration:	12.51	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + O <sub>x</sub> 3 + Ex <sup>4</sup>	
r = .999998	2629
Constants:	A = -0.016438
B = 4.632947	C =
D =	E =

APPROVED BY:

  
KIMBERLY NILES



# Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**RATA CLASS** *GRSS*  
**Dual-Analyzed Calibration Standard**

## CERTIFICATE OF ACCURACY: EPA Protocol Gas

### Assay Laboratory

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

P.O. No.: EN-75516  
Project No.: 01-90442-002

### Customer

TAMPA ELECTRIC COMPANY  
DAVID SMITH  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

### ANALYTICAL INFORMATION

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

Cylinder Number: ALM007852      Certification Date: 12May2003      Exp. Date: 11May2006  
Cylinder Pressure\*\*\*: 2015 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
OXYGEN	13.65 %	+/- 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.

### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
RM 2350	01Feb2004	A4341	23.51 %	OXYGEN

### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
BECKMAN/755/2002571	09May2003	PARAMAGNETIC

### ANALYZER READINGS

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

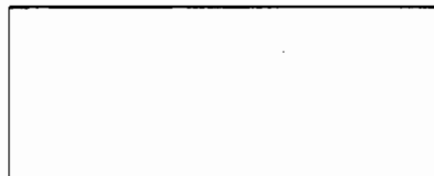
First Triad Analysis

Second Triad Analysis

Calibration Curve

#### OXYGEN

Date: 12May2003	Response Unit: VOLTS	
Z1 = 0.00030	R1 = 0.95420	T1 = 0.55410
R2 = 0.95460	Z2 = 0.00060	T2 = 0.55440
Z3 = 0.00040	T3 = 0.55440	R3 = 0.95450
Avg. Concentration: 13.65 %		



Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = 0.999999	2350
Constants:	A = 2.4646E+01
B = -1.6507E-02	C =
D =	E =

APPROVED BY:

JOE SMITH

LINEARITY DATA

Start Date: \_\_\_\_\_ Time: \_\_\_\_\_  
End Date: \_\_\_\_\_ Time: \_\_\_\_\_

Analyzer NOx	LOW	MID	HIGH
REF GAS VALUE	37.100	82.000	134.000
DATE 1, TIME 1	11/18/2003 15:23	11/18/2003 15:28	11/18/2003 15:31
RUN 1	37.700	81.600	131.500
DATE 2, TIME 2	11/18/2003 15:35	11/18/2003 15:37	11/18/2003 15:40
RUN 2	38.000	81.600	131.100
DATE 3, TIME 3	11/18/2003 15:43	11/18/2003 15:46	11/18/2003 15:51
RUN 3	37.900	81.600	131.100
AVERAGE=SUM/3	37.867	81.600	131.233
Error (Eqn A-4)	2.1	0.5	2.1
PS Error (R-A)	0.8	0.4	2.8
Final Value, *=APS	2.1	0.5	2.1
OUT OF CONTROL	NO	NO	NO
SERIAL NUMBER	ALM-019353	ALM-035365	ALM-03262
EXPIRATION DATE	09/01/2005	09/02/2005	09/02/2005

Analyzer CO2	LOW	MID	HIGH
REF GAS VALUE	2.540	5.500	9.120
DATE 1, TIME 1	11/18/2003 15:23	11/18/2003 15:28	11/18/2003 15:31
RUN 1	2.600	5.500	9.000
DATE 2, TIME 2	11/18/2003 15:35	11/18/2003 15:37	11/18/2003 15:40
RUN 2	2.500	5.500	9.000
DATE 3, TIME 3	11/18/2003 15:43	11/18/2003 15:46	11/18/2003 15:51
RUN 3	2.500	5.500	9.000
AVERAGE=SUM/3	2.533	5.500	9.000
% Error (Eqn A-4)	0.3	0.0	1.3
PS Error (R-A)	0.0	0.0	0.1
Final Value, *=APS	0.3	0.0	1.3
OUT OF CONTROL	NO	NO	NO
SERIAL NUMBER	ALM-019353	ALM-035365	ALM-03262
EXPIRATION DATE	09/01/2005	09/02/2005	09/02/2005

Signature: \_\_\_\_\_



CYCLE RESPONSE TIME DATA

Record#	DATE	TIME	CO231	NOX32	NOXH33
1	11/18/2003	161000	2.190	9.070	34.900
2	11/18/2003	161100	0.360	0.460	0.400
3	11/18/2003	161200	0.020	0.270	0.200
4	11/18/2003	161300	0.010	0.210	0.100
5	11/18/2003	161400	0.000	0.190	0.100
6	11/18/2003	161500	0.000	0.160	0.100
7	11/18/2003	161600	0.700	7.140	19.800
8	11/18/2003	161700	1.760	9.970	31.200
9	11/18/2003	161800	1.770	9.970	31.200
10	11/18/2003	161900	1.770	9.970	31.200
11	11/18/2003	162000	1.780	9.970	31.400
12	11/18/2003	162100	1.790	9.970	31.500
13	11/18/2003	162200	4.510	9.970	87.700
14	11/18/2003	162300	8.880	9.970	130.400
15	11/18/2003	162400	8.960	9.970	130.700
16	11/18/2003	162500	8.970	9.970	130.900
17	11/18/2003	162600	5.450	9.970	58.400
18	11/18/2003	162700	1.840	9.970	31.800
19	11/18/2003	162800	1.810	9.970	31.600
20	11/18/2003	162900	1.800	9.970	31.600
21	11/18/2003	163000	1.800	9.970	31.700
22	/ /				
23	/ /	AVE	2.675	7.480	41.757

7-DAY DRIFT DATA

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Daily Calibration Summary  
Tampa Electric Company  
Bayside

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Report Period

Day: 12/09/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	12:35	-0.10	0.067P	0.00	12:38	79.50	1.467P	81.70
	12:48	-0.10	0.067P	0.00	12:51	79.50	1.467P	81.70
	14:07	0.00	0.000P	0.00	14:10	79.20	1.667P	81.70
	14:44	0.00	0.000P	0.00	14:12	78.80	1.933P	81.70
	14:55	0.00	0.000P	0.00	14:47	81.90	0.133P	81.70
				14:58	81.90	0.133P	81.70	
NOx Low	12:35	0.00	0.000P	0.00	12:32	5.30	0.200P	5.50
	12:48	0.00	0.000P	0.00	12:45	5.30	0.200P	5.50
	14:07	0.00	0.000P	0.00	14:04	5.20	0.300P	5.50
	14:44	0.00	0.000P	0.00	14:41	5.00	0.500P	5.50
	14:55	0.00	0.000P	0.00	14:52	5.00	0.500P	5.50
CO2	12:35	0.00	0.000P	0.00	12:38	5.40	0.100P	5.50
	12:48	0.00	0.000P	0.00	12:51	5.40	0.100P	5.50
	14:07	0.00	0.000P	0.00	14:10	5.40	0.100P	5.50
	14:44	0.00	0.000P	0.00	14:12	5.20	0.300P	5.50
	14:55	0.00	0.000P	0.00	14:47	5.60	0.100P	5.50
				14:58	5.60	0.100P	5.50	
CO High	12:38	10.10	2.020P	0.00	12:35	545.70	2.060P	556.00
	12:51	7.40	1.480P	0.00	12:48	545.60	2.080P	556.00
	14:10	8.00	1.600P	0.00	14:07	544.70	2.260P	556.00
	14:12	-0.70	0.140P	0.00	14:44	545.10	2.180P	556.00
	14:47	-1.00	0.200P	0.00	14:55	544.40	2.320P	556.00
	14:58	-0.60	0.120P	0.00				
CO Low	12:38	11.10	11.100F	0.00	12:32	11.10	0.200P	11.30
	12:51	8.90	8.900P	0.00	12:45	11.20	0.100P	11.30
	14:10	9.00	9.000P	0.00	14:04	11.10	0.200P	11.30
	14:12	0.20	0.200P	0.00	14:41	11.50	0.200P	11.30
	14:47	0.40	0.400P	0.00	14:52	11.60	0.300P	11.30
	14:58	0.50	0.500P	0.00				

Today's Date: 12/29/2003  
Time: 10:40:17

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

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Daily Calibration Summary  
Tampa Electric Company  
Bayside [REDACTED]

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Report Period		ZERO CAL				SPAN CAL			
Day: 12/14/2003									
	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF	
NOxHigh	1:36	-0.20	0.133P	0.00	1:39	83.10	0.933P	81.70	
	9:36	0.50	0.333P	0.00	9:39	83.90	1.467P	81.70	
	10:05	0.20	0.133P	0.00	10:08	84.40	1.800P	81.70	
NOx Low	1:36	-0.10	0.100P	0.00	1:33	4.30	1.200P	5.50	
	9:36	0.50	0.500P	0.00	9:33	7.80	2.300P	5.50	
	10:05	0.20	0.200P	0.00	10:02	5.30	0.200P	5.50	
CO2	1:36	0.00	0.000P	0.00	1:39	5.70	0.200P	5.50	
	9:36	0.00	0.000P	0.00	9:39	5.70	0.200P	5.50	
	10:05	0.00	0.000P	0.00	10:08	5.70	0.200P	5.50	
CO High	1:39	-0.10	0.020P	0.00	1:36	549.80	1.240P	556.00	
	9:39	-0.10	0.020P	0.00	9:36	549.60	1.280P	556.00	
	10:08	-2.00	0.400P	0.00	10:05	552.80	0.640P	556.00	
CO Low	1:39	0.70	0.700P	0.00	1:33	11.50	0.200P	11.30	
	9:39	0.70	0.700P	0.00	9:33	19.90	8.600P	11.30	
	10:08	-0.50	0.500P	0.00	10:02	11.90	0.600P	11.30	

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Today's Date: 12/29/2003  
Time: 10:41:32

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

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Daily Calibration Summary  
Tampa Electric Company  
Bayside  
=====

Report Period  
Day: 12/15/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:36	0.00	0.000P	0.00	1:39	84.20	1.667P	81.70
NOx Low	1:36	0.00	0.000P	0.00	1:33	5.20	0.300P	5.50
CO2	1:36	0.00	0.000P	0.00	1:39	5.50	0.000P	5.50
CO High	1:39	0.00	0.000P	0.00	1:36	557.20	0.240P	556.00
CO Low	1:39	1.00	1.000P	0.00	1:33	11.60	0.300P	11.30

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Today's Date: 12/29/2003  
Time: 10:41:48

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

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Daily Calibration Summary  
Tampa Electric Company  
Bayside [REDACTED]  
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Report Period

Day: 12/16/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:36	-0.20	0.133P	0.00	1:39	83.50	1.200P	81.70
NOx Low	1:36	-0.10	0.100P	0.00	1:33	4.70	0.800P	5.50
CO2	1:36	0.00	0.000P	0.00	1:39	5.50	0.000P	5.50
CO High	1:39	-0.10	0.020P	0.00	1:36	550.60	1.080P	556.00
CO Low	1:39	0.90	0.900P	0.00	1:33	11.50	0.200P	11.30

=====  
Today's Date: 12/29/2003  
Time: 10:42:10

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

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Daily Calibration Summary  
Tampa Electric Company  
Bayside  
=====

Report Period

Day: 12/17/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:36	-0.20	0.133P	0.00	1:39	84.10	1.600P	81.70
NOx Low	1:36	-0.10	0.100P	0.00	1:33	4.70	0.800P	5.50
CO2	1:36	0.00	0.000P	0.00	1:39	5.30	0.200P	5.50
CO High	1:39	0.70	0.140P	0.00	1:36	560.60	0.920P	556.00
CO Low	1:39	2.00	2.000P	0.00	1:33	11.60	0.300P	11.30

=====  
Today's Date: 12/29/2003  
Time: 10:42:43

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed



=====  
Daily Calibration Summary  
Tampa Electric Company  
Bayside  
=====

Report Period  
Day: 12/18/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:36	-0.20	0.133P	0.00	1:39	83.50	1.200P	81.70
NOx Low	1:36	-0.10	0.100P	0.00	1:33	4.50	1.000P	5.50
CO2	1:36	0.00	0.000P	0.00	1:39	5.30	0.200P	5.50
CO High	1:39	0.70	0.140P	0.00	1:36	553.50	0.500P	556.00
CO Low	1:39	1.80	1.800P	0.00	1:33	11.10	0.200P	11.30

=====  
Today's Date: 12/29/2003  
Time: 10:43:13

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

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Daily Calibration Summary  
Tampa Electric Company  
Bayside [REDACTED]

=====

Report Period  
Day: 12/19/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:36	-0.20	0.133P	0.00	1:39	79.90	1.200P	81.70
	6:51	-0.20	0.133P	0.00	6:54	84.60	1.933P	81.70
	8:27	0.00	0.000P	0.00	8:30	81.00	0.467P	81.70
	9:05	-0.20	0.133P	0.00	9:08	80.90	0.533P	81.70
	9:20	0.00	0.000P	0.00	9:23	80.90	0.533P	81.70
	13:26	0.00	0.000P	0.00	13:17	80.90	0.533P	81.70
					13:29	80.80	0.600P	81.70
NOx Low	1:36	-0.10	0.100P	0.00	1:33	4.50	1.000P	5.50
	6:51	-0.10	0.100P	0.00	6:48	4.70	0.800P	5.50
	8:27	-0.10	0.100P	0.00	8:24	5.30	0.200P	5.50
	9:05	-0.10	0.100P	0.00	9:02	5.20	0.300P	5.50
	9:20	-0.10	0.100P	0.00	9:17	5.30	0.200P	5.50
	13:26	-0.10	0.100P	0.00	13:23	5.40	0.100P	5.50
CO2	1:36	0.00	0.000P	0.00	1:39	5.10	0.400P	5.50
	6:51	0.00	0.000P	0.00	6:54	5.20	0.300P	5.50
	8:27	0.00	0.000P	0.00	8:30	5.40	0.100P	5.50
	9:05	0.00	0.000P	0.00	9:08	5.40	0.100P	5.50
	9:20	0.00	0.000P	0.00	9:23	5.40	0.100P	5.50
	13:26	0.00	0.000P	0.00	13:17	5.50	0.000P	5.50
				13:29	5.40	0.100P	5.50	
CO High	1:39	22.90	4.580P	0.00	1:36	556.50	0.900P	552.00
	6:54	-0.10	0.020P	0.00	6:51	556.40	0.880P	552.00
	8:30	0.00	0.000P	0.00	8:27	548.50	0.700P	552.00
	9:08	-0.20	0.040P	0.00	9:05	548.30	0.740P	552.00
	9:23	0.00	0.000P	0.00	9:20	546.10	1.180P	552.00
	13:17	-0.90	0.180P	0.00	13:26	528.60	4.680P	552.00
	13:29	-0.10	0.020P	0.00				
CO Low	1:39	17.60	17.600F	0.00	1:33	11.00	0.300P	11.30
	6:54	1.00	1.000P	0.00	6:48	11.60	0.300P	11.30
	8:30	1.00	1.000P	0.00	8:24	10.90	0.400P	11.30
	9:08	0.90	0.900P	0.00	9:02	10.90	0.400P	11.30
	9:23	1.10	1.100P	0.00	9:17	11.30	0.000P	11.30
	13:17	-0.20	0.200P	0.00	13:23	11.20	0.100P	11.30
	13:29	0.60	0.600P	0.00				

Today's Date: 12/29/2003  
Time: 10:43:33

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

BEST AVAILABLE COPY

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 Daily Gas Emission Report  
 Tampa Electric Company  
 Bayside  
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REPORT PERIOD  
 12/09/2003 to 12/19/2003

Page 1

Date: 12/09/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
0	Gas	17444.3	1779.3	1.06758	105.70	174.40
1	Gas	17345.1	1769.2	1.06152	105.10	173.20
2	Gas	17427.9	1777.6	1.06656	105.60	174.30
3	Gas	17426.6	1777.5	1.06650	105.60	174.30
4	Gas	17426.9	1777.5	1.06650	105.60	174.10
5	Gas	15441.7	1575.1	0.94506	93.60	148.30
6	Gas	11629.4	1186.2	0.71172	70.50	93.70
7	Gas	11163.7	1138.7	0.68322	67.70	86.60
8	Gas	13495.9	1376.6	0.82596	81.80	121.70
9	Gas	16700.3	1703.4	1.02204	101.20	164.90
10	Gas	16982.4	1732.2	1.03932	102.90	167.70
11	Gas	16823.9	1716.0	1.02960	102.00	165.60
12	Gas	16736.2	1707.1	1.02426	101.50	164.60
13	Gas	16670.8	1700.4	1.02024	101.10	164.00
14	Gas	16641.0	1697.4	1.01844	100.90	163.50
15	Gas	16642.2	1697.5	1.01850	100.90	163.40
16	Gas	14805.8	1510.2	0.90612	89.70	139.40
17	Gas	8951.7	913.1	0.54786	54.30	58.20
18	Gas	10322.2	1052.9	0.63174	62.60	78.40
19	Gas	17001.3	1734.1	1.04046	103.10	168.00
20	Gas	13512.7	1378.3	0.82698	81.90	120.30
21	Gas	841.0	85.8	0.05148	5.10	0.30

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	321433.0	32786.1	19.67166	1948.40

Generation-Daily Total: 3038.90 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	

Date: 12/14/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
7	Gas	8.3	0.8	0.00048	0.00	0.00
8	Gas	4383.6	447.1	0.26826	26.60	2.40
9	Gas	4713.8	480.8	0.28848	28.60	9.90
10	Gas	4754.9	485.0	0.29100	28.80	10.30
11	Gas	4650.2	474.3	0.28458	28.20	9.30
12	Gas	4654.5	474.8	0.28488	28.20	9.40
13	Gas	5302.0	540.8	0.32448	32.10	15.10
14	Gas	5394.3	550.2	0.33012	32.70	19.60
15	Gas	2995.4	305.5	0.18330	18.20	4.60
16	Gas	6147.1	627.0	0.37620	37.30	23.90
17	Gas	11398.0	1162.6	0.69756	69.10	90.50
18	Gas	13581.2	1385.3	0.83118	82.30	121.30
19	Gas	17164.1	1750.7	1.05042	104.00	170.00
20	Gas	17214.4	1755.9	1.05354	104.40	170.60
21	Gas	17270.8	1761.6	1.05696	104.70	171.30
22	Gas	14268.2	1455.4	0.87324	86.50	132.40
23	Gas	17140.6	1748.3	1.04898	103.90	169.80

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	151041.4	15406.1	9.24366	915.60

Generation Daily Total: 1130.40 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	

Date: 12/15/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
0	Gas	14840.8	1513.8	0.90828	90.00	140.20
1	Gas	13361.5	1362.9	0.81774	81.00	119.80
2	Gas	13364.1	1363.1	0.81786	81.00	119.90
3	Gas	17255.2	1760.0	1.05600	104.60	171.50
4	Gas	17600.8	1795.3	1.07718	106.70	176.10
5	Gas	16394.5	1672.2	1.00332	99.40	160.60
6	Gas	17650.6	1800.4	1.08024	107.00	176.90
7	Gas	17694.5	1804.8	1.08288	107.30	177.20
8	Gas	17673.8	1802.7	1.08162	107.10	176.90
9	Gas	17632.9	1798.6	1.07916	106.90	176.30
10	Gas	17582.9	1793.5	1.07610	106.60	175.60
11	Gas	17514.0	1786.4	1.07184	106.20	174.60
12	Gas	17420.5	1776.9	1.06614	105.60	173.20
13	Gas	17326.4	1767.3	1.06038	105.00	172.00
14	Gas	17264.7	1761.0	1.05660	104.70	171.00
15	Gas	17227.4	1757.2	1.05432	104.40	170.40
16	Gas	17209.3	1755.3	1.05318	104.30	170.00
17	Gas	15871.4	1618.9	0.97134	96.20	151.70
18	Gas	12242.6	1248.7	0.74922	74.20	102.20
19	Gas	13846.9	1412.4	0.84744	83.90	126.10
20	Gas	17188.3	1753.2	1.05192	104.20	170.10
21	Gas	17469.8	1781.9	1.06914	105.90	173.80
22	Gas	17489.1	1783.9	1.07034	106.00	174.20
23	Gas	17485.9	1783.6	1.07016	106.00	174.30

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	396607.9	40454.0	24.27240	2404.20

Generation Daily Total: 3874.60 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	

Date: 12/16/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
0	Gas	17512.0	1786.2	1.07172	106.20	174.80
1	Gas	17514.4	1786.5	1.07190	106.20	174.80
2	Gas	17506.2	1785.6	1.07136	106.10	174.80
3	Gas	17534.1	1788.5	1.07310	106.30	175.10
4	Gas	17528.3	1787.9	1.07274	106.30	174.90
5	Gas	16440.3	1676.9	1.00614	99.70	161.30
6	Gas	17432.6	1778.1	1.06686	105.70	173.30
7	Gas	17442.3	1779.1	1.06746	105.70	173.20
8	Gas	17399.7	1774.8	1.06488	105.50	172.40
9	Gas	17244.4	1758.9	1.05534	104.50	170.00
10	Gas	17026.0	1736.7	1.04202	103.20	167.20
11	Gas	16806.4	1714.3	1.02858	101.90	165.00
12	Gas	16709.0	1704.3	1.02258	101.30	163.50
13	Gas	16719.3	1705.4	1.02324	101.30	163.60
14	Gas	16707.7	1704.2	1.02252	101.30	163.40
15	Gas	16670.7	1700.4	1.02024	101.10	162.90
16	Gas	16635.6	1696.8	1.01808	100.80	162.50
17	Gas	16656.7	1699.0	1.01940	101.00	162.80
18	Gas	16727.7	1706.2	1.02372	101.40	163.70
19	Gas	16770.3	1710.6	1.02636	101.70	164.20
20	Gas	16804.7	1714.1	1.02846	101.90	164.50
21	Gas	16842.9	1718.0	1.03080	102.10	164.90
22	Gas	15402.5	1571.1	0.94266	93.40	147.10
23	Gas	14831.4	1512.8	0.90768	89.90	139.70

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	404865.2	41296.4	24.77784	2454.50

Generation Daily Total: 3979.60 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	

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Date: 12/17/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
0	Gas	13728.4	1400.3	0.84018	83.20	124.60
1	Gas	12866.9	1312.4	0.78744	78.00	112.40
2	Gas	12404.7	1265.3	0.75918	75.20	105.40
3	Gas	12339.0	1258.6	0.75516	74.80	104.20
4	Gas	12364.3	1261.2	0.75672	75.00	104.60
5	Gas	12390.8	1263.9	0.75834	75.10	105.00
6	Gas	14350.0	1463.7	0.87822	87.00	132.40
7	Gas	15609.5	1592.2	0.95532	94.60	149.90
8	Gas	15594.4	1590.6	0.95436	94.50	149.90
9	Gas	15660.5	1597.4	0.95844	94.90	150.90
10	Gas	16662.1	1699.5	1.01970	101.00	163.50
11	Gas	17326.3	1767.3	1.06038	105.00	171.80
12	Gas	17303.4	1764.9	1.05894	104.90	171.40
13	Gas	17320.1	1766.7	1.06002	105.00	171.80
14	Gas	17337.8	1768.5	1.06110	105.10	172.10
15	Gas	17387.5	1773.5	1.06410	105.40	172.80
16	Gas	17425.8	1777.4	1.06644	105.60	173.30
17	Gas	17464.6	1781.4	1.06884	105.90	173.90
18	Gas	17499.7	1785.0	1.07100	106.10	174.50
19	Gas	17524.2	1787.5	1.07250	106.20	174.90
20	Gas	17547.3	1789.8	1.07388	106.40	175.10
21	Gas	17339.5	1768.6	1.06116	105.10	172.50
22	Gas	15707.1	1602.1	0.96126	95.20	151.70
23	Gas	12897.4	1315.5	0.78930	78.20	112.00

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	374051.3	38153.3	22.89198	2267.40

Generation Daily Total: 3570.60 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	

Date: 12/18/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
0	Gas	12499.9	1275.0	0.76500	75.80	105.90
1	Gas	12468.2	1271.8	0.76308	75.60	105.50
2	Gas	12467.5	1271.7	0.76302	75.60	105.50
3	Gas	12613.8	1286.6	0.77196	76.50	107.70
4	Gas	13426.8	1369.5	0.82170	81.40	120.30
5	Gas	14327.3	1461.4	0.87684	86.80	132.70
6	Gas	15745.8	1606.1	0.96366	95.40	152.30
7	Gas	17804.3	1816.0	1.08960	107.90	178.50
8	Gas	17456.1	1780.5	1.06830	105.80	174.30
9	Gas	16787.4	1712.3	1.02738	101.80	166.00
10	Gas	16866.3	1720.4	1.03224	102.20	167.10
11	Gas	17156.9	1750.0	1.05000	104.00	170.60
12	Gas	16883.1	1722.1	1.03326	102.30	167.00
13	Gas	15851.3	1616.8	0.97008	96.10	153.50
14	Gas	17272.2	1761.8	1.05708	104.70	171.40
15	Gas	17251.6	1759.7	1.05582	104.60	171.20
16	Gas	17242.3	1758.7	1.05522	104.50	171.00
17	Gas	17246.7	1759.2	1.05552	104.50	171.20
18	Gas	17228.7	1757.3	1.05438	104.40	171.10
19	Gas	17235.1	1758.0	1.05480	104.50	171.30
20	Gas	17245.3	1759.0	1.05540	104.50	171.60
21	Gas	17276.6	1762.2	1.05732	104.70	171.90
22	Gas	17250.9	1759.6	1.05576	104.60	171.50
23	Gas	17243.3	1758.8	1.05528	104.50	171.20

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	384847.4	39254.5	23.55270	2332.70

Generation Daily Total: 3720.30 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	



Date: 12/19/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
0	Gas	15175.8	1547.9	0.92874	92.00	143.70
1	Gas	12807.7	1306.4	0.78384	77.60	111.60
2	Gas	12793.2	1304.9	0.78294	77.50	111.30
3	Gas	12800.2	1305.6	0.78336	77.60	111.50
4	Gas	12822.4	1307.9	0.78474	77.70	111.80
5	Gas	13228.6	1349.3	0.80958	80.20	117.70
6	Gas	15156.1	1545.9	0.92754	91.90	144.90
7	Gas	16521.3	1685.2	1.01112	100.10	162.70
8	Gas	17505.3	1785.5	1.07130	106.10	175.10
9	Gas	17454.3	1780.3	1.06818	105.80	174.40
10	Gas	17412.6	1776.1	1.06566	105.60	173.80
11	Gas	17357.6	1770.5	1.06230	105.20	173.10
12	Gas	17302.0	1764.8	1.05888	104.90	172.40
13	Gas	17255.8	1760.1	1.05606	104.60	172.00
14	Gas	17273.1	1761.9	1.05714	104.70	171.90
15	Gas	17271.3	1761.7	1.05702	104.70	171.90
16	Gas	15054.7	1535.6	0.92136	91.30	143.10
17	Gas	14224.9	1450.9	0.87054	86.20	132.50
18	Gas	15832.6	1614.9	0.96894	96.00	154.00
19	Gas	15278.0	1558.4	0.93504	92.60	146.70
20	Gas	16049.1	1637.0	0.98220	97.30	156.80
21	Gas	15882.6	1620.0	0.97200	96.30	154.70
22	Gas	15200.3	1550.4	0.93024	92.10	145.50
23	Gas	15527.3	1583.8	0.95028	94.10	149.90

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	373186.8	38065.0	22.83900	2262.10

Generation Daily Total: 3583.00 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	

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TOTALS

REPORT DATE: 12/29/2003  
 REPORT PERIOD  
 12/09/2003 to 12/19/2003

\* = replaced data, GAS units = 100scfh, OIL units = lb/hr

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FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs	tons
Gas	2406033.0	245415.4	147.24924	14584.90

% used for a fuel = 100\*(#hrs fuel used)/(#hrs in period)  
 % used for Gas = 100\*(159/264) = 60.23  
 Total % used = 100\*(#hrs online)/(#hrs in period)  
 Total % used = 100\*(159/264) = 60.23  
 Total # hours in this period = 264  
 Total # hours online = 159  
 Total Generation for period = 22897.40 Mw

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% availability for a fuel =  $100 * (\#hrs \text{ fuel source}=1) / (\#hrs \text{ fuel used})$

% availability for Gas =  $100 * (159) / (159) = 100.00$

Total % availability =

$100 * (\text{total } \#hrs \text{ each fuel source}=1) / (\text{total } \#hrs \text{ each fuel used})$

Total % availability =  $100 * 159 / 159 = 100.00$

=====  
 Daily Calibration Summary  
 Tampa Electric Company  
 Bayside CT2C  
 =====

Report Period

Day: 01/12/2004

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:39	0.00	0.000P	0.00	1:44	84.50	0.733P	83.40
	6:26	0.00	0.000P	0.00	6:31	84.70	0.867P	83.40
NOx Low	1:39	0.00	0.000P	0.00	1:34	5.60	0.100P	5.50
	6:26	0.00	0.000P	0.00	6:22	5.70	0.200P	5.50
O2	1:39	0.00	0.000P	0.00	1:44	5.60	0.100P	5.50
	6:26	0.00	0.000P	0.00	6:31	5.60	0.100P	5.50
SO2 High	1:44	-1.20	0.240P	0.00	1:39	549.60	0.680P	553.00
	6:31	-0.90	0.180P	0.00	6:26	550.80	0.440P	553.00
SO2 Low	1:44	0.20	0.200P	0.00	1:34	11.50	0.000P	11.50
	6:31	0.20	0.200P	0.00	6:22	11.60	0.100P	11.50

=====  
 Today's Date: 01/27/2004  
 Time: 13:13:39

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

=====  
 Daily Calibration Summary  
 Tampa Electric Company  
 Bayside CT2C  
 =====

Report Period  
Day: 01/14/2004

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:39	0.00	0.000P	0.00	1:44	75.20	5.467F	83.40
	6:45	0.00	0.000P	0.00	6:50	85.00	1.067P	83.40
NOx Low	1:39	0.00	0.000P	0.00	1:34	5.10	0.400P	5.50
	6:45	0.10	0.100P	0.00	6:41	5.80	0.300P	5.50
O2	1:39	0.00	0.000P	0.00	1:44	4.90	0.600P	5.50
	6:45	0.00	0.000P	0.00	6:50	5.50	0.000P	5.50
O High	1:44	2.50	0.500P	0.00	1:39	557.90	0.980P	553.00
	6:50	-0.90	0.180P	0.00	6:45	558.80	1.160P	553.00
O Low	1:44	3.50	3.500P	0.00	1:34	9.70	1.800P	11.50
	6:50	0.30	0.300P	0.00	6:41	11.90	0.400P	11.50

Today's Date: 01/27/2004  
Time: 13:14:06

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

=====  
 Daily Calibration Summary  
 Tampa Electric Company  
 Bayside CT2C  
 =====

Report Period

Day: 01/15/2004

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:39	0.00	0.000P	0.00	1:44	85.20	1.200P	83.40
NOx Low	1:39	0.00	0.000P	0.00	1:34	5.80	0.300P	5.50
CO2	1:39	0.00	0.000P	0.00	1:44	5.40	0.100P	5.50
CO High	1:44	-0.70	0.140P	0.00	1:39	564.00	2.200P	553.00
CO Low	1:44	0.40	0.400P	0.00	1:34	12.20	0.700P	11.50

Today's Date: 01/27/2004  
 Time: 13:14:35

%CE = Percent Calibration Error

P - Calibration Passed    F - Calibration Failed

BEST AVAILABLE COPY

=====  
Daily Calibration Summary  
Tampa Electric Company  
Bayside CT2C  
=====

Report Period

Day: 01/16/2004

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:39	0.00	0.000P	0.00	1:44	83.50	0.067P	83.40
	7:35	0.10	0.067P	0.00	7:40	83.70	0.200P	83.40
NOx Low	1:39	0.00	0.000P	0.00	1:34	5.60	0.100P	5.50
	7:35	0.10	0.100P	0.00	7:30	5.80	0.300P	5.50
CO2	1:39	0.00	0.000P	0.00	1:44	5.50	0.000P	5.50
	7:35	0.00	0.000P	0.00	7:40	5.50	0.000P	5.50
CO High	1:44	-0.90	0.180P	0.00	1:39	549.60	0.680P	553.00
	7:40	-0.90	0.180P	0.00	7:35	548.70	1.060P	554.00
CO Low	1:44	0.20	0.200P	0.00	1:34	11.40	0.100P	11.50
	7:40	0.20	0.200P	0.00	7:30	11.40	0.100P	11.50

=====  
Today's Date: 01/27/2004  
Time: 13:15:09

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

=====  
 Daily Calibration Summary  
 Tampa Electric Company  
 Bayside CT2C  
 =====

Report Period

Day: 01/17/2004

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:39	0.00	0.000P	0.00	1:44	77.00	4.267P	83.40
NOx Low	1:39	0.00	0.000P	0.00	1:34	5.50	0.000P	5.50
CO2	1:39	0.00	0.000P	0.00	1:44	5.20	0.300P	5.50
CO High	1:44	-0.20	0.040P	0.00	1:39	557.00	0.600P	554.00
CO Low	1:44	1.00	1.000P	0.00	1:34	9.90	1.600P	11.50

=====

Today's Date: 01/27/2004  
 Time: 13:15:28

%CE = Percent Calibration Error

P - Calibration Passed    F - Calibration Failed

=====  
 Daily Calibration Summary  
 Tampa Electric Company  
 Bayside CT2C  
 =====

Report Period

Day: 01/18/2004

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:39	0.00	0.000P	0.00	1:44	83.30	0.067P	83.40
Ox Low	1:39	0.00	0.000P	0.00	1:34	5.60	0.100P	5.50
CO2	1:39	0.00	0.000P	0.00	1:44	5.50	0.000P	5.50
CO High	1:44	-0.90	0.180P	0.00	1:39	553.50	0.100P	554.00
CO Low	1:44	0.30	0.300P	0.00	1:34	11.60	0.100P	11.50

Today's Date: 01/27/2004  
 Time: 13:15:49

%CE = Percent Calibration Error

P - Calibration Passed    F - Calibration Failed



=====  
 Daily Calibration Summary  
 Tampa Electric Company  
 Bayside CT2C  
 =====

Report Period

Day: 01/19/2004

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:39	0.00	0.000P	0.00	1:44	84.20	0.533P	83.40
Ox Low	1:39	0.00	0.000P	0.00	1:34	5.70	0.200P	5.50
CO2	1:39	0.00	0.000P	0.00	1:44	5.40	0.100P	5.50
SO High	1:44	-0.90	0.180P	0.00	1:39	559.60	1.120P	554.00
SO Low	1:44	0.40	0.400P	0.00	1:34	11.90	0.400P	11.50

=====  
 Today's Date: 01/27/2004  
 Time: 13:16:13

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

RATA REFERENCE METHOD QA/QC REPORT

<b>Bayside 2C RATA - Report</b>				
<b>RUN 1</b>				
12/20/2003				
10:51				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)			0	4.47
Mid Level Certified Value (PPM or %)	12.6	11	3	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.063	0.042	0.048	0.025
Low Level Observed	-	-	0.004	4.457
Mid Level Observed	12.578	11.029	3.003	8.23
High Level Observed	21.002	17.963	6.29	12.552
% Difference from Zero to Target	0.25	0.21	0.48	0.17
% Difference from Low to Target	0	0	0.04	-0.09
% Difference from Mid to Target	-0.09	0.14	0.03	-0.2
% Difference from High to Target	0.41	-0.18	0	-0.32
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.063	0.042	0.048	0.025
Actual Span From Linearity	12.578	11.029	3.003	4.457
<b>Initial Readings</b>				
Zero	0.063	0.042	0.048	0.025
Span	12.578	10.98	3.008	4.384
<b>Final Readings</b>				
Zero	0.124	0.042	0.018	0.025
Span	12.578	10.98	3.042	4.347
<b>Initial Sampling System Bias</b>				
Zero Bias (Run-System Cal)	0	0	0	0
Span Bias	0	-0.24	0.05	-0.49
<b>Final Sampling System Bias</b>				
Zero Bias (Run-System Cal)	0.24	0	-0.3	0
Span Bias	0	-0.24	0.39	-0.73
<b>Calculated Drift</b>				
Zero Drift (Run-Run)	0.24	0	-0.3	0
Span Drift	0	0	0.34	-0.25
<b>Run Results</b>				
Raw Results	13.98	4.11	0.97	3.61
Corrected Results (ppmv)	14.01	4.09	0.94	3.69

Bayside 2C RATA - Report				
RUN 2				
12/20/2003				
11:30				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)			0	4.47
Mid Level Certified Value (PPM or %)	12.6	11	3	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.063	0.042	0.048	0.025
Low Level Observed	-	-	0.004	4.457
Mid Level Observed	12.578	11.029	3.003	8.23
High Level Observed	21.002	17.963	6.29	12.552
% Difference from Zero to Target	0.25	0.21	0.48	0.17
% Difference from Low to Target	0	0	0.04	-0.09
% Difference from Mid to Target	-0.09	0.14	0.03	-0.2
% Difference from High to Target	0.41	-0.18	0	-0.32
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.063	0.042	0.048	0.025
Actual Span From Linearity	12.578	11.029	3.003	4.457
Initial Readings				
Zero	0.124	0.042	0.018	0.025
Span	12.578	10.98	3.042	4.347
Final Readings				
Zero	0.124	0.042	0.048	0.062
Span	12.578	10.98	3.042	4.311
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	-0.3	0
Span Bias	0	-0.24	0.39	-0.73
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	0	0.25
Span Bias	0	-0.24	0.39	-0.97
Calculated Drift				
Zero Drift (Run-Run)	0	0	0.3	0.25
Span Drift	0	0	0	-0.24
Run Results				
Raw Results	13.99	4.1	1	3.59
Corrected Results (ppmv)	14.03	4.08	0.96	3.7

Bayside 2C RATA - Report				
RUN 3				
12/20/2003				
12:05				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)			0	4.47
Mid Level Certified Value (PPM or %)	12.6	11	3	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.063	0.042	0.048	0.025
Low Level Observed	-	-	0.004	4.457
Mid Level Observed	12.578	11.029	3.003	8.23
High Level Observed	21.002	17.963	6.29	12.552
% Difference from Zero to Target	0.25	0.21	0.48	0.17
% Difference from Low to Target	0	0	0.04	-0.09
% Difference from Mid to Target	-0.09	0.14	0.03	-0.2
% Difference from High to Target	0.41	-0.18	0	-0.32
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.063	0.042	0.048	0.025
Actual Span From Linearity	12.578	11.029	3.003	4.457
Initial Readings				
Zero	0.124	0.042	0.048	0.062
Span	12.578	10.98	3.042	4.311
Final Readings				
Zero	0.124	0.042	0.057	0.099
Span	12.578	10.98	3.056	4.347
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	0	0.25
Span Bias	0	-0.24	0.39	-0.97
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	0.09	0.49
Span Bias	0	-0.24	0.53	-0.73
Calculated Drift				
Zero Drift (Run-Run)	0	0	0.09	0.25
Span Drift	0	0	0.14	0.24
Run Results				
Raw Results	13.98	4.1	0.92	3.56
Corrected Results (ppmv)	14.02	4.08	0.87	3.66

<b>Bayside 2C RATA - Report</b>				
<b>RUN 4</b>				
12/20/2003				
12:44				
<b>Linearity Check - Calibration Error</b>	<b>O2</b>	<b>CO2</b>	<b>CO</b>	<b>NOX</b>
<b>Analyzer Range</b>	25	20	10	15
<b>Units</b>	%	%	PPM	PPM
<b>Low Level Certified Value (PPM or %)</b>			0	4.47
<b>Mid Level Certified Value (PPM or %)</b>	12.6	11	3	8.26
<b>High Level Certified Value (PPM or %)</b>	20.9	18	6.29	12.6
<b>Zero Level Observed</b>	0.063	0.042	0.048	0.025
<b>Low Level Observed</b>	-	-	0.004	4.457
<b>Mid Level Observed</b>	12.578	11.029	3.003	8.23
<b>High Level Observed</b>	21.002	17.963	6.29	12.552
<b>% Difference from Zero to Target</b>	0.25	0.21	0.48	0.17
<b>% Difference from Low to Target</b>	0	0	0.04	-0.09
<b>% Difference from Mid to Target</b>	-0.09	0.14	0.03	-0.2
<b>% Difference from High to Target</b>	0.41	-0.18	0	-0.32
<b>Analyzer Range</b>	25	20	10	15
<b>Units</b>	%	%	PPM	PPM
<b>Actual Zero From Linearity</b>	0.063	0.042	0.048	0.025
<b>Actual Span From Linearity</b>	12.578	11.029	3.003	4.457
<b>Initial Readings</b>				
<b>Zero</b>	0.124	0.042	0.057	0.099
<b>Span</b>	12.578	10.98	3.056	4.347
<b>Final Readings</b>				
<b>Zero</b>	0.124	0.042	0.053	0.062
<b>Span</b>	12.578	10.931	3.037	4.311
<b>Initial Sampling System Bias</b>				
<b>Zero Bias (Run-System Cal)</b>	0.24	0	0.09	0.49
<b>Span Bias</b>	0	-0.24	0.53	-0.73
<b>Final Sampling System Bias</b>				
<b>Zero Bias (Run-System Cal)</b>	0.24	0	0.05	0.25
<b>Span Bias</b>	0	-0.49	0.34	-0.97
<b>Calculated Drift</b>				
<b>Zero Drift (Run-Run)</b>	0	0	-0.04	-0.25
<b>Span Drift</b>	0	-0.25	-0.19	-0.24
<b>Run Results</b>				
<b>Raw Results</b>	13.96	4.09	0.82	3.54
<b>Corrected Results (ppmv)</b>	14	4.08	0.77	3.64

<b>Bayside 2C RATA - Report</b>				
<b>RUN 5</b>				
12/20/2003				
13:24				
<b>Linearity Check - Calibration Error</b>	<b>O2</b>	<b>CO2</b>	<b>CO</b>	<b>NOX</b>
<b>Analyzer Range</b>	25	20	10	15
<b>Units</b>	%	%	PPM	PPM
<b>Low Level Certified Value (PPM or %)</b>			0	4.47
<b>Mid Level Certified Value (PPM or %)</b>	12.6	11	3	8.26
<b>High Level Certified Value (PPM or %)</b>	20.9	18	6.29	12.6
<b>Zero Level Observed</b>	0.063	0.042	0.048	0.025
<b>Low Level Observed</b>	-	-	0.004	4.457
<b>Mid Level Observed</b>	12.578	11.029	3.003	8.23
<b>High Level Observed</b>	21.002	17.963	6.29	12.552
<b>% Difference from Zero to Target</b>	0.25	0.21	0.48	0.17
<b>% Difference from Low to Target</b>	0	0	0.04	-0.09
<b>% Difference from Mid to Target</b>	-0.09	0.14	0.03	-0.2
<b>% Difference from High to Target</b>	0.41	-0.18	0	-0.32
<b>Analyzer Range</b>	25	20	10	15
<b>Units</b>	%	%	PPM	PPM
<b>Actual Zero From Linearity</b>	0.063	0.042	0.048	0.025
<b>Actual Span From Linearity</b>	12.578	11.029	3.003	4.457
<b>Initial Readings</b>				
<b>Zero</b>	0.124	0.042	0.053	0.062
<b>Span</b>	12.578	10.931	3.037	4.311
<b>Final Readings</b>				
<b>Zero</b>	0.124	0.042	0.033	0.062
<b>Span</b>	12.639	10.931	3.066	4.384
<b>Initial Sampling System Bias</b>				
<b>Zero Bias (Run-System Cal)</b>	0.24	0	0.05	0.25
<b>Span Bias</b>	0	-0.49	0.34	-0.97
<b>Final Sampling System Bias</b>				
<b>Zero Bias (Run-System Cal)</b>	0.24	0	-0.15	0.25
<b>Span Bias</b>	0.24	-0.49	0.63	-0.49
<b>Calculated Drift</b>				
<b>Zero Drift (Run-Run)</b>	0	0	-0.2	0
<b>Span Drift</b>	0.24	0	0.29	0.49
<b>Run Results</b>				
<b>Raw Results</b>	13.94	4.09	0.73	3.56
<b>Corrected Results (ppmv)</b>	13.94	4.09	0.69	3.65

<b>Bayside 2C RATA - Report</b>				
RUN 6				
12/20/2003				
13:55				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)			0	4.47
Mid Level Certified Value (PPM or %)	12.6	11	3	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.063	0.042	0.048	0.025
Low Level Observed	-	-	0.004	4.457
Mid Level Observed	12.578	11.029	3.003	8.23
High Level Observed	21.002	17.963	6.29	12.552
% Difference from Zero to Target	0.25	0.21	0.48	0.17
% Difference from Low to Target	0	0	0.04	-0.09
% Difference from Mid to Target	-0.09	0.14	0.03	-0.2
% Difference from High to Target	0.41	-0.18	0	-0.32
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.063	0.042	0.048	0.025
Actual Span From Linearity	12.578	11.029	3.003	4.457
Initial Readings				
Zero	0.124	0.042	0.033	0.062
Span	12.639	10.931	3.066	4.384
Final Readings				
Zero	0.124	0.042	0.028	0.062
Span	12.639	10.931	3.027	4.384
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	-0.15	0.25
Span Bias	0.24	-0.49	0.63	-0.49
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	-0.2	0.25
Span Bias	0.24	-0.49	0.24	-0.49
Calculated Drift				
Zero Drift (Run-Run)	0	0	-0.05	0
Span Drift	0	0	-0.39	0
Run Results				
Raw Results	13.92	4.09	0.73	3.57
Corrected Results (ppmv)	13.89	4.09	0.7	3.63



<b>Bayside 2C RATA - Report</b>				
<b>RUN 7</b>				
12/20/2003				
14:26				
<b>Linearity Check - Calibration Error</b>	<b>O2</b>	<b>CO2</b>	<b>CO</b>	<b>NOX</b>
<b>Analyzer Range</b>	25	20	10	15
<b>Units</b>	%	%	PPM	PPM
<b>Low Level Certified Value (PPM or %)</b>			0	4.47
<b>Mid Level Certified Value (PPM or %)</b>	12.6	11	3	8.26
<b>High Level Certified Value (PPM or %)</b>	20.9	18	6.29	12.6
<b>Zero Level Observed</b>	0.063	0.042	0.048	0.025
<b>Low Level Observed</b>	-	-	0.004	4.457
<b>Mid Level Observed</b>	12.578	11.029	3.003	8.23
<b>High Level Observed</b>	21.002	17.963	6.29	12.552
<b>% Difference from Zero to Target</b>	0.25	0.21	0.48	0.17
<b>% Difference from Low to Target</b>	0	0	0.04	-0.09
<b>% Difference from Mid to Target</b>	-0.09	0.14	0.03	-0.2
<b>% Difference from High to Target</b>	0.41	-0.18	0	-0.32
<b>Analyzer Range</b>				
	25	20	10	15
<b>Units</b>	%	%	PPM	PPM
<b>Actual Zero From Linearity</b>	0.063	0.042	0.048	0.025
<b>Actual Span From Linearity</b>	12.578	11.029	3.003	4.457
<b>Initial Readings</b>				
<b>Zero</b>	0.124	0.042	0.028	0.062
<b>Span</b>	12.639	10.931	3.027	4.384
<b>Final Readings</b>				
<b>Zero</b>	0.124	0.042	0.048	0.062
<b>Span</b>	12.578	10.931	3.012	4.384
<b>Initial Sampling System Bias</b>				
<b>Zero Bias (Run-System Cal)</b>	0.24	0	-0.2	0.25
<b>Span Bias</b>	0.24	-0.49	0.24	-0.49
<b>Final Sampling System Bias</b>				
<b>Zero Bias (Run-System Cal)</b>	0.24	0	0	0.25
<b>Span Bias</b>	0	-0.49	0.09	-0.49
<b>Calculated Drift</b>				
<b>Zero Drift (Run-Run)</b>	0	0	0.2	0
<b>Span Drift</b>	-0.24	0	-0.15	0
<b>Run Results</b>				
<b>Raw Results</b>	13.92	4.09	0.73	3.57
<b>Corrected Results (ppmv)</b>	13.92	4.09	0.7	3.63

Bayside 2C RATA - Report				
RUN 8				
12/20/2003				
14:57				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)			0	4.47
Mid Level Certified Value (PPM or %)	12.6	11	3	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.063	0.042	0.048	0.025
Low Level Observed	-	-	0.004	4.457
Mid Level Observed	12.578	11.029	3.003	8.23
High Level Observed	21.002	17.963	6.29	12.552
% Difference from Zero to Target	0.25	0.21	0.48	0.17
% Difference from Low to Target	0	0	0.04	-0.09
% Difference from Mid to Target	-0.09	0.14	0.03	-0.2
% Difference from High to Target	0.41	-0.18	0	-0.32
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.063	0.042	0.048	0.025
Actual Span From Linearity	12.578	11.029	3.003	4.457
Initial Readings				
Zero	0.124	0.042	0.048	0.062
Span	12.578	10.931	3.012	4.384
Final Readings				
Zero	0.124	0.042	0.023	0.062
Span	12.578	10.931	3.017	4.384
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	0	0.25
Span Bias	0	-0.49	0.09	-0.49
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	-0.25	0.25
Span Bias	0	-0.49	0.14	-0.49
Calculated Drift				
Zero Drift (Run-Run)	0	0	-0.25	0
Span Drift	0	0	0.05	0
Run Results				
Raw Results	13.92	4.09	0.76	3.58
Corrected Results (ppmv)	13.96	4.09	0.73	3.64

Bayside 2C RATA - Report				
RUN 9				
12/20/2003				
15:28				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)			0	4.47
Mid Level Certified Value (PPM or %)	12.6	11	3	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.063	0.042	0.048	0.025
Low Level Observed	-	-	0.004	4.457
Mid Level Observed	12.578	11.029	3.003	8.23
High Level Observed	21.002	17.963	6.29	12.552
% Difference from Zero to Target	0.25	0.21	0.48	0.17
% Difference from Low to Target	0	0	0.04	-0.09
% Difference from Mid to Target	-0.09	0.14	0.03	-0.2
% Difference from High to Target	0.41	-0.18	0	-0.32
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.063	0.042	0.048	0.025
Actual Span From Linearity	12.578	11.029	3.003	4.457
Initial Readings				
Zero	0.124	0.042	0.023	0.062
Span	12.578	10.931	3.017	4.384
Final Readings				
Zero	0.124	0.042	0.028	0.062
Span	12.578	10.931	3.008	4.384
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	-0.25	0.25
Span Bias	0	-0.49	0.14	-0.49
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	-0.2	0.25
Span Bias	0	-0.49	0.05	-0.49
Calculated Drift				
Zero Drift (Run-Run)	0	0	0.05	0
Span Drift	0	0	-0.09	0
Run Results				
Raw Results	13.92	4.09	0.79	3.57
Corrected Results (ppmv)	13.96	4.09	0.77	3.63

RATA REFERENCE METHOD DATA LOG

Date	Time	O2 (%)	CO2 (%)	CO (PPM)	NOX (PPM)	Status
12/20/2003	8:07:58 AM	13.98	4.1	0.66	3.39	
12/20/2003	8:07:59 AM	13.98	4.14	0.66	3.43	
12/20/2003	8:08:18 AM	13.98	4.1	0.75	3.39	
12/20/2003	8:08:48 AM	13.92	4.1	0.84	3.36	
12/20/2003	8:09:18 AM	13.98	4.1	0.82	3.43	
12/20/2003	8:09:48 AM	13.92	4.1	0.85	3.36	
12/20/2003	8:10:17 AM	13.98	4.05	0.82	3.43	
12/20/2003	8:10:48 AM	13.98	4.1	0.82	3.47	
12/20/2003	8:11:18 AM	13.98	1.9	2.57	2.04	
12/20/2003	8:11:48 AM	12.39	0.04	4.63	0.06	
12/20/2003	8:12:18 AM	20.09	0.04	1	0.03	Linearity Check
12/20/2003	8:12:48 AM	21.06	0.09	0.21	-0.01	Linearity Check
12/20/2003	8:13:18 AM	21.06	0.04	0.11	-0.01	Linearity Check
12/20/2003	8:13:48 AM	21.12	0.09	0.09	-0.01	Linearity Check
12/20/2003	8:14:18 AM	21.12	0.04	0.09	-0.01	Linearity Check
12/20/2003	8:14:48 AM	21.12	0.04	0.1	-0.01	Linearity Check
12/20/2003	8:15:18 AM	21.12	0.38	0.16	10.9	Linearity Check
12/20/2003	8:15:47 AM	4.46	0.09	0.05	11.89	Linearity Check
12/20/2003	8:16:18 AM	0.43	0.04	-0.13	12.04	Linearity Check
12/20/2003	8:16:48 AM	0.19	0.04	-0.25	12.15	Linearity Check
12/20/2003	8:17:18 AM	0.06	0.04	-0.21	12.51	Linearity Check
12/20/2003	8:17:48 AM	0.06	0.04	-0.28	12.48	Linearity Check
12/20/2003	8:18:18 AM	0.06	0.04	-0.31	12.55	Linearity Check
12/20/2003	8:18:48 AM	0.06	0.04	-0.27	12.51	Linearity Check
12/20/2003	8:19:18 AM	0	-0.01	-0.19	12.51	Linearity Check
12/20/2003	8:19:48 AM	0	0.04	-0.24	8.34	Linearity Check
12/20/2003	8:20:18 AM	0.06	0.04	-0.21	7.9	Linearity Check
12/20/2003	8:20:48 AM	0	0.04	-0.15	8.19	Linearity Check
12/20/2003	8:21:18 AM	0	0.04	-0.28	8.19	Linearity Check
12/20/2003	8:21:48 AM	-0.06	-0.01	-0.3	8.16	Linearity Check
12/20/2003	8:22:18 AM	0	0.04	-0.26	6.29	Linearity Check
12/20/2003	8:22:48 AM	0.98	3.66	0.11	3.36	Linearity Check
12/20/2003	8:23:18 AM	10.69	3.95	0.63	3.58	Linearity Check
12/20/2003	8:23:48 AM	13.37	3.95	0.66	3.65	Linearity Check
12/20/2003	8:24:18 AM	10.14	0.04	0.36	4.49	Linearity Check
12/20/2003	8:24:48 AM	0.86	0.04	0.03	4.42	Linearity Check
12/20/2003	8:25:17 AM	0	-0.01	-0.17	4.42	Linearity Check
12/20/2003	8:25:48 AM	0	0.04	1.66	0.1	Linearity Check
12/20/2003	8:26:17 AM	-0.06	-0.01	5.47	0.03	Linearity Check
12/20/2003	8:26:48 AM	-0.06	-0.01	6.29	-0.01	Linearity Check
12/20/2003	8:27:18 AM	-0.06	-0.01	6.25	-0.01	Linearity Check
12/20/2003	8:27:48 AM	-0.06	0.04	6.29	-0.01	Linearity Check

12/20/2003	8:28:18 AM	0	3.95	5.95	2.85	Linearity Check
12/20/2003	8:28:48 AM	9.71	1.07	2.81	3.39	Linearity Check
12/20/2003	8:29:18 AM	6.66	0.04	2.67	0.03	Linearity Check
12/20/2003	8:29:48 AM	0.49	0.04	3.25	0.03	Linearity Check
12/20/2003	8:30:18 AM	-0.06	-0.01	3.05	-0.01	Linearity Check
12/20/2003	8:30:48 AM	-0.06	0.04	2.96	-0.05	Linearity Check
12/20/2003	8:31:18 AM	1.71	13.86	1.61	-0.01	Linearity Check
12/20/2003	8:31:47 AM	5.25	0.19	0.49	-0.01	Linearity Check
12/20/2003	8:32:18 AM	0.73	0.04	2.23	-0.01	Linearity Check
12/20/2003	8:32:47 AM	-0.06	0.04	3.11	-0.01	Linearity Check
12/20/2003	8:33:18 AM	-0.06	-0.01	3.15	-0.01	Linearity Check
12/20/2003	8:33:48 AM	-0.06	-0.01	3.09	-0.01	Linearity Check
12/20/2003	8:34:18 AM	4.28	0.04	2.02	-0.01	Linearity Check
12/20/2003	8:34:48 AM	19.17	0.04	0.32	-0.01	Linearity Check
12/20/2003	8:35:18 AM	20.76	-0.01	-0.04	-0.05	Linearity Check
12/20/2003	8:35:48 AM	20.94	-0.01	-0.07	-0.05	Linearity Check
12/20/2003	8:36:18 AM	21	7.32	0.04	-0.01	Linearity Check
12/20/2003	8:36:48 AM	15.14	10.54	-0.22	-0.05	Linearity Check
12/20/2003	8:37:18 AM	12.76	10.74	-0.46	-0.01	Linearity Check
12/20/2003	8:37:48 AM	12.64	10.83	-0.46	-0.05	Linearity Check
12/20/2003	8:38:18 AM	12.52	10.93	-0.46	-0.05	Linearity Check
12/20/2003	8:38:48 AM	12.52	10.93	-0.46	-0.05	Linearity Check
12/20/2003	8:39:18 AM	12.52	10.93	-0.46	-0.01	Linearity Check
12/20/2003	8:39:48 AM	12.58	16.79	-0.46	-0.05	Linearity Check
12/20/2003	8:40:18 AM	9.46	17.87	-0.46	-0.05	Linearity Check
12/20/2003	8:40:48 AM	6.53	17.96	-0.46	-0.05	Linearity Check
12/20/2003	8:41:18 AM	6.29	17.96	-0.46	-0.01	Linearity Check
12/20/2003	8:41:48 AM	6.23	17.91	-0.46	-0.05	Linearity Check
12/20/2003	8:42:18 AM	7.57	10.98	-0.46	-0.05	Linearity Check
12/20/2003	8:42:48 AM	11.97	9.12	-0.46	-0.01	Linearity Check
12/20/2003	8:43:18 AM	12.94	4.19	-0.18	3.39	Linearity Check
12/20/2003	8:43:48 AM	13.8	4.14	0.42	3.5	Linearity Check
12/20/2003	8:44:18 AM	13.92	4.14	0.67	3.5	Linearity Check
12/20/2003	8:44:48 AM	13.92	4.14	0.58	3.5	Linearity Check
12/20/2003	8:45:18 AM	13.92	4.14	0.65	3.54	Linearity Check
12/20/2003	8:45:48 AM	13.92	4.1	0.66	3.5	Linearity Check
12/20/2003	8:46:17 AM	13.92	4.1	0.67	3.5	Linearity Check
12/20/2003	8:46:48 AM	13.92	4.1	0.72	3.5	Linearity Check
12/20/2003	8:47:17 AM	13.92	4.1	0.65	3.54	Linearity Check
12/20/2003	8:47:48 AM	13.98	4.14	0.67	3.58	Linearity Check
12/20/2003	8:48:18 AM	13.92	4.1	0.75	3.54	
12/20/2003	8:48:48 AM	13.92	4.1	0.75	3.54	
12/20/2003	8:49:18 AM	13.92	4.05	0.67	3.5	

12/20/2003	8:49:48 AM	13.92	4.1	0.72	3.58
12/20/2003	8:50:18 AM	13.98	4.1	0.75	3.58
12/20/2003	8:50:48 AM	13.92	4.1	0.74	3.61
12/20/2003	8:51:18 AM	13.92	4.1	0.65	3.54
12/20/2003	8:51:48 AM	13.98	4.1	0.63	3.61
12/20/2003	8:52:18 AM	13.98	4.1	0.68	3.61
12/20/2003	8:52:48 AM	13.98	4.1	0.77	3.61
12/20/2003	8:53:18 AM	13.98	4.1	0.69	3.54
12/20/2003	8:53:48 AM	13.98	4.1	0.62	3.65
12/20/2003	8:54:18 AM	13.98	4.1	0.68	3.61
12/20/2003	8:54:48 AM	13.92	4.1	0.62	3.58
12/20/2003	8:55:18 AM	13.98	4.1	0.7	3.65
12/20/2003	8:55:47 AM	13.98	4.1	0.66	3.58
12/20/2003	8:56:18 AM	13.98	4.05	0.73	3.65
12/20/2003	8:56:47 AM	13.98	4.1	0.63	3.61
12/20/2003	8:57:18 AM	13.98	4.1	0.59	3.61
12/20/2003	8:57:47 AM	13.92	4.1	0.62	3.65
12/20/2003	8:58:18 AM	13.98	4.1	0.62	3.58
12/20/2003	8:58:48 AM	13.98	4.1	0.66	3.58
12/20/2003	8:59:18 AM	13.98	4.1	0.77	3.69
12/20/2003	8:59:48 AM	13.98	4.1	0.86	3.65
12/20/2003	9:00:18 AM	13.98	4.1	0.58	3.58
12/20/2003	9:00:48 AM	13.92	4.1	0.59	3.61
12/20/2003	9:01:18 AM	13.98	4.1	0.7	3.69
12/20/2003	9:01:48 AM	13.98	4.1	0.73	3.61
12/20/2003	9:02:18 AM	13.98	4.1	0.7	3.58
12/20/2003	9:02:48 AM	13.92	4.05	0.71	3.61
12/20/2003	9:03:18 AM	13.98	4.1	0.7	3.69
12/20/2003	9:03:48 AM	13.98	4.1	0.59	3.65
12/20/2003	9:04:18 AM	13.98	4.1	0.69	3.58
12/20/2003	9:04:48 AM	13.98	4.1	0.76	3.5
12/20/2003	9:05:18 AM	14.04	4.14	0.76	3.5
12/20/2003	9:05:48 AM	13.98	4.05	0.69	3.5
12/20/2003	9:06:18 AM	13.98	4.1	0.71	3.54
12/20/2003	9:06:48 AM	13.98	4.1	0.74	3.54
12/20/2003	9:07:18 AM	13.98	4.1	0.73	3.5
12/20/2003	9:07:48 AM	13.98	4.1	0.71	3.5
12/20/2003	9:08:18 AM	13.98	4.1	0.63	3.58
12/20/2003	9:08:48 AM	13.98	4.1	0.72	3.54
12/20/2003	9:09:18 AM	13.98	4.1	0.77	3.61
12/20/2003	9:09:48 AM	13.98	4.1	0.72	3.54
12/20/2003	9:10:17 AM	13.98	4.1	0.65	3.58
12/20/2003	9:10:48 AM	13.98	4.1	0.67	3.58

12/20/2003	9:11:18 AM	13.92	4.1	0.74	3.5
12/20/2003	9:11:48 AM	13.98	4.1	0.71	3.54
12/20/2003	9:12:18 AM	13.92	4.1	0.74	3.5
12/20/2003	9:12:48 AM	13.98	4.1	0.57	3.54
12/20/2003	9:13:18 AM	13.98	4.1	0.65	3.58
12/20/2003	9:13:48 AM	13.98	4.1	0.63	3.58
12/20/2003	9:14:18 AM	13.98	4.1	0.62	3.54
12/20/2003	9:14:48 AM	14.04	4.1	0.69	3.58
12/20/2003	9:15:18 AM	13.98	4.1	0.76	3.61
12/20/2003	9:15:48 AM	13.98	4.1	0.64	3.58
12/20/2003	9:16:18 AM	13.92	4.05	0.71	3.5
12/20/2003	9:16:48 AM	13.92	4.1	0.79	3.5
12/20/2003	9:17:18 AM	13.98	4.1	0.68	3.5
12/20/2003	9:17:48 AM	14.04	4.1	0.63	3.54
12/20/2003	9:18:18 AM	13.98	4.1	0.65	3.54
12/20/2003	9:18:48 AM	14.04	4.1	0.56	3.58
12/20/2003	9:19:18 AM	13.98	4.1	0.62	3.54
12/20/2003	9:19:47 AM	13.98	4.1	0.64	3.54
12/20/2003	9:20:18 AM	13.98	4.1	0.73	3.54
12/20/2003	9:20:48 AM	13.98	4.05	0.8	3.5
12/20/2003	9:21:18 AM	13.98	4.14	0.81	3.54
12/20/2003	9:21:48 AM	13.98	4.14	0.7	3.54
12/20/2003	9:22:18 AM	13.98	4.1	0.74	3.54
12/20/2003	9:22:48 AM	13.98	4.1	0.67	3.5
12/20/2003	9:23:18 AM	14.04	4.1	0.68	3.54
12/20/2003	9:23:48 AM	13.98	4.1	0.7	3.54
12/20/2003	9:24:18 AM	13.98	4.14	0.56	3.5
12/20/2003	9:24:47 AM	13.92	4.05	0.64	3.5
12/20/2003	9:25:18 AM	13.98	4.1	0.63	3.58
12/20/2003	9:25:48 AM	13.98	4.1	0.75	3.5
12/20/2003	9:26:18 AM	13.98	4.1	0.66	3.54
12/20/2003	9:26:48 AM	13.98	4.1	0.64	3.58
12/20/2003	9:27:18 AM	13.98	4.1	0.57	3.58
12/20/2003	9:27:48 AM	13.98	4.1	0.63	3.61
12/20/2003	9:28:18 AM	13.98	4.1	0.66	3.58
12/20/2003	9:28:48 AM	13.98	4.1	0.63	3.65
12/20/2003	9:29:18 AM	13.92	4.1	0.73	3.61
12/20/2003	9:29:48 AM	13.92	4.1	0.76	3.58
12/20/2003	9:30:18 AM	13.98	4.14	0.74	3.54
12/20/2003	9:30:48 AM	13.98	4.1	0.66	3.54
12/20/2003	9:31:18 AM	13.98	4.1	0.79	3.47
12/20/2003	9:31:48 AM	13.98	4.1	0.8	3.47
12/20/2003	9:32:18 AM	14.04	4.14	0.76	3.47



12/20/2003	9:32:48 AM	13.98	4.1	0.73	3.54
12/20/2003	9:33:18 AM	13.98	4.1	0.8	3.54
12/20/2003	9:33:48 AM	13.98	4.1	0.71	3.39
12/20/2003	9:34:18 AM	13.98	4.1	0.82	3.43
12/20/2003	9:34:48 AM	13.98	4.1	0.64	3.47
12/20/2003	9:35:18 AM	13.98	4.1	0.77	3.47
12/20/2003	9:35:48 AM	13.98	4.1	0.79	3.5
12/20/2003	9:36:18 AM	13.98	4.1	0.75	3.47
12/20/2003	9:36:48 AM	13.98	4.1	0.77	3.43
12/20/2003	9:37:17 AM	13.98	4.1	0.71	3.43
12/20/2003	9:37:48 AM	13.98	4.1	0.7	3.39
12/20/2003	9:38:17 AM	13.98	4.1	0.67	3.43
12/20/2003	9:38:48 AM	13.98	4.1	0.55	3.5
12/20/2003	9:39:17 AM	13.98	4.1	0.73	3.5
12/20/2003	9:39:48 AM	13.98	4.14	0.68	3.5
12/20/2003	9:40:18 AM	13.98	4.1	0.75	3.58
12/20/2003	9:40:48 AM	13.98	4.05	0.79	3.5
12/20/2003	9:41:18 AM	13.98	4.1	0.86	3.43
12/20/2003	9:41:48 AM	13.98	4.1	0.75	3.47
12/20/2003	9:42:18 AM	13.98	4.1	0.84	3.58
12/20/2003	9:42:48 AM	13.98	4.1	0.86	3.58
12/20/2003	9:43:18 AM	13.98	4.14	0.71	3.47
12/20/2003	9:43:48 AM	13.98	4.1	0.73	3.47
12/20/2003	9:44:18 AM	14.04	4.1	0.77	3.5
12/20/2003	9:44:48 AM	14.04	4.14	0.64	3.5
12/20/2003	9:45:18 AM	13.98	4.1	0.67	3.58
12/20/2003	9:45:48 AM	13.98	4.1	0.68	3.54
12/20/2003	9:46:18 AM	13.98	4.1	0.63	3.5
12/20/2003	9:46:48 AM	13.98	4.1	0.65	3.54
12/20/2003	9:47:18 AM	13.98	4.1	0.7	3.58
12/20/2003	9:47:48 AM	13.98	4.14	0.75	3.54
12/20/2003	9:48:18 AM	13.98	4.1	0.77	3.5
12/20/2003	9:48:48 AM	13.98	4.1	0.74	3.54
12/20/2003	9:49:18 AM	13.98	4.14	0.59	3.58
12/20/2003	9:49:48 AM	13.98	4.1	0.55	3.54
12/20/2003	9:50:18 AM	13.98	4.1	0.59	3.5
12/20/2003	9:50:47 AM	13.98	4.1	0.63	3.5
12/20/2003	9:51:18 AM	13.98	4.1	0.69	3.47
12/20/2003	9:51:47 AM	13.98	4.1	0.67	3.43
12/20/2003	9:52:18 AM	14.04	4.14	0.73	3.54
12/20/2003	9:52:47 AM	13.98	4.05	0.68	3.47
12/20/2003	9:53:18 AM	13.98	4.14	0.56	3.58
12/20/2003	9:53:48 AM	14.04	4.14	0.65	3.54

12/20/2003	9:54:18 AM	13.98	4.1	0.54	3.54
12/20/2003	9:54:48 AM	13.92	4.1	0.52	3.5
12/20/2003	9:55:18 AM	13.98	4.1	0.59	3.54
12/20/2003	9:55:48 AM	13.98	4.1	0.55	3.5
12/20/2003	9:56:18 AM	14.04	4.1	0.62	3.58
12/20/2003	9:56:48 AM	13.98	4.1	0.71	3.58
12/20/2003	9:57:18 AM	14.04	4.1	0.71	3.58
12/20/2003	9:57:47 AM	13.98	4.1	0.55	3.58
12/20/2003	9:58:18 AM	13.98	4.14	0.59	3.65
12/20/2003	9:58:48 AM	13.98	4.14	0.65	3.65
12/20/2003	9:59:18 AM	13.98	4.14	0.69	3.65
12/20/2003	9:59:48 AM	13.98	4.14	0.71	3.61
12/20/2003	10:00:18 AM	13.98	4.14	0.61	3.61
12/20/2003	10:00:48 AM	13.98	4.1	0.67	3.5
12/20/2003	10:01:18 AM	14.04	4.1	0.72	3.54
12/20/2003	10:01:48 AM	13.98	4.1	0.62	3.54
12/20/2003	10:02:18 AM	13.98	4.14	0.57	3.61
12/20/2003	10:02:48 AM	13.98	4.1	0.71	3.58
12/20/2003	10:03:18 AM	13.98	4.1	0.6	3.58
12/20/2003	10:03:48 AM	13.98	4.1	0.65	3.54
12/20/2003	10:04:18 AM	14.04	4.14	0.64	3.61
12/20/2003	10:04:48 AM	13.92	4.1	0.6	3.54
12/20/2003	10:05:18 AM	13.98	4.14	0.61	3.65
12/20/2003	10:05:48 AM	13.98	4.14	0.59	3.65
12/20/2003	10:06:18 AM	13.98	4.14	0.57	3.61
12/20/2003	10:06:48 AM	13.98	4.14	0.69	3.54
12/20/2003	10:07:18 AM	13.98	7.76	0.94	3.5
12/20/2003	10:07:48 AM	8.24	0.09	2.03	0.06
12/20/2003	10:08:18 AM	0.8	0.09	2.84	0.03
12/20/2003	10:08:48 AM	0.12	0.09	3.17	0.03
12/20/2003	10:09:18 AM	0.06	0.04	3.13	-0.01
12/20/2003	10:09:48 AM	0.06	4.05	2.77	1.71
12/20/2003	10:10:18 AM	10.62	4.1	1.38	3.47
12/20/2003	10:10:48 AM	13.62	4.1	0.7	3.47
12/20/2003	10:11:18 AM	12.03	0.04	1.37	-0.01
12/20/2003	10:11:48 AM	0.98	0.04	2.81	-0.05
12/20/2003	10:12:18 AM	0.12	0.04	3.13	-0.05
12/20/2003	10:12:48 AM	4.09	4.05	2.42	3.39
12/20/2003	10:13:18 AM	12.88	4.1	0.94	3.47
12/20/2003	10:13:48 AM	13.8	4.1	0.72	3.58
12/20/2003	10:14:18 AM	13.92	4.14	0.67	3.61
12/20/2003	10:14:48 AM	13.92	4.1	0.71	3.54
12/20/2003	10:15:17 AM	13.98	4.14	0.79	3.58

12/20/2003	10:15:48 AM	13.92	4.1	0.7	3.5
12/20/2003	10:16:18 AM	13.92	4.1	0.67	3.5
12/20/2003	10:16:48 AM	13.92	4.1	0.65	3.54
12/20/2003	10:17:18 AM	13.98	4.14	0.69	3.5
12/20/2003	10:17:48 AM	13.92	4.1	0.72	3.47
12/20/2003	10:18:18 AM	13.98	0.19	0.58	0.32
12/20/2003	10:18:48 AM	18.99	0.09	0.29	0.21
12/20/2003	10:19:18 AM	20.82	0.09	0.25	0.03
12/20/2003	10:19:48 AM	20.94	0.04	0.12	0.06
12/20/2003	10:20:18 AM	21	0.09	0.13	0.03
12/20/2003	10:20:48 AM	21	0.09	0.14	0.03
12/20/2003	10:21:18 AM	21	4.05	0.37	3.32
12/20/2003	10:21:48 AM	15.57	4.1	0.72	3.47
12/20/2003	10:22:18 AM	14.1	4.1	0.78	3.47
12/20/2003	10:22:48 AM	13.98	4.1	0.79	3.47
12/20/2003	10:23:18 AM	13.98	4.1	0.78	3.43
12/20/2003	10:23:48 AM	14.04	4.1	0.79	3.43
12/20/2003	10:24:18 AM	13.98	4.1	0.77	3.43
12/20/2003	10:24:48 AM	13.98	4.1	0.73	3.47
12/20/2003	10:25:18 AM	13.98	4.1	0.65	3.47
12/20/2003	10:25:48 AM	13.98	4.1	0.7	3.43
12/20/2003	10:26:18 AM	14.04	4.1	0.7	3.47
12/20/2003	10:26:48 AM	13.98	4.1	0.73	3.47
12/20/2003	10:27:18 AM	13.98	4.1	0.74	3.5
12/20/2003	10:27:48 AM	13.98	4.1	0.74	3.58
12/20/2003	10:28:18 AM	13.92	4.1	0.76	3.54
12/20/2003	10:28:48 AM	13.98	4.14	0.75	3.65
12/20/2003	10:29:18 AM	13.98	4.1	0.72	3.58
12/20/2003	10:29:48 AM	13.92	4.1	0.72	3.47
12/20/2003	10:30:18 AM	13.98	4.1	0.7	3.5
12/20/2003	10:30:47 AM	13.98	4.1	0.83	3.47
12/20/2003	10:31:18 AM	13.98	4.1	0.71	3.47
12/20/2003	10:31:47 AM	13.98	4.1	0.76	3.43
12/20/2003	10:32:18 AM	13.98	4.1	0.66	3.36
12/20/2003	10:32:47 AM	13.98	4.14	0.77	3.36
12/20/2003	10:33:18 AM	13.98	4.1	0.76	3.47
12/20/2003	10:33:48 AM	13.98	4.14	0.71	3.5
12/20/2003	10:34:18 AM	13.98	4.1	0.87	3.47
12/20/2003	10:34:48 AM	13.98	4.1	0.79	3.5
12/20/2003	10:35:18 AM	13.98	4.1	0.75	3.5
12/20/2003	10:35:48 AM	13.92	4.1	0.68	3.61
12/20/2003	10:36:18 AM	13.92	4.1	0.74	3.58
12/20/2003	10:36:48 AM	13.92	4.1	0.66	3.5

12/20/2003	10:37:18 AM	13.98	4.1	0.69	3.54	
12/20/2003	10:37:48 AM	13.98	4.1	0.7	3.54	
12/20/2003	10:38:18 AM	13.98	4.1	0.65	3.58	
12/20/2003	10:38:47 AM	13.98	4.14	0.67	3.54	
12/20/2003	10:39:18 AM	13.98	4.14	0.75	3.61	
12/20/2003	10:39:48 AM	13.98	4.1	0.72	3.61	
12/20/2003	10:40:18 AM	13.92	4.1	0.72	3.61	
12/20/2003	10:40:48 AM	13.92	1.7	0.72	2.96	
12/20/2003	10:41:18 AM	10.14	0.04	1.08	0.06	Initial Span - Zero
12/20/2003	10:41:48 AM	19.78	0.04	0.32	0.03	Initial Span - Zero
12/20/2003	10:42:18 AM	21	0.04	0.1	-0.01	Initial Span - Zero
12/20/2003	10:42:48 AM	21.06	-0.01	0.08	-0.01	Initial Span - Zero
12/20/2003	10:43:18 AM	21.12	-0.01	0.05	-0.01	Initial Span - Zero
12/20/2003	10:43:48 AM	21.12	0.04	-0.04	-0.01	Initial Span - Zero
12/20/2003	10:44:17 AM	21.19	0.09	0.05	3.29	Initial Span - Zero
12/20/2003	10:44:48 AM	5.5	0.04	-0.12	4.35	Initial Span - Zero
12/20/2003	10:45:17 AM	0.49	0.04	-0.22	4.38	Initial Span - Span
12/20/2003	10:45:48 AM	0.12	0.04	-0.29	4.35	Initial Span - Span
12/20/2003	10:46:18 AM	0.12	0.04	-0.14	3.98	Initial Span - Span
12/20/2003	10:46:48 AM	0.12	0.04	1.34	0.03	Initial Span - Zero
12/20/2003	10:47:18 AM	0.06	-0.01	2.76	-0.01	Initial Span - Zero
12/20/2003	10:47:48 AM	0	0.04	2.85	-0.01	Initial Span - Zero
12/20/2003	10:48:18 AM	0	-0.01	3.03	-0.01	Initial Span - Span
12/20/2003	10:48:48 AM	0	0.04	3.11	-0.01	Initial Span - Span
12/20/2003	10:49:18 AM	0.61	10.2	2.54	0.03	Initial Span - Span
12/20/2003	10:49:48 AM	10.62	10.93	0.25	-0.01	Initial Span - Span
12/20/2003	10:50:18 AM	12.46	10.93	-0.45	-0.01	Initial Span - Span
12/20/2003	10:50:48 AM	12.52	10.98	-0.45	-0.01	Initial Span - Span
12/20/2003	10:51:18 AM	12.52	10.93	-0.46	-0.01	Initial Span - Span
12/20/2003	10:51:49 AM	12.58	10.98	-0.46	-0.05	Initial Span - Span
12/20/2003	10:52:19 AM	12.58	10.98	-0.46	-0.05	Initial Span - Span
12/20/2003	10:52:49 AM	12.58	10.98	-0.46	-0.05	Initial Span - Span
12/20/2003	10:53:18 AM	13.92	4.14	0.94	3.69	Run 1 - 1
12/20/2003	10:53:48 AM	13.92	4.1	0.97	3.76	Run 1 - 1
12/20/2003	10:54:18 AM	13.98	4.14	1.06	3.72	Run 1 - 1
12/20/2003	10:54:48 AM	13.98	4.1	1.01	3.72	Run 1 - 1
12/20/2003	10:55:18 AM	13.92	4.1	1	3.72	Run 1 - 1
12/20/2003	10:55:48 AM	13.98	4.1	0.86	3.72	Run 1 - 1
12/20/2003	10:56:18 AM	13.92	4.1	0.82	3.76	Run 1 - 1
12/20/2003	10:56:48 AM	13.98	4.1	0.89	3.65	Run 1 - 1
12/20/2003	10:57:18 AM	13.98	4.14	0.99	3.72	Run 1 - 1
12/20/2003	10:57:48 AM	13.98	4.14	0.93	3.72	Run 1 - 1
12/20/2003	10:58:18 AM	13.98	4.1	0.96	3.69	Run 1 - 1

12/20/2003 10:58:48 AM	13.92	4.05	1.02	3.72 Run 1 - 1
12/20/2003 10:59:18 AM	13.98	4.1	0.96	3.65 Run 1 - 1
12/20/2003 10:59:48 AM	13.98	4.1	1	3.61 Run 1 - 1
12/20/2003 11:00:18 AM	13.98	4.14	0.87	3.61 Run 1 - 1
12/20/2003 11:00:48 AM	13.98	4.1	0.93	3.58 Run 1 - 1
12/20/2003 11:01:17 AM	13.98	4.1	0.98	3.61 Run 1 - 1
12/20/2003 11:01:48 AM	13.92	4.1	1.04	3.54 Run 1 - 1
12/20/2003 11:02:18 AM	13.98	4.14	1.03	3.61 Run 1 - 1
12/20/2003 11:02:48 AM	13.98	4.1	0.96	3.61 Run 1 - 1
12/20/2003 11:03:17 AM	13.92	4.1	1.1	3.58 Run 1 - 1
12/20/2003 11:03:48 AM	13.98	4.14	0.94	3.61 Run 1 - 1
12/20/2003 11:04:18 AM	13.98	4.1	0.9	3.54 Run 1 - 1
12/20/2003 11:04:48 AM	14.04	4.1	0.89	3.65 Run 1 - 1
12/20/2003 11:05:18 AM	13.98	4.1	1.01	3.61 Run 1 - 1
12/20/2003 11:05:48 AM	14.04	4.1	1.01	3.5 Run 1 - 1
12/20/2003 11:06:17 AM	14.04	4.14	1	3.61 Run 1 - 1
12/20/2003 11:06:48 AM	13.98	4.1	0.92	3.5 Run 1 - 1
12/20/2003 11:07:17 AM	13.98	4.14	1.02	3.5 Run 1 - 1
12/20/2003 11:07:48 AM	13.98	4.1	1.01	3.54 Run 1 - 1
12/20/2003 11:08:17 AM	14.04	4.1	1	3.61 Run 1 - 1
12/20/2003 11:08:48 AM	13.98	4.1	0.9	3.54 Run 1 - 1
12/20/2003 11:09:17 AM	14.04	4.1	0.9	3.5 Run 1 - 1
12/20/2003 11:09:48 AM	14.04	4.1	0.93	3.54 Run 1 - 1
12/20/2003 11:10:17 AM	14.04	4.1	0.98	3.58 Run 1 - 1
12/20/2003 11:10:48 AM	13.98	4.1	0.95	3.54 Run 1 - 1
12/20/2003 11:11:17 AM	13.98	4.1	1.04	3.54 Run 1 - 1
12/20/2003 11:11:48 AM	14.04	4.1	1.04	3.54 Run 1 - 1
12/20/2003 11:12:18 AM	13.98	4.1	1.01	3.54 Run 1 - 1
12/20/2003 11:12:48 AM	13.98	4.1	0.97	3.54 Run 1 - 1
12/20/2003 11:13:18 AM	14.04	4.14	0.98	3.58 Run 1 - 1
12/20/2003 11:13:48 AM	13.98	4.1	0.88	3.54 Run 1 - 1
12/20/2003 11:14:18 AM	13.98	4.14	1.03	3.58 Run 1 - 2
12/20/2003 11:14:48 AM	13.98	4.1	1.01	3.5
12/20/2003 11:15:18 AM	13.98	4.05	0.79	1.09
12/20/2003 11:15:48 AM	17.22	0.09	0.49	-0.12
12/20/2003 11:16:18 AM	20.88	0.09	0.22	-0.12
12/20/2003 11:16:48 AM	21.12	0.09	0.11	-0.05 Run 1 Span - Zero
12/20/2003 11:17:18 AM	21.12	0.04	-0.05	-0.05 Run 1 Span - Zero
12/20/2003 11:17:48 AM	21.12	0.04	0	-0.05 Run 1 Span - Zero
12/20/2003 11:18:18 AM	16.48	0.04	-0.02	4.2 Run 1 Span - Zero
12/20/2003 11:18:48 AM	1.53	0.04	-0.14	4.24 Run 1 Span - Zero
12/20/2003 11:19:18 AM	0.19	0.04	-0.09	4.31 Run 1 Span - Span
12/20/2003 11:19:47 AM	0.12	0.04	-0.22	4.31 Run 1 Span - Span

12/20/2003	11:20:18 AM	0.12	0.04	-0.21	4.35	Run 1 Span - Span
12/20/2003	11:20:47 AM	0.06	-0.01	-0.12	4.31	Run 1 Span - Span
12/20/2003	11:21:18 AM	0.06	0.04	0.29	0.83	Run 1 Span - Span
12/20/2003	11:21:47 AM	0	-0.01	2.27	-0.05	Run 1 Span - Zero
12/20/2003	11:22:18 AM	0	0.04	3.12	-0.05	Run 1 Span - Span
12/20/2003	11:22:48 AM	-0.06	-0.01	3.14	-0.05	Run 1 Span - Span
12/20/2003	11:23:18 AM	0	10.3	3.08	-0.05	Run 1 Span - Span
12/20/2003	11:23:48 AM	8.49	10.88	1.02	-0.08	Run 1 Span - Span
12/20/2003	11:24:18 AM	12.21	10.93	-0.36	-0.05	Run 1 Span - Span
12/20/2003	11:24:48 AM	12.52	10.98	-0.46	-0.05	Run 1 Span - Span
12/20/2003	11:25:18 AM	12.52	10.93	-0.46	-0.05	Run 1 Span - Span
12/20/2003	11:25:48 AM	12.52	10.05	-0.46	-0.08	Run 1 Span - Span
12/20/2003	11:26:18 AM	13.07	4.1	0.92	3.43	Run 1 Span - Span
12/20/2003	11:26:47 AM	13.8	4.1	1.87	3.47	Run 1 Span - Span
12/20/2003	11:27:18 AM	13.92	4.14	1.63	3.5	Run 1 Span - Span
12/20/2003	11:27:48 AM	13.92	4.1	1.33	3.5	Run 1 Span - Span
12/20/2003	11:28:18 AM	13.98	4.14	1.42	3.54	Run 1 Span - Span
12/20/2003	11:28:47 AM	13.92	4.1	1.32	3.54	Run 1 Span - Span
12/20/2003	11:29:18 AM	13.92	4.1	1.27	3.54	Run 1 Span - Span
12/20/2003	11:29:48 AM	13.92	4.1	1.34	3.61	Run 1 Span - Span
12/20/2003	11:30:18 AM	13.92	4.1	1.32	3.54	Run 2 - 1
12/20/2003	11:30:48 AM	13.92	4.1	1.14	3.5	Run 2 - 1
12/20/2003	11:31:18 AM	13.98	4.1	1.06	3.61	Run 2 - 1
12/20/2003	11:31:48 AM	13.98	4.1	1.21	3.65	Run 2 - 1
12/20/2003	11:32:18 AM	13.98	4.1	1.13	3.65	Run 2 - 1
12/20/2003	11:32:48 AM	13.98	4.1	1.09	3.61	Run 2 - 1
12/20/2003	11:33:17 AM	13.98	4.1	0.94	3.65	Run 2 - 1
12/20/2003	11:33:48 AM	13.98	4.1	1.06	3.65	Run 2 - 1
12/20/2003	11:34:18 AM	13.98	4.1	1.24	3.65	Run 2 - 1
12/20/2003	11:34:48 AM	13.98	4.1	1.22	3.58	Run 2 - 1
12/20/2003	11:35:18 AM	13.92	4.1	0.93	3.58	Run 2 - 1
12/20/2003	11:35:48 AM	13.98	4.14	1.19	3.65	Run 2 - 1
12/20/2003	11:36:18 AM	13.98	4.14	1.18	3.58	Run 2 - 1
12/20/2003	11:36:48 AM	13.98	4.1	1.01	3.54	Run 2 - 1
12/20/2003	11:37:18 AM	13.92	4.1	0.97	3.54	Run 2 - 1
12/20/2003	11:37:48 AM	13.98	4.1	0.94	3.54	Run 2 - 1
12/20/2003	11:38:18 AM	13.98	4.1	0.86	3.58	Run 2 - 1
12/20/2003	11:38:48 AM	13.98	4.1	0.8	3.61	Run 2 - 1
12/20/2003	11:39:18 AM	13.98	4.1	0.75	3.54	Run 2 - 1
12/20/2003	11:39:47 AM	13.98	4.14	1.06	3.58	Run 2 - 1
12/20/2003	11:40:18 AM	13.98	4.14	1.15	3.54	Run 2 - 1
12/20/2003	11:40:48 AM	13.98	4.1	1.05	3.54	Run 2 - 1
12/20/2003	11:41:18 AM	13.98	4.1	1.1	3.58	Run 2 - 1

12/20/2003	11:41:48 AM	13.98	4.14	0.88	3.58	Run 2 - 1
12/20/2003	11:42:18 AM	13.98	4.1	0.84	3.61	Run 2 - 1
12/20/2003	11:42:48 AM	13.98	4.1	0.95	3.58	Run 2 - 1
12/20/2003	11:43:18 AM	13.98	4.14	0.94	3.61	Run 2 - 1
12/20/2003	11:43:48 AM	13.98	4.1	0.79	3.61	Run 2 - 1
12/20/2003	11:44:18 AM	13.92	4.1	1.01	3.61	Run 2 - 1
12/20/2003	11:44:47 AM	13.98	4.1	1.04	3.61	Run 2 - 1
12/20/2003	11:45:18 AM	14.04	4.1	0.8	3.61	Run 2 - 1
12/20/2003	11:45:48 AM	13.98	4.1	0.79	3.58	Run 2 - 1
12/20/2003	11:46:18 AM	13.98	4.1	0.92	3.58	Run 2 - 1
12/20/2003	11:46:48 AM	14.04	4.14	0.9	3.58	Run 2 - 1
12/20/2003	11:47:18 AM	13.98	4.1	0.78	3.54	Run 2 - 1
12/20/2003	11:47:48 AM	14.04	4.14	0.95	3.54	Run 2 - 1
12/20/2003	11:48:18 AM	13.98	4.1	0.86	3.5	Run 2 - 1
12/20/2003	11:48:48 AM	13.98	4.1	1.06	3.54	Run 2 - 1
12/20/2003	11:49:18 AM	14.04	4.1	1.07	3.58	Run 2 - 1
12/20/2003	11:49:48 AM	13.98	4.1	0.81	3.58	Run 2 - 1
12/20/2003	11:50:18 AM	14.04	4.1	0.9	3.54	Run 2 - 1
12/20/2003	11:50:48 AM	13.98	4.1	0.94	3.54	Run 2 - 1
12/20/2003	11:51:18 AM	13.98	4.1	0.93	3.58	
12/20/2003	11:51:48 AM	13.98	4.1	0.97	3.54	
12/20/2003	11:52:18 AM	13.98	0.29	0.65	0.06	Run 2 Span - Zero
12/20/2003	11:52:48 AM	19.29	0.09	0.28	-0.05	Run 2 Span - Zero
12/20/2003	11:53:18 AM	21	0.09	0.1	-0.05	Run 2 Span - Zero
12/20/2003	11:53:48 AM	21.12	0.09	0.02	-0.08	Run 2 Span - Zero
12/20/2003	11:54:17 AM	21.12	0.04	-0.04	0.61	Run 2 Span - Zero
12/20/2003	11:54:48 AM	6.47	0.04	-0.17	4.35	Run 2 Span - Span
12/20/2003	11:55:17 AM	0.55	0.04	-0.22	4.27	Run 2 Span - Span
12/20/2003	11:55:48 AM	0.19	0.09	-0.23	4.31	Run 2 Span - Span
12/20/2003	11:56:17 AM	0.12	0.04	-0.29	4.35	Run 2 Span - Span
12/20/2003	11:56:48 AM	0.06	0.09	-0.27	4.31	Run 2 Span - Span
12/20/2003	11:57:17 AM	0.06	0.04	1.18	-0.05	Run 2 Span - Zero
12/20/2003	11:57:48 AM	0.06	0.04	2.83	-0.05	Run 2 Span - Zero
12/20/2003	11:58:18 AM	0	0.04	2.95	-0.05	Run 2 Span - Span
12/20/2003	11:58:48 AM	0	-0.01	2.94	-0.05	Run 2 Span - Span
12/20/2003	11:59:18 AM	0	7.76	3.09	-0.05	Run 2 Span - Span
12/20/2003	11:59:48 AM	6.72	10.83	1.41	-0.05	Run 2 Span - Span
12/20/2003	12:00:18 PM	12.03	10.93	-0.43	-0.08	Run 2 Span - Span
12/20/2003	12:00:48 PM	12.52	10.93	-0.45	-0.05	Run 2 Span - Span
12/20/2003	12:01:18 PM	12.52	10.93	-0.46	-0.05	Run 2 Span - Span
12/20/2003	12:01:48 PM	12.58	10.98	-0.46	-0.05	Run 2 Span - Span
12/20/2003	12:02:18 PM	12.52	4.78	-0.46	-0.05	Run 2 Span - Span
12/20/2003	12:02:48 PM	13.37	4.1	0.7	3.36	Run 2 Span - Span

12/20/2003	12:03:18 PM	13.86	4.14	1.26	3.43 Run 2 Span - Span
12/20/2003	12:03:48 PM	13.92	4.14	1.28	3.5 Run 2 Span - Span
12/20/2003	12:04:18 PM	13.74	4	0.93	0.43 Run 2 Span - Span
12/20/2003	12:04:48 PM	15.08	4.1	0.79	3.47 Run 2 Span - Span
12/20/2003	12:05:17 PM	14.04	4.1	1.06	3.43 Run 2 Span - Span
12/20/2003	12:05:48 PM	13.98	4.1	1.03	3.5 Run 3 - 1
12/20/2003	12:06:18 PM	13.98	4.1	0.98	3.43 Run 3 - 1
12/20/2003	12:06:48 PM	13.98	4.1	0.93	3.5 Run 3 - 1
12/20/2003	12:07:18 PM	13.92	4.1	0.92	3.61 Run 3 - 1
12/20/2003	12:07:48 PM	13.98	4.1	1.01	3.61 Run 3 - 1
12/20/2003	12:08:18 PM	13.92	4.1	1.04	3.65 Run 3 - 1
12/20/2003	12:08:48 PM	13.92	4.1	0.97	3.54 Run 3 - 1
12/20/2003	12:09:18 PM	13.98	4.05	1.1	3.58 Run 3 - 1
12/20/2003	12:09:48 PM	13.98	4.1	1.13	3.61 Run 3 - 1
12/20/2003	12:10:17 PM	13.92	4.1	1.08	3.54 Run 3 - 1
12/20/2003	12:10:48 PM	13.98	4.14	1.17	3.69 Run 3 - 1
12/20/2003	12:11:18 PM	13.98	4.1	1.1	3.65 Run 3 - 1
12/20/2003	12:11:48 PM	13.98	4.1	0.94	3.54 Run 3 - 1
12/20/2003	12:12:18 PM	13.92	4.1	0.83	3.61 Run 3 - 1
12/20/2003	12:12:48 PM	13.98	4.1	0.95	3.61 Run 3 - 1
12/20/2003	12:13:18 PM	13.98	4.1	1.07	3.58 Run 3 - 1
12/20/2003	12:13:48 PM	13.98	4.1	0.92	3.58 Run 3 - 1
12/20/2003	12:14:18 PM	13.92	4.1	0.99	3.54 Run 3 - 1
12/20/2003	12:14:48 PM	13.92	4.1	0.92	3.61 Run 3 - 1
12/20/2003	12:15:18 PM	13.98	4.1	0.97	3.61 Run 3 - 1
12/20/2003	12:15:48 PM	13.98	4.1	0.97	3.5 Run 3 - 1
12/20/2003	12:16:18 PM	13.98	4.1	0.95	3.61 Run 3 - 1
12/20/2003	12:16:48 PM	13.98	4.1	0.81	3.5 Run 3 - 1
12/20/2003	12:17:18 PM	13.98	4.1	0.85	3.58 Run 3 - 1
12/20/2003	12:17:48 PM	13.98	4.1	0.89	3.58 Run 3 - 1
12/20/2003	12:18:18 PM	13.98	4.1	0.87	3.58 Run 3 - 1
12/20/2003	12:18:48 PM	13.98	4.1	0.82	3.61 Run 3 - 1
12/20/2003	12:19:18 PM	13.98	4.1	0.84	3.58 Run 3 - 1
12/20/2003	12:19:47 PM	13.98	4.1	0.89	3.58 Run 3 - 1
12/20/2003	12:20:18 PM	14.04	4.1	0.95	3.54 Run 3 - 1
12/20/2003	12:20:48 PM	13.98	4.1	0.91	3.5 Run 3 - 1
12/20/2003	12:21:18 PM	13.98	4.1	0.89	3.47 Run 3 - 1
12/20/2003	12:21:48 PM	14.04	4.1	0.95	3.5 Run 3 - 1
12/20/2003	12:22:18 PM	13.98	4.1	0.92	3.47 Run 3 - 1
12/20/2003	12:22:48 PM	13.98	4.1	0.8	3.54 Run 3 - 1
12/20/2003	12:23:18 PM	13.98	4.1	0.81	3.54 Run 3 - 1
12/20/2003	12:23:48 PM	13.98	4.05	0.86	3.47 Run 3 - 1
12/20/2003	12:24:18 PM	13.98	4.1	0.82	3.54 Run 3 - 1



12/20/2003	12:24:48 PM	13.98	4.1	0.79	3.54	Run 3 - 1
12/20/2003	12:25:18 PM	13.98	4.05	0.88	3.5	Run 3 - 1
12/20/2003	12:25:48 PM	13.98	4.1	0.66	3.58	Run 3 - 1
12/20/2003	12:26:18 PM	13.98	4.1	0.99	3.58	Run 3 - 1
12/20/2003	12:26:48 PM	13.92	4.05	0.79	3.54	
12/20/2003	12:27:18 PM	13.98	4	0.88	3.58	
12/20/2003	12:27:47 PM	16.55	0.09	0.64	-0.01	Run 3 Span - Zero
12/20/2003	12:28:18 PM	20.76	0.04	0.43	-0.05	Run 3 Span - Zero
12/20/2003	12:28:48 PM	21.06	0.04	0.11	-0.08	Run 3 Span - Zero
12/20/2003	12:29:18 PM	21.19	0.04	-0.07	-0.05	Run 3 Span - Zero
12/20/2003	12:29:48 PM	20.94	0.04	0.15	3.43	Run 3 Span - Zero
12/20/2003	12:30:18 PM	2.87	0.04	-0.3	4.27	Run 3 Span - Zero
12/20/2003	12:30:48 PM	0.31	0.04	-0.32	4.31	Run 3 Span - Span
12/20/2003	12:31:18 PM	0.12	0.04	-0.24	4.31	Run 3 Span - Span
12/20/2003	12:31:48 PM	0.06	-0.01	-0.14	4.27	Run 3 Span - Zero
12/20/2003	12:32:18 PM	0.06	0.04	0.78	0.03	Run 3 Span - Zero
12/20/2003	12:32:48 PM	0	0.04	2.7	-0.05	Run 3 Span - Zero
12/20/2003	12:33:18 PM	0.06	0.04	3.05	-0.05	Run 3 Span - Span
12/20/2003	12:33:48 PM	0	0.04	3.14	-0.05	Run 3 Span - Span
12/20/2003	12:34:18 PM	0	0.04	3.14	-0.05	Run 3 Span - Span
12/20/2003	12:34:48 PM	0	0.04	3.18	-0.05	Run 3 Span - Span
12/20/2003	12:35:18 PM	0	0.19	3.05	-0.05	Run 3 Span - Span
12/20/2003	12:35:48 PM	5.13	10.78	1.56	-0.05	
12/20/2003	12:36:18 PM	11.78	10.88	-0.36	-0.08	
12/20/2003	12:36:48 PM	12.46	10.93	-0.45	-0.05	
12/20/2003	12:37:18 PM	12.52	10.93	-0.46	-0.05	
12/20/2003	12:37:48 PM	12.52	10.93	-0.46	-0.08	Run 3 Span - Span
12/20/2003	12:38:18 PM	12.52	10.93	-0.46	-0.08	Run 3 Span - Span
12/20/2003	12:38:48 PM	12.58	5.85	-0.46	-0.05	Run 3 Span - Span
12/20/2003	12:39:18 PM	13.25	4.1	0.93	3.25	Run 3 Span - Span
12/20/2003	12:39:48 PM	13.86	4.1	1.65	3.36	Run 3 Span - Span
12/20/2003	12:40:17 PM	13.92	4.1	1.5	3.43	Run 3 Span - Span
12/20/2003	12:40:48 PM	13.92	4.1	1.43	3.47	Run 3 Span - Span
12/20/2003	12:41:18 PM	13.98	4.14	1.25	3.47	Run 3 Span - Span
12/20/2003	12:41:48 PM	13.92	4.1	1.23	3.5	Run 3 Span - Span
12/20/2003	12:42:18 PM	13.92	4.1	0.62	3.54	Run 3 Span - Span
12/20/2003	12:42:48 PM	13.98	4.1	0.72	3.58	Run 3 Span - Span
12/20/2003	12:43:17 PM	13.98	4.14	1.18	3.5	Run 3 Span - Span
12/20/2003	12:43:48 PM	13.92	4.1	1.1	3.5	Run 3 Span - Span
12/20/2003	12:44:17 PM	13.98	4.1	1.12	3.5	Run 3 Span - Span
12/20/2003	12:44:48 PM	13.98	4.1	1.1	3.54	Run 3 Span - Span
12/20/2003	12:45:18 PM	13.98	4.1	1.08	3.58	Run 4 - 1
12/20/2003	12:45:48 PM	14.04	4.14	1.04	3.5	Run 4 - 1

12/20/2003	12:46:18 PM	13.98	4.05	1.02	3.5 Run 4 - 1
12/20/2003	12:46:48 PM	14.04	4.1	1.1	3.54 Run 4 - 1
12/20/2003	12:47:18 PM	14.04	4.14	1.11	3.5 Run 4 - 1
12/20/2003	12:47:48 PM	13.98	4.1	1.12	3.5 Run 4 - 1
12/20/2003	12:48:18 PM	13.98	4.05	0.89	3.47 Run 4 - 1
12/20/2003	12:48:47 PM	13.98	4.1	0.86	3.54 Run 4 - 1
12/20/2003	12:49:18 PM	14.04	4.1	0.8	3.5 Run 4 - 1
12/20/2003	12:49:47 PM	13.98	4.05	0.73	3.47 Run 4 - 1
12/20/2003	12:50:18 PM	13.98	4.05	0.77	3.5 Run 4 - 1
12/20/2003	12:50:48 PM	13.98	4.1	0.76	3.47 Run 4 - 1
12/20/2003	12:51:18 PM	13.92	4.1	0.6	3.54 Run 4 - 1
12/20/2003	12:51:48 PM	13.92	4.05	0.73	3.47 Run 4 - 1
12/20/2003	12:52:18 PM	13.92	4.1	0.73	3.61 Run 4 - 1
12/20/2003	12:52:48 PM	13.92	4.05	0.71	3.54 Run 4 - 1
12/20/2003	12:53:18 PM	13.92	4.1	0.8	3.54 Run 4 - 1
12/20/2003	12:53:48 PM	13.98	4.1	0.79	3.61 Run 4 - 1
12/20/2003	12:54:18 PM	13.98	4.14	0.82	3.61 Run 4 - 1
12/20/2003	12:54:48 PM	13.98	4.1	0.8	3.58 Run 4 - 1
12/20/2003	12:55:18 PM	13.92	4.05	0.77	3.47 Run 4 - 1
12/20/2003	12:55:47 PM	13.92	4.05	0.82	3.5 Run 4 - 1
12/20/2003	12:56:18 PM	13.98	4.1	0.77	3.58 Run 4 - 1
12/20/2003	12:56:48 PM	13.98	4.1	0.8	3.61 Run 4 - 1
12/20/2003	12:57:18 PM	13.98	4.1	0.77	3.58 Run 4 - 1
12/20/2003	12:57:48 PM	13.98	4.1	0.72	3.58 Run 4 - 1
12/20/2003	12:58:18 PM	13.92	4.05	0.77	3.5 Run 4 - 1
12/20/2003	12:58:48 PM	13.92	4.1	0.76	3.5 Run 4 - 1
12/20/2003	12:59:18 PM	13.98	4.1	0.62	3.54 Run 4 - 1
12/20/2003	12:59:48 PM	13.92	4.1	0.73	3.54 Run 4 - 1
12/20/2003	1:00:18 PM	13.98	4.1	0.74	3.54 Run 4 - 1
12/20/2003	1:00:48 PM	13.92	4.1	0.67	3.58 Run 4 - 1
12/20/2003	1:01:18 PM	13.98	4.1	0.79	3.5 Run 4 - 1
12/20/2003	1:01:48 PM	13.92	4.1	0.69	3.5 Run 4 - 1
12/20/2003	1:02:18 PM	13.98	4.1	0.81	3.54 Run 4 - 1
12/20/2003	1:02:48 PM	13.92	4.1	0.93	3.5 Run 4 - 1
12/20/2003	1:03:17 PM	13.98	4.1	0.9	3.54 Run 4 - 1
12/20/2003	1:03:48 PM	13.92	4.1	0.93	3.47 Run 4 - 1
12/20/2003	1:04:18 PM	13.98	4.1	0.94	3.5 Run 4 - 1
12/20/2003	1:04:48 PM	13.92	4.1	0.71	3.5 Run 4 - 1
12/20/2003	1:05:18 PM	13.92	4.05	0.79	3.5 Run 4 - 1
12/20/2003	1:05:48 PM	13.92	4.05	0.81	3.5 Run 4 - 1
12/20/2003	1:06:17 PM	13.92	4.1	0.81	3.47
12/20/2003	1:06:48 PM	13.92	4.1	0.73	3.47
12/20/2003	1:07:18 PM	13.98	10.83	0.58	0.06

12/20/2003	1:07:48 PM	12.88	10.93	-0.39	-0.05 Run 4 Span - Zero
12/20/2003	1:08:18 PM	12.64	10.98	-0.45	-0.01 Run 4 Span - Zero
12/20/2003	1:08:48 PM	12.58	10.93	-0.46	-0.05 Run 4 Span - Zero
12/20/2003	1:09:18 PM	12.58	10.93	-0.46	-0.05 Run 4 Span - Span
12/20/2003	1:09:48 PM	12.58	10.98	-0.45	-0.05 Run 4 Span - Span
12/20/2003	1:10:18 PM	14.29	0.14	-0.46	-0.05 Run 4 Span - Span
12/20/2003	1:10:48 PM	20.45	0.09	0.06	-0.05 Run 4 Span - Span
12/20/2003	1:11:18 PM	21.06	0.09	0.35	-0.05 Run 4 Span - Zero
12/20/2003	1:11:48 PM	21.12	0.04	0.35	-0.05 Run 4 Span - Zero
12/20/2003	1:12:18 PM	21.12	0.24	0.08	0.46 Run 4 Span - Zero
12/20/2003	1:12:48 PM	10.14	0.09	-0.07	4.24 Run 4 Span - Zero
12/20/2003	1:13:18 PM	0.73	0.04	-0.19	4.27 Run 4 Span - Span
12/20/2003	1:13:48 PM	0.19	0.09	-0.14	4.31 Run 4 Span - Zero
12/20/2003	1:14:18 PM	0.12	0.09	-0.25	4.27 Run 4 Span - Zero
12/20/2003	1:14:48 PM	0.06	0.09	-0.1	1.49 Run 4 Span - Zero
12/20/2003	1:15:18 PM	0.06	0.04	1.99	-0.01 Run 4 Span - Span
12/20/2003	1:15:48 PM	0.06	0.04	2.73	-0.01 Run 4 Span - Span
12/20/2003	1:16:18 PM	0	0.04	2.99	-0.05 Run 4 Span - Span
12/20/2003	1:16:47 PM	0.06	0.04	3.26	-0.05 Run 4 Span - Span
12/20/2003	1:17:18 PM	0	0.04	2.95	1.86 Run 4 Span - Span
12/20/2003	1:17:48 PM	0	0.04	1.2	4.24 Run 4 Span - Span
12/20/2003	1:18:18 PM	0	0.04	-0.08	4.27 Run 4 Span - Span
12/20/2003	1:18:48 PM	0	0.04	-0.35	4.27 Run 4 Span - Span
12/20/2003	1:19:18 PM	0.43	10.74	-0.46	-0.01 Run 4 Span - Span
12/20/2003	1:19:48 PM	11.05	10.88	-0.45	-0.05 Run 4 Span - Span
12/20/2003	1:20:18 PM	12.39	10.88	-0.45	-0.05 Run 4 Span - Span
12/20/2003	1:20:48 PM	12.52	10.93	-0.45	-0.05 Run 4 Span - Span
12/20/2003	1:21:18 PM	12.52	10.93	-0.46	-0.05 Run 4 Span - Span
12/20/2003	1:21:48 PM	12.52	10.93	-0.45	-0.05 Run 4 Span - Span
12/20/2003	1:22:18 PM	12.52	10.93	-0.45	-0.05 Run 4 Span - Span
12/20/2003	1:22:48 PM	12.76	4.14	-0.31	3.47 Run 4 Span - Span
12/20/2003	1:23:18 PM	13.8	4.1	0.5	3.39 Run 4 Span - Span
12/20/2003	1:23:48 PM	13.86	4.1	0.69	3.43 Run 4 Span - Span
12/20/2003	1:24:18 PM	13.92	4.1	0.7	3.43 Run 5 - 1
12/20/2003	1:24:47 PM	13.86	4.05	0.64	3.36 Run 5 - 1
12/20/2003	1:25:18 PM	13.92	4.1	0.77	3.47 Run 5 - 1
12/20/2003	1:25:47 PM	13.92	4.1	0.7	3.54 Run 5 - 1
12/20/2003	1:26:18 PM	13.92	4.1	0.67	3.47 Run 5 - 1
12/20/2003	1:26:48 PM	13.92	4.05	0.68	3.5 Run 5 - 1
12/20/2003	1:27:18 PM	13.92	4.1	0.78	3.47 Run 5 - 1
12/20/2003	1:27:48 PM	13.92	4.1	0.69	3.54 Run 5 - 1
12/20/2003	1:28:18 PM	13.92	4.1	0.7	3.5 Run 5 - 1
12/20/2003	1:28:48 PM	13.92	4.1	0.83	3.54 Run 5 - 1

12/20/2003	1:29:18 PM	13.98	4.1	0.84	3.47 Run 5 - 1
12/20/2003	1:29:48 PM	13.92	4.1	0.78	3.5 Run 5 - 1
12/20/2003	1:30:18 PM	13.92	4.05	0.73	3.5 Run 5 - 1
12/20/2003	1:30:48 PM	13.98	4.1	0.76	3.58 Run 5 - 1
12/20/2003	1:31:17 PM	13.98	4.1	0.79	3.58 Run 5 - 1
12/20/2003	1:31:48 PM	13.92	4.1	0.79	3.5 Run 5 - 1
12/20/2003	1:32:17 PM	13.92	4.1	0.89	3.5 Run 5 - 1
12/20/2003	1:32:48 PM	13.98	4.1	1	3.5 Run 5 - 1
12/20/2003	1:33:17 PM	13.92	4.05	0.84	3.54 Run 5 - 1
12/20/2003	1:33:48 PM	13.92	4.1	0.76	3.58 Run 5 - 1
12/20/2003	1:34:18 PM	13.98	4.1	0.8	3.54 Run 5 - 1
12/20/2003	1:34:48 PM	13.98	4.1	0.77	3.58 Run 5 - 1
12/20/2003	1:35:18 PM	13.98	4.1	0.66	3.61 Run 5 - 1
12/20/2003	1:35:48 PM	13.98	4.1	0.6	3.58 Run 5 - 1
12/20/2003	1:36:18 PM	13.98	4.1	0.69	3.54 Run 5 - 1
12/20/2003	1:36:48 PM	13.92	4.05	0.72	3.61 Run 5 - 1
12/20/2003	1:37:18 PM	13.92	4.05	0.71	3.58 Run 5 - 1
12/20/2003	1:37:48 PM	13.98	4.05	0.73	3.58 Run 5 - 1
12/20/2003	1:38:18 PM	13.92	4.05	0.69	3.65 Run 5 - 1
12/20/2003	1:38:48 PM	13.98	4.1	0.64	3.61 Run 5 - 1
12/20/2003	1:39:18 PM	13.92	4.05	0.49	3.65 Run 5 - 1
12/20/2003	1:39:48 PM	13.98	4.1	0.59	3.54 Run 5 - 1
12/20/2003	1:40:18 PM	13.98	4.1	0.6	3.58 Run 5 - 1
12/20/2003	1:40:48 PM	13.98	4.1	0.72	3.65 Run 5 - 1
12/20/2003	1:41:18 PM	13.98	4.1	0.72	3.65 Run 5 - 1
12/20/2003	1:41:48 PM	13.92	4.1	0.63	3.65 Run 5 - 1
12/20/2003	1:42:18 PM	13.92	4.1	0.76	3.61 Run 5 - 1
12/20/2003	1:42:48 PM	13.92	4.1	0.86	3.58 Run 5 - 1
12/20/2003	1:43:18 PM	13.92	4.1	0.82	3.65 Run 5 - 1
12/20/2003	1:43:48 PM	13.98	4.1	0.83	3.65 Run 5 - 1
12/20/2003	1:44:18 PM	13.98	4.1	0.8	3.61 Run 5 - 1
12/20/2003	1:44:48 PM	13.92	4.1	0.69	3.61 Run 5 - 1
12/20/2003	1:45:18 PM	13.98	4.1	0.74	3.65 Run 5 - 2
12/20/2003	1:45:48 PM	13.98	4.14	0.87	3.61
12/20/2003	1:46:18 PM	13.98	4.05	0.77	3.61
12/20/2003	1:46:48 PM	13.92	10.78	0.48	0.06
12/20/2003	1:47:18 PM	12.76	10.88	-0.41	0.03 Run 5 Span - Zero
12/20/2003	1:47:48 PM	12.64	10.93	-0.46	-0.01 Run 5 Span - Span
12/20/2003	1:48:18 PM	12.64	10.98	-0.46	-0.01 Run 5 Span - Span
12/20/2003	1:48:48 PM	12.58	10.93	-0.46	-0.01 Run 5 Span - Span
12/20/2003	1:49:17 PM	12.58	0.29	-0.45	3.69 Run 5 Span - Span
12/20/2003	1:49:48 PM	2.32	0.09	-0.46	4.31 Run 5 Span - Span
12/20/2003	1:50:18 PM	0.19	0.09	-0.16	4.31 Run 5 Span - Span

12/20/2003	1:50:48 PM	0.06	0.04	-0.22	4.35 Run 5 Span - Zero
12/20/2003	1:51:18 PM	0.06	0.09	-0.28	4.35 Run 5 Span - Span
12/20/2003	1:51:48 PM	0.06	0.09	-0.23	4.09 Run 5 Span - Span
12/20/2003	1:52:18 PM	0	0.04	1.56	0.03 Run 5 Span - Span
12/20/2003	1:52:48 PM	0	0.04	2.83	-0.01 Run 5 Span - Span
12/20/2003	1:53:18 PM	-0.06	0.04	3.06	-0.01 Run 5 Span - Span
12/20/2003	1:53:48 PM	0	0.04	3.08	-0.05 Run 5 Span - Span
12/20/2003	1:54:18 PM	0	3.95	2.98	1.53 Run 5 Span - Span
12/20/2003	1:54:48 PM	9.59	4.05	1.82	3.47 Run 5 Span - Span
12/20/2003	1:55:18 PM	13.55	4.05	0.74	3.5 Run 5 Span - Span
12/20/2003	1:55:48 PM	13.8	4.05	0.72	3.5 Run 5 Span - Span
12/20/2003	1:56:18 PM	13.86	4.05	0.64	3.5 Run 6 - 1
12/20/2003	1:56:48 PM	13.86	4.1	0.72	3.47 Run 6 - 1
12/20/2003	1:57:18 PM	13.86	4.1	0.71	3.47 Run 6 - 1
12/20/2003	1:57:48 PM	13.86	4.1	0.84	3.54 Run 6 - 1
12/20/2003	1:58:18 PM	13.92	4.1	0.71	3.54 Run 6 - 1
12/20/2003	1:58:48 PM	13.86	4.1	0.63	3.5 Run 6 - 1
12/20/2003	1:59:18 PM	13.86	4.1	0.83	3.39 Run 6 - 1
12/20/2003	1:59:48 PM	13.92	4.1	0.66	3.47 Run 6 - 1
12/20/2003	2:00:18 PM	13.92	4.1	0.75	3.54 Run 6 - 1
12/20/2003	2:00:48 PM	13.92	4.1	0.73	3.58 Run 6 - 1
12/20/2003	2:01:18 PM	13.92	4.1	0.81	3.5 Run 6 - 1
12/20/2003	2:01:47 PM	13.86	4.05	0.78	3.54 Run 6 - 1
12/20/2003	2:02:18 PM	13.86	4.1	0.81	3.61 Run 6 - 1
12/20/2003	2:02:47 PM	13.92	4.1	0.83	3.54 Run 6 - 1
12/20/2003	2:03:18 PM	13.92	4.1	0.76	3.61 Run 6 - 1
12/20/2003	2:03:48 PM	13.92	4.1	0.78	3.58 Run 6 - 1
12/20/2003	2:04:18 PM	13.92	4.14	0.78	3.61 Run 6 - 1
12/20/2003	2:04:48 PM	13.92	4.1	0.68	3.54 Run 6 - 1
12/20/2003	2:05:18 PM	13.98	4.1	0.71	3.54 Run 6 - 1
12/20/2003	2:05:48 PM	13.98	4.14	0.8	3.54 Run 6 - 1
12/20/2003	2:06:18 PM	13.92	4.1	0.75	3.54 Run 6 - 1
12/20/2003	2:06:48 PM	13.92	4.1	0.77	3.5 Run 6 - 1
12/20/2003	2:07:18 PM	13.98	4.1	0.81	3.58 Run 6 - 1
12/20/2003	2:07:48 PM	13.92	4.1	0.74	3.58 Run 6 - 1
12/20/2003	2:08:18 PM	13.98	4.1	0.64	3.54 Run 6 - 1
12/20/2003	2:08:48 PM	13.92	4.1	0.64	3.61 Run 6 - 1
12/20/2003	2:09:17 PM	13.98	4.1	0.68	3.58 Run 6 - 1
12/20/2003	2:09:48 PM	13.98	4.1	0.63	3.58 Run 6 - 1
12/20/2003	2:10:17 PM	13.92	4.05	0.64	3.58 Run 6 - 1
12/20/2003	2:10:48 PM	13.98	4.1	0.72	3.61 Run 6 - 1
12/20/2003	2:11:18 PM	13.92	4.1	0.73	3.61 Run 6 - 1
12/20/2003	2:11:48 PM	13.92	4.1	0.77	3.65 Run 6 - 1

12/20/2003	2:12:18 PM	13.92	4.1	0.65	3.65 Run 6 - 1
12/20/2003	2:12:48 PM	13.92	4.1	0.75	3.65 Run 6 - 1
12/20/2003	2:13:18 PM	13.98	4.1	0.77	3.65 Run 6 - 1
12/20/2003	2:13:48 PM	13.98	4.1	0.77	3.65 Run 6 - 1
12/20/2003	2:14:18 PM	13.98	4.1	0.79	3.65 Run 6 - 1
12/20/2003	2:14:48 PM	13.92	4.1	0.68	3.65 Run 6 - 1
12/20/2003	2:15:18 PM	13.92	4.1	0.63	3.69 Run 6 - 1
12/20/2003	2:15:47 PM	13.92	4.1	0.82	3.69 Run 6 - 1
12/20/2003	2:16:18 PM	13.98	4.1	0.73	3.61 Run 6 - 1
12/20/2003	2:16:47 PM	13.92	4.1	0.63	3.65 Run 6 - 1
12/20/2003	2:17:18 PM	13.92	4.1	0.59	3.61
12/20/2003	2:17:48 PM	13.92	4.05	0.63	3.58
12/20/2003	2:18:18 PM	13.43	10.74	0.99	0.1 Run 6 Span - Zero
12/20/2003	2:18:48 PM	11.6	10.88	0.02	0.03 Run 6 Span - Zero
12/20/2003	2:19:18 PM	12.52	10.93	-0.46	-0.01 Run 6 Span - Zero
12/20/2003	2:19:48 PM	12.58	10.93	-0.46	-0.01 Run 6 Span - Span
12/20/2003	2:20:18 PM	12.58	10.93	-0.46	-0.01 Run 6 Span - Span
12/20/2003	2:20:48 PM	12.58	0.58	-0.45	0.68 Run 6 Span - Span
12/20/2003	2:21:18 PM	4.09	0.09	-0.46	4.35 Run 6 Span - Span
12/20/2003	2:21:48 PM	0.31	0.09	-0.25	4.31 Run 6 Span - Span
12/20/2003	2:22:18 PM	0.06	0.09	-0.19	4.38 Run 6 Span - Zero
12/20/2003	2:22:48 PM	0.06	0.09	-0.27	4.38 Run 6 Span - Zero
12/20/2003	2:23:18 PM	0.06	0.04	0.99	0.06 Run 6 Span - Zero
12/20/2003	2:23:48 PM	0.06	0.04	2.72	-0.01 Run 6 Span - Zero
12/20/2003	2:24:18 PM	0.06	0.09	3.07	-0.01 Run 6 Span - Span
12/20/2003	2:24:48 PM	0	0.04	3.02	-0.05
12/20/2003	2:25:18 PM	4.64	4.05	2.22	3.36
12/20/2003	2:25:48 PM	13.07	4.1	0.97	3.54
12/20/2003	2:26:18 PM	13.8	4.1	0.67	3.5
12/20/2003	2:26:48 PM	13.86	4.1	0.59	3.5 Run 7 - 1
12/20/2003	2:27:18 PM	13.86	4.1	0.73	3.5 Run 7 - 1
12/20/2003	2:27:48 PM	13.86	4.1	0.73	3.54 Run 7 - 1
12/20/2003	2:28:18 PM	13.86	4.05	0.7	3.54 Run 7 - 1
12/20/2003	2:28:48 PM	13.86	4.1	0.83	3.54 Run 7 - 1
12/20/2003	2:29:18 PM	13.86	4.1	0.61	3.54 Run 7 - 1
12/20/2003	2:29:48 PM	13.86	4.1	0.66	3.5 Run 7 - 1
12/20/2003	2:30:17 PM	13.92	4.1	0.72	3.47 Run 7 - 1
12/20/2003	2:30:48 PM	13.86	4.1	0.66	3.47 Run 7 - 1
12/20/2003	2:31:18 PM	13.92	4.1	0.62	3.5 Run 7 - 1
12/20/2003	2:31:48 PM	13.92	4.1	0.66	3.54 Run 7 - 1
12/20/2003	2:32:18 PM	13.92	4.1	0.83	3.54 Run 7 - 1
12/20/2003	2:32:48 PM	13.86	4.05	0.76	3.61 Run 7 - 1
12/20/2003	2:33:18 PM	13.92	4.1	0.79	3.54 Run 7 - 1

12/20/2003	2:33:48 PM	13.92	4.1	0.9	3.58 Run 7 - 1
12/20/2003	2:34:18 PM	13.92	4.1	0.92	3.5 Run 7 - 1
12/20/2003	2:34:48 PM	13.92	4.1	0.81	3.54 Run 7 - 1
12/20/2003	2:35:18 PM	13.92	4.1	0.73	3.58 Run 7 - 1
12/20/2003	2:35:48 PM	13.92	4.1	0.72	3.54 Run 7 - 1
12/20/2003	2:36:18 PM	13.92	4.1	0.66	3.54 Run 7 - 1
12/20/2003	2:36:48 PM	13.98	4.1	0.72	3.54 Run 7 - 1
12/20/2003	2:37:18 PM	13.92	4.05	0.73	3.54 Run 7 - 1
12/20/2003	2:37:47 PM	13.98	4.1	0.81	3.61 Run 7 - 1
12/20/2003	2:38:18 PM	13.92	4.05	0.67	3.54 Run 7 - 1
12/20/2003	2:38:47 PM	13.92	4.05	0.64	3.54 Run 7 - 1
12/20/2003	2:39:18 PM	13.92	4.1	0.72	3.58 Run 7 - 1
12/20/2003	2:39:47 PM	13.98	4.1	0.71	3.65 Run 7 - 1
12/20/2003	2:40:18 PM	13.92	4.1	0.77	3.58 Run 7 - 1
12/20/2003	2:40:47 PM	13.92	4.1	0.72	3.61 Run 7 - 1
12/20/2003	2:41:18 PM	13.92	4.05	0.67	3.58 Run 7 - 1
12/20/2003	2:41:47 PM	13.92	4.1	0.87	3.61 Run 7 - 1
12/20/2003	2:42:18 PM	13.92	4.1	0.68	3.61 Run 7 - 1
12/20/2003	2:42:48 PM	13.92	4.1	0.72	3.65 Run 7 - 1
12/20/2003	2:43:18 PM	13.98	4.1	0.66	3.54 Run 7 - 1
12/20/2003	2:43:48 PM	13.92	4.05	0.65	3.54 Run 7 - 1
12/20/2003	2:44:18 PM	13.92	4.1	0.75	3.5 Run 7 - 1
12/20/2003	2:44:47 PM	13.92	4.1	0.81	3.61 Run 7 - 1
12/20/2003	2:45:18 PM	13.92	4.1	0.79	3.58 Run 7 - 1
12/20/2003	2:45:47 PM	13.98	4.1	0.7	3.61 Run 7 - 1
12/20/2003	2:46:18 PM	13.92	4.1	0.66	3.58 Run 7 - 1
12/20/2003	2:46:48 PM	13.92	4.05	0.72	3.65 Run 7 - 1
12/20/2003	2:47:18 PM	13.92	4.1	0.76	3.65 Run 7 - 1
12/20/2003	2:47:47 PM	13.98	4.1	0.84	3.61
12/20/2003	2:48:18 PM	13.92	3.9	0.72	3.61
12/20/2003	2:48:47 PM	10.01	10.74	0.72	0.06 Run 7 Span - Zero
12/20/2003	2:49:18 PM	12.09	10.93	-0.21	0.03 Run 7 Span - Zero
12/20/2003	2:49:48 PM	12.58	10.93	-0.45	0.03 Run 7 Span - Span
12/20/2003	2:50:18 PM	12.58	10.93	-0.46	-0.01 Run 7 Span - Span
12/20/2003	2:50:48 PM	12.58	10.93	-0.46	-0.01 Run 7 Span - Span
12/20/2003	2:51:18 PM	12.58	10.93	-0.45	-0.01 Run 7 Span - Span
12/20/2003	2:51:48 PM	12.58	0.29	-0.46	2.81 Run 7 Span - Span
12/20/2003	2:52:18 PM	2.32	0.09	-0.46	4.31 Run 7 Span - Span
12/20/2003	2:52:48 PM	0.19	0.09	-0.24	4.35 Run 7 Span - Span
12/20/2003	2:53:18 PM	0.06	0.04	-0.3	4.35 Run 7 Span - Span
12/20/2003	2:53:48 PM	0.06	0.04	-0.31	4.35 Run 7 Span - Zero
12/20/2003	2:54:18 PM	0.06	0.09	0.53	0.14 Run 7 Span - Zero
12/20/2003	2:54:48 PM	0	0.04	2.49	-0.01 Run 7 Span - Zero

12/20/2003	2:55:18 PM	0	0.04	2.98	-0.01 Run 7 Span - Zero
12/20/2003	2:55:48 PM	-0.06	0.04	3.14	-0.01 Run 7 Span - Span
12/20/2003	2:56:18 PM	0.19	4.1	2.77	3.21 Run 7 Span - Span
12/20/2003	2:56:48 PM	12.03	4.1	1.2	3.58 Run 7 Span - Span
12/20/2003	2:57:18 PM	13.68	4.1	0.81	3.54 Run 7 Span - Span
12/20/2003	2:57:48 PM	13.8	4.1	0.78	3.54 Run 7 Span - Span
12/20/2003	2:58:18 PM	13.86	4.1	0.58	3.58 Run 8 - 1
12/20/2003	2:58:47 PM	13.86	4.1	0.76	3.54 Run 8 - 1
12/20/2003	2:59:18 PM	13.86	4.1	0.79	3.58 Run 8 - 1
12/20/2003	2:59:48 PM	13.86	4.05	0.73	3.58 Run 8 - 1
12/20/2003	3:00:18 PM	13.86	4.1	0.76	3.5 Run 8 - 1
12/20/2003	3:00:47 PM	13.86	4.1	0.74	3.5 Run 8 - 1
12/20/2003	3:01:18 PM	13.86	4.1	0.82	3.61 Run 8 - 1
12/20/2003	3:01:47 PM	13.86	4.1	0.67	3.54 Run 8 - 1
12/20/2003	3:02:18 PM	13.92	4.1	0.75	3.54 Run 8 - 1
12/20/2003	3:02:48 PM	13.86	4.1	0.76	3.58 Run 8 - 1
12/20/2003	3:03:18 PM	13.86	4.1	0.74	3.61 Run 8 - 1
12/20/2003	3:03:48 PM	13.92	4.1	0.75	3.58 Run 8 - 1
12/20/2003	3:04:18 PM	13.92	4.14	0.75	3.54 Run 8 - 1
12/20/2003	3:04:48 PM	13.86	4.1	0.87	3.54 Run 8 - 1
12/20/2003	3:05:18 PM	13.92	4.1	0.84	3.58 Run 8 - 1
12/20/2003	3:05:48 PM	13.86	4.05	0.83	3.54 Run 8 - 1
12/20/2003	3:06:18 PM	13.92	4.1	0.86	3.54 Run 8 - 1
12/20/2003	3:06:48 PM	13.92	4.1	0.75	3.58 Run 8 - 1
12/20/2003	3:07:18 PM	13.92	4.1	0.81	3.58 Run 8 - 1
12/20/2003	3:07:48 PM	13.98	4.1	0.79	3.61 Run 8 - 1
12/20/2003	3:08:18 PM	13.98	4.1	0.85	3.58 Run 8 - 1
12/20/2003	3:08:48 PM	13.98	4.1	0.75	3.58 Run 8 - 1
12/20/2003	3:09:18 PM	13.98	4.1	0.64	3.5 Run 8 - 1
12/20/2003	3:09:48 PM	13.92	4.1	0.76	3.54 Run 8 - 1
12/20/2003	3:10:18 PM	13.98	4.14	0.77	3.58 Run 8 - 1
12/20/2003	3:10:48 PM	13.92	4.1	0.77	3.58 Run 8 - 1
12/20/2003	3:11:18 PM	13.92	4.05	0.75	3.54 Run 8 - 1
12/20/2003	3:11:48 PM	13.92	4.1	0.78	3.58 Run 8 - 1
12/20/2003	3:12:18 PM	13.98	4.05	0.71	3.61 Run 8 - 1
12/20/2003	3:12:48 PM	13.98	4.1	0.78	3.61 Run 8 - 1
12/20/2003	3:13:18 PM	13.98	4.1	0.84	3.61 Run 8 - 1
12/20/2003	3:13:48 PM	13.98	4.1	0.72	3.61 Run 8 - 1
12/20/2003	3:14:17 PM	13.92	4.1	0.81	3.65 Run 8 - 1
12/20/2003	3:14:48 PM	13.92	4.05	0.81	3.58 Run 8 - 1
12/20/2003	3:15:17 PM	13.92	4.05	0.67	3.54 Run 8 - 1
12/20/2003	3:15:48 PM	13.92	4.1	0.82	3.58 Run 8 - 1
12/20/2003	3:16:18 PM	13.92	4.05	0.85	3.61 Run 8 - 1



12/20/2003	3:16:48 PM	13.92	4.1	0.75	3.61	Run 8 - 1
12/20/2003	3:17:18 PM	13.98	4.1	0.78	3.58	Run 8 - 1
12/20/2003	3:17:48 PM	13.98	4.1	0.85	3.65	Run 8 - 1
12/20/2003	3:18:18 PM	13.92	4.1	0.78	3.61	Run 8 - 1
12/20/2003	3:18:48 PM	13.98	4.1	0.68	3.58	Run 8 - 1
12/20/2003	3:19:18 PM	13.92	4.1	0.78	3.58	
12/20/2003	3:19:48 PM	13.92	4.1	0.75	3.54	
12/20/2003	3:20:18 PM	13.92	10.35	0.99	1.6	
12/20/2003	3:20:48 PM	10.99	10.93	0.41	0.06	Run 8 Span - Zero
12/20/2003	3:21:18 PM	12.46	10.93	-0.45	0.03	Run 8 Span - Span
12/20/2003	3:21:48 PM	12.58	10.93	-0.46	-0.01	Run 8 Span - Span
12/20/2003	3:22:18 PM	12.58	4.44	-0.46	-0.01	Run 8 Span - Span
12/20/2003	3:22:47 PM	6.05	0.09	-0.46	4.27	Run 8 Span - Span
12/20/2003	3:23:18 PM	0.43	0.09	-0.17	4.31	Run 8 Span - Zero
12/20/2003	3:23:48 PM	0.12	0.09	-0.14	4.35	Run 8 Span - Zero
12/20/2003	3:24:18 PM	0.06	0.09	-0.12	4.38	Run 8 Span - Zero
12/20/2003	3:24:48 PM	0.06	0.09	-0.08	4.38	Run 8 Span - Zero
12/20/2003	3:25:18 PM	0	0.04	1.4	0.03	Run 8 Span - Zero
12/20/2003	3:25:48 PM	0	0.04	2.87	-0.01	Run 8 Span - Zero
12/20/2003	3:26:18 PM	0	0.04	3.02	-0.01	Run 8 Span - Span
12/20/2003	3:26:49 PM	-0.06	3.9	3.04	0.03	Run 8 Span - Span
12/20/2003	3:27:18 PM	9.83	4.05	1.78	3.47	Run 8 Span - Span
12/20/2003	3:27:48 PM	13.55	4.1	0.85	3.47	Run 8 Span - Span
12/20/2003	3:28:18 PM	13.8	4.1	0.81	3.5	Run 9 - 1
12/20/2003	3:28:48 PM	13.86	4.1	0.84	3.47	Run 9 - 1
12/20/2003	3:29:18 PM	13.86	4.05	0.79	3.5	Run 9 - 1
12/20/2003	3:29:47 PM	13.86	4.1	0.72	3.58	Run 9 - 1
12/20/2003	3:30:18 PM	13.86	4.1	0.79	3.54	Run 9 - 1
12/20/2003	3:30:47 PM	13.92	4.1	0.67	3.61	Run 9 - 1
12/20/2003	3:31:18 PM	13.92	4.1	0.78	3.58	Run 9 - 1
12/20/2003	3:31:48 PM	13.86	4.1	0.77	3.54	Run 9 - 1
12/20/2003	3:32:18 PM	13.92	4.1	0.89	3.58	Run 9 - 1
12/20/2003	3:32:47 PM	13.92	4.1	0.89	3.54	Run 9 - 1
12/20/2003	3:33:18 PM	13.92	4.05	0.76	3.47	Run 9 - 1
12/20/2003	3:33:48 PM	13.92	4.1	0.72	3.54	Run 9 - 1
12/20/2003	3:34:18 PM	13.86	4.1	0.74	3.54	Run 9 - 1
12/20/2003	3:34:48 PM	13.92	4.1	0.72	3.54	Run 9 - 1
12/20/2003	3:35:18 PM	13.92	4.1	0.68	3.58	Run 9 - 1
12/20/2003	3:35:48 PM	13.86	4.05	0.74	3.58	Run 9 - 1
12/20/2003	3:36:18 PM	13.92	4.05	0.73	3.61	Run 9 - 1
12/20/2003	3:36:48 PM	13.92	4.1	0.78	3.58	Run 9 - 1
12/20/2003	3:37:18 PM	13.92	4.1	0.74	3.58	Run 9 - 1
12/20/2003	3:37:48 PM	13.92	4.1	0.79	3.58	Run 9 - 1

12/20/2003	3:38:17 PM	13.92	4.1	0.74	3.58 Run 9 - 1
12/20/2003	3:38:48 PM	13.86	4.1	0.79	3.58 Run 9 - 1
12/20/2003	3:39:18 PM	13.92	4.1	0.72	3.58 Run 9 - 1
12/20/2003	3:39:48 PM	13.92	4.05	0.82	3.58 Run 9 - 1
12/20/2003	3:40:18 PM	13.98	4.1	0.85	3.58 Run 9 - 1
12/20/2003	3:40:48 PM	13.92	4.1	0.85	3.58 Run 9 - 1
12/20/2003	3:41:18 PM	13.92	4.1	0.88	3.61 Run 9 - 1
12/20/2003	3:41:48 PM	13.92	4.05	0.95	3.58 Run 9 - 1
12/20/2003	3:42:18 PM	13.92	4.1	0.82	3.58 Run 9 - 1
12/20/2003	3:42:48 PM	13.92	4.1	0.74	3.58 Run 9 - 1
12/20/2003	3:43:18 PM	13.92	4.1	0.84	3.61 Run 9 - 1
12/20/2003	3:43:48 PM	13.92	4.1	0.83	3.58 Run 9 - 1
12/20/2003	3:44:18 PM	13.92	4.1	0.82	3.58 Run 9 - 1
12/20/2003	3:44:48 PM	13.92	4.1	0.79	3.58 Run 9 - 1
12/20/2003	3:45:18 PM	13.92	4.1	0.84	3.54 Run 9 - 1
12/20/2003	3:45:48 PM	13.92	4.1	0.84	3.58 Run 9 - 1
12/20/2003	3:46:18 PM	13.92	4.1	0.91	3.61 Run 9 - 1
12/20/2003	3:46:48 PM	13.92	4.1	0.78	3.61 Run 9 - 1
12/20/2003	3:47:18 PM	13.92	4.05	0.73	3.58 Run 9 - 1
12/20/2003	3:47:48 PM	13.92	4.1	0.85	3.58 Run 9 - 1
12/20/2003	3:48:18 PM	13.92	4.1	0.77	3.5 Run 9 - 1
12/20/2003	3:48:48 PM	13.92	4.1	0.86	3.5 Run 9 - 1
12/20/2003	3:49:18 PM	13.92	4.1	0.91	3.58 Run 9 - 2
12/20/2003	3:49:48 PM	13.92	4.1	0.97	3.54
12/20/2003	3:50:18 PM	13.92	4.1	0.79	3.54
12/20/2003	3:50:48 PM	10.32	10.74	1.04	0.03 Run 9 Span - Zero
12/20/2003	3:51:18 PM	11.97	10.93	0	-0.01 Run 9 Span - Span
12/20/2003	3:51:47 PM	12.58	10.93	-0.46	-0.01 Run 9 Span - Span
12/20/2003	3:52:18 PM	12.58	10.93	-0.46	-0.01 Run 9 Span - Span
12/20/2003	3:52:47 PM	10.08	0.14	-0.46	3.83 Run 9 Span - Span
12/20/2003	3:53:18 PM	0.8	0.09	-0.43	4.35 Run 9 Span - Span
12/20/2003	3:53:48 PM	0.12	0.09	-0.19	4.35 Run 9 Span - Zero
12/20/2003	3:54:18 PM	0.12	0.09	-0.15	4.38 Run 9 Span - Zero
12/20/2003	3:54:48 PM	0.06	0.04	-0.14	2.7 Run 9 Span - Zero
12/20/2003	3:55:18 PM	0.06	0.09	1.52	0.03 Run 9 Span - Zero
12/20/2003	3:55:48 PM	0	0.04	2.77	-0.01 Run 9 Span - Zero
12/20/2003	3:56:18 PM	0	0.04	2.86	-0.01 Run 9 Span - Zero
12/20/2003	3:56:48 PM	0	0.09	3.02	-0.01 Run 9 Span - Span
12/20/2003	3:57:18 PM	0	0.04	3.01	-0.01 Run 9 Span - Span
12/20/2003	3:57:47 PM	1.83	4.05	2.44	3.47 Run 9 Span - Span
12/20/2003	3:58:18 PM	12.64	4.05	1.02	3.54 Run 9 Span - Span
12/20/2003	3:58:48 PM	13.74	4.1	0.72	3.58 Run 9 Span - Span
12/20/2003	3:59:18 PM	13.8	4.1	0.94	3.58 Run 9 Span - Span

12/20/2003	3:59:47 PM	13.86	4.1	0.84	3.61 Run 9 Span - Span
12/20/2003	4:00:18 PM	13.86	4.1	0.76	3.58 Run 9 Span - Span
12/20/2003	4:00:47 PM	13.86	4.1	0.63	3.58 Run 9 Span - Span
12/20/2003	4:01:18 PM	13.86	4.1	0.8	3.5 Run 9 Span - Span

RATA CEM DATA

run1

Record#	DATE	TIME	GEN31	GAS32	NOX33	NOXD34	NOXRT35	CO236	COL37	COLD38
1	12/20/2003	105300	176.1	21.41	3.41	2.9	0.011	3.99	0.9	0.8
2	12/20/2003	105400	176.4	21.466	3.42	2.9	0.011	3.99	0.9	0.8
3	12/20/2003	105500	176.5	21.408	3.48	2.9	0.011	4	0.9	0.8
4	12/20/2003	105600	176.3	21.464	3.53	3	0.011	4	0.9	0.8
5	12/20/2003	105700	176.4	21.413	3.56	3	0.011	4	0.9	0.8
6	12/20/2003	105800	176.5	21.464	3.55	3	0.011	4	0.9	0.8
7	12/20/2003	105900	176.5	21.47	3.59	3	0.011	4	0.9	0.8
8	12/20/2003	110000	176	21.408	3.59	3	0.011	4	0.9	0.8
9	12/20/2003	110100	176.2	21.406	3.54	3	0.011	4	0.9	0.8
10	12/20/2003	110200	176.2	21.406	3.58	3	0.011	4	0.9	0.8
11	12/20/2003	110300	176.4	21.404	3.62	3	0.011	4	0.9	0.8
12	12/20/2003	110400	176.5	21.464	3.61	3	0.011	4	0.9	0.8
13	12/20/2003	110500	176.5	21.468	3.63	3	0.011	4	0.9	0.8
14	12/20/2003	110600	176.2	21.47	3.57	3	0.011	4	0.9	0.8
15	12/20/2003	110700	176.2	21.406	3.57	3	0.011	4	0.9	0.8
16	12/20/2003	110800	176.3	21.406	3.56	3	0.011	4	0.9	0.8
17	12/20/2003	110900	176.5	21.408	3.56	3	0.011	4	0.9	0.8
18	12/20/2003	111000	176.6	21.464	3.58	3	0.011	4	0.9	0.8
19	12/20/2003	111100	176.5	21.414	3.57	3	0.011	4	0.9	0.8
20	12/20/2003	111200	176.2	21.406	3.6	3	0.011	4	0.9	0.8
21	12/20/2003	111300	176.4	21.406	3.58	3	0.011	4	0.9	0.8
22	12/20/2003	111400	176	21.402	3.58	3	0.011	3.99	0.9	0.8
23	/ /									
24	/ /	AVE	176.336	21.429	3.558	2.986	0.011	3.999	0.9	0.8

run2

Record#	DATE	TIME	GEN31	GAS32	NOX33	NOXD34	NOXRT35	CO236	COL37	COLD38
1	12/20/2003	113000	175.8	21.406	3.58	3	0.011	4	0.9	0.8
2	12/20/2003	113100	175.9	21.404	3.62	3	0.011	4	0.9	0.8
3	12/20/2003	113200	176	21.404	3.6	3	0.011	4	0.9	0.8
4	12/20/2003	113300	176	21.408	3.64	3.1	0.011	4	0.9	0.8
5	12/20/2003	113400	175.9	21.406	3.61	3	0.011	4	0.9	0.8
6	12/20/2003	113500	175.8	21.404	3.62	3	0.011	4	0.9	0.8
7	12/20/2003	113600	175.9	21.361	3.59	3	0.011	4	0.9	0.8
8	12/20/2003	113700	175.9	21.404	3.57	3	0.011	4	0.9	0.8
9	12/20/2003	113800	175.7	21.353	3.57	3	0.011	4	0.9	0.8
10	12/20/2003	113900	175.6	21.402	3.57	3	0.011	4	0.9	0.8
11	12/20/2003	114000	175.7	21.404	3.61	3	0.011	4	0.9	0.8
12	12/20/2003	114100	175.5	21.404	3.57	3	0.011	4	0.9	0.8
13	12/20/2003	114200	175.7	21.406	3.58	3	0.011	4	0.9	0.8
14	12/20/2003	114300	175.8	21.361	3.62	3.1	0.011	4	0.9	0.8
15	12/20/2003	114400	175.6	21.406	3.59	3	0.011	4	0.9	0.8
16	12/20/2003	114500	175.4	21.402	3.6	3	0.011	4	0.9	0.8
17	12/20/2003	114600	175.7	21.359	3.58	3	0.011	4	0.9	0.8
18	12/20/2003	114700	175.8	21.404	3.6	3	0.011	4	0.9	0.8
19	12/20/2003	114800	175.6	21.361	3.59	3	0.011	4	0.9	0.8
20	12/20/2003	114900	175.6	21.404	3.53	3	0.011	4	0.9	0.8
21	12/20/2003	115000	175.5	21.404	3.57	3	0.011	4	0.9	0.8
22	12/20/2003	115100	175.5	21.361	3.59	3	0.011	4	0.9	0.8
23	12/20/2003	115200	175.4	21.359	3.58	3	0.011	4	0.9	0.8
24	12/20/2003	115300	175.4	21.297	3.52	3	0.011	4	0.9	0.8
25	12/20/2003	115400	175.3	21.345	3.52	3	0.011	3.99	0.9	0.8
26	/ /									
27	/ /	AVE	175.68	21.385	3.585	3.008	0.011	4	0.9	0.8

□  
□

run 3

Record#	DATE	TIME	GEN31	GAS32	NOX33	NOXD34	NOXRT35	CO236	COL37	COLD38
1	12/20/2003	120500	174.9	21.361	3.54	3	0.011	4	0.9	0.8
2	12/20/2003	120600	175	21.295	3.54	3	0.011	3.99	0.9	0.8
3	12/20/2003	120700	175.4	21.293	3.53	3	0.011	3.99	0.9	0.8
4	12/20/2003	120800	175.5	21.353	3.6	3	0.011	4	0.9	0.8
5	12/20/2003	120900	175.2	21.355	3.63	3	0.011	4	0.9	0.8
6	12/20/2003	121000	175.3	21.357	3.62	3	0.011	4	0.9	0.8
7	12/20/2003	121100	175.6	21.357	3.63	3.1	0.011	4	0.9	0.8
8	12/20/2003	121200	175.4	21.355	3.65	3.1	0.011	4	0.9	0.8
9	12/20/2003	121300	175.1	21.353	3.66	3.1	0.011	4	0.9	0.8
10	12/20/2003	121400	175.3	21.355	3.6	3	0.011	4	0.9	0.8
11	12/20/2003	121500	175.1	21.359	3.62	3	0.011	4	0.9	0.8
12	12/20/2003	121600	175	21.297	3.61	3	0.011	4	0.9	0.8
13	12/20/2003	121700	175.2	21.293	3.58	3	0.011	4	0.9	0.8
14	12/20/2003	121800	175	21.351	3.63	3.1	0.011	4	0.9	0.8
15	12/20/2003	121900	175.2	21.361	3.59	3	0.011	4.01	0.9	0.8
16	12/20/2003	122000	175	21.359	3.61	3	0.011	4	0.9	0.8
17	12/20/2003	122100	174.9	21.297	3.58	3	0.011	4.01	0.9	0.8
18	12/20/2003	122200	175	21.295	3.53	3	0.011	4	0.9	0.8
19	12/20/2003	122300	175	21.349	3.55	3	0.011	4	0.9	0.8
20	12/20/2003	122400	175.2	21.361	3.57	3	0.011	4.01	0.9	0.8
21	12/20/2003	122500	175	21.355	3.54	3	0.011	4	0.9	0.8
22	12/20/2003	122600	175	21.295	3.6	3	0.011	4.01	0.9	0.8
23	/ /									
24	/ /	AVE	175.15	21.337	3.591	3.018	0.011	4.001	0.9	0.8

□  
□

run4

Record#	DATE	TIME	GEN31	GAS32	NOX33	NOXD34	NOXRT35	CO236	COL37	COLD38
1	12/20/2003	124500	174.7	21.297	3.64	3.1	0.011	4.01	0.9	0.8
2	12/20/2003	124600	174.5	21.293	3.64	3.1	0.011	4.01	0.9	0.8
3	12/20/2003	124700	174.5	21.252	3.63	3.1	0.011	4.01	0.9	0.8
4	12/20/2003	124800	174.5	21.289	3.63	3.1	0.011	4.01	0.9	0.8
5	12/20/2003	124900	174.3	21.246	3.59	3	0.011	4.01	0.9	0.8
6	12/20/2003	125000	174.2	21.246	3.57	3	0.011	4	0.9	0.8
7	12/20/2003	125100	174.3	21.24	3.54	3	0.011	4	0.9	0.8
8	12/20/2003	125200	174.6	21.246	3.52	3	0.011	4	0.9	0.8
9	12/20/2003	125300	174.8	21.244	3.56	3	0.011	4	0.9	0.8
10	12/20/2003	125400	174.6	21.289	3.62	3	0.011	4.01	0.9	0.8
11	12/20/2003	125500	174.5	21.254	3.63	3.1	0.011	4.01	0.9	0.8
12	12/20/2003	125600	174.5	21.289	3.57	3	0.011	4.01	0.9	0.8
13	12/20/2003	125700	174.9	21.293	3.53	3	0.011	4	0.9	0.8
14	12/20/2003	125800	174.8	21.293	3.6	3	0.011	4	0.9	0.8
15	12/20/2003	125900	174.7	21.295	3.6	3	0.011	4.01	0.9	0.8
16	12/20/2003	130000	174.6	21.289	3.61	3	0.011	4.01	0.9	0.8
17	12/20/2003	130100	174.8	21.293	3.59	3	0.011	4.01	0.9	0.8
18	12/20/2003	130200	174.6	21.295	3.59	3	0.011	4.01	0.9	0.8
19	12/20/2003	130300	174.6	21.295	3.57	3	0.011	4.01	0.9	0.8
20	12/20/2003	130400	174.5	21.246	3.61	3	0.011	4.01	0.9	0.8
21	12/20/2003	130500	174.8	21.246	3.58	3	0.011	4.01	0.8	0.8
22	12/20/2003	130600	174.8	21.248	3.62	3	0.011	4.01	0.9	0.8
23	/ /									
24	/ /	AVE	174.595	21.272	3.593	3.023	0.011	4.007	0.895	0.8

□



run5

Record#	DATE	TIME	GEN31	GAS32	NOX33	NOXD34	NOXRT35	CO236	COL37	COLD38
1	12/20/2003	132400	174.2	21.192	3.56	3	0.011	4.01	0.9	0.8
2	12/20/2003	132500	173.9	21.246	3.54	3	0.011	4	0.9	0.8
3	12/20/2003	132600	174	21.246	3.55	3	0.011	4.01	0.9	0.8
4	12/20/2003	132700	174	21.192	3.59	3	0.011	4.01	0.9	0.8
5	12/20/2003	132800	174.3	21.24	3.59	3	0.011	4.01	0.9	0.8
6	12/20/2003	132900	174.2	21.244	3.59	3	0.011	4.01	0.9	0.8
7	12/20/2003	133000	174.2	21.246	3.6	3	0.011	4.01	0.9	0.8
8	12/20/2003	133100	174	21.19	3.61	3	0.011	4.01	0.9	0.8
9	12/20/2003	133200	174.2	21.237	3.55	3	0.011	4.01	0.8	0.8
10	12/20/2003	133300	174.1	21.238	3.54	3	0.011	4.01	0.8	0.7
11	12/20/2003	133400	173.8	21.25	3.57	3	0.011	4.01	0.8	0.7
12	12/20/2003	133500	173.8	21.254	3.58	3	0.011	4.01	0.9	0.8
13	12/20/2003	133600	173.9	21.196	3.62	3	0.011	4.01	0.9	0.8
14	12/20/2003	133700	174.2	21.192	3.57	3	0.011	4.01	0.9	0.8
15	12/20/2003	133800	174.3	21.246	3.62	3	0.011	4.01	0.9	0.8
16	12/20/2003	133900	174.2	21.244	3.63	3.1	0.011	4.01	0.9	0.8
17	12/20/2003	134000	173.9	21.246	3.63	3.1	0.011	4.01	0.9	0.8
18	12/20/2003	134100	174.2	21.246	3.56	3	0.011	4.01	0.9	0.8
19	12/20/2003	134200	174	21.25	3.64	3	0.011	4.01	0.9	0.8
20	12/20/2003	134300	174.4	21.244	3.61	3	0.011	4.01	0.9	0.8
21	12/20/2003	134400	174.1	21.242	3.61	3	0.011	4.01	0.9	0.8
22	12/20/2003	134500	174.1	21.242	3.64	3.1	0.011	4.02	0.9	0.8
23	/ /									
24	/ /	AVE	174.091	21.233	3.591	3.014	0.011	4.01	0.886	0.791

□  
□

run6

Record#	DATE	TIME	GEN31	GAS32	NOX33	NOXD34	NOXRT35	CO236	COL37	COLD38
1	12/20/2003	135600	173.8	21.246	3.59	3	0.011	4.02	0.9	0.8
2	12/20/2003	135700	174	21.25	3.57	3	0.011	4.02	0.9	0.8
3	12/20/2003	135800	173.9	21.25	3.58	3	0.011	4.02	0.8	0.7
4	12/20/2003	135900	173.8	21.252	3.58	3	0.011	4.02	0.9	0.8
5	12/20/2003	140000	173.9	21.252	3.57	3	0.011	4.01	0.8	0.7
6	12/20/2003	140100	173.9	21.25	3.55	3	0.011	4.01	0.9	0.8
7	12/20/2003	140200	174.3	21.242	3.6	3	0.011	4.01	0.9	0.8
8	12/20/2003	140300	174.2	21.244	3.59	3	0.011	4.01	0.9	0.8
9	12/20/2003	140400	174	21.248	3.61	3	0.011	4.02	0.9	0.8
10	12/20/2003	140500	174	21.252	3.59	3	0.011	4.02	0.9	0.8
11	12/20/2003	140600	173.7	21.19	3.52	3	0.011	4.02	0.9	0.8
12	12/20/2003	140700	173.7	21.19	3.56	3	0.011	4.02	0.9	0.8
13	12/20/2003	140800	174.2	21.238	3.57	3	0.011	4.02	0.9	0.8
14	12/20/2003	140900	174	21.242	3.61	3	0.011	4.02	0.8	0.8
15	12/20/2003	141000	174	21.248	3.58	3	0.011	4.02	0.9	0.8
16	12/20/2003	141100	173.8	21.248	3.62	3	0.011	4.02	0.9	0.8
17	12/20/2003	141200	173.8	21.198	3.62	3	0.011	4.02	0.9	0.8
18	12/20/2003	141300	174.1	21.184	3.63	3	0.011	4.03	0.9	0.8
19	12/20/2003	141400	174.1	21.24	3.62	3	0.011	4.02	0.9	0.8
20	12/20/2003	141500	174	21.246	3.64	3	0.011	4.02	0.9	0.8
21	12/20/2003	141600	173.9	21.25	3.64	3	0.011	4.02	0.9	0.8
22	12/20/2003	141700	174.1	21.248	3.65	3.1	0.011	4.02	0.9	0.8
23	/ /									
24	/ /	AVE	173.964	21.237	3.595	3.005	0.011	4.019	0.886	0.791

□

run 7

Record#	DATE	TIME	GEN31	GAS32	NOX33	NOXD34	NOXRT35	CO236	COL37	COLD38
1	12/20/2003	142600	174.2	21.24	3.53	3	0.011	4.02	0.8	0.7
2	12/20/2003	142700	174.4	21.246	3.54	3	0.011	4.02	0.8	0.7
3	12/20/2003	142800	174.2	21.244	3.62	3	0.011	4.02	0.9	0.8
4	12/20/2003	142900	174.1	21.248	3.61	3	0.011	4.02	0.9	0.8
5	12/20/2003	143000	173.9	21.252	3.56	3	0.011	4.02	0.9	0.8
6	12/20/2003	143100	174	21.244	3.51	3	0.011	4.02	0.9	0.8
7	12/20/2003	143200	174	21.254	3.54	3	0.011	4.02	0.9	0.8
8	12/20/2003	143300	173.9	21.244	3.59	3	0.011	4.02	0.9	0.8
9	12/20/2003	143400	174.2	21.246	3.63	3	0.011	4.02	0.9	0.8
10	12/20/2003	143500	173.9	21.25	3.59	3	0.011	4.02	0.9	0.8
11	12/20/2003	143600	174.1	21.248	3.55	3	0.011	4.02	0.9	0.8
12	12/20/2003	143700	173.9	21.248	3.57	3	0.011	4.02	0.9	0.8
13	12/20/2003	143800	173.7	21.248	3.58	3	0.011	4.02	0.9	0.8
14	12/20/2003	143900	173.9	21.25	3.6	3	0.011	4.02	0.9	0.8
15	12/20/2003	144000	173.8	21.256	3.62	3	0.011	4.02	0.9	0.8
16	12/20/2003	144100	173.8	21.254	3.63	3	0.011	4.03	0.9	0.8
17	12/20/2003	144200	174	21.248	3.61	3	0.011	4.02	0.8	0.7
18	12/20/2003	144300	173.8	21.25	3.6	3	0.011	4.02	0.9	0.8
19	12/20/2003	144400	173.6	21.196	3.53	3	0.011	4.02	0.9	0.8
20	12/20/2003	144500	173.6	21.19	3.53	3	0.011	4.02	0.9	0.8
21	12/20/2003	144600	173.9	21.188	3.55	3	0.011	4.02	0.9	0.8
22	12/20/2003	144700	174.1	21.239	3.6	3	0.011	4.02	0.9	0.8
23	/ /									
24	/ /	AVE	173.955	21.24	3.577	3	0.011	4.02	0.886	0.786

□

run 8

Record#	DATE	TIME	GEN31	GAS32	NOX33	NOXD34	NOXRT35	CO236	COL37	COLD38
1	12/20/2003	145800	174	21.242	3.62	3	0.011	4.02	0.9	0.8
2	12/20/2003	145900	174.2	21.246	3.62	3	0.011	4.03	0.9	0.8
3	12/20/2003	150000	173.9	21.246	3.62	3	0.011	4.02	0.9	0.8
4	12/20/2003	150100	174.1	21.24	3.57	3	0.011	4.02	0.8	0.7
5	12/20/2003	150200	174	21.293	3.56	3	0.011	4.02	0.9	0.8
6	12/20/2003	150300	174.2	21.291	3.58	3	0.011	4.02	0.9	0.8
7	12/20/2003	150400	174	21.252	3.58	3	0.011	4.03	0.9	0.8
8	12/20/2003	150500	173.8	21.254	3.59	3	0.011	4.02	0.8	0.8
9	12/20/2003	150600	173.9	21.194	3.58	3	0.011	4.02	0.8	0.7
10	12/20/2003	150700	174.2	21.231	3.54	3	0.011	4.03	0.8	0.7
11	12/20/2003	150800	174.3	21.289	3.56	3	0.011	4.02	0.8	0.7
12	12/20/2003	150900	174.2	21.246	3.58	3	0.011	4.03	0.8	0.7
13	12/20/2003	151000	174.2	21.287	3.54	3	0.011	4.02	0.9	0.8
14	12/20/2003	151100	174.1	21.252	3.56	3	0.011	4.02	0.8	0.7
15	12/20/2003	151200	174.4	21.293	3.6	3	0.011	4.02	0.9	0.8
16	12/20/2003	151300	174.1	21.252	3.59	3	0.011	4.02	0.9	0.8
17	12/20/2003	151400	174.4	21.246	3.61	3	0.011	4.02	0.9	0.8
18	12/20/2003	151500	173.9	21.25	3.58	3	0.011	4.02	0.8	0.8
19	12/20/2003	151600	174.1	21.25	3.61	3	0.011	4.02	0.8	0.7
20	12/20/2003	151700	173.9	21.254	3.59	3	0.011	4.02	0.8	0.7
21	12/20/2003	151800	174	21.252	3.6	3	0.011	4.02	0.8	0.7
22	12/20/2003	151900	173.9	21.246	3.58	3	0.011	4.03	0.8	0.7
23	/ /									
24	/ /	AVE	174.082	21.255	3.585	3	0.011	4.022	0.845	0.755

□

Bayside 2C Gas RATA  
Run 9

Record#	DATE	TIME	GEN31	GAS32	NOX33	NOXD34	NOXRT35	CO236	COL37	COLD38
1	12/20/2003	152800	174.4	21.246	3.57	3	0.011	4.03	0.8	0.7
2	12/20/2003	152810	174	21.246	3.53	3	0.011	4.02	0.8	0.7
3	12/20/2003	152820	174.2	21.246	3.55	3	0.011	4.02	0.8	0.7
4	12/20/2003	152830	174.2	21.221	3.6	3	0.011	4.02	0.8	0.7
5	12/20/2003	152840	174.2	21.221	3.53	3	0.011	4.02	0.8	0.7
6	12/20/2003	152850	174.2	21.246	3.54	3	0.011	4.02	0.8	0.7
7	12/20/2003	152900	174.3	21.246	3.59	3	0.011	4.02	0.8	0.7
8	12/20/2003	152910	174.3	21.246	3.54	3	0.011	4.02	0.8	0.7
9	12/20/2003	152920	174.3	21.246	3.53	3	0.011	4.02	0.8	0.7
10	12/20/2003	152930	174.2	21.221	3.53	3	0.011	4.02	0.8	0.7
11	12/20/2003	152940	174.4	21.258	3.5	3	0.011	4.02	0.8	0.7
12	12/20/2003	152950	174.2	21.221	3.55	2.9	0.011	4.02	0.8	0.7
13	12/20/2003	153000	174.3	21.246	3.58	3	0.011	4.02	0.8	0.7
14	12/20/2003	153010	174.3	21.246	3.61	3	0.011	4.02	0.8	0.7
15	12/20/2003	153020	174.2	21.246	3.59	3	0.011	4.02	0.8	0.7
16	12/20/2003	153030	174.3	21.246	3.58	3	0.011	4.02	0.8	0.7
17	12/20/2003	153040	174.4	21.246	3.55	3	0.011	4.02	0.9	0.7
18	12/20/2003	153050	174.5	21.246	3.59	3	0.011	4.02	0.9	0.8
19	12/20/2003	153100	174.4	21.221	3.57	3	0.011	4.02	0.8	0.8
20	12/20/2003	153110	174.4	21.27	3.61	3	0.011	4.02	0.8	0.7
21	12/20/2003	153120	174.4	21.283	3.61	3	0.011	4.02	0.8	0.7
22	12/20/2003	153130	174.5	21.295	3.66	3	0.011	4.02	0.8	0.7
23	12/20/2003	153140	174.5	21.307	3.64	3.1	0.011	4.03	0.8	0.7
24	12/20/2003	153150	174.4	21.295	3.65	3	0.011	4.03	0.8	0.7
25	12/20/2003	153200	174.4	21.295	3.57	3.1	0.011	4.03	0.8	0.7
26	12/20/2003	153210	174.5	21.295	3.58	3	0.011	4.02	0.8	0.7
27	12/20/2003	153220	174.4	21.283	3.6	3	0.011	4.02	0.8	0.7
28	12/20/2003	153230	174.4	21.295	3.6	3	0.011	4.02	0.8	0.7
29	12/20/2003	153240	174.3	21.307	3.61	3	0.011	4.02	0.9	0.7
30	12/20/2003	153250	174.4	21.283	3.58	3	0.011	4.02	0.8	0.8

31	12/20/2003	153300	174	21.295	3.58	3	0.011	4.02	0.8	0.7
32	12/20/2003	153310	174.6	21.295	3.58	3	0.011	4.02	0.8	0.7
33	12/20/2003	153320	174.5	21.295	3.57	3	0.011	4.02	0.8	0.7
34	12/20/2003	153330	174.5	21.307	3.51	3	0.011	4.02	0.8	0.7
35	12/20/2003	153340	174.5	21.295	3.51	2.9	0.011	4.02	0.8	0.7
36	12/20/2003	153350	174.2	21.295	3.52	2.9	0.011	4.02	0.8	0.7
37	12/20/2003	153400	174.3	21.295	3.65	3	0.011	4.02	0.8	0.7
38	12/20/2003	153410	174.4	21.295	3.6	3.1	0.011	4.02	0.8	0.7
39	12/20/2003	153420	174.4	21.295	3.57	3	0.011	4.02	0.8	0.7
40	12/20/2003	153430	174.4	21.295	3.57	3	0.011	4.03	0.8	0.7
41	12/20/2003	153440	174.4	21.295	3.61	3	0.011	4.02	0.8	0.7
42	12/20/2003	153450	174.4	21.295	3.59	3	0.011	4.02	0.8	0.7
43	12/20/2003	153500	174	21.307	3.59	3	0.011	4.02	0.8	0.7
44	12/20/2003	153510	174.2	21.27	3.58	3	0.011	4.01	0.8	0.7
45	12/20/2003	153520	174	21.246	3.59	3	0.011	4.02	0.8	0.7
46	12/20/2003	153530	174.2	21.258	3.61	3	0.011	4.02	0.8	0.7
47	12/20/2003	153540	174.2	21.258	3.58	3	0.011	4.02	0.9	0.7
48	12/20/2003	153550	174	21.246	3.58	3	0.011	4.03	0.9	0.8
49	12/20/2003	153600	174.4	21.221	3.55	3	0.011	4.02	0.8	0.8
50	12/20/2003	153610	174.4	21.27	3.58	3	0.011	4.02	0.8	0.7
51	12/20/2003	153620	174.3	21.295	3.57	3	0.011	4.02	0.8	0.7
52	12/20/2003	153630	174.4	21.295	3.58	3	0.011	4.02	0.8	0.7
53	12/20/2003	153640	173.9	21.295	3.58	3	0.011	4.02	0.8	0.7
54	12/20/2003	153650	174.3	21.295	3.54	3	0.011	4.02	0.9	0.7
55	12/20/2003	153700	174.3	21.295	3.54	3	0.011	4.02	0.8	0.8
56	12/20/2003	153710	174.2	21.258	3.58	3	0.011	4.02	0.8	0.7
57	12/20/2003	153720	174.2	21.246	3.59	3	0.011	4.02	0.8	0.7
58	12/20/2003	153730	174.4	21.246	3.56	3	0.011	4.02	0.8	0.7
59	12/20/2003	153740	174.3	21.246	3.56	3	0.011	4.02	0.8	0.7
60	12/20/2003	153750	174.4	21.246	3.53	3	0.011	4.02	0.8	0.7
61	12/20/2003	153800	174.4	21.246	3.54	3	0.011	4.02	0.8	0.7
62	12/20/2003	153810	174.5	21.27	3.57	3	0.011	4.02	0.8	0.7

63	12/20/2003	153820	174.4	21.295	3.59	3	0.011	4.02	0.9	0.7
64	12/20/2003	153830	174.5	21.295	3.6	3	0.011	4.02	0.8	0.8
65	12/20/2003	153840	174.3	21.283	3.48	3	0.011	4.02	0.8	0.7
66	12/20/2003	153850	174.4	21.295	3.54	2.9	0.011	4.02	0.8	0.7
67	12/20/2003	153900	174.4	21.295	3.56	3	0.011	4.01	0.8	0.7
68	12/20/2003	153910	174.4	21.295	3.53	3	0.011	4.02	0.8	0.7
69	12/20/2003	153920	174.4	21.295	3.54	3	0.011	4.02	0.8	0.7
70	12/20/2003	153930	174.7	21.283	3.56	3	0.011	4.02	0.8	0.7
71	12/20/2003	153940	174.7	21.295	3.57	3	0.011	4.02	0.8	0.7
72	12/20/2003	153950	174	21.295	3.59	3	0.011	4.02	0.8	0.7
73	12/20/2003	154000	174.2	21.295	3.6	3	0.011	4.02	0.8	0.7
74	12/20/2003	154010	174.7	21.295	3.59	3	0.011	4.02	0.8	0.7
75	12/20/2003	154020	174.7	21.295	3.58	3	0.011	4.02	0.8	0.7
76	12/20/2003	154030	174.6	21.295	3.54	3	0.011	4.02	0.8	0.7
77	12/20/2003	154040	174.6	21.295	3.55	3	0.011	4.02	0.8	0.7
78	12/20/2003	154050	174.3	21.295	3.58	3	0.011	4.02	0.8	0.7
79	12/20/2003	154100	174.3	21.295	3.56	3	0.011	4.02	0.8	0.7
80	12/20/2003	154110	174.3	21.258	3.57	3	0.011	4.02	0.9	0.7
81	12/20/2003	154120	174.2	21.246	3.62	3	0.011	4.02	0.8	0.8
82	12/20/2003	154130	174.3	21.221	3.62	3	0.011	4.02	0.8	0.7
83	12/20/2003	154140	174.4	21.221	3.55	3	0.011	4.02	0.8	0.7
84	12/20/2003	154150	174.8	21.258	3.58	3	0.011	4.02	0.8	0.7
85	12/20/2003	154200	174.7	21.221	3.58	3	0.011	4.02	0.8	0.7
86	12/20/2003	154210	174.3	21.258	3.59	3	0.011	4.02	0.8	0.7
87	12/20/2003	154220	174.2	21.295	3.58	3	0.011	4.02	0.8	0.7
88	12/20/2003	154230	174.3	21.295	3.56	3	0.011	4.02	0.8	0.7
89	12/20/2003	154240	174.6	21.295	3.52	3	0.011	4.02	0.8	0.7
90	12/20/2003	154250	174.6	21.283	3.62	3	0.011	4.02	0.8	0.7
91	12/20/2003	154300	174.4	21.295	3.61	3	0.011	4.02	0.8	0.7
92	12/20/2003	154310	174	21.295	3.55	3	0.011	4.02	0.8	0.7
93	12/20/2003	154320	173.9	21.295	3.55	3	0.011	4.02	0.8	0.7
94	12/20/2003	154330	174.3	21.295	3.56	3	0.011	4.02	0.8	0.7
95	12/20/2003	154340	174.3	21.295	3.59	3	0.011	4.02	0.9	0.7

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96	12/20/2003	154350	174	21.295	3.56	3	0.011	4.02	0.8	0.8
97	12/20/2003	154400	174.3	21.295	3.63	3	0.011	4.02	0.8	0.7
98	12/20/2003	154410	173.9	21.27	3.59	3	0.011	4.02	0.8	0.7
99	12/20/2003	154420	174.7	21.246	3.55	3	0.011	4.02	0.8	0.7
100	12/20/2003	154430	174.4	21.221	3.56	3	0.011	4.02	0.8	0.7
101	12/20/2003	154440	174.4	21.246	3.58	3	0.011	4.01	0.9	0.7
102	12/20/2003	154450	174.3	21.246	3.57	3	0.011	4.02	0.8	0.8
103	12/20/2003	154500	174.3	21.246	3.59	3	0.011	4.02	0.8	0.7
104	12/20/2003	154510	174.3	21.246	3.59	3	0.011	4.01	0.8	0.7
105	12/20/2003	154520	174.2	21.246	3.53	3	0.011	4.02	0.8	0.7
106	12/20/2003	154530	174.2	21.258	3.57	3	0.011	4.02	0.8	0.7
107	12/20/2003	154540	174.3	21.246	3.61	3	0.011	4.01	0.8	0.7
108	12/20/2003	154550	173.9	21.258	3.58	3	0.011	4.02	0.8	0.7
109	12/20/2003	154600	174.4	21.246	3.58	3	0.011	4.02	0.8	0.7
110	12/20/2003	154610	174	21.258	3.61	3	0.011	4.02	0.8	0.7
111	12/20/2003	154620	174.3	21.258	3.63	3	0.011	4.02	0.8	0.7
112	12/20/2003	154630	174.2	21.221	3.61	3	0.011	4.02	0.9	0.7
113	12/20/2003	154640	173.9	21.258	3.64	3	0.011	4.02	0.9	0.8
114	12/20/2003	154650	174	21.258	3.6	3	0.011	4.02	0.9	0.8
115	12/20/2003	154700	173.9	21.246	3.58	3	0.011	4.02	0.9	0.8
116	12/20/2003	154710	174	21.258	3.59	3	0.011	4.02	0.9	0.8
117	12/20/2003	154720	173.9	21.246	3.66	3	0.011	4.02	0.8	0.8
118	12/20/2003	154730	174	21.246	3.6	3.1	0.011	4.01	0.8	0.7
119	12/20/2003	154740	174	21.258	3.53	3	0.011	4.01	0.8	0.7
120	12/20/2003	154750	173.9	21.246	3.58	3	0.011	4.01	0.8	0.7
121	12/20/2003	154800	173.9	21.246	3.58	3	0.011	4.02	0.8	0.7
122	12/20/2003	154810	174	21.246	3.58	3	0.011	4.02	0.8	0.7
123	12/20/2003	154820	174	21.246	3.59	3	0.011	4.02	0.8	0.7
124	12/20/2003	154830	174.3	21.246	3.53	3	0.011	4.02	0.8	0.7
125	12/20/2003	154840	174.2	21.221	3.47	3	0.011	4.01	0.8	0.7
126	12/20/2003	154850	174.2	21.246	3.5	2.9	0.011	4.01	0.8	0.7
127	12/20/2003	154900	174.3	21.246	3.46	2.9	0.011	4.02	0.8	0.7



128 / /

129 / /

AVE

174.294

21.267

3.574

2.998

0.011

4.02

0.812

0.712

RATA REFERENCE METHOD CYLINDER GAS CERTIFICATES

CERTIFIED MASTER CLASS

Single-Certified Calibration Standard



Scott Specialty Gases

3141 EASTON ROAD, BLDG 1, ELMSTADVILLE, PA 18048-0310 Phone: 800-331-1953 Fax: 215-766-7226

RDS04

CERTIFICATE OF ACCURACY: Certified Master Class Calibration Standard

Product Information

Project No.: 01-95261-006  
Item No.: 01020000840PAL  
P.O. No.: E-N06925

Customer

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA, FL 33619

Cylinder Number: ALM026412  
Cylinder Size: AL  
Certification Date: 21Aug2003  
Expiration Date: 19Feb2004

CERTIFIED CONCENTRATION

Component Name

Concentration  
(Moles)

Accuracy  
(+/-%)

CARBON MONOXIDE  
NITROGEN

3.00 PPM  
BALANCE

2

TRACEABILITY

Traceable To

NIST

APPROVED BY:

JOHN C. FITZ

DATE:

8/21/03

## SPECIFICATIONS

<u>Component Name</u>	<u>Requested Concentration (Moles)</u>	<u>Certified Concentration (Moles)</u>	<u>Blend Tolerance Result (+/- %)</u>	<u>Certified Accuracy Result (+/- %)</u>
CARBON MONOXIDE	3. PPM	3.00 PPM	.0	2.00
NITROGEN	BAL	BAL		

## TRACEABILITY

Traceable To  
NIST

## PHYSICAL PROPERTIES

Cylinder Size: AL

Pressure: 2000 PSIG  
Expiration Date: 19Feb2004

Min. Cyl. Pressure: 150 PSIG

## SPECIAL HANDLING INSTRUCTIONS

Do not use or store cylinder at or below the stated dew point temperature. Possible condensation of heavier components could result. In the event the cylinder has been exposed to temperatures at or below the dew point, place cylinder in heated area for 24 hours and then roll cylinder for 15 minutes to re-mix.

Use of calibration standards at or below dew point temperature may result in calibration error.



**Scott Specialty Gases**

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: EN-75516  
 Project No.: 01-84921-001

Customer

TAMPA ELECTRIC COMPANY  
 DAVID SMITH  
 5010 CAUSEWAY BLVD  
 TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: ALM063413 Certification Date: 13Feb2003 Exp. Date: 12Feb2004  
 Cylinder Pressure\*\*\*: 1250 PSIG

COMPONENT

CERTIFIED CONCENTRATION (Moles)

ANALYTICAL ACCURACY\*\*

TRACEABILITY

CARBON MONOXIDE 6.29 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.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NT/RM 2635	03Apr2003	ALM020670	25.78 PPM	CARBON MONOXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS/6E/KN-240	30Jan2003	NDIR

**ANALYZER READINGS**

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

**CARBON MONOXIDE**

Date: 08Aug2002 Response Unit: VOLTS  
 Z1 = -0.00400 R1 = 2.54380 T1 = 0.60620  
 R2 = 2.54240 Z2 = -0.00340 T2 = 0.60320  
 Z3 = -0.00700 T3 = 0.60060 R3 = 2.54320  
 Avg. Concentration: 6.230 PPM

Date: 13Feb2003 Response Unit: VOLTS  
 Z1 = -0.00310 R1 = 2.53330 T1 = 0.60820  
 R2 = 2.53100 Z2 = -0.00100 T2 = 0.60910  
 Z3 = -0.00540 T3 = 0.60930 R3 = 2.53000  
 Avg. Concentration: 6.290 PPM

Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>  
 r = .999951 2635  
 Constants: A = 6.6140E-02  
 B = 1.0194E+01 C =  
 D = E =

APPROVED BY:

JOHN C. FITZ

DLUUS

RATA CLASS



Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-01676-001

Customer

TAMPA ELECTRIC COMPANY  
CHARLES DUFENY  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

ANALYTICAL INFORMATION

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

Cylinder Number: ALM0407-1 Certification Date: 15Dec2003 Exp. Date: 14Dec2006  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	11.0 %	+/- 1%	Direct NIST and NMI
OXYGEN	12.6 %	+/- 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.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1675	01Jun2004	K001509	13.93 %	CARBON DIOXIDE
NTRM 2658	02Oct2006	ALM065189	9.930 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
MTI/M200/170927	12Dec2003	GC-TCD
MTI/M200/170927	12Dec2003	GC-TCD

ANALYZER READINGS

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

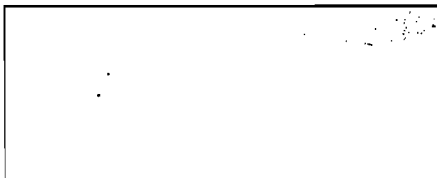
First Triad Analysis

Second Triad Analysis

Calibration Curve

CARBON DIOXIDE

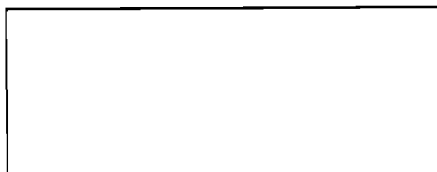
Date: 12Dec2003	Response Unit: VOLTS
Z1 = 0.00000	R1 = 636210.0 T1 = 503192.0
R2 = 636484.0	Z2 = 0.00000 T2 = 503158.0
Z3 = 0.00000	T3 = 503152.0 R3 = 636384.0
Avg. Concentration:	11.00 %



Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999998	1675
Constants:	A = 2.1891E-05
B = 9.5568E-03	C =
D =	E =

OXYGEN

Date: 12Dec2003	Response Unit: VOLTS
Z1 = 0.00000	R1 = 323325.0 T1 = 408839.0
R2 = 323240.0	Z2 = 0.00000 T2 = 409029.0
Z3 = 0.00000	T3 = 408900.0 R3 = 323094.0
Avg. Concentration:	12.60 %



Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999997	2658
Constants:	A = -1.5960E-02
B = 3.0872E-05	C =
D =	E =

APPROVED BY:

*Bradley C. Williams*  
BRADLEY C. WILLIAMS

**RATA CLASS** **BLOOY**  
**Dual-Analyzed Calibration Standard**



**Scott Specialty Gases**

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

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**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
 Project No.: 01-95261-004

Customer

TAMPA ELECTRIC COMPANY  
 Charles Dufeny  
 5010 CAUSEWAY BLVD  
 TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: ALM040695 Certification Date: 22Aug2003 Exp. Date: 21Aug2006  
 Cylinder Pressure\*\*\*: 1950 PSIG

COMPONENT

CERTIFIED CONCENTRATION (Moles)

ANALYTICAL ACCURACY\*\*

TRACEABILITY

CARBON DIOXIDE	18.0 %	+/- 1%	Direct NIST and NMI
OXYGEN	6.24 %	+/- 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.

**REFERENCE STANDARD**

PE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
SRM 1675	01Jun2004	K001509	13.93 %	CARBON DIOXIDE
NTRM 2659	01Jun2004	K012946	20.85 %	OXYGEN

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#

DATE LAST CALIBRATED

ANALYTICAL PRINCIPLE

MTI/M200/170927  
 BECKMAN/755/2002571

18Aug2003  
 30Jul2003

GC-TCD  
 PARAMAGNETIC

**ANALYZER READINGS**

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

First Triad Analysis

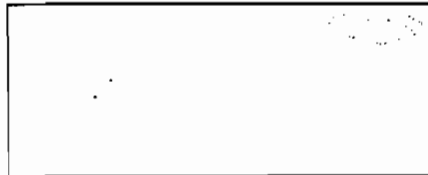
Second Triad Analysis

Calibration Curve

**CARBON DIOXIDE**

Date: 22Aug2003 Response Unit: VOLTS

Z1 = 0.00000	R1 = 635416.0	T1 = 822096.0
R2 = 635972.0	Z2 = 0.00000	T2 = 822258.0
Z3 = 0.00000	T3 = 822295.0	R3 = 636024.0
Avg. Concentration: 18.00 %		



Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>

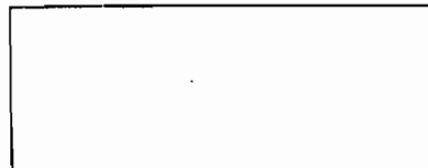
r = .999997 1675

Constants: A = 7.7433E-03  
 B = 2.1753E-05 C =  
 D = E =

**OXYGEN**

Date: 30Jul2003 Response Unit: VOLTS

Z1 = 0.00100	R1 = 0.84400	T1 = 0.25140
R2 = 0.84320	Z2 = 0.00140	T2 = 0.25120
Z3 = 0.00000	T3 = 0.25110	R3 = 0.84310
Avg. Concentration: 6.240 %		



Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>

r = .999998 2659

Constants: A = -1.4608E-02  
 B = -2.1461E+00 C = 2.6702E+01  
 D = E =

APPROVED BY:

*Bradley C. Lillman*  
 BRADLEY C. LILLMAN

RDS10

RATA CLASS



# Scott Specialty Gases

Dual-Analyzed Calibration Standard

8141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

## CERTIFICATE OF ACCURACY: EPA Protocol Gas

**Assay Laboratory**

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

P.C. No.: E-N06925  
Project No.: 01-01495-001

**Customer**

TAMPA ELECTRIC COMPANY  
CHARLES DUFENY  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: AAL3073      Certification Date: 13Nov2003      Exp. Date: 12Nov2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	4.46 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	4.47 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2627	15Jan2004	AAL069671	5.180 PPM	NITRIC OXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
TECO/10/9741111S	06Nov2003	CHEMILUMINESCENT

**ANALYZER READINGS**

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

First Triad Analysis      Second Triad Analysis      Calibration Curve

**NITRIC OXIDE**

Date: 26Aug2003	Response Unit: VOLTS		
Z1 = 0.00020	R1 = 0.87080	T1 = 0.74970	
R2 = 0.87070	Z2 = 0.00020	T2 = 0.74980	
Z3 = 0.00020	T3 = 0.75070	R3 = 0.86970	
Avg. Concentration:	4.460	PPM	

Date: 13Nov2003	Response Unit: VOLTS		
Z1 = 0.00030	R1 = 0.86580	T1 = 0.74680	
R2 = 0.86610	Z2 = 0.00030	T2 = 0.74670	
Z3 = 0.00030	T3 = 0.74710	R3 = 0.86770	
Avg. Concentration:	4.460	PPM	

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = .999992	2627
Constants:	A = 0.001488
	B = 5.993653
	C =
	D =
	E =

APPROVED BY:

  
KIMBERLY NILIS





**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.C. No.: E-N06925  
Project No.: 01-95261-009

Customer

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: AAL15968 Certification Date: 26Aug2003 Exp. Date: 25Aug2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT

CERTIFIED CONCENTRATION (Moles)

ANALYTICAL ACCURACY\*\*

TRACEABILITY

NITRIC OXIDE	8.24 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	8.26 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

REFERENCE STANDARD

<u>PE/SRM NO.</u>	<u>EXPIRATION DATE</u>	<u>CYLINDER NUMBER</u>	<u>CONCENTRATION</u>	<u>COMPONENT</u>
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#

HORIBA/CLA220/5708850810

DATE LAST CALIBRATED

21Aug2003

ANALYTICAL PRINCIPLE

CHEMILUMINESCENCE

**ANALYZER READINGS**

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

**NITRIC OXIDE**

Date: 19Aug2003	Response Unit: VOLTS	
Z1=0.00460	R1=3.94120	T1=1.8010C
R2=3.93760	Z2=0.00380	T2=1.7972C
Z3=0.00490	T3=1.79740	R3=3.9291C
Avg. Concentration:	8.220	PPM

Date: 26Aug2003	Response Unit: VOLTS	
Z1=0.00520	R1=3.78620	T1=1.73250
R2=3.78260	Z2=0.00820	T2=1.73300
Z3=0.00720	T3=1.73030	R3=3.77760
Avg. Concentration:	8.220	PPM

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999998	2629
Constants:	A = -0.016438
B = 4.632947	C =
D =	E =

APPROVED BY:

  
KIMBERLY NILES

RATA CLASS

R0512

Dual-Analyzed Calibration Standard



Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

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

P.O. No.: E-N06925
Project No.: 01-95261-012

Customer

TAMPA ELECTRIC COMPANY
Charles Dufery
5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

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

Cylinder Number: AAL6916 Certification Date: 26Aug2003 Exp. Date: 25Aug2005
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT

CERTIFIED CONCENTRATION (Moles)

ANALYTICAL ACCURACY\*\*

TRACEABILITY

Table with 4 columns: COMPONENT, CERTIFIED CONCENTRATION (Moles), ANALYTICAL ACCURACY\*\*, TRACEABILITY. Rows include NITRIC OXIDE, NITROGEN - OXYGEN FREE, and TOTAL OXIDES OF NITROGEN.

\*\*\* Do not use when cylinder pressure is below 50 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.

REFERENCE STANDARD

Table with 5 columns: TYPE/SRM NO., EXPIRATION DATE, CYLINDER NUMBER, CONCENTRATION, COMPONENT. Row: NTRM 2629, 02Oct2004, AAL069525, 13.05 PPM, NITRIC OXIDE.

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#

HORIBA/CLA220/5708850810

DATE LAST CALIBRATED

21Aug2003

ANALYTICAL PRINCIPLE

CHEMILUMINESCENCE

ANALYZER READINGS

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

NITRIC OXIDE

Table with 3 columns: Date, Response Unit, and three columns of Z, R, T values. Date: 19Aug2003, Response Unit: VOLTS.

Table with 3 columns: Date, Response Unit, and three columns of Z, R, T values. Date: 26Aug2003, Response Unit: VOLTS.

Table with 2 columns: Constants and coefficients A, B, C, D, E. Concentration = A + Bx + Cx2 + Dx3 + Ex4.

APPROVED BY:

KIMBERLY NILES

LINEARITY DATA

Start Date: 11-16-03 Time: 10:59  
 End Date: \_\_\_\_\_ Time: 11:33

Analyzer NOx	LOW	MID	HIGH
REF GAS VALUE	37.100	82.000	134.000
DATE 1, TIME 1	11/16/2003 10:59	11/16/2003 11:03	11/16/2003 11:07
RUN 1	37.200	81.900	132.400
DATE 2, TIME 2	11/16/2003 11:10	11/16/2003 11:14	11/16/2003 11:17
RUN 2	37.100	81.900	133.100
DATE 3, TIME 3	11/16/2003 11:20	11/16/2003 11:29	11/16/2003 11:33
RUN 3	37.100	82.300	132.700
AVERAGE=SUM/3	37.133	82.033	132.733
% Error (Eqn A-4)	0.1	0.0	0.9
APS Error (R-A)	0.0	0.0	1.3
Final Value, *=APS	0.1	0.0	0.9
OUT OF CONTROL	NO	NO	NO
SERIAL NUMBER	ALM-019353	ALM035365	ALM-03262
EXPIRATION DATE	09/01/2005	09/02/2005	09/02/2005

Analyzer CO2	LOW	MID	HIGH
REF GAS VALUE	2.540	5.500	9.120
DATE 1, TIME 1	11/16/2003 10:59	11/16/2003 11:03	11/16/2003 11:07
RUN 1	2.500	5.500	9.000
DATE 2, TIME 2	11/16/2003 11:10	11/16/2003 11:14	11/16/2003 11:17
RUN 2	2.500	5.500	9.000
DATE 3, TIME 3	11/16/2003 11:20	11/16/2003 11:29	11/16/2003 11:33
RUN 3	2.600	5.500	9.000
AVERAGE=SUM/3	2.533	5.500	9.000
% Error (Eqn A-4)	0.3	0.0	1.3
APS Error (R-A)	0.0	0.0	0.1
Final Value, *=APS	0.3	0.0	1.3
OUT OF CONTROL	NO	NO	NO
SERIAL NUMBER	ALM-019353	ALM-035365	ALM-03262
EXPIRATION DATE	09/01/2005	09/02/2005	09/02/2005

Signature: *Mitch Salters*

CYCLE RESPONSE TIME DATA

CT2d

Record#	DATE	TIME	CO241	NOX42	NOXH43	
1	11/16/2003	120000	1.810	9.980	32.800	
2	11/16/2003	120100	1.810	9.980	32.800	
3	11/16/2003	120200	2.550	8.210	40.400	
4	11/16/2003	120300	0.060	0.760	0.700	
5	11/16/2003	120400	0.000	0.510	0.400	
6	11/16/2003	120500	0.000	0.430	0.400	
7	11/16/2003	120600	1.380	8.280	25.900	
8	11/16/2003	120700	1.790	9.980	32.600	
9	11/16/2003	120800	1.800	9.980	32.700	
10	11/16/2003	120900	1.800	9.980	32.700	
11	11/16/2003	121000	1.800	9.980	32.700	
12	11/16/2003	121100	1.800	9.980	32.700	
13	11/16/2003	121200	2.870	9.810	41.400	
14	11/16/2003	121300	8.480	9.980	129.000	
15	11/16/2003	121400	8.940	9.980	132.400	
16	11/16/2003	121500	8.960	9.980	132.600	
17	11/16/2003	121600	6.950	9.980	107.700	
18	11/16/2003	121700	1.900	9.980	33.100	
19	11/16/2003	121800	1.830	9.980	32.800	
20	11/16/2003	121900	1.820	9.980	32.700	
21	11/16/2003	122000	1.810	9.980	32.700	
22	/	/				
23	/	/	AVE	2.865	8.462	46.248

7-DAY DRIFT DATA

-----  
 Daily Calibration Summary  
 Tampa Electric Company  
 Bayside CT2D  
 -----

Report Period  
 Day: 12/09/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	15:14	2.00	2.000P	0.00	15:17	83.80	2.100P	81.70
NOx Low	15:14	2.00	2.000P	0.00	15:11	7.70	2.200P	5.50
CO2	15:14	0.00	0.000P	0.00	15:17	5.30	0.200P	5.50
CO High	15:17	0.40	0.080P	0.00	15:14	557.50	0.300P	556.00
CO Low	15:17	1.30	1.300P	0.00	15:11	12.00	0.700P	11.30

Today's Date: 12/15/2003  
 Time: 07:51:32

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed



=====  
 Daily Calibration Summary  
 Tampa Electric Company  
 Bayside CT2D  
 =====

Report Period  
 Day: 12/10/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:51	0.00	0.000P	0.00	1:54	82.40	0.700P	81.70
	9:57	0.70	0.700P	0.00	10:00	84.20	2.500P	81.70
NOx Low	1:51	0.10	0.100P	0.00	1:48	5.20	0.300P	5.50
	9:57	0.70	0.700P	0.00	9:54	6.00	0.500P	5.50
CO2	1:51	0.00	0.000P	0.00	1:54	5.30	0.200P	5.50
	9:57	0.00	0.000P	0.00	10:00	5.30	0.200P	5.50
CO High	1:54	0.60	0.120P	0.00	1:51	559.40	0.680P	556.00
	10:00	0.60	0.120P	0.00	9:57	564.90	1.780P	556.00
CO Low	1:54	1.30	1.300P	0.00	1:48	11.80	0.500P	11.30
	10:00	1.30	1.300P	0.00	9:54	11.90	0.600P	11.30

=====  
 Today's Date: 12/15/2003  
 Time: 07:52:04

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

=====  
 Daily Calibration Summary  
 Tampa Electric Company  
 Bayside CT2D  
 =====

Report Period  
 Day: 12/11/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:51	0.00	0.000P	0.00	1:54	82.90	1.200P	81.70
	10:06	1.90	1.900P	0.00	10:09	84.30	2.600P	81.70
NOx Low	1:51	0.00	0.000P	0.00	1:48	5.20	0.300P	5.50
	√10:06	2.00	2.000P	0.00	10:03	7.70	2.200P	5.50
CO2	1:51	0.00	0.000P	0.00	1:54	5.40	0.100P	5.50
	10:06	0.00	0.000P	0.00	10:09	5.50	0.000P	5.50
CO High	1:54	0.50	0.100P	0.00	1:51	567.00	2.200P	556.00
	10:09	0.40	0.080P	0.00	10:06	561.20	1.040P	556.00
CO Low	1:54	1.40	1.400P	0.00	1:48	12.10	0.800P	11.30
	10:09	1.10	1.100P	0.00	10:03	11.80	0.500P	11.30

=====  
 Today's Date: 12/15/2003  
 Time: 07:52:31

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

=====

Daily Calibration Summary  
Tampa Electric Company  
Bayside CT2D

=====

Report Period

Day: 12/12/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:38	0.10	0.100P	0.00	1:41	82.60	0.900P	81.70
	1:51	0.10	0.100P	0.00	1:54	82.60	0.900P	81.70
NOx Low	1:38	0.20	0.200P	0.00	1:35	5.30	0.200P	5.50
	1:51	0.20	0.200P	0.00	1:48	5.40	0.100P	5.50
CO2	1:38	0.00	0.000P	0.00	1:41	5.50	0.000P	5.50
	1:51	0.00	0.000P	0.00	1:54	5.50	0.000P	5.50
CO High	1:41	0.40	0.080P	0.00	1:38	561.80	1.160P	556.00
	1:54	0.40	0.080P	0.00	1:51	560.50	0.900P	556.00
CO Low	1:41	1.30	1.300P	0.00	1:35	11.90	0.600P	11.30
	1:54	1.40	1.400P	0.00	1:48	11.90	0.600P	11.30

=====

Today's Date: 12/17/2003  
Time: 07:37:39

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

=====  
 Daily Calibration Summary  
 Tampa Electric Company  
 Bayside CT2D  
 =====

Report Period  
 Day: 12/15/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:51	0.00	0.000P	0.00	1:54	83.60	1.900P	81.70
	16:04	0.90	0.900P	0.00	16:07	83.70	2.000P	81.70
NOx Low	1:51	0.00	0.000P	0.00	1:48	5.20	0.300P	5.50
	√16:04	1.00	1.000P	0.00	16:01	6.30	0.800P	5.50
CO2	1:51	0.00	0.000P	0.00	1:54	5.30	0.200P	5.50
	16:04	0.00	0.000P	0.00	16:07	5.20	0.300P	5.50
CO High	1:54	0.90	0.180P	0.00	1:51	571.10	3.020P	556.00
	16:07	0.70	0.140P	0.00	16:04	563.10	1.420P	556.00
CO Low	1:54	1.50	1.500P	0.00	1:48	12.20	0.900P	11.30
	16:07	1.40	1.400P	0.00	16:01	11.90	0.600P	11.30

=====  
 Today's Date: 12/17/2003  
 Time: 07:37:10

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

=====  
 Daily Calibration Summary  
 Tampa Electric Company  
 Bayside CT2D  
 =====

Report Period  
 Day: 12/16/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:38	0.00	0.000P	0.00	1:41	83.00	1.300P	81.70
	1:51	0.00	0.000P	0.00	1:54	83.10	1.400P	81.70
NOx Low	1:38	0.10	0.100P	0.00	1:35	5.30	0.200P	5.50
	1:51	0.10	0.100P	0.00	1:48	5.30	0.200P	5.50
CO2	1:38	0.00	0.000P	0.00	1:41	5.10	0.400P	5.50
	1:51	0.00	0.000P	0.00	1:54	5.10	0.400P	5.50
CO High	1:41	0.60	0.120P	0.00	1:38	565.30	1.860P	556.00
	1:54	0.60	0.120P	0.00	1:51	565.30	1.860P	556.00
CO Low	1:41	1.40	1.400P	0.00	1:35	12.00	0.700P	11.30
	1:54	1.40	1.400P	0.00	1:48	12.00	0.700P	11.30

=====  
 Today's Date: 12/17/2003  
 Time: 07:36:54

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

=====  
 Daily Calibration Summary  
 Tampa Electric Company  
 Bayside CT2D  
 =====

Report Period		ZERO CAL				SPAN CAL			
Day: 12/17/2003									
	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF	
NOxHigh	1:37	0.00	0.000P	0.00	1:40	83.70	2.000P	81.70	
	1:51	0.00	0.000P	0.00	1:54	83.80	2.100P	81.70	
NOx Low	1:37	0.00	0.000P	0.00	1:34	5.20	0.300P	5.50	
	1:51	0.10	0.100P	0.00	1:48	5.30	0.200P	5.50	
CO2	1:37	0.00	0.000P	0.00	1:40	5.00	0.500P	5.50	
	1:51	0.00	0.000P	0.00	1:54	5.00	0.500P	5.50	
CO High	1:40	0.90	0.180P	0.00	1:37	572.30	3.260P	556.00	
	1:54	1.00	0.200P	0.00	1:51	573.60	3.520P	556.00	
CO Low	1:40	1.50	1.500P	0.00	1:34	12.40	1.100P	11.30	
	1:54	1.60	1.600P	0.00	1:48	12.30	1.000P	11.30	

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Today's Date: 12/17/2003  
 Time: 07:36:31

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

CO2

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Daily Calibration Summary  
Tampa Electric Company  
Bayside CT2D

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Report Period

Day: 12/20/2003

ZERO CAL

SPAN CAL

=====

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:41	0.00	0.000P	0.00	1:46	81.40	0.200P	81.70
	1:55	0.00	0.000P	0.00	2:00	81.40	0.200P	81.70
NOx Low	1:41	0.00	0.000P	0.00	1:36	5.40	0.100P	5.50
	1:55	0.00	0.000P	0.00	1:50	5.60	0.100P	5.50
O2	1:41	0.00	0.000P	0.00	1:46	5.30	0.200P	5.50
	1:55	0.00	0.000P	0.00	2:00	5.30	0.200P	5.50
O High	1:46	0.20	0.040P	0.00	1:41	534.70	3.460P	552.00
	2:00	0.20	0.040P	0.00	1:55	534.90	3.420P	552.00
CO Low	1:46	0.60	0.600P	0.00	1:36	11.40	0.100P	11.30
	2:00	0.70	0.700P	0.00	1:50	11.60	0.300P	11.30

=====

Today's Date: 01/27/2004

Time: 14:00:15

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

=====  
 Daily Calibration Summary  
 Tampa Electric Company  
 Bayside CT2D  
 =====

Report Period

Day: 12/21/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:41	0.00	0.000P	0.00	1:46	84.20	0.333P	83.70
	1:55	0.00	0.000P	0.00	2:00	84.30	0.400P	83.70
NOx Low	1:41	0.00	0.000P	0.00	1:36	5.50	0.000P	5.50
	1:55	0.00	0.000P	0.00	1:50	5.60	0.100P	5.50
O2	1:41	0.00	0.000P	0.00	1:46	5.30	0.200P	5.50
	1:55	0.00	0.000P	0.00	2:00	5.30	0.200P	5.50
O High	1:46	0.30	0.060P	0.00	1:41	539.60	2.480P	552.00
	2:00	0.50	0.100P	0.00	1:55	540.00	2.400P	552.00
CO Low	1:46	0.70	0.700P	0.00	1:36	11.70	0.400P	11.30
	2:00	0.80	0.800P	0.00	1:50	11.80	0.500P	11.30

=====  
 Today's Date: 01/27/2004  
 Time: 14:00:42

%CE = Percent Calibration Error

P - Calibration Passed    F - Calibration Failed



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Daily Calibration Summary  
Tampa Electric Company  
Bayside CT2D

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Report Period

Day: 12/22/2003

ZERO CAL

SPAN CAL

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	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:54	0.00	0.000P	0.00	1:59	83.30	0.267P	83.70
	9:41	0.70	0.467P	0.00	9:45	84.10	0.267P	83.70
NOx Low	1:54	0.00	0.000P	0.00	1:49	5.40	0.100P	5.50
	9:41	0.80	0.800P	0.00	9:36	6.50	1.000P	5.50
O2	1:54	0.00	0.000P	0.00	1:59	5.60	0.100P	5.50
	9:41	0.00	0.000P	0.00	9:45	5.60	0.100P	5.50
CO High	1:59	0.20	0.040P	0.00	1:54	537.10	2.980P	552.00
	9:45	0.20	0.040P	0.00	9:41	534.70	3.460P	552.00
CO Low	1:59	0.70	0.700P	0.00	1:49	11.60	0.300P	11.30
	9:45	0.80	0.800P	0.00	9:36	12.00	0.700P	11.30

=====

Today's Date: 01/27/2004  
Time: 14:01:15

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

=====  
 Daily Calibration Summary  
 Tampa Electric Company  
 Bayside CT2D  
 =====

Report Period

Day: 12/23/2003

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:41	0.00	0.000P	0.00	1:46	83.80	0.067P	83.70
	1:55	0.00	0.000P	0.00	2:00	83.80	0.067P	83.70
NOx Low	1:41	0.00	0.000P	0.00	1:36	5.50	0.000P	5.50
	1:55	0.10	0.100P	0.00	1:50	5.60	0.100P	5.50
CO2	1:41	0.00	0.000P	0.00	1:46	5.40	0.100P	5.50
	1:55	0.00	0.000P	0.00	2:00	5.40	0.100P	5.50
CO High	1:46	0.20	0.040P	0.00	1:41	540.80	2.240P	552.00
	2:00	0.20	0.040P	0.00	1:55	541.90	2.020P	552.00
CO Low	1:46	0.80	0.800P	0.00	1:36	11.80	0.500P	11.30
	2:00	0.80	0.800P	0.00	1:50	11.80	0.500P	11.30

=====  
 Today's Date: 01/27/2004  
 Time: 14:01:36

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

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Daily Calibration Summary  
Tampa Electric Company  
Bayside CT2D

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Report Period  
Day: 01/05/2004

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:54	0.00	0.000P	0.00	1:59	84.30	0.400P	83.70
	15:29	0.40	0.267P	0.00	15:34	84.10	0.267P	83.70
NOx Low	1:54	0.00	0.000P	0.00	1:49	5.50	0.000P	5.50
	15:29	0.50	0.500P	0.00	15:25	6.00	0.500P	5.50
O2	1:54	0.00	0.000P	0.00	1:59	5.80	0.300P	5.50
	15:29	0.00	0.000P	0.00	15:34	5.90	0.400P	5.50
O High	1:59	0.00	0.000P	0.00	1:54	560.80	1.560P	553.00
	15:34	0.10	0.020P	0.00	15:29	559.80	1.360P	553.00
CO Low	1:59	0.60	0.600P	0.00	1:49	11.60	0.100P	11.50
	15:34	0.50	0.500P	0.00	15:25	11.50	0.000P	11.50

=====

Today's Date: 01/27/2004  
Time: 14:02:15

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

=====  
 Daily Calibration Summary  
 Tampa Electric Company  
 Bayside CT2D  
 =====

Report Period

Day: 01/12/2004

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:54	0.00	0.000P	0.00	1:59	84.70	0.867P	83.40
	4:26	1.40	0.933P	0.00	4:30	86.00	1.733P	83.40
NOx Low	1:54	0.00	0.000P	0.00	1:49	5.50	0.000P	5.50
	4:26	1.50	1.500P	0.00	4:21	7.50	2.000P	5.50
O2	1:54	0.00	0.000P	0.00	1:59	5.50	0.000P	5.50
	4:26	0.00	0.000P	0.00	4:30	5.50	0.000P	5.50
SO High	1:59	0.20	0.040P	0.00	1:54	552.00	0.200P	553.00
	4:30	0.30	0.060P	0.00	4:26	554.00	0.200P	553.00
SO Low	1:59	0.50	0.500P	0.00	1:49	11.60	0.100P	11.50
	4:30	0.60	0.600P	0.00	4:21	11.60	0.100P	11.50

=====  
 Today's Date: 01/27/2004  
 Time: 14:02:45

%CE = Percent Calibration Error

P - Calibration Passed    F - Calibration Failed

=====  
 Daily Calibration Summary  
 Tampa Electric Company  
 Bayside CT2D  
 =====

Report Period

Day: 01/13/2004

ZERO CAL

SPAN CAL

	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOxHigh	1:40	0.00	0.000P	0.00	1:45	85.30	1.267P	83.40
	1:54	0.00	0.000P	0.00	1:59	85.30	1.267P	83.40
NOx Low	1:40	0.00	0.000P	0.00	1:36	5.60	0.100P	5.50
	1:54	0.00	0.000P	0.00	1:50	5.70	0.200P	5.50
CO2	1:40	0.00	0.000P	0.00	1:45	5.30	0.200P	5.50
	1:54	0.00	0.000P	0.00	1:59	5.30	0.200P	5.50
CO High	1:45	0.30	0.060P	0.00	1:40	558.50	1.100P	553.00
	1:59	0.20	0.040P	0.00	1:54	562.00	1.800P	553.00
CO Low	1:45	0.60	0.600P	0.00	1:36	11.70	0.200P	11.50
	1:59	0.70	0.700P	0.00	1:50	11.80	0.300P	11.50

=====  
 Today's Date: 01/27/2004  
 Time: 14:03:07

%CE = Percent Calibration Error

P - Calibration Passed      F - Calibration Failed

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Daily Gas Emission Report  
Tampa Electric Company  
Bayside CT2D

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REPORT PERIOD

Page 1

12/17/2003 to 01/27/2004

Date: 12/17/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
0	Gas	16938.3	1727.7	1.03662	102.70	124.40
1	Gas	15861.2	1617.8	0.97068	96.10	112.40
2	Gas	15256.2	1556.1	0.93366	92.50	105.40
3	Gas	15265.1	1557.0	0.93420	92.50	105.30
4	Gas	15227.2	1553.2	0.93192	92.30	104.80
5	Gas	15243.8	1554.9	0.93294	92.40	105.10
6	Gas	17695.9	1805.0	1.08300	107.30	132.00
7	Gas	19338.5	1972.5	1.18350	117.20	150.30
8	Gas	20298.2	2070.4	1.24224	123.00	159.80
9	Gas	21489.8	2192.0	1.31520	130.30	171.70
10	Gas	21581.6	2201.3	1.32078	130.80	172.70
11	Gas	21583.0	2201.5	1.32090	130.80	172.80
12	Gas	21549.6	2198.1	1.31886	130.60	172.40
13	Gas	21594.9	2202.7	1.32162	130.90	172.80
14	Gas	21617.3	2205.0	1.32300	131.00	173.20
15	Gas	21659.8	2209.3	1.32558	131.30	173.80
16	Gas	21716.7	2215.1	1.32906	131.60	174.50
17	Gas	21775.6	2221.1	1.33266	132.00	175.20
18	Gas	21842.2	2227.9	1.33674	132.40	175.70
19	Gas	21865.9	2230.3	1.33818	132.50	176.10
20	Gas	21894.6	2233.2	1.33992	132.70	176.40
21	Gas	21629.4	2206.2	1.32372	131.10	173.80
22	Gas	19374.7	1976.2	1.18572	117.40	151.00
23	Gas	15869.8	1618.7	0.97122	96.20	111.80

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	468169.3	47753.2	28.65192	2837.60

Generation Daily Total: 3623.40 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	

Date: 12/18/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
0	Gas	15407.2	1571.5	0.94290	93.40	106.10
1	Gas	15369.3	1567.7	0.94062	93.20	105.50
2	Gas	15309.2	1561.5	0.93690	92.80	104.50
3	Gas	15480.8	1579.0	0.94740	93.80	106.70
4	Gas	16565.6	1689.7	1.01382	100.40	120.00
5	Gas	17674.8	1802.8	1.08168	107.10	132.20
6	Gas	19476.4	1986.6	1.19196	118.10	152.20
7	Gas	22202.6	2264.7	1.35882	134.60	179.80
8	Gas	21759.0	2219.4	1.33164	131.90	175.40
9	Gas	20659.2	2107.2	1.26432	125.20	164.80
10	Gas	20847.8	2126.5	1.27590	126.40	166.50
11	Gas	21131.5	2155.4	1.29324	128.10	169.20
12	Gas	20789.0	2120.5	1.27230	126.00	165.70
13	Gas	17740.4	1809.5	1.08570	107.50	133.70
14	Gas	15971.4	1629.1	0.97746	96.80	113.60
15	Gas	16000.7	1632.1	0.97926	97.00	113.90
16	Gas	16018.6	1633.9	0.98034	97.10	114.10
17	Gas	18485.6	1885.5	1.13130	112.10	141.60
18	Gas	20981.3	2140.1	1.28406	127.20	167.50
19	Gas	19525.7	1991.6	1.19496	118.40	153.20
20	Gas	19493.2	1988.3	1.19298	118.20	153.00
21	Gas	18943.7	1932.3	1.15938	114.80	147.10
22	Gas	16750.2	1708.5	1.02510	101.50	122.70
23	Gas	16405.4	1673.4	1.00404	99.40	118.80

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	438988.6	44776.8	26.86608	2661.00

Generation Daily Total: 3327.80 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	

Date: 12/19/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
0	Gas	16143.8	1646.7	0.98802	97.90	115.90
1	Gas	15985.1	1630.5	0.97830	96.90	114.00
2	Gas	15983.9	1630.4	0.97824	96.90	113.90
3	Gas	15986.9	1630.7	0.97842	96.90	113.90
4	Gas	15976.0	1629.6	0.97776	96.80	113.90
5	Gas	16402.2	1673.0	1.00380	99.40	118.60
6	Gas	18626.5	1899.9	1.13994	112.90	143.60
7	Gas	19833.1	2023.0	1.21380	120.20	156.60
8	Gas	19539.1	1993.0	1.19580	118.40	153.40
9	Gas	18587.1	1895.9	1.13754	112.70	143.30
10	Gas	19206.1	1959.0	1.17540	116.40	149.90
11	Gas	16279.8	1660.5	0.99630	98.70	117.40
12	Gas	16012.6	1633.3	0.97998	97.10	114.30
13	Gas	16000.8	1632.1	0.97926	97.00	114.10
14	Gas	15984.0	1630.4	0.97824	96.90	113.90
15	Gas	15972.5	1629.2	0.97752	96.80	113.90
16	Gas	16559.8	1689.1	1.01346	100.40	121.00
17	Gas	17481.1	1783.1	1.06986	106.00	131.40
18	Gas	19467.5	1985.7	1.19142	118.00	152.70
19	Gas	18781.3	1915.7	1.14942	113.80	145.50
20	Gas	19722.1	2011.7	1.20702	119.60	155.50
21	Gas	19529.2	1992.0	1.19520	118.40	153.40
22	Gas	18681.2	1905.5	1.14330	113.20	144.30
23	Gas	19086.1	1946.8	1.16808	115.70	148.60

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	421827.8	43026.8	25.81608	2557.00

Generation Daily Total: 3163.00 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	



Date: 12/20/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

ITEM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
0	Gas	17586.9	1793.9	1.07634	106.60	132.20
1	Gas	16566.0	1689.7	1.01382	100.40	120.60
2	Gas	16653.1	1698.6	1.01916	100.90	121.60
3	Gas	16983.7	1732.3	1.03938	102.90	125.20
4	Gas	17899.6	1825.8	1.09548	108.50	135.70
5	Gas	16047.3	1636.8	0.98208	97.30	114.30
6	Gas	16362.5	1669.0	1.00140	99.20	118.00
7	Gas	19191.9	1957.6	1.17456	116.30	149.30
8	Gas	21758.5	2219.4	1.33164	131.90	175.60
9	Gas	21596.9	2202.9	1.32174	130.90	174.00
10	Gas	18559.8	1893.1	1.13586	112.50	142.10
11	Gas	19359.4	1974.7	1.18482	117.40	150.90
12	Gas	17307.1	1765.3	1.05918	104.90	128.70
13	Gas	17503.4	1785.3	1.07118	106.10	130.90
14	Gas	16068.1	1638.9	0.98334	97.40	114.40
15	Gas	16031.0	1635.2	0.98112	97.20	113.80
16	Gas	16983.1	1732.3	1.03938	102.90	124.90
17	Gas	19782.1	2017.8	1.21068	119.90	155.40
18	Gas	21359.4	2178.7	1.30722	129.50	171.40
19	Gas	19920.0	2031.8	1.21908	120.70	157.10
20	Gas	20608.1	2102.0	1.26120	124.90	164.20
21	Gas	21398.4	2182.6	1.30956	129.70	171.90
22	Gas	21876.2	2231.4	1.33884	132.60	176.80
23	Gas	19817.4	2021.4	1.21284	120.10	155.60

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	447219.9	45616.5	27.36990	2710.70

Generation Daily Total: 3424.60 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	

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Date: 12/31/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
0	Gas	16608.5	1694.1	1.01646	100.70	120.20
1	Gas	18500.2	1887.0	1.13220	112.10	141.70
2	Gas	20158.2	2056.1	1.23366	122.20	159.60
3	Gas	19787.8	2018.4	1.21104	120.00	155.60
4	Gas	19032.7	1941.3	1.16478	115.40	147.50
5	Gas	18818.3	1919.5	1.15170	114.10	144.90
6	Gas	17620.9	1797.3	1.07838	106.80	131.60
7	Gas	16389.3	1671.7	1.00302	99.30	117.50
8	Gas	17272.1	1761.8	1.05708	104.70	127.70
9	Gas	20338.7	2074.5	1.24470	123.30	161.00
10	Gas	20740.3	2115.5	1.26930	125.70	164.80
11	Gas	18570.2	1894.2	1.13652	112.60	141.50
12	Gas	4152.3	423.5	0.25410	25.20	12.40

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	227989.5	23254.9	13.95294	1382.10

Generation Daily Total: 1726.00 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	

Date: 12/22/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

EM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
8	Gas	6864.8	700.2	0.42012	41.60	25.40
9	Gas	8828.9	900.5	0.54030	53.50	38.10
10	Gas	15931.8	1625.0	0.97500	96.60	112.20
11	Gas	16724.2	1705.9	1.02354	101.40	121.80
12	Gas	16870.9	1720.8	1.03248	102.30	123.70
13	Gas	18996.4	1937.6	1.16256	115.10	145.70
14	Gas	18645.5	1901.8	1.14108	113.00	142.70
15	Gas	17804.8	1816.1	1.08966	107.90	134.10
16	Gas	17640.0	1799.3	1.07958	106.90	132.40
17	Gas	19270.7	1965.6	1.17936	116.80	149.40
18	Gas	19068.4	1945.0	1.16700	115.60	147.00
19	Gas	16078.0	1640.0	0.98400	97.50	114.50
20	Gas	17206.7	1755.1	1.05306	104.30	127.50
21	Gas	18116.6	1847.9	1.10874	109.80	137.40
22	Gas	18277.4	1864.3	1.11858	110.80	139.10
23	Gas	16038.9	1636.0	0.98160	97.20	114.00

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	262364.0	26761.1	16.05666	1590.30

Generation Daily Total: 1905.00 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	

Date: 12/23/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
0	Gas	16995.0	1733.5	1.04010	103.00	125.20
1	Gas	16208.7	1653.3	0.99198	98.30	116.00
2	Gas	16076.8	1639.8	0.98388	97.50	114.40
3	Gas	16070.4	1639.2	0.98352	97.40	114.30
4	Gas	16065.6	1638.7	0.98322	97.40	114.40
5	Gas	18903.4	1928.1	1.15686	114.60	145.80
6	Gas	17377.0	1772.5	1.06350	105.30	129.20
7	Gas	16076.4	1639.8	0.98388	97.50	114.40
8	Gas	16092.5	1641.4	0.98484	97.50	114.40
9	Gas	16029.7	1635.0	0.98100	97.20	113.90
10	Gas	16016.8	1633.7	0.98022	97.10	113.90
11	Gas	16008.5	1632.9	0.97974	97.00	114.00
12	Gas	16034.8	1635.5	0.98130	97.20	114.10
13	Gas	15994.1	1631.4	0.97884	97.00	113.90
14	Gas	15979.4	1629.9	0.97794	96.90	113.90
15	Gas	15969.7	1628.9	0.97734	96.80	114.00
16	Gas	16015.3	1633.6	0.98016	97.10	114.50
17	Gas	19712.2	2010.6	1.20636	119.50	153.80
18	Gas	20865.1	2128.2	1.27692	126.50	165.10
19	Gas	20041.7	2044.3	1.22658	121.50	157.50
20	Gas	19644.5	2003.7	1.20222	119.10	153.80
21	Gas	21240.6	2166.5	1.29990	128.80	169.10
22	Gas	21397.5	2182.5	1.30950	129.70	171.00
23	Gas	18739.0	1911.4	1.14684	113.60	145.80

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	419554.7	42794.4	25.67664	2543.50

Generation Daily Total: 3116.40 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	

Date: 01/05/2004

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
13	Gas	2604.5	265.7	0.15942	15.80	0.20
14	Gas	4607.3	469.9	0.28194	27.90	0.80
15	Gas	4563.4	465.5	0.27930	27.70	0.70
16	Gas	3162.3	322.6	0.19356	19.20	0.50

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	14937.5	1523.7	0.91422	90.60

Generation Daily Total: 2.20 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	

Date: 01/12/2004

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
2	Gas	2136.5	217.9	0.13074	12.90	4.90
3	Gas	7497.2	764.7	0.45882	45.40	31.90
4	Gas	15700.3	1601.4	0.96084	95.20	109.50
5	Gas	16773.7	1710.9	1.02654	101.70	122.40
6	Gas	22208.4	2265.3	1.35918	134.60	181.00
7	Gas	22229.6	2267.4	1.36044	134.70	181.40
8	Gas	22194.1	2263.8	1.35828	134.50	180.80
9	Gas	22025.6	2246.6	1.34796	133.50	178.90
10	Gas	21826.7	2226.3	1.33578	132.30	176.60
11	Gas	21567.2	2199.9	1.31994	130.70	173.80
12	Gas	21355.5	2178.3	1.30698	129.50	171.60
13	Gas	21275.9	2170.1	1.30206	129.00	170.80
14	Gas	21218.9	2164.3	1.29858	128.60	170.30
15	Gas	21165.8	2158.9	1.29534	128.30	170.00
16	Gas	21227.8	2165.2	1.29912	128.70	170.60
17	Gas	21374.9	2180.2	1.30812	129.60	172.00
18	Gas	21579.9	2201.1	1.32066	130.80	174.20
19	Gas	21571.1	2200.3	1.32018	130.80	174.30
20	Gas	21407.1	2183.5	1.31010	129.80	173.10
21	Gas	21764.7	2220.0	1.33200	131.90	176.60
22	Gas	21145.8	2156.9	1.29414	128.20	170.70
23	Gas	21812.5	2224.9	1.33494	132.20	177.20

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	431059.2	43967.9	26.38074	2612.90

Generation Daily Total: 3412.60 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	

Date: 01/13/2004

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
0	Gas	20880.3	2129.8	1.27788	126.60	168.40
1	Gas	21348.8	2177.6	1.30656	129.40	173.00
2	Gas	20923.0	2134.1	1.28046	126.80	168.90
3	Gas	20577.6	2098.9	1.25934	124.70	165.40
4	Gas	20489.3	2089.9	1.25394	124.20	164.50
5	Gas	20205.1	2060.9	1.23654	122.50	161.30
6	Gas	21199.6	2162.4	1.29744	128.50	171.70
7	Gas	21951.9	2239.1	1.34346	133.10	178.60
8	Gas	21977.2	2241.7	1.34502	133.20	178.80
9	Gas	21813.9	2225.0	1.33500	132.20	177.10
10	Gas	20643.8	2105.7	1.26342	125.10	165.40
11	Gas	19618.5	2001.1	1.20066	118.90	155.00
12	Gas	19959.7	2035.9	1.22154	121.00	158.50
13	Gas	20646.4	2105.9	1.26354	125.20	165.20
14	Gas	19529.0	1992.0	1.19520	118.40	154.20
15	Gas	18439.9	1880.9	1.12854	111.80	142.70
16	Gas	18824.3	1920.1	1.15206	114.10	146.90
17	Gas	19515.0	1990.5	1.19430	118.30	154.10
18	Gas	21012.6	2143.3	1.28598	127.40	169.20
19	Gas	21279.3	2170.5	1.30230	129.00	171.90
20	Gas	20981.6	2140.1	1.28406	127.20	169.20
21	Gas	20575.0	2098.7	1.25922	124.70	165.20
22	Gas	19749.9	2014.5	1.20870	119.70	156.70
23	Gas	18393.8	1876.2	1.12572	111.50	141.90

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	490535.5	50034.8	30.02088	2973.50

Generation Daily Total: 3923.80 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	

Date: 01/14/2004

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
0	Gas	20985.6	2140.5	1.28430	127.20	169.50
1	Gas	21761.6	2219.7	1.33182	131.90	176.90
2	Gas	21625.7	2205.8	1.32348	131.10	175.70
3	Gas	18646.2	1901.9	1.14114	113.00	144.90
4	Gas	17086.1	1742.8	1.04568	103.60	127.00
5	Gas	16068.5	1639.0	0.98340	97.40	115.40
6	Gas	18596.4	1896.8	1.13808	112.70	144.20
7	Gas	20886.1	2130.4	1.27824	126.60	168.90
8	Gas	20277.9	2068.3	1.24098	122.90	162.50
9	Gas	16049.1	1637.0	0.98220	97.30	119.80

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	191983.2	19582.2	11.74932	1163.70

Generation Daily Total: 1504.80 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	



Date: 01/16/2004

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
3	Gas	3212.8	327.7	0.19662	19.50	10.10
4	Gas	7155.2	729.8	0.43788	43.40	35.00
5	Gas	10471.3	1068.1	0.64086	63.50	80.80
6	Gas	16381.4	1670.9	1.00254	99.30	162.80
7	Gas	17156.3	1749.9	1.04994	104.00	172.40
8	Gas	17426.5	1777.5	1.06650	105.60	175.70
9	Gas	15910.9	1622.9	0.97374	96.40	157.00
10	Gas	14820.5	1511.7	0.90702	89.80	142.70
11	Gas	14198.1	1448.2	0.86892	86.10	134.30
12	Gas	15910.2	1622.8	0.97368	96.40	156.80
13	Gas	16908.0	1724.6	1.03476	102.50	168.90
14	Gas	13818.4	1409.5	0.84570	83.80	129.00
15	Gas	15370.8	1567.8	0.94068	93.20	149.30
16	Gas	15820.9	1613.7	0.96822	95.90	155.60
17	Gas	12593.6	1284.5	0.77070	76.30	111.40
18	Gas	13750.5	1402.6	0.84156	83.40	127.90
19	Gas	15689.1	1600.3	0.96018	95.10	154.40
20	Gas	15398.8	1570.7	0.94242	93.30	150.60
21	Gas	15775.9	1609.1	0.96546	95.60	155.50
22	Gas	15368.6	1567.6	0.94056	93.20	149.70
23	Gas	15847.7	1616.5	0.96990	96.10	155.90

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	298985.5	30496.4	18.29784	1812.40

Generation Daily Total: 2835.80 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	

Date: 01/17/2004

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
0	Gas	15844.6	1616.1	0.96966	96.00	155.40
1	Gas	15983.5	1630.3	0.97818	96.90	158.30
2	Gas	16400.0	1672.8	1.00368	99.40	163.90
3	Gas	16300.2	1662.6	0.99756	98.80	162.50
4	Gas	15350.8	1565.8	0.93948	93.10	150.00
5	Gas	14480.8	1477.0	0.88620	87.80	138.20
6	Gas	12670.2	1292.4	0.77544	76.80	111.90
7	Gas	12946.2	1320.5	0.79230	78.50	116.10
8	Gas	12671.5	1292.5	0.77550	76.80	112.10
9	Gas	15090.2	1539.2	0.92352	91.50	146.30
10	Gas	14976.3	1527.6	0.91656	90.80	144.00
11	Gas	13916.8	1419.5	0.85170	84.40	130.30
12	Gas	14606.0	1489.8	0.89388	88.50	139.80
13	Gas	14167.1	1445.0	0.86700	85.90	134.00
14	Gas	14358.9	1464.6	0.87876	87.00	136.50
15	Gas	13668.6	1394.2	0.83652	82.90	127.10
16	Gas	13751.5	1402.7	0.84162	83.40	128.30
17	Gas	12561.5	1281.3	0.76878	76.10	111.10
18	Gas	15146.9	1545.0	0.92700	91.80	146.10
19	Gas	16414.7	1674.3	1.00458	99.50	162.80
20	Gas	14822.8	1511.9	0.90714	89.80	142.40
21	Gas	13604.7	1387.7	0.83262	82.50	126.10
22	Gas	12671.6	1292.5	0.77550	76.80	112.40
23	Gas	12102.5	1234.5	0.74070	73.40	104.80

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	344507.9	35139.8	21.08388	2088.40

Generation Daily Total: 3260.40 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	

Date: 01/18/2004

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
0	Gas	585.1	59.7	0.03582	3.50	0.00

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	585.1	59.7	0.03582	3.50

Generation Daily Total: 0.00 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	

Date: 01/19/2004

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
8	Gas	4145.7	422.9	0.25374	25.10	14.30
9	Gas	7260.0	740.5	0.44430	44.00	36.10
10	Gas	14976.5	1527.6	0.91656	90.80	143.30
11	Gas	16016.3	1633.7	0.98022	97.10	157.20
12	Gas	13811.7	1408.8	0.84528	83.70	129.00
13	Gas	13859.3	1413.6	0.84816	84.00	129.90
14	Gas	14319.2	1460.6	0.87636	86.80	136.10
15	Gas	13815.8	1409.2	0.84552	83.70	129.20
16	Gas	12730.1	1298.5	0.77910	77.20	113.70
17	Gas	13871.4	1414.9	0.84894	84.10	129.90
18	Gas	16121.0	1644.3	0.98658	97.70	159.00
19	Gas	16558.5	1689.0	1.01340	100.40	164.60
20	Gas	14971.6	1527.1	0.91626	90.80	144.70
21	Gas	15870.7	1618.8	0.97128	96.20	155.70
22	Gas	14895.9	1519.4	0.91164	90.30	143.30
23	Gas	15076.0	1537.8	0.92268	91.40	145.60

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	218299.7	22266.7	13.36002	1323.30

Generation Daily Total: 2031.60 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	

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Date: 01/20/2004

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
0	Gas	13434.6	1370.3	0.82218	81.40	123.10
1	Gas	12535.0	1278.6	0.76716	76.00	109.90
2	Gas	14122.6	1440.5	0.86430	85.60	132.10
3	Gas	16403.7	1673.2	1.00392	99.40	163.80
4	Gas	15364.0	1567.1	0.94026	93.10	149.90
5	Gas	16833.6	1717.0	1.03020	102.00	169.10
6	Gas	16375.6	1670.3	1.00218	99.30	162.80
7	Gas	14898.8	1519.7	0.91182	90.30	143.50
8	Gas	14308.5	1459.5	0.87570	86.70	135.40
9	Gas	16381.1	1670.9	1.00254	99.30	162.80
10	Gas	14909.9	1520.8	0.91248	90.40	143.00
11	Gas	15518.6	1582.9	0.94974	94.10	151.80
12	Gas	15703.6	1601.8	0.96108	95.20	154.20
13	Gas	14601.7	1489.4	0.89364	88.50	139.60
14	Gas	15106.7	1540.9	0.92454	91.60	146.30
15	Gas	13414.2	1368.2	0.82092	81.30	123.30
16	Gas	14708.5	1500.3	0.90018	89.20	141.20
17	Gas	15364.4	1567.2	0.94032	93.10	149.90
18	Gas	16779.6	1711.5	1.02690	101.70	167.40
19	Gas	17429.5	1777.8	1.06668	105.70	175.40
20	Gas	16532.3	1686.3	1.01178	100.20	164.80
21	Gas	15889.4	1620.7	0.97242	96.30	156.60
22	Gas	16283.1	1660.9	0.99654	98.70	161.50
23	Gas	15697.1	1601.1	0.96066	95.20	154.20

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	368596.1	37596.9	22.55814	2234.30

Generation Daily Total: 3581.60 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	

Date: 01/21/2004

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
0	Gas	14248.9	1453.4	0.87204	86.40	134.20
1	Gas	15302.9	1560.9	0.93654	92.80	148.80
2	Gas	14872.0	1516.9	0.91014	90.10	142.80
3	Gas	15670.3	1598.4	0.95904	95.00	153.80
4	Gas	14499.5	1478.9	0.88734	87.90	137.10
5	Gas	13660.2	1393.3	0.83598	82.80	125.90
6	Gas	14822.1	1511.9	0.90714	89.80	142.30
7	Gas	15469.7	1577.9	0.94674	93.80	150.90
8	Gas	14409.1	1469.7	0.88182	87.30	136.40
9	Gas	13766.1	1404.1	0.84246	83.40	127.40
10	Gas	14158.6	1444.2	0.86652	85.80	132.90
11	Gas	13804.9	1408.1	0.84486	83.70	127.90
12	Gas	13166.7	1343.0	0.80580	79.80	119.30
13	Gas	12531.4	1278.2	0.76692	76.00	110.00
14	Gas	12647.2	1290.0	0.77400	76.70	111.70
15	Gas	12937.3	1319.6	0.79176	78.40	115.90
16	Gas	13400.5	1366.9	0.82014	81.20	122.60
17	Gas	14277.8	1456.3	0.87378	86.50	135.10
18	Gas	15371.9	1567.9	0.94074	93.20	149.60
19	Gas	15910.9	1622.9	0.97374	96.40	156.80
20	Gas	15483.2	1579.3	0.94758	93.90	151.20
21	Gas	15839.6	1615.6	0.96936	96.00	155.80
22	Gas	16671.2	1700.5	1.02030	101.10	166.20
23	Gas	13715.2	1399.0	0.83940	83.10	126.90

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	346637.2	35356.9	21.21414	2101.10

Generation Daily Total: 3281.50 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	

Date: 01/22/2004

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
0	Gas	14697.0	1499.1	0.89946	89.10	140.60
1	Gas	16009.9	1633.0	0.97980	97.00	158.20
2	Gas	17503.7	1785.4	1.07124	106.10	176.60
3	Gas	16201.8	1652.6	0.99156	98.20	160.80
4	Gas	12850.3	1310.7	0.78642	77.90	114.30
5	Gas	13421.4	1369.0	0.82140	81.40	122.80
6	Gas	17398.6	1774.7	1.06482	105.50	175.40
7	Gas	16638.8	1697.2	1.01832	100.90	166.20
8	Gas	15192.9	1549.7	0.92982	92.10	147.40
9	Gas	16177.9	1650.1	0.99006	98.10	160.00
10	Gas	14991.8	1529.2	0.91752	90.90	144.30
11	Gas	15680.7	1599.4	0.95964	95.00	153.70
12	Gas	14019.0	1429.9	0.85794	85.00	131.30
13	Gas	13745.7	1402.1	0.84126	83.30	127.20
14	Gas	12540.5	1279.1	0.76746	76.00	109.90
15	Gas	12526.6	1277.7	0.76662	75.90	110.00
16	Gas	12585.5	1283.7	0.77022	76.30	110.60
17	Gas	14501.2	1479.1	0.88746	87.90	138.00
18	Gas	15138.0	1544.1	0.92646	91.80	146.60
19	Gas	17088.5	1743.0	1.04580	103.60	171.50
20	Gas	16578.4	1691.0	1.01460	100.50	165.50
21	Gas	14287.4	1457.3	0.87438	86.60	135.20
22	Gas	15238.3	1554.3	0.93258	92.40	147.90
23	Gas	14659.2	1495.2	0.89712	88.90	140.10

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	359673.1	36686.6	22.01196	2180.40

Generation Daily Total: 3454.10 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	

Date: 01/23/2004

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

ITEM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
0	Gas	599.3	61.1	0.03666	3.60	0.00
4	Gas	5649.0	576.2	0.34572	34.20	23.40
5	Gas	12468.4	1271.8	0.76308	75.60	107.70
6	Gas	14261.0	1454.6	0.87276	86.40	134.40
7	Gas	15540.5	1585.1	0.95106	94.20	151.80
8	Gas	16504.0	1683.4	1.01004	100.00	164.40
9	Gas	16110.0	1643.2	0.98592	97.70	159.10
10	Gas	15840.5	1615.7	0.96942	96.00	155.50
11	Gas	15424.5	1573.3	0.94398	93.50	149.90
12	Gas	16181.8	1650.5	0.99030	98.10	159.90
13	Gas	15107.5	1541.0	0.92460	91.60	146.10
14	Gas	14402.8	1469.1	0.88146	87.30	136.70
15	Gas	13719.7	1399.4	0.83964	83.20	127.20
16	Gas	12538.7	1278.9	0.76734	76.00	110.10
17	Gas	13125.0	1338.8	0.80328	79.60	118.60
18	Gas	14269.1	1455.4	0.87324	86.50	134.60
19	Gas	15002.8	1530.3	0.91818	90.90	144.60
20	Gas	15917.9	1623.6	0.97416	96.50	156.60
21	Gas	16234.3	1655.9	0.99354	98.40	160.70
22	Gas	16803.0	1713.9	1.02834	101.90	167.60
23	Gas	15524.3	1583.5	0.95010	94.10	151.20

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	291224.1	29704.7	17.82282	1765.30

Generation Daily Total: 2760.10 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	



Date: 01/24/2004

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
0	Gas	17025.7	1736.6	1.04196	103.20	170.70
1	Gas	17453.6	1780.3	1.06818	105.80	175.60
2	Gas	17510.6	1786.1	1.07166	106.10	176.40
3	Gas	17556.8	1790.8	1.07448	106.40	177.20
4	Gas	16129.9	1645.2	0.98712	97.80	159.60
5	Gas	14840.0	1513.7	0.90822	90.00	141.70
6	Gas	13960.5	1424.0	0.85440	84.60	130.20
7	Gas	15398.3	1570.6	0.94236	93.30	149.90
8	Gas	16059.1	1638.0	0.98280	97.30	158.80
9	Gas	16494.9	1682.5	1.00950	100.00	163.80
10	Gas	16398.9	1672.7	1.00362	99.40	162.20
11	Gas	16837.9	1717.5	1.03050	102.10	167.10
12	Gas	3218.9	328.3	0.19698	19.50	11.00

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	198885.1	20286.3	12.17178	1205.50

Generation Daily Total: 1944.20 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	

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TOTALS

REPORT DATE: 01/27/2004

REPORT PERIOD

12/17/2003 to 01/27/2004

\* = replaced data, GAS units = 100scfh, OIL units = lb/hr

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FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs	CO2 EM tons
Gas	6242023.0	636686.3	382.01178	37837.10

% used for a fuel = 100\*(#hrs fuel used)/(#hrs in period)

% used for Gas = 100\*(377/998) = 37.78

Total % used = 100\*(#hrs online)/(#hrs in period)

Total % used = 100\*(377/998) = 37.78

Total # hours in this period = 998

Total # hours online = 377

Total Generation for period = 52278.90 Mw

% availability for a fuel = 100\*(#hrs fuel source=1)/(#hrs fuel used)

% availability for Gas = 100\*(377)/(377) = 100.00

Total % availability =

100\*(total #hrs each fuel source=1)/(total #hrs each fuel used)

Total % availability = 100\*377/377 = 100.00

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Daily Gas Emission Report  
Tampa Electric Company  
Bayside CT2D

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REPORT PERIOD  
12/05/2003 to 12/17/2003

Page 1

Date: 12/09/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
13	Gas	0.2	0.0	0.00000	0.00	15.80
14	Gas	0.2	0.0	0.00000	0.00	34.90
15	Gas	1.7	0.2	0.00012	0.00	137.60
16	Gas	3.0	0.3	0.00018	0.00	162.50
17	Gas	10.2	1.0	0.00060	0.10	163.70
18	Gas	12.6	1.3	0.00078	0.10	140.70
19	Gas	1.2	0.1	0.00006	0.00	121.90
20	Gas	2.2	0.2	0.00012	0.00	83.60
21	Gas	18.9	1.9	0.00114	0.10	62.90

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	50.2	5.0	0.00300	0.30

Generation Daily Total: 923.60 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	

Date: 12/10/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/hr	CO2 EM ton/hr	GGEN Mw
8	Gas	15.4	1.6	0.00096	0.10	24.60
9	Gas	27.5	2.8	0.00168	0.20	87.40
10	Gas	36.7	3.7	0.00222	0.20	162.20
11	Gas	10359.5	1056.7	0.63402	62.80	167.00
12	Gas	21058.8	2148.0	1.28880	127.70	166.20
13	Gas	21017.2	2143.8	1.28628	127.40	165.80
14	Gas	20963.5	2138.3	1.28298	127.10	165.00
15	Gas	21458.4	2188.8	1.31328	130.10	170.00
16	Gas	21559.7	2199.1	1.31946	130.70	171.20
17	Gas	21013.5	2143.4	1.28604	127.40	166.50
18	Gas	16784.8	1712.0	1.02720	101.70	122.80
19	Gas	16400.3	1672.8	1.00368	99.40	118.30
20	Gas	15099.9	1540.2	0.92412	91.50	102.30
21	Gas	13547.8	1381.9	0.82914	82.10	82.80
22	Gas	13277.0	1354.3	0.81258	80.50	79.70
23	Gas	7022.3	716.3	0.42978	42.60	38.70

Daily totals:	FUEL FLOW	HEAT INPUT mmBtu	SO2 EM lbs/day	CO2 EM ton/day
Gas	219642.3	22403.7	13.44222	1331.50

Generation Daily Total: 1990.50 Mw

Fuels Data:	HEAT CONTENT Btu/flow unit	SULFUR CONTENT oil-% gas-lb/mmBtu	CARBON CONTENT %
Gas	102000.0	0.0006	

Date: 12/11/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
8	Gas	4618.0	471.0	0.28260	28.00	16.60
9	Gas	11344.1	1157.1	0.69426	68.80	58.30
10	Gas	13579.0	1385.1	0.83106	82.30	82.20
11	Gas	1300.2	132.6	0.07956	7.90	0.00
12	Gas	15436.8	1574.6	0.94476	93.60	107.00
13	Gas	22012.1	2245.2	1.34712	133.40	176.40
14	Gas	22048.0	2248.9	1.34934	133.60	176.70
15	Gas	21973.4	2241.3	1.34478	133.20	176.10
16	Gas	22223.1	2266.8	1.36008	134.70	178.50
17	Gas	21199.1	2162.3	1.29738	128.50	169.00
18	Gas	21369.3	2179.7	1.30782	129.50	170.60
19	Gas	22900.7	2335.9	1.40154	138.80	184.90
20	Gas	19286.5	1967.2	1.18032	116.90	149.30
21	Gas	17925.8	1828.4	1.09704	108.70	134.50
22	Gas	16651.7	1698.5	1.01910	100.90	119.60
23	Gas	15114.0	1541.6	0.92496	91.60	101.10

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	268981.8	27436.2	16.46172	1630.40

Generation Daily Total: 2000.80 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	

Date: 12/12/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
0	Gas	18432.4	1880.1	1.12806	111.70	136.90
1	Gas	15454.6	1576.4	0.94584	93.70	103.70
2	Gas	11729.9	1196.4	0.71784	71.10	61.90
3	Gas	6312.0	643.8	0.38628	38.30	33.30

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	51928.9	5296.7	3.17802	314.80

Generation Daily Total: 335.80 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	

Date: 12/15/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
14	Gas	3864.4	394.2	0.23652	23.40	10.30
15	Gas	11768.0	1200.3	0.72018	71.30	69.00
16	Gas	21377.5	2180.5	1.30830	129.60	170.00
17	Gas	19715.8	2011.0	1.20660	119.50	152.00
18	Gas	15113.5	1541.6	0.92496	91.60	102.20
19	Gas	17091.7	1743.4	1.04604	103.60	125.80
20	Gas	21379.2	2180.7	1.30842	129.60	170.60
21	Gas	21775.4	2221.1	1.33266	132.00	174.90
22	Gas	21795.6	2223.2	1.33392	132.10	175.30
23	Gas	21836.4	2227.3	1.33638	132.40	175.70

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	175717.5	17923.3	10.75398	1065.10

Generation Daily Total: 1325.80 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	

Date: 12/16/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GEN
			mmBtu	lbs/hr	ton/hr	Mw
0	Gas	21853.4	2229.0	1.33740	132.50	176.10
1	Gas	21852.6	2229.0	1.33740	132.50	176.20
2	Gas	21832.3	2226.9	1.33614	132.30	175.90
3	Gas	21870.6	2230.8	1.33848	132.60	176.30
4	Gas	21866.3	2230.4	1.33824	132.50	176.30
5	Gas	20388.2	2079.6	1.24776	123.60	161.60
6	Gas	21750.7	2218.6	1.33116	131.80	174.60
7	Gas	21756.7	2219.2	1.33152	131.90	174.50
8	Gas	21702.1	2213.6	1.32816	131.60	173.50
9	Gas	21435.1	2186.4	1.31184	129.90	170.40
10	Gas	21173.2	2159.7	1.29582	128.30	167.80
11	Gas	20898.1	2131.6	1.27896	126.70	165.50
12	Gas	20789.6	2120.5	1.27230	126.00	164.20
13	Gas	20782.7	2119.8	1.27188	126.00	164.10
14	Gas	20771.8	2118.7	1.27122	125.90	163.80
15	Gas	20726.1	2114.1	1.26846	125.60	163.30
16	Gas	20670.1	2108.4	1.26504	125.30	162.80
17	Gas	20736.1	2115.1	1.26906	125.70	163.50
18	Gas	20778.7	2119.4	1.27164	126.00	164.00
19	Gas	20831.0	2124.8	1.27488	126.30	164.50
20	Gas	20881.0	2129.9	1.27794	126.60	165.00
21	Gas	20935.5	2135.4	1.28124	126.90	165.40
22	Gas	19056.0	1943.7	1.16622	115.50	146.90
23	Gas	18301.6	1866.8	1.12008	110.90	139.30

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	503639.5	51371.4	30.82284	3052.90

Generation Daily Total: 3995.50 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	

Date: 12/17/2003

\* = replaced data, GAS units=100scfh, OIL units=lb/hr

TM	FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM	GGEN
			mmBtu	lbs/hr	ton/hr	Mw
0	Gas	16938.3	1727.7	1.03662	102.70	124.40
1	Gas	15861.2	1617.8	0.97068	96.10	112.40
2	Gas	15256.2	1556.1	0.93366	92.50	105.40
3	Gas	15265.1	1557.0	0.93420	92.50	105.30
4	Gas	15227.2	1553.2	0.93192	92.30	104.80
5	Gas	15243.8	1554.9	0.93294	92.40	105.10
6	Gas	17695.9	1805.0	1.08300	107.30	132.00

Daily totals:	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs/day	ton/day
Gas	111487.7	11371.7	6.82302	675.80

Generation Daily Total: 789.40 Mw

Fuels Data:	HEAT CONTENT	SULFUR CONTENT	CARBON CONTENT
	Btu/flow unit	oil-% gas-lb/mmBtu	%
Gas	102000.0	0.0006	

TOTALS

REPORT DATE: 12/17/2003

REPORT PERIOD

12/05/2003 to 12/17/2003

\* = replaced data, GAS units = 100scfh, OIL units = lb/hr

FUEL	FUEL FLOW	HEAT INPUT	SO2 EM	CO2 EM
		mmBtu	lbs	tons
Gas	1331447.9	135808.0	81.48480	8070.80

% used for a fuel = 100\*(#hrs fuel used)/(#hrs in period)

% used for Gas = 100\*(86/296) = 29.05

Total % used = 100\*(#hrs online)/(#hrs in period)

Total % used = 100\*(86/296) = 29.05

Total # hours in this period = 296

Total # hours online = 86

Total Generation for period = 11361.40 Mw

% availability for a fuel = 100\*(#hrs fuel source=1)/(#hrs fuel used)

% availability for Gas = 100\*(86)/(86) = 100.00

Total % availability =

100\*(total #hrs each fuel source=1)/(total #hrs each fuel used)

Total % availability = 100\*86/86 = 100.00



RATA REFERENCE METHOD QA/QC REPORT

Bayside 2D - Report				
RUN 1				
12/17/2003				
9:32				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3.09	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.061	0	0.039	0.037
Low Level Observed	-	-	-	4.468
Mid Level Observed	13.674	10.011	3.008	8.241
High Level Observed	20.877	17.971	6.304	12.489
% Difference from Zero to Target	0.24	0	0.39	0.25
% Difference from Low to Target	0	0	0	-0.01
% Difference from Mid to Target	0.1	0	-0.82	-0.13
% Difference from High to Target	-0.09	-0.14	0.14	-0.74
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.061	0	0.039	0.037
Actual Span From Linearity	13.674	10.011	3.008	4.468
Initial Readings				
Zero	0.122	0	0.02	0
Span	13.613	10.011	3.008	4.468
Final Readings				
Zero	0.061	0	0.024	0
Span	13.613	10.06	3.008	4.468
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	-0.19	-0.25
Span Bias	-0.24	0	0	0
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	-0.15	-0.25
Span Bias	-0.24	0.25	0	0
Calculated Drift				
Zero Drift (Run-Run)	-0.24	0	0.04	0
Span Drift	0	0.25	0	0
Run Results				
Raw Results	13.8	4.16	0.86	3.74
Corrected Results (ppmv)	13.84	4.15	0.87	3.74

Bayside 2D - Report				
RUN 2				
12/17/2003				
10:46				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3.09	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.061	0	0.039	0.037
Low Level Observed	-	-	-	4.468
Mid Level Observed	13.674	10.011	3.008	8.241
High Level Observed	20.877	17.971	6.304	12.489
% Difference from Zero to Target	0.24	0	0.39	0.25
% Difference from Low to Target	0	0	0	-0.01
% Difference from Mid to Target	0.1	0	-0.82	-0.13
% Difference from High to Target	-0.09	-0.14	0.14	-0.74
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.061	0	0.039	0.037
Actual Span From Linearity	13.674	10.011	3.008	4.468
Initial Readings				
Zero	0.061	0	0.024	0
Span	13.613	10.06	3.008	4.468
Final Readings				
Zero	0.061	0	0.015	0.037
Span	13.613	10.06	3.008	4.468
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	-0.15	-0.25
Span Bias	-0.24	0.25	0	0
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	-0.24	0
Span Bias	-0.24	0.25	0	0
Calculated Drift				
Zero Drift (Run-Run)	0	0	-0.09	0.25
Span Drift	0	0	0	0
Run Results				
Raw Results	13.79	4.16	0.81	3.81
Corrected Results (ppmv)	13.83	4.14	0.82	3.81

<b>Bayside 2D - Report</b>				
<b>RUN 3</b>				
12/17/2003				
11:23				
<b>Linearity Check - Calibration Error</b>	<b>O2</b>	<b>CO2</b>	<b>CO</b>	<b>NOX</b>
<b>Analyzer Range</b>	25	20	10	15
<b>Units</b>	%	%	PPM	PPM
<b>Low Level Certified Value (PPM or %)</b>				4.47
<b>Mid Level Certified Value (PPM or %)</b>	13.65	10.01	3.09	8.26
<b>High Level Certified Value (PPM or %)</b>	20.9	18	6.29	12.6
<b>Zero Level Observed</b>	0.061	0	0.039	0.037
<b>Low Level Observed</b>	-	-	-	4.468
<b>Mid Level Observed</b>	13.674	10.011	3.008	8.241
<b>High Level Observed</b>	20.877	17.971	6.304	12.489
<b>% Difference from Zero to Target</b>	0.24	0	0.39	0.25
<b>% Difference from Low to Target</b>	0	0	0	-0.01
<b>% Difference from Mid to Target</b>	0.1	0	-0.82	-0.13
<b>% Difference from High to Target</b>	-0.09	-0.14	0.14	-0.74
<b>Analyzer Range</b>				
	25	20	10	15
<b>Units</b>	%	%	PPM	PPM
<b>Actual Zero From Linearity</b>	0.061	0	0.039	0.037
<b>Actual Span From Linearity</b>	13.674	10.011	3.008	4.468
<b>Initial Readings</b>				
<b>Zero</b>	0.061	0	0.015	0.037
<b>Span</b>	13.613	10.06	3.008	4.468
<b>Final Readings</b>				
<b>Zero</b>	0.061	0.049	0.005	0.037
<b>Span</b>	13.613	10.109	2.994	4.468
<b>Initial Sampling System Bias</b>				
<b>Zero Bias (Run-System Cal)</b>	0	0	-0.24	0
<b>Span Bias</b>	-0.24	0.25	0	0
<b>Final Sampling System Bias</b>				
<b>Zero Bias (Run-System Cal)</b>	0	0.24	-0.34	0
<b>Span Bias</b>	-0.24	0.49	-0.14	0
<b>Calculated Drift</b>				
<b>Zero Drift (Run-Run)</b>	0	0.24	-0.1	0
<b>Span Drift</b>	0	0.24	-0.14	0
<b>Run Results</b>				
<b>Raw Results</b>	13.81	4.16	0.85	3.73
<b>Corrected Results (ppmv)</b>	13.85	4.11	0.87	3.73

Bayside 2D - Report				
RUN 4				
12/17/2003				
11:55				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3.09	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.061	0	0.039	0.037
Low Level Observed	-	-	-	4.468
Mid Level Observed	13.674	10.011	3.008	8.241
High Level Observed	20.877	17.971	6.304	12.489
% Difference from Zero to Target	0.24	0	0.39	0.25
% Difference from Low to Target	0	0	0	-0.01
% Difference from Mid to Target	0.1	0	-0.82	-0.13
% Difference from High to Target	-0.09	-0.14	0.14	-0.74
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.061	0	0.039	0.037
Actual Span From Linearity	13.674	10.011	3.008	4.468
Initial Readings				
Zero	0.061	0.049	0.005	0.037
Span	13.613	10.109	2.994	4.468
Final Readings				
Zero	0.061	0.049	0.005	0
Span	13.613	10.06	3.008	4.468
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0	0.24	-0.34	0
Span Bias	-0.24	0.49	-0.14	0
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0.24	-0.34	-0.25
Span Bias	-0.24	0.25	0	0
Calculated Drift				
Zero Drift (Run-Run)	0	0	0	-0.25
Span Drift	0	-0.24	0.14	0
Run Results				
Raw Results	13.81	4.15	0.81	3.76
Corrected Results (ppmv)	13.85	4.09	0.83	3.76

Bayside 2D - Report				
RUN 5				
12/17/2003				
12:31				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3.09	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.061	0	0.039	0.037
Low Level Observed	-	-	-	4.468
Mid Level Observed	13.674	10.011	3.008	8.241
High Level Observed	20.877	17.971	6.304	12.489
% Difference from Zero to Target	0.24	0	0.39	0.25
% Difference from Low to Target	0	0	0	-0.01
% Difference from Mid to Target	0.1	0	-0.82	-0.13
% Difference from High to Target	-0.09	-0.14	0.14	-0.74
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.061	0	0.039	0.037
Actual Span From Linearity	13.674	10.011	3.008	4.468
Initial Readings				
Zero	0.061	0.049	0.005	0
Span	13.613	10.06	3.008	4.468
Final Readings				
Zero	0.061	0.049	-0.005	0.037
Span	13.613	10.109	3.003	4.505
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0	0.24	-0.34	-0.25
Span Bias	-0.24	0.25	0	0
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0.24	-0.44	0
Span Bias	-0.24	0.49	-0.05	0.25
Calculated Drift				
Zero Drift (Run-Run)	0	0	-0.1	0.25
Span Drift	0	0.24	-0.05	0.25
Run Results				
Raw Results	13.8	4.15	0.93	3.78
Corrected Results (ppmv)	13.84	4.09	0.96	3.76

Bayside 2D - Report				
RUN 6				
12/17/2003				
13:05				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3.09	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.061	0	0.039	0.037
Low Level Observed	-	-	-	4.468
Mid Level Observed	13.674	10.011	3.008	8.241
High Level Observed	20.877	17.971	6.304	12.489
% Difference from Zero to Target	0.24	0	0.39	0.25
% Difference from Low to Target	0	0	0	-0.01
% Difference from Mid to Target	0.1	0	-0.82	-0.13
% Difference from High to Target	-0.09	-0.14	0.14	-0.74
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.061	0	0.039	0.037
Actual Span From Linearity	13.674	10.011	3.008	4.468
Initial Readings				
Zero	0.061	0.049	-0.005	0.037
Span	13.613	10.109	3.003	4.505
Final Readings				
Zero	0.061	0.049	0.02	0.037
Span	13.552	10.06	3.077	4.432
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0	0.24	-0.44	0
Span Bias	-0.24	0.49	-0.05	0.25
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0.24	-0.19	0
Span Bias	-0.49	0.25	0.69	-0.24
Calculated Drift				
Zero Drift (Run-Run)	0	0	0.25	0
Span Drift	-0.24	-0.24	0.74	-0.49
Run Results				
Raw Results	13.8	4.15	0.98	3.81
Corrected Results (ppmv)	13.87	4.09	0.99	3.81

Bayside 2D - Report				
RUN 7				
12/17/2003				
13:42				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3.09	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.061	0	0.039	0.037
Low Level Observed	-	-	-	4.468
Mid Level Observed	13.674	10.011	3.008	8.241
High Level Observed	20.877	17.971	6.304	12.489
% Difference from Zero to Target	0.24	0	0.39	0.25
% Difference from Low to Target	0	0	0	-0.01
% Difference from Mid to Target	0.1	0	-0.82	-0.13
% Difference from High to Target	-0.09	-0.14	0.14	-0.74
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.061	0	0.039	0.037
Actual Span From Linearity	13.674	10.011	3.008	4.468
Initial Readings				
Zero	0.061	0.049	0.02	0.037
Span	13.552	10.06	3.077	4.432
Final Readings				
Zero	0.061	0.049	0.039	0.037
Span	13.613	10.06	3.042	4.432
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0	0.24	-0.19	0
Span Bias	-0.49	0.25	0.69	-0.24
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0.24	0	0
Span Bias	-0.24	0.25	0.34	-0.24
Calculated Drift				
Zero Drift (Run-Run)	0	0	0.19	0
Span Drift	0.24	0	-0.35	0
Run Results				
Raw Results	13.82	4.15	0.94	3.84
Corrected Results (ppmv)	13.89	4.1	0.93	3.87



Bayside 2D - Report				
RUN 8				
12/17/2003				
14:15				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3.09	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.061	0	0.039	0.037
Low Level Observed	-	-	-	4.468
Mid Level Observed	13.674	10.011	3.008	8.241
High Level Observed	20.877	17.971	6.304	12.489
% Difference from Zero to Target	0.24	0	0.39	0.25
% Difference from Low to Target	0	0	0	-0.01
% Difference from Mid to Target	0.1	0	-0.82	-0.13
% Difference from High to Target	-0.09	-0.14	0.14	-0.74
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.061	0	0.039	0.037
Actual Span From Linearity	13.674	10.011	3.008	4.468
Initial Readings				
Zero	0.061	0.049	0.039	0.037
Span	13.613	10.06	3.042	4.432
Final Readings				
Zero	0.061	0.049	0.034	0.037
Span	13.552	10.06	3.037	4.432
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0	0.24	0	0
Span Bias	-0.24	0.25	0.34	-0.24
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0.24	-0.05	0
Span Bias	-0.49	0.25	0.29	-0.24
Calculated Drift				
Zero Drift (Run-Run)	0	0	-0.05	0
Span Drift	-0.24	0	-0.05	0
Run Results				
Raw Results	13.82	4.15	0.94	3.87
Corrected Results (ppmv)	13.89	4.1	0.93	3.9

<b>Bayside 2D - Report</b>				
<b>RUN 9</b>				
12/17/2003				
14:48				
<b>Linearity Check - Calibration Error</b>	<b>O2</b>	<b>CO2</b>	<b>CO</b>	<b>NOX</b>
<b>Analyzer Range</b>	25	20	10	15
<b>Units</b>	%	%	PPM	PPM
<b>Low Level Certified Value (PPM or %)</b>				4.47
<b>Mid Level Certified Value (PPM or %)</b>	13.65	10.01	3.09	8.26
<b>High Level Certified Value (PPM or %)</b>	20.9	18	6.29	12.6
<b>Zero Level Observed</b>	0.061	0	0.039	0.037
<b>Low Level Observed</b>	-	-	-	4.468
<b>Mid Level Observed</b>	13.674	10.011	3.008	8.241
<b>High Level Observed</b>	20.877	17.971	6.304	12.489
<b>% Difference from Zero to Target</b>	0.24	0	0.39	0.25
<b>% Difference from Low to Target</b>	0	0	0	-0.01
<b>% Difference from Mid to Target</b>	0.1	0	-0.82	-0.13
<b>% Difference from High to Target</b>	-0.09	-0.14	0.14	-0.74
<b>Analyzer Range</b>	25	20	10	15
<b>Units</b>	%	%	PPM	PPM
<b>Actual Zero From Linearity</b>	0.061	0	0.039	0.037
<b>Actual Span From Linearity</b>	13.674	10.011	3.008	4.468
<b>Initial Readings</b>				
<b>Zero</b>	0.061	0.049	0.034	0.037
<b>Span</b>	13.552	10.06	3.037	4.432
<b>Final Readings</b>				
<b>Zero</b>	0.061	0.049	0.01	0.073
<b>Span</b>	13.613	10.06	3.037	4.395
<b>Initial Sampling System Bias</b>				
<b>Zero Bias (Run-System Cal)</b>	0	0.24	-0.05	0
<b>Span Bias</b>	-0.49	0.25	0.29	-0.24
<b>Final Sampling System Bias</b>				
<b>Zero Bias (Run-System Cal)</b>	0	0.24	-0.29	0.24
<b>Span Bias</b>	-0.24	0.25	0.29	-0.49
<b>Calculated Drift</b>				
<b>Zero Drift (Run-Run)</b>	0	0	-0.24	0.24
<b>Span Drift</b>	0.24	0	0	-0.25
<b>Run Results</b>				
<b>Raw Results</b>	13.81	4.15	0.96	3.91
<b>Corrected Results (ppmv)</b>	13.88	4.1	0.96	3.95

RATA REFERENCE METHOD DATA LOG

Date	Time	O2 (%)	CO2 (%)	CO (PPM)	NOX (PPM)	Status
12/17/2003	7:40:35 AM	1.65	1.32	0.13	0.99	
12/17/2003	7:40:36 AM	1.59	1.27	0.13	0.95	
12/17/2003	7:40:52 AM	1.59	1.27	0.13	0.95	
12/17/2003	7:41:23 AM	1.65	1.32	0.13	0.99	
12/17/2003	7:41:52 AM	1.59	1.27	0.13	0.95	
12/17/2003	7:42:22 AM	1.59	1.27	0.13	0.95	
12/17/2003	7:42:53 AM	1.65	1.32	0.13	0.99	
12/17/2003	7:43:22 AM	1.59	1.27	0.13	0.95	
12/17/2003	7:43:53 AM	20.88	0.05	0.89		0 Linearity Check
12/17/2003	7:44:22 AM	20.82	0	0.88		0 Linearity Check
12/17/2003	7:44:53 AM	12.82	-0.05	0.84		0 Linearity Check
12/17/2003	7:45:22 AM	0.92	0	0.48		0 Linearity Check
12/17/2003	7:45:53 AM	0.18	-0.05	0.46		0 Linearity Check
12/17/2003	7:46:22 AM	0.12	0	0		0 Linearity Check
12/17/2003	7:46:53 AM	0.06	0	0.04		0 Linearity Check
12/17/2003	7:47:22 AM	0.06	0	-0.01		0 Linearity Check
12/17/2003	7:47:53 AM	0	0.93	0.24	0.04	Linearity Check
12/17/2003	7:48:22 AM	0.12	3.76	0.29	3.48	Linearity Check
12/17/2003	7:48:53 AM	0.06	0.15	0.13	11.21	Linearity Check
12/17/2003	7:49:23 AM	0	0.05	0.21	11.98	Linearity Check
12/17/2003	7:49:52 AM	0	0.1	0.15	12.01	Linearity Check
12/17/2003	7:50:23 AM	0	0.05	0.15	12.09	Linearity Check
12/17/2003	7:50:52 AM	0	0.05	0.23	12.12	Linearity Check
12/17/2003	7:51:23 AM	0	0.05	0.15	12.16	Linearity Check
12/17/2003	7:51:52 AM	0	0.05	0.24	12.09	Linearity Check
12/17/2003	7:52:23 AM	0	0.05	0.29	12.12	Linearity Check
12/17/2003	7:52:52 AM	0	0.05	0.12	12.31	Linearity Check
12/17/2003	7:53:23 AM	0	0	0.04	12.49	Linearity Check
12/17/2003	7:53:52 AM	0.67	0	0.02	3.33	Linearity Check
12/17/2003	7:54:23 AM	0.06	0	0.17	8.35	Linearity Check
12/17/2003	7:54:52 AM	0	0	0.02	8.2	Linearity Check
12/17/2003	7:55:23 AM	0	0	-0.03	2.2	Linearity Check
12/17/2003	7:55:53 AM	0.06	0	-0.01	4.36	Linearity Check
12/17/2003	7:56:22 AM	0	0	-0.07	4.47	Linearity Check
12/17/2003	7:56:53 AM	-0.06	0	0.03	0.22	Linearity Check
12/17/2003	7:57:22 AM	0	0	0.2	0.18	Linearity Check
12/17/2003	7:57:53 AM	12.09	0	0.36	0.04	Linearity Check
12/17/2003	7:58:22 AM	13.49	0	0.18	0.04	Linearity Check
12/17/2003	7:58:53 AM	13.55	0	0.21	0.04	Linearity Check
12/17/2003	7:59:22 AM	13.61	15.38	0.15	0	Linearity Check
12/17/2003	7:59:53 AM	7.45	15.58	-0.04	0	Linearity Check
12/17/2003	8:00:22 AM	6.04	17.43	-0.35	0	Linearity Check

12/17/2003	8:00:53 AM	6.23	17.53	-0.45	0	Linearity Check
12/17/2003	8:01:22 AM	6.23	17.53	-0.45	0.04	Linearity Check
12/17/2003	8:01:53 AM	6.23	17.92	-0.46	0	Linearity Check
12/17/2003	8:02:23 AM	6.23	17.97	-0.45	0.04	Linearity Check
12/17/2003	8:02:52 AM	6.23	17.97	-0.45	0	Linearity Check
12/17/2003	8:03:23 AM	6.23	17.97	-0.45	0	Linearity Check
12/17/2003	8:03:52 AM	6.23	17.97	-0.45	0	Linearity Check
12/17/2003	8:04:23 AM	6.23	10.11	-0.45	0	Linearity Check
12/17/2003	8:04:52 AM	4.33	10.01	-0.35	0.4	Linearity Check
12/17/2003	8:05:23 AM	0.24	0.05	0.61	0.29	Linearity Check
12/17/2003	8:05:52 AM	0	0	4.7	0	Linearity Check
12/17/2003	8:06:23 AM	-0.06	0	7.54	0	Linearity Check
12/17/2003	8:06:52 AM	-0.06	0	7.67	0	Linearity Check
12/17/2003	8:07:23 AM	-0.06	0.05	7.68	0.04	Linearity Check
12/17/2003	8:07:52 AM	0	0.05	7.72	0	Linearity Check
12/17/2003	8:08:23 AM	-0.06	0	6.23	0.04	Linearity Check
12/17/2003	8:08:52 AM	-0.06	0	6.06	0.04	Linearity Check
12/17/2003	8:09:23 AM	-0.06	0	6.39	0	Linearity Check
12/17/2003	8:09:52 AM	-0.06	0	6.27	0	Linearity Check
12/17/2003	8:10:23 AM	-0.06	0	6.34	0	Linearity Check
12/17/2003	8:10:52 AM	0.67	0.05	4.34	0.07	Linearity Check
12/17/2003	8:11:23 AM	1.77	0.05	2.81	0	Linearity Check
12/17/2003	8:11:52 AM	0.06	0	3.04	0.04	Linearity Check
12/17/2003	8:12:23 AM	0.85	0.05	2.81	0.04	Linearity Check
12/17/2003	8:12:53 AM	17.09	0	1.17	0.04	Linearity Check
12/17/2003	8:13:22 AM	20.69	0	0.46	0.04	Linearity Check
12/17/2003	8:13:53 AM	20.94	0.05	0.43	0.04	Linearity Check
12/17/2003	8:14:22 AM	20.94	0	0.46	0.04	Linearity Check
12/17/2003	8:14:53 AM	21	0.05	0.43	0.04	Linearity Check
12/17/2003	8:15:22 AM	21	0.05	0.48	0.04	Linearity Check
12/17/2003	8:15:53 AM	21	0.05	0.36	0.04	Linearity Check
12/17/2003	8:16:22 AM	20.94	0.05	0.43	0.04	Linearity Check
12/17/2003	8:16:53 AM	21	0.05	0.41	0.04	Linearity Check
12/17/2003	8:17:23 AM	20.94	0	0.39	0.04	Linearity Check
12/17/2003	8:17:52 AM	20.94	0	0.39	0.04	Linearity Check
12/17/2003	8:18:23 AM	20.94	0.05	0.42	0.04	Linearity Check
12/17/2003	8:18:52 AM	21	0	0.42	0.04	Linearity Check
12/17/2003	8:19:23 AM	21	0.05	0.46	0.04	Linearity Check
12/17/2003	8:19:52 AM	21	0.05	0.45	0	Linearity Check
12/17/2003	8:20:24 AM	20.94	0.05	0.41	0.04	Linearity Check
12/17/2003	8:20:54 AM	20.94	0.05	0.41	0.04	Linearity Check
12/17/2003	8:21:24 AM	20.94	0.05	0.41	0.04	Linearity Check
12/17/2003	8:21:54 AM	20.94	0.05	0.41	0.04	Linearity Check

12/17/2003	8:22:24 AM	20.94	0.05	0.41	0.04 Linearity Check
12/17/2003	8:22:53 AM	20.94	0.05	0.41	0.04 Linearity Check
12/17/2003	8:23:23 AM	20.94	0.05	0.41	0.04 Linearity Check
12/17/2003	8:23:53 AM	20.94	0.05	0.41	0.04 Linearity Check
12/17/2003	8:24:23 AM	20.94	0.05	0.41	0.04 Linearity Check
12/17/2003	8:24:53 AM	20.94	0.05	0.41	0.04 Linearity Check
12/17/2003	8:25:23 AM	20.94	0.05	0.41	0.04 Linearity Check
12/17/2003	8:25:53 AM	21	0	0.41	3 Converter Check - 1
12/17/2003	8:26:22 AM	21.06	0.05	0.45	3.04 Converter Check - 1
12/17/2003	8:26:53 AM	21	0	0.51	3.08 Converter Check - 1
12/17/2003	8:27:22 AM	21.06	0.05	0.38	3.04 Converter Check - 1
12/17/2003	8:27:53 AM	21.06	0.05	0.4	3.08 Converter Check - 1
12/17/2003	8:28:22 AM	21.06	0.05	0.41	3.08 Converter Check - 1
12/17/2003	8:28:53 AM	21.06	0.05	0.34	3.04 Converter Check - 1
12/17/2003	8:29:22 AM	21.06	0.05	0.45	3.08 Converter Check - 1
12/17/2003	8:29:53 AM	21.06	0.05	0.36	3.08 Converter Check - 1
12/17/2003	8:30:22 AM	21.06	0.05	0.41	3.08 Converter Check - 1
12/17/2003	8:30:53 AM	21.06	0.05	0.4	3.08 Converter Check - 1
12/17/2003	8:31:22 AM	21.06	0	0.33	3.08 Converter Check - 1
12/17/2003	8:31:53 AM	21.12	0.05	0.38	3.08 Converter Check - 1
12/17/2003	8:32:22 AM	21.06	0.05	0.37	3.08 Converter Check - 1
12/17/2003	8:32:53 AM	21	0.05	0.29	3.08 Converter Check - 1
12/17/2003	8:33:22 AM	21	0	0.24	3.08 Converter Check - 1
12/17/2003	8:33:53 AM	21.06	0.05	0.33	3.11 Converter Check - 1
12/17/2003	8:34:22 AM	21.06	0.05	0.4	3.11 Converter Check - 1
12/17/2003	8:34:53 AM	21	0	0.43	3.11 Converter Check - 1
12/17/2003	8:35:22 AM	21.06	0.05	0.4	3.11 Converter Check - 1
12/17/2003	8:35:53 AM	21.06	0	0.49	3.11 Converter Check - 1
12/17/2003	8:36:22 AM	21.06	0.05	0.39	3.15 Converter Check - 1
12/17/2003	8:36:53 AM	21.06	0.05	0.53	3.11 Converter Check - 1
12/17/2003	8:37:22 AM	21	0.05	0.41	3.11 Converter Check - 1
12/17/2003	8:37:53 AM	21	0	0.43	3.11 Converter Check - 1
12/17/2003	8:38:22 AM	21	0	0.48	3.11 Converter Check - 1
12/17/2003	8:38:53 AM	21.06	0.05	0.45	3.11 Converter Check - 1
12/17/2003	8:39:22 AM	21	0	0.42	3.11 Converter Check - 1
12/17/2003	8:39:53 AM	21	0	0.45	3.11 Converter Check - 1
12/17/2003	8:40:22 AM	21	0.05	0.49	3.08 Converter Check - 1
12/17/2003	8:40:53 AM	21	0	0.48	3.08 Converter Check - 1
12/17/2003	8:41:22 AM	21	0.05	0.52	3.11 Converter Check - 1
12/17/2003	8:41:53 AM	21.06	0.05	0.48	3.15 Converter Check - 1
12/17/2003	8:42:22 AM	21.06	0.05	0.43	3.11 Converter Check - 1
12/17/2003	8:42:53 AM	21.06	0.05	0.29	3.15 Converter Check - 1
12/17/2003	8:43:22 AM	21.06	0.05	0.45	3.15 Converter Check - 1

12/17/2003	8:43:53 AM	21.06	0.05	0.37	3.15 Converter Check - 1
12/17/2003	8:44:23 AM	21	0.05	0.39	3.15 Converter Check - 1
12/17/2003	8:44:53 AM	21.06	0.05	0.42	3.11 Converter Check - 1
12/17/2003	8:45:23 AM	21	0.05	0.49	3.15 Converter Check - 1
12/17/2003	8:45:52 AM	21	0	0.45	3.11 Converter Check - 1
12/17/2003	8:46:22 AM	21.06	0.05	0.39	3.11 Converter Check - 1
12/17/2003	8:46:53 AM	21	0	0.42	3.11 Converter Check - 1
12/17/2003	8:47:22 AM	21	0.05	0.46	3.11 Converter Check - 1
12/17/2003	8:47:53 AM	21.06	0.05	0.52	3.11 Converter Check - 1
12/17/2003	8:48:23 AM	21.06	0.05	0.52	3.11 Converter Check - 1
12/17/2003	8:48:52 AM	21.06	0	0.56	3.11 Converter Check - 1
12/17/2003	8:49:22 AM	21.06	0.05	0.46	3.11 Converter Check - 1
12/17/2003	8:49:53 AM	21.06	0.05	0.45	3.11 Converter Check - 1
12/17/2003	8:50:22 AM	21.06	0	0.49	3.11 Converter Check - 1
12/17/2003	8:50:53 AM	21.06	0	0.5	3.11 Converter Check - 1
12/17/2003	8:51:22 AM	21.06	0.05	0.49	3.11 Converter Check - 1
12/17/2003	8:51:53 AM	21.06	0	0.45	3.11 Converter Check - 1
12/17/2003	8:52:22 AM	21.06	0.05	0.31	3.11 Converter Check - 1
12/17/2003	8:52:53 AM	20.33	0	0.36	3.11 Converter Check - 1
12/17/2003	8:53:23 AM	1.89	-0.05	0.17	3.11 Converter Check - 1
12/17/2003	8:53:53 AM	0.24	0	0.18	3.11 Converter Check - 1
12/17/2003	8:54:22 AM	0.18	0	0.23	3.11 Converter Check - 1
12/17/2003	8:54:53 AM	0.12	0	0.27	3.11 Converter Check - 1
12/17/2003	8:55:22 AM	0.55	0	0.25	3.15 Converter Check - 1
12/17/2003	8:55:53 AM	0.67	0	0.28	3.15
12/17/2003	8:56:22 AM	0.12	0	0.21	0.11
12/17/2003	8:56:53 AM	0.06	0	0.23	0.07
12/17/2003	8:57:23 AM	0.06	0	0.16	0.04 Initial Span - Zero
12/17/2003	8:57:52 AM	0	0	-0.02	0.04 Initial Span - Zero
12/17/2003	8:58:23 AM	0.06	0	-0.04	0 Initial Span - Zero
12/17/2003	8:58:52 AM	0.06	0	0.01	0 Initial Span - Zero
12/17/2003	8:59:23 AM	0	-0.05	0.17	0.04 Initial Span - Zero
12/17/2003	8:59:52 AM	0	0	0.16	3.22 Initial Span - Zero
12/17/2003	9:00:23 AM	0	0	-0.01	4.47 Initial Span - Span
12/17/2003	9:00:52 AM	0	0	-0.07	4.47 Initial Span - Span
12/17/2003	9:01:23 AM	-0.06	3.81	0.02	4.54 Initial Span - Span
12/17/2003	9:01:52 AM	0	9.82	0.08	1.03 Initial Span - Span
12/17/2003	9:02:23 AM	-0.06	10.01	-0.03	0.33 Initial Span - Span
12/17/2003	9:02:52 AM	0	10.06	-0.09	0.29 Initial Span - Span
12/17/2003	9:03:23 AM	-0.06	0.1	0.87	0.07 Initial Span - Span
12/17/2003	9:03:52 AM	-0.06	0	2.75	0.04 Initial Span - Span
12/17/2003	9:04:23 AM	-0.06	0	3.34	0.07 Initial Span - Span
12/17/2003	9:04:52 AM	-0.06	0	3.11	0.07 Initial Span - Span

12/17/2003	9:05:23 AM	0	0	1.39	0.04	Initial Span - Span
12/17/2003	9:05:53 AM	-0.06	0	0.29	0.04	Initial Span - Span
12/17/2003	9:06:23 AM	-0.06	0	0.15	0.04	Initial Span - Span
12/17/2003	9:06:53 AM	-0.06	0	0.05	0.04	Initial Span - Span
12/17/2003	9:07:22 AM	-0.06	0	0.18	0.04	Initial Span - Span
12/17/2003	9:07:53 AM	-0.06	0	1.73	0.04	Initial Span - Span
12/17/2003	9:08:22 AM	-0.06	0	2.85	0.04	Initial Span - Span
12/17/2003	9:08:53 AM	-0.06	0	3.06	0.04	Initial Span - Span
12/17/2003	9:09:22 AM	-0.06	0	3.07	0.04	Initial Span - Span
12/17/2003	9:09:53 AM	-0.06	0	2.89	0.04	Initial Span - Span
12/17/2003	9:10:22 AM	7.87	0	1.5	0	Initial Span - Span
12/17/2003	9:10:53 AM	13.12	0	0.16	0.04	Initial Span - Span
12/17/2003	9:11:22 AM	13.55	0	-0.03	0.04	Initial Span - Span
12/17/2003	9:11:53 AM	13.55	0	0.05	0.04	Initial Span - Span
12/17/2003	9:12:22 AM	13.61	0	-0.01	0	Initial Span - Span
12/17/2003	9:12:53 AM	15.44	0.05	0.05	0.04	Initial Span - Span
12/17/2003	9:13:22 AM	20.33	0	0.15	0.04	Initial Span - Span
12/17/2003	9:13:53 AM	20.88	0	0.16	0.07	Initial Span - Span
12/17/2003	9:14:23 AM	20.88	0	0.04	0.04	Initial Span - Span
12/17/2003	9:14:52 AM	20.94	0	0.19	0.04	Initial Span - Span
12/17/2003	9:15:23 AM	21	0.05	0.16	0.04	Initial Span - Span
12/17/2003	9:15:52 AM	20.94	0.05	0.04	0.04	Initial Span - Span
12/17/2003	9:16:23 AM	21	0.05	0.01	0.04	Initial Span - Span
12/17/2003	9:16:52 AM	21	0.05	0.1	0	Initial Span - Span
12/17/2003	9:17:23 AM	21	0.05	0.04	0.04	Initial Span - Span
12/17/2003	9:17:52 AM	21	0.05	0.12	0	Initial Span - Span
12/17/2003	9:18:23 AM	21	4.05	0.18	3.04	Initial Span - Span
12/17/2003	9:18:52 AM	16.05	4.15	0.61	3.92	Initial Span - Span
12/17/2003	9:19:23 AM	13.92	4.1	0.89	3.96	Initial Span - Span
12/17/2003	9:19:52 AM	13.86	4.15	0.91	3.99	Initial Span - Span
12/17/2003	9:20:23 AM	13.8	0.05	0.86	3.81	Initial Span - Span
12/17/2003	9:20:52 AM	3.6	0.05	0.17	4.58	Initial Span - Span
12/17/2003	9:21:23 AM	0.37	0	0	4.54	Initial Span - Span
12/17/2003	9:21:52 AM	0.12	0	-0.13	4.47	Initial Span - Span
12/17/2003	9:22:23 AM	0.06	0	-0.17	4.47	Initial Span - Span
12/17/2003	9:22:52 AM	0.06	4.1	0.03	3.99	Initial Span - Span
12/17/2003	9:23:23 AM	11.54	4.1	0.8	3.96	Initial Span - Span
12/17/2003	9:23:53 AM	13.55	4.1	0.93	3.96	Initial Span - Span
12/17/2003	9:24:23 AM	13.73	4.15	0.87	3.96	Initial Span - Span
12/17/2003	9:24:53 AM	13.73	4.15	0.9	3.92	Initial Span - Span
12/17/2003	9:25:22 AM	13.73	4.15	0.91	3.96	Initial Span - Span
12/17/2003	9:25:53 AM	13.73	4.15	0.86	3.92	Initial Span - Span
12/17/2003	9:26:22 AM	13.73	4.15	0.76	3.96	Initial Span - Span



12/17/2003	9:26:53 AM	13.73	4.15	0.73	3.88 Initial Span - Span
12/17/2003	9:27:22 AM	13.73	4.2	0.74	3.92 Initial Span - Span
12/17/2003	9:27:53 AM	13.73	4.15	0.87	3.92 Initial Span - Span
12/17/2003	9:28:22 AM	13.8	4.15	0.83	3.81 Initial Span - Span
12/17/2003	9:28:53 AM	13.8	0.24	0.7	4.03 Initial Span - Span
12/17/2003	9:29:22 AM	5.01	0.05	0.44	0.04 Initial Span - Span
12/17/2003	9:29:53 AM	0.43	0.05	0.28	0 Initial Span - Span
12/17/2003	9:30:22 AM	0.06	4.05	0.21	3.11 Initial Span - Span
12/17/2003	9:30:52 AM	9.95	4.1	0.7	3.74 Initial Span - Span
12/17/2003	9:31:23 AM	13.49	4.2	0.85	3.81 Initial Span - Span
12/17/2003	9:31:52 AM	13.67	4.15	0.85	3.81 Initial Span - Span
12/17/2003	9:32:23 AM	13.73	4.15	0.88	3.85 Initial Span - Span
12/17/2003	9:32:53 AM	13.73	4.15	0.88	3.85 Initial Span - Span
12/17/2003	9:33:23 AM	13.73	4.15	0.88	3.85 Initial Span - Span
12/17/2003	9:33:52 AM	13.73	4.15	0.83	3.81 Strat Test (Run 1) - 1
12/17/2003	9:34:23 AM	13.8	4.2	0.87	3.85 Strat Test (Run 1) - 1
12/17/2003	9:34:52 AM	13.8	4.2	0.91	3.88 Strat Test (Run 1) - 1
12/17/2003	9:35:23 AM	13.73	4.15	0.91	3.88 Strat Test (Run 1) - 1
12/17/2003	9:35:52 AM	13.73	4.15	0.92	3.85 Strat Test (Run 1) - 1
12/17/2003	9:36:23 AM	13.73	4.2	0.97	3.88 Strat Test (Run 1) - 1
12/17/2003	9:36:53 AM	13.8	4.2	0.92	3.85 Strat Test (Run 1) - 1
12/17/2003	9:37:23 AM	13.86	4.2	0.84	3.85 Strat Test (Run 1) - 1
12/17/2003	9:37:53 AM	13.8	4.2	0.94	3.81 Strat Test (Run 1) - 1
12/17/2003	9:38:22 AM	13.8	4.15	0.93	3.81 Strat Test (Run 1) - 1
12/17/2003	9:38:53 AM	13.8	4.2	0.73	3.81 Strat Test (Run 1) - 1
12/17/2003	9:39:22 AM	13.8	4.2	0.8	3.77 Strat Test (Run 1) - 1
12/17/2003	9:39:53 AM	13.8	4.15	0.97	3.77 Run Paused
12/17/2003	9:40:22 AM	13.86	4.15	0.85	3.81 Run Paused
12/17/2003	9:40:53 AM	13.8	0.44	0.93	3.37 Run Paused
12/17/2003	9:41:22 AM	5.86	0.05	0.46	4.32 Run Paused
12/17/2003	9:41:52 AM	0.55	0	0	4.43 Run Paused
12/17/2003	9:42:22 AM	0.12	0	-0.01	4.4 Run Paused
12/17/2003	9:42:53 AM	0.06	0	-0.12	4.43 Run Paused
12/17/2003	9:43:23 AM	0.06	0.05	-0.21	4.43 Run Paused
12/17/2003	9:43:52 AM	5.98	0.05	-0.04	0.07 Run Paused
12/17/2003	9:44:23 AM	17.52	4.1	0.41	4.03 Run Paused
12/17/2003	9:44:53 AM	14.1	4.15	0.97	4.03 Run Paused
12/17/2003	9:45:23 AM	13.8	4.15	0.99	4.1 Run Paused
12/17/2003	9:45:53 AM	13.73	3.03	0.77	4.03 Run Paused
12/17/2003	9:46:23 AM	8.3	0	0.62	0.07 Run Paused
12/17/2003	9:46:52 AM	0.73	4.1	0.35	3.81 Run Paused
12/17/2003	9:47:23 AM	11.48	4.15	0.89	3.96 Run Paused
12/17/2003	9:47:53 AM	13.61	4.2	0.96	3.99 Run Paused

12/17/2003	9:48:22 AM	13.73	4.15	0.88	3.92 Run Paused
12/17/2003	9:48:53 AM	13.73	4.15	0.71	3.96 Run Paused
12/17/2003	9:49:22 AM	13.73	4.15	0.71	3.96 Run Paused
12/17/2003	9:49:53 AM	13.73	4.15	0.95	3.96 Run Paused
12/17/2003	9:50:22 AM	13.73	4.15	0.88	3.92 Strat Test (Run 1) - 1
12/17/2003	9:50:53 AM	13.73	4.15	0.87	3.92 Strat Test (Run 1) - 1
12/17/2003	9:51:22 AM	13.8	4.2	0.99	3.92 Strat Test (Run 1) - 1
12/17/2003	9:51:53 AM	13.8	4.15	1.06	3.88 Strat Test (Run 1) - 1
12/17/2003	9:52:22 AM	13.8	4.15	0.92	3.85 Strat Test (Run 1) - 1
12/17/2003	9:52:53 AM	13.8	4.15	1.18	3.88 Strat Test (Run 1) - 1
12/17/2003	9:53:22 AM	13.8	4.15	1.08	3.85 Strat Test (Run 1) - 1
12/17/2003	9:53:53 AM	13.8	4.15	0.77	3.85 Strat Test (Run 1) - 1
12/17/2003	9:54:22 AM	13.8	4.15	0.84	3.96 Strat Test (Run 1) - 1
12/17/2003	9:54:53 AM	13.8	4.15	0.86	3.92 Strat Test (Run 1) - 1
12/17/2003	9:55:22 AM	13.8	4.2	0.79	3.92 Strat Test (Run 1) - 1
12/17/2003	9:55:53 AM	13.86	4.2	0.9	3.92 Strat Test (Run 1) - 1
12/17/2003	9:56:22 AM	13.8	4.15	0.79	3.88 Run Paused
12/17/2003	9:56:53 AM	13.8	4.15	0.78	3.88 Run Paused
12/17/2003	9:57:22 AM	13.86	0.1	0.68	0.04 Run Paused
12/17/2003	9:57:53 AM	19.9	0.05	0.36	-0.04 Run Paused
12/17/2003	9:58:22 AM	20.94	0.1	0.25	-0.04 Run Paused
12/17/2003	9:58:53 AM	20.39	4.15	0.65	3.48 Run Paused
12/17/2003	9:59:22 AM	14.65	4.15	0.99	3.63 Run Paused
12/17/2003	9:59:53 AM	13.86	4.15	0.96	3.63 Run Paused
12/17/2003	10:00:23 AM	13.8	4.15	0.76	3.63 Run Paused
12/17/2003	10:00:53 AM	13.8	4.15	0.83	3.66 Run Paused
12/17/2003	10:01:22 AM	13.8	4.15	0.93	3.59 Run Paused
12/17/2003	10:01:53 AM	13.8	4.15	0.76	3.63 Run Paused
12/17/2003	10:02:22 AM	13.8	4.15	0.96	3.66 Run Paused
12/17/2003	10:02:53 AM	13.8	4.15	0.78	3.63 Run Paused
12/17/2003	10:03:22 AM	13.8	4.15	0.77	3.66 Strat Test (Run 1) - 1
12/17/2003	10:03:53 AM	13.8	4.15	0.91	3.63 Strat Test (Run 1) - 1
12/17/2003	10:04:22 AM	13.8	4.15	0.86	3.63 Strat Test (Run 1) - 1
12/17/2003	10:04:53 AM	13.8	4.15	0.95	3.66 Strat Test (Run 1) - 1
12/17/2003	10:05:22 AM	13.86	4.2	0.88	3.7 Strat Test (Run 1) - 1
12/17/2003	10:05:53 AM	13.8	4.15	0.79	3.63 Strat Test (Run 1) - 1
12/17/2003	10:06:22 AM	13.8	4.15	0.85	3.66 Strat Test (Run 1) - 1
12/17/2003	10:06:53 AM	13.86	4.2	0.81	3.63 Strat Test (Run 1) - 1
12/17/2003	10:07:22 AM	13.86	4.15	0.84	3.59 Strat Test (Run 1) - 1
12/17/2003	10:07:53 AM	13.8	4.15	0.79	3.59 Strat Test (Run 1) - 1
12/17/2003	10:08:22 AM	13.8	4.15	0.83	3.52 Strat Test (Run 1) - 1
12/17/2003	10:08:53 AM	13.86	4.2	0.88	3.52 Strat Test (Run 1) - 1
12/17/2003	10:09:22 AM	13.86	4.15	0.87	3.52 Run Paused

12/17/2003 10:09:53 AM	13.8	4.15	0.76	3.55 Run Paused
12/17/2003 10:10:22 AM	13.86	1.95	0.68	3.52 Run Paused
12/17/2003 10:10:53 AM	17.4	0.05	0.37	0 Run Paused
12/17/2003 10:11:22 AM	20.75	0.1	0.28	0 Run Paused
12/17/2003 10:11:53 AM	21	0.05	0.08	-0.04 Run Paused
12/17/2003 10:12:22 AM	21	4.05	0.19	3.08 Run Paused
12/17/2003 10:12:53 AM	15.32	4.1	0.8	3.63 Run Paused
12/17/2003 10:13:22 AM	13.92	4.1	0.83	3.63 Run Paused
12/17/2003 10:13:53 AM	13.86	4.15	0.84	3.66 Run Paused
12/17/2003 10:14:22 AM	13.86	4.15	1.14	3.66 Strat Test (Run 1) - 1
12/17/2003 10:14:53 AM	13.8	4.15	0.85	3.59 Strat Test (Run 1) - 1
12/17/2003 10:15:22 AM	13.8	4.15	0.73	3.7 Strat Test (Run 1) - 1
12/17/2003 10:15:53 AM	13.86	4.15	0.79	3.66 Strat Test (Run 1) - 1
12/17/2003 10:16:22 AM	13.8	4.15	0.69	3.63 Strat Test (Run 1) - 1
12/17/2003 10:16:53 AM	13.8	4.1	0.93	3.63 Strat Test (Run 1) - 1
12/17/2003 10:17:23 AM	13.8	4.15	0.87	3.63 Strat Test (Run 1) - 1
12/17/2003 10:17:53 AM	13.8	4.15	0.81	3.55 Strat Test (Run 1) - 1
12/17/2003 10:18:23 AM	13.8	4.2	0.87	3.52 Strat Test (Run 1) - 1
12/17/2003 10:18:53 AM	13.8	4.15	0.68	3.55 Strat Test (Run 1) - 1
12/17/2003 10:19:23 AM	13.86	4.2	0.78	3.55 Strat Test (Run 1) - 1
12/17/2003 10:19:52 AM	13.86	4.2	0.73	3.55 Strat Test (Run 1) - 1
12/17/2003 10:20:23 AM	13.8	4.15	0.83	3.52
12/17/2003 10:20:52 AM	13.86	4.2	0.81	3.44
12/17/2003 10:21:23 AM	13.8	0.73	0.69	3.41
12/17/2003 10:21:52 AM	6.65	0	0.48	0
12/17/2003 10:22:23 AM	0.55	0	0.13	0 Run 1 Span - Zero
12/17/2003 10:22:52 AM	0.12	0	0.1	0 Run 1 Span - Zero
12/17/2003 10:23:23 AM	0.06	0	-0.01	-0.04 Run 1 Span - Zero
12/17/2003 10:23:52 AM	0.12	0	-0.04	0 Run 1 Span - Zero
12/17/2003 10:24:23 AM	0.06	0	-0.28	3.74 Run 1 Span - Zero
12/17/2003 10:24:52 AM	0.06	0.05	-0.35	4.43 Run 1 Span - Zero
12/17/2003 10:25:23 AM	0.06	0.05	-0.25	4.47 Run 1 Span - Zero
12/17/2003 10:25:52 AM	0	0	-0.18	4.47 Run 1 Span - Span
12/17/2003 10:26:23 AM	0.06	7.42	-0.21	4.43 Run 1 Span - Span
12/17/2003 10:26:52 AM	0	9.82	-0.22	0.88 Run 1 Span - Span
12/17/2003 10:27:23 AM	0	10.06	-0.34	0.29 Run 1 Span - Span
12/17/2003 10:27:52 AM	-0.06	10.06	-0.45	0.29 Run 1 Span - Span
12/17/2003 10:28:23 AM	-0.06	0.1	0.41	0.04 Run 1 Span - Span
12/17/2003 10:28:52 AM	0	0.05	2.31	0 Run 1 Span - Span
12/17/2003 10:29:23 AM	-0.06	0.05	2.98	-0.04 Run 1 Span - Span
12/17/2003 10:29:53 AM	0	0.05	2.93	-0.04 Run 1 Span - Span
12/17/2003 10:30:22 AM	0	0	2.52	-0.04 Run 1 Span - Span
12/17/2003 10:30:53 AM	11.42	0	0.65	-0.04 Run 1 Span - Span

12/17/2003	10:31:22 AM	13.37	0	0.09	-0.04	Run 1 Span - Span
12/17/2003	10:31:53 AM	13.49	0	0.05	-0.04	Run 1 Span - Span
12/17/2003	10:32:22 AM	13.55	0	0.05	-0.04	Run 1 Span - Span
12/17/2003	10:32:53 AM	13.55	0	0.1	-0.04	Run 1 Span - Span
12/17/2003	10:33:23 AM	13.61	4.1	0.42	3.63	Run 1 Span - Span
12/17/2003	10:33:52 AM	13.67	4.1	0.9	3.7	Run 1 Span - Span
12/17/2003	10:34:23 AM	13.73	4.15	0.88	3.74	Run 1 Span - Span
12/17/2003	10:34:53 AM	13.73	4.2	0.77	3.74	Run 1 Span - Span
12/17/2003	10:35:22 AM	13.73	4.15	0.78	3.7	Run 1 Span - Span
12/17/2003	10:35:53 AM	13.73	4.15	0.93	3.7	Run 1 Span - Span
12/17/2003	10:36:22 AM	13.73	4.15	1.07	3.74	
12/17/2003	10:36:53 AM	13.73	4.15	0.85	3.7	
12/17/2003	10:37:23 AM	13.73	4.15	0.93	3.74	
12/17/2003	10:37:52 AM	13.8	4.15	0.87	3.66	
12/17/2003	10:38:23 AM	13.73	4.15	0.74	3.74	
12/17/2003	10:38:52 AM	13.8	4.15	0.8	3.74	
12/17/2003	10:39:23 AM	13.73	4.1	0.86	3.74	
12/17/2003	10:39:52 AM	13.8	4.2	0.79	3.77	
12/17/2003	10:40:23 AM	13.8	0.1	0.93	0.26	
12/17/2003	10:40:52 AM	4.09	0.05	2.35	0	
12/17/2003	10:41:23 AM	0.31	0	3.08	-0.04	Linearity Check
12/17/2003	10:41:52 AM	0.06	2.73	3.02	0	Linearity Check
12/17/2003	10:42:23 AM	7.14	4.15	2.04	3.66	Linearity Check
12/17/2003	10:42:52 AM	13.12	0.54	1.06	3.77	Linearity Check
12/17/2003	10:43:23 AM	5.74	0.05	2.95	0	Linearity Check
12/17/2003	10:43:53 AM	0.43	0.05	5.8	0	Linearity Check
12/17/2003	10:44:23 AM	0.06	0	6.31	0	Linearity Check
12/17/2003	10:44:53 AM	0	0.24	6.27	-0.04	Linearity Check
12/17/2003	10:45:22 AM	4.64	4.1	4.29	3.66	Linearity Check
12/17/2003	10:45:53 AM	12.94	4.15	1.37	3.74	Linearity Check
12/17/2003	10:46:23 AM	13.67	4.15	0.84	3.81	
12/17/2003	10:46:53 AM	13.73	4.15	0.88	3.74	
12/17/2003	10:47:23 AM	13.73	4.15	0.88	3.81	Run 2 - 1
12/17/2003	10:47:53 AM	13.8	4.15	0.8	3.74	Run 2 - 1
12/17/2003	10:48:22 AM	13.8	4.15	0.76	3.74	Run 2 - 1
12/17/2003	10:48:53 AM	13.8	4.15	0.85	3.77	Run 2 - 1
12/17/2003	10:49:22 AM	13.73	4.15	0.72	3.81	Run 2 - 1
12/17/2003	10:49:53 AM	13.73	4.15	0.8	3.81	Run 2 - 1
12/17/2003	10:50:23 AM	13.8	4.2	0.86	3.85	Run 2 - 1
12/17/2003	10:50:52 AM	13.8	4.15	0.69	3.85	Run 2 - 1
12/17/2003	10:51:23 AM	13.73	4.15	0.72	3.81	Run 2 - 1
12/17/2003	10:51:52 AM	13.8	4.15	0.83	3.85	Run 2 - 1
12/17/2003	10:52:23 AM	13.8	4.15	0.81	3.85	Run 2 - 1

12/17/2003	10:52:52 AM	13.73	4.15	0.91	3.81	Run 2 - 1
12/17/2003	10:53:23 AM	13.8	4.15	0.79	3.77	Run 2 - 1
12/17/2003	10:53:53 AM	13.8	4.15	0.73	3.81	Run 2 - 1
12/17/2003	10:54:22 AM	13.8	4.15	0.68	3.85	Run 2 - 1
12/17/2003	10:54:53 AM	13.8	4.15	0.83	3.88	Run 2 - 1
12/17/2003	10:55:22 AM	13.73	4.15	0.84	3.85	Run 2 - 1
12/17/2003	10:55:52 AM	13.8	4.15	0.89	3.81	Run 2 - 1
12/17/2003	10:56:23 AM	13.8	4.15	0.89	3.85	Run 2 - 1
12/17/2003	10:56:53 AM	13.8	4.15	0.8	3.77	Run 2 - 1
12/17/2003	10:57:23 AM	13.8	4.15	0.88	3.81	Run 2 - 1
12/17/2003	10:57:52 AM	13.8	4.15	0.71	3.77	Run 2 - 1
12/17/2003	10:58:23 AM	13.8	4.15	0.75	3.81	Run 2 - 1
12/17/2003	10:58:52 AM	13.8	4.15	0.68	3.81	Run 2 - 1
12/17/2003	10:59:23 AM	13.8	4.15	0.91	3.77	Run 2 - 1
12/17/2003	10:59:53 AM	13.86	4.2	0.83	3.85	Run 2 - 1
12/17/2003	11:00:22 AM	13.8	4.15	0.81	3.88	Run 2 - 1
12/17/2003	11:00:53 AM	13.8	4.2	0.82	3.85	Run 2 - 1
12/17/2003	11:01:22 AM	13.8	4.15	0.8	3.85	Run 2 - 1
12/17/2003	11:01:53 AM	13.8	4.15	0.84	3.85	Run 2 - 1
12/17/2003	11:02:22 AM	13.86	4.2	0.84	3.88	Run 2 - 1
12/17/2003	11:02:52 AM	13.8	4.2	0.82	3.85	Run 2 - 1
12/17/2003	11:03:23 AM	13.8	4.15	0.83	3.81	Run 2 - 1
12/17/2003	11:03:52 AM	13.8	4.15	0.89	3.77	Run 2 - 1
12/17/2003	11:04:23 AM	13.8	4.15	0.87	3.74	Run 2 - 1
12/17/2003	11:04:52 AM	13.8	4.15	0.82	3.77	Run 2 - 1
12/17/2003	11:05:23 AM	13.8	4.15	0.78	3.77	Run 2 - 1
12/17/2003	11:05:52 AM	13.8	4.15	0.77	3.81	Run 2 - 1
12/17/2003	11:06:23 AM	13.86	4.2	0.92	3.81	Run 2 - 1
12/17/2003	11:06:52 AM	13.73	4.15	0.8	3.81	Run 2 - 1
12/17/2003	11:07:23 AM	13.8	4.2	0.85	3.81	Run 2 - 1
12/17/2003	11:07:52 AM	13.8	4.2	0.62	3.81	Run 2 - 1
12/17/2003	11:08:23 AM	13.8	4.15	0.89	3.81	
12/17/2003	11:08:53 AM	13.8	0.24	1.22	3.81	
12/17/2003	11:09:22 AM	5.19	0.05	1.6	0	Run 2 Span - Zero
12/17/2003	11:09:53 AM	0.49	0.05	0.48	0	Run 2 Span - Zero
12/17/2003	11:10:22 AM	0.12	0	0.2	0	Run 2 Span - Zero
12/17/2003	11:10:53 AM	0.12	0.05	0.1	-0.04	Run 2 Span - Zero
12/17/2003	11:11:22 AM	0.06	0.05	-0.03	-0.04	Run 2 Span - Zero
12/17/2003	11:11:53 AM	0	0	0.06	-0.04	Run 2 Span - Zero
12/17/2003	11:12:22 AM	0.06	0	0.01	3.74	Run 2 Span - Zero
12/17/2003	11:12:53 AM	0	0	-0.19	4.36	Run 2 Span - Zero
12/17/2003	11:13:22 AM	0	0	-0.32	4.47	Run 2 Span - Span
12/17/2003	11:13:53 AM	0	0	-0.37	4.36	Run 2 Span - Span

12/17/2003	11:14:22 AM	0.06	9.67	-0.2	0.55	Run 2 Span - Span
12/17/2003	11:14:53 AM	0	10.06	-0.21	0.26	Run 2 Span - Span
12/17/2003	11:15:22 AM	-0.06	10.06	-0.45	0.22	Run 2 Span - Span
12/17/2003	11:15:53 AM	-0.06	0.15	0.38	0	Run 2 Span - Span
12/17/2003	11:16:23 AM	0	0.1	2.48	-0.04	Run 2 Span - Span
12/17/2003	11:16:52 AM	0	0.05	3.17	-0.07	Run 2 Span - Span
12/17/2003	11:17:23 AM	-0.06	0.05	3.08	-0.04	Run 2 Span - Span
12/17/2003	11:17:52 AM	0	0.05	1.7	4.07	Run 2 Span - Span
12/17/2003	11:18:23 AM	-0.06	0.05	0.14	4.36	Run 2 Span - Span
12/17/2003	11:18:52 AM	0	0	-0.27	4.36	Run 2 Span - Span
12/17/2003	11:19:23 AM	-0.06	0	-0.33	0.81	Run 2 Span - Span
12/17/2003	11:19:52 AM	9.77	0	-0.16	-0.04	Run 2 Span - Span
12/17/2003	11:20:23 AM	13.31	0.05	-0.09	-0.07	Run 2 Span - Span
12/17/2003	11:20:52 AM	13.55	0.05	-0.03	-0.07	Run 2 Span - Span
12/17/2003	11:21:23 AM	13.61	0	0.14	-0.07	Run 2 Span - Span
12/17/2003	11:21:52 AM	13.61	0	-0.03	-0.07	Run 2 Span - Span
12/17/2003	11:22:23 AM	13.61	4.1	0.5	3.7	Run 2 Span - Span
12/17/2003	11:22:52 AM	13.73	4.15	0.84	3.77	Run 2 Span - Span
12/17/2003	11:23:23 AM	13.73	4.1	0.94	3.74	Run 3 - 1
12/17/2003	11:23:53 AM	13.73	4.15	1.02	3.81	Run 3 - 1
12/17/2003	11:24:22 AM	13.8	4.15	0.93	3.77	Run 3 - 1
12/17/2003	11:24:53 AM	13.73	4.15	0.95	3.74	Run 3 - 1
12/17/2003	11:25:22 AM	13.73	4.15	0.93	3.7	Run 3 - 1
12/17/2003	11:25:53 AM	13.8	4.15	0.89	3.74	Run 3 - 1
12/17/2003	11:26:22 AM	13.73	4.15	1	3.74	Run 3 - 1
12/17/2003	11:26:53 AM	13.8	4.2	0.88	3.7	Run 3 - 1
12/17/2003	11:27:22 AM	13.8	4.15	0.76	3.7	Run 3 - 1
12/17/2003	11:27:53 AM	13.8	4.15	0.86	3.7	Run 3 - 1
12/17/2003	11:28:22 AM	13.73	4.15	0.84	3.74	Run 3 - 1
12/17/2003	11:28:53 AM	13.8	4.15	0.72	3.74	Run 3 - 1
12/17/2003	11:29:22 AM	13.8	4.15	0.69	3.74	Run 3 - 1
12/17/2003	11:29:53 AM	13.8	4.15	0.89	3.74	Run 3 - 1
12/17/2003	11:30:22 AM	13.8	4.15	0.83	3.74	Run 3 - 1
12/17/2003	11:30:53 AM	13.8	4.15	0.84	3.74	Run 3 - 1
12/17/2003	11:31:22 AM	13.8	4.15	0.91	3.74	Run 3 - 1
12/17/2003	11:31:53 AM	13.8	4.15	0.74	3.7	Run 3 - 1
12/17/2003	11:32:23 AM	13.8	4.15	0.85	3.77	Run 3 - 1
12/17/2003	11:32:52 AM	13.8	4.15	0.85	3.74	Run 3 - 1
12/17/2003	11:33:23 AM	13.8	4.15	0.81	3.74	Run 3 - 1
12/17/2003	11:33:52 AM	13.86	4.2	0.88	3.66	Run 3 - 1
12/17/2003	11:34:23 AM	13.86	4.15	0.72	3.7	Run 3 - 1
12/17/2003	11:34:52 AM	13.86	4.15	0.78	3.7	Run 3 - 1
12/17/2003	11:35:23 AM	13.8	4.15	0.82	3.74	Run 3 - 1

12/17/2003	11:35:52 AM	13.86	4.15	0.91	3.7	Run 3 - 1
12/17/2003	11:36:23 AM	13.86	4.15	0.93	3.74	Run 3 - 1
12/17/2003	11:36:52 AM	13.86	4.15	0.81	3.7	Run 3 - 1
12/17/2003	11:37:23 AM	13.86	4.15	0.77	3.74	Run 3 - 1
12/17/2003	11:37:52 AM	13.86	4.15	0.67	3.77	Run 3 - 1
12/17/2003	11:38:23 AM	13.86	4.15	0.84	3.74	Run 3 - 1
12/17/2003	11:38:52 AM	13.86	4.2	1.05	3.74	Run 3 - 1
12/17/2003	11:39:23 AM	13.8	4.15	0.77	3.74	Run 3 - 1
12/17/2003	11:39:52 AM	13.86	4.2	0.77	3.7	Run 3 - 1
12/17/2003	11:40:23 AM	13.86	4.2	0.79	3.7	Run 3 - 1
12/17/2003	11:40:52 AM	13.86	4.2	0.77	3.77	Run 3 - 1
12/17/2003	11:41:23 AM	13.86	4.2	0.87	3.77	Run 3 - 1
12/17/2003	11:41:52 AM	13.8	4.15	0.94	3.74	Run 3 - 1
12/17/2003	11:42:23 AM	13.8	4.15	0.92	3.74	Run 3 - 1
12/17/2003	11:42:52 AM	13.8	4.15	0.86	3.74	Run 3 - 1
12/17/2003	11:43:23 AM	13.86	4.15	0.89	3.77	Run 3 - 1
12/17/2003	11:43:52 AM	13.8	4.15	0.83	3.74	Run 3 - 1
12/17/2003	11:44:23 AM	13.8	4.15	0.79	3.77	
12/17/2003	11:44:52 AM	13.55	0.05	0.66	-0.04	Run 3 Span - Zero
12/17/2003	11:45:23 AM	1.83	0.05	0.4	-0.04	Run 3 Span - Zero
12/17/2003	11:45:52 AM	0.24	0.05	0.13	-0.04	Run 3 Span - Zero
12/17/2003	11:46:23 AM	0.06	0	-0.01	-0.04	Run 3 Span - Zero
12/17/2003	11:46:53 AM	0.06	0	-0.04	-0.07	Run 3 Span - Zero
12/17/2003	11:47:22 AM	0.06	0.05	-0.15	3.96	Run 3 Span - Zero
12/17/2003	11:47:53 AM	0	0	-0.21	4.4	Run 3 Span - Zero
12/17/2003	11:48:22 AM	0	0	-0.27	4.36	Run 3 Span - Span
12/17/2003	11:48:53 AM	0	3.86	-0.29	4.29	Run 3 Span - Span
12/17/2003	11:49:22 AM	0	9.96	-0.21	0.33	Run 3 Span - Span
12/17/2003	11:49:53 AM	-0.06	10.06	-0.33	0.18	Run 3 Span - Span
12/17/2003	11:50:22 AM	-0.06	0.24	-0.17	-0.04	Run 3 Span - Span
12/17/2003	11:50:53 AM	-0.06	0.05	1.84	-0.04	Run 3 Span - Span
12/17/2003	11:51:22 AM	0	0.05	3.09	-0.04	Run 3 Span - Span
12/17/2003	11:51:53 AM	0	0.05	3.16	-0.07	Run 3 Span - Span
12/17/2003	11:52:22 AM	0	0.05	2.6	-0.07	Run 3 Span - Span
12/17/2003	11:52:53 AM	11.17	0	0.73	-0.07	Run 3 Span - Span
12/17/2003	11:53:22 AM	13.43	0	0.14	-0.04	Run 3 Span - Span
12/17/2003	11:53:53 AM	13.61	0	-0.07	-0.07	Run 3 Span - Span
12/17/2003	11:54:22 AM	13.61	0.05	-0.17	-0.07	Run 3 Span - Span
12/17/2003	11:54:53 AM	13.67	4.1	0.39	3.7	Run 3 Span - Span
12/17/2003	11:55:22 AM	13.8	4.2	0.96	3.7	Run 3 Span - Span
12/17/2003	11:55:53 AM	13.8	4.15	0.9	3.7	Run 3 Span - Span
12/17/2003	11:56:23 AM	13.8	4.15	0.82	3.74	Run 4 - 1
12/17/2003	11:56:52 AM	13.86	4.15	0.76	3.77	Run 4 - 1

12/17/2003	11:57:23 AM	13.8	4.15	0.81	3.81	Run 4 - 1
12/17/2003	11:57:52 AM	13.8	4.15	0.65	3.77	Run 4 - 1
12/17/2003	11:58:23 AM	13.8	4.15	0.76	3.77	Run 4 - 1
12/17/2003	11:58:52 AM	13.73	4.1	0.86	3.77	Run 4 - 1
12/17/2003	11:59:23 AM	13.73	4.15	0.82	3.77	Run 4 - 1
12/17/2003	11:59:52 AM	13.8	4.15	0.92	3.85	Run 4 - 1
12/17/2003	12:00:23 PM	13.8	4.15	0.84	3.77	Run 4 - 1
12/17/2003	12:00:52 PM	13.73	4.1	0.89	3.77	Run 4 - 1
12/17/2003	12:01:22 PM	13.86	4.2	0.79	3.77	Run 4 - 1
12/17/2003	12:01:53 PM	13.73	4.15	1.06	3.77	Run 4 - 1
12/17/2003	12:02:23 PM	13.8	4.15	0.74	3.77	Run 4 - 1
12/17/2003	12:02:52 PM	13.86	4.2	0.9	3.81	Run 4 - 1
12/17/2003	12:03:23 PM	13.8	4.2	0.76	3.81	Run 4 - 1
12/17/2003	12:03:52 PM	13.8	4.15	0.65	3.81	Run 4 - 1
12/17/2003	12:04:23 PM	13.8	4.15	0.79	3.81	Run 4 - 1
12/17/2003	12:04:52 PM	13.8	4.15	0.98	3.77	Run 4 - 1
12/17/2003	12:05:23 PM	13.8	4.15	0.95	3.81	Run 4 - 1
12/17/2003	12:05:52 PM	13.8	4.1	0.96	3.74	Run 4 - 1
12/17/2003	12:06:23 PM	13.8	4.15	0.8	3.77	Run 4 - 1
12/17/2003	12:06:52 PM	13.8	4.15	0.78	3.77	Run 4 - 1
12/17/2003	12:07:23 PM	13.8	4.15	0.64	3.81	Run 4 - 1
12/17/2003	12:07:53 PM	13.86	4.2	0.75	3.77	Run 4 - 1
12/17/2003	12:08:23 PM	13.86	4.2	0.75	3.77	Run 4 - 1
12/17/2003	12:08:52 PM	13.86	4.15	0.78	3.74	Run 4 - 1
12/17/2003	12:09:23 PM	13.86	4.15	0.72	3.81	Run 4 - 1
12/17/2003	12:09:52 PM	13.86	4.15	0.84	3.77	Run 4 - 1
12/17/2003	12:10:23 PM	13.86	4.15	0.84	3.77	Run 4 - 1
12/17/2003	12:10:52 PM	13.86	4.15	0.84	3.74	Run 4 - 1
12/17/2003	12:11:23 PM	13.8	4.15	0.9	3.77	Run 4 - 1
12/17/2003	12:11:52 PM	13.86	4.15	0.76	3.7	Run 4 - 1
12/17/2003	12:12:23 PM	13.86	4.15	0.51	3.7	Run 4 - 1
12/17/2003	12:12:52 PM	13.86	4.15	0.75	3.74	Run 4 - 1
12/17/2003	12:13:23 PM	13.86	4.15	0.73	3.77	Run 4 - 1
12/17/2003	12:13:52 PM	13.86	4.15	0.66	3.74	Run 4 - 1
12/17/2003	12:14:23 PM	13.86	4.15	0.72	3.74	Run 4 - 1
12/17/2003	12:14:52 PM	13.8	4.15	0.77	3.77	Run 4 - 1
12/17/2003	12:15:23 PM	13.8	4.15	0.91	3.74	Run 4 - 1
12/17/2003	12:15:52 PM	13.8	4.15	0.81	3.74	Run 4 - 1
12/17/2003	12:16:23 PM	13.8	4.15	0.81	3.74	Run 4 - 1
12/17/2003	12:16:53 PM	13.8	4.15	0.78	3.74	Run 4 - 1
12/17/2003	12:17:23 PM	13.86	4.15	0.75	3.77	
12/17/2003	12:17:53 PM	13.8	0.1	0.79	0.04	Run 4 Span - Zero
12/17/2003	12:18:22 PM	4.21	0.05	0.47	-0.04	Run 4 Span - Zero



12/17/2003	12:18:53 PM	0.43	0.05	0.12	-0.04	Run 4 Span - Zero
12/17/2003	12:19:22 PM	0.12	0.05	0.05	-0.04	Run 4 Span - Zero
12/17/2003	12:19:53 PM	0.06	0	-0.03	-0.07	Run 4 Span - Zero
12/17/2003	12:20:22 PM	0.06	0.05	0	-0.04	Run 4 Span - Zero
12/17/2003	12:20:53 PM	0	0	-0.11	3.81	Run 4 Span - Zero
12/17/2003	12:21:22 PM	0.06	0.05	-0.21	4.4	Run 4 Span - Span
12/17/2003	12:21:53 PM	0	0	-0.25	4.36	Run 4 Span - Span
12/17/2003	12:22:22 PM	0.06	0	-0.28	4.4	Run 4 Span - Span
12/17/2003	12:22:53 PM	0	0	-0.35	4.47	Run 4 Span - Span
12/17/2003	12:23:22 PM	0	0	-0.31	4.4	Run 4 Span - Span
12/17/2003	12:23:53 PM	0	9.72	-0.32	0.55	Run 4 Span - Span
12/17/2003	12:24:22 PM	0	10.06	-0.29	0.22	Run 4 Span - Span
12/17/2003	12:24:53 PM	-0.06	10.06	-0.34	0.18	Run 4 Span - Span
12/17/2003	12:25:22 PM	-0.06	10.11	-0.41	0.18	Run 4 Span - Span
12/17/2003	12:25:53 PM	-0.06	7.08	-0.43	0.15	Run 4 Span - Span
12/17/2003	12:26:22 PM	-0.06	0.1	1.15	-0.04	Run 4 Span - Zero
12/17/2003	12:26:53 PM	0	0.1	2.93	-0.07	Run 4 Span - Zero
12/17/2003	12:27:22 PM	0	0.05	3.13	-0.04	Run 4 Span - Span
12/17/2003	12:27:53 PM	0	0.05	2.72	-0.07	Run 4 Span - Span
12/17/2003	12:28:23 PM	10.19	0	0.96	-0.07	Run 4 Span - Span
12/17/2003	12:28:52 PM	13.31	0.05	0.13	-0.07	Run 4 Span - Span
12/17/2003	12:29:23 PM	13.55	0	-0.03	-0.07	Run 4 Span - Span
12/17/2003	12:29:52 PM	13.55	0.05	0.09	-0.07	Run 4 Span - Span
12/17/2003	12:30:23 PM	13.55	0.05	-0.06	-0.07	Run 4 Span - Span
12/17/2003	12:30:53 PM	13.67	4.15	0.37	3.66	Run 4 Span - Span
12/17/2003	12:31:23 PM	13.73	4.15	0.92	3.77	Run 4 Span - Span
12/17/2003	12:31:53 PM	13.73	4.1	0.96	3.77	Run 4 Span - Span
12/17/2003	12:32:22 PM	13.73	4.15	1.04	3.81	Run 5 - 1
12/17/2003	12:32:53 PM	13.73	4.15	0.97	3.77	Run 5 - 1
12/17/2003	12:33:22 PM	13.73	4.15	0.96	3.85	Run 5 - 1
12/17/2003	12:33:53 PM	13.73	4.15	1.02	3.77	Run 5 - 1
12/17/2003	12:34:22 PM	13.8	4.15	0.98	3.85	Run 5 - 1
12/17/2003	12:34:53 PM	13.8	4.2	0.91	3.81	Run 5 - 1
12/17/2003	12:35:22 PM	13.8	4.15	0.93	3.77	Run 5 - 1
12/17/2003	12:35:53 PM	13.8	4.2	0.97	3.81	Run 5 - 1
12/17/2003	12:36:22 PM	13.73	4.15	0.86	3.81	Run 5 - 1
12/17/2003	12:36:53 PM	13.8	4.15	1	3.81	Run 5 - 1
12/17/2003	12:37:22 PM	13.8	4.15	0.98	3.81	Run 5 - 1
12/17/2003	12:37:53 PM	13.8	4.15	1	3.77	Run 5 - 1
12/17/2003	12:38:22 PM	13.8	4.15	0.9	3.77	Run 5 - 1
12/17/2003	12:38:53 PM	13.8	4.15	0.9	3.74	Run 5 - 1
12/17/2003	12:39:22 PM	13.86	4.15	0.88	3.77	Run 5 - 1
12/17/2003	12:39:53 PM	13.8	4.1	0.88	3.81	Run 5 - 1

12/17/2003	12:40:22 PM	13.8	4.15	0.85	3.81 Run 5 - 1
12/17/2003	12:40:53 PM	13.86	4.15	0.94	3.77 Run 5 - 1
12/17/2003	12:41:22 PM	13.86	4.15	0.92	3.74 Run 5 - 1
12/17/2003	12:41:53 PM	13.8	4.15	0.84	3.77 Run 5 - 1
12/17/2003	12:42:22 PM	13.86	4.15	0.87	3.77 Run 5 - 1
12/17/2003	12:42:53 PM	13.86	4.15	0.89	3.77 Run 5 - 1
12/17/2003	12:43:22 PM	13.8	4.15	0.84	3.77 Run 5 - 1
12/17/2003	12:43:53 PM	13.86	4.15	0.84	3.74 Run 5 - 1
12/17/2003	12:44:22 PM	13.86	4.15	0.88	3.77 Run 5 - 1
12/17/2003	12:44:53 PM	13.8	4.1	0.94	3.7 Run 5 - 1
12/17/2003	12:45:23 PM	13.8	4.15	0.95	3.77 Run 5 - 1
12/17/2003	12:45:52 PM	13.8	4.15	1.01	3.77 Run 5 - 1
12/17/2003	12:46:22 PM	13.8	4.15	0.96	3.74 Run 5 - 1
12/17/2003	12:46:53 PM	13.8	4.15	0.95	3.74 Run 5 - 1
12/17/2003	12:47:23 PM	13.8	4.1	0.97	3.74 Run 5 - 1
12/17/2003	12:47:53 PM	13.86	4.15	0.98	3.77 Run 5 - 1
12/17/2003	12:48:23 PM	13.8	4.15	0.93	3.77 Run 5 - 1
12/17/2003	12:48:52 PM	13.86	4.15	0.9	3.81 Run 5 - 1
12/17/2003	12:49:23 PM	13.8	4.15	0.87	3.77 Run 5 - 1
12/17/2003	12:49:53 PM	13.86	4.15	0.8	3.81 Run 5 - 1
12/17/2003	12:50:23 PM	13.8	4.2	0.92	3.81 Run 5 - 1
12/17/2003	12:50:53 PM	13.86	4.2	1.01	3.85 Run 5 - 1
12/17/2003	12:51:23 PM	13.8	4.15	0.86	3.81 Run 5 - 1
12/17/2003	12:51:52 PM	13.8	4.15	0.85	3.81 Run 5 - 1
12/17/2003	12:52:23 PM	13.86	4.2	0.91	3.81 Run 5 - 1
12/17/2003	12:52:52 PM	13.86	4.2	0.99	3.81 Run 5 - 1
12/17/2003	12:53:23 PM	13.86	4	0.96	3.81
12/17/2003	12:53:53 PM	12.82	0.05	0.62	-0.04 Run 5 Span - Zero
12/17/2003	12:54:23 PM	1.47	0.05	0.32	-0.04 Run 5 Span - Zero
12/17/2003	12:54:52 PM	0.24	0.05	0.17	-0.04 Run 5 Span - Zero
12/17/2003	12:55:23 PM	0.06	0	0.08	-0.07 Run 5 Span - Zero
12/17/2003	12:55:52 PM	0.06	0	0.01	-0.07 Run 5 Span - Zero
12/17/2003	12:56:23 PM	0.06	0.05	-0.05	-0.07 Run 5 Span - Zero
12/17/2003	12:56:52 PM	0.06	0	-0.19	4.4 Run 5 Span - Zero
12/17/2003	12:57:23 PM	0.06	0.05	-0.25	4.51 Run 5 Span - Span
12/17/2003	12:57:52 PM	0	0	-0.3	4.47 Run 5 Span - Span
12/17/2003	12:58:23 PM	0	9.67	-0.31	1.65 Run 5 Span - Span
12/17/2003	12:58:52 PM	0	10.01	-0.19	0.22 Run 5 Span - Span
12/17/2003	12:59:23 PM	0	10.06	-0.14	0.18 Run 5 Span - Span
12/17/2003	12:59:52 PM	-0.06	0.49	-0.13	0.15 Run 5 Span - Span
12/17/2003	1:00:23 PM	0	0.05	1.87	-0.04 Run 5 Span - Span
12/17/2003	1:00:52 PM	0	0.05	3.28	-0.04 Run 5 Span - Span
12/17/2003	1:01:23 PM	-0.06	0	3.07	-0.04 Run 5 Span - Span

12/17/2003	1:01:53 PM	3.6	0	2.06	-0.04 Run 5 Span - Span
12/17/2003	1:02:22 PM	12.58	0.05	0.36	-0.04 Run 5 Span - Span
12/17/2003	1:02:53 PM	13.49	0	0.09	-0.04 Run 5 Span - Span
12/17/2003	1:03:22 PM	13.55	0	0.08	-0.07 Run 5 Span - Span
12/17/2003	1:03:53 PM	13.55	0	0.17	-0.07 Run 5 Span - Span
12/17/2003	1:04:22 PM	13.61	4.1	0.48	2.75 Run 5 Span - Span
12/17/2003	1:04:53 PM	13.73	4.15	1.28	3.81 Run 5 Span - Span
12/17/2003	1:05:23 PM	13.73	4.1	1.26	3.81 Run 6 - 1
12/17/2003	1:05:52 PM	13.73	4.15	1.17	3.88 Run 6 - 1
12/17/2003	1:06:23 PM	13.8	4.15	1.13	3.77 Run 6 - 1
12/17/2003	1:06:52 PM	13.73	4.15	1.13	3.81 Run 6 - 1
12/17/2003	1:07:23 PM	13.8	4.15	0.99	3.88 Run 6 - 1
12/17/2003	1:07:52 PM	13.73	4.15	1.05	3.85 Run 6 - 1
12/17/2003	1:08:23 PM	13.8	4.15	0.91	3.85 Run 6 - 1
12/17/2003	1:08:53 PM	13.8	4.15	0.99	3.85 Run 6 - 1
12/17/2003	1:09:23 PM	13.8	4.15	0.96	3.85 Run 6 - 1
12/17/2003	1:09:53 PM	13.8	4.15	1	3.85 Run 6 - 1
12/17/2003	1:10:22 PM	13.8	4.15	0.85	3.85 Run 6 - 1
12/17/2003	1:10:53 PM	13.8	4.15	0.95	3.85 Run 6 - 1
12/17/2003	1:11:22 PM	13.86	4.15	0.99	3.81 Run 6 - 1
12/17/2003	1:11:53 PM	13.86	4.15	0.92	3.85 Run 6 - 1
12/17/2003	1:12:22 PM	13.86	4.2	1.05	3.81 Run 6 - 1
12/17/2003	1:12:53 PM	13.86	4.2	0.93	3.85 Run 6 - 1
12/17/2003	1:13:22 PM	13.8	4.15	0.91	3.77 Run 6 - 1
12/17/2003	1:13:53 PM	13.8	4.15	0.97	3.77 Run 6 - 1
12/17/2003	1:14:23 PM	13.86	4.15	1.05	3.77 Run 6 - 1
12/17/2003	1:14:52 PM	13.8	4.1	0.97	3.77 Run 6 - 1
12/17/2003	1:15:23 PM	13.8	4.15	0.94	3.81 Run 6 - 1
12/17/2003	1:15:52 PM	13.8	4.15	0.89	3.85 Run 6 - 1
12/17/2003	1:16:23 PM	13.8	4.15	1.02	3.81 Run 6 - 1
12/17/2003	1:16:53 PM	13.8	4.15	0.9	3.81 Run 6 - 1
12/17/2003	1:17:22 PM	13.8	4.15	0.94	3.74 Run 6 - 1
12/17/2003	1:17:53 PM	13.8	4.15	0.96	3.77 Run 6 - 1
12/17/2003	1:18:22 PM	13.8	4.1	1.03	3.77 Run 6 - 1
12/17/2003	1:18:53 PM	13.8	4.15	0.95	3.77 Run 6 - 1
12/17/2003	1:19:22 PM	13.8	4.15	0.97	3.81 Run 6 - 1
12/17/2003	1:19:53 PM	13.8	4.2	0.86	3.81 Run 6 - 1
12/17/2003	1:20:22 PM	13.8	4.1	0.99	3.81 Run 6 - 1
12/17/2003	1:20:52 PM	13.8	4.15	0.96	3.81 Run 6 - 1
12/17/2003	1:21:23 PM	13.8	4.15	0.88	3.81 Run 6 - 1
12/17/2003	1:21:52 PM	13.8	4.15	0.93	3.77 Run 6 - 1
12/17/2003	1:22:23 PM	13.8	4.15	0.96	3.77 Run 6 - 1
12/17/2003	1:22:52 PM	13.8	4.15	0.9	3.77 Run 6 - 1

12/17/2003	1:23:23 PM	13.8	4.15	0.84	3.81 Run 6 - 1
12/17/2003	1:23:52 PM	13.8	4.15	0.98	3.85 Run 6 - 1
12/17/2003	1:24:23 PM	13.8	4.15	0.97	3.81 Run 6 - 1
12/17/2003	1:24:53 PM	13.8	4.15	0.97	3.81 Run 6 - 1
12/17/2003	1:25:22 PM	13.8	4.15	1.03	3.85 Run 6 - 1
12/17/2003	1:25:53 PM	13.86	4.15	1.03	3.88 Run 6 - 1
12/17/2003	1:26:22 PM	13.8	4.15	0.92	3.88
12/17/2003	1:26:53 PM	13.86	0.1	0.85	0.11
12/17/2003	1:27:22 PM	3.54	0.05	0.44	-0.04 Run 6 Span - Zero
12/17/2003	1:27:53 PM	0.37	0.05	0.25	-0.04 Run 6 Span - Zero
12/17/2003	1:28:22 PM	0.12	0	0.14	-0.04 Run 6 Span - Zero
12/17/2003	1:28:53 PM	0.12	0.05	0.03	-0.04 Run 6 Span - Zero
12/17/2003	1:29:22 PM	0.06	0	0.04	-0.07 Run 6 Span - Zero
12/17/2003	1:29:53 PM	0.06	0	-0.07	4.21 Run 6 Span - Zero
12/17/2003	1:30:22 PM	0.06	0.05	-0.25	4.36 Run 6 Span - Zero
12/17/2003	1:30:53 PM	0	0	-0.36	4.4 Run 6 Span - Zero
12/17/2003	1:31:22 PM	0.06	0.05	-0.32	4.4 Run 6 Span - Zero
12/17/2003	1:31:53 PM	0	0	-0.21	4.4 Run 6 Span - Zero
12/17/2003	1:32:22 PM	0	0.05	-0.32	4.4 Run 6 Span - Zero
12/17/2003	1:32:53 PM	0	0	-0.31	4.4 Run 6 Span - Zero
12/17/2003	1:33:22 PM	0	0.05	-0.27	4.43 Run 6 Span - Span
12/17/2003	1:33:53 PM	-0.06	0	-0.28	4.4 Run 6 Span - Span
12/17/2003	1:34:23 PM	0	0.29	-0.31	4.36 Run 6 Span - Span
12/17/2003	1:34:53 PM	-0.06	9.96	-0.2	0.33 Run 6 Span - Span
12/17/2003	1:35:23 PM	-0.06	10.06	-0.27	0.18 Run 6 Span - Span
12/17/2003	1:35:52 PM	-0.06	0.83	-0.28	0.18 Run 6 Span - Span
12/17/2003	1:36:23 PM	-0.06	0.05	1.47	-0.04
12/17/2003	1:36:52 PM	-0.06	0	3.02	-0.04
12/17/2003	1:37:23 PM	-0.06	0.05	3.14	-0.04 Run 6 Span - Span
12/17/2003	1:37:52 PM	-0.06	0	3.04	-0.04 Run 6 Span - Span
12/17/2003	1:38:23 PM	0	0.05	2.45	-0.07 Run 6 Span - Span
12/17/2003	1:38:52 PM	11.35	0	0.69	-0.07 Run 6 Span - Span
12/17/2003	1:39:23 PM	13.37	0	0.09	-0.04 Run 6 Span - Span
12/17/2003	1:39:52 PM	13.55	0.05	0.19	-0.07 Run 6 Span - Span
12/17/2003	1:40:23 PM	13.55	0	0.21	-0.07 Run 6 Span - Span
12/17/2003	1:40:52 PM	13.55	0	0.09	-0.04 Run 6 Span - Span
12/17/2003	1:41:23 PM	13.61	4.05	0.58	2.2 Run 6 Span - Span
12/17/2003	1:41:52 PM	13.73	4.1	1.35	3.77 Run 6 Span - Span
12/17/2003	1:42:23 PM	13.73	4.1	1.36	3.85 Run 6 Span - Span
12/17/2003	1:42:52 PM	13.73	4.15	1.15	3.85 Run 6 Span - Span
12/17/2003	1:43:23 PM	13.8	4.1	1.02	3.85 Run 7 - 1
12/17/2003	1:43:53 PM	13.8	4.1	0.97	3.85 Run 7 - 1
12/17/2003	1:44:23 PM	13.8	4.15	1.04	3.85 Run 7 - 1

12/17/2003	1:44:52 PM	13.8	4.15	0.95	3.85 Run 7 - 1
12/17/2003	1:45:23 PM	13.8	4.15	0.94	3.88 Run 7 - 1
12/17/2003	1:45:52 PM	13.8	4.15	0.89	3.85 Run 7 - 1
12/17/2003	1:46:23 PM	13.8	4.15	0.9	3.92 Run 7 - 1
12/17/2003	1:46:52 PM	13.8	4.15	0.89	3.88 Run 7 - 1
12/17/2003	1:47:23 PM	13.86	4.15	0.94	3.92 Run 7 - 1
12/17/2003	1:47:53 PM	13.8	4.15	0.8	3.92 Run 7 - 1
12/17/2003	1:48:23 PM	13.86	4.15	0.81	3.88 Run 7 - 1
12/17/2003	1:48:52 PM	13.8	4.15	0.77	3.85 Run 7 - 1
12/17/2003	1:49:22 PM	13.86	4.15	0.89	3.85 Run 7 - 1
12/17/2003	1:49:53 PM	13.86	4.15	1.05	3.85 Run 7 - 1
12/17/2003	1:50:22 PM	13.8	4.15	0.89	3.88 Run 7 - 1
12/17/2003	1:50:53 PM	13.8	4.15	0.9	3.88 Run 7 - 1
12/17/2003	1:51:23 PM	13.86	4.15	0.91	3.88 Run 7 - 1
12/17/2003	1:51:52 PM	13.86	4.2	0.94	3.88 Run 7 - 1
12/17/2003	1:52:23 PM	13.8	4.15	0.98	3.88 Run 7 - 1
12/17/2003	1:52:52 PM	13.8	4.15	0.87	3.85 Run 7 - 1
12/17/2003	1:53:23 PM	13.8	4.15	0.89	3.88 Run 7 - 1
12/17/2003	1:53:52 PM	13.86	4.2	0.95	3.85 Run 7 - 1
12/17/2003	1:54:23 PM	13.8	4.15	0.87	3.85 Run 7 - 1
12/17/2003	1:54:52 PM	13.8	4.15	1.02	3.88 Run 7 - 1
12/17/2003	1:55:23 PM	13.8	4.15	1.06	3.88 Run 7 - 1
12/17/2003	1:55:52 PM	13.8	4.15	0.95	3.85 Run 7 - 1
12/17/2003	1:56:23 PM	13.8	4.2	0.94	3.88 Run 7 - 1
12/17/2003	1:56:52 PM	13.8	4.1	0.92	3.85 Run 7 - 1
12/17/2003	1:57:23 PM	13.86	4.15	1.05	3.81 Run 7 - 1
12/17/2003	1:57:52 PM	13.8	4.15	1.02	3.88 Run 7 - 1
12/17/2003	1:58:23 PM	13.86	4.15	0.93	3.81 Run 7 - 1
12/17/2003	1:58:52 PM	13.86	4.15	0.84	3.81 Run 7 - 1
12/17/2003	1:59:23 PM	13.8	4.15	0.95	3.81 Run 7 - 1
12/17/2003	1:59:52 PM	13.8	4.15	1.07	3.77 Run 7 - 1
12/17/2003	2:00:23 PM	13.8	4.15	0.95	3.74 Run 7 - 1
12/17/2003	2:00:52 PM	13.86	4.15	0.95	3.74 Run 7 - 1
12/17/2003	2:01:23 PM	13.86	4.15	0.9	3.77 Run 7 - 1
12/17/2003	2:01:53 PM	13.86	4.15	1.01	3.77 Run 7 - 1
12/17/2003	2:02:23 PM	13.86	4.15	1	3.77 Run 7 - 1
12/17/2003	2:02:52 PM	13.86	4.1	0.96	3.77 Run 7 - 1
12/17/2003	2:03:23 PM	13.86	4.15	1.09	3.74 Run 7 - 1
12/17/2003	2:03:53 PM	13.86	4.15	1.08	3.77 Run 7 - 1
12/17/2003	2:04:23 PM	13.86	4.15	1.01	3.81
12/17/2003	2:04:53 PM	13.86	0.1	1.01	0
12/17/2003	2:05:22 PM	3.3	0.05	0.43	-0.04 Run 7 Span - Zero
12/17/2003	2:05:53 PM	0.31	0	0.18	-0.07 Run 7 Span - Zero

12/17/2003	2:06:22 PM	0.12	0	0.1	-0.04	Run 7 Span - Zero
12/17/2003	2:06:53 PM	0.06	0	0.03	-0.04	Run 7 Span - Zero
12/17/2003	2:07:22 PM	0	0	0.07	-0.07	Run 7 Span - Zero
12/17/2003	2:07:53 PM	0.06	0	0.11	3.48	Run 7 Span - Zero
12/17/2003	2:08:22 PM	0	0	-0.05	4.43	Run 7 Span - Span
12/17/2003	2:08:53 PM	0	0	-0.2	4.4	Run 7 Span - Span
12/17/2003	2:09:22 PM	0	0	-0.24	4.36	Run 7 Span - Span
12/17/2003	2:09:53 PM	0.06	10.01	-0.2	0.29	Run 7 Span - Span
12/17/2003	2:10:22 PM	-0.06	10.06	-0.29	0.18	Run 7 Span - Span
12/17/2003	2:10:53 PM	-0.06	0.73	-0.18	0.04	Run 7 Span - Span
12/17/2003	2:11:22 PM	-0.06	0.05	1.57	-0.04	Run 7 Span - Zero
12/17/2003	2:11:53 PM	0	0.05	3.1	-0.07	Run 7 Span - Span
12/17/2003	2:12:22 PM	-0.06	0	3.22	-0.07	Run 7 Span - Span
12/17/2003	2:12:53 PM	-0.06	0	2.54	-0.04	Run 7 Span - Span
12/17/2003	2:13:22 PM	10.99	0.05	0.79	-0.04	Run 7 Span - Span
12/17/2003	2:13:53 PM	13.37	0.05	0.07	-0.07	Run 7 Span - Span
12/17/2003	2:14:22 PM	13.61	0.05	0	-0.07	Run 7 Span - Span
12/17/2003	2:14:53 PM	13.61	0	-0.04	-0.04	Run 7 Span - Span
12/17/2003	2:15:22 PM	13.61	4.1	0.29	3.77	Run 7 Span - Span
12/17/2003	2:15:54 PM	13.73	4.1	0.98	3.85	Run 7 Span - Span
12/17/2003	2:16:23 PM	13.8	4.15	1	3.88	Run 8 - 1
12/17/2003	2:16:52 PM	13.73	4.15	1.01	3.85	Run 8 - 1
12/17/2003	2:17:23 PM	13.73	4.1	0.95	3.88	Run 8 - 1
12/17/2003	2:17:52 PM	13.8	4.15	0.94	3.85	Run 8 - 1
12/17/2003	2:18:23 PM	13.8	4.15	0.85	3.88	Run 8 - 1
12/17/2003	2:18:52 PM	13.86	4.15	0.96	3.92	Run 8 - 1
12/17/2003	2:19:23 PM	13.86	4.15	0.94	3.85	Run 8 - 1
12/17/2003	2:19:52 PM	13.8	4.15	0.88	3.81	Run 8 - 1
12/17/2003	2:20:23 PM	13.73	4.15	0.89	3.85	Run 8 - 1
12/17/2003	2:20:52 PM	13.8	4.1	0.87	3.88	Run 8 - 1
12/17/2003	2:21:23 PM	13.8	4.15	0.94	3.92	Run 8 - 1
12/17/2003	2:21:52 PM	13.8	4.15	0.95	3.92	Run 8 - 1
12/17/2003	2:22:23 PM	13.8	4.15	1	3.88	Run 8 - 1
12/17/2003	2:22:53 PM	13.8	4.15	1.03	3.88	Run 8 - 1
12/17/2003	2:23:22 PM	13.8	4.15	0.92	3.88	Run 8 - 1
12/17/2003	2:23:53 PM	13.8	4.15	1.05	3.88	Run 8 - 1
12/17/2003	2:24:22 PM	13.8	4.15	0.96	3.88	Run 8 - 1
12/17/2003	2:24:53 PM	13.8	4.15	0.93	3.88	Run 8 - 1
12/17/2003	2:25:22 PM	13.8	4.15	0.95	3.88	Run 8 - 1
12/17/2003	2:25:52 PM	13.8	4.15	1.04	3.81	Run 8 - 1
12/17/2003	2:26:23 PM	13.86	4.15	1.02	3.85	Run 8 - 1
12/17/2003	2:26:53 PM	13.8	4.1	0.97	3.81	Run 8 - 1
12/17/2003	2:27:22 PM	13.86	4.2	0.94	3.88	Run 8 - 1

12/17/2003	2:27:53 PM	13.8	4.1	0.96	3.85 Run 8 - 1
12/17/2003	2:28:22 PM	13.86	4.1	0.89	3.85 Run 8 - 1
12/17/2003	2:28:53 PM	13.86	4.1	0.95	3.81 Run 8 - 1
12/17/2003	2:29:22 PM	13.86	4.2	0.98	3.88 Run 8 - 1
12/17/2003	2:29:53 PM	13.86	4.15	0.94	3.81 Run 8 - 1
12/17/2003	2:30:22 PM	13.86	4.15	0.86	3.85 Run 8 - 1
12/17/2003	2:30:53 PM	13.86	4.1	0.8	3.81 Run 8 - 1
12/17/2003	2:31:22 PM	13.86	4.15	0.97	3.85 Run 8 - 1
12/17/2003	2:31:53 PM	13.86	4.1	0.98	3.88 Run 8 - 1
12/17/2003	2:32:22 PM	13.8	4.15	0.88	3.85 Run 8 - 1
12/17/2003	2:32:53 PM	13.8	4.15	0.92	3.88 Run 8 - 1
12/17/2003	2:33:22 PM	13.8	4.15	0.96	3.85 Run 8 - 1
12/17/2003	2:33:53 PM	13.86	4.1	0.95	3.81 Run 8 - 1
12/17/2003	2:34:22 PM	13.8	4.15	0.93	3.81 Run 8 - 1
12/17/2003	2:34:53 PM	13.86	4.15	0.92	3.85 Run 8 - 1
12/17/2003	2:35:22 PM	13.86	4.15	0.96	3.88 Run 8 - 1
12/17/2003	2:35:53 PM	13.8	4.15	1	3.92 Run 8 - 1
12/17/2003	2:36:22 PM	13.86	4.15	0.97	3.88 Run 8 - 1
12/17/2003	2:36:53 PM	13.86	4.15	0.89	3.85 Run 8 - 1
12/17/2003	2:37:22 PM	13.8	2.59	0.97	3.81
12/17/2003	2:37:53 PM	13.73	3.03	0.95	3.81
12/17/2003	2:38:22 PM	10.07	0.05	0.68	0 Run 8 Span - Zero
12/17/2003	2:38:53 PM	0.92	0.05	0.32	-0.07 Run 8 Span - Zero
12/17/2003	2:39:22 PM	0.12	0	0.12	0.07 Run 8 Span - Zero
12/17/2003	2:39:53 PM	0.06	0	0.18	-0.07 Run 8 Span - Zero
12/17/2003	2:40:22 PM	0.06	0	0	-0.04 Run 8 Span - Zero
12/17/2003	2:40:53 PM	0	0	-0.02	0.26 Run 8 Span - Zero
12/17/2003	2:41:22 PM	0.06	0.05	-0.19	4.36 Run 8 Span - Zero
12/17/2003	2:41:53 PM	0.06	0	-0.25	4.4 Run 8 Span - Span
12/17/2003	2:42:23 PM	0	0	-0.21	4.4 Run 8 Span - Span
12/17/2003	2:42:53 PM	0.06	9.67	-0.04	0.77 Run 8 Span - Span
12/17/2003	2:43:23 PM	0	10.01	-0.12	0.18 Run 8 Span - Span
12/17/2003	2:43:52 PM	-0.06	10.06	-0.22	0.18 Run 8 Span - Span
12/17/2003	2:44:23 PM	-0.06	0.15	0.21	-0.04 Run 8 Span - Span
12/17/2003	2:44:52 PM	0	0.1	2.36	-0.04 Run 8 Span - Span
12/17/2003	2:45:23 PM	-0.06	0.05	3.24	-0.04 Run 8 Span - Span
12/17/2003	2:45:52 PM	0	0	3.13	-0.04 Run 8 Span - Span
12/17/2003	2:46:23 PM	4.46	0	1.82	-0.07 Run 8 Span - Span
12/17/2003	2:46:52 PM	12.7	0.05	0.31	-0.07 Run 8 Span - Span
12/17/2003	2:47:23 PM	13.49	0	0.01	-0.04 Run 8 Span - Span
12/17/2003	2:47:53 PM	13.61	0.05	0.08	-0.04 Run 8 Span - Span
12/17/2003	2:48:22 PM	13.61	4.1	0.44	3.7 Run 8 Span - Span
12/17/2003	2:48:54 PM	13.73	4.15	0.99	3.88 Run 8 Span - Span

12/17/2003	2:49:23 PM	13.73	4.15	1.13	3.85 Run 9 - 1
12/17/2003	2:49:52 PM	13.8	4.15	1.12	3.92 Run 9 - 1
12/17/2003	2:50:23 PM	13.73	4.1	0.97	3.88 Run 9 - 1
12/17/2003	2:50:52 PM	13.8	4.15	1.07	3.92 Run 9 - 1
12/17/2003	2:51:23 PM	13.8	4.15	0.94	3.92 Run 9 - 1
12/17/2003	2:51:52 PM	13.8	4.15	0.98	3.96 Run 9 - 1
12/17/2003	2:52:23 PM	13.8	4.15	1.05	3.99 Run 9 - 1
12/17/2003	2:52:52 PM	13.8	4.15	0.97	3.96 Run 9 - 1
12/17/2003	2:53:23 PM	13.8	4.15	0.99	3.96 Run 9 - 1
12/17/2003	2:53:52 PM	13.8	4.15	1.04	3.96 Run 9 - 1
12/17/2003	2:54:23 PM	13.8	4.15	1.01	3.88 Run 9 - 1
12/17/2003	2:54:52 PM	13.8	4.15	1.01	3.96 Run 9 - 1
12/17/2003	2:55:23 PM	13.8	4.15	0.83	3.88 Run 9 - 1
12/17/2003	2:55:53 PM	13.8	4.15	0.94	3.92 Run 9 - 1
12/17/2003	2:56:23 PM	13.8	4.15	0.97	3.88 Run 9 - 1
12/17/2003	2:56:52 PM	13.86	4.15	0.99	3.88 Run 9 - 1
12/17/2003	2:57:23 PM	13.86	4.15	1.02	3.85 Run 9 - 1
12/17/2003	2:57:52 PM	13.86	4.15	0.96	3.96 Run 9 - 1
12/17/2003	2:58:23 PM	13.86	4.2	0.89	3.92 Run 9 - 1
12/17/2003	2:58:52 PM	13.86	4.15	0.84	3.92 Run 9 - 1
12/17/2003	2:59:23 PM	13.86	4.15	0.94	3.88 Run 9 - 1
12/17/2003	2:59:52 PM	13.86	4.15	0.9	3.92 Run 9 - 1
12/17/2003	3:00:23 PM	13.86	4.15	0.92	3.92 Run 9 - 1
12/17/2003	3:00:52 PM	13.8	4.1	0.93	3.99 Run 9 - 1
12/17/2003	3:01:24 PM	13.8	4.1	0.85	3.99 Run 9 - 1
12/17/2003	3:01:52 PM	13.8	4.15	0.89	3.96 Run 9 - 1
12/17/2003	3:02:23 PM	13.8	4.15	0.88	3.96 Run 9 - 1
12/17/2003	3:02:52 PM	13.8	4.15	0.87	3.96 Run 9 - 1
12/17/2003	3:03:23 PM	13.8	4.15	0.97	3.96 Run 9 - 1
12/17/2003	3:03:52 PM	13.86	4.15	0.95	3.92 Run 9 - 1
12/17/2003	3:04:23 PM	13.8	4.15	1.01	3.92 Run 9 - 1
12/17/2003	3:04:53 PM	13.86	4.15	0.86	3.88 Run 9 - 1
12/17/2003	3:05:23 PM	13.8	4.15	0.86	3.85 Run 9 - 1
12/17/2003	3:05:52 PM	13.86	4.15	0.97	3.85 Run 9 - 1
12/17/2003	3:06:23 PM	13.8	4.15	0.96	3.92 Run 9 - 1
12/17/2003	3:06:52 PM	13.86	4.2	0.93	3.92 Run 9 - 1
12/17/2003	3:07:23 PM	13.8	4.15	0.91	3.85 Run 9 - 1
12/17/2003	3:07:53 PM	13.8	4.15	0.99	3.85 Run 9 - 1
12/17/2003	3:08:22 PM	13.8	4.15	0.96	3.85 Run 9 - 1
12/17/2003	3:08:53 PM	13.86	4.15	0.81	3.88 Run 9 - 1
12/17/2003	3:09:22 PM	13.8	4.15	0.89	3.88 Run 9 - 1
12/17/2003	3:09:53 PM	13.86	4.15	0.91	3.85 Run 9 - 1
12/17/2003	3:10:22 PM	13.86	4.15	0.94	3.88



12/17/2003	3:10:53 PM	13.86	3.71	0.86	3.88
12/17/2003	3:11:22 PM	12.94	0.05	0.7	-0.04 Run 9 Span - Zero
12/17/2003	3:11:53 PM	1.53	0	0.5	-0.07 Run 9 Span - Zero
12/17/2003	3:12:22 PM	0.24	0.05	0.15	-0.07 Run 9 Span - Zero
12/17/2003	3:12:53 PM	0.12	0.05	0	-0.07 Run 9 Span - Zero
12/17/2003	3:13:22 PM	0.06	0	-0.12	-0.11 Run 9 Span - Zero
12/17/2003	3:13:53 PM	0.06	0	-0.09	3.63 Run 9 Span - Zero
12/17/2003	3:14:22 PM	0.06	0.05	-0.25	4.36 Run 9 Span - Zero
12/17/2003	3:14:53 PM	0.06	0	-0.17	4.36 Run 9 Span - Zero
12/17/2003	3:15:22 PM	0	0	-0.24	4.4 Run 9 Span - Span
12/17/2003	3:15:53 PM	0	0	-0.29	4.4 Run 9 Span - Span
12/17/2003	3:16:22 PM	0	0	-0.38	4.36 Run 9 Span - Span
12/17/2003	3:16:53 PM	0	5.18	-0.23	4.36 Run 9 Span - Span
12/17/2003	3:17:23 PM	0	10.01	-0.2	0.18 Run 9 Span - Span
12/17/2003	3:17:52 PM	0	10.06	-0.23	0.15 Run 9 Span - Span
12/17/2003	3:18:23 PM	-0.06	0.44	-0.06	0.07 Run 9 Span - Zero
12/17/2003	3:18:52 PM	0	0.1	1.64	-0.07 Run 9 Span - Zero
12/17/2003	3:19:23 PM	-0.06	0.05	3.01	-0.07 Run 9 Span - Zero
12/17/2003	3:19:52 PM	0	0.05	3.06	-0.11 Run 9 Span - Span
12/17/2003	3:20:23 PM	-0.06	0.05	3.07	-0.07 Run 9 Span - Span
12/17/2003	3:20:52 PM	5.01	0.05	1.82	-0.07 Run 9 Span - Span
12/17/2003	3:21:23 PM	12.82	0.05	0.38	-0.07 Run 9 Span - Span
12/17/2003	3:21:52 PM	13.49	0	0.2	-0.11 Run 9 Span - Span
12/17/2003	3:22:23 PM	13.55	0	0.1	-0.11 Run 9 Span - Span
12/17/2003	3:22:52 PM	13.61	0	0.11	-0.07 Run 9 Span - Span
12/17/2003	3:23:23 PM	13.61	4.1	0.83	3.74 Run 9 Span - Span
12/17/2003	3:23:52 PM	13.73	4.1	1.19	3.81 Run 9 Span - Span
12/17/2003	3:24:23 PM	13.8	4.15	1.05	3.81 Run 9 Span - Span
12/17/2003	3:24:52 PM	13.8	4.15	0.96	3.85 Run 9 Span - Span
12/17/2003	3:25:23 PM	13.8	4.2	0.91	3.81 Run 9 Span - Span
12/17/2003	3:25:53 PM	13.8	4.15	0.9	3.81 Run 9 Span - Span
12/17/2003	3:26:23 PM	13.8	4.15	1.05	3.81 Run 9 Span - Span
12/17/2003	3:26:52 PM	13.8	4.15	1	3.85 Run 9 Span - Span
12/17/2003	3:27:23 PM	13.8	4.15	0.92	3.85 Run 9 Span - Span
12/17/2003	3:27:52 PM	13.8	4.15	0.93	3.88 Run 9 Span - Span
12/17/2003	3:28:22 PM	13.8	4.15	0.96	3.85 Run 9 Span - Span

RATA CEM DATA

run 1

Record#	DATE	TIME	GEN41	GAS42	NOX43	NOXD44	NOXRT45	CO246	COL47	COLD48
1	12/17/2003	93300	172	26.145	3.66	3	0.011	4.09	1	0.8
2	12/17/2003	93400	171.9	26.124	3.68	3	0.011	4.09	0.9	0.8
3	12/17/2003	93500	171.8	26.155	3.68	3	0.011	4.09	1	0.8
4	12/17/2003	93600	172	26.182	3.67	3	0.011	4.09	0.9	0.8
5	12/17/2003	93700	171.9	26.209	3.69	3	0.011	4.09	1	0.8
6	12/17/2003	93800	171.7	26.199	3.68	3	0.011	4.09	1	0.8
7	12/17/2003	93900	172	26.182	3.69	3	0.011	4.09	0.9	0.8
8	12/17/2003	94000	172.1	26.184	3.67	3	0.011	4.09	0.9	0.7
9	12/17/2003	94100	171.9	26.184	3.7	3	0.011	4.09	0.9	0.8
10	12/17/2003	94200	171.7	26.182	3.69	3	0.011	4.09	0.9	0.8
11	12/17/2003	94300	171.9	26.184	3.69	3	0.011	4.09	1	0.8
12	12/17/2003	94400	171.8	26.18	3.67	3	0.011	4.09	1	0.8
13	12/17/2003	94500	171.8	26.18	3.68	3	0.011	4.09	1	0.8
14	12/17/2003	94600	171.8	26.213	3.7	3	0.011	4.09	1	0.8
15	12/17/2003	94700	172.1	26.202	3.7	3	0.011	4.09	1	0.8
16	12/17/2003	94800	171.9	26.18	3.68	3	0.011	4.09	0.9	0.8
17	12/17/2003	94900	172.1	26.18	3.66	3	0.011	4.09	1	0.8
18	12/17/2003	95000	172	26.184	3.67	3	0.011	4.09	0.9	0.8
19	12/17/2003	95100	172	26.184	3.69	3	0.011	4.09	0.9	0.8
20	12/17/2003	95200	172.1	26.186	3.69	3	0.011	4.09	1	0.8
21	12/17/2003	95300	171.9	26.182	3.68	3	0.011	4.09	0.9	0.8
22	12/17/2003	95400	172.1	26.188	3.7	3.1	0.011	4.09	1	0.7
23	12/17/2003	95500	172.3	26.184	3.68	3	0.011	4.08	1	0.8
24	12/17/2003	95600	172.3	26.213	3.7	3.1	0.011	4.08	1	0.8
25	12/17/2003	95700	172.2	26.231	3.69	3	0.011	4.08	1	0.8
26	12/17/2003	95800	172.3	26.238	3.68	3	0.011	4.08	0.9	0.8
27	12/17/2003	95900	172.2	26.2	3.66	3	0.011	4.08	1	0.8
28	12/17/2003	100000	172.3	26.213	3.68	3	0.011	4.08	0.9	0.7
29	12/17/2003	100100	172.4	26.235	3.67	3	0.011	4.08	1	0.8
30	12/17/2003	100200	172.1	26.233	3.68	3	0.011	4.08	0.9	0.7
31	12/17/2003	100300	172.2	26.207	3.67	3	0.011	4.08	0.9	0.8
32	12/17/2003	100400	172.3	26.215	3.71	3.1	0.011	4.08	0.9	0.7
33	12/17/2003	100500	172.2	26.231	3.67	3	0.011	4.08	1	0.8
34	12/17/2003	100600	172	26.205	3.71	3.1	0.011	4.08	0.9	0.7
35	12/17/2003	100700	172.1	26.182	3.7	3.1	0.011	4.08	1	0.8
36	12/17/2003	100800	172.1	26.186	3.71	3.1	0.011	4.08	0.9	0.8
37	12/17/2003	100900	172.1	26.182	3.7	3	0.011	4.08	0.9	0.7
38	12/17/2003	101000	172.1	26.186	3.67	3	0.011	4.08	1	0.8
39	12/17/2003	101100	172.1	26.19	3.67	3	0.011	4.08	0.9	0.8
40	12/17/2003	101200	172.3	26.182	3.68	3	0.011	4.08	1	0.8
41	12/17/2003	101300	172.2	26.18	3.68	3	0.011	4.08	0.9	0.7
42	12/17/2003	101400	172.3	26.215	3.64	3	0.011	4.08	1	0.8
43	12/17/2003	101500	172	26.205	3.63	3	0.011	4.08	0.9	0.8
44	12/17/2003	101600	172.1	26.186	3.64	3	0.011	4.07	0.9	0.7
45	12/17/2003	101700	172.3	26.182	3.63	3	0.011	4.08	1	0.8
46	12/17/2003	101800	172.3	26.188	3.64	3	0.011	4.08	1	0.8
47	12/17/2003	101900	172.3	26.215	3.65	3	0.011	4.08	1	0.8
48	/ /									
49	/ /	AVE	172.077	26.193	3.678	3.013	0.011	4.084	0.953	0.781

□  
□

run 2

Record#	DATE	TIME	GEN41	GAS42	NOX43	NOXD44	NOXRT45	CO246	COL47	COLD48
1	12/17/2003	104700	172.8	26.269	3.66	3	0.011	4.08	1	0.8
2	12/17/2003	104800	172.8	26.297	3.66	3	0.011	4.08	1	0.8
3	12/17/2003	104900	172.7	26.293	3.66	3	0.011	4.08	1	0.8
4	12/17/2003	105000	173.1	26.295	3.69	3	0.011	4.08	1	0.8
5	12/17/2003	105100	172.8	26.293	3.69	3.1	0.011	4.08	1	0.8
6	12/17/2003	105200	173	26.291	3.7	3.1	0.011	4.08	0.9	0.8
7	12/17/2003	105300	172.8	26.258	3.67	3	0.011	4.08	0.9	0.7
8	12/17/2003	105400	172.8	26.27	3.67	3	0.011	4.08	1	0.8
9	12/17/2003	105500	173	26.256	3.67	3	0.011	4.08	0.9	0.7
10	12/17/2003	105600	172.8	26.233	3.69	3.1	0.011	4.08	1	0.8
11	12/17/2003	105700	172.9	26.264	3.65	3	0.011	4.08	1	0.8
12	12/17/2003	105800	172.9	26.295	3.65	3	0.011	4.08	0.9	0.8
13	12/17/2003	105900	172.9	26.295	3.63	3	0.011	4.07	1	0.8
14	12/17/2003	110000	172.8	26.297	3.63	3	0.011	4.08	1	0.8
15	12/17/2003	110100	172.8	26.26	3.66	3	0.011	4.08	0.9	0.7
16	12/17/2003	110200	172.8	26.231	3.68	3	0.011	4.08	1	0.8
17	12/17/2003	110300	172.9	26.229	3.68	3	0.011	4.08	0.9	0.7
18	12/17/2003	110400	172.9	26.266	3.66	3	0.011	4.08	1	0.8
19	12/17/2003	110500	172.9	26.293	3.64	3	0.011	4.08	0.9	0.8
20	12/17/2003	110600	173	26.293	3.63	3	0.011	4.08	0.9	0.7
21	12/17/2003	110700	172.9	26.25	3.66	3	0.011	4.08	1	0.8
22	12/17/2003	110800	173.1	26.268	3.67	3	0.011	4.08	0.9	0.7
23	/ /									
24	/ /	AVE	172.882	26.273	3.664	3.014	0.011	4.08	0.959	0.773

□  
□

run 3

Record#	DATE	TIME	GEN41	GAS42	NOX43	NOXD44	NOXRT45	CO246	COL47	COLD48
1	12/17/2003	112300	172.8	26.254	3.69	3	0.011	4.07	0.9	0.8
2	12/17/2003	112400	172.9	26.264	3.66	3	0.011	4.07	1	0.8
3	12/17/2003	112500	172.9	26.295	3.66	3	0.011	4.07	0.9	0.7
4	12/17/2003	112600	173	26.295	3.64	3	0.011	4.07	1	0.8
5	12/17/2003	112700	173.1	26.262	3.64	3	0.011	4.07	0.9	0.8
6	12/17/2003	112800	172.9	26.236	3.63	3	0.011	4.07	0.9	0.7
7	12/17/2003	112900	172.9	26.27	3.65	3	0.011	4.07	1	0.8
8	12/17/2003	113000	173	26.297	3.66	3	0.011	4.07	1	0.8
9	12/17/2003	113100	172.8	26.295	3.64	3	0.011	4.07	1	0.8
10	12/17/2003	113200	172.8	26.291	3.66	3	0.011	4.07	1	0.8
11	12/17/2003	113300	172.9	26.293	3.67	3	0.011	4.07	1	0.8
12	12/17/2003	113400	172.8	26.295	3.66	3	0.011	4.07	0.9	0.7
13	12/17/2003	113500	172.6	26.291	3.64	3	0.011	4.07	0.9	0.7
14	12/17/2003	113600	172.7	26.291	3.67	3	0.011	4.07	0.9	0.7
15	12/17/2003	113700	172.6	26.295	3.7	3	0.011	4.08	1	0.8
16	12/17/2003	113800	172.3	26.254	3.68	3	0.011	4.07	0.9	0.8
17	12/17/2003	113900	172.6	26.231	3.7	3.1	0.011	4.08	0.9	0.8
18	12/17/2003	114000	172.4	26.227	3.67	3	0.011	4.07	1	0.8
19	12/17/2003	114100	172.5	26.233	3.7	3.1	0.011	4.07	1	0.8
20	12/17/2003	114200	172.3	26.231	3.67	3	0.011	4.07	1	0.8
21	12/17/2003	114300	172.6	26.229	3.68	3	0.011	4.08	0.9	0.8
22	12/17/2003	114400	173	26.272	3.67	3	0.011	4.07	1	0.8
24 / /		AVE	172.745	26.268	3.665	3.009	0.011	4.071	0.955	0.777

□  
□

run 4

Record#	DATE	TIME	GEN41	GAS42	NOX43	NOXD44	NOXRT45	CO246	COL47	COLD48
1	12/17/2003	115600	172.7	26.233	3.66	3	0.011	4.08	1	0.8
2	12/17/2003	115700	172.4	26.235	3.67	3	0.011	4.07	1	0.8
3	12/17/2003	115800	172.6	26.227	3.67	3	0.011	4.08	1	0.8
4	12/17/2003	115900	172.5	26.231	3.68	3	0.011	4.08	1	0.8
5	12/17/2003	120000	172.6	26.233	3.66	3	0.011	4.08	1	0.8
6	12/17/2003	120100	172.6	26.238	3.68	3	0.011	4.08	1	0.8
7	12/17/2003	120200	172.5	26.227	3.67	3	0.011	4.08	0.9	0.8
8	12/17/2003	120300	172.6	26.201	3.65	3	0.011	4.08	0.9	0.7
9	12/17/2003	120400	172.3	26.213	3.65	3	0.011	4.07	1	0.8
10	12/17/2003	120500	172.4	26.205	3.67	3	0.011	4.07	1	0.8
11	12/17/2003	120600	172.1	26.182	3.65	3	0.011	4.08	1	0.8
12	12/17/2003	120700	172.2	26.213	3.66	3	0.011	4.07	1	0.8
13	12/17/2003	120800	172.4	26.231	3.68	3	0.011	4.07	1	0.8
14	12/17/2003	120900	172.4	26.237	3.68	3	0.011	4.07	1	0.8
15	12/17/2003	121000	172.4	26.229	3.68	3	0.011	4.07	1	0.8
16	12/17/2003	121100	172.1	26.207	3.66	3	0.011	4.07	1	0.8
17	12/17/2003	121200	172	26.186	3.68	3	0.011	4.08	0.9	0.7
18	12/17/2003	121300	172.4	26.211	3.67	3	0.011	4.07	1	0.8
19	12/17/2003	121400	172.2	26.205	3.67	3	0.011	4.07	1	0.8
20	12/17/2003	121500	172	26.188	3.65	3	0.011	4.07	1	0.8
21	12/17/2003	121600	172.1	26.182	3.66	3	0.011	4.08	1	0.8
22	12/17/2003	121700	172.2	26.211	3.66	3	0.011	4.07	0.9	0.7

23 / /

24 / /      AVE      172.35 26.215 3.666      3      0.011 4.075 0.982 0.786

□  
□

run 8

Record#	DATE	TIME	GEN41	GAS42	NOX43	NOXD44	NOXRT45	CO246	COL47	COLD48
1	12/17/2003	141600	172.9	26.246	3.72	3	0.011	4.14	0.8	0.7
2	12/17/2003	141700	172.9	26.258	3.72	3	0.011	4.14	0.8	0.7
3	12/17/2003	141800	172.9	26.285	3.73	3	0.011	4.14	0.8	0.7
4	12/17/2003	141900	172.9	26.283	3.71	3	0.011	4.14	0.8	0.7
5	12/17/2003	142000	172.9	26.281	3.72	3	0.011	4.14	0.8	0.7
6	12/17/2003	142100	172.9	26.281	3.7	3	0.011	4.14	0.8	0.7
7	12/17/2003	142200	172.8	26.287	3.7	3	0.011	4.14	0.8	0.7
8	12/17/2003	142300	173.1	26.283	3.73	3	0.011	4.14	0.8	0.6
9	12/17/2003	142400	173.1	26.312	3.71	3	0.011	4.14	0.8	0.7
10	12/17/2003	142500	173.1	26.306	3.71	3	0.011	4.14	0.8	0.7
11	12/17/2003	142600	173.3	26.283	3.71	3	0.011	4.14	0.8	0.7
12	12/17/2003	142700	173.5	26.287	3.68	3	0.011	4.14	0.8	0.7
13	12/17/2003	142800	173.3	26.246	3.66	3	0.011	4.14	0.8	0.7
14	12/17/2003	142900	173.2	26.283	3.68	3	0.011	4.14	0.8	0.7
15	12/17/2003	143000	173.1	26.304	3.66	3	0.011	4.14	0.8	0.7
16	12/17/2003	143100	173	26.287	3.68	3	0.011	4.14	0.8	0.7
17	12/17/2003	143200	173.4	26.314	3.69	3	0.011	4.14	0.8	0.7
18	12/17/2003	143300	173.1	26.304	3.7	3	0.011	4.14	0.8	0.6
19	12/17/2003	143400	173.3	26.306	3.71	3	0.011	4.14	0.8	0.6
20	12/17/2003	143500	173.5	26.326	3.65	3	0.011	4.14	0.8	0.7
21	12/17/2003	143600	173.4	26.337	3.66	3	0.011	4.14	0.8	0.7
22	12/17/2003	143700	173.3	26.332	3.68	3	0.011	4.14	0.8	0.7
23	/ /									
24	/ /	AVE	173.132	26.292	3.696	3	0.011	4.14	0.8	0.686

□  
□



run 9

Record#	DATE	TIME	GEN41	GAS42	NOX43	NOXD44	NOXRT45	CO246	COL47	COLD48
1	12/17/2003	144900	173.4	26.332	3.7	3	0.011	4.15	0.8	0.6
2	12/17/2003	145000	173.3	26.295	3.7	3	0.011	4.15	0.8	0.6
3	12/17/2003	145100	173.4	26.287	3.69	3	0.011	4.14	0.8	0.6
4	12/17/2003	145200	173.5	26.281	3.7	3	0.011	4.15	0.8	0.6
5	12/17/2003	145300	173.3	26.312	3.72	3	0.011	4.15	0.8	0.6
6	12/17/2003	145400	173.1	26.301	3.75	3	0.011	4.15	0.8	0.6
7	12/17/2003	145500	173.1	26.31	3.74	3	0.011	4.15	0.8	0.6
8	12/17/2003	145600	173.2	26.302	3.75	3	0.011	4.15	0.8	0.6
9	12/17/2003	145700	173.6	26.305	3.74	3	0.011	4.15	0.8	0.6
10	12/17/2003	145800	173.4	26.326	3.73	3	0.011	4.15	0.8	0.6
11	12/17/2003	145900	173.6	26.332	3.73	3	0.011	4.15	0.8	0.6
12	12/17/2003	150000	173.8	26.328	3.74	3	0.011	4.15	0.8	0.6
13	12/17/2003	150100	173.3	26.328	3.73	3	0.011	4.15	0.8	0.6
14	12/17/2003	150200	173.6	26.337	3.76	3	0.011	4.15	0.8	0.6
15	12/17/2003	150300	173.7	26.33	3.77	3.1	0.011	4.15	0.8	0.6
16	12/17/2003	150400	173.8	26.332	3.78	3.1	0.011	4.14	0.8	0.6
17	12/17/2003	150500	173.5	26.326	3.73	3	0.011	4.14	0.8	0.7
18	12/17/2003	150600	173.7	26.363	3.67	3	0.011	4.14	0.8	0.7
19	12/17/2003	150700	173.6	26.355	3.66	3	0.011	4.14	0.8	0.7
20	12/17/2003	150800	173.6	26.369	3.68	3	0.011	4.14	0.8	0.7
21	12/17/2003	150900	173.7	26.398	3.66	3	0.011	4.14	0.8	0.7
22	12/17/2003	151000	173.6	26.396	3.69	3	0.011	4.14	0.8	0.7
23	/ /									
24	/ /	AVE	173.491	26.329	3.719	3.009	0.011	4.146	0.8	0.627

RATA REFERENCE METHOD CYLINDER GAS CERTIFICATES

RATA CLASS **BLOOY**



# Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

## CERTIFICATE OF ACCURACY: EPA Protocol Gas

### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-95261-004

### Customer

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

### ANALYTICAL INFORMATION

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

Cylinder Number: ALM040665 Certification Date: 22Aug2003 Exp. Date: 21Aug2006  
Cylinder Pressure\*\*\*: 1950 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	18.0 %	+/- 1%	Direct NIST and NMI
OXYGEN	6.24 %	+/- 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.

### REFERENCE STANDARD

PE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1675	01Jun2004	K001509	13.93 %	CARBON DIOXIDE
NTRM 2659	01Jun2004	K012946	20.85 %	OXYGEN

### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
MTI/M200/170927	18Aug2003	GC-TCD
BECKMAN/755/2002571	30Jul2003	PARAMAGNETIC

### ANALYZER READINGS

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

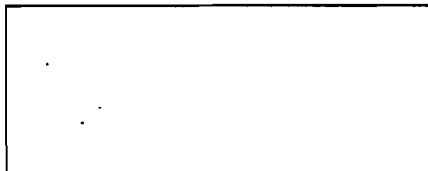
First Triad Analysis

Second Triad Analysis

Calibration Curve

#### CARBON DIOXIDE

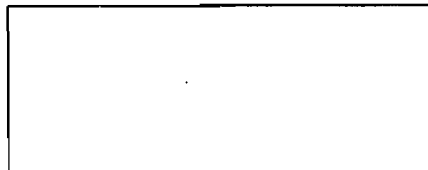
Date: 22Aug2003	Response Unit: VOLTS
Z1 = 0.00000	R1 = 635416.0
R2 = 635972.0	Z2 = 0.00000
Z3 = 0.00000	T3 = 822295.0
	R3 = 636024.0
Avg. Concentration:	18.00 %



Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = .999997	1675
Constants:	A = 7.7433E-03
B = 2.1753E-05	C =
D =	E =

#### OXYGEN

Date: 30Jul2003	Response Unit: VOLTS
Z1 = 0.00100	R1 = 0.84400
R2 = 0.84320	Z2 = 0.00140
Z3 = 0.00000	T3 = 0.25110
	R3 = 0.84310
Avg. Concentration:	6.240 %



Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = .999998	2659
Constants:	A = -1.4608E-02
B = -2.1461E+00	C = 2.6702E+01
D =	E =

APPROVED BY:

*Bradley C. Millman*  
BRADLEY C. MILLMAN

RATA CLASS



Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7228

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-01676-001

Customer

TAMPA ELECTRIC COMPANY  
CHARLES DUFENY  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

ANALYTICAL INFORMATION

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

Cylinder Number: ALM040741 Certification Date: 15Dec2003 Exp. Date: 14Dec2006  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	11.0 %	+/- 1%	Direct NIST and NMI
OXYGEN	12.6 %	+/- 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.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1675	01Jun2004	K001509	13.93 %	CARBON DIOXIDE
NTRM 2658	02Oct2006	ALM065189	9.930 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
MTI/M200/170927	12Dec2003	GC-TCD
MTI/M200/170927	12Dec2003	GC-TCD

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: 12Dec2003	Response Unit: VOLTS	
Z1 = 0.00000	R1 = 636210.0	T1 = 503192.0
R2 = 636484.0	Z2 = 0.00000	T2 = 503158.0
Z3 = 0.00000	T3 = 503152.0	R3 = 636384.0
Avg. Concentration:	11.00	%



Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999998	1675
Constants:	A = 2.1891E-05
B = 9.5568E-03	C =
D =	E =

OXYGEN

Date: 12Dec2003	Response Unit: VOLTS	
Z1 = 0.00000	R1 = 323325.0	T1 = 408839.0
R2 = 323240.0	Z2 = 0.00000	T2 = 409029.0
Z3 = 0.00000	T3 = 408900.0	R3 = 323094.0
Avg. Concentration:	12.60	%



Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999997	2658
Constants:	A = -1.5960E-02
B = 3.0872E-05	C =
D =	E =

APPROVED BY:

*Bradley C. Millman*  
BRADLEY C. MILLMAN



# Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

RATA CLASS

R0512

Dual-Analyzed Calibration Standard

## CERTIFICATE OF ACCURACY: EPA Protocol Gas

### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-95261-012

### Customer

TAMPA ELECTRIC COMPANY  
Charles Duferoy  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

### ANALYTICAL INFORMATION

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

Cylinder Number: AAL6916 Certification Date: 26Aug2003 Exp. Date: 25Aug2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	12.5 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	12.6 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

### REFERENCE STANDARD

YPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
HORIBA/CLA220/5708850810	21Aug2003	CHEMILUMINESCENCE

### ANALYZER READINGS

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

#### NITRIC OXIDE

Date: 19Aug2003	Response Unit: VOLTS		
Z1 = 0.00710	R1 = 3.92820	T1 = 2.72460	
R2 = 3.93490	Z2 = 0.00720	T2 = 2.72850	
Z3 = 0.00440	T3 = 2.72410	R3 = 3.92940	
Avg. Concentration:	12.50	PPM	

Date: 26Aug2003	Response Unit: VOLTS		
Z1 = 0.00490	R1 = 3.79000	T1 = 2.62890	
R2 = 3.78830	Z2 = 0.00560	T2 = 2.62770	
Z3 = 0.00460	T3 = 2.62620	R3 = 3.79020	
Avg. Concentration:	12.51	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999998	2629
Constants:	A = -0.016438
B = 4.632947	C =
D =	E =

APPROVED BY:

KIMBERLY NILES



# Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

## RATA CLASS **RDSII**

### Dual-Analyzed Calibration Standard

Phone: 800-331-4953

Fax: 215-766-7226

## CERTIFICATE OF ACCURACY: EPA Protocol Gas

### Assay Laboratory

P.O. No.: E-N06925  
SCOTT SPECIALTY GASES Project No.: 01-95261-009  
6141 EASTON ROAD, BLDG 1  
PLUMSTEADVILLE, PA 18949-0310

### Customer

TAMPA ELECTRIC COMPANY  
Charles Dufany  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

### ANALYTICAL INFORMATION

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

Cylinder Number: AAL15968 Certification Date: 26Aug2003 Exp. Date: 25Aug2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	8.24 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	8.26 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
HORIBA/CLA220/5708850810	21Aug2003	CHEMILUMINESCENCE

### ANALYZER READINGS

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

#### NITRIC OXIDE

Date: 19Aug2003	Response Unit: VOLTS		
Z1 = 0.00460	R1 = 3.94120	T1 = 1.80100	
R2 = 3.93760	Z2 = 0.00380	T2 = 1.79720	
Z3 = 0.00490	T3 = 1.79740	R3 = 3.92910	
Avg. Concentration:	8.220	PPM	

Date: 26Aug2003	Response Unit: VOLTS		
Z1 = 0.00520	R1 = 3.78620	T1 = 1.73250	
R2 = 3.78260	Z2 = 0.00820	T2 = 1.73300	
Z3 = 0.00720	T3 = 1.73030	R3 = 3.77760	
Avg. Concentration:	8.250	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999998	2629
Constants:	A = -0.016438
B = 4.632947	C =
D =	E =

APPROVED BY:

  
KIMBERLY NILES

RDS10

RATA CLASS



# Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

## CERTIFICATE OF ACCURACY: EPA Protocol Gas

### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-01495-001

### Customer

TAMPA ELECTRIC COMPANY  
CHARLES DUFENY  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

### ANALYTICAL INFORMATION

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

Cylinder Number: AAL3073      Certification Date: 13Nov2003      Exp. Date: 12Nov2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	4.46 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	4.47 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2627	15Jan2004	AAL069671	5.180 PPM	NITRIC OXIDE

### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
TECO/10/9741111S	06Nov2003	CHEMILUMINESCENT

### ANALYZER READINGS

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

First Triad Analysis      Second Triad Analysis      Calibration Curve

#### NITRIC OXIDE

Date: 26Aug2003      Response Unit: VOLTS

Z1 = 0.00020	R1 = 0.87080	T1 = 0.74970
R2 = 0.87070	Z2 = 0.00020	T2 = 0.74980
Z3 = 0.00020	T3 = 0.75070	R3 = 0.86970
Avg. Concentration:      4.460      PPM		

Date: 13Nov2003      Response Unit: VOLTS

Z1 = 0.00030	R1 = 0.86580	T1 = 0.74680
R2 = 0.86610	Z2 = 0.00030	T2 = 0.74670
Z3 = 0.00030	T3 = 0.74710	R3 = 0.86770
Avg. Concentration:      4.460      PPM		

Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>

r = .999992	2627
Constants:	A = 0.001488
B = 5.993653	C =
D =	E =

APPROVED BY:

KIMBERLY NILES

**CERTIFIED MASTER CLASS**

*Single-Certified Calibration Standard*



**Scott Specialty Gases**

3141 EASTON ROAD, BLDG 1, PEUMSTEADVILLE, PA 18948-0310 Phone: 800-331-1953 Fax: 215-766-7226

**RDS04**

**CERTIFICATE OF ACCURACY: Certified Master Class Calibration Standard**

**Product Information**

Project No.: 01-95261-006  
Item No.: 01020000840PAL  
P.O. No.: E-N06925

Cylinder Number: ALM026412  
Cylinder Size: AL  
Certification Date: 21Aug2003  
Expiration Date: 19Feb2004

**Customer**

TAMPA ELECTRIC COMPANY  
Charles Dufery  
5010 CAUSEWAY BLVD  
TAMPA, FL 33619

**CERTIFIED CONCENTRATION**

<u>Component Name</u>	<u>Concentration (Moles)</u>	<u>Accuracy (+/-%)</u>
CARBON MONOXIDE	3.00 PPM	2
NITROGEN	BALANCE	

**TRACEABILITY**

Traceable To

NIST

APPROVED BY:

JOHN C. FITZ

DATE:



## SPECIFICATIONS

<u>Component Name</u>	<u>Requested Concentration (Moles)</u>	<u>Certified Concentration (Moles)</u>	<u>Blend Tolerance Result (+/- %)</u>	<u>Certified Accuracy Result (+/- %)</u>
CARBON MONOXIDE	3. PPM	3.00 PPM	.0	2.00
NITROGEN	BAL	BAL		

## TRACEABILITY

Traceable To  
NIST

## PHYSICAL PROPERTIES

Cylinder Size: AL

Pressure: 2000 PSIG  
Expiration Date: 19Feb2004

Min. Cyl. Pressure: 150 PSIG

## SPECIAL HANDLING INSTRUCTIONS

Do not use or store cylinder at or below the stated dew point temperature. Possible condensation of heavier components could result. In the event the cylinder has been exposed to temperatures at or below the dew point, place cylinder in heated area for 24 hours and then roll cylinder for 15 minutes to re-mix.

Use of calibration standards at or below dew point temperature may result in calibration error.



# Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**RATA CLASS CES HARD 5**  
*Dual-Analyzed Calibration Standard* *re-cert.*

## CERTIFICATE OF ACCURACY: EPA Protocol Gas

### Assay Laboratory

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

P.O. No.: EN-75516  
Project No.: 01-84921-001

### Customer

TAMPA ELECTRIC COMPANY  
DAVID SMITH  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

### ANALYTICAL INFORMATION

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

Cylinder Number: ALM063413      Certification Date: 13Feb2003      Exp. Date: 12Feb2004  
Cylinder Pressure\*\*\*: 1250 PSIG

### COMPONENT

CARBON MONOXIDE  
NITROGEN

### CERTIFIED CONCENTRATION (Moles)

6.29 PPM  
BALANCE

### ANALYTICAL

ACCURACY\*\*  
+/- 1%

### TRACEABILITY

Direct NIST and NMI

\*\*\* 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.

### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2635	03Apr2003	ALM020670	25.78 PPM	CARBON MONOXIDE

### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#

SIEMENS/6E/KN-240

DATE LAST CALIBRATED

30Jan2003

ANALYTICAL PRINCIPLE

NDIR

### ANALYZER READINGS

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

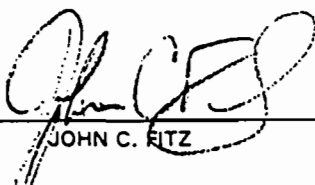
### CARBON MONOXIDE

Date:	06Aug2002	Response Unit:	VOLTS
Z1 =	-0.00400	R1 =	2.54380
T1 =	0.60600		
R2 =	2.54240	Z2 =	-0.00340
T2 =	0.60320		
Z3 =	-0.00700	T3 =	0.60060
R3 =	2.54390		
Avg. Concentration:	6.230	PPM	

Date:	13Feb2003	Response Unit:	VOLTS
Z1 =	-0.00310	R1 =	2.53330
T1 =	0.60820		
R2 =	2.53100	Z2 =	-0.00100
T2 =	0.60910		
Z3 =	-0.00540	T3 =	0.60930
R3 =	2.53000		
Avg. Concentration:	6.290	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r =	.999951      2635
Constants:	A = 6.6140E-02
B =	1.0194E+01      C =
D =	E =

APPROVED BY:



JOHN C. FITZ

# RATA CLASS



## Scott Specialty Gases

### Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

## CERTIFICATE OF ACCURACY: EPA Protocol Gas

### Assay Laboratory

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

P.O. No.: 75516  
Project No.: 01-86476-002

### Customer

TAMPA ELECTRIC COMPANY  
BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

### ANALYTICAL INFORMATION

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

Cylinder Number: AAL13026      Certification Date: 08Aug2003      Exp. Date: 07Aug2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	11.1 PPM	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	5.46 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	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.

### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2635	01May2007	ALM019380	25.78 PPM	CARBON MONOXIDE
NTRM 2629	02Oct2004	AAL069525	12.05 PPM	NITRIC OXIDE

### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS/6E/KN-240	25Jul2003	NDIR
HORIBA/CLA220/5708850810	21Jul2003	CHEMILUMINESCENCE

### ANALYZER READINGS

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

#### CARBON MONOXIDE

Date: 01Aug2003	Response Unit: VOLTS		
Z1 = -0.00310	R1 = 2.54050	T1 = 1.08040	
R2 = 2.54300	Z2 = 0.00120	T2 = 1.07800	
Z3 = 0.00120	T3 = 1.07880	R3 = 2.54270	
Avg. Concentration:		11.10	PPM

Date: 08Aug2003	Response Unit: VOLTS		
Z1 = -0.00560	R1 = 2.53950	T1 = 1.07810	
R2 = 2.53680	Z2 = -0.00290	T2 = 1.07390	
Z3 = -0.00910	T3 = 1.07320	R3 = 2.54320	
Avg. Concentration:		11.10	PPM

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999996	2635
Constants:	A = -.204011
B = 10.689694	C = -.1853936
D =	E =

#### NITRIC OXIDE

Date: 29Jul2003	Response Unit: VOLTS		
Z1 = 0.00390	R1 = 3.98360	T1 = 1.21250	
R2 = 3.98720	Z2 = 0.00590	T2 = 1.21480	
Z3 = 0.00430	T3 = 1.21400	R3 = 3.99290	
Avg. Concentration:		5.460	PPM

Date: 05Aug2003	Response Unit: VOLTS		
Z1 = 0.00580	R1 = 4.00820	T1 = 1.21920	
R2 = 4.00100	Z2 = 0.00450	T2 = 1.21900	
Z3 = 0.00490	T3 = 1.21880	R3 = 3.99890	
Avg. Concentration:		6.460	PPM

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999997	2629
Constants:	A = -.051204
B = 4.536439	C =
D =	E =

Special Notes:

NO<sub>x</sub> = 5.47 ppm

APPROVED BY:

*John C. RTZ*  
JOHN C. RTZ

# RATA CLASS



## Scott Specialty Gases

### Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

### CERTIFICATE OF ACCURACY: EPA Protocol Gas

#### Assay Laboratory

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

P.O. No.: 75516  
Project No.: 01-86476-003

#### Customer

TAMPA ELECTRIC COMPANY  
BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

#### ANALYTICAL INFORMATION

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

Cylinder Number: ALM019746      Certification Date: 08Aug2003      Exp. Date: 07Aug2006  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	555 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.

#### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1680	01May2007	ALM005372	498.8 PPM	CARBON MONOXIDE

#### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS/6E/KN-240	08Aug2003	NDIR

#### ANALYZER READINGS

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

#### CARBON MONOXIDE

Date: 01Aug2003	Response Unit: VOLTS		
Z1 = -0.00490	R1 = 2.45780	T1 = 2.73230	
R2 = 2.45930	Z2 = -0.00380	T2 = 2.73290	
Z3 = -0.00410	T3 = 2.73270		R3 = 2.45910
Avg. Concentration:	554.0	PPM	

Date: 08Aug2003	Response Unit: VOLTS		
Z1 = -0.00490	R1 = 4.81780	T1 = 2.72270	
R2 = 4.81910	Z2 = -0.00450	T2 = 2.72400	
Z3 = -0.00480	T3 = 2.72490		R3 = 4.82070
Avg. Concentration:	557.0	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999952	1681
Constants:	A = 2.902682
B = 203.478435	C =
D =	E =

R

APPROVED BY:

JOHN C. FITZ

RATA CLASS

PPL10

Dual-Analyzed Calibration Standard



Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 19949-0310

Phone: 800-331-4953

Fax: 215-766-7226

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

Assay Laboratory

SCOTT SPECIALTY GASES  
6141 EASTON ROAD, BLDG 1  
PLUMSTEADVILLE, PA 19949-0310

P.O. No.: EN75516  
Project No.: 01-76630-003

Customer

TAMPA ELECTRIC COMPANY

Mike Skirvin  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

ANALYTICAL INFORMATION

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

Cylinder Number: ALM039271 Certification Date: 8/28/02 Exp. Date: 8/27/2004  
Cylinder Pressure\*\*\*: 2000 PSIA

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON DIOXIDE	5.46 %	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	83.1 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	83.6 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2000	6/01/05	K026963	5.006 %	CO2/N2
NTRM 1684	4/03/06	AAL069395	94.62 PPM	NO/N2

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AAB9300174	08/12/02	Scott Enhanced FTIR
FTIR System/8220/AAB9300174	08/12/02	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: 08/21/02 Response Unit: %  
Z1 = 0.00610 R1 = 5.00603 T1 = 5.46221  
R2 = 5.00653 Z2 = 0.00750 T2 = 5.46482  
Z3 = 0.00640 T3 = 5.46723 R3 = 5.00543  
Avg. Concentration: 5.465 %

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

NITRIC OXIDE

Date: 08/21/02 Response Unit: PPM  
Z1 = 0.26390 R1 = 94.21246 T1 = 82.75406  
R2 = 94.63716 Z2 = 0.04730 T2 = 82.86872  
Z3 = 0.22250 T3 = 83.22143 R3 = 95.01036  
Avg. Concentration: 82.95 PPM

Date: 08/28/02 Response Unit: PPM  
Z1 = -0.06610 R1 = 94.54635 T1 = 83.30645  
R2 = 94.47483 Z2 = 0.11350 T2 = 83.40255  
Z3 = 0.20650 T3 = 83.29737 R3 = 94.53882  
Avg. Concentration: 83.33 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

Borrowed From Env. Affairs.  
Returned 9/11/03

APPROVED BY:

*Michael A. Kuhns*  
Michael A. Kuhns

BEST AVAILABLE COPY

RATA CLASS **GR514**

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: Interference Free <sup>TM</sup> EPA Protocol Gas**

**Assay Laboratory**

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

P.O. No.: E-N06925  
Project No.: 01-93963-007

**Customer**

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: ALM046642      Certification Date: 22 Jul 2003      Exp. Date: 21 Jul 2006  
Cylinder Pressure\*\*\*: 2000 PSIA

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	554 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.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NITRIM 14180	01Mar2007	ALM065542	488.3 PPM	CO, N2

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FIR System 9220/AA99300174	26 Jun 2003	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 MONOXIDE**

Date: 15 Jul 2003	Response Unit: PPM		
Z1 = 0.04970	R1 = 486.9405	T1 = 553.8718	
R2 = 486.5362	Z2 = 0.03260	T2 = 554.4254	
Z3 = 0.09520	T3 = 553.6068	R3 = 485.4230	
Avg. Concentration:		554.0	PPM

Date: 22 Jul 2003	Response Unit: PPM		
Z1 = 0.26570	R1 = 485.5447	T1 = 552.7072	
R2 = 485.8595	Z2 = 0.19740	T2 = 553.9093	
Z3 = 0.23920	T3 = 553.3391	R3 = 487.4955	
Avg. Concentration:		553.3	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

*loaned from Env. Affairs  
Returned 9/11/03*

APPROVED BY: \_\_\_\_\_  
Michael A. Kuhns

**RATA CLASS**



**Scott Specialty Gases**

*Dual-Analyzed Calibration Standard*

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: Interference Free <sup>TM</sup> EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925

Project No.: 01-86479-007

Customer

TAMPA ELECTRIC COMPANY  
BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

ANALYTICAL INFORMATION

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

Cylinder Number: ALM030911      Certification Date: 01Sep2003      Exp. Date: 31Aug2006  
Cylinder Pressure\*\*\*: 1990 PSIA

<u>COMPONENT</u>	<u>CERTIFIED CONCENTRATION (Moles)</u>	<u>ANALYTICAL ACCURACY**</u>	<u>TRACEABILITY</u>
CARBON MONOXIDE	542 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.

REFERENCE STANDARD

<u>TYPE/SRM NO.</u>	<u>EXPIRATION DATE</u>	<u>CYLINDER NUMBER</u>	<u>CONCENTRATION</u>	<u>COMPONENT</u>
NTRM 1680	01Mar2007	ALM065542	486.3 PPM	CO/N2

INSTRUMENTATION

<u>INSTRUMENT/MODEL/SERIAL#</u>	<u>DATE LAST CALIBRATED</u>	<u>ANALYTICAL PRINCIPLE</u>
FTIR System/8220/AAB9300174	24Aug2003	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 MONOXIDE

Date: 25Aug2003	Response Unit: PPM	
Z1 = 0.09660	R1 = 485.6375	T1 = 542.1126
R2 = 485.8749	Z2 = 0.21360	T2 = 542.7438
Z3 = 0.24150	T3 = 544.7175	R3 = 487.3873
Avg. Concentration:	543.2	PPM

Date: 01Sep2003	Response Unit: PPM	
Z1 = 0.13860	R1 = 486.4303	T1 = 540.8651
R2 = 486.2202	Z2 = 0.14270	T2 = 540.7272
Z3 = 0.14880	T3 = 541.1898	R3 = 486.2492
Avg. Concentration:	540.9	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

Special Notes:

CO2 = 1 PPM

NO = 0.3 PPM

APPROVED BY:

Michael A. Kuhns



# Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

## RATA CLASS

Dual-Analyzed Calibration Standard

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

#### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-86479-005

#### Customer

TAMPA ELECTRIC COMPANY

BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

#### ANALYTICAL INFORMATION

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

Cylinder Number: ALM051590 Certification Date: 30Aug2003 Exp. Date: 29Aug2005  
Cylinder Pressure\*\*\*: 2000 PSIA

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON DIOXIDE	5.50 %	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	83.9 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	84.4 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

#### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2000	01Jun20C5	K026511	5.006 %	CARBON DIOXIDE
NTRM 1684	01Aug20C6	AALC69430	97.20 PPM	NO/N2

#### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AA89300174	24Aug2003	Scott Enhanced FTIR
FTIR System/8220/AA89300174	24Aug2003	Scott Enhanced FTIR

#### ANALYZER READINGS

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

##### First Triad Analysis

##### CARBON DIOXIDE

Date: 23Aug2003 Response Unit: %  
Z1 = -0.00260 R1 = 5.00852 T1 = 5.50242  
R2 = 4.99945 Z2 = -0.00200 T2 = 5.49444  
Z3 = 0.00040 T3 = 5.49893 R3 = 5.01002  
Avg. Concentration: 5.499 %

##### Second Triad Analysis

##### NITRIC OXIDE

Date: 23Aug2003 Response Unit: PPM  
Z1 = -0.02210 R1 = 96.97610 T1 = 83.98317  
R2 = 97.16465 Z2 = -0.18930 T2 = 84.01867  
Z3 = -0.05790 T3 = 84.09750 R3 = 97.45924  
Avg. Concentration: 84.03 PPM

Date: 30Aug2003 Response Unit: PPM  
Z1 = -0.20810 R1 = 96.90617 T1 = 83.66785  
R2 = 97.20896 Z2 = -0.67640 T2 = 83.82502  
Z3 = 0.06020 T3 = 84.00520 R3 = 97.48485  
Avg. Concentration: 83.83 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

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

Special Notes: CO = 0.2 PPM

APPROVED BY:

*Paul Graef*  
FOR



# RATA CLASS



## Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

### CERTIFICATE OF ACCURACY: Interference Free <sup>TM</sup> EPA Protocol Gas

#### Assay Laboratory

P.O. No.: E-N06925  
SCOTT SPECIALTY GASES Project No.: 01-86479-003  
6141 EASTON ROAD, BLDG 1  
PLUMSTEADVILLE, PA 18949-0310

#### Customer

TAMPA ELECTRIC COMPANY  
BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

#### ANALYTICAL INFORMATION

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

Cylinder Number: ALM020204 Certification Date: 01Sep2003 Exp. Date: 31Aug2006  
Cylinder Pressure\*\*\*: 1970 PSIA

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	542 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.

#### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1680	01Mar2007	ALM065542	486.3 PPM	CO/N2

#### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AAB9300174	24Aug2003	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 MONOXIDE

Date: 25Aug2003	Response Unit: PPM		
Z1 = 0.09660	R1 = 485.6375	T1 = 541.6741	
R2 = 485.8749	Z2 = 0.21360	T2 = 542.2652	
Z3 = 0.24150	T3 = 543.1424	R3 = 487.3873	
Avg. Concentration:	542.4	PPM	

Date: 01Sep2003	Response Unit: PPM		
Z1 = 0.13860	R1 = 486.4303	T1 = 541.8204	
R2 = 486.2202	Z2 = 0.14270	T2 = 541.2463	
Z3 = 0.14880	T3 = 541.4149	R3 = 486.2492	
Avg. Concentration:	541.5	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = 0.999990	
Constants:	A = 0.000000
B = 1.000000	C = 0.000000
D = 0.000000	E = 0.000000

Special Notes:

CO2 = 1 PPM

NO = 0.3 PPM

APPROVED BY:

Michael A. Kuhns

# RATA CLASS



## Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

### CERTIFICATE OF ACCURACY: Interference Free <sup>TM</sup> EPA Protocol Gas

#### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-86479-010

#### Customer

TAMPA ELECTRIC COMPANY  
BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

#### ANALYTICAL INFORMATION

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

Cylinder Number: ALM064853      Certification Date: 01Sep2003      Exp. Date: 31Aug2006  
Cylinder Pressure\*\*\*: 1994 PSIA

#### COMPONENT

CARBON MONOXIDE  
NITROGEN

#### CERTIFIED CONCENTRATION (Moles)

542 PPM  
BALANCE

#### ANALYTICAL

#### ACCURACY\*\*

+/- 1%

#### TRACEABILITY

Direct NIST and NMI

\*\*\* 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.

#### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1680	01Mar2007	ALM065542	486.3 PPM	CO/N2

#### INSTRUMENTATION

#### INSTRUMENT/MODEL/SERIAL#

FTIR System/8220/AA89300174

#### DATE LAST CALIBRATED

24Aug2003

#### ANALYTICAL PRINCIPLE

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 MONOXIDE

Date: 25Aug2003	Response Unit: PPM		
Z1 = 0.09660	R1 = 485.6375	T1 = 542.7288	
R2 = 485.8749	Z2 = 0.21360	T2 = 544.0471	
Z3 = 0.24150	T3 = 544.0092	R3 = 487.3873	
Avg. Concentration:			543.6 PPM

Date: 01Sep2003	Response Unit: PPM		
Z1 = 0.13860	R1 = 486.4303	T1 = 541.2876	
R2 = 486.2202	Z2 = 0.14270	T2 = 540.9262	
Z3 = 0.14880	T3 = 540.9412	R3 = 486.2492	
Avg. Concentration:			541.1 PPM

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = 0.999990	
Constants:	A = 0.000000
B = 1.000000	C = 0.000000
D = 0.000000	E = 0.000000

Special Notes:

CO2 = 1 PPM

NO = 0.3 PPM

APPROVED BY:

Michael A. Kuhns



# Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

## RATA CLASS

Dual-Analyzed Calibration Standard

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

#### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-86479-008

#### Customer

TAMPA ELECTRIC COMPANY

BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

#### ANALYTICAL INFORMATION

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

Cylinder Number: ALM060212 Certification Date: 30Aug2003 Exp. Date: 29Aug2005  
Cylinder Pressure\*\*\*: 2000 PSIA

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON DIOXIDE	5.50 %	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	84.0 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	84.4 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

#### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2000	01Jun2005	K026511	5.006 %	CARBON DIOXIDE
NTRM 1684	01Aug2006	AAL069430	97.20 PPM	NO/N2

#### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AAB9300174	24Aug2003	Scott Enhanced FTIR
FTIR System/8220/AAB9300174	24Aug2003	Scott Enhanced FTIR

#### ANALYZER READINGS

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

##### First Triad Analysis

##### CARBON DIOXIDE

Date: 23Aug2003 Response Unit: %  
Z1 = -0.00260 R1 = 5.00852 T1 = 5.50252  
R2 = 4.99945 Z2 = 0.00200 T2 = 5.49664  
Z3 = 0.00040 T3 = 5.49375 R3 = 5.01002  
Avg. Concentration: 5.498 %

##### Second Triad Analysis

##### NITRIC OXIDE

Date: 23Aug2003 Response Unit: PPM  
Z1 = -0.02210 R1 = 96.97610 T1 = 84.07850  
R2 = 97.16465 Z2 = -0.18930 T2 = 83.89414  
Z3 = -0.05790 T3 = 84.41770 R3 = 97.45924  
Avg. Concentration: 84.13 PPM

Date: 30Aug2003 Response Unit: PPM  
Z1 = -0.20810 R1 = 96.90617 T1 = 83.39873  
R2 = 97.20896 Z2 = -0.67640 T2 = 84.07342  
Z3 = 0.06020 T3 = 83.97651 R3 = 97.48425  
Avg. Concentration: 83.82 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

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

Special Notes:

CO = 0.2 PPM

APPROVED BY:

*Paul Graft* FCR

Paul Graft

**RATA CLASS**

*Dual-Analyzed Calibration Standard*



**Scott Specialty Gases**

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

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

**Assay Laboratory**

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

P.O. No.: E-N06925  
Project No.: 01-86479-001

**Customer**

TAMPA ELECTRIC COMPANY

BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: **ALM046413**      Certification Date: **30Aug2003**      Exp. Date: **29Aug2005**  
Cylinder Pressure\*\*\*: **2000 PSIA**

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON DIOXIDE	5.51 %	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	84.0 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	84.4 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2000	01Jun2005	K026511	5.006 %	CARBON DIOXIDE
NTRM 1684	01Aug2006	AAL069430	97.20 PPM	NO/N2

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AAB9300174	24Aug2003	Scott Enhanced FTIR
FTIR System/8220/AAB9300174	24Aug2003	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: 23Aug2003    Response Unit: %  
Z1 = -0.00260    R1 = 5.00852    T1 = 5.50312  
R2 = 4.99945    Z2 = 0.00200    T2 = 5.50880  
Z3 = 0.00040    T3 = 5.50671    R3 = 5.01002  
Avg. Concentration: 5.506 %

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

**NITRIC OXIDE**

Date: 23Aug2003    Response Unit: PPM  
Z1 = -0.02210    R1 = 96.97610    T1 = 84.26495  
R2 = 97.16465    Z2 = -0.18930    T2 = 84.14991  
Z3 = -0.05790    T3 = 83.79161    R3 = 97.45924  
Avg. Concentration: 84.07 PPM

Date: 30Aug2003    Response Unit: PPM  
Z1 = -0.20810    R1 = 96.90617    T1 = 83.84773  
R2 = 97.20896    Z2 = -0.67640    T2 = 83.90271  
Z3 = 0.06020    T3 = 83.92253    R3 = 97.48485  
Avg. Concentration: 83.89 PPM

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

Special Notes:            CO = 0.2 PPM

APPROVED BY:

*Paul Graaf*  
Paul Graaf FOR

## Certificate of Analysis: E.P.A. Protocol Gas Mixture

Cylinder No :	<u>CC130386</u>	Order No.	<u>110611360</u>
Cylinder Pressure:	<u>2000PSIG</u>	Expiration Date:	<u>7/23/05</u>
Certification Date	<u>7/23/03</u>	Laboratory:	<u>ASG-Mobile</u>
Part Number:	<u>E03NI94E15A1027</u>		

### Reference Standard Information:

<u>Type</u>	<u>Component</u>	<u>Cyl. Number</u>	<u>Concentration</u>
NTRM 01040301	NITRIC OXIDE	CC26726	96.4 ppm
NTRM 40408	CARBON DIOXIDE	CC113750	7.061%

### Instrumentation:

<u>Instrument/Model/Serial No.</u>	<u>Analytical Principle</u>
ECOPhysics/CLD700EL/72411	Chemiluminescence
SIEMENS ULTRAMAT 5E K3-684	NDIR

Analytical Methodology does not require correction for analytical interferences.

### Certified Concentrations:

<u>Component</u>	<u>Concentration</u>	<u>Accuracy</u>	<u>Procedure</u>
NITRIC OXIDE	78.20 ppm	+/- 1%	G1
NOX	78.45 ppm		
CARBON DIOXIDE	5.501 %	+/- 1%	G1
NITROGEN	Balance		

### Analytical Results:

#### 1st Component:

#### NITRIC OXIDE

1st Analysis Date: 7/14/03

R	<u>96.40</u>	S	<u>.78.20</u>	Z	<u>0.00</u>	Conc	<u>78.20 ppm</u>
S	<u>78.20</u>	Z	<u>0.00</u>	R	<u>96.40</u>	Conc	<u>78.20 ppm</u>
Z	<u>0.00</u>	R	<u>96.40</u>	S	<u>78.20</u>	Conc	<u>78.20 ppm</u>
						AVG:	<u>78.20 ppm</u>

Airgas Specialty Gases  
5480 Hamilton Blvd.  
Theodore, AL 36582

P.O. Box 190969  
Mobile, AL 36619  
(251) 653-2500 Fax: (251) 653-2530  
<http://www.airgas.com>

2nd Analysis Date: 7/21/03

R	<u>96.40</u>	S	<u>78.20</u>	Z	<u>0.00</u>
S	<u>78.20</u>	Z	<u>0.00</u>	R	<u>96.40</u>
Z	<u>0.00</u>	R	<u>96.40</u>	S	<u>78.20</u>

Conc	<u>78.20</u>	ppm
Conc	<u>78.20</u>	ppm
Conc	<u>78.20</u>	ppm
AVG:	<u>78.20</u>	ppm

**2nd Component:**

**CARBON DIOXIDE**

1st Analysis Date: 7/14/03

R	<u>7.060</u>	S	<u>5.500</u>	Z	<u>0.000</u>
S	<u>5.500</u>	Z	<u>0.000</u>	R	<u>7.060</u>
Z	<u>0.000</u>	R	<u>7.060</u>	S	<u>5.500</u>

Conc	<u>5.501</u>	%
Conc	<u>5.501</u>	%
Conc	<u>5.501</u>	%
AVG:	<u>5.501</u>	%

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed.

Do not use cylinder below 150 psig.

Coop Stewart  
Approved for Release



**Scott Specialty Gases**

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

**Assay Laboratory**

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

P.O. No.: 75516  
Project No.: 01-86479-006

**Customer**

TAMPA ELECTRIC COMPANY  
  
BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: **AAL4158** Certification Date: **06Aug2003** Exp. Date: **05Aug2005**  
Cylinder Pressure\*\*\*: **2000 PSIG** Batch No: **0194546**

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON MONOXIDE	11.2 PPM	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	5.44 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	5.45 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2635	01May2007	ALM019380	25.78 PPM	CARBON MONOXIDE
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS/6E/KN-240	25Jul2003	NDIR
HORIBA/CLA220/5708850810	21Jul2003	CHEMILUMINESCENCE

**ANALYZER READINGS**

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

**First Triad Analysis**

**Second Triad Analysis**

**Calibration Curve**

**CARBON MONOXIDE**

Date: 30Jul2003 Response Unit: VOLTS  
Z1=0.00380 R1=2.54790 T1=1.09290  
R2=2.54920 Z2=-0.00420 T2=1.08260  
Z3=-0.01420 T3=1.06940 R3=2.52710  
Avg. Concentration: 11.20 PPM

Date: 06Aug2003 Response Unit: VOLTS  
Z1=-0.00320 R1=2.54220 T1=1.08240  
R2=2.54720 Z2=-0.00080 T2=1.08370  
Z3=-0.00490 T3=1.08240 R3=2.54580  
Avg. Concentration: 11.10 PPM

Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>  
r = .999996 2635  
Constants: A = -.204011  
B = 10.689694 C = .185393  
D = E =

**NITRIC OXIDE**

Date: 29Jul2003 Response Unit: VOLTS  
Z1=0.00390 R1=3.98360 T1=1.20900  
R2=3.98720 Z2=0.00590 T2=1.20970  
Z3=0.00430 T3=1.20850 R3=3.99290  
Avg. Concentration: 5.440 PPM

Date: 05Aug2003 Response Unit: VOLTS  
Z1=0.00580 R1=4.00820 T1=1.21410  
R2=4.00100 Z2=0.00450 T2=1.21500  
Z3=0.00490 T3=1.21290 R3=3.99890  
Avg. Concentration: 5.440 PPM

Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>  
r = .999997 2635  
Constants: A = -.051204  
B = 4.536439 C =  
D = E =

R

APPROVED BY:

JOHN C. FITZ

# RATA CLASS



## Scott Specialty Gases

### Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

### CERTIFICATE OF ACCURACY: EPA Protocol Gas

#### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-86479-002

#### Customer

TAMPA ELECTRIC COMPANY  
BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

#### ANALYTICAL INFORMATION

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

Cylinder Number: AAL18045      Certification Date: 02Sep2003      Exp. Date: 01Sep2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	11.0 PPM	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	5.50 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	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.

#### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2635	01May2007	ALM019380	25.78 PPM	CARBON MONOXIDE
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

#### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS/6E-KN-240	25Aug2003	NDIR
HORIBA/CLA220/5708250810	21Aug2003	CHEMILUMINESCENCE

#### ANALYZER READINGS

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

#### CARBON MONOXIDE

Date: 25Aug2003	Response Unit: VOLTS		
Z1 = -0.00810	R1 = 2.53500	T1 = 1.07720	
R2 = 2.53810	Z2 = -0.00730	T2 = 1.07500	
Z3 = -0.00780	T3 = 1.07460	R3 = 2.53960	
Avg. Concentration:	11.03	PPM	

Date: 02Sep2003	Response Unit: VOLTS		
Z1 = 0.00730	R1 = 2.54260	T1 = 1.08940	
R2 = 2.54160	Z2 = 0.00800	T2 = 1.08550	
Z3 = 0.00830	T3 = 1.08670	R3 = 2.54230	
Avg. Concentration:	11.04	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .99998	2635
Constants:	A = 0.067806
B = 10.172378	C =
D =	E =

#### NITRIC OXIDE

Date: 25Aug2003	Response Unit: VOLTS		
Z1 = 0.00570	R1 = 3.79130	T1 = 1.15930	
R2 = 3.79140	Z2 = 0.00940	T2 = 1.15890	
Z3 = 0.00820	T3 = 1.15910	R3 = 3.79060	
Avg. Concentration:	5.500	PPM	

Date: 02Sep2003	Response Unit: VOLTS		
Z1 = 0.00660	R1 = 3.76100	T1 = 1.14950	
R2 = 3.75510	Z2 = 0.00460	T2 = 1.15030	
Z3 = 0.00670	T3 = 1.14850	R3 = 3.75520	
Avg. Concentration:	5.510	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .99998	2629
Constants:	A = -0.016438
B = 4.632947	C =
D =	E =

Special Notes: NOX = 5.52 PPM

APPROVED BY:

KIMBERLY NILES



# RATA CLASS

Dual-Analyzed Calibration Standard



## Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

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

#### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-86680-001

#### Customer

TAMPA ELECTRIC COMPANY

BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

#### ANALYTICAL INFORMATION

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

Cylinder Number: ALM034670  
Cylinder Pressure\*\*\*: 2000 PSIA

Certification Date: 10Sep2003

Exp. Date: 09Sep2005

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON DIOXIDE	5.54 %	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	81.9 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	82.5 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

#### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2000	01Jun2005	K026511	5.006 %	CARBON DIOXIDE
NTRM 1684	01Aug2006	AAL069430	97.20 PPM	NO/N2

#### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AAB9300174	24Aug2003	Scott Enhanced FTIR
FTIR System/8220/AAB9300174	24Aug2003	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: 03Sep2003 Response Unit: %

Z1 = -0.00430 R1 = 5.01039 T1 = 5.54066  
R2 = 5.00739 Z2 = -0.00400 T2 = 5.54175  
Z3 = -0.00370 T3 = 5.54814 R3 = 5.00021  
Avg. Concentration: 5.543 %

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

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

#### NITRIC OXIDE

Date: 03Sep2003 Response Unit: PPM

Z1 = -1.17480 R1 = 97.01567 T1 = 81.78783  
R2 = 97.57845 Z2 = -0.58240 T2 = 81.86225  
Z3 = -0.78780 T3 = 81.46807 R3 = 97.00585  
Avg. Concentration: 81.71 PPM

Date: 10Sep2003 Response Unit: PPM

Z1 = -0.60110 R1 = 97.03229 T1 = 82.06947  
R2 = 97.58406 Z2 = -0.16140 T2 = 82.10470  
Z3 = -0.26430 T3 = 82.08024 R3 = 96.98363  
Avg. Concentration: 82.08 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

#### Special Notes:

CO = 0.2 ppm

APPROVED BY:

Michael A. Kubus



# Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

## RATA CLASS

Dual-Analyzed Calibration Standard

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

#### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-86680-005

#### Customer

TAMPA ELECTRIC COMPANY

BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

#### ANALYTICAL INFORMATION

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

Cylinder Number: ALM000945 Certification Date: 10Sep2003 Exp. Date: 09Sep2005  
Cylinder Pressure\*\*\*: 2000 PSIA

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON DIOXIDE	5.54 %	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	82.1 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	82.6 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

#### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2000	01Jun2005	K026511	5.006 %	CARBON DIOXIDE
NTRM 1684	01Aug2006	AAL069430	97.20 PPM	NO/N2

#### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AAB9300174	24Aug2003	Scott Enhanced FTIR
FTIR System/8220/AAB9300174	24Aug2003	Scott Enhanced FTIR

#### ANALYZER READINGS

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

##### First Triad Analysis

##### CARBON DIOXIDE

Date: 03Sep2003 Response Unit: %  
Z1 = 0.00290 R1 = 5.00260 T1 = 5.55103  
R2 = 5.00679 Z2 = 0.00090 T2 = 5.54195  
Z3 = 0.00510 T3 = 5.53795 R3 = 5.00859  
Avg. Concentration: 5.544 %

##### Second Triad Analysis

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

##### Calibration Curve

Concentration = A + Bx + Cx<sup>2</sup> - Dx<sup>3</sup> + Ex<sup>4</sup>  
r = 0.999990  
Constants: A = 0.000000  
B = 1.000000 C = 0.000000  
D = 0.000000 E = 0.000000

##### NITRIC OXIDE

Date: 03Sep2003 Response Unit: PPM  
Z1 = -0.82960 R1 = 96.88134 T1 = 82.11411  
R2 = 97.24871 Z2 = -0.43070 T2 = 81.89802  
Z3 = -0.55410 T3 = 82.04219 R3 = 97.46992  
Avg. Concentration: 82.02 PPM

Date: 10Sep2003 Response Unit: PPM  
Z1 = -0.60110 R1 = 97.03229 T1 = 82.08301  
R2 = 97.58406 Z2 = -0.16140 T2 = 82.17372  
Z3 = -0.26430 T3 = 82.12345 R3 = 96.98363  
Avg. Concentration: 82.13 PPM

Concentration = A + Bx + Cx<sup>2</sup> - Dx<sup>3</sup> + Ex<sup>4</sup>  
r = 0.999990  
Constants: A = 0.000000  
B = 1.000000 C = 0.000000  
D = 0.000000 E = 0.000000

#### Special Notes:

CO = 0.2 ppm

APPROVED BY:

Michael A. Kubas



# Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

## RATA CLASS

Dual-Analyzed Calibration Standard

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

#### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-86680-001

#### Customer

TAMPA ELECTRIC COMPANY

BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

#### ANALYTICAL INFORMATION

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

Cylinder Number: ALM041102 Certification Date: 15Sep2003 Exp. Date: 14Sep2005  
Cylinder Pressure\*\*\*: 1948 PSIA

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON DIOXIDE	5.50 %	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	83.0 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	83.4 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

#### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2000	01Jun2005	K026511	5.006 %	CARBON DIOXIDE
NTRM 1684	01Aug2006	AAL069430	97.20 PPM	NO/N2

#### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AAB9300174	24Aug2003	Scott Enhanced FTIR
FTIR System/8220/AAB9300174	24Aug2003	Scott Enhanced FTIR

#### ANALYZER READINGS

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

##### First Triad Analysis

##### CARBON DIOXIDE

Date: 08Sep2003 Response Unit: %

Z1=0.00670 R1=5.00204 T1=5.50909  
R2=5.00773 Z2=0.00500 T2=5.50047  
Z3=0.00130 T3=5.50428 R3=5.00822  
Avg. Concentration: 5.505 %

##### Second Triad Analysis

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

##### Calibration Curve

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

##### NITRIC OXIDE

Date: 08Sep2003 Response Unit: PPM

Z1=0.05770 R1=97.12298 T1=82.86180  
R2=97.18899 Z2=-0.42920 T2=82.94445  
Z3=-0.16390 T3=83.37175 R3=97.28801  
Avg. Concentration: 83.06 PPM

Date: 15Sep2003 Response Unit: PPM

Z1=-0.30270 R1=97.36956 T1=83.03816  
R2=97.31981 Z2=-0.49190 T2=82.68529  
Z3=-0.13190 T3=83.22831 R3=96.91059  
Avg. Concentration: 82.98 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

#### Special Notes:

CO = 0.2 ppm

APPROVED BY:

Michael A. Kuhns

**RATA CLASS***Dual-Analyzed Calibration Standard***Scott Specialty Gases**

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas****Assay Laboratory**SCOTT SPECIALTY GASES  
6141 EASTON ROAD, BLDG 1  
PLUMSTEADVILLE, PA 18949-0310P.O. No.: E-N06925  
Project No.: 01-86680-006**Customer**

TAMPA ELECTRIC COMPANY

BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619**ANALYTICAL INFORMATION**

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

Cylinder Number: **AAL5442** Certification Date: **03Feb2003** Exp. Date: **02Feb2005**  
Cylinder Pressure\*\*\*: **2000 PSIG** Batch No: **0184624**

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON MONOXIDE	11.2 PPM	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	5.51 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	5.52 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
	03Apr2003	ALM020670	25.78 PPM	CARBON MONOXIDE
	02Oct2004	AAL069504	18.05 PPM	NITRIC OXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS/6E/KN-240	31Jan2003	NDIR
HORIBA/CLA220/5708850810	22Jan2003	CHEMILUMINESCENCE

**ANALYZER READINGS**

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

**First Triad Analysis****Second Triad Analysis****Calibration Curve****CARBON MONOXIDE**Date: 27Jan2003 Response Unit: VOLTS  
Z1 = -0.00340 R1 = 2.54020 T1 = 1.10370  
R2 = 2.54570 Z2 = -0.00370 T2 = 1.10630  
Z3 = -0.00490 T3 = 1.10410 R3 = 2.54600  
Avg. Concentration: 11.20 PPMDate: 03Feb2003 Response Unit: VOLTS  
Z1 = -0.00300 R1 = 2.54290 T1 = 1.10740  
R2 = 2.54390 Z2 = -0.00090 T2 = 1.10680  
Z3 = -0.00190 T3 = 1.11190 R3 = 2.55390  
Avg. Concentration: 11.30 PPMConcentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>  
r = .999951 2635  
Constants: A = 6.6140E-02  
B = 1.0194E+01 C =  
D = E =**NITRIC OXIDE**Date: 27Jan2003 Response Unit: VOLTS  
Z1 = 0.00660 R1 = 3.95720 T1 = 1.21310  
R2 = 3.96140 Z2 = 0.00570 T2 = 1.21370  
Z3 = 0.00580 T3 = 1.21370 R3 = 3.96470  
Avg. Concentration: 5.520 PPMDate: 03Feb2003 Response Unit: VOLTS  
Z1 = 0.00750 R1 = 3.91320 T1 = 1.19870  
R2 = 3.92460 Z2 = 0.01000 T2 = 1.20190  
Z3 = 0.00660 T3 = 1.20470 R3 = 3.94700  
Avg. Concentration: 5.510 PPMConcentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>  
r = .999999 2629  
Constants: A = -.005887  
B = 4.549761 C =  
D = E =

APPROVED BY:

  
JOHN C. FITZ



**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-86680-002

Customer

TAMPA ELECTRIC COMPANY  
BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: AAL068149      Certification Date: 15Sep2003      Exp. Date: 14Sep2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	11.0 PPM	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	5.51 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	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.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2635	01May2007	ALM019380	25.78 PPM	CARBON MONOXIDE
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS/6E/KN-240	25Aug2003	NDIR
HORIBA/CLA220/5708850810	21Aug2003	CHEMILUMINESCENCE

**ANALYZER READINGS**

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

**CARBON MONOXIDE**

Date: 08Sep2003	Response Unit: VOLTS	
Z1 = -0.01280	R1 = 2.54100	T1 = 1.07280
R2 = 2.54230	Z2 = -0.01390	T2 = 1.07330
Z3 = -0.01310	T3 = 1.06680	R3 = 2.53870
Avg. Concentration:	11.00	PPM

Date: 15Sep2003	Response Unit: VOLTS	
Z1 = 0.01460	R1 = 2.54400	T1 = 1.09050
R2 = 2.54580	Z2 = 0.01830	T2 = 1.08780
Z3 = 0.01320	T3 = 1.08830	R3 = 2.54850
Avg. Concentration:	11.00	PPM

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999980	2635
Constants:	A = .067806
B = 10.172378	C =
D =	E =

**NITRIC OXIDE**

Date: 08Sep2003	Response Unit: VOLTS	
Z1 = 0.00620	R1 = 3.77390	T1 = 1.15480
R2 = 3.77200	Z2 = 0.00600	T2 = 1.15370
Z3 = 0.00480	T3 = 1.15450	R3 = 3.76880
Avg. Concentration:	5.510	PPM

Date: 15Sep2003	Response Unit: VOLTS	
Z1 = 0.00560	R1 = 3.81470	T1 = 1.16960
R2 = 3.81360	Z2 = 0.00510	T2 = 1.16730
Z3 = 0.00550	T3 = 1.16780	R3 = 3.81140
Avg. Concentration:	5.510	PPM

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999998	2629
Constants:	A = -.016438
B = 4.632947	C =
D =	E =

Special Notes: NOx = 5.53 ppm

APPROVED BY:

JOHN C. FITZ



**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-86680-002

Customer

TAMPA ELECTRIC COMPANY  
BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: AAL955      Certification Date: 15Sep2003      Exp. Date: 14Sep2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT

CERTIFIED CONCENTRATION (Moles)

ANALYTICAL

ACCURACY\*\*

TRACEABILITY

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	11.1 PPM	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	5.46 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	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.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2635	01May2007	ALM019380	25.78 PPM	CARBON MONOXIDE
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS/6E/KN-240	25Aug2003	NDIR
HORIBA/CLA220/5708850810	21Aug2003	CHEMILUMINESCENCE

**ANALYZER READINGS**

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

**CARBON MONOXIDE**

Date: 08Sep2003	Response Unit: VOLTS
Z1 = -0.01280	R1 = 2.54100    T1 = 1.07530
R2 = 2.54230	Z2 = -0.01390    T2 = 1.07770
Z3 = -0.01310	T3 = 1.07570    R3 = 2.53870
Avg. Concentration:	11.10 PPM

Date: 15Sep2003	Response Unit: VOLTS
Z1 = 0.01460	R1 = 2.54400    T1 = 1.09530
R2 = 2.54580	Z2 = 0.01830    T2 = 1.09340
Z3 = 0.01320	T3 = 1.09430    R3 = 2.54850
Avg. Concentration:	11.10 PPM

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>
r = .999980      2635
Constants:      A = .067806
B = 10.172378    C =
D =                E =

**NITRIC OXIDE**

Date: 08Sep2003	Response Unit: VOLTS
Z1 = 0.00620	R1 = 3.77390    T1 = 1.14670
R2 = 3.77200	Z2 = 0.00600    T2 = 1.14530
Z3 = 0.00480	T3 = 1.14500    R3 = 3.76880
Avg. Concentration:	5.460 PPM

Date: 15Sep2003	Response Unit: VOLTS
Z1 = 0.00560	R1 = 3.81470    T1 = 1.15940
R2 = 3.81360	Z2 = 0.00510    T2 = 1.15710
Z3 = 0.00550	T3 = 1.15690    R3 = 3.81140
Avg. Concentration:	5.460 PPM

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>
r = .999998      2629
Constants:      A = -.016438
B = 4.632947    C =
D =                E =

**Special Notes:**

NO<sub>x</sub> = 5.47 ppm

APPROVED BY:

*[Signature]*  
JOHN L. FITZ

# RATA CLASS



## Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

### CERTIFICATE OF ACCURACY: Interference Free <sup>TM</sup> EPA Protocol Gas

#### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-86680-003

#### Customer

TAMPA ELECTRIC COMPANY  
BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

#### ANALYTICAL INFORMATION

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

Cylinder Number: ALM032306 Certification Date: 10Sep2003 Exp. Date: 09Sep2006  
Cylinder Pressure\*\*\*: 2000 PSIA

#### COMPONENT

CARBON MONOXIDE  
NITROGEN

#### CERTIFIED CONCENTRATION (Moles)

545 PPM  
BALANCE

#### ANALYTICAL

#### ACCURACY\*\*

+/- 1%

#### TRACEABILITY

Direct NIST and NMI

\*\*\* 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.

#### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1680	01Mar2007	ALM065542	486.3 PPM	CO/N2

#### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#

FTIR System/8220/AAB9300174

DATE LAST CALIBRATED

24Aug2003

ANALYTICAL PRINCIPLE

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 MONOXIDE

Date: 03Sep2003	Response Unit: PPM		
Z1 = 0.16940	R1 = 485.4700	T1 = 544.9245	
R2 = 486.8612	Z2 = 0.26260	T2 = 546.3255	
Z3 = 0.25010	T3 = 544.9328	R3 = 486.5687	
Avg. Concentration:	545.4	PPM	

Date: 10Sep2003	Response Unit: PPM		
Z1 = 0.19960	R1 = 486.3540	T1 = 546.1717	
R2 = 486.9532	Z2 = 0.16310	T2 = 545.8952	
Z3 = 0.20590	T3 = 545.0406	R3 = 485.5928	
Avg. Concentration:	545.7	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = 0.999990	
Constants:	A = 0.000000
B = 1.000000	C = 0.000000
D = 0.000000	E = 0.000000

#### Special Notes:

CO2 = 2 ppm, NO = 0.3 ppm

APPROVED BY:

Michael A. Kuhns

# RATA CLASS



## Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

### CERTIFICATE OF ACCURACY: Interference Free <sup>TM</sup> EPA Protocol Gas

Assay Laboratory

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

P.O. No.: E-N06925

Project No.: 01-86680-003

Customer

TAMPA ELECTRIC COMPANY  
BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

ANALYTICAL INFORMATION

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

Cylinder Number: ALM025175      Certification Date: 10Sep2003      Exp. Date: 09Sep2006  
Cylinder Pressure\*\*\*: 2000 PSIA

ANALYTICAL ACCURACY\*\*  
+/- 1%

<u>COMPONENT</u>	<u>CERTIFIED CONCENTRATION (Moles)</u>	<u>ANALYTICAL ACCURACY**</u>	<u>TRACEABILITY</u>
CARBON MONOXIDE	546 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.

REFERENCE STANDARD

<u>TYPE/SRM NO.</u>	<u>EXPIRATION DATE</u>	<u>CYLINDER NUMBER</u>	<u>CONCENTRATION</u>	<u>COMPONENT</u>
NTRM 1680	01Mar2007	ALM0655-2	486.3 PPM	CO/N2

INSTRUMENTATION

<u>INSTRUMENT/MODEL/SERIAL#</u>	<u>DATE LAST CALIBRATED</u>	<u>ANALYTICAL PRINCIPLE</u>
FTIR System/8220.AAB9300174	24Aug2003	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 MONOXIDE

Date: 03Sep2003	Response Unit: PPM		
Z1 = 0.16940	R1 = 485.4700	T1 = 546.0058	
R2 = 486.8612	Z2 = 0.26260	T2 = 545.7763	
Z3 = 0.25010	T3 = 546.1175	R3 = 486.5687	
Avg. Concentration: 546.0		PPM	

Date: 10Sep2003	Response Unit: PPM		
Z1 = 0.19960	R1 = 486.3540	T1 = 546.2522	
R2 = 486.9532	Z2 = 0.16310	T2 = 545.2239	
Z3 = 0.20590	T3 = 545.1453	R3 = 485.5928	
Avg. Concentration: 545.5		PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = 0.999990	
Constants:	A = 0.000000
B = 1.000000	C = 0.000000
D = 0.000000	E = 0.000000

Special Notes: CO2 = 2 ppm, NO = 0.3 ppm

APPROVED BY:

Michael A. Kuhns



# RATA CLASS



## Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

### CERTIFICATE OF ACCURACY: Interference Free <sup>TM</sup> EPA Protocol Gas

#### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-86680-007

#### Customer

TAMPA ELECTRIC COMPANY  
BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

#### ANALYTICAL INFORMATION

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

Cylinder Number: ALM063022      Certification Date: 10Sep2003      Exp. Date: 09Sep2006  
Cylinder Pressure\*\*\*: 1998 PSIA

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	546 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.

#### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1680	01Mar2007	ALM065542	486.3 PPM	CO:N2

#### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AAB9300174	24Aug2003	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 MONOXIDE

Date: 03Sep2003	Response Unit: PPM		
Z1 = 0.16940	R1 = 485.4700	T1 = 546.4616	
R2 = 486.8612	Z2 = 0.26260	T2 = 546.1168	
Z3 = 0.25010	T3 = 545.8988	R3 = 486.5687	
Avg. Concentration:	546.1	PPM	

Date: 10Sep2003	Response Unit: PPM		
Z1 = 0.19960	R1 = 486.3540	T1 = 545.4462	
R2 = 486.9532	Z2 = 0.16310	T2 = 546.5520	
Z3 = 0.20590	T3 = 545.5203	R3 = 485.5928	
Avg. Concentration:	545.8	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

Special Notes: CO2 = 2 ppm, NO = 0.3 ppm

APPROVED BY:

Michael A. Kuhns

# RATA CLASS

Dual-Analyzed Calibration Standard



## Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

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

#### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-86681-001

#### Customer

TAMPA ELECTRIC COMPANY

BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

#### ANALYTICAL INFORMATION

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

Cylinder Number: AAL19020 Certification Date: 14Oct2003 Exp. Date: 13Oct2005  
Cylinder Pressure\*\*\*: 2000 PSIA

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON DIOXIDE	5.52 %	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	83.7 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	84.2 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 as - +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

#### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2000	01Jun2005	K026617	5.006 %	CO2/N2
NTRM 1684	01Aug2006	AAL069517	97.20 PPM	NO/N2

#### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AAB930174	19Sep2003	Scott Enhanced FTIR
FTIR System/8220/AAB930174	19Sep2003	Scott Enhanced FTIR

#### ANALYZER READINGS

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

##### First Triad Analysis

##### CARBON DIOXIDE

Date: 07Oct2003 Response Unit: %  
Z1=0.00530 R1=5.00756 T1=5.51956  
R2=5.00736 Z2=0.01100 T2=5.52065  
Z3=0.00600 T3=5.50720 R3=5.00307  
Avg. Concentration: 5.516 %

##### Second Triad Analysis

##### NITRIC OXIDE

Date: 07Oct2003 Response Unit: PPM  
Z1=-0.95680 R1=97.03506 T1=83.79280  
R2=97.32881 Z2=-0.86150 T2=83.62001  
Z3=-0.71760 T3=83.66541 R3=97.23613  
Avg. Concentration: 83.69 PPM

Date: 14Oct2003 Response Unit: PPM  
Z1=-0.40790 R1=97.47394 T1=83.60422  
R2=97.01862 Z2=-0.15890 T2=83.86763  
Z3=-0.24640 T3=83.63793 R3=97.10742  
Avg. Concentration: 83.70 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

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

Special Notes:

CO = 0.1 PPM

APPROVED BY:

Michael A. Kuhns

**RATA CLASS**

*Dual-Analyzed Calibration Standard*



**Scott Specialty Gases**

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

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

**Assay Laboratory**

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

P.O. No.: E-N06925  
Project No.: 01-86681-001

**Customer**

TAMPA ELECTRIC COMPANY

BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: **ALM010732** Certification Date: **14Oct2003** Exp. Date: **13Oct2005**  
Cylinder Pressure\*\*\*: **2000 PSIA**

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON DIOXIDE	5.49 %	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	83.6 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	84.2 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTR: 2000	01Jun2005	K026617	5.006 %	CO2/N2
NTR: 1684	01Aug2006	AAL069517	97.20 PPM	NO/N2

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AAB9300174	19Sep2003	Scott Enhanced FTIR
FTIR System/8220/AAB9300174	19Sep2003	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: 07Oct2003 Response Unit: %  
Z1 = 0.00530 R1 = 5.00756 T1 = 5.48946  
R2 = 5.00736 Z2 = 0.01100 T2 = 5.48796  
Z3 = 0.00600 T3 = 5.48647 R3 = 5.00307  
Avg. Concentration: 5.488 %

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

**NITRIC OXIDE**

Date: 07Oct2003 Response Unit: PPM  
Z1 = -0.95680 R1 = 97.03506 T1 = 83.46924  
R2 = 97.32881 Z2 = -0.86150 T2 = 83.42185  
Z3 = -0.71760 T3 = 83.33377 R3 = 97.23613  
Avg. Concentration: 83.41 PPM

Date: 14Oct2003 Response Unit: PPM  
Z1 = -0.40790 R1 = 97.47394 T1 = 84.03051  
R2 = 97.01862 Z2 = -0.15890 T2 = 83.37293  
Z3 = -0.24640 T3 = 83.73796 R3 = 97.10742  
Avg. Concentration: 83.71 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

Special Notes: CO = 0.1 PPM

APPROVED BY:

*Michael A. Kubas*

Michael A. Kubas



# Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

## RATA CLASS

### Dual-Analyzed Calibration Standard

## CERTIFICATE OF ACCURACY: EPA Protocol Gas

### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-86681-002

### Customer

TAMPA ELECTRIC COMPANY

BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

### ANALYTICAL INFORMATION

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

Cylinder Number: **AAL17906** Certification Date: **10Sep2003** Exp. Date: **09Sep2005**  
Cylinder Pressure\*\*\*: **2000 PSIG** Batch No: **0196439**

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON MONOXIDE	11.0 PPM	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	5.50 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	5.50 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2635	01May2007	ALM019355	25.78 PPM	CARBON MONOXIDE
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS/6E/KN-240	25Aug2003	NDIR
HORIBA/CLA220/5708850810	21Aug2003	CHEMILUMINESCENCE

### ANALYZER READINGS

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

#### First Triad Analysis

#### CARBON MONOXIDE

Date: 03Sep2003 Response Unit: VOLTS  
Z1 = -0.01110 R1 = 2.53860 T1 = 1.07340  
R2 = 2.54080 Z2 = -0.01110 T2 = 1.07080  
Z3 = -0.01070 T3 = 1.07070 R3 = 2.54420  
Avg. Concentration: 10.99 PPM

#### Second Triad Analysis

Date: 10Sep2003 Response Unit: VOLTS  
Z1 = 0.00400 R1 = 2.53950 T1 = 1.07970  
R2 = 2.53760 Z2 = 0.00160 T2 = 1.07890  
Z3 = -0.00070 T3 = 1.07510 R3 = 2.53240  
Avg. Concentration: 11.00 PPM

#### Calibration Curve

Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>  
r = .99998 2635  
Constants: A = 0.067806  
B = 10.172378 C =  
D = E =

#### NITRIC OXIDE

Date: 03Sep2003 Response Unit: VOLTS  
Z1 = 0.00390 R1 = 3.77650 T1 = 1.15660  
R2 = 3.77480 Z2 = 0.00580 T2 = 1.15710  
Z3 = 0.00500 T3 = 1.15480 R3 = 3.77280  
Avg. Concentration: 5.510 PPM

Date: 10Sep2003 Response Unit: VOLTS  
Z1 = 0.00580 R1 = 3.77490 T1 = 1.15290  
R2 = 3.77430 Z2 = 0.00890 T2 = 1.15230  
Z3 = 0.00830 T3 = 1.15010 R3 = 3.77280  
Avg. Concentration: 5.480 PPM

Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>  
r = .999998 2629  
Constants: A = -0.016438  
B = 4.632947 C =  
D = E =

APPROVED BY:

  
KIMBERLY NILES

# RATA CLASS

Dual-Analyzed Calibration Standard



## Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

### CERTIFICATE OF ACCURACY: EPA Protocol Gas

#### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-86681-002

#### Customer

TAMPA ELECTRIC COMPANY

BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

#### ANALYTICAL INFORMATION

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

Cylinder Number: AAL2318 Certification Date: 10Sep2003 Exp. Date: 09Sep2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON MONOXIDE	10.9 PPM	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	5.49 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	5.50 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

#### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2635	01May2007	ALM019380	25.73 PPM	CARBON MONOXIDE
NTRM 2629	02Oct2004	AAL069525	18.65 PPM	NITRIC OXIDE

#### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS/6E/KN-240	25Aug2003	NDIR
HORIBA/CLA220/5708850810	21Aug2003	CHEMILUMINESCENCE

#### ANALYZER READINGS

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

##### First Triad Analysis

##### CARBON MONOXIDE

Date: 03Sep2003 Response Unit: VOLTS  
Z1 = -0.01110 R1 = 2.53860 T1 = 1.06790  
R2 = 2.54080 Z2 = -0.01110 T2 = 1.06560  
Z3 = -0.01070 T3 = 1.06450 R3 = 2.54420  
Avg. Concentration: 10.93 PPM

##### Second Triad Analysis

Date: 10Sep2003 Response Unit: VOLTS  
Z1 = 0.00400 R1 = 2.53950 T1 = 1.07540  
R2 = 2.53760 Z2 = 0.00160 T2 = 1.06980  
Z3 = -0.00070 T3 = 1.06790 R3 = 2.53240  
Avg. Concentration: 10.93 PPM

##### Calibration Curve

Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>  
r = .99998 2635  
Constants: A = 0.067806  
B = 10.172378 C =  
D = E =

##### NITRIC OXIDE

Date: 03Sep2003 Response Unit: VOLTS  
Z1 = 0.00390 R1 = 3.77650 T1 = 1.15320  
R2 = 3.77480 Z2 = 0.00580 T2 = 1.15430  
Z3 = 0.00500 T3 = 1.15310 R3 = 3.77280  
Avg. Concentration: 5.500 PPM

Date: 10Sep2003 Response Unit: VOLTS  
Z1 = 0.00580 R1 = 3.77490 T1 = 1.15150  
R2 = 3.77430 Z2 = 0.00890 T2 = 1.14880  
Z3 = 0.00830 T3 = 1.14760 R3 = 3.77220  
Avg. Concentration: 5.470 PPM

Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>  
r = .99998 2629  
Constants: A = -0.016438  
B = 4.632947 C =  
D = E =

APPROVED BY:

  
KIMBERLY NILES

# RATA CLASS



## Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

### CERTIFICATE OF ACCURACY: Interference Free <sup>TM</sup> EPA Protocol Gas

#### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-86681-003

#### Customer

TAMPA ELECTRIC COMPANY  
BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

#### ANALYTICAL INFORMATION

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

Cylinder Number: ALM051463      Certification Date: 14Oct2003      Exp. Date: 13Oct2006  
Cylinder Pressure\*\*\*: 1972 PSIA

#### ANALYTICAL

#### ACCURACY\*\*

#### TRACEABILITY

#### COMPONENT

#### CERTIFIED CONCENTRATION (Moles)

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	552 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.

#### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1680	01Mar2007	ALM065542	486.3 PPM	CO/N2

#### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AAB9300174	19Sep2003	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 MONOXIDE

Date: 07Oct2003	Response Unit: PPM		
Z1 = 0.02640	R1 = 486.6410	T1 = 551.8493	
R2 = 485.8522	Z2 = 0.03330	T2 = 552.5097	
Z3 = 0.17440	T3 = 552.3704	R3 = 486.4067	
Avg. Concentration:	552.2	PPM	

Date: 14Oct2003	Response Unit: PPM		
Z1 = -0.08380	R1 = 485.7056	T1 = 551.6705	
R2 = 485.7569	Z2 = -0.02320	T2 = 553.3110	
Z3 = 0.09570	T3 = 553.2753	R3 = 487.4374	
Avg. Concentration:	552.7	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = 0.999990	
Constants:	A = 0.000000
B = 1.000000	C = 0.000000
D = 0.000000	E = 0.000000

Special Notes: CO2 = 1 PPM, NO = 0.1 PPM

APPROVED BY:

Michael A. Kuhns



6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

CERTIFICATE OF ACCURACY: Interference Free <sup>TM</sup> EPA Protocol Gas

Assay Laboratory

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

P.O. No.: E-N06925
Project No.: 01-86681-003

Customer

TAMPA ELECTRIC COMPANY
BILL ROBINSON
GANNON WHSE-STOREROOM 22
3602 PORT SUTTON ROAD
TAMPA FL 33619

ANALYTICAL INFORMATION

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

Cylinder Number: ALM054618 Certification Date: 14Oct2003 Exp. Date: 13Oct2006
Cylinder Pressure\*\*\*: 1972 PSIA

Table with 4 columns: COMPONENT, CERTIFIED CONCENTRATION (Moles), ANALYTICAL ACCURACY\*\*, TRACEABILITY. Rows for CARBON MONOXIDE and NITROGEN.

\*\*\* 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.

REFERENCE STANDARD

Table with 5 columns: TYPE/SRM NO., EXPIRATION DATE, CYLINDER NUMBER, CONCENTRATION, COMPONENT. Row for NTRM 1680.

INSTRUMENTATION

Table with 3 columns: INSTRUMENT/MODEL/SERIAL#, DATE LAST CALIBRATED, ANALYTICAL PRINCIPLE. Row for FTIR System/8220/AAB9300174.

ANALYZER READINGS

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

CARBON MONOXIDE

Table for Carbon Monoxide analysis on 07Oct2003. Includes response unit PPM and concentration data.

Table for Carbon Monoxide analysis on 14Oct2003. Includes response unit PPM and concentration data.

Table for Calibration Curve showing concentration equation and constants A, B, C, D, E.

Special Notes: CO2 = 1 PPM, NO = 0.1 PPM

APPROVED BY:

Signature of Michael A. Kuhns

Michael A. Kuhns

# RATA CLASS

## Dual-Analyzed Calibration Standard



# Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

### CERTIFICATE OF ACCURACY: EPA Protocol Gas

#### Assay Laboratory

SCOTT SPECIALTY GASES  
6141 EASTON ROAD, BLDG 1  
PLUMSTEADVILLE, PA 18949-0310P.O. No.: E-N06925  
Project No.: 01-86681-006

#### Customer

TAMPA ELECTRIC COMPANY

BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

#### ANALYTICAL INFORMATION

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

Cylinder Number: ALM003626 Certification Date: 10Sep2003 Exp. Date: 09Sep2005  
Cylinder Pressure\*\*\*: 2000 PSIG Batch No: 0196268

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON MONOXIDE	11.0 PPM	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	5.47 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	5.48 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

#### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2635	01Jul2007	ALM019380	25.78 PPM	CARBON MONOXIDE
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

#### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS/6E/KN-240	25Aug2003	DIR
HORIBA/CLA 220 5708850810	21Aug2003	CHEMILUMINESCENCE

#### ANALYZER READINGS

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

##### First Triad Analysis

##### CARBON MONOXIDE

Date: 02Sep2003 Response Unit: VOLTS  
Z1=0.00480 R1=2.54270 T1=1.08460  
R2=2.54370 Z2=0.00620 T2=1.08310  
Z3=0.00480 T3=1.08360 R3=2.54390  
Avg. Concentration: 11.00 PPM

##### Second Triad Analysis

Date: 09Sep2003 Response Unit: VOLTS  
Z1=0.00200 R1=2.53320 T1=1.07230  
R2=2.53500 Z2=0.00550 T2=1.06960  
Z3=0.00240 T3=1.06990 R3=2.53480  
Avg. Concentration: 10.90 PPM

##### Calibration Curve

Concentration = A + Bx - Cx2 + Dx3 + Ex4  
r = .999980 2635  
Constants: A = .067806  
B = 10.172378 C =  
D = E =

##### NITRIC OXIDE

Date: 02Sep2003 Response Unit: VOLTS  
Z1=0.00660 R1=3.76100 T1=1.14380  
R2=3.75510 Z2=0.00460 T2=1.14550  
Z3=0.00670 T3=1.14360 R3=3.75520  
Avg. Concentration: 5.480 PPMDate: 09Sep2003 Response Unit: VOLTS  
Z1=0.00480 R1=3.79270 T1=1.15450  
R2=3.79140 Z2=0.00760 T2=1.15360  
Z3=0.00660 T3=1.15520 R3=3.79580  
Avg. Concentration: 5.470 PPMConcentration = A + Bx + Cx2 + Dx3 + Ex4  
r = .999998 2629  
Constants: A = -.015438  
B = 4.632947 C =  
D = E =

APPROVED BY:

JOHN C. FITZ





# Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

## RATA CLASS

Dual-Analyzed Calibration Standard

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

#### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-86681-007

#### Customer

TAMPA ELECTRIC COMPANY

BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

#### ANALYTICAL INFORMATION

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

Cylinder Number: AAL15143 Certification Date: 14Oct2003 Exp. Date: 13Oct2005  
Cylinder Pressure\*\*\*: 2000 PSIA

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON DIOXIDE	5.51 %	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	83.4 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	84.1 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

#### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2000	01Jun2005	K026617	5.006 %	CO2 N2
NTRM 1684	01Aug2006	AAL069517	97.20 PPM	NO, N2

#### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AAB9300174	19Sep2003	Scott Enhanced FTIR
FTIR System/8220/AAB9300174	19Sep2003	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: 07Oct2003 Response Unit: %  
Z1 = 0.00530 R1 = 5.00756 T1 = 5.51148  
R2 = 5.00736 Z2 = 0.01100 T2 = 5.51178  
Z3 = 0.00600 T3 = 5.51178 R3 = 5.00307  
Avg. Concentration: 5.512 %

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

#### NITRIC OXIDE

Date: 07Oct2003 Response Unit: PPM  
Z1 = -0.95680 R1 = 97.03506 T1 = 83.79570  
R2 = 97.32881 Z2 = -0.86150 T2 = 83.30257  
Z3 = -0.71760 T3 = 83.10690 R3 = 97.23613  
Avg. Concentration: 83.40 PPM

Date: 14Oct2003 Response Unit: PPM  
Z1 = -0.40790 R1 = 97.47394 T1 = 83.39938  
R2 = 97.01862 Z2 = -0.15890 T2 = 83.47892  
Z3 = -0.24640 T3 = 83.49772 R3 = 97.10742  
Avg. Concentration: 83.46 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

Special Notes:

CO = 0.1 PPM

APPROVED BY:

Michael A. Kubas

**RATA CLASS**



**Scott Specialty Gases**

*Dual-Analyzed Calibration Standard*

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: Interference Free <sup>TM</sup> EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-86681-008

Customer

TAMPA ELECTRIC COMPANY  
BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: ALM025786      Certification Date: 14Oct2003      Exp. Date: 13Oct2006  
Cylinder Pressure\*\*\*: 2000 PSIA

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	553 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.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1680	01Mar2007	ALM065542	486.3 PPM	CO <sub>2</sub>

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AAB9300174	19Sep2003	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 MONOXIDE**

Date: 07Oct2003	Response Unit: PPM		
Z1 = 0.02640	R1 = 486.6410	T1 = 552.8861	
R2 = 485.8522	Z2 = 0.03330	T2 = 552.7086	
Z3 = 0.17440	T3 = 553.5029	R3 = 486.4067	
Avg. Concentration:		553.0	PPM

Date: 14Oct2003	Response Unit: PPM		
Z1 = -0.08380	R1 = 485.7056	T1 = 553.2412	
R2 = 485.7569	Z2 = -0.02320	T2 = 552.4321	
Z3 = 0.09570	T3 = 554.2337	R3 = 487.4374	
Avg. Concentration:		553.3	PPM

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = 0.999990	
Constants:	A = 0.000000
B = 1.000000	C = 0.000000
D = 0.000000	E = 0.000000

Special Notes: CO<sub>2</sub> = 1 PPM, NO = 0.1 PPM

APPROVED BY:   
Michael A. Kuhns

# RATA CLASS

Dual-Analyzed Calibration Standard



## Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

### CERTIFICATE OF ACCURACY: EPA Protocol Gas

#### Assay Laboratory

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

P.O. No.: 0320848F  
Project No.: 01-96419-001

#### Customer

SPECTRUM SYSTEMS

R GARLAND/RECEIVING MGR  
C/O TIC/BAYSIDE POWER PRO  
4343 PORT SUTTON ROAD  
TAMPA FL 33619

#### ANALYTICAL INFORMATION

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

Cylinder Number: 1L1617      Certification Date: 03Feb2003      Exp. Date: 02Feb2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON MONOXIDE	11.3 PPM	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	5.51 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	5.51 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

#### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2635	01May2007	ALM019380	25.78 PPM	CARBON MONOXIDE
NTRM 2635	02Oct2004	AAL069504	18.05 PPM	NITRIC OXIDE

#### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS/6E/KN-240	31Jan2003	NOIR
HORIBA/CLA220/5708850810	22Jan2003	CHEMILUMINESCENCE

#### ANALYZER READINGS

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

##### First Triad Analysis

##### CARBON MONOXIDE

Date: 27Jan2003    Response Unit: VOLTS  
Z1 = -0.00340    R1 = 2.54020    T1 = 1.11260  
R2 = 2.54570    Z2 = -0.00370    T2 = 1.10780  
Z3 = -0.00490    T3 = 1.10820    R3 = 2.54600  
Avg. Concentration: 11.30    PPM

##### NITRIC OXIDE

Date: 27Jan2003    Response Unit: VOLTS  
Z1 = 0.00660    R1 = 3.95720    T1 = 1.20860  
R2 = 3.96140    Z2 = 0.00570    T2 = 1.21140  
Z3 = 0.00580    T3 = 1.21110    R3 = 3.96470  
Avg. Concentration: 5.510    PPM

##### Second Triad Analysis

Date: 03Feb2003    Response Unit: VOLTS  
Z1 = -0.00300    R1 = 2.54290    T1 = 1.10680  
R2 = 2.54390    Z2 = -0.00090    T2 = 1.10950  
Z3 = -0.00190    T3 = 1.10840    R3 = 2.55390  
Avg. Concentration: 11.30    PPM

Date: 03Feb2003    Response Unit: VOLTS  
Z1 = 0.00750    R1 = 3.91320    T1 = 1.19660  
R2 = 3.92460    Z2 = 0.01000    T2 = 1.20280  
Z3 = 0.00660    T3 = 1.20340    R3 = 3.94700  
Avg. Concentration: 5.500    PPM

##### Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4  
r = .999951    2635  
Constants:    A = 6.6140E-02  
B = 1.0194E + 01    C =  
D =    E =

Concentration = A + Bx + Cx2 + Dx3 + Ex4  
r = .999999    2629  
Constants:    A = -.005887  
B = 4.549761    C =  
D =    E =

APPROVED BY:

JOHN C. FITZ

BPS # 2  
CEMS  
Spectrum Gas

# RATA CLASS



## Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

### CERTIFICATE OF ACCURACY: Interference Free <sup>TM</sup> EPA Protocol Gas

#### Assay Laboratory

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

P.O. No.: 0320848F  
Project No.: 01-96419-002

#### Customer

SPECTRUM SYSTEMS  
R GARLAND/RECEIVING MGR  
C/O TIC/BAYSIDE POWER PRO  
4343 PORT SUTTON ROAD  
TAMPA FL 33619

#### ANALYTICAL INFORMATION

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

Cylinder Number: ALM029425      Certification Date: 02Sep2003      Exp. Date: 01Sep2006  
Cylinder Pressure\*\*\*: 1966 PSIA

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	555 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.

#### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1680	01Mar2007	ALM065542	486.3 PPM	CO/N2

#### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System:8220/AAB9300174	24Aug2003	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 MONOXIDE

Date: 26Aug2003	Response Unit: PPM		
Z1 = 0.22100	R1 = 484.8673	T1 = 554.5311	
R2 = 486.5341	Z2 = 0.28550	T2 = 555.5563	
Z3 = 0.23450	T3 = 556.8118	R3 = 487.4985	
Avg. Concentration:	555.6	PPM	

Date: 02Sep2003	Response Unit: PPM		
Z1 = 0.11700	R1 = 486.4294	T1 = 553.6367	
R2 = 486.8952	Z2 = 0.17010	T2 = 554.7982	
Z3 = 0.20390	T3 = 553.3243	R3 = 485.5751	
Avg. Concentration:	553.9	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = 0.999990	
Constants:	A = 0.000000
B = 1.000000	C = 0.000000
D = 0.000000	E = 0.000000

APPROVED BY:

Michael A. Kuhns

RATA CLASS

Dual Analyzed Calibration Standard



Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 600-331-4953

Fax: 215-766-7226

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

Assay Laboratory

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

P.O. No.: 0320848F
Project No.: 01-96419-007

Customer
SPECTRUM SYSTEMS

R GARLAND/RECEIVING MGR
C/O TIC/BAYSIDE POWER PRO
4343 PORT SUTTON ROAD
TAMPA FL 33619

ANALYTICAL INFORMATION

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

Cylinder Number: ALM035365 Certification Date: 03Sep2003 Exp. Date: 03Sep2005
Cylinder Pressure\*\*\*: 1900 PSIA

Table with 4 columns: COMPONENT, CERTIFIED CONCENTRATION (Moles), ACCURACY, TRACEABILITY. Rows include CARBON DIOXIDE, NITRIC OXIDE, NITROGEN - OXYGEN FREE, and TOTAL OXIDES OF NITROGEN.

\*\*\* 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.

REFERENCE STANDARD

Table with 5 columns: TYPE/SRM NO., EXPIRATION DATE, CYLINDER NUMBER, CONCENTRATION, COMPONENT. Rows include NTRM 2000 and NTRM 1684.

INSTRUMENTATION

Table with 3 columns: INSTRUMENT/MODEL/SERIAL#, DATE LAST CALIBRATED, ANALYTICAL PRINCIPLE. Rows include FTIR System/B220/AAB9300174.

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: 26Aug2003
Z1=0.00060 R1=0.00000 T1=0.00000
R2=0.00090 Z2=0.00000 T2=0.00000
Z3=0.00000 T3=0.00000 R3=0.00000
Avg. Concentration: 0.000

Date: 03Sep2003 Response Unit: %
Z1=0.00290 R1=5.00260 T1=5.50023
R2=5.00679 Z2=0.00000 T2=5.50303
Z3=0.00510 T3=5.50053 R3=5.00859
Avg. Concentration: 5.331 %

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 0.999990
Constants: A = 0.00000
B = 1.000000 C = 0.000000
D = 0.000000 E = 0.000000

NITRIC OXIDE

Date: 26Aug2003 Response Unit: PPM
Z1=0.32240 R1=97.10959 T1=82.34514
R2=97.15055 Z2=0.21530 T2=81.94608
Z3=0.43140 T3=81.90293 R3=97.33954
Avg. Concentration: 82.06 PPM

Date: 03Sep2003 Response Unit: PPM
Z1=-0.82960 R1=96.88134 T1=92.31513
R2=97.24871 Z2=-0.43070 T2=91.84016
Z3=-0.55410 T3=81.93931 R3=97.46952
Avg. Concentration: 82.02 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

APPROVED BY:

Handwritten signature of Michael A. Kubas

Michael A. Kubas

# RATA CLASS

Dual-Analyzed Calibration Standard



## Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

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

#### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-86682-001

#### Customer

TAMPA ELECTRIC COMPANY

BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

#### ANALYTICAL INFORMATION

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

Cylinder Number: **ALM001953**  
Cylinder Pressure\*\*\*: 2000 PSIA

Certification Date: 12Nov2003

Exp. Date: 11Nov2005

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON DIOXIDE	5.51 %	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	81.7 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	82.4 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

#### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2000	01Jun2005	K026617	5.006 %	CO2/N2
NTRM 1684	01Aug2006	AAL069517	97.20 PPM	NO/N2

#### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AAB9300174	16Oct2003	Scott Enhanced FTIR
FTIR System/8220/AAB9300174	16Oct2003	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: 05Nov2003 Response Unit: %  
Z1 = 0.00720 R1 = 5.00351 T1 = 5.51300  
R2 = 5.00460 Z2 = 0.00310 T2 = 5.50952  
Z3 = 0.01000 T3 = 5.51091 R3 = 5.00988  
Avg. Concentration: 5.511 %

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

#### NITRIC OXIDE

Date: 05Nov2003 Response Unit: PPM  
Z1 = 0.01760 R1 = 97.02462 T1 = 82.03264  
R2 = 97.38021 Z2 = 0.04790 T2 = 82.13884  
Z3 = -0.32280 T3 = 82.07765 R3 = 97.19516  
Avg. Concentration: 82.08 PPM

Date: 12Nov2003 Response Unit: PPM  
Z1 = -0.28730 R1 = 97.30124 T1 = 81.33190  
R2 = 97.35668 Z2 = -0.52550 T2 = 81.20890  
Z3 = -0.47980 T3 = 81.60501 R3 = 96.94208  
Avg. Concentration: 81.38 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

Special Notes: CO = 0.3 PPM

APPROVED BY:

Michael A. Kuhns



**Scott Specialty Gases**

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

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

**Assay Laboratory**

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

P.O. No.: E-N06925  
Project No.: 01-86682-001

**Customer**

TAMPA ELECTRIC COMPANY

BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: **ALM040392** Certification Date: **12Nov2003** Exp. Date: **11Nov2005**  
Cylinder Pressure\*\*\*: **2000 PSIA**

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON DIOXIDE	5.51 %	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	81.8 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	82.4 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2000	01Jun2005	K026617	5.006 %	CO2/N2
NTRM 1684	01Aug2006	AAL069517	97.20 PPM	NO/N2

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AAB9300174	16Oct2003	Scott Enhanced FTIR
FTIR System/8220/AAB9300174	16Oct2003	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: 05Nov2003 Response Unit: %  
Z1 = 0.00720 R1 = 5.00351 T1 = 5.51131  
R2 = 5.00460 Z2 = 0.00310 T2 = 5.50942  
Z3 = 0.01000 T3 = 5.52136 R3 = 5.00988  
Avg. Concentration: 5.514 %

Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>  
r = 0.999990  
Constants: A = 0.000000  
B = 1.000000 C = 0.000000  
D = 0.000000 E = 0.000000

**NITRIC OXIDE**

Date: 05Nov2003 Response Unit: PPM  
Z1 = 0.01760 R1 = 97.02462 T1 = 82.12364  
R2 = 97.38021 Z2 = 0.04790 T2 = 81.99041  
Z3 = -0.32280 T3 = 81.76922 R3 = 97.19516  
Avg. Concentration: 81.96 PPM

Date: 12Nov2003 Response Unit: PPM  
Z1 = -0.28730 R1 = 97.30124 T1 = 81.76497  
R2 = 97.35668 Z2 = -0.52550 T2 = 81.76269  
Z3 = -0.47980 T3 = 81.64456 R3 = 96.94208  
Avg. Concentration: 81.72 PPM

Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>  
r = 0.999990  
Constants: A = 0.000000  
B = 1.000000 C = 0.000000  
D = 0.000000 E = 0.000000

Special Notes: CO = 0.3 PPM

APPROVED BY:

Michael A. Kuhns

**RATA CLASS**

*Dual-Analyzed Calibration Standard*



**Scott Specialty Gases**

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-86682-006

Customer

TAMPA ELECTRIC COMPANY  
  
BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: CC27508      Certification Date: 03Oct2003      Exp. Date: 02Oct2005  
Cylinder Pressure\*\*\*: 2000 PSIG      Batch No: 0196770

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON MONOXIDE	11.6 PPM	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	5.55 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	5.56 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2635	01May2007	ALM000324	25.78 PPM	CARBON MONOXIDE
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS/6E/KN-240	02Oct2003	NDIR
HORIBA/CLA 220/5708850810	22Sep2003	CHEMILUMINESCENCE

**ANALYZER READINGS**

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

**First Triad Analysis**

**Second Triad Analysis**

**Calibration Curve**

**CARBON MONOXIDE**

Date: 25Sep2003    Response Unit: VOLTS  
Z1 = -0.02070    R1 = 2.54020    T1 = 1.07490  
R2 = 2.54200    Z2 = -0.02500    T2 = 1.07550  
Z3 = -0.02040    T3 = 1.07130    R3 = 2.54400  
Avg. Concentration: 11.50    PPM

Date: 03Oct2003    Response Unit: VOLTS  
Z1 = -0.00550    R1 = 2.53880    T1 = 1.08450  
R2 = 2.54520    Z2 = -0.00040    T2 = 1.08190  
Z3 = -0.00680    T3 = 1.08250    R3 = 2.54230  
Avg. Concentration: 11.60    PPM

Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>  
r = .999975    1678  
Constants:    A = 1.066519  
B = 10.057237    C =  
D =    E =

**NITRIC OXIDE**

Date: 24Sep2003    Response Unit: VOLTS  
Z1 = 0.00360    R1 = 3.79550    T1 = 1.16060  
R2 = 3.79980    Z2 = 0.00830    T2 = 1.15700  
Z3 = 0.00480    T3 = 1.15860    R3 = 3.79480  
Avg. Concentration: 5.550    PPM

Date: 01Oct2003    Response Unit: VOLTS  
Z1 = 0.00650    R1 = 3.79920    T1 = 1.15880  
R2 = 3.79580    Z2 = 0.00500    T2 = 1.15850  
Z3 = 0.00730    T3 = 1.15830    R3 = 3.79410  
Avg. Concentration: 5.550    PPM

Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>  
r = .999987    2629  
Constants:    A = .059533  
B = 4.777057    C =  
D =    E =

APPROVED BY:

JOHN C. FITZ





**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925

Project No.: 01-86682-002

Customer

TAMPA ELECTRIC COMPANY  
BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: AAL7695      Certification Date: 10Nov2003      Exp. Date: 09Nov2005  
Cylinder Pressure\*\*\*: 2000 PSIG

<u>COMPONENT</u>	<u>CERTIFIED CONCENTRATION (Moles)</u>	<u>ANALYTICAL ACCURACY**</u>	<u>TRACEABILITY</u>
CARBON MONOXIDE	11.3 PPM	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	5.47 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	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.

**REFERENCE STANDARD**

<u>TYPE/SRM NO.</u>	<u>EXPIRATION DATE</u>	<u>CYLINDER NUMBER</u>	<u>CONCENTRATION</u>	<u>COMPONENT</u>
NTRM 2635	01May2007	ALM016229	25.78 PPM	CARBON MONOXIDE
NTRM 2629	02Oct2004	AAL069414	18.05 PPM	NITRIC OXIDE

**INSTRUMENTATION**

<u>INSTRUMENT/MODEL/SERIAL#</u>	<u>DATE LAST CALIBRATED</u>	<u>ANALYTICAL PRINCIPLE</u>
SIEMENS/6E/KN-240	15Oct2003	NDIR
HORIBA/CLA220/5708850810	22Oct2003	CHEMILUMINESCENCE

**ANALYZER READINGS**

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

**CARBON MONOXIDE**

Date: 03Nov2003	Response Unit: VOLTS	
Z1 = -0.00330	R1 = 2.54640	T1 = 1.10490
R2 = 2.54380	Z2 = -0.00730	T2 = 1.10250
Z3 = -0.00730	T3 = 1.10060	R3 = 2.54300
Avg. Concentration:	11.29	PPM

Date: 10Nov2003	Response Unit: VOLTS	
Z1 = -0.00540	R1 = 2.54210	T1 = 1.10690
R2 = 2.54190	Z2 = -0.00370	T2 = 1.10350
Z3 = -0.00450	T3 = 1.10130	R3 = 2.54030
Avg. Concentration:	11.31	PPM

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999994	2635
Constants:	A = -0.032332
B = 10.824539	C = -0.184971
D =	E =

**NITRIC OXIDE**

Date: 03Nov2003	Response Unit: VOLTS	
Z1 = 0.00480	R1 = 3.89040	T1 = 1.19040
R2 = 3.89230	Z2 = 0.00440	T2 = 1.19140
Z3 = 0.00570	T3 = 1.19210	R3 = 3.88990
Avg. Concentration:	5.480	PPM

Date: 10Nov2003	Response Unit: VOLTS	
Z1 = 0.00620	R1 = 3.88090	T1 = 1.18590
R2 = 3.87650	Z2 = 0.00050	T2 = 1.18370
Z3 = 0.00630	T3 = 1.18570	R3 = 3.88150
Avg. Concentration:	5.470	PPM

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999997	2629
Constants:	A = -0.066808
B = 4.681466	C =
D =	E =

Special Notes: NOX = 5.48 PPM

APPROVED BY:

KIMBERLY NILES

# RATA CLASS



## Scott Specialty Gases

### Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

## CERTIFICATE OF ACCURACY: EPA Protocol Gas

### Assay Laboratory

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

P.O. No.: E-NO6925  
Project No.: 01-86632-002

### Customer

TAMPA ELECTRIC COMPANY  
BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

### ANALYTICAL INFORMATION

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

Cylinder Number: AAL069092      Certification Date: 10Nov2003      Exp. Date: 09Nov2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	11.1 PPM	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	5.41 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		

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

\*\* Analytical accuracy is based on the requirements of EPA Protocol Procedure G-1, September 1997.

Product certified as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2635	01May2007	ALM016889	25.78 PPM	CARBON MONOXIDE
NTRM 2629	02Oct2004	AAL069414	18.05 PPM	NITRIC OXIDE

### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS/6E/KN-240	15Oct2003	NDIR
HORIBA/CLA220/5708850810	22Oct2003	CHEMILUMINESCENCE

### ANALYZER READINGS

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

#### CARBON MONOXIDE

Date: 03Nov2003	Response Unit: VOLTS	
Z1 = -0.00330	R1 = 2.54640	T1 = 1.09010
R2 = 2.54380	Z2 = -0.00730	T2 = 1.08550
Z3 = -0.00730	T3 = 1.08690	R3 = 2.54300
Avg. Concentration:	11.14	PPM

Date: 10Nov2003	Response Unit: VOLTS	
Z1 = -0.00540	R1 = 2.54210	T1 = 1.09220
R2 = 2.54190	Z2 = -0.00370	T2 = 1.08640
Z3 = -0.00450	T3 = 1.08510	R3 = 2.54030
Avg. Concentration:	11.15	PPM

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999994	2635
Constants:	A = -0.032332
B = 10.824539	C = -0.184971
D =	E =

#### NITRIC OXIDE

Date: 03Nov2003	Response Unit: VOLTS	
Z1 = 0.00480	R1 = 3.89040	T1 = 1.17630
R2 = 3.89230	Z2 = 0.00440	T2 = 1.17700
Z3 = 0.00570	T3 = 1.17780	R3 = 3.88990
Avg. Concentration:	5.410	PPM

Date: 10Nov2003	Response Unit: VOLTS	
Z1 = 0.00620	R1 = 3.88090	T1 = 1.17060
R2 = 3.87650	Z2 = 0.00050	T2 = 1.17140
Z3 = 0.00630	T3 = 1.16960	R3 = 3.88150
Avg. Concentration:	5.400	PPM

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999997	2629
Constants:	A = -0.066808
B = 4.681466	C =
D =	E =

Special Notes: NOX = 5.42 PPM

APPROVED BY:

KIMBERLY NILES



**Scott Specialty Gases**

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

*Dual-Analyzed Calibration Standard*

**CERTIFICATE OF ACCURACY: Interference Free <sup>TM</sup> EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-86682-007

Customer

TAMPA ELECTRIC COMPANY  
BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: ALM031867      Certification Date: 11Nov2003      Exp. Date: 10Nov2006  
Cylinder Pressure\*\*\*: 2000 PSIA

<u>COMPONENT</u>	<u>CERTIFIED CONCENTRATION (Moles)</u>	<u>ANALYTICAL ACCURACY**</u>	<u>TRACEABILITY</u>
CARBON MONOXIDE	556 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.

**REFERENCE STANDARD**

<u>TYPE/SRM NO.</u>	<u>EXPIRATION DATE</u>	<u>CYLINDER NUMBER</u>	<u>CONCENTRATION</u>	<u>COMPONENT</u>
NTRM 1680	01Mar2007	ALM065550	486.3 PPM	CO/N2

**INSTRUMENTATION**

<u>INSTRUMENT/MODEL/SERIAL#</u>	<u>DATE LAST CALIBRATED</u>	<u>ANALYTICAL PRINCIPLE</u>
FTIR System/8220/AAB9300174	16Oct2003	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 MONOXIDE**

Date: 04Nov2003	Response Unit: PPM		
Z1 = 0.10420	R1 = 485.5463	T1 = 557.0499	
R2 = 486.5235	Z2 = 0.24030	T2 = 555.7564	
Z3 = 0.21190	T3 = 556.9533	R3 = 486.8300	
Avg. Concentration:		556.6	PPM

Date: 11Nov2003	Response Unit: PPM		
Z1 = 0.25710	R1 = 485.7313	T1 = 555.7413	
R2 = 485.7375	Z2 = 0.30980	T2 = 554.5024	
Z3 = 0.33850	T3 = 556.2530	R3 = 487.4310	
Avg. Concentration:		555.5	PPM

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = 0.999990	
Constants:	A = 0.000000
B = 1.000000	C = 0.000000
D = 0.000000	E = 0.000000

Special Notes: CO2 = 3 PPM, NO = 0.1 PPM

APPROVED BY:

*Michael A. Kuhns*

Michael A. Kuhns

# RATA CLASS



## Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

### Dual-Analyzed Calibration Standard

## CERTIFICATE OF ACCURACY: Interference Free <sup>TM</sup> EPA Protocol Gas

### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-86682-003

### Customer

TAMPA ELECTRIC COMPANY  
BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

### ANALYTICAL INFORMATION

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

Cylinder Number: ALM003778      Certification Date: 11Nov2003      Exp. Date: 10Nov2006  
Cylinder Pressure\*\*\*: 2000 PSIA

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	556 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.

### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1680	01Mar2007	ALM065550	486.3 PPM	CO/N2

### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AAB9300174	16Oct2003	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 MONOXIDE

Date: 04Nov2003	Response Unit: PPM		
Z1 = 0.10420	R1 = 485.5463	T1 = 556.4619	
R2 = 486.5235	Z2 = 0.24030	T2 = 557.3847	
Z3 = 0.21190	T3 = 555.5844	R3 = 486.8300	
Avg. Concentration: 556.5		PPM	

Date: 11Nov2003	Response Unit: PPM		
Z1 = 0.25710	R1 = 485.7313	T1 = 555.8299	
R2 = 485.7375	Z2 = 0.30980	T2 = 555.5845	
Z3 = 0.33850	T3 = 556.1674	R3 = 487.4310	
Avg. Concentration: 555.9		PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = 0.999990	
Constants:	A = 0.000000
B = 1.000000	C = 0.000000
D = 0.000000	E = 0.000000

Special Notes: CO2 = 3 PPM, NO = 0.1 PPM

APPROVED BY:

Michael A. Kuhns



**Scott Specialty Gases**

*Dual-Analyzed Calibration Standard*

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

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**CERTIFICATE OF ACCURACY: Interference Free <sup>TM</sup> EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-86682-003

Customer

TAMPA ELECTRIC COMPANY  
BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: AAL20053      Certification Date: 11Nov2003      Exp. Date: 10Nov2006  
Cylinder Pressure\*\*\*: 2000 PSIA

<u>COMPONENT</u>	<u>CERTIFIED CONCENTRATION (Moles)</u>	<u>ANALYTICAL ACCURACY**</u>	<u>TRACEABILITY</u>
CARBON MONOXIDE	556 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.

**REFERENCE STANDARD**

<u>TYPE/SRM NO.</u>	<u>EXPIRATION DATE</u>	<u>CYLINDER NUMBER</u>	<u>CONCENTRATION</u>	<u>COMPONENT</u>
NTRM 1680	01Mar2007	ALM065550	486.3 PPM	CO/N2

**INSTRUMENTATION**

<u>INSTRUMENT/MODEL/SERIAL#</u>	<u>DATE LAST CALIBRATED</u>	<u>ANALYTICAL PRINCIPLE</u>
FTIR System/8220/AAB9300174	16Oct2003	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 MONOXIDE**

Date: 04Nov2003	Response Unit: PPM		
Z1 = 0.10420	R1 = 485.5463	T1 = 555.4479	
R2 = 486.5235	Z2 = 0.24030	T2 = 556.2004	
Z3 = 0.21190	T3 = 556.2991	R3 = 486.8300	
Avg. Concentration: 556.0		PPM	

Date: 11Nov2003	Response Unit: PPM		
Z1 = 0.25710	R1 = 485.7313	T1 = 555.1742	
R2 = 485.7375	Z2 = 0.30980	T2 = 555.9224	
Z3 = 0.33850	T3 = 557.1075	R3 = 487.4310	
Avg. Concentration: 556.1		PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = 0.999990	
Constants:	A = 0.000000
B = 1.000000	C = 0.000000
D = 0.000000	E = 0.000000

Special Notes: CO2 = 4 PPM, NO = 0.1 PPM

APPROVED BY:

*Michael A. Kuhns*  
Michael A. Kuhns



# Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

## RATA CLASS

Dual-Analyzed Calibration Standard

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

#### Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-96714-001

#### Customer

TAMPA ELECTRIC COMPANY

BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

#### ANALYTICAL INFORMATION

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

Cylinder Number: ALM011163 Certification Date: 13Dec2003 Exp. Date: 12Dec2005  
Cylinder Pressure\*\*\*: 2000 PSIA

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON DIOXIDE	5.50 %	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	81.4 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	82.0 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

#### REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2000	01Jun2005	K026617	5.006 %	CO2/N2
NTRM 1684	01Aug2006	AA069517	97.20 PPM	NO/N2

#### INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System/8220/AA89300174	14Nov2003	Scott Enhanced FTIR
FTIR System/8220/AA89300174	14Nov2003	Scott Enhanced FTIR

#### ANALYZER READINGS

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

##### First Triad Analysis

##### CARBON DIOXIDE

Date: 05Dec2003 Response Unit: %

Z1 = -0.00080 R1 = 5.00387 T1 = 5.50197  
R2 = 5.00916 Z2 = 0.00720 T2 = 5.50167  
Z3 = 0.00330 T3 = 5.50856 R3 = 5.00496  
Avg. Concentration: 5.504 %

##### Second Triad Analysis

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

##### Calibration Curve

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

##### NITRIC OXIDE

Date: 05Dec2003 Response Unit: PPM

Z1 = -0.53030 R1 = 96.91445 T1 = 81.03781  
R2 = 97.70502 Z2 = -0.09730 T2 = 81.44050  
Z3 = -0.29610 T3 = 81.60306 R3 = 96.98049  
Avg. Concentration: 81.36 PPM

Date: 13Dec2003 Response Unit: PPM

Z1 = -0.64180 R1 = 97.36933 T1 = 81.30403  
R2 = 96.97616 Z2 = -0.02710 T2 = 81.43843  
Z3 = -0.33480 T3 = 81.58139 R3 = 97.25451  
Avg. Concentration: 81.44 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

#### Special Notes:

CO = 0.2 PPM

APPROVED BY:

Michael A. Kubins



**Scott Specialty Gases**

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Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

**Assay Laboratory**

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

P.O. No.: E-N06925  
Project No.: 01-96714-002

**Customer**

TAMPA ELECTRIC COMPANY

BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: **AAL15657** Certification Date: **03Oct2003** Exp. Date: **02Oct2005**  
Cylinder Pressure\*\*\*: **2000 PSIG** Batch No: **0196770**

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON MONOXIDE	11.5 PPM	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	5.56 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	5.59 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2635	01May2007	ALM000324	25.78 PPM	CARBON MONOXIDE
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS 6E/KN-240	02Oct2003	NDIR
HORIBA:CLA220/57C3850810	22Sep2003	CHEMILUMINESCENCE

**ANALYZER READINGS**

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

**First Triad Analysis**

**Second Triad Analysis**

**Calibration Curve**

**CARBON MONOXIDE**

Date: 26Sep2003 Response Unit: VOLTS  
Z1 = -0.01340 R1 = 2.53730 T1 = 1.07600  
R2 = 2.53980 Z2 = -0.00980 T2 = 1.07510  
Z3 = -0.00780 T3 = 1.07340 R3 = 2.54070  
Avg. Concentration: 11.50 PPM

Date: 03Oct2003 Response Unit: VOLTS  
Z1 = -0.00550 R1 = 2.53880 T1 = 1.07620  
R2 = 2.54520 Z2 = -0.00040 T2 = 1.07700  
Z3 = -0.00680 T3 = 1.07560 R3 = 2.54230  
Avg. Concentration: 11.50 PPM

Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>  
r = .999975 1678  
Constants: A = 1.066519  
B = 10.057237 C =  
D = E =

**NITRIC OXIDE**

Date: 24Sep2003 Response Unit: VOLTS  
Z1 = 0.00280 R1 = 3.79350 T1 = 1.16130  
R2 = 3.79280 Z2 = 0.00280 T2 = 1.15940  
Z3 = 0.00660 T3 = 0.16040 R3 = 3.79210  
Avg. Concentration: 5.570 PPM

Date: 01Oct2003 Response Unit: VOLTS  
Z1 = 0.00650 R1 = 3.79920 T1 = 1.15930  
R2 = 3.79580 Z2 = 0.00500 T2 = 1.16140  
Z3 = 0.00730 T3 = 1.15950 R3 = 3.79410  
Avg. Concentration: 5.560 PPM

Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>  
r = .999987 2629  
Constants: A = .059533  
B = 4.777057 C =  
D = E =

APPROVED BY:

JOHN C. FITZ



**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

**Assay Laboratory**

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

P.O. No.: E-N06925  
Project No.: 01-96714-002

**Customer**

TAMPA ELECTRIC COMPANY

BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: 1L1147 Certification Date: 03Oct2003 Exp. Date: 02Oct2005  
Cylinder Pressure\*\*\*: 2000 PSIG Batch No: 0196770

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON MONOXIDE	11.5 PPM	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	5.53 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	5.55 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2635	01May2007	ALM000324	25.78 PPM	CARBON MONOXIDE
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS/6E/KN-240	02Oct2003	NDIR
HORIBA/CLA220/5708250810	22Sep2003	CHEMILUMINESCENCE

**ANALYZER READINGS**

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

**First Triad Analysis**

**Second Triad Analysis**

**Calibration Curve**

**CARBON MONOXIDE**

Date: 25Sep2003 Response Unit: VOLTS  
Z1 = -0.02070 R1 = 2.54020 T1 = 1.06380  
R2 = 2.54200 Z2 = -0.02500 T2 = 1.06930  
Z3 = -0.02040 T3 = 1.06690 R3 = 2.54400  
Avg. Concentration: 11.50 PPM

Date: 03Oct2003 Response Unit: VOLTS  
Z1 = -0.00550 R1 = 2.53880 T1 = 1.07740  
R2 = 2.54520 Z2 = -0.00040 T2 = 1.07860  
Z3 = -0.00680 T3 = 1.07590 R3 = 2.54230  
Avg. Concentration: 11.50 PPM

Concentration = A + Bx + Cx2 + Dx3 + Ex4  
r = .999975 167B  
Constants: A = 1.066519  
B = 10.057237 C =  
D = E =

**NITRIC OXIDE**

Date: 24Sep2003 Response Unit: VOLTS  
Z1 = 0.00360 R1 = 3.79550 T1 = 1.15930  
R2 = 3.79980 Z2 = 0.00830 T2 = 1.15420  
Z3 = 0.00480 T3 = 1.15390 R3 = 3.79480  
Avg. Concentration: 5.540 PPM

Date: 01Oct2003 Response Unit: VOLTS  
Z1 = 0.00650 R1 = 3.79920 T1 = 1.15450  
R2 = 3.79580 Z2 = 0.00500 T2 = 1.15630  
Z3 = 0.00730 T3 = 1.15470 R3 = 3.79410  
Avg. Concentration: 5.530 PPM

Concentration = A + Bx + Cx2 + Dx3 + Ex4  
r = .999987 2629  
Constants: A = .059533  
B = 4.777057 C =  
D = E =

APPROVED BY:

JOHN C. FITZ





**Scott Specialty Gases**

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-96714-002

Customer

TAMPA ELECTRIC COMPANY  
  
BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: 1L2917 Certification Date: 03Oct2003 Exp. Date: 02Oct2005  
Cylinder Pressure\*\*\*: 2000 PSIG Batch No: 0196770

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON MONOXIDE	11.5 PPM	+/- 1%	Direct NIST and NMI
NITRIC OXIDE	5.56 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	5.57 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2635	01May2007	ALM000324	25.78 PPM	CARBON MONOXIDE
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS/6E KN-240	02Oct2003	NDIR
HORIBA/CLA220/5708850810	22Sep2003	CHEMILUMINESCENCE

**ANALYZER READINGS**

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

**First Triad Analysis**

**Second Triad Analysis**

**Calibration Curve**

**CARBON MONOXIDE**

Date: 25Sep2003 Response Unit: VOLTS  
Z1 = -0.02070 R1 = 2.54020 T1 = 1.06730  
R2 = 2.54200 Z2 = -0.02500 T2 = 1.06520  
Z3 = -0.02040 T3 = 1.06640 R3 = 2.54400  
Avg. Concentration: 11.50 PPM

Date: 03Oct2003 Response Unit: VOLTS  
Z1 = -0.00550 R1 = 2.53880 T1 = 1.07680  
R2 = 2.54520 Z2 = -0.00040 T2 = 1.07590  
Z3 = -0.00680 T3 = 1.07630 R3 = 2.54230  
Avg. Concentration: 11.50 PPM

Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>  
r = .999975 1678  
Constants: A = 1.066519  
B = 10.057237 C =  
D = E =

**NITRIC OXIDE**

Date: 24Sep2003 Response Unit: VOLTS  
Z1 = 0.00360 R1 = 3.79550 T1 = 1.16350  
R2 = 3.79980 Z2 = 0.00830 T2 = 1.16020  
Z3 = 0.00480 T3 = 1.16030 R3 = 3.79480  
Avg. Concentration: 5.560 PPM

Date: 01Oct2003 Response Unit: VOLTS  
Z1 = 0.00650 R1 = 3.79920 T1 = 1.16020  
R2 = 3.79580 Z2 = 0.00500 T2 = 1.15980  
Z3 = 0.00730 T3 = 1.16050 R3 = 3.79410  
Avg. Concentration: 5.560 PPM

Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>  
r = .999987 2629  
Constants: A = .059533  
B = 4.777057 C =  
D = E =

APPROVED BY:

JOHN C. FITZ



6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: Interference Free <sup>TM</sup> EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-96714-003

Customer

TAMPA ELECTRIC COMPANY  
BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: ALM055649 Certification Date: 13Dec2003 Exp. Date: 12Dec2006  
Cylinder Pressure\*\*\*: 2000 PSIA

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	553 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.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1680	01Mar2007	ALM065550	486.3 PPM	CO/N2

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR System: 8220/AA89300174	14Nov2003	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 MONOXIDE**

Date: 05Dec2003	Response Unit: PPM		
Z1 = 0.30240	R1 = 486.5638	T1 = 553.3212	
R2 = 486.4697	Z2 = 0.38320	T2 = 552.8372	
Z3 = 0.46940	T3 = 553.0394	R3 = 485.8663	
Avg. Concentration:	553.1	PPM	

Date: 13Dec2003	Response Unit: PPM		
Z1 = 0.12930	R1 = 485.9872	T1 = 553.7630	
R2 = 487.0159	Z2 = 0.27540	T2 = 552.7068	
Z3 = 0.22090	T3 = 553.9498	R3 = 485.8969	
Avg. Concentration:	553.5	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

Special Notes: CO2 = 1 PPM

NO = 0.1 PPM

APPROVED BY:   
Michael A. Kuhns



**CERTIFICATE OF ACCURACY: Interference Free <sup>TM</sup> EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-96714-003

Customer

TAMPA ELECTRIC COMPANY  
BILL ROBINSON  
GANNON WHSE-STOREROOM 22  
3602 PORT SUTTON ROAD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: ALM057477      Certification Date: 13Dec2003      Exp. Date: 12Dec2006  
Cylinder Pressure\*\*\*: 2000 PSIA

<u>COMPONENT</u>	<u>CERTIFIED CONCENTRATION (Moles)</u>	<u>ANALYTICAL ACCURACY**</u>	<u>TRACEABILITY</u>
CARBON MONOXIDE	554 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.

**REFERENCE STANDARD**

<u>TYPE/SRM NO.</u>	<u>EXPIRATION DATE</u>	<u>CYLINDER NUMBER</u>	<u>CONCENTRATION</u>	<u>COMPONENT</u>
NTRM 1680	01Mar2007	ALM065550	486.3 PPM	CO/N2

**INSTRUMENTATION**

<u>INSTRUMENT/MODEL/SERIAL#</u>	<u>DATE LAST CALIBRATED</u>	<u>ANALYTICAL PRINCIPLE</u>
FTIR System/8220/AAB9300174	14Nov2003	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 MONOXIDE**

Date: 05Dec2003	Response Unit: PPM		
Z1 = 0.30240	R1 = 486.5638	T1 = 554.0811	
R2 = 486.4697	Z2 = 0.38320	T2 = 553.9240	
Z3 = 0.46940	T3 = 553.2687	R3 = 485.8663	
Avg. Concentration:	553.7	PPM	

Date: 13Dec2003	Response Unit: PPM		
Z1 = 0.12930	R1 = 485.9872	T1 = 554.1126	
R2 = 487.0159	Z2 = 0.27540	T2 = 553.5903	
Z3 = 0.22090	T3 = 552.7036	R3 = 485.8969	
Avg. Concentration:	553.5	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = 0.999990	
Constants:	A = 0.000000
B = 1.000000	C = 0.000000
D = 0.000000	E = 0.000000

Special Notes:

CO2 = 1 PPM

NO = 0.1 PPM

APPROVED BY:

Michael A. Kuhns

## **TEST PARTICIPANTS**

### **ENVIRONMENTAL SERVICES**

#### **AIR SERVICES GROUP**

Jorge Varino	Technician
Charles Dufeny	Environmental Technician
Juan Ramirez	Environmental Technician
Robert Barthelette	Environmental Technician
Ray McDarby	Senior Environmental Technician
David A. Smith	Coordinator – Air Services Group
Ted Wenning	Coordinator – CEM Program

#### **BAYSIDE POWER STATION**

Drupatie Latchman	Engineer
-------------------	----------

**INITIAL COMPLIANCE DEMONSTRATION  
AMMONIA SLIP, CARBON MONOXIDE,  
NITROGEN OXIDES, and VISIBLE EMISSIONS  
DECEMBER 20, 2003  
BAYSIDE POWER STATION  
UNIT # 2  
FACILITY ID NUMBER: 0570040  
EMISSION UNIT ID NOS: -023, -024, -025, & -026**

Prepared For:  
Tampa Electric Company  
P.O. Box 111  
Tampa, Florida 33601

**RECEIVED**

FEB 03 2004

BUREAU OF AIR REGULATION

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



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

## REPORT CERTIFICATION

---

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

Date: 2/2/2004 Signature: 

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

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

Date: 2/2/2004 Signature: 

Juan F. Ramirez  
Environmental Technician  
Test Team Lead  
Air Services Group  
Environmental Services  
Tampa Electric Company

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

Date: 2/2/04 Signature: 

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

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### **APPENDICIES**

#### APPENDIX A – UNIT 2A

AMMONIA SLIP TEST INFORMATION
CALCULATED DATA
FIELD DATA SHEETS
LABORATORY ANALYSIS
EQUIPMENT CALIBRATIONS
CARBON MONOXIDE / NITROGEN OXIDES TEST INFORMATION
SUMMARIZED RUN DATA AND QUALITY ASSURANCE/CONTROL
RUN LOG
CALIBRATIONS
CONVERTER EFFICIENCY TEST
CYLINDER GAS CERTIFICATES
VISIBLE EMMISIONS OBSERVATIONS

**APPENDICIES – CONTINUED**

**APPENDIX A – UNIT 2A (CONTINUED)**

PLANT OPERATIONAL DATA

NOVEMBER 14, 2003

NOVEMBER 22, 2003

FUEL ANALYSIS

NOVEMBER 14, 2003

NOVEMBER 22, 2003

**APPENDIX B – UNIT 2B**

AMMONIA SLIP TEST INFORMATION

CALCULATED DATA

FIELD DATA SHEETS

LABORATORY ANALYSIS

EQUIPMENT CALIBRATIONS

CARBON MONOXIDE / NITROGEN OXIDES TEST INFORMATION

SUMMARIZED RUN DATA AND QUALITY ASSURANCE/CONTROL

RUN LOG

CONVERTER EFFICIENCY TEST

CYLINDER GAS CERTIFICATES

VISIBLE EMISSIONS OBSERVATIONS

PLANT OPERATIONAL DATA

NOVEMBER 12, 2003

DECEMBER 16, 2003

FUEL ANALYSIS

NOVEMBER 12, 2003

DECEMBER 16, 2003

**APPENDIX C – UNIT 2C**

AMMONIA SLIP TEST INFORMATION

CALCULATED DATA

FIELD DATA SHEETS

LABORATORY ANALYSIS

EQUIPMENT CALIBRATIONS

CARBON MONOXIDE / NITROGEN OXIDES TEST INFORMATION

SUMMARIZED RUN DATA AND QUALITY ASSURANCE/CONTROL

RUN LOG

CONVERTER EFFICIENCY TEST

CYLINDER GAS CERTIFICATES

VISIBLE EMISSIONS OBSERVATIONS

PLANT OPERATIONAL DATA

DECEMBER 19, 2003

DECEMBER 20, 2003



APPENDIX C – UNIT 2C (CONTINUED)

FUEL ANALYSIS

DECEMBER 19, 2003

DECEMBER 20, 2003

APPENDIX D – UNIT 2D

AMMONIA SLIP TEST INFORMATION

CALCULATED DATA

FIELD DATA SHEETS

LABORATORY ANALYSIS

EQUIPMENT CALIBRATIONS

CARBON MONOXIDE / NITROGEN OXIDES TEST INFORMATION

SUMMARIZED RUN DATA AND QUALITY ASSURANCE/CONTROL

RUN LOG

CONVERTER EFFICIENCY TEST

CYLINDER GAS CERTIFICATES

VISIBLE EMISSIONS OBSERVATIONS

PLANT OPERATIONAL DATA

DECEMBER 17, 2003

FUEL ANALYSIS

DECEMBER 17, 2003

APPENDIX E – PROJECT PARTICIPANTS

## **1.0 INTRODUCTION**

Tampa Electric Company's (TEC) Air Services Group performed initial compliance tests on Bayside Power Station Unit #2. Bayside Power Station Unit #2 consists of 4 combined cycle combustion turbines designated as CT-2A, CT-2B, CT-2C, and CT-2D. The combined cycle combustion turbines have been assigned Emission Unit ID No.'s 023, 024, 025, and 026 respectively. All testing was conducted in accordance with the procedures stipulated in Florida Department of Environmental Protection (FDEP) Air Permit No. PSD-FL-301A.

## **2.0 TESTING NARATIVE**

### **Bayside Power Station Combined Cycle Combustion Turbine 2A**

Ammonia Slip testing was conducted on November 14, 2003, using United States Environmental Protection Agency (USEPA) Conditional Test Method (CTM) – 027. The average of the 3, 1-hour runs was 3 ppmvd @ 15% O<sub>2</sub>. The FDEP permit limit is 5 ppmvd @ 15% O<sub>2</sub>.

Carbon Monoxide (CO) testing was conducted on November 22, 2003, as part of the initial certification Relative Accuracy Test Audit (RATA) using USEPA Reference Method 10. The average emission rate was 3.0 lbs/hr, at an average concentration of 0.8 ppmvd @ 15% O<sub>2</sub>. The FDEP permit limits are 28.7 lbs/hr, and 7.8 ppmvd @ 15% O<sub>2</sub>.

Nitrogen Oxides (NO<sub>x</sub>) testing was conducted on November 22, 2003, as part of the initial certification Relative Accuracy Test Audit (RATA) using USEPA Reference Method 7E. The average emission rate was 18.8 lbs/hr, at an average concentration of 3.0 ppmvd @ 15% O<sub>2</sub>. The FDEP permit limits are 23.1 lbs/hr, and 3.5 ppmvd @ 15% O<sub>2</sub>.

Visible Emissions Observations (VEOs) were conducted on November 14, 2003, using USEPA Reference Method 9. The average opacity for the 30-minute test was 0%, with a maximum 6-minute average of 0%. The FDEP permit limit is ≤ 10%, based on a 6-minute average.

During the testing conducted on November 14, 2003 the unit was operated at an average heat input of 1745 mmBtu/hr at an average load of 169 MW. During the testing conducted on November 22, 2003 the unit was operated at an average heat input of 1685 mmBtu/hr at an average load of 161 MW.

Bayside Power Station Combined Cycle Combustion Turbine 2B

Ammonia Slip testing was conducted on November 12, 2003, using United States Environmental Protection Agency (USEPA) CTM – 027. The average of the 3, 1-hour runs was 2 ppmvd @ 15% O<sub>2</sub>. The FDEP permit limit is 5 ppmvd @ 15% O<sub>2</sub>.

Carbon Monoxide (CO) testing was conducted on December 16, 2003 as part of the initial certification Relative Accuracy Test Audit (RATA) using USEPA Reference Method 10. The average emission rate was 3.4 lbs/hr, at an average concentration of 0.9 ppmvd @ 15% O<sub>2</sub>. The FDEP permit limits are 28.7 lbs/hr, and 7.8 ppmvd @ 15% O<sub>2</sub>.

Nitrogen Oxides (NO<sub>x</sub>) testing was conducted on December 16, 2003 as part of the initial certification Relative Accuracy Test Audit (RATA) using USEPA Reference Method 7E. The average emission rate was 17.5 lbs/hr, at an average concentration of 2.8 ppmvd @ 15% O<sub>2</sub>. The FDEP permit limits are 23.1 lbs/hr, and 3.5 ppmvd @ 15% O<sub>2</sub>.

Visible Emissions Observations (VEOs) were conducted on November 14, 2003, using USEPA Reference Method 9. The average opacity for the 30-minute test was 0%, with a maximum 6-minute average of 0%. The FDEP permit limit is ≤ 10%, based on a 6-minute average.

During the testing conducted on November 12, 2003 the unit was operated at an average heat input of 1709 mmBtu/hr at an average load of 164 MW. During the testing conducted on December 16, 2003 the unit was operated at an average heat input of 1685 mmBtu/hr at an average load of 162 MW.

Bayside Power Station Combined Cycle Combustion Turbine 2C

Ammonia Slip testing was conducted on December 19, 2003, using United States Environmental Protection Agency (USEPA) CTM – 027. The average of the 3, 1-hour runs was 4 ppmvd @ 15% O<sub>2</sub>. The FDEP permit limit is 5 ppmvd @ 15% O<sub>2</sub>.

Carbon Monoxide (CO) testing was conducted on December 20, 2003 as part of the initial certification Relative Accuracy Test Audit (RATA) using USEPA Reference Method 10. The average emission rate was 2.7 lbs/hr, at an average concentration of 0.7 ppmvd @ 15% O<sub>2</sub>. The FDEP permit limits are 28.7 lbs/hr, and 7.8 ppmvd @ 15% O<sub>2</sub>.

Nitrogen Oxides (NO<sub>x</sub>) testing was conducted on December 20, 2003 as part of the initial certification Relative Accuracy Test Audit (RATA) using USEPA Reference Method 7E. The average emission rate was 20.1 lbs/hr, at an average concentration of 3.1 ppmvd @ 15% O<sub>2</sub>. The FDEP permit limits are 23.1 lbs/hr, and 3.5 ppmvd @ 15% O<sub>2</sub>.

Visible Emissions Observations (VEOs) were conducted on December 20, 2003, using USEPA Reference Method 9. The average opacity for the 30-minute test was 0%, with a maximum 6-minute average of 0%. The FDEP permit limit is ≤ 10%, based on a 6-minute average.

During the testing conducted on December 19, 2003 the unit was operated at an average heat input of 1752 mmBtu/hr at an average load of 172 MW. During the testing conducted on December 20, 2003 the unit was operated at an average heat input of 1767 mmBtu/hr at an average load of 175 MW.

Bayside Power Station Combined Cycle Combustion Turbine 2D

Ammonia Slip testing was conducted on December 17, 2003, using United States Environmental Protection Agency (USEPA) CTM – 027. The average of the 3, 1-hour runs was 3 ppmvd @ 15% O<sub>2</sub>. The FDEP permit limit is 5 ppmvd @ 15% O<sub>2</sub>.

Carbon Monoxide (CO) testing was conducted on December 17, 2003 as part of the initial certification Relative Accuracy Test Audit (RATA) using USEPA Reference Method 10. The average emission rate was 3.0 lbs/hr, at an average concentration of 0.8 ppmvd @ 15% O<sub>2</sub>. The FDEP permit limits are 28.7 lbs/hr, and 7.8 ppmvd @ 15% O<sub>2</sub>.

Nitrogen Oxides (NO<sub>x</sub>) testing was conducted on December 17, 2003 as part of the initial certification Relative Accuracy Test Audit (RATA) using USEPA Reference Method 7E. The average emission rate was 20.7 lbs/hr, at an average concentration of 3.2 ppmvd @ 15% O<sub>2</sub>. The FDEP permit limits are 23.1 lbs/hr, and 3.5 ppmvd @ 15% O<sub>2</sub>.

Visible Emissions Observations (VEOs) were conducted on December 17, 2003, using USEPA Reference Method 9. The average opacity for the 30-minute test was 0%, with a maximum 6-minute average of 0%. The FDEP permit limit is ≤ 10%, based on a 6-minute average.

During the testing conducted on December 17, 2003 the unit was operated at an average heat input of 1769 mmBtu/hr at an average load of 173 MW.

### **3.0 SOURCE DESCRIPTION / TEST PROCEDURES**

Bayside Power Station is located on Port Sutton Road, Tampa, Florida at UTM coordinates Zone 17, 360.00 km E, 3087.50 km N. Unit #2 consists of 4 identical General Electric Model PG7241(FA) gas turbine - electrical generator sets, each with an un-fired heat recovery steam generator (HRSG). Steam from these 4 turbines is also used to drive the former F.J. Gannon Station steam turbine No.6. Each gas turbine operates in the combined cycle mode, and is equipped with dry low-NO<sub>x</sub> burners, and a Selective Catalytic Reduction (SCR) for control of NO<sub>x</sub> emissions. Each unit produces a nominal 169 MW of shaft-driven electricity at an inlet air temperature of 59° F and a heat input of 1842 mmBtu/hr (based on the Higher Heating Value, HHV, of the fuel) Pipeline Natural Gas is the exclusive fuel. Each unit exhausts through a 150 foot tall stack, with an inside diameter of 19 feet. Sampling ports are located 90° apart on the stack circumference at the 123 foot level. A diagram of the stack location is included as Figure 1.

Ammonia Slip testing/analysis was performed in accordance with USEPA Conditional Test Method (CTM) – 027 – “Procedure for Collection and Analysis of Ammonia in Stationary Sources”. Three 60-minute test runs were performed to determine the average concentration in the effluent.

CO testing was performed in accordance with USEPA Reference Method 10 – “Determination of Carbon Monoxide Emissions from Stationary Sources”. The test was conducted as part of the certification RATA activities, and consisted of 9, 21-minute runs used to calculate the average emission rate and concentration in the effluent.

NO<sub>x</sub> testing was performed in accordance with USEPA Reference Method 7E – “Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrumental Analyzer Method)”. The test was conducted as part of the certification RATA activities, and consisted of 9, 21-minute runs used to calculate the average emission rate and concentration in the effluent.

Visible Emissions Observations were performed in accordance with USEPA Reference Method 9 – “Visual Determination of the Opacity of Emissions from Stationary Sources”. Observations were performed over a 30-minute time period.

Heat input was calculated using the gas supplier’s (Florida Gas Transmission) gas composition analysis for Perry Stream #1, and plant fuel flow data. Manufacturer’s curves for heat input corrections to ambient conditions were not available in time for this report, and percent of load at test conditions were not determined.



**4.0 TABULATED DATA**



**BAYSIDE POWER STATION  
AMMONIA SLIP TEST DATA**

**COMBINED CYCLE COMBUSTION TURBINE SYSTEM - UNIT 2A  
November 14, 2003**

Run Number	Sample Volume $V_{m(std)}$ , liters	Total $V_a$	$C_{NH_3}$ , ppm	% $O_2$	$C_{NH_3}$ , ppm @ 15% $O_2$
1	79.700	0.00030	3.77	14.00	3.22
2	97.188	0.00033	3.37	14.00	2.88
3	88.511	0.00030	3.40	14.00	2.90
				Average=	3.000

Where:

Concentration of Ammonia, ppm  $NH_3$  is calculated as:

$$C_{NH_3}, \text{ ppm} = (V_a / V_{m(std)}) \times 10^6$$

and:

$C_{NH_3}$ , ppm @15%  $O_2$  is calculated as:

$$C_{NH_3}, \text{ ppm @ 15\% } O_2 = C_{NH_3}, \text{ ppm} \times (5.9 / (20.9 - \%O_2))$$



**BAYSIDE POWER STATION  
CARBON MONOXIDE TEST DATA**

**Combined Cycle Combustion Turbine  
CT-2A  
November 22, 2003**

Run Number	Run Time		CO ppmvd	O <sub>2</sub> %, dry	CO ppmvd @ 15% O <sub>2</sub>	CO lbs/hr
	Start	Stop				
1	10:00	10:44	0.83	14.16	0.7	2.7
2	11:00	11:21	0.90	14.19	0.8	3.0
3	11:40	12:01	0.90	14.19	0.8	3.0
4	12:10	12:31	0.90	14.17	0.8	3.0
5	12:40	13:01	0.80	14.16	0.7	2.6
6	13:12	13:33	1.00	14.16	0.9	3.3
7	13:43	14:04	0.92	14.16	0.8	3.0
8	14:19	14:40	0.92	14.16	0.8	3.0
9	14:49	15:10	1.00	14.16	0.9	3.3
Averages:					0.80	2.98

CO, ppmvd @15% O<sub>2</sub> is calculated as:

$$\text{CO, ppmvd} \times (5.9 / (20.9 - \text{O}_2, \% \text{ dry}))$$

CO, lbs/hr is calculated as:

$$\text{CO, ppmvd} \times C_f \times F_d \times (20.9 / (20.9 - \text{O}_2, \% \text{ dry})) \times \text{HI}$$

where:

$$C_f = 7.272\text{E-}08 \text{ lb/scf ppm}$$

$$F_d = 8639 \text{ dscf/mmBtu, from fuel analysis}$$

and:

$$\text{HI (Heat Input)} = 1685.20 \text{ mmBtu/hr}$$



**BAYSIDE POWER STATION  
NITROGEN OXIDES TEST DATA**

**Combined Cycle Combustion Turbine  
CT-2A  
November 22, 2003**

Run Number	Run Time		NO <sub>x</sub> ppmvd	O <sub>2</sub> %, dry	NO <sub>x</sub> ppmvd @ 15% O <sub>2</sub>	NO <sub>x</sub> lbs/hr
	Start	Stop				
1	10:00	10:44	3.58	14.16	3.1	19.3
2	11:00	11:21	3.47	14.19	3.1	18.8
3	11:40	12:01	3.47	14.19	3.1	18.8
4	12:10	12:31	3.47	14.17	3.0	18.7
5	12:40	13:01	3.47	14.16	3.0	18.7
6	13:12	13:33	3.47	14.16	3.0	18.7
7	13:43	14:04	3.47	14.16	3.0	18.7
8	14:19	14:40	3.47	14.16	3.0	18.7
9	14:49	15:10	3.47	14.16	3.0	18.7
Averages:					3.03	18.81

NO<sub>x</sub>, ppmvd @15% O<sub>2</sub> is calculated as:

$$\text{NO}_x, \text{ ppmvd} \times (5.9 / (20.9 - \text{O}_2, \% \text{ dry}))$$

NO<sub>x</sub>, lbs/hr is calculated as:

$$\text{NO}_x, \text{ ppmvd} \times \text{Cf} \times \text{Fd} \times (20.9 / (20.9 - \text{O}_2, \% \text{ dry})) \times \text{HI}$$

where:

$$\text{Cf} = 1.1946\text{E-}07 \text{ lb/scf ppm}$$

$$\text{Fd} = 8639 \text{ dscf/mmBtu, from fuel analysis}$$

and:

$$\text{HI (Heat Input)} = 1685.20 \text{ mmBtu/hr}$$



**BAYSIDE POWER STATION  
HEAT INPUT FROM NATURAL GAS**

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**Combined Cycle Combustion Turbine  
CT-2A  
November 14, 2003**

**Conversion of Mass Fuel Flow (Natural Gas) to Volumetric Fuel Flow**

Average Fuel Flow For Test Period,  $F_g$ : 20.98 lbs/sec

$F_g$ , lbs/sec x 3600 sec/hr: 75521.60 lbs/hr

Fuel Density,  $D_f$  = 0.0447086 lb/ft<sup>3</sup>

Volumetric Fuel Flow,  $F = (F_g / D_f) = 1.689E+06$  ft<sup>3</sup>/hr

**Calculated Heat Input**

Gross Heating Value of Natural Gas (HHV),  $H_g = 1033$  Btu/ft<sup>3</sup>

Volumetric Fuel Flow,  $F = 1.689E+06$  ft<sup>3</sup>/hr

Heat Input, calculated as ( $H_g \times F$ ) = 1744.88 mmBtu/hr



**BAYSIDE POWER STATION  
HEAT INPUT FROM NATURAL GAS**

**Combined Cycle Combustion Turbine  
CT-2A  
November 22, 2003**

**Conversion of Mass Fuel Flow (Natural Gas) to Volumetric Fuel Flow**

Average Fuel Flow For Test Period,  $F_g$ : 20.26 lbs/sec  
 $F_g$ , lbs/sec x 3600 sec/hr: 72938.40 lbs/hr

Fuel Density,  $D_f$  = 0.0446507 lb/ft<sup>3</sup>

Volumetric Fuel Flow,  $F = (F_g / D_f) = 1.634E+06$  ft<sup>3</sup>/hr

**Calculated Heat Input**

Gross Heating Value of Natural Gas (HHV),  $H_g$  = 1032 Btu/ft<sup>3</sup>

Volumetric Fuel Flow,  $F = 1.634E+06$  ft<sup>3</sup>/hr

Heat Input, calculated as ( $H_g \times F$ ) = 1685.20 mmBtu/hr



**BAYSIDE POWER STATION  
AMMONIA SLIP TEST DATA**

**COMBINED CYCLE COMBUSTION TURBINE SYSTEM - UNIT 2B  
November 12, 2003**

Run Number	Sample Volume		C <sub>NH3</sub> , ppm	% O <sub>2</sub>	C <sub>NH3</sub> , ppm @ 15% O <sub>2</sub>
	V <sub>m(std)</sub> , liters	Total V <sub>a</sub>			
1	84.906	0.00022	2.60	14.00	2.22
2	91.448	0.00026	2.85	14.00	2.44
3	98.390	0.00024	2.44	14.00	2.09
				Average=	2.25

Where:

Concentration of Ammonia, ppm NH<sub>3</sub> is calculated as:

$$C_{NH3}, \text{ ppm} = (V_a / V_{m(std)}) \times 10^6$$

and:

C<sub>NH3</sub>, ppm @15% O<sub>2</sub> is calculated as:

$$C_{NH3}, \text{ ppm @ 15\% O}_2 = C_{NH3}, \text{ ppm} \times (5.9 / (20.9 - \%O_2))$$



**BAYSIDE POWER STATION  
CARBON MONOXIDE TESTING**

**Combined Cycle Combustion Turbine  
CT-2B  
December 16, 2003**

Run Number	Run Time		CO ppmvd	O <sub>2</sub> %, dry	CO ppmvd @ 15% O <sub>2</sub>	CO lbs/hr
	Start	Stop				
1	09:31	09:52	1.05	13.87	0.9	3.3
2	10:31	10:52	1.14	13.86	1.0	3.6
3	11:08	11:29	0.93	13.85	0.8	2.9
4	11:45	12:06	1.11	13.85	0.9	3.5
5	12:20	12:41	1.27	13.84	1.1	4.0
6	12:53	13:14	1.18	13.84	1.0	3.7
7	13:29	13:50	1.12	13.80	0.9	3.5
8	14:07	14:28	1.03	13.80	0.9	3.2
9	14:42	15:03	0.90	13.81	0.7	2.8
Averages:					0.91	3.39

CO, ppmvd @15% O<sub>2</sub> is calculated as:

$$\text{CO, ppmvd} \times (5.9 / (20.9 - \text{O}_2, \% \text{ dry}))$$

CO, lbs/hr is calculated as:

$$\text{CO, ppmvd} \times \text{Cf} \times \text{Fd} \times (20.9 / (20.9 - \text{O}_2, \% \text{ dry})) \times \text{HI}$$

where:

$$\text{Cf} = 7.272\text{E-}08 \text{ lb/scf ppm}$$

$$\text{Fd} = 8642 \text{ dscf/mmBtu, from fuel analysis}$$

and:

$$\text{HI (Heat Input)} = 1684.95 \text{ mmBtu/hr}$$





**BAYSIDE POWER STATION  
NITROGEN OXIDES TESTING**

**Combined Cycle Combustion Turbine  
CT-2B  
December 16, 2003**

Run Number	Run Time		NO <sub>x</sub> ppmvd	O <sub>2</sub> %, dry	NO <sub>x</sub> ppmvd @ 15% O <sub>2</sub>	NO <sub>x</sub> lbs/hr
	Start	Stop				
1	09:31	09:52	3.48	13.87	2.9	18.0
2	10:31	10:52	3.42	13.86	2.9	17.7
3	11:08	11:29	3.42	13.85	2.9	17.6
4	11:45	12:06	3.42	13.85	2.9	17.6
5	12:20	12:41	3.36	13.84	2.8	17.3
6	12:53	13:14	3.30	13.84	2.8	17.0
7	13:29	13:50	3.32	13.80	2.8	17.0
8	14:07	14:28	3.39	13.80	2.8	17.4
9	14:42	15:03	3.42	13.81	2.8	17.5
Averages:					2.84	17.46

NO<sub>x</sub> ppmvd @15% O<sub>2</sub> is calculated as:

$$\text{NO}_x, \text{ ppmvd} \times (5.9 / (20.9 - \text{O}_2, \% \text{ dry}))$$

NO<sub>x</sub> lbs/hr is calculated as:

$$\text{NO}_x, \text{ ppmvd} \times \text{Cf} \times \text{Fd} \times (20.9 / (20.9 - \text{O}_2, \% \text{ dry})) \times \text{HI}$$

where:

$$\text{Cf} = 1.1946\text{E-}07 \text{ lb/scf ppm}$$

$$\text{Fd} = 8642 \text{ dscf/mmBtu, from fuel analysis}$$

and:

$$\text{HI (Heat Input)} = 1684.95 \text{ mmBtu/hr}$$



**BAYSIDE POWER STATION  
HEAT INPUT FROM NATURAL GAS**

---

**Combined Cycle Combustion Turbine  
CT-2B  
November 12, 2003**

**Conversion of Mass Fuel Flow (Natural Gas) to Volumetric Fuel Flow**

Average Fuel Flow For Test Period,  $F_g$ : 20.55 lbs/sec  
 $F_g$ , lbs/sec x 3600 sec/hr: 73988.40 lbs/hr

Fuel Density,  $D_f$  = 0.0446581 lb/ft<sup>3</sup>

Volumetric Fuel Flow,  $F = (F_g / D_f) = 1.657E+06$  ft<sup>3</sup>/hr

**Calculated Heat Input**

Gross Heating Value of Natural Gas (HHV),  $H_g = 1032$  Btu/ft<sup>3</sup>

Volumetric Fuel Flow,  $F = 1.657E+06$  ft<sup>3</sup>/hr

Heat Input, calculated as ( $H_g \times F$ ) = 1709.90 mmBtu/hr



**BAYSIDE POWER STATION  
HEAT INPUT FROM NATURAL GAS**

---

**Combined Cycle Combustion Turbine  
CT-2B  
December 16, 2003**

**Conversion of Mass Fuel Flow (Natural Gas) to Volumetric Fuel Flow**

Average Fuel Flow For Test Period,  $F_g$ : 20.28 lbs/sec  
 $F_g$ , lbs/sec x 3600 sec/hr: 73020.40 lbs/hr

Fuel Density,  $D_f$  = 0.0450894 lb/ft<sup>3</sup>

Volumetric Fuel Flow,  $F = (F_g / D_f) = 1.619E+06$  ft<sup>3</sup>/hr

**Calculated Heat Input**

Gross Heating Value of Natural Gas (HHV),  $H_g = 1040$  Btu/ft<sup>3</sup>

Volumetric Fuel Flow,  $F = 1.619E+06$  ft<sup>3</sup>/hr

Heat Input, calculated as ( $H_g \times F$ ) = 1684.95 mmBtu/hr



**BAYSIDE POWER STATION  
AMMONIA SLIP TEST DATA**

**COMBINED CYCLE COMBUSTION TURBINE SYSTEM - UNIT 2C  
December 19, 2003**

Run Number	Sample Volume $V_{m(std)}$ , liters	Total $V_a$	$C_{NH_3}$ , ppm	% $O_2$	$C_{NH_3}$ , ppm @ 15% $O_2$
1	85.841	0.00037	4.36	13.90	3.67
2	82.370	0.00043	5.19	13.90	4.37
3	84.639	0.00045	5.36	13.90	4.52
				Average=	4.187

Where:

Concentration of Ammonia, ppm  $NH_3$  is calculated as:

$$C_{NH_3}, \text{ ppm} = (V_a / V_{m(std)}) \times 10^6$$

and:

$C_{NH_3}$ , ppm @15%  $O_2$  is calculated as:

$$C_{NH_3}, \text{ ppm @ 15\% } O_2 = C_{NH_3}, \text{ ppm} \times (5.9 / (20.9 - \%O_2))$$



**BAYSIDE POWER STATION  
CARBON MONOXIDE TESTING**

**Combined Cycle Combustion Turbine  
CT-2C  
December 20, 2003**

Run Number	Run Time		CO ppmvd	O <sub>2</sub> %, dry	CO ppmvd @ 15% O <sub>2</sub>	CO lbs/hr
	Start	Stop				
1	10:51	11:12	0.94	14.01	0.8	3.2
2	11:30	11:51	0.96	14.03	0.8	3.2
3	12:05	12:26	0.87	14.02	0.7	2.9
4	12:44	13:05	0.77	14.00	0.7	2.6
5	13:24	13:45	0.69	13.94	0.6	2.3
6	13:55	14:16	0.70	13.89	0.6	2.3
7	14:26	14:47	0.70	13.92	0.6	2.3
8	14:57	15:18	0.73	13.96	0.6	2.4
9	15:28	15:49	0.77	13.96	0.7	2.6
Averages:					0.68	2.66

CO, ppmvd @15% O<sub>2</sub> is calculated as:

$$\text{CO, ppmvd} \times (5.9 / (20.9 - \text{O}_2, \% \text{ dry}))$$

CO, lbs/hr is calculated as:

$$\text{CO, ppmvd} \times \text{Cf} \times \text{Fd} \times (20.9 / (20.9 - \text{O}_2, \% \text{ dry})) \times \text{HI}$$

where:

$$\text{Cf} = 7.272\text{E-}08 \text{ lb/scf ppm}$$

$$\text{Fd} = 8644 \text{ dscf/mmBtu, from fuel analysis}$$

and:

$$\text{HI (Heat Input)} = 1767.11 \text{ mmBtu/hr}$$



**BAYSIDE POWER STATION  
NITROGEN OXIDES TESTING**

**Combined Cycle Combustion Turbine  
CT-2C  
December 20, 2003**

Run Number	Run Time		NO <sub>x</sub> ppmvd	O <sub>2</sub> %, dry	NO <sub>x</sub> ppmvd @ 15% O <sub>2</sub>	NO <sub>x</sub> lbs/hr
	Start	Stop				
1	10:51	11:12	3.69	14.01	3.2	20.4
2	11:30	11:51	3.70	14.03	3.2	20.5
3	12:05	12:26	3.66	14.02	3.1	20.3
4	12:44	13:05	3.64	14.00	3.1	20.1
5	13:24	13:45	3.65	13.94	3.1	20.0
6	13:55	14:16	3.63	13.89	3.1	19.7
7	14:26	14:47	3.63	13.92	3.1	19.8
8	14:57	15:18	3.64	13.96	3.1	20.0
9	15:28	15:49	3.63	13.96	3.1	19.9
Averages:					3.12	20.10

NO<sub>x</sub>, ppmvd @15% O<sub>2</sub> is calculated as:

$$\text{NO}_x, \text{ ppmvd} \times (5.9 / (20.9 - \text{O}_2, \% \text{ dry}))$$

NO<sub>x</sub>, lbs/hr is calculated as:

$$\text{NO}_x, \text{ ppmvd} \times \text{Cf} \times \text{Fd} \times (20.9 / (20.9 - \text{O}_2, \% \text{ dry})) \times \text{HI}$$

where:

$$\text{Cf} = 1.1946\text{E-}07 \text{ lb/scf ppm}$$

$$\text{Fd} = 8644 \text{ dscf/mmBtu, from fuel analysis}$$

and:

$$\text{HI (Heat Input)} = 1767.11 \text{ mmBtu/hr}$$



**BAYSIDE POWER STATION  
HEAT INPUT FROM NATURAL GAS**

---

**Combined Cycle Combustion Turbine  
CT-2C  
December 19, 2003**

**Conversion of Mass Fuel Flow (Natural Gas) to Volumetric Fuel Flow**

Average Fuel Flow For Test Period,  $F_g$ : 21.09 lbs/sec  
 $F_g$ , lbs/sec x 3600 sec/hr: 75912.68 lbs/hr

Fuel Density,  $D_f$  = 0.04530408 lb/ft<sup>3</sup>

Volumetric Fuel Flow,  $F = (F_g / D_f) = 1.676E+06$  ft<sup>3</sup>/hr

**Calculated Heat Input**

Gross Heating Value of Natural Gas (HHV),  $H_g = 1046$  Btu/ft<sup>3</sup>

Volumetric Fuel Flow,  $F = 1.676E+06$  ft<sup>3</sup>/hr

Heat Input, calculated as ( $H_g \times F$ ) = 1752.05 mmBtu/hr



**BAYSIDE POWER STATION  
HEAT INPUT FROM NATURAL GAS**

---

**Combined Cycle Combustion Turbine  
CT-2C  
December 20, 2003**

**Conversion of Mass Fuel Flow (Natural Gas) to Volumetric Fuel Flow**

Average Fuel Flow For Test Period,  $F_g$ : 21.29 lbs/sec  
 $F_g$ , lbs/sec x 3600 sec/hr: 76645.20 lbs/hr

Fuel Density,  $D_f$  = 0.0453041 lb/ft<sup>3</sup>

Volumetric Fuel Flow,  $F = (F_g / D_f) = 1.692E+06$  ft<sup>3</sup>/hr

**Calculated Heat Input**

Gross Heating Value of Natural Gas (HHV),  $H_g = 1045$  Btu/ft<sup>3</sup>

Volumetric Fuel Flow,  $F = 1.692E+06$  ft<sup>3</sup>/hr

Heat Input, calculated as ( $H_g \times F$ ) = 1767.11 mmBtu/hr





**BAYSIDE POWER STATION  
AMMONIA SLIP TEST DATA**

**COMBINED CYCLE COMBUSTION TURBINE SYSTEM - UNIT 2D  
December 17, 2003**

Run Number	Sample Volume $V_{m(std)}$ , liters	Total $V_a$	$C_{NH_3}$ , ppm	% $O_2$	$C_{NH_3}$ , ppm @ 15% $O_2$
1	85.841	0.00033	3.81	13.80	3.17
2	85.574	0.00035	4.14	13.90	3.49
3	89.979	0.00038	4.23	13.90	3.57
Average=					3.410

Where:

Concentration of Ammonia, ppm  $NH_3$  is calculated as:

$$C_{NH_3}, \text{ ppm} = (V_a / V_{m(std)}) \times 10^6$$

and:

$C_{NH_3}$ , ppm @15%  $O_2$  is calculated as:

$$C_{NH_3}, \text{ ppm @ 15\% } O_2 = C_{NH_3}, \text{ ppm} \times (5.9 / (20.9 - \%O_2))$$



**BAYSIDE POWER STATION  
CARBON MONOXIDE TESTING**

**Combined Cycle Combustion Turbine  
CT-2D  
December 17, 2003**

Run Number	Run Time		CO ppmvd	O <sub>2</sub> %, dry	CO ppmvd @ 15% O <sub>2</sub>	CO lbs/hr
	Start	Stop				
1	09:32	09:53	0.87	13.84	0.7	2.9
2	10:46	11:07	0.82	13.83	0.7	2.7
3	11:23	11:44	0.87	13.85	0.7	2.9
4	11:55	12:16	0.83	13.85	0.7	2.7
5	12:31	12:52	0.96	13.84	0.8	3.2
6	13:05	13:26	0.99	13.87	0.8	3.3
7	13:42	14:03	0.93	13.89	0.8	3.1
8	14:15	14:36	0.93	13.89	0.8	3.1
9	14:48	15:09	0.96	13.88	0.8	3.2
Averages:					0.76	2.99

CO, ppmvd @15% O<sub>2</sub> is calculated as:

$$\text{CO, ppmvd} \times (5.9 / (20.9 - \text{O}_2, \% \text{ dry}))$$

CO, lbs/hr is calculated as:

$$\text{CO, ppmvd} \times \text{Cf} \times \text{Fd} \times (20.9 / (20.9 - \text{O}_2, \% \text{ dry})) \times \text{HI}$$

where:

$$\text{Cf} = 7.272\text{E-}08 \text{ lb/scf ppm}$$

$$\text{Fd} = 8644 \text{ dscf/mmBtu, from fuel analysis}$$

and:

$$\text{HI (Heat Input)} = 1768.92 \text{ mmBtu/hr}$$



**BAYSIDE POWER STATION  
NITROGEN OXIDES TESTING**

**Combined Cycle Combustion Turbine  
CT-2D  
December 17, 2003**

Run Number	Run Time		NO <sub>x</sub> ppmvd	O <sub>2</sub> %, dry	NO <sub>x</sub> ppmvd @ 15% O <sub>2</sub>	NO <sub>x</sub> lbs/hr
	Start	Stop				
1	09:32	09:53	3.74	13.84	3.1	20.2
2	10:46	11:07	3.81	13.83	3.2	20.6
3	11:23	11:44	3.73	13.85	3.1	20.2
4	11:55	12:16	3.76	13.85	3.1	20.4
5	12:31	12:52	3.76	13.84	3.1	20.3
6	13:05	13:26	3.81	13.87	3.2	20.7
7	13:42	14:03	3.87	13.89	3.3	21.1
8	14:15	14:36	3.90	13.89	3.3	21.2
9	14:48	15:09	3.95	13.88	3.3	21.5
Averages:					3.19	20.68

NO<sub>x</sub>, ppmvd @15% O<sub>2</sub> is calculated as:

$$\text{NO}_x, \text{ ppmvd} \times (5.9 / (20.9 - \text{O}_2, \% \text{ dry}))$$

NO<sub>x</sub>, lbs/hr is calculated as:

$$\text{NO}_x, \text{ ppmvd} \times \text{Cf} \times \text{Fd} \times (20.9 / (20.9 - \text{O}_2, \% \text{ dry})) \times \text{HI}$$

where:

$$\text{Cf} = 1.1946\text{E-}07 \text{ lb/scf ppm}$$

$$\text{Fd} = 8644 \text{ dscf/mmBtu, from fuel analysis}$$

and:

$$\text{HI (Heat Input)} = 1768.92 \text{ mmBtu/hr}$$



**BAYSIDE POWER STATION  
HEAT INPUT FROM NATURAL GAS**

---

**Combined Cycle Combustion Turbine  
CT-2D  
December 17, 2003**

**Conversion of Mass Fuel Flow (Natural Gas) to Volumetric Fuel Flow**

Average Fuel Flow For Test Period,  $F_g$ : 21.33 lbs/sec  
 $F_g$ , lbs/sec x 3600 sec/hr: 76773.60 lbs/hr

Fuel Density,  $D_f$  = 0.0452333 lb/ft<sup>3</sup>

Volumetric Fuel Flow,  $F = (F_g / D_f) = 1.697E+06$  ft<sup>3</sup>/hr

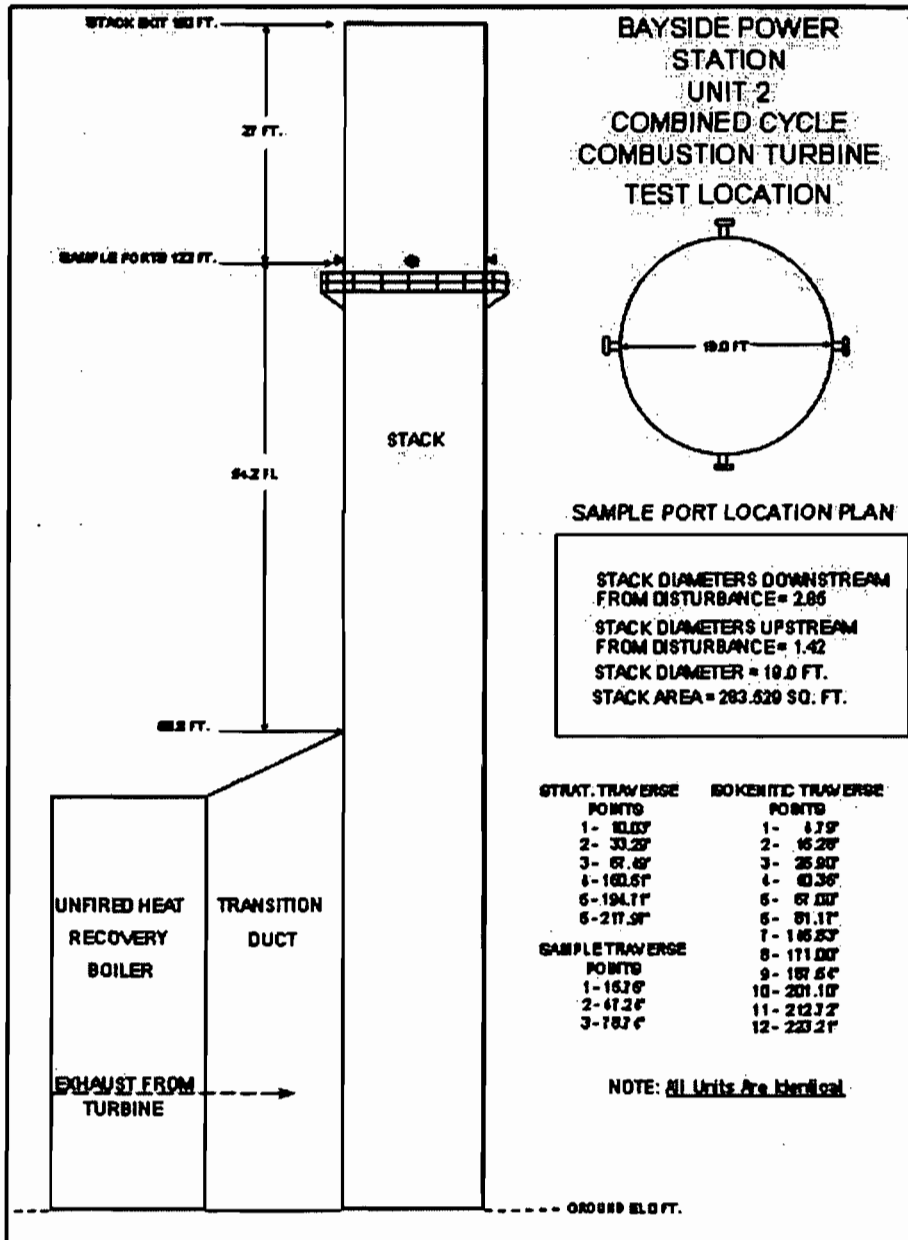
**Calculated Heat Input**

Gross Heating Value of Natural Gas (HHV),  $H_g$  = 1042 Btu/ft<sup>3</sup>

Volumetric Fuel Flow,  $F = 1.697E+06$  ft<sup>3</sup>/hr

Heat Input, calculated as ( $H_g \times F$ ) = 1768.92 mmBtu/hr

**5.0 FIGURES**



SAMPLING LOCATION

AMMONIA SLIP TEST INFORMATION

CALCULATED DATA





**Environmental Services  
Air Services Group**

**Conditional Test Method (CTM) -027  
Test Calculations**

Customer: TECO  
 Facility: Bayside  
 Unit: 2A  
 Run Number: 1  
 Date: 11/14/03

Sample Time, $\theta$ :	60 minutes	Nozzle Diameter, $D_n$ :	0.189 inches
Barometric Pressure, $P_b$ :	29.94 "Hg	Nozzle Area, $A_n$ :	0.00019482 ft <sup>2</sup>
Stack Pressure, $P_s$ :	29.90 "Hg	Average Orifice Meter, $\Delta H$ :	1.069 "H <sub>2</sub> O
Effective Stack Area, $A_s$ :	283.529 ft <sup>2</sup>	Sample Volume, $V_m$ :	34.433 ft <sup>3</sup>
Pitot Coefficient, $C_p$ :	0.84 dimensionless	Average Meter Temp., $T_m$ :	61.3 °F
Gas Analysis:	4.0 % CO <sub>2</sub>	Average Stack Temp., $T_s$ :	224.9 °F
	14.0 % O <sub>2</sub>	Average $\sqrt{\Delta p}$ :	1.100 "H <sub>2</sub> O
	0.0 % CO	Condensate Volume, $V_{lc}$ :	59.7 ml
	82.0 % N <sub>2</sub>	Meter Box Y:	1.004 dimensionless

**Data Calculated from Source Measurements:**

$V_{w(std)} = 4.714E-02 \times V_{lc}$	2.814 scf
	79.700 liters
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	35.131 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.074 %
$FDA = 1.0 - B_{ws}$	0.926 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%CO))$	29.20 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	28.37 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	70.95 ft/second
$Q_s = v_s \times A_s \times 60$	1206926.2 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92)$	860979.6 dscf/minute
$I = (T_s + 460) \times ((2.67E-03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s)$	99.0 %



Calculation of NH<sub>3</sub> Concentration  
CTM - 027

Customer: TECO  
Facility: Bayside  
Unit: 2A  
Test Date: 11/14/2003

Run #1

Calculation of Volume of Ammonia Gas Present in Sample:

$$V_a = (N \times D_v \times 24.04) / (1000 \times 18) \quad (\text{CTM} - 027, \text{Equation } 2)$$

Where:

$V_a$  = Volume of ammonia gas in the sample

$N$  = 0.45 Sum of concentrations of ammonia ion in solution, mg/l

$D_v$  = 0.5 Dilution volume

24.04 = liters of ideal gas per mole of substance

1/1000 = conversion factor mg/l to g/l

18 = weight of ammonium ion

$$V_a = 0.0003 \text{ liters}$$

Calculation of ppmv of Ammonia present in Stack Gas:

$$C_{\text{NH}_3} = (V_a / V_{m(\text{std})}) \times 10^6$$

Where:

$V_a$  = Volume of ammonia gas in the sample

$V_{m(\text{std})}$  = 79.700 liters

$$C_{\text{NH}_3} = 3.770399 \text{ ppmv}$$



**Environmental Services  
Air Services Group**

**Conditional Test Method (CTM) -027  
Test Calculations**

Customer: TECO  
 Facility: Bayside  
 Unit: 2A  
 Run Number: 2  
 Date: 11/14/03

Sample Time, $\theta$ :	60 minutes	Nozzle Diameter, $D_n$ :	0.189 inches
Barometric Pressure, $P_b$ :	29.90 "Hg	Nozzle Area, $A_n$ :	0.00019482 ft <sup>2</sup>
Stack Pressure, $P_s$ :	29.86 "Hg	Average Orifice Meter, $\Delta H$ :	1.040 "H <sub>2</sub> O
Effective Stack Area, $A_s$ :	283.529 ft <sup>2</sup>	Sample Volume, $V_m$ :	34.241 ft <sup>3</sup>
Pitot Coefficient, $C_p$ :	0.84 dimensionless	Average Meter Temp., $T_m$ :	68.9 °F
Gas Analysis:	4.0 % CO <sub>2</sub>	Average Stack Temp., $T_s$ :	222.9 °F
	14.0 % O <sub>2</sub>	Average $\sqrt{\Delta p}$ :	1.074 "H <sub>2</sub> O
	0.0 % CO	Condensate Volume, $V_{lc}$ :	72.8 ml
	82.0 % N <sub>2</sub>	Meter Box Y:	1.004 dimensionless

**Data Calculated from Source Measurements:**

$V_{w(std)} = 4.714E-02 \times V_{lc}$	3.432 scf
	97.188 liters
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	34.383 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.091 %
$FDA = 1.0 - B_{ws}$	0.909 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%CO))$	29.20 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	28.18 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	69.50 ft/second
$Q_s = v_s \times A_s \times 60$	1182304.8 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92)$	829620.6 dscf/minute
$I = (T_s + 460) \times ((2.67E-03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s)$	100.5 %



Environmental Services  
Air Services Group

Calculation of NH<sub>3</sub> Concentration  
CTM - 027

Customer: TECO  
Facility: Bayside  
Unit: 2A  
Test Date: 11/14/2003

Run #2

Calculation of Volume of Ammonia Gas Present in Sample:

$$V_a = (N \times D_v \times 24.04) / (1000 \times 18) \quad (\text{CTM - 027, Equation 2})$$

Where:

$V_a$  = Volume of ammonia gas in the sample

$N$  = 0.49 Sum of concentrations of ammonia ion in solution, mg/l

$D_v$  = 0.5 Dilution volume

24.04 = liters of ideal gas per mole of substance

1/1000 = conversion factor mg/l to g/l

18 = weight of ammonium ion

$$V_a = 0.0003 \text{ liters}$$

Calculation of ppmv of Ammonia present in Stack Gas:

$$C_{\text{NH}_3} = (V_a / V_{\text{m(std)}}) \times 10^6$$

Where:

$V_a$  = Volume of ammonia gas in the sample

$V_{\text{m(std)}}$  = 97.188 liters

$$C_{\text{NH}_3} = 3.366773 \text{ ppmv}$$



**Environmental Services  
Air Services Group**

**Conditional Test Method (CTM) -027  
Test Calculations**

Customer: TECO  
 Facility: Bayside  
 Unit: 2A  
 Run Number: 3  
 Date: 11/14/03

Sample Time, $\theta$ :	60 minutes	Nozzle Diameter, $D_n$ :	0.189 inches
Barometric Pressure, $P_b$ :	29.96 "Hg	Nozzle Area, $A_n$ :	0.00019482 ft <sup>2</sup>
Stack Pressure, $P_s$ :	29.92 "Hg	Average Orifice Meter, $\Delta H$ :	1.003 "H <sub>2</sub> O
Effective Stack Area, $A_s$ :	254.469 ft <sup>2</sup>	Sample Volume, $V_m$ :	33.872 ft <sup>3</sup>
Pitot Coefficient, $C_p$ :	0.84 dimensionless	Average Meter Temp., $T_m$ :	80.4 °F
Gas Analysis:	4.0 % CO <sub>2</sub>	Average Stack Temp., $T_s$ :	221.5 °F
	14.0 % O <sub>2</sub>	Average $\sqrt{\Delta p}$ :	1.043 "H <sub>2</sub> O
	0.0 % CO	Condensate Volume, $V_{lc}$ :	66.3 ml
	82.0 % N <sub>2</sub>	Meter Box Y:	1.004 dimensionless

**Data Calculated from Source Measurements:**

$V_{w(std)} = 4.714E-02 \times V_{lc}$	3.125 scf
	88.511 liters
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	33.355 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.086 %
$FDA = 1.0 - B_{ws}$	0.914 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%CO))$	29.20 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	28.24 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	67.28 ft/second
$Q_s = v_s \times A_s \times 60$	1027246.9 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92)$	727765.3 dscf/minute
$I = (T_s + 460) \times ((2.67E-03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times \frac{1}{6})$	99.8 %



Calculation of NH<sub>3</sub> Concentration  
CTM - 027

Customer: TECO  
Facility: Bayside  
Unit: 2A  
Test Date: 11/14/2003

Run #3

Calculation of Volume of Ammonia Gas Present in Sample:

$$V_a = (N \times D_v \times 24.04) / (1000 \times 18) \quad (\text{CTM - 027, Equation 2})$$

Where:

$V_a$  = Volume of ammonia gas in the sample

$N$  = 0.45 Sum of concentrations of ammonia ion in solution, mg/l

$D_v$  = 0.5 Dilution volume

24.04 = liters of ideal gas per mole of substance

1/1000 = conversion factor mg/l to g/l

18 = weight of ammonium ion

$$V_a = 0.0003 \text{ liters}$$

Calculation of ppmv of Ammonia present in Stack Gas:

$$C_{\text{NH}_3} = (V_a / V_{m(\text{std})}) \times 10^6$$

Where:

$V_a$  = Volume of ammonia gas in the sample

$V_{m(\text{std})}$  = 88.511 liters

$$C_{\text{NH}_3} = 3.395065 \text{ ppmv}$$

FIELD DATA SHEETS

# ISOKINETIC FIELD DATA SHEET

Plant BAYSIDE  
 Location UNIT 2A  
 Date 11/14/03  
 Method No. 1 (TMO27)  
 Run No. 1  
 Box Operator JAV  
 Probe Operator DAS  
 Time - Start: 8:49 End: 9:59  
 Sampling Time 1:00  
 Min.\ Pt. 2.5/24  
 Meter Box No. M306  
 Stack Area Ft.<sup>2</sup> 283.529  
 Meter Cal. (ΔH) 1.769  
 Meter Cal. (ΔY) 1.024

Nozzle I.D. No. 16609  
 Nozzle Diameter .189  
 Pitot Tube No. PT 124  
 Pitot Tube (C<sub>p</sub>) .84  
 Probe Length 9ft  
 Probe Liner Material 1 Glass  
 Probe Heater Setting 250  
 Pressure Pb ("Hg): 29.14 Pg ("H<sub>2</sub>O): -.5 Ps ("Hg): 29.90  
 Assumed Moisture (%) 9.0  
 Filter Holder No. NA  
 Comments CDLO OUTSIDE  
 Start Imp#1 100 Imp#2 100 Imp#3 0  
 Finish Imp#1 130 Imp#2 112 Imp#3 0  
 O<sub>2</sub> 14 CO<sub>2</sub> 4

Dry Gas Meter Volume  
 Final 751.526 Ft.<sup>3</sup>  
 Initial 717.393 Ft.<sup>3</sup>  
 Net 34.433 Ft.<sup>3</sup>  
 Equipment Leak Checks  
 Initial 0.000 CFM @ 8 "Hg  
 Final 0.000 CFM @ 5 "H<sub>2</sub>O  
 Pitot Tube OK @ 3.5 "H<sub>2</sub>O  
 Moisture Determination  
 Impinger 52 ml  
 Silica Gel 7.7 gm  
 Total 59.7

Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	Δ P (In. H <sub>2</sub> O)	Δ H (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	8:49	718.755	1.1	.96	225	59	232		56	2.5
2		720.17	1.2	1.05	227	59	240		54	3.0
3		721.72	1.4	1.23	226	60	233		56	3.5
4		723.33	1.5	1.32	226	60	235		54	4.0
5		724.93	1.5	1.32	224	60	232		55	4.0
6	9:04	726.36	1.2	1.06	217	60	235		56	3.0
1	9:08	727.72	1.1	.96	229	60	235		54	2.5
2		729.05	1.1	.96	228	60	235		53	2.5
3		730.5	1.2	1.05	228	60	234		54	3.0
4		731.94	1.2	1.05	228	61	235		54	3.0
5		733.28	1.1	.96	228	60	235		54	2.5
6	9:23	734.555	.95	.84	217	60	231		55	2.5



Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	Δ P (In. H <sub>2</sub> O)	Δ H (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	9:26	735.99	1.2	1.05	228	61	220		53	3.0
2		737.35	1.1	.96	228	61	229		52	3.0
3		738.71	1.1	.96	228	61	226		52	3.0
4		740.14	1.3	1.14	227	62	223		52	3.5
5		741.62	1.2	1.06	225	63	223		53	3.0
6	9:41	742.868	.90	.80	217	63	216		53	2.0
1	9:44	744.24	1.1	.97	226	63	243		53	3.0
2		745.74	1.3	1.14	227	63	244		54	3.5
3		747.24	1.3	1.15	225	63	245		55	3.5
4		748.85	1.5	1.33	224	63	242		57	4.0
5		750.44	1.5	1.33	222	64	243		59	4.0
6	9:59	751.826	1.1	.99	217	65	239		59	3.0

Quality Assurance / Quality Control Information

Console Operator Signature:  Date: 11/14/03

Complete: \_\_\_\_\_ Legible: \_\_\_\_\_ Accurate: \_\_\_\_\_ Project Scope: \_\_\_\_\_ Reasonableness: \_\_\_\_\_

Reviewer's Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

# ISOKINETIC FIELD DATA SHEET

Plant	<u>BAYVIEW</u>	Nozzle I.D. No.	<u>GLOS</u>	Dry Gas Meter Volume	
Location	<u>UNIT 2A</u>	Nozzle Diameter	<u>.189</u>	Final	<u>786.166</u> Ft. <sup>3</sup>
Date	<u>11/14/03</u>	Pitot Tube No.	<u>PT 124</u>	Initial	<u>751.925</u> Ft. <sup>3</sup>
Method No.	<u>CTM027</u>	Pitot Tube (C <sub>p</sub> )	<u>.84</u>	Net	<u>34.241</u> Ft. <sup>3</sup>
Run No.	<u>2</u>	Probe Length	<u>9ft</u>	Equipment Leak Checks	
Box Operator	<u>JMV</u>	Probe Liner Material	<u>YSL002</u>	Initial	<u>0.000</u> CFM @ <u>8</u> "Hg
Probe Operator	<u>DMS</u>	Probe Heater Setting	<u>250</u>	Final	<u>0.000</u> CFM @ <u>5</u> "H <sub>2</sub> O
Time - Start:	<u>1020</u>	End:	<u>1129</u>	Pitot Tube	<u>OK(0)</u> <u>4.0</u> "H <sub>2</sub> O
Sampling Time	<u>60</u>	Pressure	Pb ("Hg): <u>28.9</u> Pg ("H <sub>2</sub> O): <u>2.5</u> Ps ("Hg): <u>29.86</u>	Moisture Determination	
Min.\ Pt.	<u>2.5/24</u>	Assumed Moisture (%)	<u>9.0</u>	Impinger	<u>62</u> ml
Meter Box No.	<u>M306</u>	Filter Holder No.		Silica Gel	<u>10.8</u> gm
Stack Area Ft. <sup>2</sup>	<u>283.529</u>	Comments		Total	<u>72.8</u>
Meter Cal. (ΔH)	<u>1.769</u>	Start	Imp#1 <u>100</u> Imp#2 <u>100</u> Imp#3 <u>0</u>		
Meter Cal. (ΔY)	<u>1.004</u>	Finish	Imp#1 <u>156</u> Imp#2 <u>100</u> Imp#3 <u>0</u>		
		O <sub>2</sub>	<u>14</u>		
		CO <sub>2</sub>	<u>4</u>		

Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	Δ P (In. H <sub>2</sub> O)	Δ H (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	1020	753.325	1.1	.98	223	66	245		60	3.0
2		754.76	1.2	1.07	225	66	244		60	3.0
3		756.26	1.3	1.16	224	66	242		60	3.5
4		757.88	1.5	1.34	223	66	245		60	4.0
5		759.50	1.5	1.34	222	66	245		61	4.0
6	1035	760.894	1.1	.99	210	64	246		63	3.0
1	1030	762.28	1.1	.98	226	68	225		61	3.0
2		763.66	1.1	.98	226	68	233		55	3.0
3		765.12	1.2	1.07	224	68	230		54	3.5
4		766.51	1.1	.98	226	68	229		52	3.0
5		767.89	1.1	.98	225	69	229		53	3.0
10	1053	764.124	.85	.78	217	69	224		55	2.0

Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	Δ P (In. H <sub>2</sub> O)	Δ H (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	10:56	770.45	1.0	.89	225	69	234		55	2.5
2		771.77	1.0	.89	226	69	244		54	2.5
3		773.17	1.1	.98	226	70	245		54	3.0
4		774.56	1.1	.98	226	70	245		54	3.0
5		775.95	1.1	.98	224	70	242		55	3.0
6	11:11	777.225	.90	.82	217	71	243		55	2.5
1	11:14	778.64	1.1	.99	223	71	233		56	3.0
2		780.03	1.1	.99	224	71	238		56	3.0
3		781.60	1.4	1.26	223	71	237		56	4.0
4		783.17	1.4	1.27	220	72	243		57	4.0
5		784.76	1.4	1.27	221	72	233		57	4.0
6	11:29	786.166	1.1	1.0	217	72	239		58	3.0

Quality Assurance / Quality Control Information

Console Operator Signature: \_\_\_\_\_

Date: 11/14/03

Complete: \_\_\_\_\_ Legible: \_\_\_\_\_ Accurate: \_\_\_\_\_ Project Scope: \_\_\_\_\_ Reasonableness: \_\_\_\_\_

Reviewer's Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

# ISOKINETIC FIELD DATA SHEET

Plant BAYSIDE  
 Location UNIT 2A  
 Date 11/14/03  
 Method No. CTM027  
 Run No. 3  
 Box Operator SAV  
 Probe Operator SAV DAS  
 Time - Start: 1153 End: 1259  
 Sampling Time 60  
 Min.\ Pt. 2.5/24  
 Meter Box No. MB00  
 Stack Area Ft.<sup>2</sup> 283.529  
 Meter Cal. (ΔH) 1.769  
 Meter Cal. (ΔY) 1.004

Nozzle I.D. No. 6209  
 Nozzle Diameter .189  
 Pitot Tube No. PT124  
 Pitot Tube (C<sub>p</sub>) .84  
 Probe Length 5ft  
 Probe Liner Material Glass  
 Probe Heater Setting 250  
 Pressure Pb ("Hg): 29.96 Pg ("H<sub>2</sub>O): .5 Ps ("Hg): 29.92  
 Assumed Moisture (%) 9.0  
 Filter Holder No. N/A  
 Comments \_\_\_\_\_  
 Start Imp#1 100 Imp#2 100 Imp#3 0  
 Finish Imp#1 152 Imp#2 109 Imp#3 0  
 O<sub>2</sub> 14 CO<sub>2</sub> 4

Dry Gas Meter Volume  
 Final 820.202 Ft.<sup>3</sup>  
 Initial 786.330 Ft.<sup>3</sup>  
 Net 33.872 Ft.<sup>3</sup>  
 Equipment Leak Checks  
 Initial 0.000 CFM @ 8 "Hg  
 Final 0.000 CFM @ 5 "H<sub>2</sub>O  
 Pitot Tube OK @ 3.6 "H<sub>2</sub>O  
 Moisture Determination  
 Impinger 60 ml  
 Silica Gel 6.3 gm  
 Total 66.3

Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	Δ P (In. H <sub>2</sub> O)	Δ H (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	1153	787.76	1.1	1.0	224	75	235		62	3.0
2		789.18	1.1	1.0	223	75	240		61	3.0
3		790.70	1.3	1.18	223	77	237		60	3.5
4		792.225	1.3	1.19	222	77	236		61	3.5
5		793.76	1.3	1.19	222	78	236		62	3.5
6	1208	795.185	1.1	1.01	217	78	233		63	3.0
1	1210	796.53	1.0	.91	225	78	237		64	3.0
2		797.87	1.0	.91	224	78	229		60	3.0
3		799.20	1.0	.91	224	78	230		58	3.0
4		800.61	1.1	1.00	222	78	238		58	3.0
5		802.02	1.1	1.01	222	78	236		58	3.0
6	1225	803.305	.90	.83	217	79	227		60	2.5

Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	Δ P (In. H <sub>2</sub> O)	Δ H (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	1227	804.65	1.0	.91	225	81	236		59	2.5
2		806.00	1.0	.91	226	81	235		58	2.5
3		807.415	1.1	1.00	226	81	240		59	3.0
4		808.835	1.1	1.00	224	81	239		60	3.0
5		810.25	1.1	1.01	222	82	240		61	3.0
6		811.47	.80	.74	215	83	242		62	2.0
1	1244	812.89	1.1	1.01	225	84	239		65	3.0
2		814.31	1.1	1.01	223	84	237		62	3.0
3		815.92	1.4	1.30	221	85	245		61	4.0
4		817.53	1.4	1.30	220	86	239		62	4.0
5		819.00	1.4	1.03	216	86	235		63	3.0
6	1259	820.202	.76	.71	212	86	232		64	2.0

Quality Assurance / Quality Control Information

Console Operator Signature:  Date: 11/14/03

Complete: \_\_\_\_\_ Legible: \_\_\_\_\_ Accurate: \_\_\_\_\_ Project Scope: \_\_\_\_\_ Reasonableness: \_\_\_\_\_

Reviewer's Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

LABORATORY ANALYSIS

## Analytical Information

**Method:** CTM - 027

**Date Analyzed:** 11/24/03

**Analyst:** Bret Nicholas *B.a.h.*

**Samples:** Received recovered samples in 500ml Nalgene bottles.  
Transferred all impinger #1 and impinger #2 samples  
into 500 ml Volumetrics using DI Water.

**Instrument:** Dionex IC Model DX120  
Column: CS12A with CG12A guard  
Eluent concentration: 22mN H2SO4  
Flow rate: 1.8 mls/min

**Standards:** Stock ammonium standard 1000 mg/l as NH4  
Spex CertiPrep Lot 24-131AS Exp. August 30, 2004  
Diluted stock 10 mls to 100 mls to create an intermediate 100 mg/l standard.  
Diluted intermediate(100 mg/l) standard 10 mls to 100 mls to create an intermediate 10 mg/l standard.

Standard	Volume (mls)	Final Volume (mls)	mg/L as NH4
10 mg/l	1	100	0.10
10 mg/l	3	100	0.30
10 mg/l	5	100	0.50
10 mg/l	10	100	1.00
10 mg/l	20	100	2.00
10 mg/l	30	100	3.00
100 mg/l	5	100	5.00
100 mg/l	8	100	8.00
100 mg/l	10	100	10.00

All standards had 4 mls of 1.0 N. H2SO4 added before being brought to 100 ml volume.  
This prepares all standards in a 0.04 N H2SO4 matrix.  
A reagent blank was prepared using 4 mls of 1.0 N H2SO4 and DI water brought  
to 100 ml volume.

**Factors Used:** N to NH4 divide by 0.7765

**Eluent:** 22 mN H2SO4 prepared by diluting 44 mls of 1.0 N H2SO4 to 2 liters.

**Results:** All standards are calibrated using the NH4 concentration and integrated with peak area.  
All reported sample results are based on peak area and expressed as mg NH4 per liter

**QC:** Spex CertiPrep standard 5.00 mg/l as NH4 was run after the calibration curve and after  
the first seven samples and then after the next seven samples.  
Orion Ammonia Standard 1000 ppm as N prepared to 5.15 mg/l as NH4 was run  
after the calibration curve, after the next seven samples and after the last seven samples.  
Reagent blank was run after the calibration curve, after seven samples, and after



# ANALYSIS REQUEST & CHAIN OF CUSTODY

## ENVIRONMENTAL SERVICES

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

PROJECT REFERENCE <b>BAYSIDE</b>		PROJECT NO. <b>UNIT 2B</b>	PROJECT LOCATION (STATE) <b>FL, TAMPA</b>		REQUIRED ANALYSIS				DUE DATE <div style="border: 1px solid black; width: 100px; height: 30px;"></div>	
SAMPLER'S PRINTED NAME <b>JORGE VARINO</b>		SAMPLER'S SIGNATURE 								
P.O. NUMBER	CONTRACT NO.		SITE							
CLIENT NAME	CLIENT PHONE		CLIENT FAX							
CLIENT EMAIL		CLIENT ADDRESS			PRESERVATIVE				NUMBER OF COOLERS SUBMITTED PER SHIPMENT:	
					<b>ICE</b>					
SAMPLE ID	SAMPLE DESCRIPTION	SAMPLING		* MATRIX	NUMBER OF CONTAINERS SUBMITTED				REMARKS	
		DATE	TIME							
<b>RUN 1</b>	<b>RUN 1 - PROBE + 1ST Imp.</b>	<b>11/12/03</b>		<b>0.1g/L</b>						
<b>RUN 1</b>	<b>RUN 1 - 2ND Imp</b>			<b>#2 Set</b>						
<b>RUN 2</b>	<b>RUN 2 - PROBE + 1ST Imp</b>									
<b>RUN 2</b>	<b>RUN 2 - 2ND Imp</b>									
<b>RUN 3</b>	<b>RUN 3 PROBE + 1ST Imp</b>									
<b>RUN 3</b>	<b>RUN 3 2ND Imp</b>									
<b>BLANK</b>	<b>REAGANT BLANK</b>									

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

CONTAINERS/SEALS INTACT <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	ON ICE/4°C <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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### SAMPLE TRANSFERS

RELINQUISHED BY:		RECEIVED BY:		DATE	TIME
PERSON'S NAME:		PERSON'S NAME: <b>Craig V. Coronado</b>		<b>11/13/03</b>	<b>9:50 am</b>
FACILITY NAME: <b>TECO / EHS / AIR SERVICES</b>		FACILITY NAME: <b>Polk Power Station / Lab</b>			
PERSON'S NAME:		PERSON'S NAME:			
FACILITY NAME:		FACILITY NAME:			
PERSON'S NAME:		PERSON'S NAME:			
FACILITY NAME:		FACILITY NAME:			
PERSON'S NAME:		PERSON'S NAME:			
FACILITY NAME:		FACILITY NAME:			



# Polk Power Laboratory

## Summary of Lab Results

**Customer:** Tampa Electric Company  
**Sampling Location/Identifier:** Bayside Units 2B & 2A  
**Test Dates:** Unit 2B - 11/12/2003 Unit 2A - 11/14/2003  
**Analytical Method for Recovered Samples:** CTM - 027  
**Analysis Date:** 11/24/03  
**Analyst:** Bret Nicholas *B.G.h.*

Sample Identification	Time	Volume (mls)	mg NH4 / L
Sample RW -2840 0.1N. H2SO4		as received	<0.10
11/12/03 Unit 2B Run 1 Impinger #1	13:10	500	0.33
11/12/03 Unit 2B Run 1 Impinger #2	13:10	500	<0.10
11/12/03 Unit 2B Run 2 Impinger #1	14:44	500	0.39
11/12/03 Unit 2B Run 2 Impinger #2	14:44	500	<0.10
11/12/03 Unit 2B Run 3 Impinger #1	16:23	500	0.36
11/12/03 Unit 2B Run 3 Impinger #2	16:23	500	<0.10

Sample Identification	Time	Volume (mls)	mg NH4 / L
Sample RW - 2839 0.1N. H2SO4		as received	<0.10
11/14/03 Unit 2A Run 1 Impinger #1	10:14	500	0.45
11/14/03 Unit 2A Run 1 Impinger #2	10:14	500	<0.10
11/14/03 Unit 2A Run 2 Impinger #1	12:00	500	0.49
11/14/03 Unit 2A Run 2 Impinger #2	12:00	500	<0.10
11/14/03 Unit 2A Run 3 Impinger #1	13:07	500	0.45
11/14/03 Unit 2A Run 3 Impinger #2	13:07	500	<0.10

QC Information	True Value	Result	% Rec.
Reagent Blank	<0.10	<0.10	
Calibration Standard Check 5	5.00	4.94	98.8
Orion Check Standard	5.15	4.93	95.7
Reagent Blank	<0.10	<0.10	
Calibration Standard Check 5	5.00	4.91	98.2
Orion Check Standard	5.15	4.92	95.5
Reagent Blank	<0.10	<0.10	
Calibration Standard Check 5	5.00	4.91	98.2
Orion Check Standard	5.15	4.92	95.5

Line	Sample	Method	Data File	Dilution	Comment
	Reagent Blank	ctm-027.met	nh401001.dxd	1	
	Autocal1R	ctm-027.met	nh401002.dxd	1	
3	Autocal2R	ctm-027.met	nh401003.dxd	1	
4	Autocal3R	ctm-027.met	nh401004.dxd	1	
	Autocal4R	ctm-027.met	nh401005.dxd	1	
	Autocal5R	ctm-027.met	nh401006.dxd	1	
7	Autocal6R	ctm-027.met	nh401007.dxd	1	
8	Autocal7R	ctm-027.met	nh401008.dxd	1	
	Autocal8R	ctm-027.met	nh401009.dxd	1	
10	Autocal9R	ctm-027.met	nh401010.dxd	1	
11	Reagent Blank	ctm-027.met	nh401011.dxd	1	
	Cal. Std 5 (5.00 mg/l)	ctm-027.met	nh401012.dxd	1	
	Orion Standard T.V. = 5.	ctm-027.met	nh401013.dxd	1	
14	RW - 2840 0.1N H2SO4	ctm-027.met	nh401014.dxd	1	
15	11/12/03 Run 1 Impinger	ctm-027.met	nh401015.dxd	1	
	11/12/03 Run 1 Impinger	ctm-027.met	nh401016.dxd	1	
	11/12/03 Run 2 Impinger	ctm-027.met	nh401017.dxd	1	
18	11/12/03 Run 2 Impinger	ctm-027.met	nh401018.dxd	1	
19	11/12/03 Run 3 Impinger	ctm-027.met	nh401019.dxd	1	
	11/12/03 Run 3 Impinger	ctm-027.met	nh401020.dxd	1	
21	Reagent Blank	ctm-027.met	nh401021.dxd	1	
22	Cal Std 5 (5.00 mg/l)	ctm-027.met	nh401022.dxd	1	
	Orion Standard T.V. = 5.	ctm-027.met	nh401023.dxd	1	
	RW - 2839 0.1N H2SO4	ctm-027.met	nh401024.dxd	1	
25	11/14/03 Run 1 Impinger	ctm-027.met	nh401025.dxd	1	
26	11/14/03 Run 1 Impinger	ctm-027.met	nh401026.dxd	1	
	11/14/03 Run 2 Impinger	ctm-027.met	nh401027.dxd	1	
28	11/14/03 Run 2 Impinger	ctm-027.met	nh401028.dxd	1	
29	11/14/03 Run 3 Impinger	ctm-027.met	nh401029.dxd	1	
	11/14/03 Run 3 Impinger	ctm-027.met	nh401030.dxd	1	
	Reagent Blank	ctm-027.met	nh401031.dxd	1	
32	Cal Std 5 (5.00 mg/l)	ctm-027.met	nh403032.dxd	1	
33	Orion Standard T.V. = 5.	ctm-027.met	nh403033.dxd	1	
	Stop Program	stopcat.met	nh4	1	

Default Method Path: C:\PEAKNET\METHOD

Default Data Path: C:\PEAKNET\DATA

Comment:

Component: NH4; Fit Type: Quadratic

Method: c:\peaknet\method\ctm-027.met; Updated: 11/24/2003 1:20:06 PM

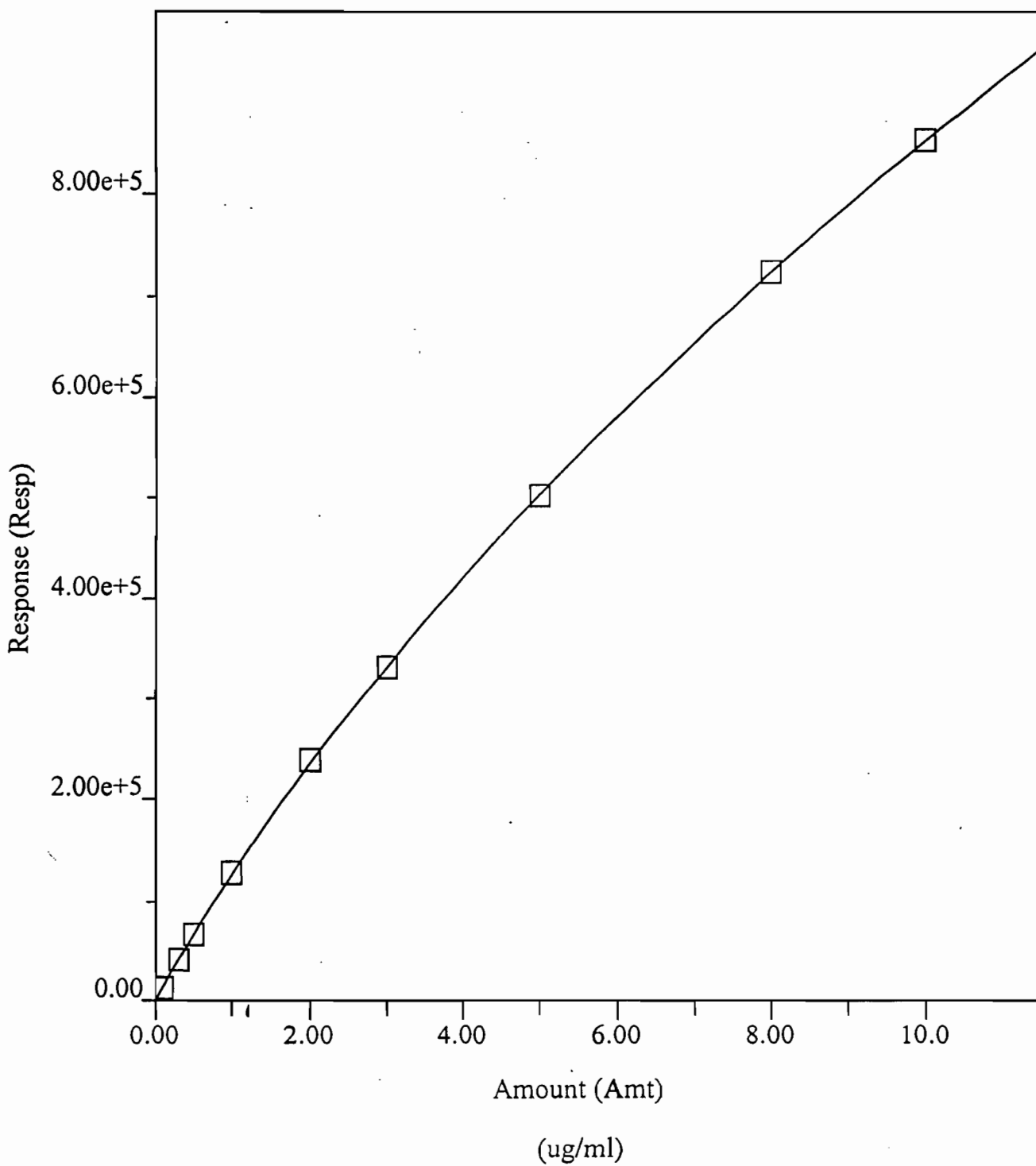
$r^2 = 0.999978$

$Amt = 5.122352e-012 * Resp^2 + 7.383744e-006 *$

$Resp + -0.01736$

Standard: External

Calibration: Area



```

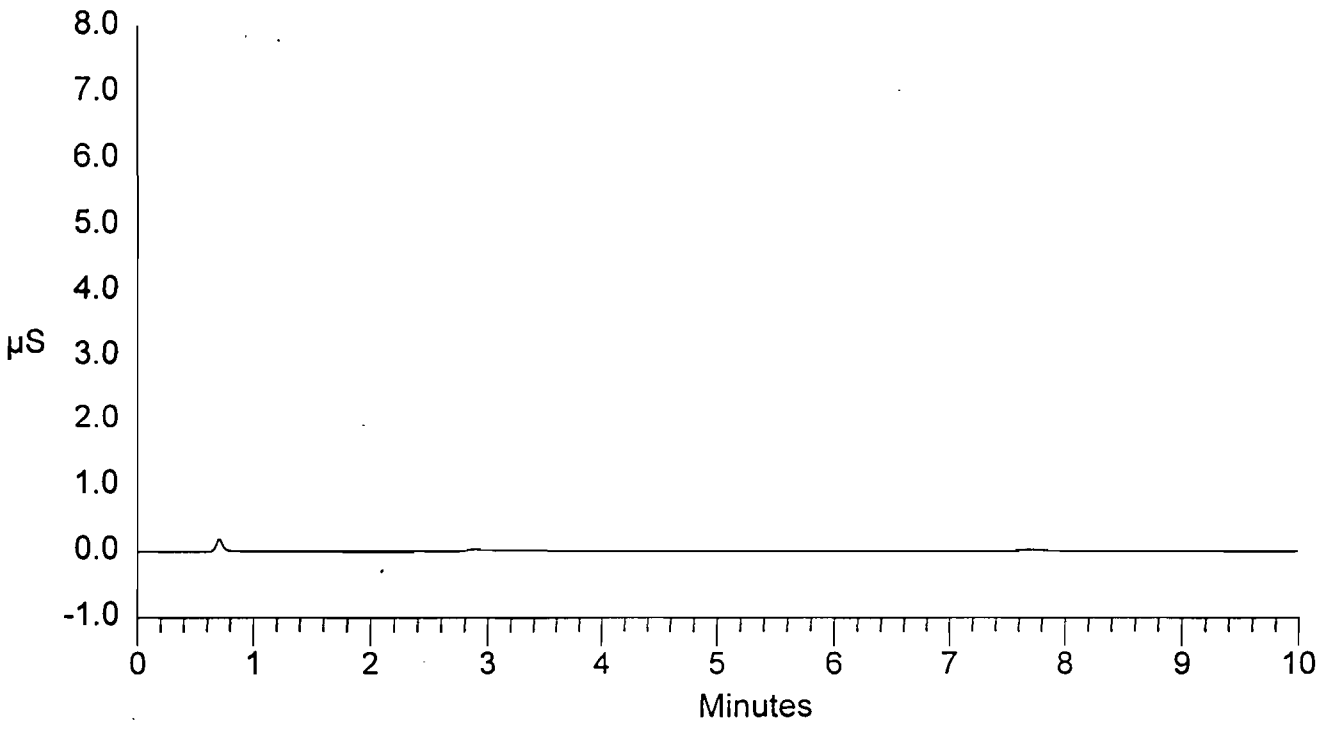
=====
Data File   : C:\PEAKNET\DATA\NH401001.DXD   Report Date: 11/24/2003 11:22:33
Sample Name: Reagent Blank                   Collected  : 11/24/2003 11:09:29
Inject #    : 1                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/10/2003 6:37:55 P
System Name : DX-120                          Detector    : DX-120
Column Type : Ionpac CS12A                    Operator    :
Data Points : 3000                             Rate       : 5.00 Hz
Module Name : DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
Totals			0.00	0	0		

**File: NH401001.DXD Sample Reagent Blank**



```

=====
Data File   : C:\PEAKNET\DATA\NH401002.DXD   Report Date: 11/24/2003 11:35:33
Sample Name: Autocal1R                       Collected  : 11/24/2003 11:22:33
Inject #    : 2                               Vial #     :
Method File : c:\peaknet\method\ctm-027.met  Last Update: 11/10/2003 6:37:55 P
System Name : DX-120                          Detector   : DX-120
Cal. Level  : 1                               Analyst    : Polk Lab
=====
    
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

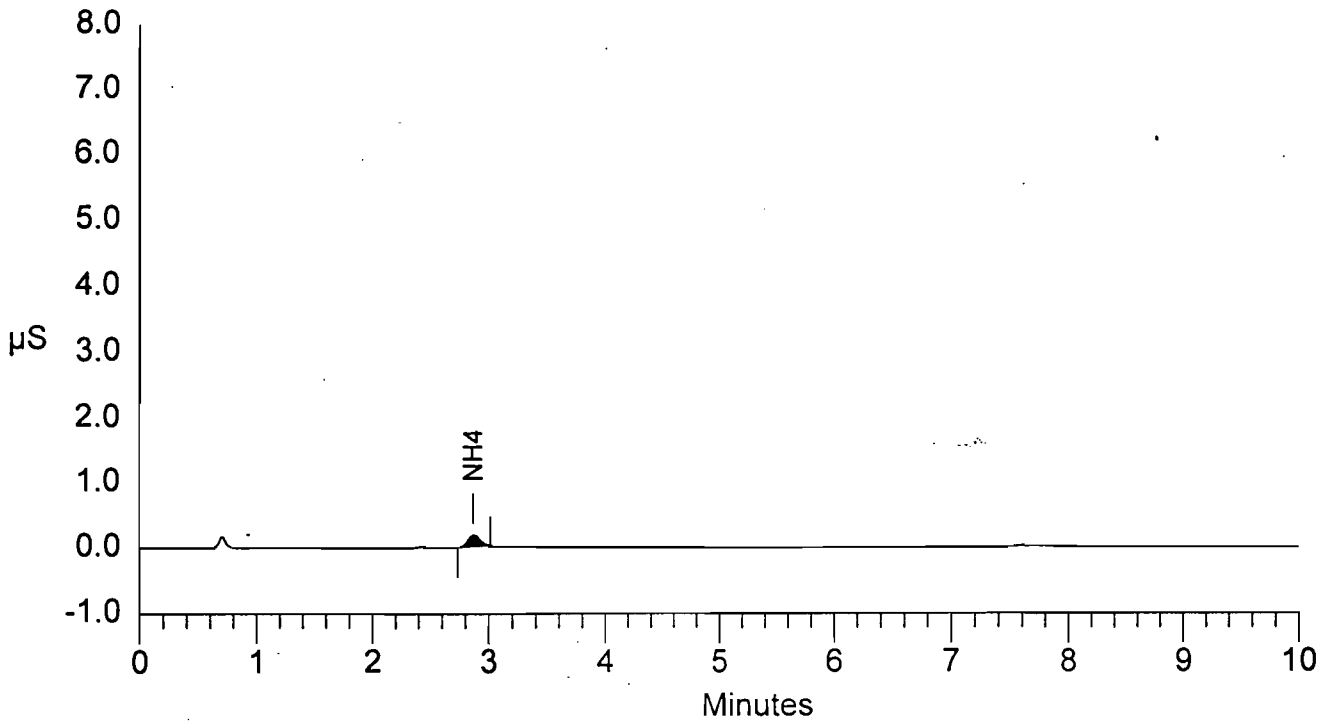
DMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.92	2.87	2.87	1.793e+004	1.358e+004	1.358e+004

```

=====
Data File   : C:\PEAKNET\DATA\NH401002.DXD   Report Date: 11/24/2003 11:35:33
Sample Name: Autocal1R                       Collected  : 11/24/2003 11:22:33
Inject #    : 2                               Vial #     :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 11:35:33
System Name : DX-120                          Detector   : DX-120
Column Type : Ionpac CS12A                    Operator    :
Data Points : 3000                             Rate       : 5.00 Hz
Module Name : DX-120                           ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.87	NH4	0.10	1829	13576	1	0.00
Totals			0.10	1829	13576		



\*\*\*\*\* AUTOMATIC CALIBRATION UPDATE \*\*\*\*\*

```

=====
Data File   : C:\PEAKNET\DATA\NH401003.DXD   Report Date: 11/24/2003 11:48:35
Sample Name: Autocal2R                       Collected  : 11/24/2003 11:35:34
Inject #    : 3                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Last Update: 11/24/2003 11:35:33
System Name: DX-120                           Detector    : DX-120
Cal. Level  : 2                               Analyst     : Polk Lab
=====
    
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

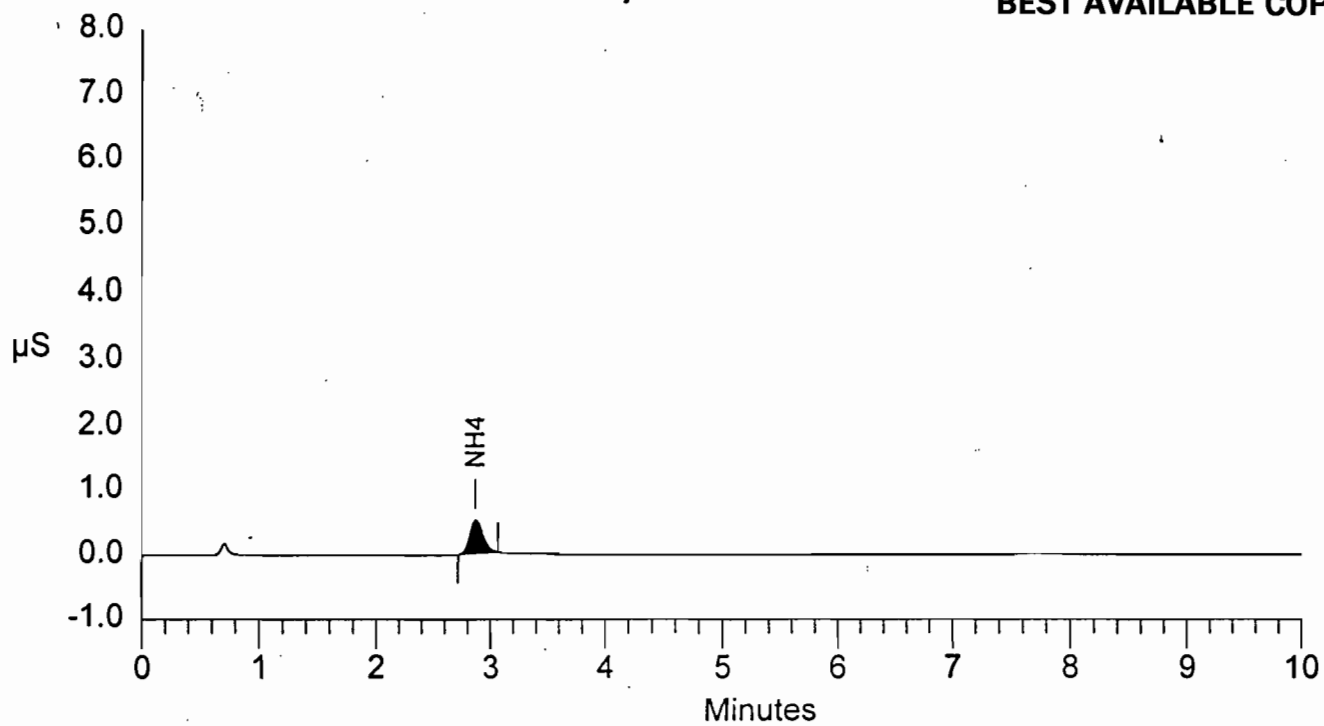
DMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.87	2.87	2.87	3.650e+004	4.154e+004	4.154e+004

```

=====
Data File   : C:\PEAKNET\DATA\NH401003.DXD   Report Date: 11/24/2003 11:48:35
Sample Name: Autocal2R                       Collected  : 11/24/2003 11:35:34
Inject #    : 3                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 11/24/2003 11:48:35
System Name: DX-120                           Detector    : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.87	NH4	0.30	5137	41541	1	0.00
Totals			0.30	5137	41541		





```

=====
Data File   : C:\PEAKNET\DATA\NH401004.DXD   Report Date: 11/24/2003 12:01:41
Sample Name: Autocal3R                       Collected  : 11/24/2003 11:48:36
Inject #    : 4                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Last Update: 11/24/2003 11:48:35
System Name : DX-120                          Detector    : DX-120
Cal. Level  : 3                               Analyst     : Polk Lab
=====
  
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

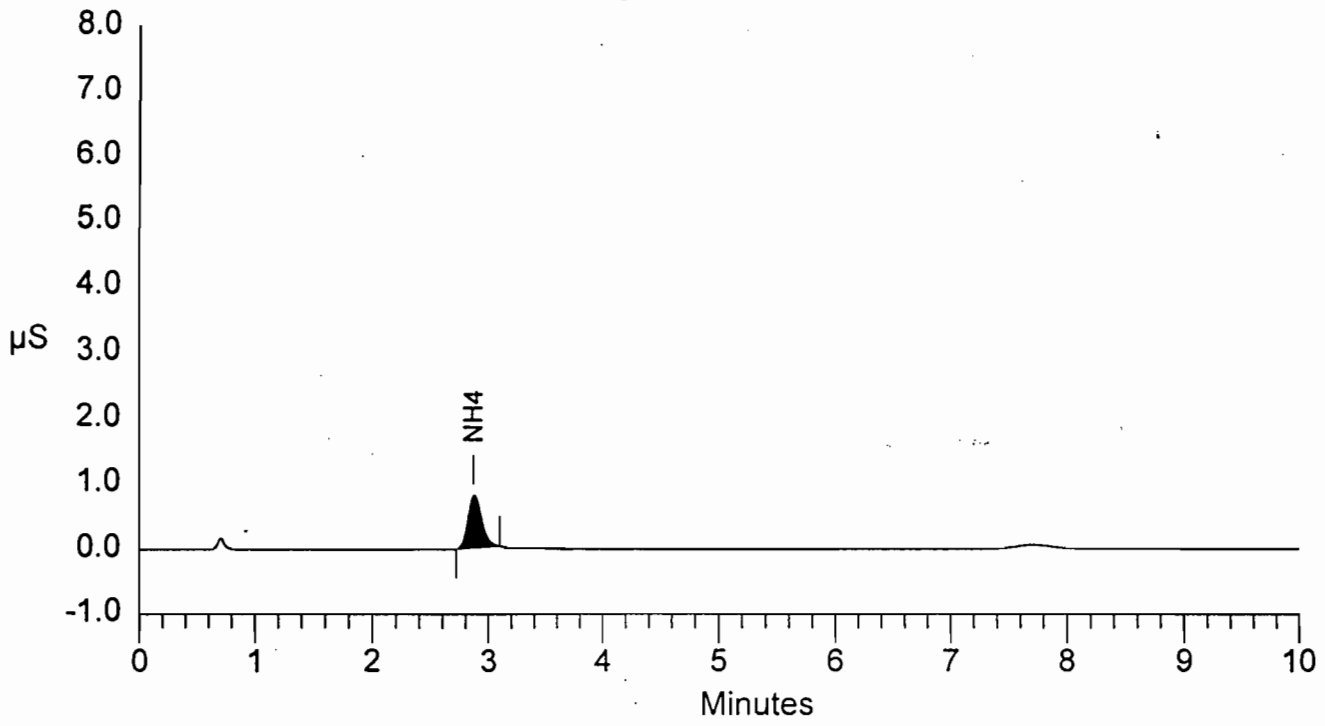
OMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.87	2.87	2.87	6.129e+004	6.676e+004	6.676e+004

```

=====
Data File   : C:\PEAKNET\DATA\NH401004.DXD   Report Date: 11/24/2003 12:01:41
Sample Name: Autocal3R                       Collected  : 11/24/2003 11:48:36
Inject #    : 4                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 12:01:41
System Name : DX-120                          Detector    : DX-120
Column Type : Ionpac CS12A                    Operator     :
Data Points : 3000                             Rate        : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====
  
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.87	NH4	0.50	7837	66762	1	0.00
Totals			0.50	7837	66762		



```

=====
Data File   : C:\PEAKNET\DATA\NH401005.DXD   Report Date: 11/24/2003 12:14:41
Sample Name: Autocal4R                       Collected  : 11/24/2003 12:01:41
Inject #    : 5                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Last Update: 11/24/2003 12:01:41
System Name : DX-120                          Detector    : DX-120
Cal. Level  : 4                               Analyst     : Polk Lab
=====
    
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

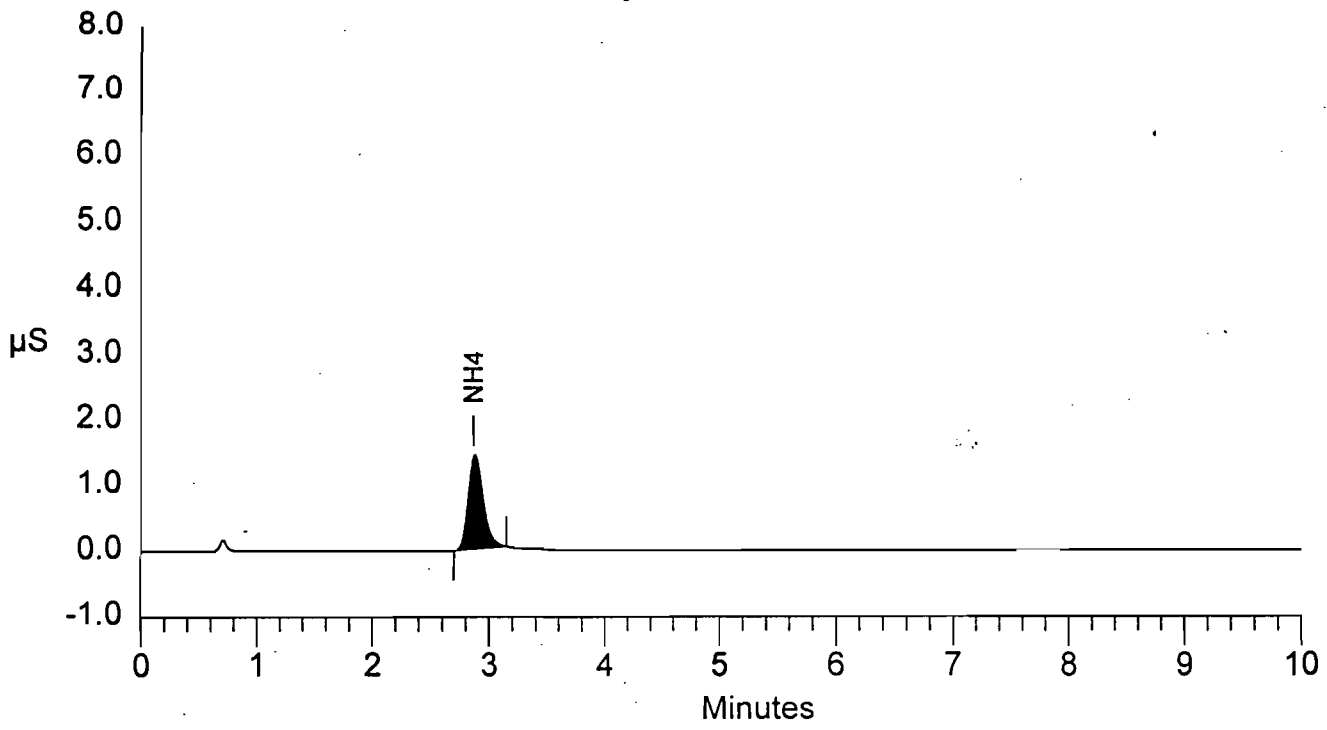
OMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.87	2.87	2.87	1.159e+005	1.280e+005	1.280e+005

```

=====
Data File   : C:\PEAKNET\DATA\NH401005.DXD   Report Date: 11/24/2003 12:14:41
Sample Name: Autocal4R                       Collected  : 11/24/2003 12:01:41
Inject #    : 5                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 12:14:41
System Name : DX-120                          Detector    : DX-120
Column Type : Ionpac CS12A                    Operator    :
Data Points : 3000                             Rate       : 5.00 Hz
Module Name : DX-120                           ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.87	NH4	1.00	14003	128008	1	0.00
Totals			1.00	14003	128008		



```

=====
Data File   : C:\PEAKNET\DATA\NH401006.DXD   Report Date: 11/24/2003 12:27:47
Sample Name: Autocal5R                       Collected  : 11/24/2003 12:14:42
Inject #    : 6                               Vial #     :
Method File : c:\peaknet\method\ctm-027.met  Last Update: 11/24/2003 12:14:41
System Name : DX-120                          Detector   : DX-120
Cal. Level  : 5                               Analyst    : Polk Lab
=====
  
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

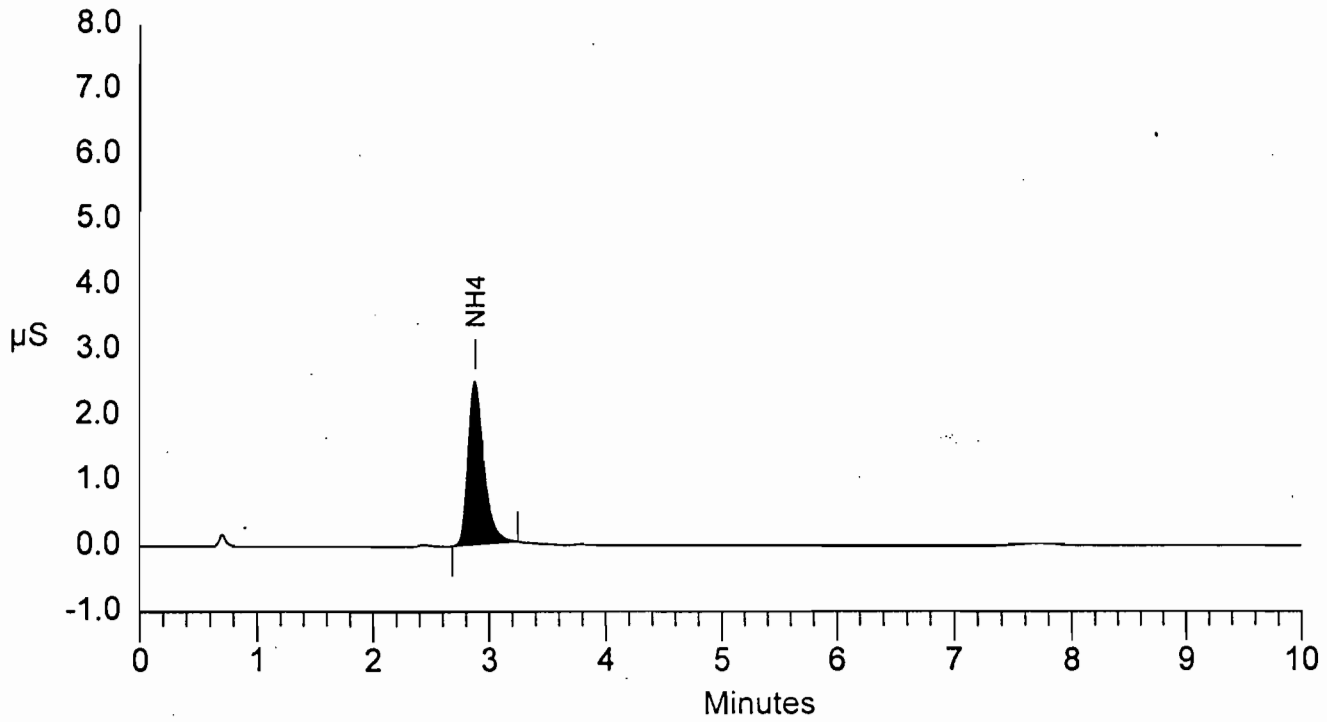
COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.87	2.88	2.88	2.204e+005	2.383e+005	2.383e+005

```

=====
Data File   : C:\PEAKNET\DATA\NH401006.DXD   Report Date: 11/24/2003 12:27:47
Sample Name: Autocal5R                       Collected  : 11/24/2003 12:14:42
Inject #    : 6                               Vial #     :
Method File : c:\peaknet\method\ctm-027.met  Calibrated : 11/24/2003 12:27:47
System Name : DX-120                          Detector   : DX-120
Column Type : Ionpac CS12A                    Operator    :
Data Points : 3000                             Rate       : 5.00 Hz
Module Name : DX-120                           ID:50 05 d8 Moduleware : 1.00
=====
  
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.88	NH4	2.00	25103	238324	1	0.00
Totals			2.00	25103	238324		



\*\*\*\*\*

AUTOMATIC CALIBRATION UPDATE

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```

=====
Data File   : C:\PEAKNET\DATA\NH401007.DXD   Report Date: 11/24/2003 12:40:53
Sample Name: Autocal6R                       Collected  : 11/24/2003 12:27:47
Inject #    : 7                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Last Update: 11/24/2003 12:27:47
System Name : DX-120                          Detector    : DX-120
Cal. Level  : 6                               Analyst     : Polk Lab
=====

```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

OMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.88	2.88	2.88	3.051e+005	3.314e+005	3.314e+005

```

=====
Data File   : C:\PEAKNET\DATA\NH401007.DXD   Report Date: 11/24/2003 12:40:53
Sample Name: Autocal6R                       Collected  : 11/24/2003 12:27:47
Inject #    : 7                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 12:40:53
System Name : DX-120                          Detector    : DX-120
Column Type : Ionpac CS12A                    Operator    :
Data Points : 3000                             Rate       : 5.00 Hz
Module Name : DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.88	NH4	3.00	33697	331404	1	0.00
Totals			3.00	33697	331404		

```

=====
Data File   : C:\PEAKNET\DATA\NH401010.DXD   Report Date: 11/24/2003 1:20:06 P
Sample Name: Autocal9R                       Collected  : 11/24/2003 1:07:01 P
Inject #    : 10                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Last Update: 11/24/2003 1:07:00 P
System Name : DX-120                          Detector    : DX-120
Cal. Level  : 9                               Analyst     : Polk Lab
=====
    
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

OMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.88	2.88	2.88	7.984e+005	8.529e+005	8.529e+005

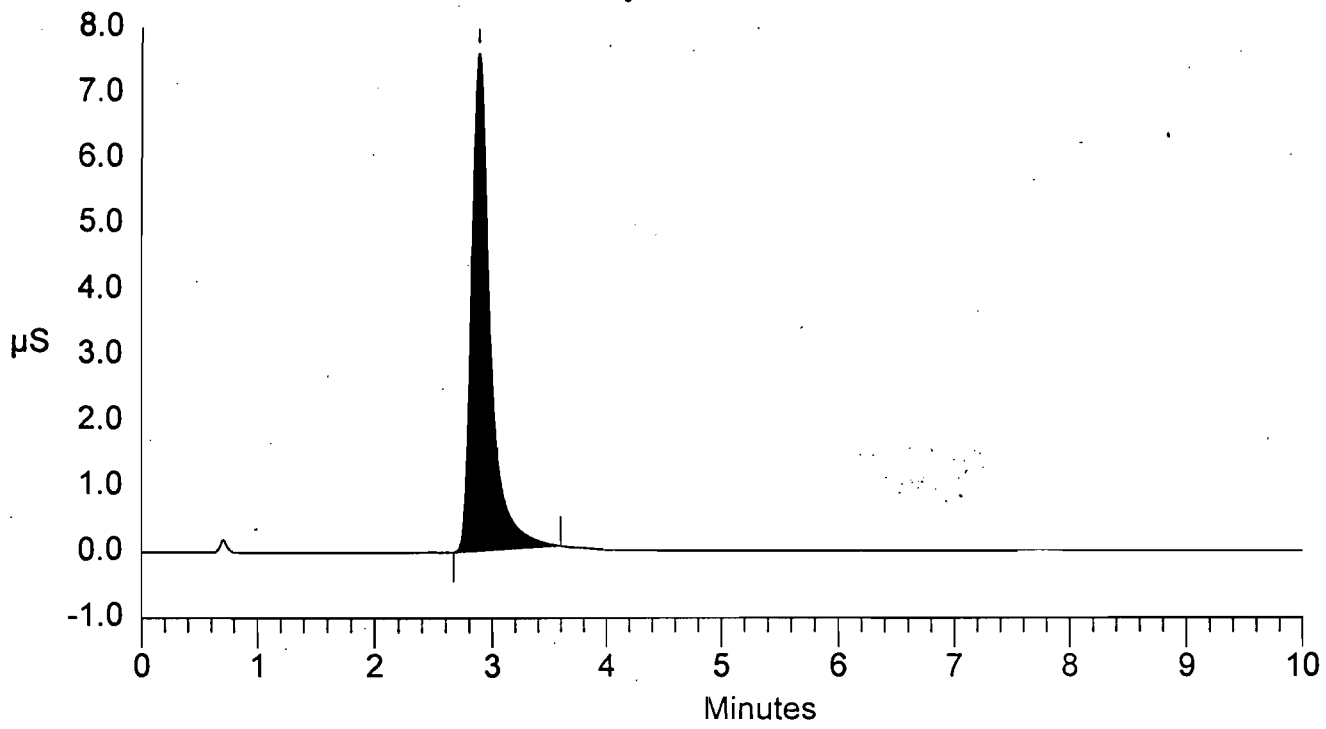
```

=====
Data File   : C:\PEAKNET\DATA\NH401010.DXD   Report Date: 11/24/2003 1:20:06 P
Sample Name: Autocal9R                       Collected  : 11/24/2003 1:07:01 P
Inject #    : 10                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name : DX-120                          Detector    : DX-120
Column Type : Ionpac CS12A                    Operator    :
Data Points : 3000                             Rate       : 5.00 Hz
Module Name : DX-120                           ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.88	NH4	10.00	75921	852866	1	0.00
Totals			10.00	75921	852866		





```

=====
Data File   : C:\PEAKNET\DATA\NH401011.DXD   Report Date: 11/24/2003 1:33:13 P
Sample Name: Reagent Blank                   Collected  : 11/24/2003 1:20:06 P
Inject #    : 11                             Vial #     :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name : DX-120                         Detector   : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

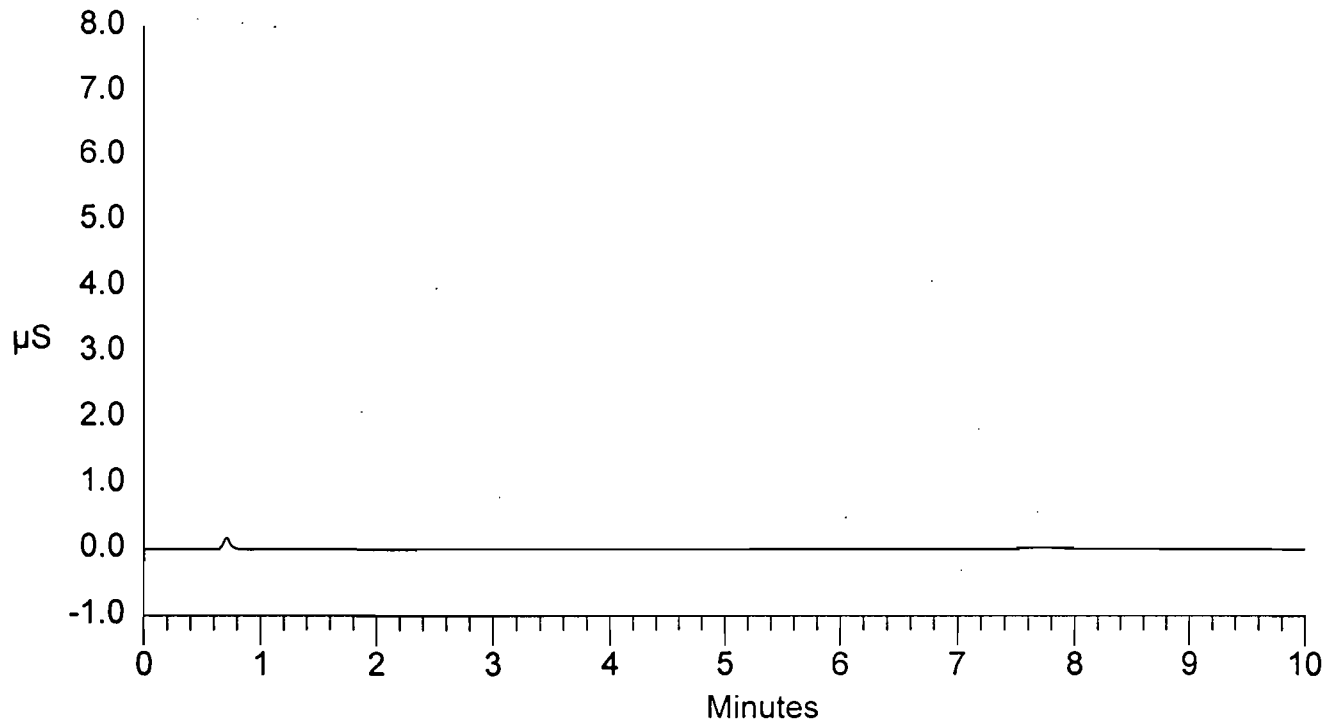
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
---------	----------	----------------	---------------------	--------	------	----------	--------

Totals 0.00 0 0

**File: NH401011.DXD Sample Reagent Blank**



```

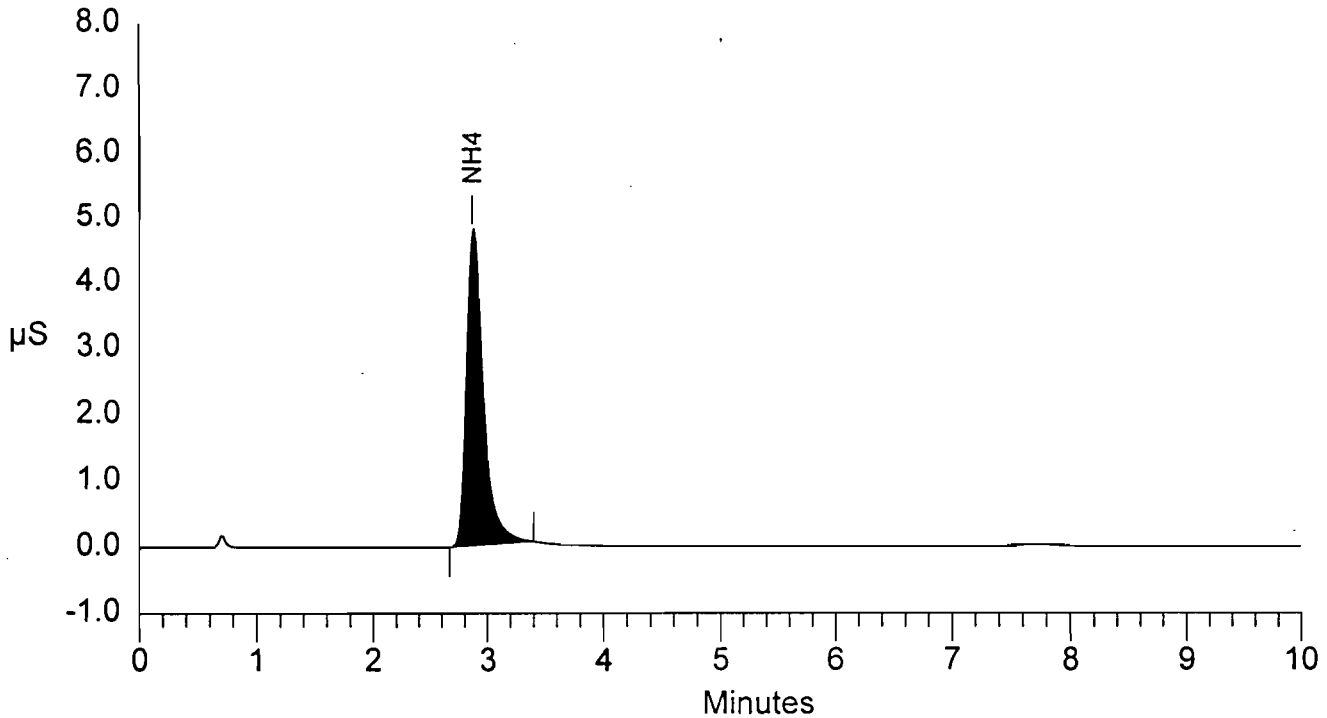
=====
Data File   : C:\PEAKNET\DATA\NH401012.DXD   Report Date: 11/24/2003 1:46:19 P
Sample Name: Cal. Std 5 (5.00 mg/l)         Collected  : 11/24/2003 1:33:13 P
Inject #    : 12                             Vial #     :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                            Rate       : 5.00 Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.87	NH4	4.94	46927	498944	1	0.00
Totals			4.94	46927	498944		

**File: NH401012.DXD Sample Cal. Std 5 (5.00 mg/l)**



```

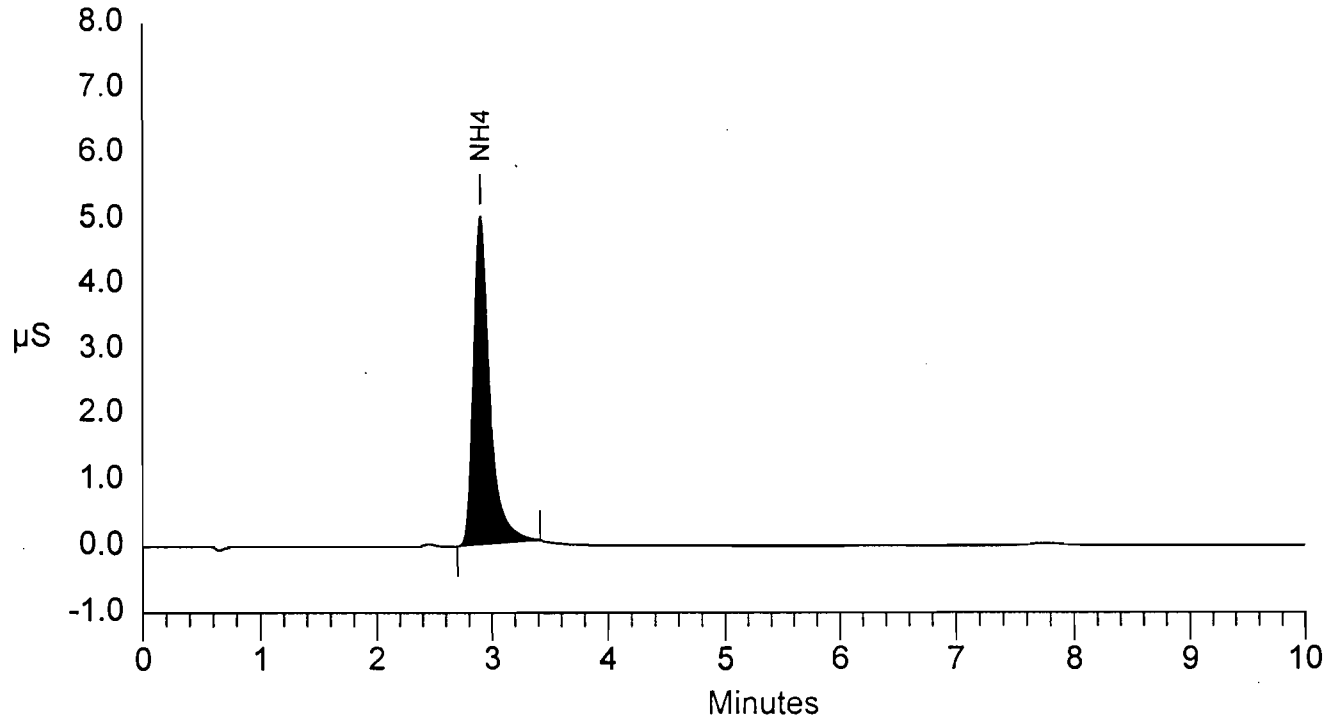
=====
Data File   : C:\PEAKNET\DATA\NH401013.DXD   Report Date: 11/24/2003 1:59:19 P
Sample Name : Orion Standard T.V.= 5.15      Collected  : 11/24/2003 1:46:19 P
Inject #    : 13                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.90	NH4	4.93	50214	497954	1	0.00
Totals			4.93	50214	497954		

**File: NH401013.DXD Sample Orion Standard T.V.= 5.15**



```

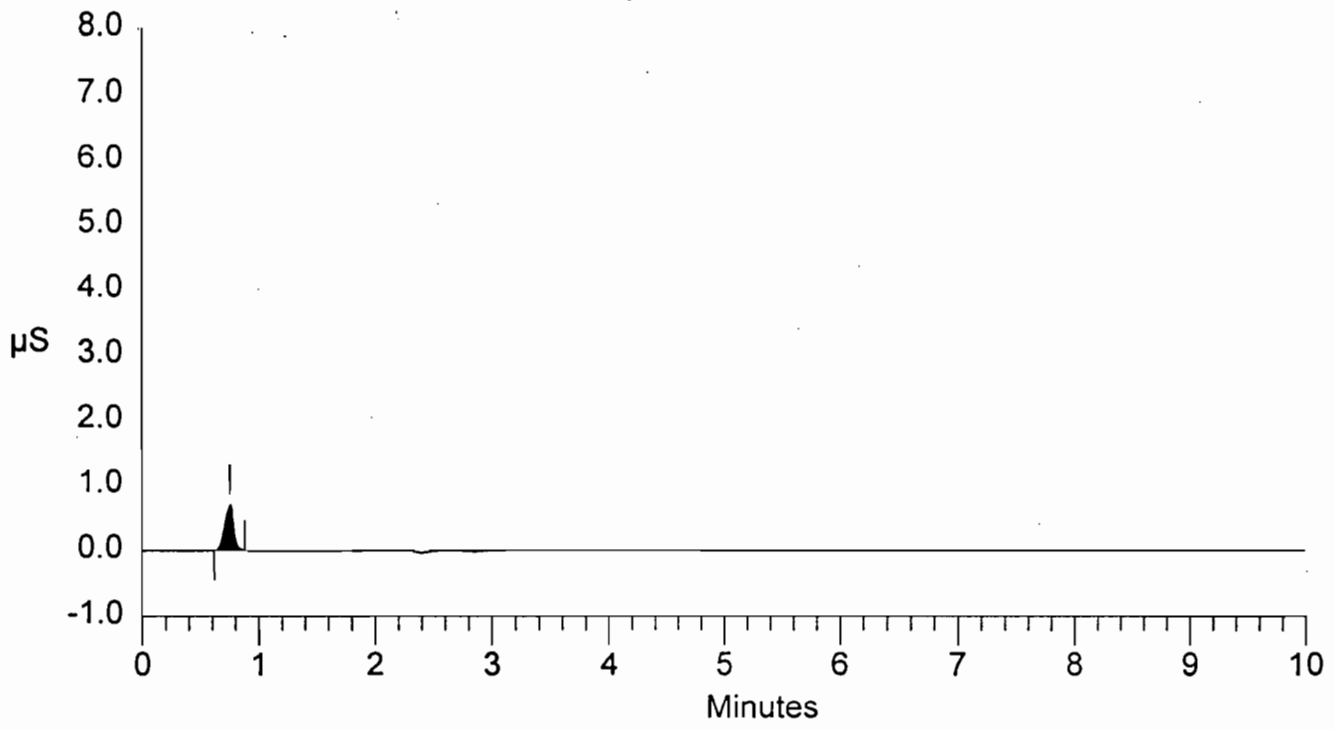
=====
Data File   : C:\PEAKNET\DATA\NH401014.DXD   Report Date: 11/24/2003 2:12:25 P
Sample Name: RW - 2840 0.1N H2SO4           Collected  : 11/24/2003 1:59:20 P
Inject #    : 14                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
-----							
Totals			0.00	0	0		

**File: NH401014.DXD Sample RW - 2840 0.1N H2SO4**



```

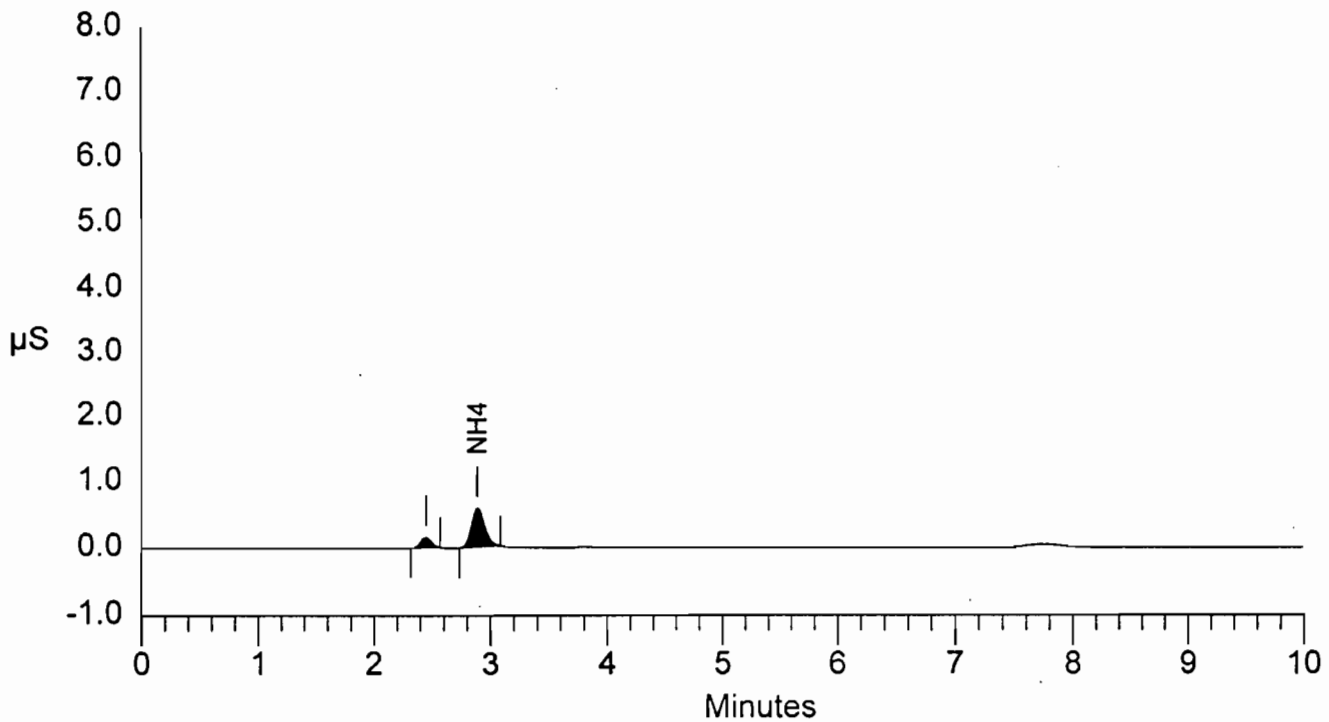
=====
Data File   : C:\PEAKNET\DATA\NH401015.DXD   Report Date: 11/24/2003 2:25:26 P
Sample Name: 11/12/03 Run 1 Impinger #1     Collected  : 11/24/2003 2:12:25 P
Inject #   : 15                               Vial #     :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                           Detector   : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.88	NH4	0.33	5826	46093	1	0.00
Totals			0.33	5826	46093		

**File: NH401015.DXD Sample 11/12/03 Run 1 Impinger #1**



```

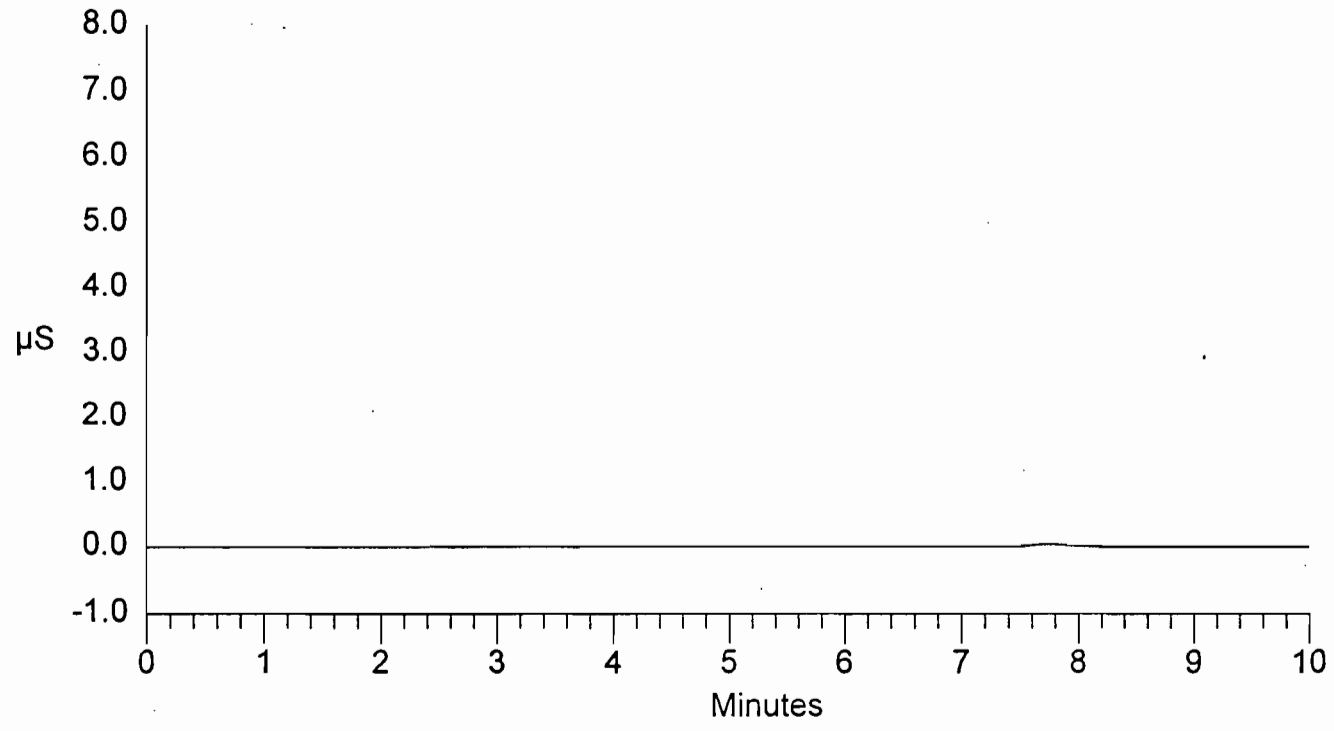
=====
Data File   : C:\PEAKNET\DATA\NH401016.DXD   Report Date: 11/24/2003 2:38:32 P
Sample Name: 11/12/03 Run 1 Impinger #2     Collected  : 11/24/2003 2:25:26 P
Inject #    : 16                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                            Rate        : 5.00 Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
-----							
Totals			0.00	0	0		

**File: NH401016.DXD Sample 11/12/03 Run 1 Impinger #2**



```

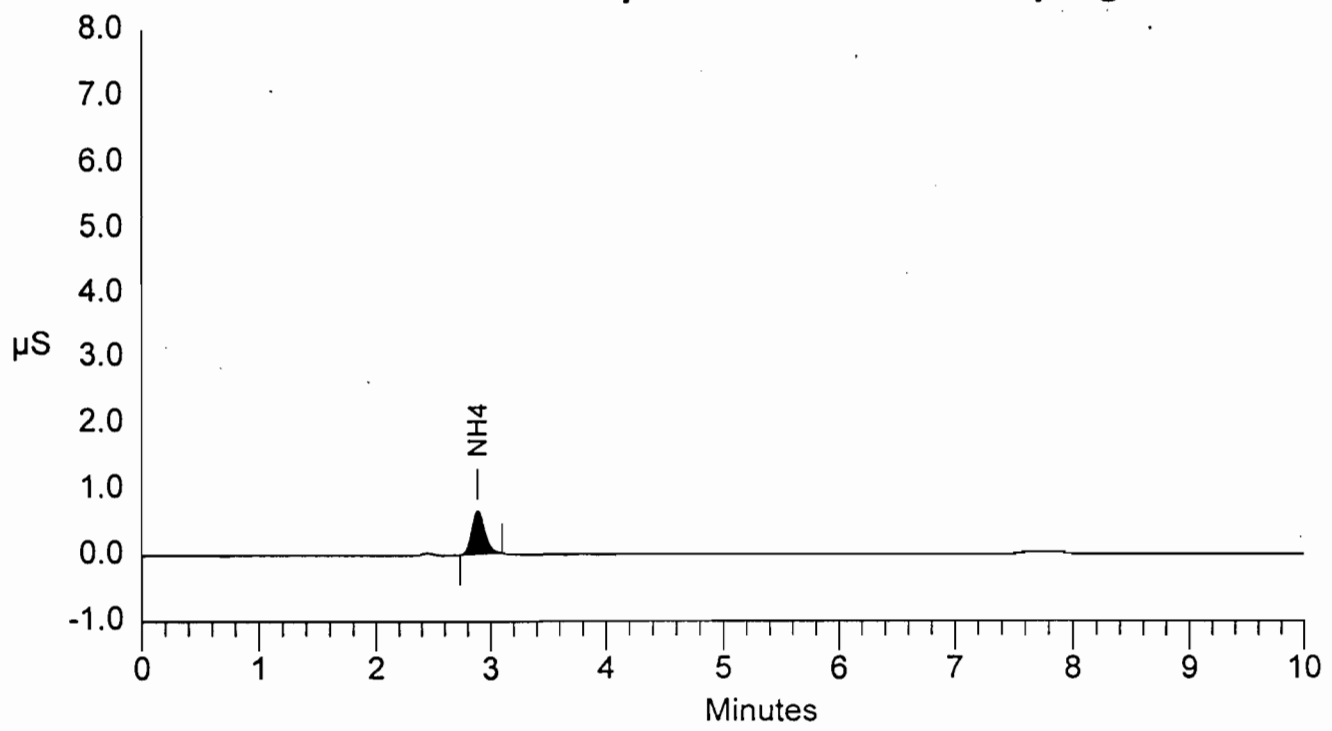
=====
Data File   : C:\PEAKNET\DATA\NH401017.DXD   Report Date: 11/24/2003 2:51:32 P
Sample Name: 11/12/03 Run 2 Impinger #1     Collected  : 11/24/2003 2:38:32 P
Inject #    : 17                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                             Rate        : 5.00 Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.88	NH4	0.39	6576	52682	1	0.00
Totals			0.39	6576	52682		

**File: NH401017.DXD Sample 11/12/03 Run 2 Impinger #1**





```

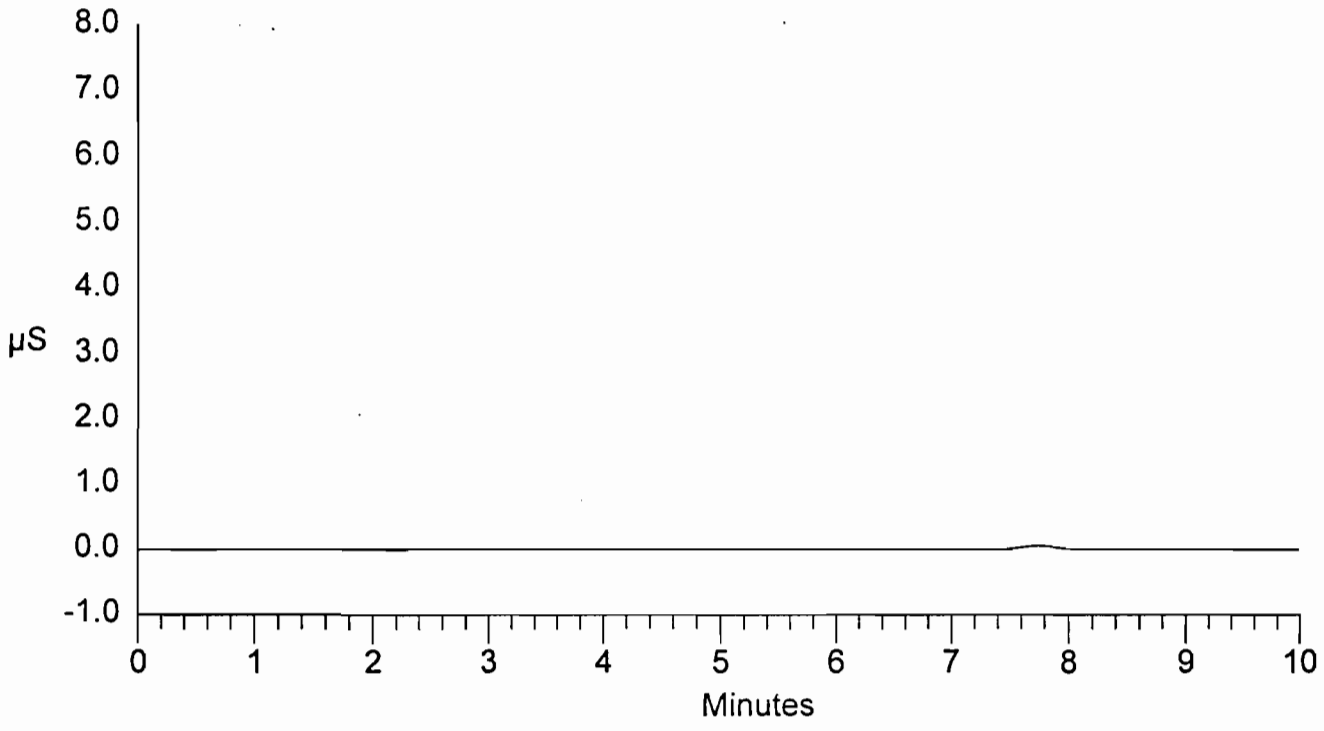
=====
Data File   : C:\PEAKNET\DATA\NH401018.DXD   Report Date: 11/24/2003 3:04:38 P
Sample Name: 11/12/03 Run 2 Impinger #2     Collected  : 11/24/2003 2:51:33 P
Inject #    : 18                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator     :
Data Points: 3000                             Rate        : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
Totals			0.00	0	0		

**File: NH401018.DXD Sample 11/12/03 Run 2 Impinger #2**



```

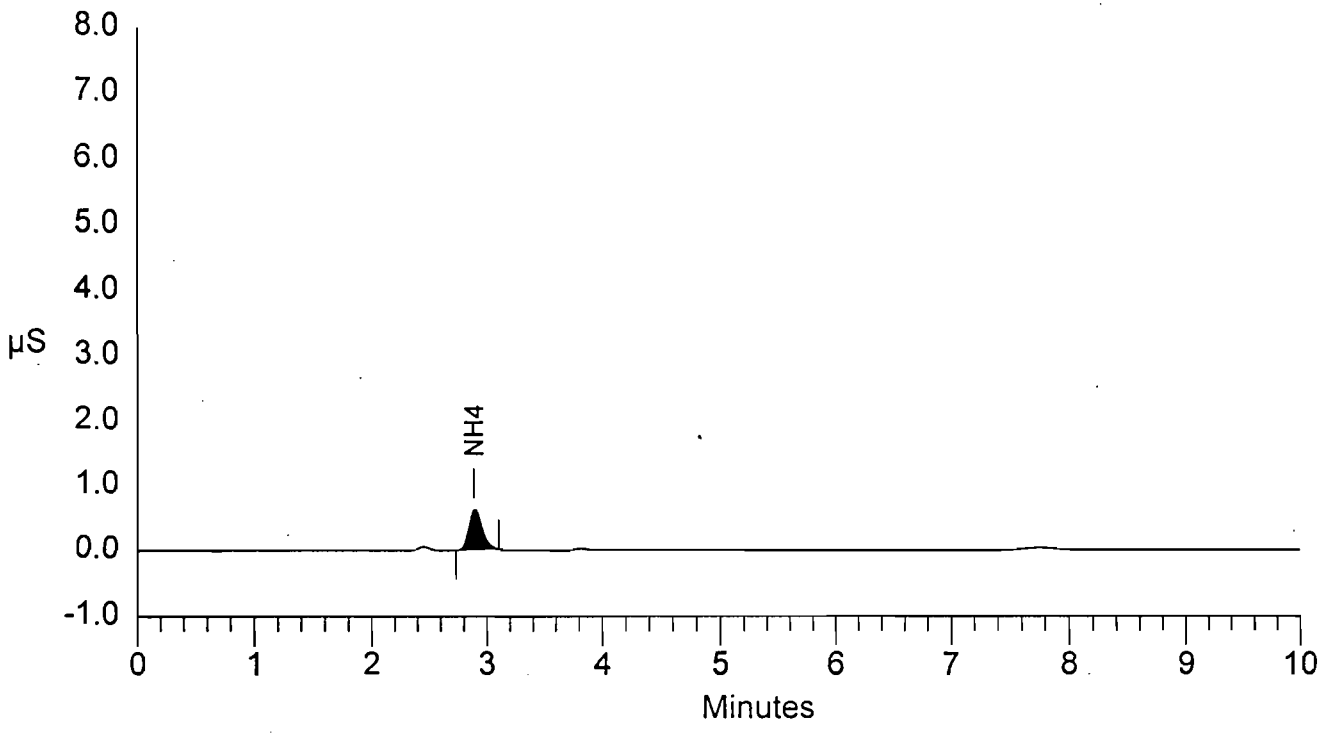
=====
Data File   : C:\PEAKNET\DATA\NH401019.DXD   Report Date: 11/24/2003 3:17:44 P
Sample Name: 11/12/03 Run 3 Impinger #1     Collected  : 11/24/2003 3:04:39 P
Inject #    : 19                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator     :
Data Points: 3000                            Rate        : 5.00   Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.88	NH4	0.36	6110	49291	1	0.00
Totals			0.36	6110	49291		

**File: NH401019.DXD Sample 11/12/03 Run 3 Impinger #1**



```

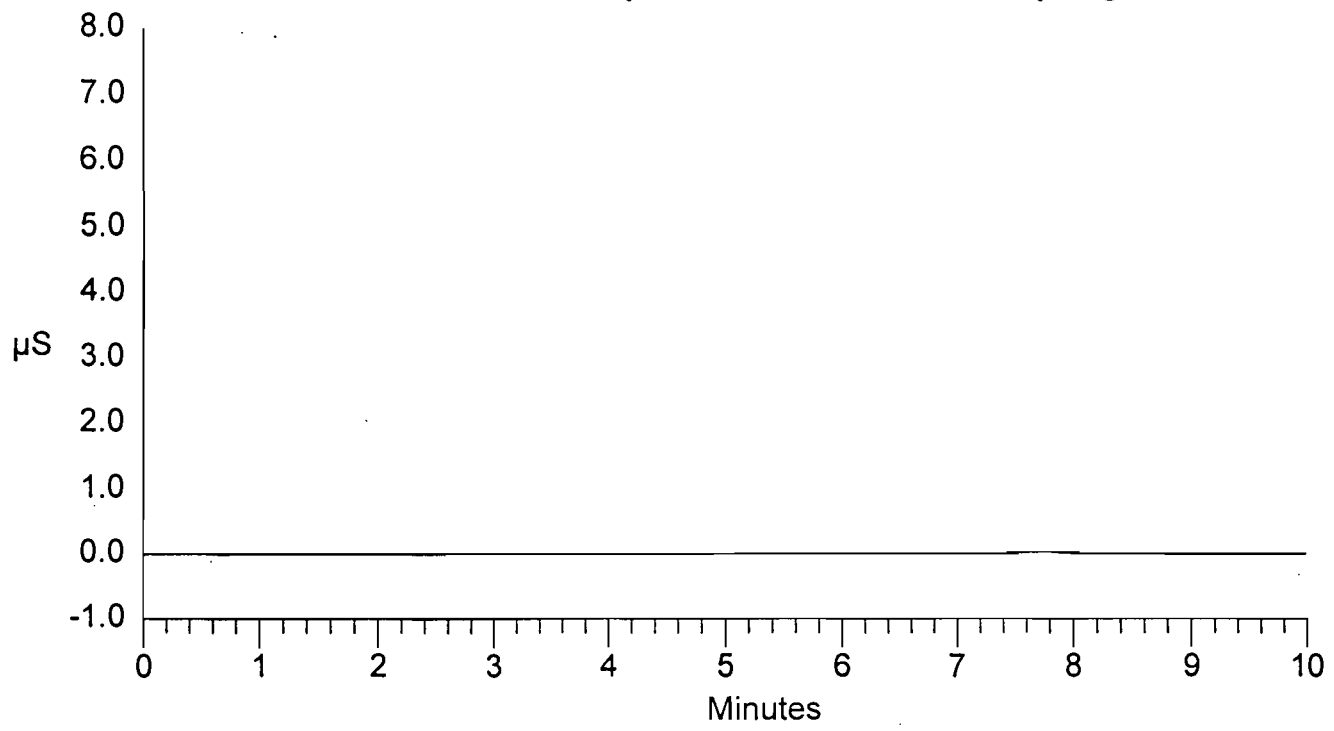
=====
Data File   : C:\PEAKNET\DATA\NH401020.DXD   Report Date: 11/24/2003 3:30:45 P
Sample Name: 11/12/03 Run 3 Impinger #2      Collected  : 11/24/2003 3:17:44 P
Inject #    : 20                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                           Detector    : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate        : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
Totals			0.00	0	0		

**File: NH401020.DXD Sample 11/12/03 Run 3 Impinger #2**



```

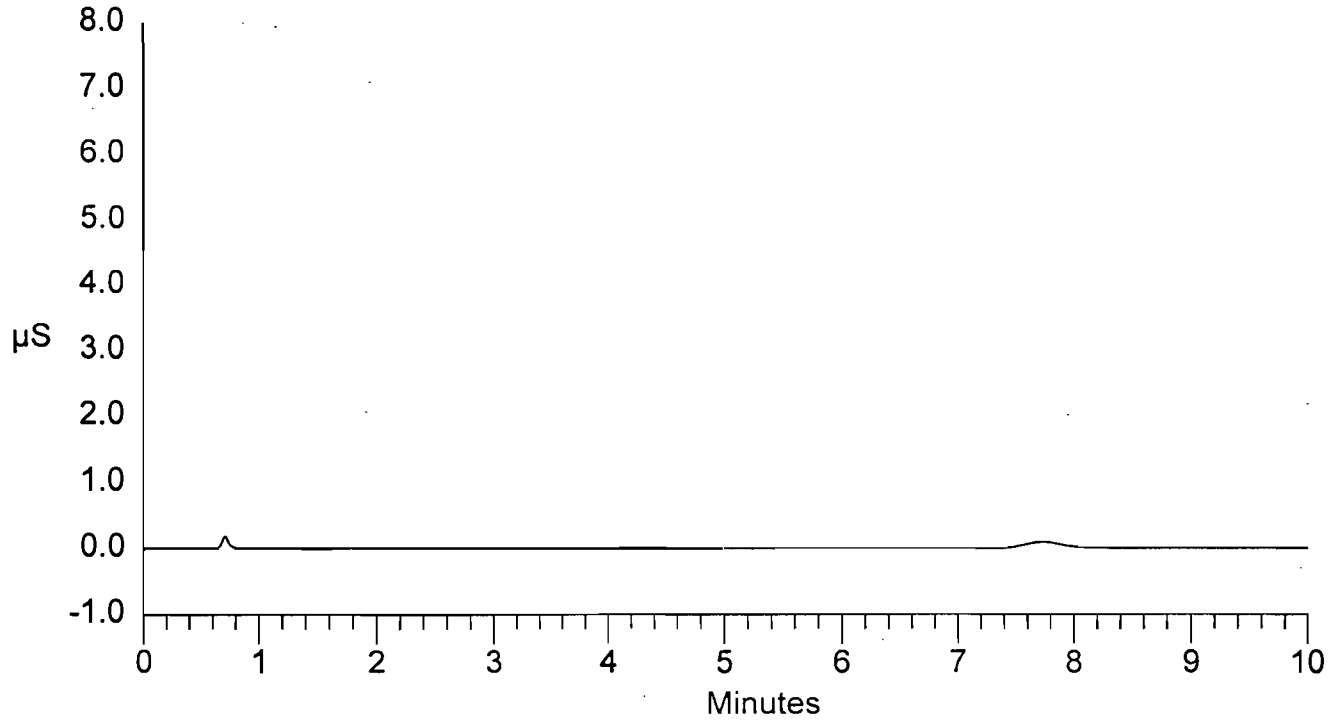
=====
Data File   : C:\PEAKNET\DATA\NH401021.DXD   Report Date: 11/24/2003 3:43:51 P
Sample Name : Reagent Blank                   Collected  : 11/24/2003 3:30:46 P
Inject #    : 21                             Vial #     :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name : DX-120                         Detector   : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate       : 5.00   Hz
Module Name : DX-120                         ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
-----							
Totals			0.00	0	0		

**File: NH401021.DXD Sample Reagent Blank**



```

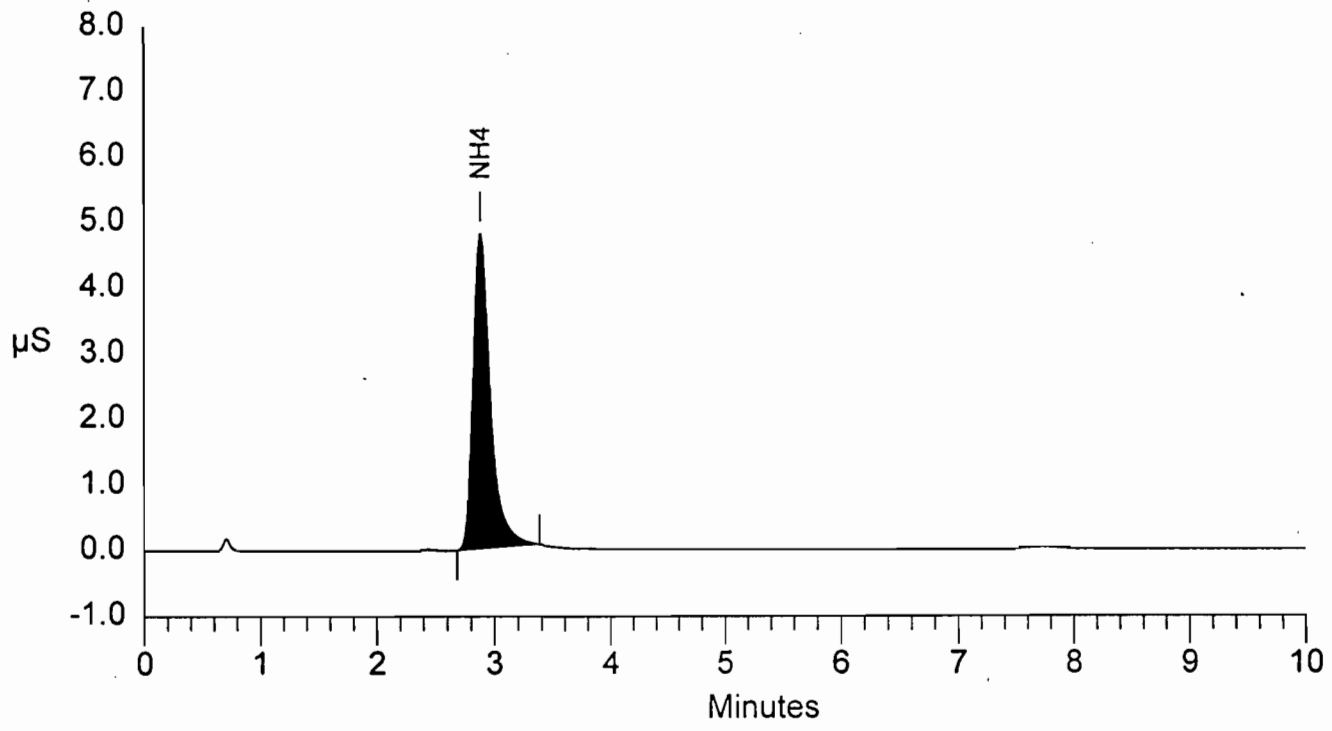
=====
Data File   : C:\PEAKNET\DATA\NH401022.DXD   Report Date: 11/24/2003 3:56:57 P
Sample Name : Cal Std 5 (5.00 mg/l)         Collected  : 11/24/2003 3:43:51 P
Inject #    : 22                             Vial #     :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.88	NH4	4.91	48049	496390	1	0.00
Totals			4.91	48049	496390		

File: NH401022.DXD Sample Cal Std 5 (5.00 mg/l)



```

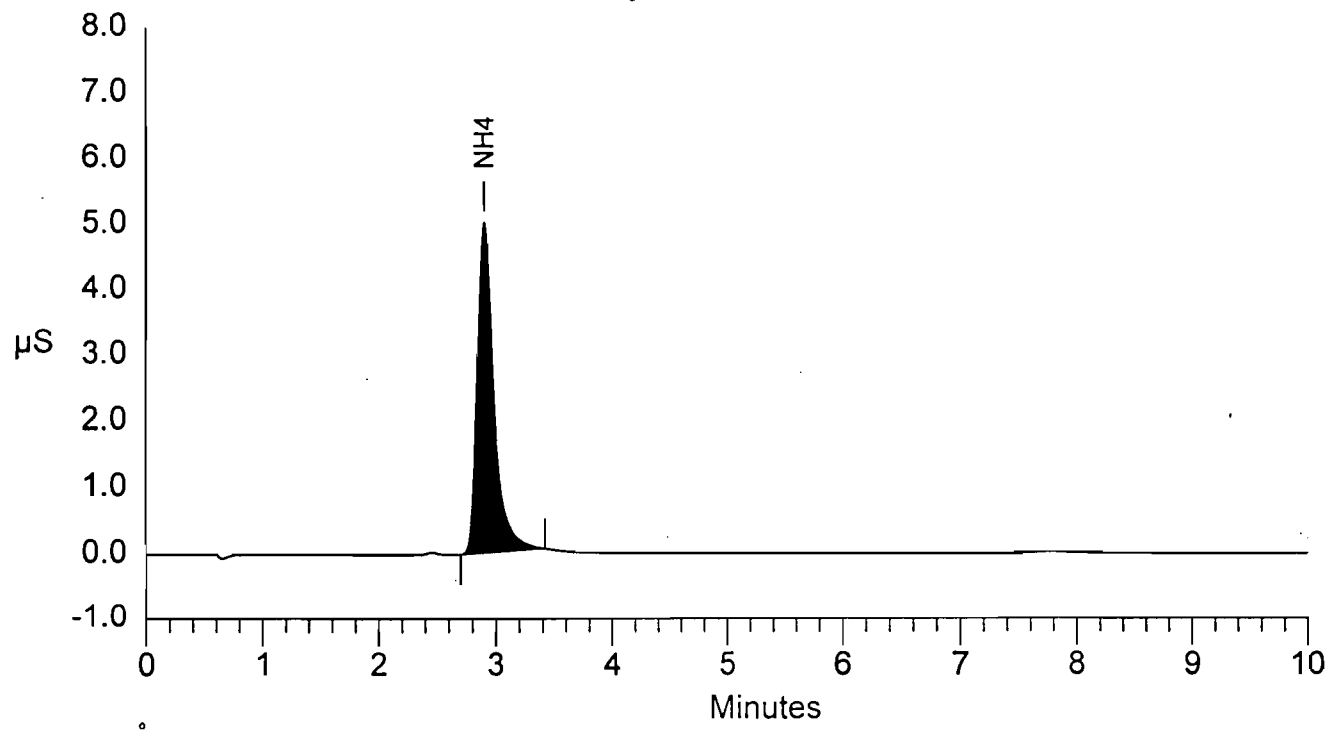
=====
Data File   : C:\PEAKNET\DATA\NH401023.DXD   Report Date: 11/24/2003 4:09:57 P
Sample Name: Orion Standard T.V. = 5.15     Collected  : 11/24/2003 3:56:57 P
Inject #    : 23                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                            Rate        : 5.00 Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.90	NH4	4.92	50094	496919	1	0.00
Totals			4.92	50094	496919		

**File: NH401023.DXD Sample Orion Standard T.V. = 5.15**



```

=====
Data File   : C:\PEAKNET\DATA\NH401024.DXD   Report Date: 11/24/2003 4:23:03 P
Sample Name: RW - 2839 0.1N H2SO4           Collected  : 11/24/2003 4:09:58 P
Inject #    : 24                             Vial #     :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name : DX-120                         Detector   : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

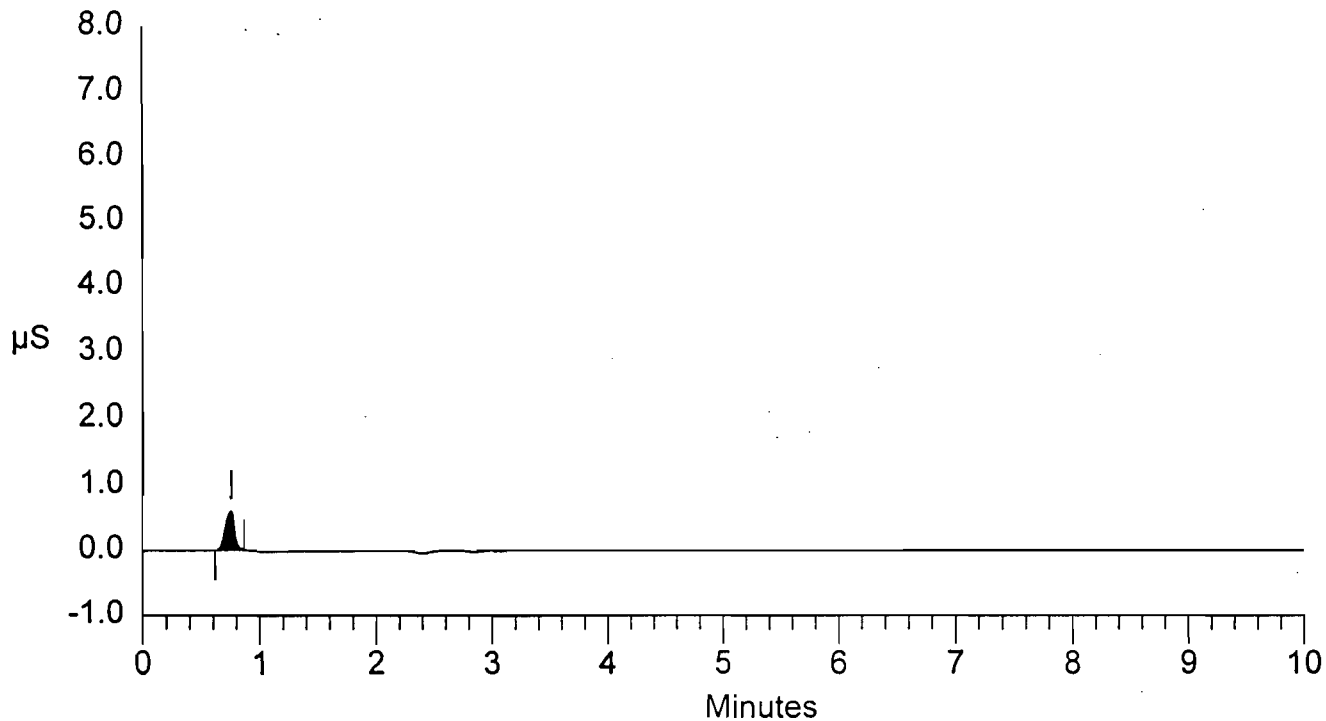
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
---------	----------	----------------	---------------------	--------	------	----------	--------

Totals 0.00 0 0

**File: NH401024.DXD Sample RW - 2839 0.1N H2SO4**



```

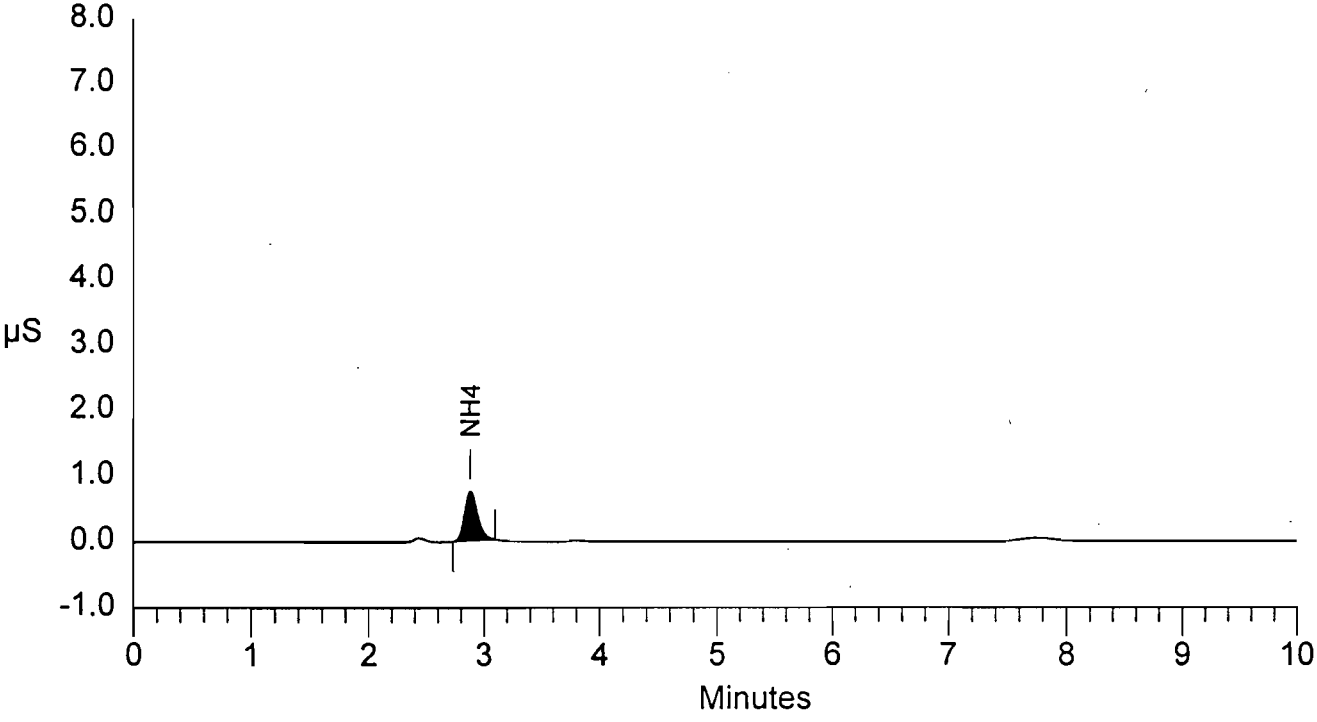
=====
Data File   : C:\PEAKNET\DATA\NH401025.DXD   Report Date: 11/24/2003 4:36:04 P
Sample Name: 11/14/03 Run 1 Impinger #1     Collected  : 11/24/2003 4:23:03 P
Inject #    : 25                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                           Detector    : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.88	NH4	0.45	7574	60924	1	0.00
Totals			0.45	7574	60924		

**File: NH401025.DXD Sample 11/14/03 Run 1 Impinger #1**





```

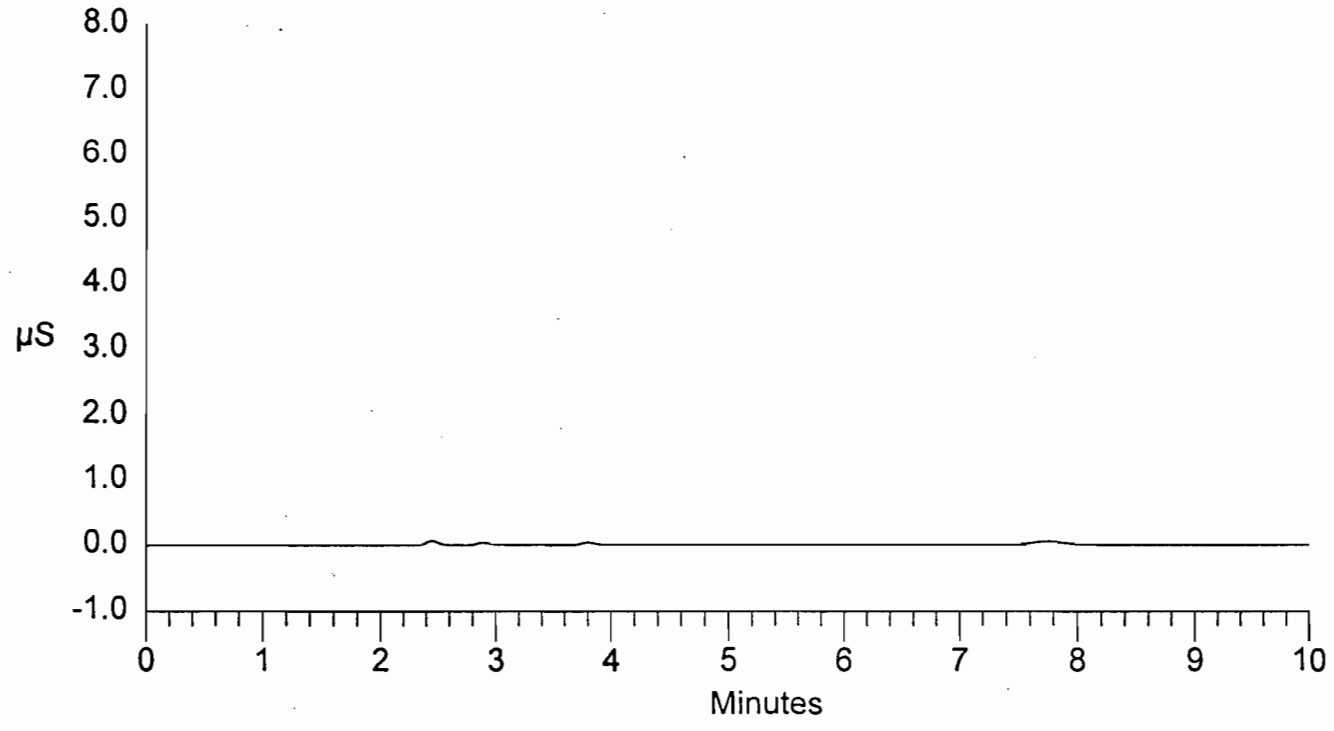
=====
Data File   : C:\PEAKNET\DATA\NH401026.DXD   Report Date: 11/24/2003 4:49:10 P
Sample Name: 11/14/03 Run 1 Impinger #2     Collected  : 11/24/2003 4:36:04 P
Inject #    : 26                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
Totals			0.00	0	0		

**File: NH401026.DXD Sample 11/14/03 Run 1 Impinger #2**



```

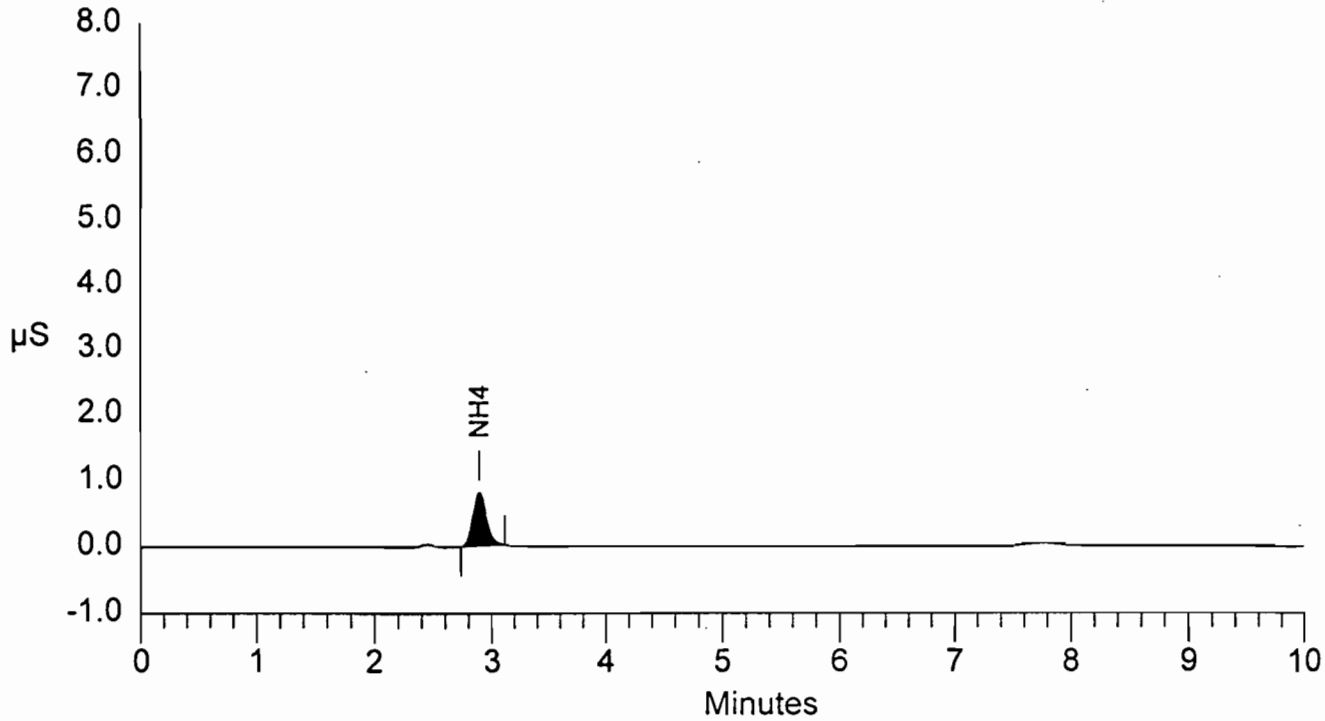
=====
Data File   : C:\PEAKNET\DATA\NH401027.DXD   Report Date: 11/24/2003 5:02:16 P
Sample Name: 11/14/03 Run 2 Impinger #1     Collected  : 11/24/2003 4:49:11 P
Inject #    : 27                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                             Rate       : 5.00   Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.88	NH4	0.49	8088	66035	1	0.00
Totals			0.49	8088	66035		

**File: NH401027.DXD Sample 11/14/03 Run 2 Impinger #1**



```

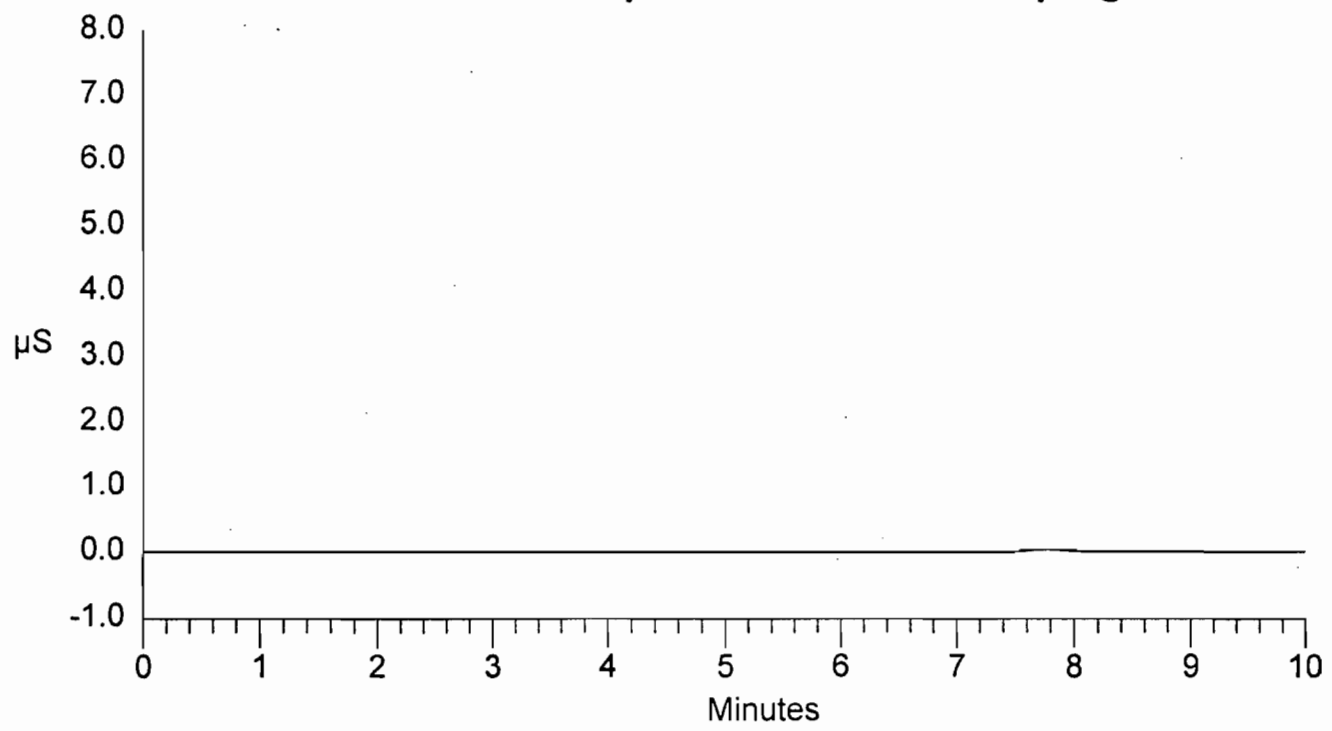
=====
Data File   : C:\PEAKNET\DATA\NH401028.DXD   Report Date: 11/24/2003 5:15:16 P
Sample Name: 11/14/03 Run 2 Impinger #2     Collected  : 11/24/2003 5:02:16 P
Inject #   : 28                               Vial #     :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                          Detector   : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                            Rate       : 5.00 Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
-----							
Totals			0.00	0	0		

**File: NH401028.DXD Sample 11/14/03 Run 2 Impinger #2**



```

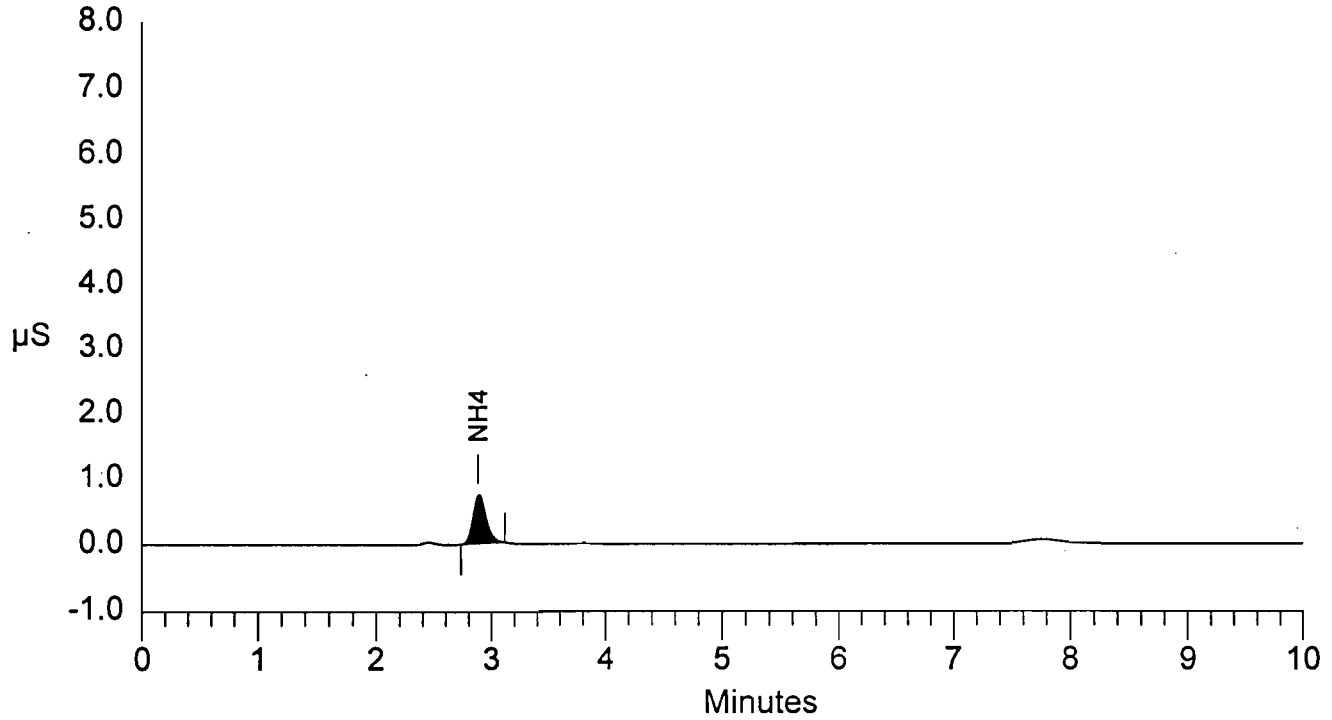
=====
Data File   : C:\PEAKNET\DATA\NH401029.DXD   Report Date: 11/24/2003 5:28:22 P
Sample Name: 11/14/03 Run 3 Impinger #1     Collected  : 11/24/2003 5:15:16 P
Inject #    : 29                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate       : 5.00   Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.88	NH4	0.45	7358	60558	1	0.00
Totals			0.45	7358	60558		

**File: NH401029.DXD Sample 11/14/03 Run 3 Impinger #1**



```

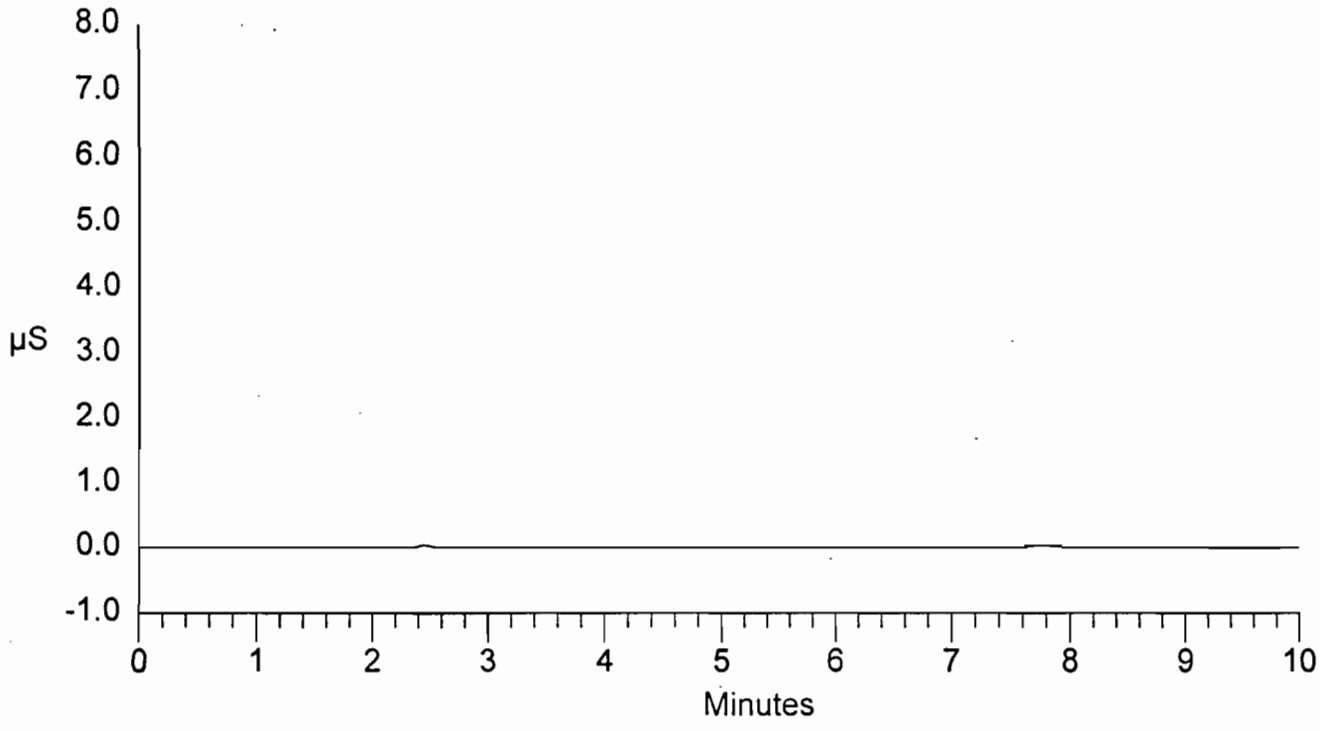
=====
Data File   : C:\PEAKNET\DATA\NH401030.DXD   Report Date: 11/24/2003 5:41:23 P
Sample Name: 11/14/03 Run 3 Impinger #2     Collected  : 11/24/2003 5:28:23 P
Inject #    : 30                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                            Rate        : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
Totals			0.00	0	0		

**File: NH401030.DXD Sample 11/14/03 Run 3 Impinger #2**



```

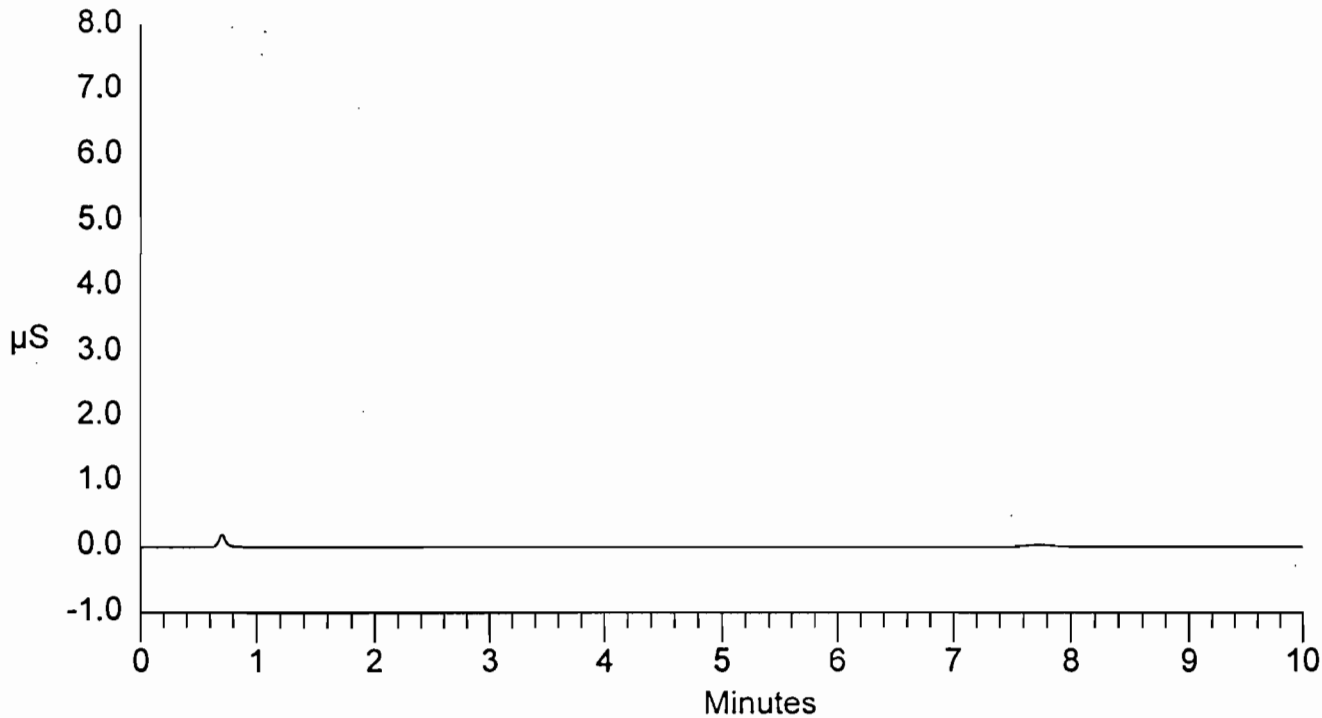
=====
Data File   : C:\PEAKNET\DATA\NH401031.DXD   Report Date: 11/24/2003 5:54:29 P
Sample Name: Reagent Blank                   Collected  : 11/24/2003 5:41:24 P
Inject #    : 31                             Vial #     :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                          Detector   : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                            Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
-----							
Totals			0.00	0	0		

**File: NH401031.DXD Sample Reagent Blank**



```

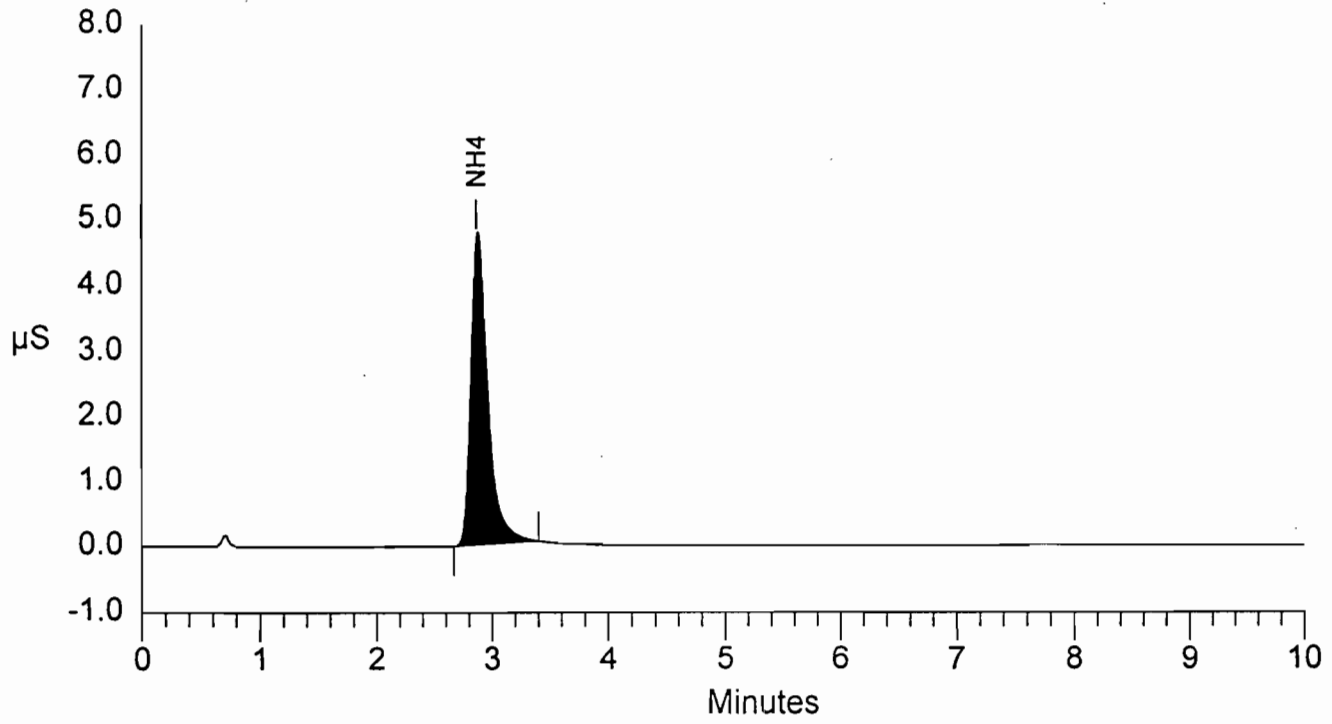
=====
Data File   : C:\PEAKNET\DATA\NH403032.DXD   Report Date: 11/24/2003 6:07:29 P
Sample Name: Cal Std 5 (5.00 mg/l)           Collected  : 11/24/2003 5:54:29 P
Inject #    : 32                               Vial #     :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                           Detector    : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.87	NH4	4.91	46603	496500	1	0.00
Totals			4.91	46603	496500		

**File: NH403032.DXD Sample Cal Std 5 (5.00 mg/l)**



```

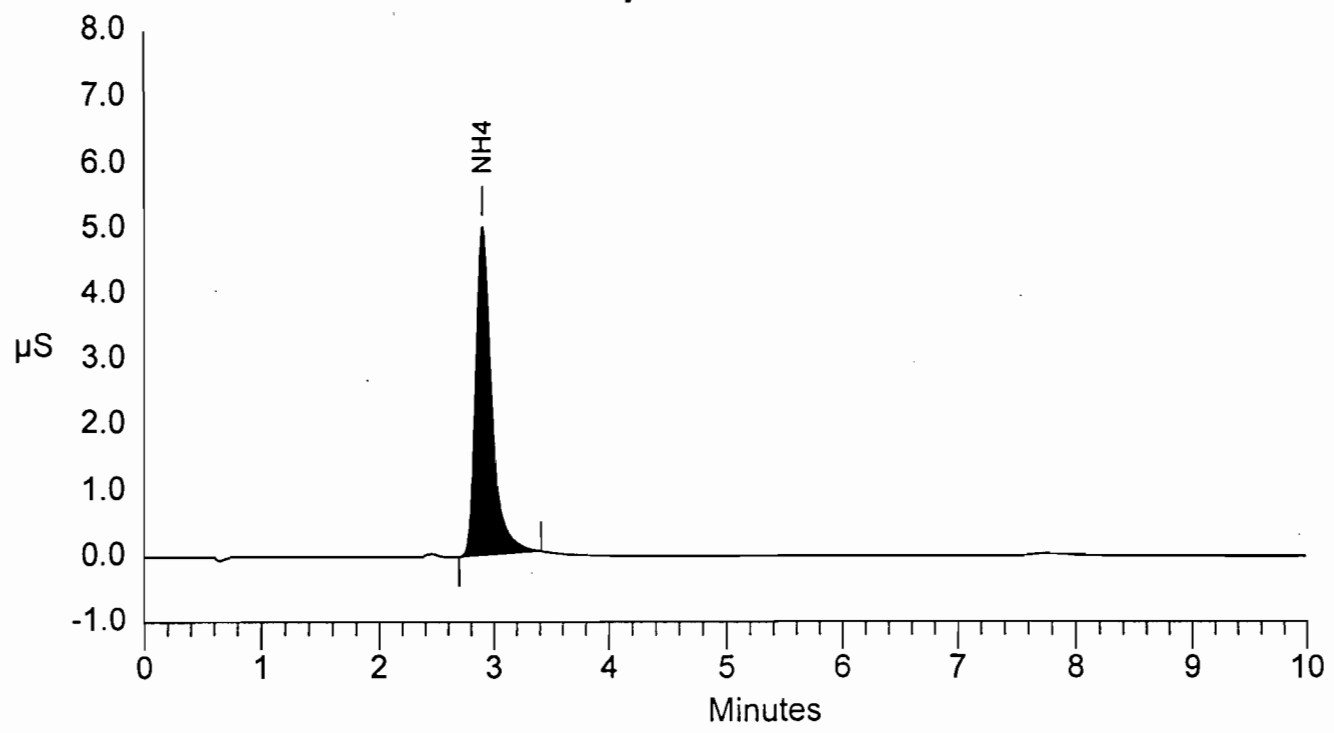
=====
Data File   : C:\PEAKNET\DATA\NH403033.DXD   Report Date: 11/24/2003 6:20:35 P
Sample Name: Orion Standard T.V. = 5.15      Collected  : 11/24/2003 6:07:30 P
Inject #    : 33                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                           Detector    : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

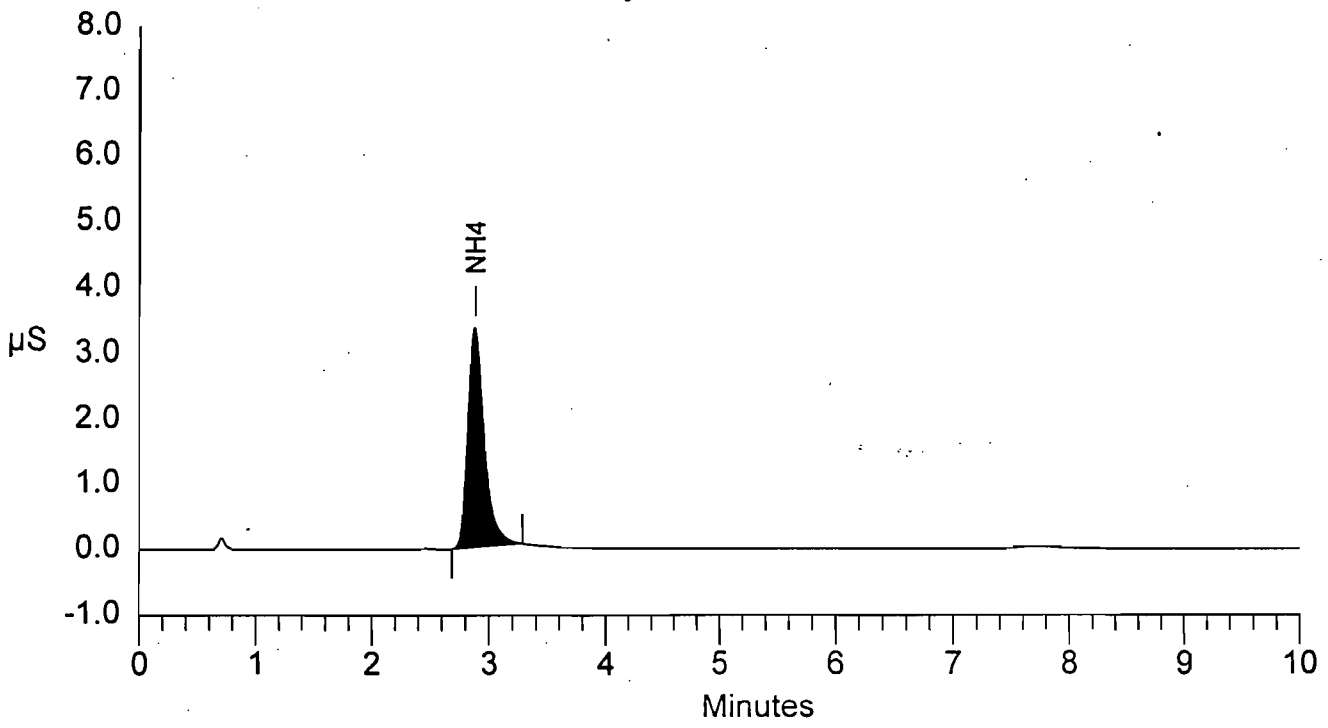
Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.90	NH4	4.92	50052	497318	1	0.00
Totals			4.92	50052	497318		

**File: NH403033.DXD Sample Orion Standard T.V. = 5.15**





File: NH401007.DXD Sample AutocaloR



\*\*\*\*\* AUTOMATIC CALIBRATION UPDATE \*\*\*\*\*

```

=====
Data File   : C:\PEAKNET\DATA\NH401008.DXD   Report Date: 11/24/2003 12:54:00
Sample Name: Autocal7R                      Collected  : 11/24/2003 12:40:54
Inject #    : 8                              Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Last Update: 11/24/2003 12:40:53
System Name: DX-120                          Detector    : DX-120
Cal. Level  : 7                              Analyst     : Polk Lab
=====
    
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

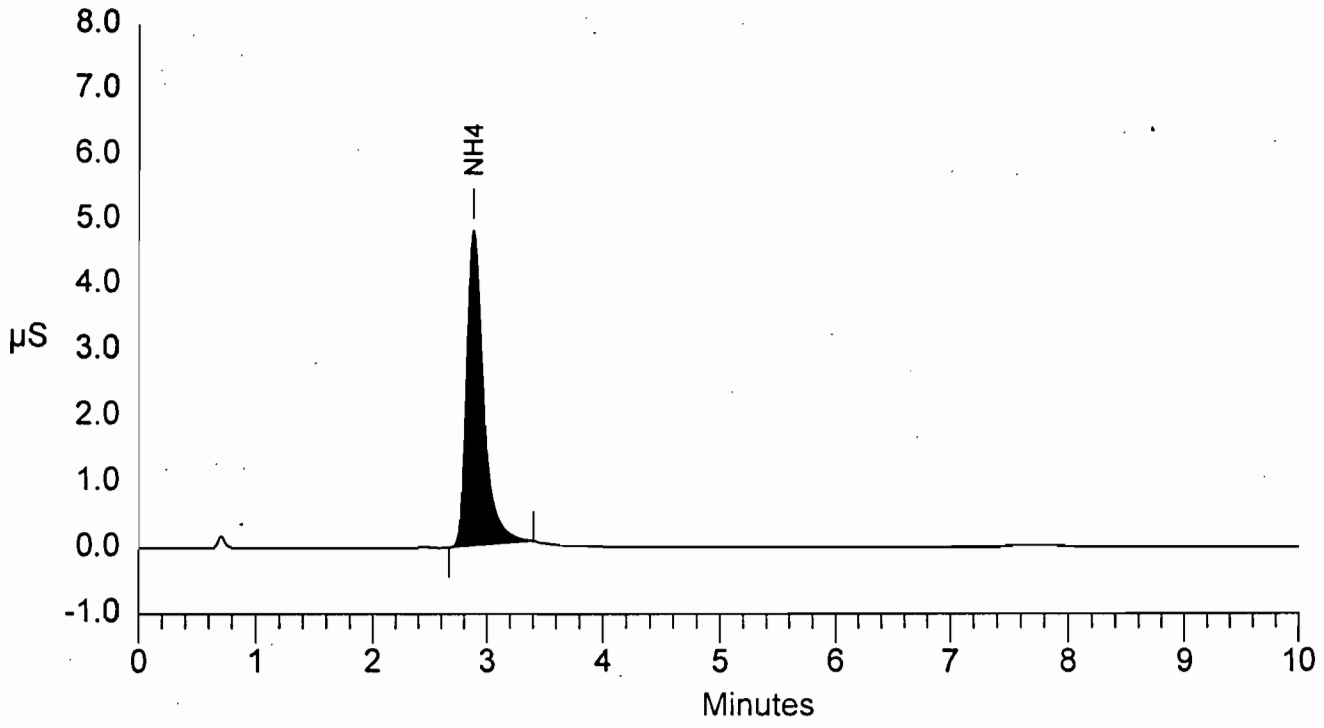
COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.88	2.88	2.88	4.641e+005	5.016e+005	5.016e+005

```

=====
Data File   : C:\PEAKNET\DATA\NH401008.DXD   Report Date: 11/24/2003 12:54:00
Sample Name: Autocal7R                      Collected  : 11/24/2003 12:40:54
Inject #    : 8                              Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 12:54:00
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                            Rate       : 5.00 Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.88	NH4	5.00	48246	501570	1	0.00
Totals			5.00	48246	501570		



\*\*\*\*\* AUTOMATIC CALIBRATION UPDATE \*\*\*\*\*

```

=====
Data File   : C:\PEAKNET\DATA\NH401009.DXD   Report Date: 11/24/2003 1:07:00 P
Sample Name: Autocal8R                       Collected  : 11/24/2003 12:54:00
Inject #    : 9                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Last Update: 11/24/2003 12:54:00
System Name: DX-120                           Detector    : DX-120
Cal. Level  : 8                               Analyst     : Polk Lab
=====
    
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

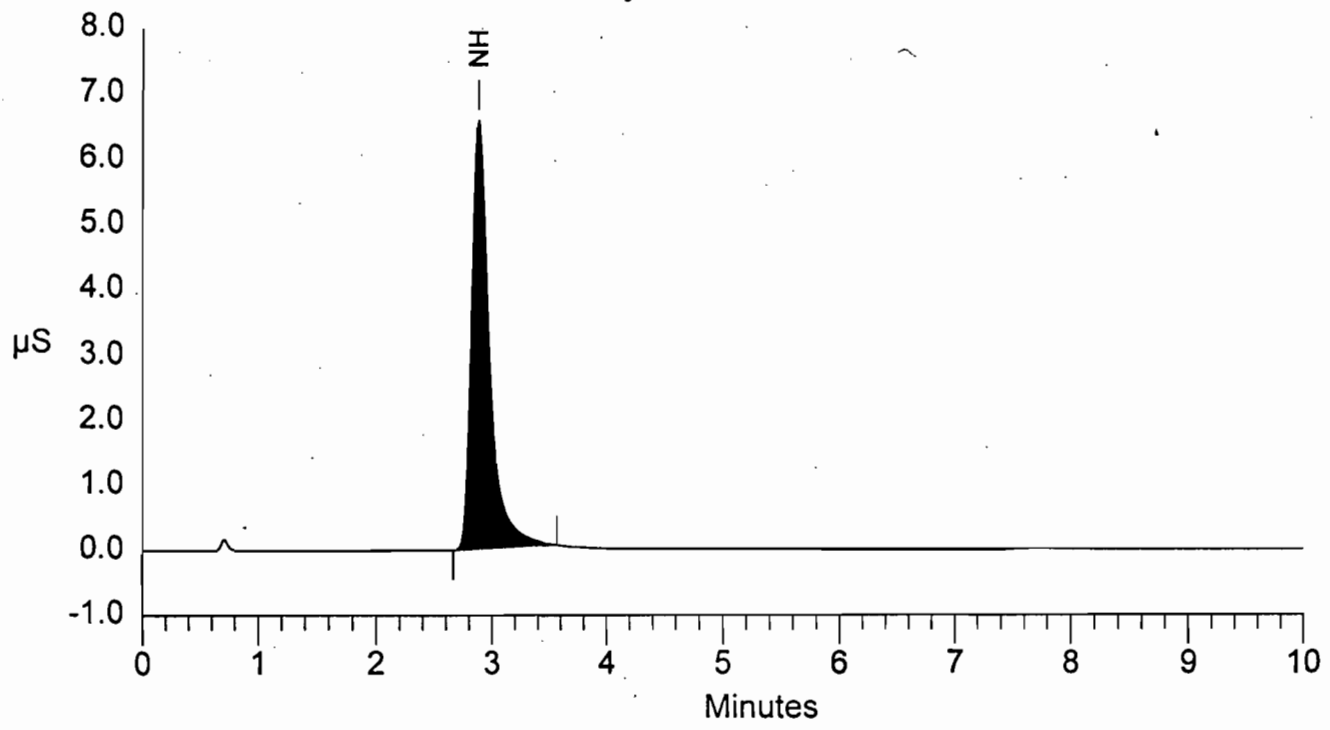
COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.88	2.88	2.88	6.727e+005	7.232e+005	7.232e+005

```

=====
Data File   : C:\PEAKNET\DATA\NH401009.DXD   Report Date: 11/24/2003 1:07:00 P
Sample Name: Autocal8R                       Collected  : 11/24/2003 12:54:00
Inject #    : 9                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 11/24/2003 1:07:00 P
System Name: DX-120                           Detector    : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.88	NH4	8.00	65592	723200	1	0.00
Totals			8.00	65592	723200		



EQUIPMENT CALIBRATIONS

## SUMMARY OF EQUIPMENT CALIBRATIONS

<u>EQUIPMENT</u>	<u>CAL DATE</u>	<u>METHOD</u>	<u>RESULTS</u>
CONSOLE (MB 06)		USEPA RM 5	
INITIAL	10/02/2003	(ORIFICE)	1.004
POST TEST	11/17/2003		1.003
NOZZLE (GL09)		CALIPER	
INITIAL	10/02/2003	MEASUREMENTS	0.189
POST TEST	None (glass)		
PYROMETER (PY 06)	10/03/2003	ASTM THERMOMETER	$\pm 2^{\circ}$ F
PITOT TUBE (PT 05)	10/08/2003	USEPA RM 2	$C_p = 0.84$
BAROMETER (BR 02)	10/02/2003	NWS COMPARISON	$\pm 0.01$ " Hg

**EPA Method 5  
Meter Box Calibration  
Pre-Test Orifice Method  
English Meter Box Units, English K' Factor**

Revised: 7/25/95                      Version: 2.2

Model #: Thermo  
Instrument Code No.: ^MB06  
Sample Number: AA71435

Date: \_\_\_\_\_> 10/02/2003  
Barometric Pressure: \_\_\_\_\_> 30.01 (in. Hg)  
Theoretical Critical Vacuum: \_\_\_\_\_> 14.16 (in. Hg)  
Calibrated By: \_\_\_\_\_>

!!!!!!!  
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)<sup>3</sup>\*(deg R)<sup>0.5</sup>/((in.Hg)\*(min)).  
!!!!!!!

----- DRY GAS METER READINGS -----

----- CRITICAL ORIFICE READINGS -----

dH (in.H2O)	Time (min)	Volume			Initial Temps		Final Temps		Orifice Serial#	K' Orifice Coefficient (see above)	Actual Vacuum (in.Hg)	- Ambient Temperature -		
		Initial (cu.ft)	Final (cu.ft)	Total (cu.ft)	Inlet (deg.F)	Outlet (deg.F)	Inlet (deg.F)	Outlet (deg.F)				Initial (deg.F)	Final (deg.F)	Average (deg.F)
0.64	15	769.070	775.883	6.813	75	74	75	74	48	0.3483	21	73	73	73
1.15	10	783.428	789.518	6.09	77	75	78	75	55	0.4660	19.5	73	73	73
1.95	10	796.706	804.526	7.82	80	75	81	76	63	0.5971	17.5	73	73	73
3.7	10	811.905	822.644	10.739	85	75	86	77	73	0.8177	15	73	73	73

\*\*\*\*\* RESULTS \*\*\*\*\*

-- DRY GAS METER --

----- ORIFICE -----

-- DRY GAS METER --

----- ORIFICE -----

VOLUME CORRECTED Vm(std) (cu.ft)	VOLUME CORRECTED Vm(std) (liters)
6.758	191.39
6.029	170.74
7.731	218.95
10.608	300.43

VOLUME CORRECTED Vcr(std) (cu.ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu.ft)
6.791	192.33	6.838
6.057	171.55	6.099
7.762	219.81	7.815
10.629	301.02	10.702

CALIBRATION FACTOR Y	
Value (number)	Variation (number)
1.005	0.001
1.005	0.001
1.004	0.000
1.002	-0.002

CALIBRATION FACTOR dH@		
Value (in.H2O)	Value (mmH2O)	Variation (in.H2O)
1.740	44.20	-0.029
1.741	44.22	-0.028
1.792	45.52	0.023
1.804	45.82	0.035

Average Y ----->

1.004

1.769      44.94      <----- Average dH@

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 H2O that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +/-0.2.

REVIEWED BY: \_\_\_\_\_

Date: \_\_\_\_\_



**EPA Method 5  
Meter Box Calibration  
Post-Test Orifice Method  
English Meter Box Units, English K' Factor**

Revised: 7/25/95                      Version: 2.2

Model #: ThermoAnderson MST  
Instrument Code No. MB06  
Sample No.  
Test Designation Bayside, Payne Creek

Date: \_\_\_\_\_> 11/17/2003  
Barometric Pressure: \_\_\_\_\_> 30.18 (in. Hg)  
Theoretical Critical Vacuum: \_\_\_\_\_> 14.24 (in. Hg)  
Calibration By: \_\_\_\_\_> crd

!!!!!!!  
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)<sup>3</sup>\*(deg R)<sup>0.5</sup>/((in.Hg)\*(min)).  
!!!!!!!

----- DRY GAS METER READINGS -----

----- CRITICAL ORIFICE READINGS -----

dH (in H <sub>2</sub> O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Initial Temps		Final Temps		Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	-- Ambient Temperature --		
					Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)				Initial (deg F)	Final (deg F)	Average (deg F)
1.15	10	852.800	858.903	6.103	76	75	76	77	55	0.466	18	71	71	71
1.15	13	858.903	866.854	7.951	76	77	76	77	55	0.466	18	71	71	71
1.15	10	866.854	872.981	6.127	76	77	78	80	55	0.466	18	71	71	71

\*\*\*\*\* RESULTS \*\*\*\*\*

-- DRY GAS METER --

----- ORIFICE -----

-- DRY GAS METER --

----- ORIFICE -----

VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)
6.079	172.15
7.912	224.07
6.083	172.26

VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu ft)
6.103	172.84	6.087
7.934	224.70	7.914
6.103	172.84	6.087

CALIBRATION FACTOR Y	
Value (number)	Variation (number)
1.004	0.001
1.003	-0.001
1.003	0.000

CALIBRATION FACTOR dH@		
Value (in H <sub>2</sub> O)	Value (mm H <sub>2</sub> O)	Variation (in H <sub>2</sub> O)
1.726	43.83	0.002
1.724	43.79	0.001
1.720	43.69	-0.003

**Average Y ----->**  
**Prior Y**  
**% Difference**

**1.003**  
**1.004**  
**0.06%**

1.723    43.77    <----- Average dH@

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 H<sub>2</sub>O 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.

REVIEWED BY: \_\_\_\_\_

Date: \_\_\_\_\_

# NOZZLE CALIBRATION DATA FORM

## GLASS NOZZLE SET

DATE: 10/02/03 CALIBRATOR: R A Barthelette Jr.

NOZZLE I. D.	NOZZLE DIAMETER (IN.)			D diff.	D avg
	D1	D2	D3		
^GN01	0.128	0.128	0.128	0.000	0.128
^GN02	0.189	0.189	0.189	0.000	0.189
^GN03	0.254	0.254	0.254	0.000	0.254
^GN04	0.313	0.313	0.313	0.000	0.313
^GN05	0.374	0.374	0.374	0.000	0.374
^GN06	0.429	0.429	0.429	0.000	0.429
^GN07	0.504	0.504	0.504	0.000	0.504
^GNO8	0.128	0.128	0.128	0.000	0.128
^GNO9	0.189	0.189	0.189	0.000	0.189
^GN10	0.254	0.254	0.254	0.000	0.254
^GN11	0.313	0.313	0.313	0.000	0.313
^GN12	0.374	0.374	0.374	0.000	0.374
^GN13	0.429	0.429	0.429	0.000	0.429
^GN14	0.504	0.504	0.504	0.000	0.504
^GN15	0.193	0.193	0.193	0.000	0.193
^GN16	0.197	0.197	0.197	0.000	0.197
^GN17	0.224	0.224	0.224	0.000	0.224
^GN18	0.224	0.224	0.224	0.000	0.224
^GN19	0.251	0.251	0.251	0.000	0.251
^GN20	0.251	0.251	0.251	0.000	0.251
^GN21	0.287	0.287	0.287	0.000	0.287

where:

*D 1,2,3 = three different nozzle diameters, (in); each diameter must be measured to the nearest 0.001 in.*

*D diff. = maximum difference between any two diameters, (in.) must be .004 in. or less.*

*D avg. = average of D1, D2, and D3.*

REVIEWED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_

Page 1  
OF 1



## Pyrometer Calibration

### Pyrometer Under Test

Pyrometer Number: ^PY06  
Labworks Sample # AA71435  
Calibration Date: 10/03/2003

### Calibrator Information

Calibrator Type/Manufacturer: Hart Scientific  
Calibrator Serial Number: AOA024  
Date of Last Calibration: 02/10/2003  
Calibration Personnel (Typed and Signature): Robert Barthelette Jr.

### Calibration Data

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

Reference temperatures must encompass the expected range of measurement. These three points should be ~ 32 degrees, ~212 degrees, and ~ 400 degrees Fahrenheit.

Difference is calculated as follows:

$$(\text{reference temperature}) - (\text{pyrometer indication})$$

### Quality Control Data

Calibration Point	Difference
1	Pass
2	Pass
3	Pass

This data has been reviewed and is certified as meeting all project quality objectives.

Reviewer: \_\_\_\_\_

Date: \_\_\_\_\_



PITOT TUBE CALIBRATION DATA SHEET

Pitot Tube ID # pt05

Calibration Date: 10/08/2003

Openings Damaged? [ ] Y [x] N

Operating Quarter: 4

Repaired? [ ] Y [x] N [ ] N/A

Alpha and Beta Angle Determinations

alpha 1 0.7 degrees Pass

alpha 2 1 degrees Pass

beta 1 1.4 degrees Pass

beta 2 0.4 degrees Pass

Gamma, Theta, A, Z, and W Determinations

psi 1.2 degrees

A 2.28 cm

Z 0.048 cm Pass

o 0.8 degrees

W 0.032 cm Pass

Acceptable Limits: Dt 0.48 < Dt > 0.95 cm, alpha < 10 degrees, beta 1 < 5 degrees, beta 2 < 5 degrees, Z < 0.32 cm, W < 0.08 cm, A distance between tips, o angle of plane on side of pitots, psi angle between tips

NOTES: All measurements are taken in accordance with the requirements of 40 CFR 60 Appendix A - Test Methods, Method 2, "Determination of stack gas velocity and volumetric flow rate (Type S pitot tube)".

Comments: REMOVABLE

Calibrated by: JORGE A VARINO

Date: 10/08/2003

Quality Assurance Review / Approval: Date:

**BAROMETER CALIBRATION DATA FORM**

**CALIBRATOR: RAB**

**DATE:** 10/02/2003  
**INST. NO:** ^BR02  
**SAMPLE NO.** AA 71435

**COMMENTS:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

<b>TIME OF READING</b>	<b>BAROMETER READING (HG")</b>	<b>REFERENCE STANDARD READING (HG")</b>	<b>DIFFERENCE (HG")</b>
9:22	29.98	29.98	0.00
11:23	29.98	30.01	-0.03
12:37	29.98	30.01	-0.03
0:00		0.00	0.00

**\*NOTE: BAROMETRIC READINGS MUST AGREE WITHIN 0.1 INCHES HG OF READINGS OBTAINED FROM THE REFERENCE STANDARD, THE TAMPA INTERNATIONAL AIRPORT TO BE DEEMED ACCEPTABLE.**

**REVIEWED BY:**  
**DATE:**

CARBON MONOXIDE / NITROGEN OXIDES TEST INFORMATION

SUMMARIZED RUN DATA AND QUALITY ASSURANCE/CONTROL

Linearity Check		NOx	CO	O2
Analyzer Range (ppm), O2 & CO2 in %		15.00	10.00	25.00
Low Level Certified Value (PPM or %)		4.49	3.00	6.41
Mid Level Certified Value (PPM or %)		8.24	6.00	12.70
High Level Certified Value (PPM or %)		12.50	-	21.00
Zero Observed		0.10	0.00	0.02
Low Level Observed		4.50	3.00	6.47
Mid Level Observed		8.30	6.00	12.72
High Level Observed		12.60		21.03
%Diff. From Zero to Target	<2%	0.10	0.00	0.02
%Diff. From Low to Target	<2%	0.22	0.00	0.94
%Diff. From Mid to Target	<2%	0.73	0.00	0.16
%Diff. From High to Target	<2%	0.80	-	0.14

Run 1		NOx	CO	O2
Analyzer Range (ppm), O2 & CO2 in %		15.00	10.00	25.00
Span Gas Certified Value (ppm or %)		4.49	3.00	12.70
Actual Zero from Linearity		0.10	0.00	0.02
Actual Span from Linearity		4.50	3.00	12.72
<b>Initial Readings</b>				
Zero		0.00	0.00	0.03
Span		4.50	3.00	12.71
<b>Final Readings</b>				
Zero		0.10	0.00	0.03
Span		4.50	3.00	12.68
<b>Bias and Drift Calculations</b>				
Zero Bias (Run-System Cal) <5%		0.00	0.00	0.04
Span Bias <5%		0.00	0.00	-0.16
Zero Drift (Run-Run) <3%		0.67	0.00	0.00
Span Drift <3%		0.00	0.00	-0.12
<b>Run Results</b>				
Raw Results		3.60	0.83	14.16
Corrected Results (ppmv)		3.58	0.83	14.16

Run 2		NOx	CO	O2
Analyzer Range (ppm), O2 & CO2 in %		15.00	10.00	25.00
Span Gas Certified Value (ppm or %)		4.49	3.00	12.70
Actual Zero from Linearity		0.10	0.00	0.02
Actual Span from Linearity		4.50	3.00	12.72
<b>Initial Readings</b>				
Zero		0.10	0.00	0.03
Span		4.50	3.00	12.68
<b>Final Readings</b>				
Zero		0.10	0.00	0.00
Span		4.50	3.00	12.68
<b>Bias and Drift Calculations</b>				
Zero Bias (Run-System Cal) <5%		0.00	0.00	-0.08
Span Bias <5%		0.00	0.00	-0.16
Zero Drift (Run-Run) <3%		0.00	0.00	-0.12
Span Drift <3%		0.00	0.00	0.00
<b>Run Results</b>				
Raw Results		3.50	0.90	14.17
Corrected Results (ppmv)		3.47	0.90	14.19



Run 3	NOx	CO	O2
Analyzer Range (ppm), O2 & CO2 in %	15.00	10.00	25.00
Span Gas Certified Value (ppm or %)	4.49	3.00	12.70
Actual Zero from Linearity	0.10	0.00	0.02
Actual Span from Linearity	4.50	3.00	12.72
<b>Initial Readings</b>			
Zero	0.10	0.00	0.00
Span	4.50	3.00	12.68
<b>Final Readings</b>			
Zero	0.10	0.00	0.02
Span	4.50	3.00	12.70
<b>Bias and Drift Calculations</b>			
Zero Bias (Run-System Cal) <5%	0.00	0.00	0.00
Span Bias <5%	0.00	0.00	-0.08
Zero Drift (Run-Run) <3%	0.00	0.00	0.08
Span Drift <3%	0.00	0.00	0.08
<b>Run Results</b>			
Raw Results	3.50	0.90	14.18
Corrected Results (ppmv)	3.47	0.90	14.19
Run 4	NOx	CO	O2
Analyzer Range (ppm), O2 & CO2 in %	15.00	10.00	25.00
Span Gas Certified Value (ppm or %)	4.49	3.00	12.70
Actual Zero from Linearity	0.10	0.00	0.02
Actual Span from Linearity	4.50	3.00	12.72
<b>Initial Readings</b>			
Zero	0.10	0.00	0.02
Span	4.50	3.00	12.70
<b>Final Readings</b>			
Zero	0.10	0.00	0.02
Span	4.50	3.00	12.69
<b>Bias and Drift Calculations</b>			
Zero Bias (Run-System Cal) <5%	0.00	0.00	0.00
Span Bias <5%	0.00	0.00	-0.12
Zero Drift (Run-Run) <3%	0.00	0.00	0.00
Span Drift <3%	0.00	0.00	-0.04
<b>Run Results</b>			
Raw Results	3.50	0.90	14.16
Corrected Results (ppmv)	3.47	0.90	14.17
Run 5	NOx	CO	O2
Analyzer Range (ppm), O2 & CO2 in %	15.00	10.00	25.00
Span Gas Certified Value (ppm or %)	4.49	3.00	12.70
Actual Zero from Linearity	0.10	0.00	0.02
Actual Span from Linearity	4.50	3.00	12.72
<b>Initial Readings</b>			
Zero	0.10	0.00	0.02
Span	4.50	3.00	12.69
<b>Final Readings</b>			
Zero	0.10	0.00	0.02
Span	4.50	3.00	12.71
<b>Bias and Drift Calculations</b>			
Zero Bias (Run-System Cal) <5%	0.00	0.00	0.00
Span Bias <5%	0.00	0.00	-0.04
Zero Drift (Run-Run) <3%	0.00	0.00	0.00
Span Drift <3%	0.00	0.00	0.08
<b>Run Results</b>			
Raw Results	3.50	0.80	14.16
Corrected Results (ppmv)	3.47	0.80	14.16

Run 6	NOx	CO	O2
Analyzer Range (ppm), O2 & CO2 in %	15.00	10.00	25.00
Span Gas Certified Value (ppm or %)	4.49	3.00	12.70
Actual Zero from Linearity	0.10	0.00	0.02
Actual Span from Linearity	4.50	3.00	12.72
<b>Initial Readings</b>			
Zero	0.10	0.00	0.02
Span	4.50	3.00	12.71
<b>Final Readings</b>			
Zero	0.10	0.00	0.02
Span	4.50	3.00	12.71
Zero Bias (Run-System Cal) <5%	0.00	0.00	0.00
Span Bias <5%	0.00	0.00	-0.04
Zero Drift (Run-Run) <3%	0.00	0.00	0.00
Span Drift <3%	0.00	0.00	0.00
<b>Run Results</b>			
Raw Results	3.50	1.00	14.17
Corrected Results (ppmv)	3.47	1.00	14.16

Run 7	NOx	CO	O2
Analyzer Range (ppm), O2 & CO2 in %	15.00	10.00	25.00
Span Gas Certified Value (ppm or %)	4.49	3.00	12.70
Actual Zero from Linearity	0.10	0.00	0.02
Actual Span from Linearity	4.50	3.00	12.72
<b>Initial Readings</b>			
Zero	0.10	0.00	0.02
Span	4.50	3.00	12.71
<b>Final Readings</b>			
Zero	0.10	0.00	0.02
Span	4.50	2.90	12.70
<b>Bias and Drift Calculations</b>			
Zero Bias (Run-System Cal) <5%	0.00	0.00	0.00
Span Bias <5%	0.00	-1.00	-0.08
Zero Drift (Run-Run) <3%	0.00	0.00	0.00
Span Drift <3%	0.00	-1.00	-0.04
<b>Run Results</b>			
Raw Results	3.50	0.90	14.16
Corrected Results (ppmv)	3.47	0.92	14.16

Run 8	NOx	CO	O2
Analyzer Range (ppm), O2 & CO2 in %	15.00	10.00	25.00
Span Gas Certified Value (ppm or %)	4.49	3.00	12.70
Actual Zero from Linearity	0.10	0.00	0.02
Actual Span from Linearity	4.50	3.00	12.72
<b>Initial Readings</b>			
Zero	0.10	0.00	0.02
Span	4.50	2.90	12.70
<b>Final Readings</b>			
Zero	0.10	0.00	0.02
Span	4.50	3.00	12.68
<b>Bias and Drift Calculations</b>			
Zero Bias (Run-System Cal) <5%	0.00	0.00	0.00
Span Bias <5%	0.00	0.00	-0.16
Zero Drift (Run-Run) <3%	0.00	0.00	0.00
Span Drift <3%	0.00	1.00	-0.08
<b>Run Results</b>			
Raw Results	3.50	0.90	14.15
Corrected Results (ppmv)	3.47	0.92	14.16

Run 9	NOx	CO	O2
Analyzer Range (ppm), O2 & CO2 in %	15.00	10.00	25.00
Span Gas Certified Value (ppm or %)	4.49	3.00	12.70
Actual Zero from Linearity	0.10	0.00	0.02
Actual Span from Linearity	4.50	3.00	12.72
<b>Initial Readings</b>			
Zero	0.10	0.00	0.02
Span	4.50	3.00	12.68
<b>Final Readings</b>			
Zero	0.10	0.00	0.02
Span	4.50	3.00	12.68
<b>Bias and Drift Calculations</b>			
Zero Bias (Run-System Cal) <5%	0.00	0.00	0.00
Span Bias <5%	0.00	0.00	-0.16
Zero Drift (Run-Run) <3%	0.00	0.00	0.00
Span Drift <3%	0.00	0.00	0.00
<b>Run Results</b>			
Raw Results	3.50	1.00	14.14
Corrected Results (ppmv)	3.47	1.00	14.16

RUN LOG

Baysise <sup>2A</sup> 1A RATA

11-22-2003

TIME	CHAN 1 STACK %CO2	CHAN 5 STACK ppmNOX	CHAN 2 STACK ppm CO	CHAN 0 Stack %O2	STACK ppmNOX @15%O2	STACK lb NOX MM-BTU
<del>10:14</del>	4.02	3.7	0.8	14.20	3.2	0.000
10:15	4.03	3.6	0.8	14.15	3.2	0.000
10:16	4.02	3.6	0.8	14.15	3.2	0.000
10:17	4.03	3.6	0.9	14.15	3.2	0.000
10:18	4.03	3.6	0.9	14.15	3.2	0.000
10:19	4.03	3.6	0.9	14.15	3.2	0.000

AVERAGE VALUES FOR THE LAST 6 MINUTES

<del>10:19</del>	4.03	3.6	0.9	14.16	3.2	0.000
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COMMENTS *S* East

Baysise <sup>2A</sup> RATA

11-22-2003

TIME	CHAN 1 STACK %CO2	CHAN 5 STACK ppmNOX	CHAN 2 STACK ppm CO	CHAN 0 Stack %O2	STACK ppmNOX @15%O2	STACK lb NOX MM-BTU
<i>1019</i> <del>10:23</del>	4.03	3.7	0.9	14.15	3.2	0.000
10:24	4.03	3.7	0.9	14.15	3.2	0.000
10:25	4.03	3.8	0.8	14.15	3.3	0.000
10:26	4.03	3.8	0.8	14.15	3.3	0.000
10:27	4.03	3.8	0.8	14.15	3.3	0.000
10:28	4.03	3.8	0.8	14.14	3.3	0.000

AVERAGE VALUES FOR THE LAST 6 MINUTES

<i>1024</i> <del>10:28</del>	4.03	3.8	0.8	14.15	3.3	0.000
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COMMENTS: nort east

Baysise <sup>2A</sup> RATA

11-22-2003

TIME	CHAN 1 STACK %CO2	CHAN 5 STACK ppmNOX	CHAN 2 STACK ppm CO	CHAN 0 Stack %O2	STACK ppmNOX @15%O2	STACK lb NOX MM-BTU
10:30 <del>10:34</del>	4.02	3.6	0.9	14.16	3.1	0.000
10:35	4.03	3.6	0.8	14.16	3.1	0.000
10:36	4.03	3.5	0.8	14.15	3.1	0.000
10:37	4.03	3.5	0.8	14.15	3.1	0.000
10:38	4.03	3.5	0.8	14.15	3.0	0.000
10:39	4.03	3.5	0.8	14.15	3.0	0.000

AVERAGE VALUES FOR THE LAST 6 MINUTES

10:35 <del>10:39</del>	4.03	3.5	0.8	14.15	3.1	0.000
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COMMENTS: Nort west

Baysise <sup>20</sup> 2A RATA

11-22-2003

TIME	CHAN 1 STACK %CO2	CHAN 5 STACK ppmNOX	CHAN 2 STACK ppm CO	CHAN 0 Stack %O2	STACK ppmNOX @15%O2	STACK lb NOX MM-BTU
<del>10:43</del>	4.03	3.6	0.9	14.16	3.1	0.000
10:44	4.03	3.6	0.8	14.16	3.1	0.000
10:45	4.03	3.5	0.8	14.16	3.1	0.000
10:46	4.03	3.5	0.8	14.16	3.1	0.000
10:47	4.02	3.6	0.8	14.16	3.1	0.000
10:48	4.03	3.5	0.8	14.15	3.1	0.000

AVERAGE VALUES FOR THE LAST 6 MINUTES

<del>10:48</del>	4.03	3.5	0.8	14.16	3.1	0.000
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COMMENTS: south west



BPS2A

11-22-2003

TIME	CHAN 1 STACK %CO2	CHAN 5 STACK ppmNOX	CHAN 2 STACK ppm CO	CHAN 0 Stack %O2	STACK ppmNOX @15%O2	Stack lb NOX MM-BTU
<i>1101</i> 11:05	4.03	3.5	0.8	14.16	3.1	0.011
11:06	4.03	3.5	0.9	14.16	3.1	0.011
11:07	4.02	3.6	0.9	14.17	3.1	0.011
11:08	4.02	3.6	0.9	14.17	3.1	0.012
11:09	4.02	3.6	0.9	14.17	3.1	0.012
11:10	4.03	3.6	0.9	14.17	3.1	0.012
11:11	4.02	3.6	0.9	14.17	3.1	0.012
11:12	4.02	3.5	0.9	14.17	3.1	0.011
11:13	4.02	3.5	0.9	14.17	3.1	0.011
11:14	4.02	3.5	0.9	14.17	3.1	0.011
11:15	4.02	3.5	0.8	14.17	3.1	0.011
11:16	4.02	3.5	0.9	14.17	3.1	0.011
11:17	4.02	3.5	0.9	14.17	3.1	0.011
11:18	4.02	3.5	0.9	14.17	3.1	0.011
11:19	4.02	3.5	0.9	14.17	3.1	0.011
11:20	4.02	3.5	0.9	14.17	3.1	0.011
11:21	4.02	3.5	0.9	14.17	3.1	0.011
11:22	4.02	3.5	0.9	14.17	3.1	0.011
11:23	4.02	3.5	0.9	14.17	3.1	0.011
11:24	4.02	3.5	0.9	14.17	3.1	0.011
11:25	4.01	3.6	0.9	14.18	3.1	0.012

AVERAGE VALUES FOR THE LAST 21 MINUTES

<i>1121</i> <del>11:25</del>	4.02	3.5	0.9	14.17	3.1	0.011
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COMMENTS: run<sub>2</sub>

BEST AVAILABLE COPY

BPS2A		11-22-2003				
	CHAN 1	CHAN 5	CHAN 2	CHAN 0	STACK	Stack
	STACK	STACK	STACK	Stack	ppmNOX	lb NOX
TIME	%CO2	ppmNOX	ppm CO	%O2	@15%O2	MM-BTU
11:41	4.01	3.5	0.9	14.17	3.1	0.011
11:42	4.00	3.5	0.9	14.17	3.0	0.011
11:43	4.01	3.5	0.8	14.17	3.0	0.011
11:44	4.01	3.5	0.8	14.17	3.0	0.011
11:45	4.01	3.5	0.9	14.17	3.1	0.011
11:46	4.01	3.5	0.9	14.17	3.1	0.011
11:47	4.01	3.5	0.9	14.18	3.0	0.011
11:48	4.01	3.5	1.0	14.18	3.1	0.011
11:49	4.01	3.5	1.0	14.18	3.1	0.011
11:50	4.01	3.5	1.0	14.18	3.1	0.011
11:51	4.01	3.5	1.0	14.18	3.1	0.011
11:52	4.01	3.5	1.0	14.18	3.1	0.011
11:53	4.01	3.5	1.0	14.18	3.1	0.011
11:54	4.01	3.5	1.0	14.18	3.1	0.011
11:55	4.01	3.5	1.0	14.18	3.1	0.011
11:56	4.01	3.5	1.1	14.18	3.1	0.011
11:57	4.01	3.5	1.0	14.19	3.1	0.011
11:58	4.00	3.5	1.0	14.19	3.1	0.011
11:59	4.01	3.5	1.0	14.19	3.1	0.011
12:00	4.00	3.5	1.0	14.19	3.1	0.011
12:01	4.00	3.5	1.0	14.19	3.1	0.011
AVERAGE VALUES FOR THE LAST 21 MINUTES						
12:01	4.01	3.5	0.9	14.18	3.1	0.011

COMMENTS: run3

BPS2A

11-22-2003

TIME	CHAN 1 STACK %CO2	CHAN 5 STACK ppmNOX	CHAN 2 STACK ppm CO	CHAN 0 Stack %O2	STACK ppmNOX @15%O2	Stack lb NOX MM-BTU
12:11	4.00	3.6	0.9	14.15	3.1	0.011
12:12	4.00	3.5	1.0	14.16	3.1	0.011
12:13	4.00	3.5	0.9	14.16	3.1	0.011
12:14	4.00	3.5	0.9	14.16	3.1	0.011
12:15	4.00	3.5	0.9	14.16	3.1	0.011
12:16	4.00	3.5	0.9	14.16	3.1	0.011
12:17	4.00	3.5	0.8	14.16	3.1	0.011
12:18	4.00	3.5	0.8	14.16	3.1	0.011
12:19	4.00	3.5	0.8	14.16	3.1	0.011
12:20	4.01	3.5	0.8	14.16	3.1	0.011
12:21	4.00	3.5	0.9	14.16	3.0	0.011
12:22	4.00	3.5	1.0	14.16	3.1	0.011
12:23	4.00	3.5	0.9	14.16	3.1	0.011
12:24	4.00	3.5	1.0	14.16	3.1	0.011
12:25	4.00	3.5	1.0	14.16	3.1	0.011
12:26	4.00	3.5	0.9	14.16	3.1	0.011
12:27	4.00	3.5	0.9	14.16	3.1	0.011
12:28	4.00	3.5	0.9	14.16	3.1	0.011
12:29	4.00	3.5	0.9	14.16	3.1	0.011
12:30	4.00	3.5	0.9	14.16	3.1	0.011
12:31	4.00	3.5	0.9	14.16	3.1	0.011

AVERAGE VALUES FOR THE LAST 21 MINUTES

12:31	4.00	3.5	0.9	14.16	3.1	0.011
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COMMENTS: run4

BPS2A

11-22-2003

TIME	CHAN 1 STACK %CO2	CHAN 5 STACK ppmNOX	CHAN 2 STACK ppm CO	CHAN 0 Stack %O2	STACK ppmNOX @15%O2	Stack lb NOX MM-BTU
12:41	4.00	3.5	0.9	14.15	3.1	0.011
12:42	4.00	3.5	0.9	14.16	3.1	0.011
12:43	4.00	3.5	0.9	14.16	3.0	0.011
12:44	4.00	3.5	0.9	14.16	3.0	0.011
12:45	4.00	3.5	0.9	14.16	3.0	0.011
12:46	4.00	3.5	0.8	14.16	3.0	0.011
12:47	4.01	3.5	0.8	14.16	3.0	0.011
12:48	4.01	3.5	0.8	14.16	3.1	0.011
12:49	4.01	3.5	0.8	14.17	3.1	0.011
12:50	4.01	3.5	0.9	14.16	3.1	0.011
12:51	4.00	3.5	0.8	14.17	3.1	0.011
12:52	4.00	3.5	0.8	14.16	3.1	0.011
12:53	4.01	3.5	0.8	14.16	3.1	0.011
12:54	4.01	3.5	0.8	14.16	3.1	0.011
12:55	4.00	3.5	0.8	14.16	3.1	0.011
12:56	4.00	3.5	0.8	14.16	3.1	0.011
12:57	4.01	3.5	0.8	14.16	3.1	0.011
12:58	4.00	3.5	0.8	14.16	3.1	0.011
12:59	4.01	3.5	0.8	14.16	3.1	0.011
13:00	4.00	3.5	0.8	14.16	3.1	0.011
13:01	4.01	3.5	0.9	14.16	3.1	0.011

AVERAGE VALUES FOR THE LAST 21 MINUTES

13:01	4.00	3.5	0.8	14.16	3.1	0.011
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COMMENTS: run5

BPS2A

11-22-2003

TIME	CHAN 1 STACK %CO2	CHAN 5 STACK ppmNOX	CHAN 2 STACK ppm CO	CHAN 0 Stack %O2	STACK ppmNOX @15%O2	Stack lb NOX MM-BTU
13:13	4.00	3.5	0.9	14.15	3.1	0.011
13:14	4.01	3.5	0.9	14.16	3.1	0.011
13:15	4.00	3.5	0.9	14.16	3.1	0.011
13:16	4.00	3.5	0.9	14.17	3.1	0.011
13:17	4.00	3.5	0.9	14.17	3.1	0.011
13:18	4.00	3.5	0.9	14.17	3.1	0.011
13:19	4.00	3.5	1.1	14.17	3.0	0.011
13:20	4.00	3.5	1.0	14.17	3.0	0.011
13:21	4.00	3.5	1.0	14.17	3.0	0.011
13:22	4.00	3.5	1.0	14.17	3.1	0.011
13:23	4.00	3.5	1.0	14.17	3.0	0.011
13:24	4.00	3.5	1.0	14.17	3.1	0.011
13:25	4.00	3.5	1.0	14.17	3.1	0.011
13:26	4.00	3.5	0.9	14.17	3.1	0.011
13:27	4.00	3.5	0.9	14.17	3.1	0.011
13:28	4.00	3.5	1.0	14.17	3.1	0.011
13:29	4.00	3.5	0.9	14.17	3.1	0.011
13:30	4.00	3.5	0.9	14.17	3.1	0.011
13:31	4.00	3.5	0.9	14.17	3.1	0.011
13:32	4.00	3.5	1.0	14.18	3.1	0.011
13:33	4.00	3.5	1.0	14.18	3.1	0.011

AVERAGE VALUES FOR THE LAST 21 MINUTES

13:33	4.00	3.5	1.0	14.17	3.1	0.011
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COMMENTS: run6

BPS2A

11-22-2003

TIME	CHAN 1 STACK %CO2	CHAN 5 STACK ppmNOX	CHAN 2 STACK ppm CO	CHAN 0 Stack %O2	STACK ppmNOX @15%O2	Stack lb NOX MM-BTU
13:44	4.00	3.5	1.0	14.14	3.1	0.011
13:45	4.00	3.5	1.0	14.14	3.0	0.011
13:46	3.99	3.5	0.9	14.15	3.0	0.011
13:47	4.00	3.5	0.9	14.15	3.1	0.011
13:48	4.00	3.5	0.9	14.15	3.1	0.011
13:49	4.00	3.5	0.9	14.15	3.1	0.011
13:50	4.00	3.5	0.9	14.15	3.0	0.011
13:51	4.00	3.5	1.0	14.15	3.0	0.011
13:52	4.00	3.5	0.9	14.15	3.0	0.011
13:53	4.00	3.5	0.9	14.15	3.1	0.011
13:54	4.00	3.5	0.9	14.15	3.1	0.011
13:55	4.00	3.5	0.9	14.19	3.1	0.011
13:56	3.99	3.5	0.9	14.16	3.1	0.011
13:57	4.00	3.5	0.8	14.16	3.1	0.011
13:58	4.00	3.5	0.8	14.16	3.1	0.011
13:59	3.99	3.5	0.9	14.16	3.1	0.011
14:00	3.99	3.5	0.9	14.17	3.1	0.011
14:01	3.99	3.5	0.8	14.16	3.0	0.011
14:02	3.99	3.5	0.8	14.16	3.0	0.011
14:03	3.99	3.5	0.8	14.16	3.0	0.011
14:04	4.00	3.5	0.8	14.16	3.1	0.011

AVERAGE VALUES FOR THE LAST 21 MINUTES

14:04	4.00	3.5	0.9	14.16	3.1	0.011
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COMMENTS: End Run 7

BPS2A

11-22-2003

TIME	CHAN 1 STACK %CO2	CHAN 5 STACK ppmNOX	CHAN 2 STACK ppm CO	CHAN 0 Stack %O2	STACK ppmNOX @15%O2	Stack lb NOX MM-BTU
14:20	4.01	3.4	0.9	14.14	3.0	0.011
14:21	4.00	3.5	0.9	14.14	3.0	0.011
14:22	4.00	3.5	0.8	14.14	3.1	0.011
14:23	4.00	3.5	0.9	14.15	3.1	0.011
14:24	4.00	3.5	0.9	14.15	3.1	0.011
14:25	4.00	3.5	0.9	14.15	3.1	0.011
14:26	4.00	3.5	0.9	14.15	3.1	0.011
14:27	4.00	3.5	0.9	14.15	3.1	0.011
14:28	4.00	3.5	1.0	14.15	3.1	0.011
14:29	4.00	3.5	1.1	14.15	3.1	0.011
14:30	4.00	3.5	1.0	14.15	3.0	0.011
14:31	4.00	3.5	1.0	14.15	3.1	0.011
14:32	4.00	3.5	0.9	14.16	3.1	0.011
14:33	3.99	3.5	0.9	14.16	3.1	0.011
14:34	3.99	3.5	1.0	14.16	3.1	0.011
14:35	4.00	3.5	0.9	14.16	3.1	0.011
14:36	4.00	3.5	0.9	14.15	3.1	0.011
14:37	4.00	3.5	0.8	14.15	3.1	0.011
14:38	4.00	3.5	1.0	14.15	3.1	0.011
14:39	4.00	3.5	0.9	14.15	3.1	0.011
14:40	4.00	3.5	0.9	14.15	3.1	0.011

AVERAGE VALUES FOR THE LAST 21 MINUTES

14:40	4.00	3.5	0.9	14.15	3.1	0.011
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COMMENTS: run8

BPS2A

11-22-2003

TIME	CHAN 1 STACK %CO2	CHAN 5 STACK ppmNOX	CHAN 2 STACK ppm CO	CHAN 0 Stack %O2	STACK ppmNOX @15%O2	Stack lb NOX MM-BTU
14:50	4.00	3.5	1.0	14.12	3.0	0.011
14:51	3.99	3.5	0.9	14.13	3.0	0.011
14:52	3.99	3.5	0.8	14.13	3.0	0.011
14:53	3.99	3.5	0.9	14.13	3.0	0.011
14:54	4.00	3.5	0.9	14.13	3.0	0.011
14:55	4.00	3.5	1.1	14.13	3.0	0.011
14:56	4.00	3.5	0.9	14.14	3.0	0.011
14:57	4.00	3.5	0.9	14.14	3.0	0.011
14:58	4.00	3.5	0.9	14.14	3.0	0.011
14:59	4.00	3.5	1.0	14.14	3.0	0.011
15:00	4.00	3.5	1.0	14.14	3.0	0.011
15:01	3.99	3.5	1.0	14.14	3.0	0.011
15:02	4.00	3.5	1.0	14.14	3.0	0.011
15:03	4.00	3.5	1.1	14.14	3.0	0.011
15:04	3.99	3.5	1.0	14.14	3.0	0.011
15:05	4.00	3.5	1.1	14.14	3.0	0.011
15:06	3.99	3.5	1.0	14.14	3.1	0.011
15:07	3.99	3.5	1.1	14.14	3.1	0.011
15:08	3.99	3.5	1.2	14.14	3.1	0.011
15:09	3.99	3.5	1.0	14.15	3.1	0.011
15:10	4.00	3.5	1.0	14.15	3.1	0.011

AVERAGE VALUES FOR THE LAST 21 MINUTES

15:10	4.00	3.5	1.0	14.14	3.0	0.011
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COMMENTS: run9



CALIBRATIONS

CALIBRATION SUMMARY

SOURCE: Baysise <sup>219</sup> ~~1A~~ RATA

REASON: Linearity

DATE : 11-22-2003 TIME: 08:27 - 08:54

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	%CO2	0.00	0.02
1	STACK	%CO2	5.50	5.50
1	STACK	%CO2	11.00	11.08
1	STACK	%CO2	18.10	18.24
5	STACK	ppmNOX	0.0	0.1
5	STACK	ppmNOX	4.5	4.5
5	STACK	ppmNOX	8.2	8.3
5	STACK	ppmNOX	12.5	12.6
2	STACK	ppm CO	0.0	0.0
2	STACK	ppm CO	3.0	3.0
2	STACK	ppm CO	6.0	6.0
0	Stack	%O2	0.00	0.02
0	Stack	%O2	6.41	6.47
0	Stack	%O2	12.70	12.72
0	Stack	%O2	21.00	21.03

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CALIBRATION SUMMARY

SOURCE: Baysise <sup>2A</sup> RATA

REASON: INitial Run 1

DATE : 11-22-2003 TIME: 09:40 - 09:59

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	%CO2	0.00	0.02
1	STACK	%CO2	11.00	11.03
3	STACK	ppmNOX	0.0	0.0
5	STACK	ppmNOX	4.5	4.5
2	STACK	ppm CO	0.0	-0.0
2	STACK	ppm CO	3.0	3.0
0	Stack	%O2	0.00	0.03
0	Stack	%O2	12.70	12.71

CALIBRATION SUMMARY

SOURCE: Baysise <sup>2A</sup> RATA

REASON: Final Run 1

DATE : 11-22-2003      TIME: 10:48 - 10:55

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	%CO2	0.00	0.06
1	STACK	%CO2	11.00	11.02
5	STACK	ppmNOX	0.0	0.1
5	STACK	ppmNOX	4.5	4.5
2	STACK	ppm CO	0.0	0.0
2	STACK	ppm CO	3.0	3.0
0	Stack	%O2	0.00	0.03
0	Stack	%O2	12.70	12.68

# CALIBRATION SUMMARY

SOURCE: BPS2A

REASON: Final run2

DATE : 11-22-2003      TIME: 11:30 - 11:37

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	%CO2	0.00	0.04
1	STACK	%CO2	11.00	11.00
5	STACK	ppmNOX	0.0	0.1
5	STACK	ppmNOX	4.5	4.5
2	STACK	ppm CO	0.0	0.0
2	STACK	ppm CO	3.0	3.0
0	Stack	%O2	0.00	0.00
0	Stack	%O2	12.70	12.65

# CALIBRATION SUMMARY

SOURCE: BPS2A

REASON: final run3

DATE : 11-22-2003      TIME: 12:01 - 12:07

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	%CO2	0.00	0.05
1	STACK	%CO2	11.00	11.01
5	STACK	ppmNOX	0.0	0.1
5	STACK	ppmNOX	4.5	4.5
2	STACK	ppm CO	0.0	0.0
2	STACK	ppm CO	3.0	3.0
0	Stack	%O2	0.00	0.02
0	Stack	%O2	12.70	12.70

# CALIBRATION SUMMARY

SOURCE: BPS2A

REASON: final run4

DATE : 11-22-2003      TIME: 12:31 - 12:38

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	%CO2	0.00	0.04
1	STACK	%CO2	11.00	10.99
5	STACK	ppmNOX	0.0	0.1
5	STACK	ppmNOX	4.5	4.5
2	STACK	ppm CO	0.0	0.0
2	STACK	ppm CO	3.0	3.0
0	Stack	%O2	0.00	0.02
0	Stack	%O2	12.70	12.69

# CALIBRATION SUMMARY

SOURCE: BPS2A

REASON: final run5

DATE : 11-22-2003      TIME: 13:01 - 13:09

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	%CO2	0.00	0.05
1	STACK	%CO2	11.00	10.99
5	STACK	ppmNOX	0.0	0.1
5	STACK	ppmNOX	4.5	4.5
2	STACK	ppm CO	0.0	0.0
2	STACK	ppm CO	3.0	3.0
0	Stack	%O2	0.00	0.02
0	Stack	%O2	12.70	12.71



# CALIBRATION SUMMARY

SOURCE: BPS2A

REASON: final run6

DATE : 11-22-2003      TIME: 13:33 - 13:40

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	%CO2	0.00	0.05
1	STACK	%CO2	11.00	10.98
5	STACK	ppmNOX	0.0	0.1
5	STACK	ppmNOX	4.5	4.5
2	STACK	ppm CO	0.0	0.0
2	STACK	ppm CO	3.0	3.0
0	Stack	%O2	0.00	0.02
0	Stack	%O2	12.70	12.71

# CALIBRATION SUMMARY

SOURCE: BPS2A

REASON: Final run7

DATE : 11-22-2003      TIME: 14:04 - 14:16

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	%CO2	0.00	0.05
1	STACK	%CO2	11.00	10.98
5	STACK	ppmNOX	0.0	0.1
5	STACK	ppmNOX	4.5	4.5
2	STACK	ppm CO	0.0	0.0
2	STACK	ppm CO	3.0	2.9
0	Stack	%O2	0.00	0.02
0	Stack	%O2	12.70	12.70

# CALIBRATION SUMMARY

SOURCE: BPS2A

REASON: final run8

DATE : 11-22-2003      TIME: 14:40 - 14:46

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	%CO2	0.00	0.05
1	STACK	%CO2	11.00	10.98
5	STACK	ppmNOX	0.0	0.1
5	STACK	ppmNOX	4.5	4.5
2	STACK	ppm CO	0.0	0.0
2	STACK	ppm CO	3.0	3.0
0	Stack	%O2	0.00	0.02
0	Stack	%O2	12.70	12.68

# CALIBRATION SUMMARY

SOURCE: BPS2A

REASON: final run9

DATE : 11-22-2003      TIME: 15:10 - 15:16

A/D CHAN	MONITOR DESCRIPTION	UNITS	GAS VALUE	MONITOR RESPONSE
1	STACK	%CO2	0.00	0.05
1	STACK	%CO2	11.00	10.98
5	STACK	ppmNOX	0.0	0.1
5	STACK	ppmNOX	4.5	4.5
2	STACK	ppm CO	0.0	0.0
2	STACK	ppm CO	3.0	3.0
0	Stack	%O2	0.00	0.02
0	Stack	%O2	12.70	12.68

CONVERTER EFFICIENCY TEST



**Reference Method 20  
Converter Efficiency Test  
Data Summary**

Analyzer Serial Number: 42CHL-69577-363  
Test Date: 11/22/2003

Maximum 1-minute Value in 30-minute Period:	5.4	ppm
Value at End of 30-minute Period:	5.3	ppm
Difference Observed:	-0.1	ppm
Converter Efficiency:	98.15	%
Percent Decrease:	1.85	%

Converter Efficiency calculated as:

$$\frac{\text{Value at End of 30-minute Period}}{\text{Maximum Value in 30-minute Period}} \times 100$$

Converter is acceptable providing decrease is less than or equal to 2.0%.

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2A

Baysise ~~14~~ RATA 11-22-2003

TIME	CHAN 1 STACK %CO2	CHAN 5 STACK ppmNOX	CHAN 2 STACK ppm CO	CHAN 0 Stack %O2	STACK ppmNOX @15%O2	STACK lb NOX MM-BTU
09:10	0.07	5.4	0.1	21.04	-226.0	0.000
09:11	0.07	5.4	0.1	21.05	-215.9	0.000
09:12	0.07	5.4	0.1	21.05	-209.3	0.000
09:13	0.07	5.4	0.1	21.06	-202.5	0.000
09:14	0.07	5.4	0.1	21.06	-199.5	0.000
09:15	0.07	5.4	0.1	21.06	-202.1	0.000
09:16	0.07	5.4	0.1	21.06	-195.5	0.000
09:17	0.07	5.4	0.1	21.07	-190.6	0.000
09:18	0.07	5.4	0.1	21.07	-188.2	0.000
09:19	0.07	5.4	0.1	21.07	-188.9	0.000
09:20	0.07	5.4	0.1	21.07	-190.2	0.000
09:21	0.07	5.4	0.1	21.07	-185.7	0.000
09:22	0.07	5.4	0.1	21.07	-184.5	0.000
09:23	0.07	5.4	0.1	21.07	-183.0	0.000
09:24	0.07	5.3	0.1	21.07	-185.6	0.000
09:25	0.07	5.3	0.0	21.07	-180.7	0.000
09:26	0.07	5.4	0.0	21.07	-183.0	0.000
09:27	0.07	5.4	0.0	21.08	-179.5	0.000
09:28	0.07	5.4	0.0	21.07	-182.6	0.000
09:29	0.07	5.4	0.0	21.08	-180.8	0.000
09:30	0.07	5.4	0.0	21.08	-180.6	0.000
09:31	0.07	5.4	0.0	21.08	-178.4	0.000
09:32	0.07	5.4	0.1	21.08	-179.6	0.000
09:33	0.07	5.3	0.1	21.08	-179.1	0.000
09:34	0.07	5.3	0.1	21.08	-177.4	0.000
09:35	0.07	5.3	0.1	21.08	-178.6	0.000
09:36	0.07	5.3	0.1	21.08	-179.7	0.000
09:37	0.07	5.3	0.1	21.08	-178.7	0.000
09:38	0.07	5.3	0.1	21.08	-177.3	0.000
09:39	0.07	5.3	0.1	21.08	-175.9	0.000

AVERAGE VALUES FOR THE LAST 30 MINUTES

09:39	0.07	5.4	0.1	21.07	-188.0	0.000
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COMMENTS: NOX converter

CYLINDER GAS CERTIFICATES



**CERTIFIED MASTER CLASS**

*Single-Certified Calibration Standard*



**Scott Specialty Gases**

6141 EASTON ROAD, BLDG 1, PUMSTEADVILLE, PA 18949-0210 Phone: 800-331-4953 Fax: 215-766-7226

**RDS04**

**CERTIFICATE OF ACCURACY: Certified Master Class Calibration Standard**

**Product Information**

Project No.: 01-95261-006  
Item No.: 01020000840PAL  
P.O. No.: E-N06925

Cylinder Number: ALM026412  
Cylinder Size: AL  
Certification Date: 21 Aug 2003  
Expiration Date: 19 Feb 2004

**Customer**

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA, FL 33619

**CERTIFIED CONCENTRATION**

<u>Component Name</u>	<u>Concentration (Moles)</u>	<u>Accuracy (+/-%)</u>
CARBON MONOXIDE NITROGEN	3.00 PPM BALANCE	2

**TRACEABILITY**

Traceable To

NIST

APPROVED BY:

JOHN C. FITZ

DATE:

## SPECIFICATIONS

<u>Component Name</u>	<u>Requested Concentration (Moles)</u>	<u>Certified Concentration (Moles)</u>	<u>Blend Tolerance Result (+/- %)</u>	<u>Certified Accuracy Result (+/- %)</u>
CARBON MONOXIDE	3. PPM	3.00 PPM	.0	2.00
NITROGEN	BAL	BAL		

## TRACEABILITY

Traceable To  
NIST

## PHYSICAL PROPERTIES

Cylinder Size: AL                      Pressure: 2000 PSIG  
Expiration Date: 19Feb2004

Min. Cyl. Pressure: 150 PSIG

## SPECIAL HANDLING INSTRUCTIONS

Do not use or store cylinder at or below the stated dew point temperature. Possible condensation of heavier components could result. In the event the cylinder has been exposed to temperatures at or below the dew point, place cylinder in heated area for 24 hours and then roll cylinder for 15 minutes to re-mix.

Use of calibration standards at or below dew point temperature may result in calibration error.

**COMPLIANCE CLASS**



**Scott Specialty Gases**

*Dual-Analyzed Calibration Standard*

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**RDS05**

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-95261-011

Customer

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: ALM005846      Certification Date: 20Aug2003      Exp. Date: 18Feb2004  
Cylinder Pressure\*\*\*: 2000 PSIG

<u>COMPONENT</u>	<u>CERTIFIED CONCENTRATION (Moles)</u>	<u>ANALYTICAL ACCURACY**</u>	<u>TRACEABILITY</u>
CARBON MONOXIDE	6.07 PPM	+/- 2%	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 procedures, September 1997.

**REFERENCE STANDARD**

<u>TYPE/SRM NO.</u>	<u>EXPIRATION DATE</u>	<u>CYLINDER NUMBER</u>	<u>CONCENTRATION</u>	<u>COMPONENT</u>
NTRM 2635	01May2007	ALM019380	25.78 PPM	CARBON MONOXIDE

**INSTRUMENTATION**

<u>INSTRUMENT/MODEL/SERIAL#</u>	<u>DATE LAST CALIBRATED</u>	<u>ANALYTICAL PRINCIPLE</u>
SIEMENS/6E/KN-240	25Jul2003	NDIR

APPROVED BY:

JOHN C. FITZ

RATA CLASS **RDS10**  
Dual-Analyzed Calibration Standard



**Scott Specialty Gases**

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-95261-008

Customer

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: AAL6536 Certification Date: 26Aug2003 Exp. Date: 25Feb2004  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	4.49 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	4.49 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2627	15Jan2004	AAL069671	5.180 PPM	NITRIC OXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
TECO/10/9741111S	04Aug2003	CHEMILUMINESCENT

**ANALYZER READINGS**

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

**NITRIC OXIDE**

Date: 19Aug2003	Response Unit: VOLTS		
Z1=0.00030	R1=0.86910	T1=0.75290	
R2=0.87010	Z2=0.00020	T2=0.75390	
Z3=0.00020	T3=0.75400	R3=0.86910	
Avg. Concentration:	4.490	PPM	

Date: 26Aug2003	Response Unit: VOLTS		
Z1=0.00020	R1=0.87080	T1=0.75390	
R2=0.87070	Z2=0.00020	T2=0.75410	
Z3=0.00020	T3=0.75380	R3=0.86970	
Avg. Concentration:	4.490	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999995	2627
Constants:	A = .007701
B = 5.948957	C =
D =	E =

APPROVED BY:

KIMBERLY NILES

RATA CLASS **ROS11**



**Scott Specialty Gases**

*Dual-Analyzed Calibration Standard*

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-95261-009

Customer

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: AAL15823 Certification Date: 26Aug2003 Exp. Date: 25Aug2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	8.21 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	8.24 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
HORIBA/CLA220/5708850810	21Aug2003	CHEMILUMINESCENCE

**ANALYZER READINGS**

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

**NITRIC OXIDE**

Date: 19Aug2003	Response Unit: VOLTS	
Z1 = 0.00460	R1 = 3.94120	T1 = 1.79530
R2 = 3.93760	Z2 = 0.00380	T2 = 1.79320
Z3 = 0.00490	T3 = 1.79150	R3 = 3.92910
Avg. Concentration:	8.200	PPM

Date: 26Aug2003	Response Unit: VOLTS	
Z1 = 0.00520	R1 = 3.78620	T1 = 1.72780
R2 = 3.78260	Z2 = 0.00820	T2 = 1.72900
Z3 = 0.00720	T3 = 1.72740	R3 = 3.77760
Avg. Concentration:	8.230	PPM

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999998	2629
Constants:	A = -0.016438
B = 4.632947	C =
D =	E =

APPROVED BY:

  
KIMBERLY MILES

RATA CLASS **R0512**

Dual-Analyzed Calibration Standard



**Scott Specialty Gases**

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925

Project No.: 01-95261-012

Customer

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: AAL9355 Certification Date: 26Aug2003 Exp. Date: 25Aug2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	12.5 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	12.5 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
HORIBA/CLA220/5708850810	21Aug2003	CHEMILUMINESCENCE

**ANALYZER READINGS**

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

**NITRIC OXIDE**

Date: 19Aug2003	Response Unit: VOLTS	
Z1 = 0.00710	R1 = 3.92820	T1 = 2.71940
R2 = 3.93490	Z2 = 0.00720	T2 = 2.72370
Z3 = 0.00440	T3 = 2.71900	R3 = 3.92940
Avg. Concentration:	12.48	PPM

Date: 26Aug2003	Response Unit: VOLTS	
Z1 = 0.00490	R1 = 3.79000	T1 = 2.62460
R2 = 3.78830	Z2 = 0.00560	T2 = 2.62270
Z3 = 0.00460	T3 = 2.62210	R3 = 3.79020
Avg. Concentration:	12.49	PPM

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999998	2629
Constants:	A = -0.016438
B = 4.632947	C =
D =	E =

APPROVED BY:

  
KIMBERLY NILES

**RATA CLASS STOCK 8**  
Dual-Analyzed Calibration Standard



**Scott Specialty Gases**

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N75516  
Project No.: 01-82472-008

Customer

TAMPA ELECTRIC COMPANY  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: ALM031470      Certification Date: 11/05/01      Exp. Date: 11/04/2004  
Cylinder Pressure\*\*\*: 2000 PSIG

**ANALYTICAL**

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON DIOXIDE	18.1 %	+/- 1%	Direct NIST and NMI
OXYGEN	6.41 %	+/- 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.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1800	1/01/04	HO49491	18.05 %	CARBON DIOXIDE
NTRM 2858	10/01/02	ALM065041	9.930 %	OXYGEN

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
MTI/M200/170927	11/05/01	GC-TCD
MTI/M200/170927	11/05/01	GC-TCD

**ANALYZER READINGS**

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

First Triad Analysis

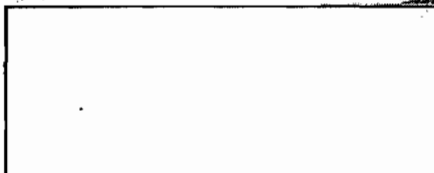
Second Triad Analysis

Calibration Curve

**CARBON DIOXIDE**

Date: 11/05/01      Response Unit: AREA

Z1 = 0.00000	R1 = 601872.0	T1 = 802880.0
R2 = 800871.0	Z2 = 0.00000	T2 = 800330.0
Z3 = 0.00000	T3 = 802949.0	R3 = 801064.0
Avg. Concentration: 18.10 %		



Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>

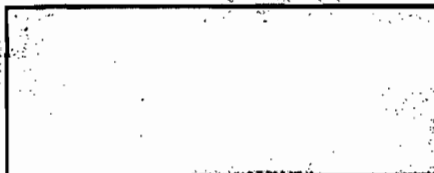
r = 0.999998      1800

Constants:      A = 2.16844E-03  
B = 2.2544E-06      C =  
D =      E =

**OXYGEN**

Date: 11/05/01      Response Unit: AREA

Z1 = 0.00000	R1 = 283829.0	T1 = 183849.0
R2 = 283482.0	Z2 = 0.00000	T2 = 183088.0
Z3 = 0.00000	T3 = 182859.0	R3 = 283570.0
Avg. Concentration: 6.410 %		



Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>

r = 0.99998      2858

Constants:      A = -3.8047E-02  
B = 3.5188E-06      C =  
D =      E =

APPROVED BY: \_\_\_\_\_

RATA CLASS **BLD03**



**Scott Specialty Gases**

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-95261-001

Customer

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: ALM059566 Certification Date: 21Aug2003 Exp. Date: 20Aug2006  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	11.0 %	+/- 1%	Direct NIST and NMI
OXYGEN	12.7 %	+/- 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.

**REFERENCE STANDARD**

PE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
IRM 1675	01Jun2004	K001509	13.93 %	CARBON DIOXIDE
NTRM 2659	01Jun2004	K012946	20.85 %	OXYGEN

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
MTI/M200/170927	18Aug2003	GC-TCD
BECKMAN/755/2002571	30Jul2003	PARAMAGNETIC

**ANALYZER READINGS**

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

**CARBON DIOXIDE**

Date: 21Aug2003	Response Unit: VOLTS	
Z1 = 0.00000	R1 = 637781.0	T1 = 503737.0
R2 = 937313.0	Z2 = 0.00000	T2 = 503218.0
Z3 = 0.00000	T3 = 503572.0	R3 = 637698.0
Avg. Concentration:	11.00	%



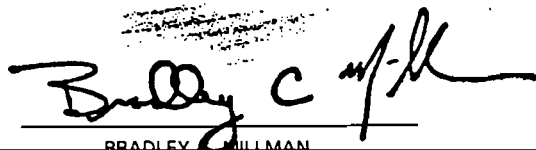
Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999997	1675
Constants:	A = 7.7433E-03
B = 2.1753E-05	C =
D =	E =

**OXYGEN**

Date: 21Aug2003	Response Unit: VOLTS	
Z1 = 0.00030	R1 = 0.84260	T1 = 0.49750
R2 = 0.84320	Z2 = 0.00070	T2 = 0.49760
Z3 = 0.00080	T3 = 0.49740	R3 = 0.84320
Avg. Concentration:	12.70	%



Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999998	2659
Constants:	A = -1.4608E-02
B = -2.1461E+00	C = 2.6702E+01
D =	E =

APPROVED BY:   
BRADLEY MILLMAN



**CERTIFICATE OF PURE GAS BATCH ANALYSIS**

**PURE GAS PRODUCT:** Air

**Date:** June 27, 2003

**Reference Number:** 55-03101-1

**Customer Name:** Airgas South  
**Address:**

**Purchase Order #:**

**Grade of Product:** CEM

<u>Cylinder Number</u> (Analyzed Cylinder)	<u>Impurity</u>	<u>Specification</u>	<u>Actual Level</u>
CC165812	Oxygen	20-21	21.0 %
	THC	0.1	<0.1 ppm
	Water	2.0	0.6 ppm
	Carbon Dioxide	1.0	<0.1 ppm
	Carbon Monoxide	0.5	<0.1 ppm
	NOX	0.1	0.08 ppm
	SO2	0.1	0.05 ppm

**Cylinder Numbers in Batch:**

CC31215	CC165812	CC165854	CC165643
CC165836	892228		

**Delivery Ticket #:**

*E. Edward Henderson*  
Approval Signature

VISIBLE EMISSIONS OBSERVATIONS



VISIBLE EMISSION OBSERVATION

E-496 R 10/85

SOURCE NAME		SOURCE LOCATION		OBSERVATION DATE				START TIME				STOP TIME							
Dyckie CT-2A		Tampa, FL		11/14/2003				11:00				11:30							
TYPE OF FACILITY										SEC.		SEC.		SEC.		SEC.			
Combined Cycle Combustion Turbine - firing NG										MIN	0	15	30	45	MIN	0	15	30	45
DISTANCE FROM OBSERVER										1	∅	∅	∅	∅	31				
~650'										2	∅	∅	∅	∅	32				
SKY CONDITIONS/PLUME BACKGROUND										3	∅	∅	∅	∅	33				
clear / background is blue										4	∅	∅	∅	∅	34				
SOURCE LAYOUT SKETCH										5	∅	∅	∅	∅	35				
DRAW NORTH ARROW										6	∅	∅	∅	∅	36				
										7	∅	∅	∅	∅	37				
AVERAGE OPACITY -										8	∅	∅	∅	∅	38				
∅.0%										9	∅	∅	∅	∅	39				
WIND SPEED (EST.)					WIND DIRECTION (EST.)					10	∅	∅	∅	∅	40				
moderate ~8 to 10					ENE to NNE					11	∅	∅	∅	∅	41				
OBSERVER'S NAME (PRINT)										12	∅	∅	∅	∅	42				
R.A. McDarby										13	∅	∅	∅	∅	43				
OBSERVER'S SIGNATURE					DATE					14	∅	∅	∅	∅	44				
[Signature]					11/14/2003					15	∅	∅	∅	∅	45				
COMMENTS										16	∅	∅	∅	∅	46				
30 minutes as per PSD-FL-301A, Testing Requirements #18										17	∅	∅	∅	∅	47				
Maximum observed: ∅%										18	∅	∅	∅	∅	48				
Minimum observed: ∅%										19	∅	∅	∅	∅	49				
Maximum 6 minute average: ∅.0%										20	∅	∅	∅	∅	50				
COPY OF VISIBLE EMISSIONS CERTIFICATION CARD										21	∅	∅	∅	∅	51				
										22	∅	∅	∅	∅	52				
										23	∅	∅	∅	∅	53				
										24	∅	∅	∅	∅	54				
										25	∅	∅	∅	∅	55				
										26	∅	∅	∅	∅	56				
										27	∅	∅	∅	∅	57				
										28	∅	∅	∅	∅	58				
										29	∅	∅	∅	∅	59				
										30	∅	∅	∅	∅	60				

PLANT OPERATIONAL DATA

NOVEMBER 14, 2003

**Bayside CT2A**  
**11/14/03 8:50 -**  
**13:00**

	<b>MW</b>	<b>Turbine Exhaust Temp</b>	<b>Fuel Gas Flow</b>	<b>Compressor Inlet Temp</b>	<b>Barametric Pressure</b>	<b>NH3 Injection Rate</b>
	<b>2aDWATT</b>	<b>2aTTXM</b>	<b>2aFQG</b>	<b>2aCTIM</b>	<b>2aAFPAP</b>	<b>2AFGCFI711</b>
14-Nov-03 08:50:00	173.23	1112.67	21.47	55.01	30.17	9.85
14-Nov-03 08:51:00	173.19	1112.73	21.47	55.08	30.17	9.88
14-Nov-03 08:52:00	173.15	1112.78	21.47	55.15	30.17	9.91
14-Nov-03 08:53:00	173.11	1112.84	21.47	55.22	30.17	9.94
14-Nov-03 08:54:00	173.07	1112.90	21.46	55.30	30.17	9.98
14-Nov-03 08:55:00	173.02	1112.96	21.46	55.37	30.17	10.01
14-Nov-03 08:56:00	172.98	1113.02	21.46	55.44	30.17	10.04
14-Nov-03 08:57:00	172.94	1113.08	21.46	55.53	30.17	10.07
14-Nov-03 08:58:00	172.90	1113.14	21.45	55.62	30.17	10.10
14-Nov-03 08:59:00	172.86	1113.20	21.45	55.72	30.17	10.14
14-Nov-03 09:00:00	172.82	1113.26	21.45	55.81	30.17	10.17
14-Nov-03 09:01:00	172.78	1113.32	21.44	55.91	30.17	10.20
14-Nov-03 09:02:00	172.75	1113.38	21.44	56.00	30.17	10.22
14-Nov-03 09:03:00	172.71	1113.43	21.44	56.10	30.17	10.23
14-Nov-03 09:04:00	172.68	1113.49	21.43	56.19	30.17	10.25
14-Nov-03 09:05:00	172.64	1113.56	21.43	56.29	30.17	10.26
14-Nov-03 09:06:00	172.61	1113.74	21.43	56.38	30.17	10.28
14-Nov-03 09:07:00	172.57	1113.97	21.42	56.48	30.17	10.29
14-Nov-03 09:08:00	172.54	1114.19	21.42	56.57	30.17	10.31
14-Nov-03 09:09:00	172.50	1114.42	21.42	56.67	30.17	10.33
14-Nov-03 09:10:00	172.47	1114.64	21.41	56.76	30.17	10.34
14-Nov-03 09:11:00	172.43	1114.87	21.41	56.86	30.17	10.36
14-Nov-03 09:12:00	172.40	1115.09	21.41	56.95	30.17	10.37
14-Nov-03 09:13:00	172.36	1115.32	21.40	57.05	30.17	10.39
14-Nov-03 09:14:00	172.33	1115.54	21.40	57.14	30.17	10.40
14-Nov-03 09:15:00	172.29	1115.77	21.40	57.24	30.17	10.42
14-Nov-03 09:16:00	172.26	1115.99	21.39	57.33	30.17	10.43
14-Nov-03 09:17:00	172.22	1116.22	21.39	57.43	30.17	10.45
14-Nov-03 09:18:00	172.19	1116.44	21.39	57.52	30.17	10.46
14-Nov-03 09:19:00	172.15	1116.67	21.38	57.62	30.17	10.48
14-Nov-03 09:20:00	172.12	1116.89	21.38	57.71	30.17	10.49
14-Nov-03 09:21:00	172.08	1117.12	21.37	57.81	30.17	10.51
14-Nov-03 09:22:00	172.03	1117.34	21.37	57.91	30.17	10.52
14-Nov-03 09:23:00	171.96	1117.57	21.37	58.03	30.17	10.53
14-Nov-03 09:24:00	171.90	1117.79	21.36	58.15	30.17	10.53
14-Nov-03 09:25:00	171.84	1118.02	21.36	58.27	30.17	10.53
14-Nov-03 09:26:00	171.78	1118.24	21.35	58.39	30.17	10.53
14-Nov-03 09:27:00	171.71	1118.39	21.34	58.51	30.17	10.53
14-Nov-03 09:28:00	171.65	1118.50	21.34	58.63	30.17	10.54
14-Nov-03 09:29:00	171.59	1118.60	21.33	58.75	30.17	10.54
14-Nov-03 09:30:00	171.52	1118.71	21.33	58.87	30.17	10.54
14-Nov-03 09:31:00	171.46	1118.81	21.32	58.99	30.17	10.54
14-Nov-03 09:32:00	171.40	1118.91	21.32	59.11	30.17	10.54
14-Nov-03 09:33:00	171.33	1119.02	21.31	59.23	30.17	10.54
14-Nov-03 09:34:00	171.27	1119.12	21.31	59.35	30.17	10.54
14-Nov-03 09:35:00	171.21	1119.23	21.30	59.47	30.17	10.55
14-Nov-03 09:36:00	171.15	1119.33	21.30	59.59	30.17	10.55
14-Nov-03 09:37:00	171.08	1119.44	21.29	59.71	30.17	10.55

14-Nov-03 09:38:00	171.02	1119.54	21.29	59.83	30.17	10.55
14-Nov-03 09:39:00	170.96	1119.64	21.28	59.95	30.17	10.55
14-Nov-03 09:40:00	170.89	1119.75	21.28	60.07	30.17	10.55
14-Nov-03 09:41:00	170.82	1119.85	21.27	60.19	30.17	10.55
14-Nov-03 09:42:00	170.74	1119.96	21.27	60.31	30.17	10.56
14-Nov-03 09:43:00	170.66	1120.06	21.26	60.43	30.17	10.56
14-Nov-03 09:44:00	170.57	1120.17	21.25	60.55	30.17	10.55
14-Nov-03 09:45:00	170.49	1120.27	21.25	60.67	30.17	10.54
14-Nov-03 09:46:00	170.41	1120.37	21.24	60.79	30.17	10.53
14-Nov-03 09:47:00	170.32	1120.48	21.23	60.88	30.17	10.52
14-Nov-03 09:48:00	170.24	1120.58	21.23	60.96	30.17	10.51
14-Nov-03 09:49:00	170.16	1120.69	21.22	61.05	30.17	10.50
14-Nov-03 09:50:00	170.07	1120.79	21.21	61.13	30.17	10.49
14-Nov-03 09:51:00	169.99	1120.89	21.21	61.22	30.17	10.48
14-Nov-03 09:52:00	169.91	1120.96	21.20	61.31	30.17	10.47
14-Nov-03 09:53:00	169.82	1121.02	21.19	61.39	30.17	10.46
14-Nov-03 09:54:00	169.74	1121.08	21.19	61.48	30.17	10.45
14-Nov-03 09:55:00	169.66	1121.14	21.18	61.56	30.17	10.44
14-Nov-03 09:56:00	169.57	1121.20	21.17	61.65	30.17	10.43
14-Nov-03 09:57:00	169.49	1121.27	21.17	61.74	30.17	10.42
14-Nov-03 09:58:00	169.41	1121.33	21.16	61.82	30.17	10.41
14-Nov-03 09:59:00	169.32	1121.39	21.16	61.91	30.17	10.40
14-Nov-03 10:00:00	169.24	1121.45	21.15	61.99	30.17	10.39
14-Nov-03 10:01:00	169.16	1121.52	21.14	62.08	30.17	10.38
14-Nov-03 10:02:00	169.07	1121.58	21.14	62.16	30.17	10.37
14-Nov-03 10:03:00	168.99	1121.64	21.13	62.25	30.17	10.36
14-Nov-03 10:04:00	168.91	1121.70	21.12	62.34	30.17	10.34
14-Nov-03 10:05:00	168.82	1121.77	21.12	62.42	30.17	10.32
14-Nov-03 10:06:00	168.75	1121.83	21.11	62.51	30.17	10.30
14-Nov-03 10:07:00	168.72	1121.89	21.10	62.59	30.17	10.28
14-Nov-03 10:08:00	168.70	1121.95	21.10	62.68	30.17	10.26
14-Nov-03 10:09:00	168.67	1122.01	21.09	62.76	30.17	10.24
14-Nov-03 10:10:00	168.64	1122.09	21.08	62.85	30.16	10.22
14-Nov-03 10:11:00	168.62	1122.20	21.07	62.93	30.16	10.20
14-Nov-03 10:12:00	168.59	1122.31	21.07	63.01	30.16	10.18
14-Nov-03 10:13:00	168.57	1122.42	21.06	63.08	30.16	10.16
14-Nov-03 10:14:00	168.54	1122.53	21.05	63.15	30.16	10.14
14-Nov-03 10:15:00	168.52	1122.65	21.04	63.23	30.16	10.12
14-Nov-03 10:16:00	168.49	1122.76	21.04	63.30	30.16	10.10
14-Nov-03 10:17:00	168.46	1122.87	21.03	63.37	30.16	10.08
14-Nov-03 10:18:00	168.44	1122.98	21.02	63.44	30.16	10.05
14-Nov-03 10:19:00	168.41	1123.09	21.02	63.52	30.16	10.03
14-Nov-03 10:20:00	168.39	1123.20	21.01	63.59	30.16	10.01
14-Nov-03 10:21:00	168.36	1123.32	21.00	63.66	30.16	9.99
14-Nov-03 10:22:00	168.34	1123.43	20.99	63.74	30.16	9.97
14-Nov-03 10:23:00	168.31	1123.54	20.99	63.81	30.16	9.95
14-Nov-03 10:24:00	168.28	1123.65	20.98	63.88	30.16	9.93
14-Nov-03 10:25:00	168.26	1123.76	20.97	63.95	30.16	9.92
14-Nov-03 10:26:00	168.22	1123.87	20.96	64.03	30.16	9.92
14-Nov-03 10:27:00	168.15	1123.99	20.96	64.10	30.16	9.91
14-Nov-03 10:28:00	168.07	1124.10	20.95	64.17	30.16	9.91
14-Nov-03 10:29:00	168.00	1124.21	20.94	64.24	30.16	9.90

14-Nov-03 10:30:00	167.92	1124.32	20.94	64.32	30.16	9.89
14-Nov-03 10:31:00	167.85	1124.43	20.93	64.39	30.16	9.89
14-Nov-03 10:32:00	167.77	1124.54	20.93	64.46	30.16	9.88
14-Nov-03 10:33:00	167.69	1124.65	20.93	64.53	30.16	9.88
14-Nov-03 10:34:00	167.62	1124.75	20.93	64.61	30.16	9.87
14-Nov-03 10:35:00	167.54	1124.85	20.93	64.68	30.16	9.86
14-Nov-03 10:36:00	167.47	1124.95	20.93	64.75	30.16	9.86
14-Nov-03 10:37:00	167.39	1125.05	20.93	64.83	30.16	9.85
14-Nov-03 10:38:00	167.32	1125.15	20.93	64.90	30.16	9.85
14-Nov-03 10:39:00	167.24	1125.25	20.93	64.98	30.16	9.84
14-Nov-03 10:40:00	167.16	1125.35	20.93	65.06	30.16	9.84
14-Nov-03 10:41:00	167.09	1125.45	20.93	65.13	30.16	9.83
14-Nov-03 10:42:00	167.01	1125.55	20.93	65.21	30.16	9.82
14-Nov-03 10:43:00	166.94	1125.65	20.93	65.28	30.16	9.82
14-Nov-03 10:44:00	166.86	1125.75	20.93	65.36	30.16	9.81
14-Nov-03 10:45:00	166.79	1125.85	20.93	65.43	30.16	9.81
14-Nov-03 10:46:00	166.71	1125.95	20.93	65.51	30.16	9.80
14-Nov-03 10:47:00	166.64	1126.05	20.93	65.58	30.16	9.80
14-Nov-03 10:48:00	166.60	1126.15	20.93	65.66	30.16	9.81
14-Nov-03 10:49:00	166.56	1126.25	20.93	65.74	30.15	9.81
14-Nov-03 10:50:00	166.52	1126.35	20.93	65.81	30.15	9.81
14-Nov-03 10:51:00	166.48	1126.45	20.92	65.89	30.15	9.81
14-Nov-03 10:52:00	166.44	1126.55	20.91	65.96	30.15	9.81
14-Nov-03 10:53:00	166.40	1126.65	20.90	66.04	30.15	9.81
14-Nov-03 10:54:00	166.36	1126.75	20.90	66.11	30.15	9.81
14-Nov-03 10:55:00	166.32	1126.85	20.89	66.19	30.15	9.81
14-Nov-03 10:56:00	166.28	1126.95	20.88	66.26	30.15	9.81
14-Nov-03 10:57:00	166.24	1127.03	20.87	66.34	30.15	9.82
14-Nov-03 10:58:00	166.20	1127.10	20.86	66.41	30.15	9.82
14-Nov-03 10:59:00	166.16	1127.18	20.85	66.49	30.15	9.82
14-Nov-03 11:00:00	166.11	1127.25	20.84	66.57	30.15	9.82
14-Nov-03 11:01:00	166.07	1127.33	20.83	66.66	30.15	9.82
14-Nov-03 11:02:00	166.03	1127.40	20.82	66.77	30.15	9.82
14-Nov-03 11:03:00	165.99	1127.48	20.81	66.88	30.15	9.82
14-Nov-03 11:04:00	165.95	1127.56	20.81	66.99	30.15	9.82
14-Nov-03 11:05:00	165.91	1127.63	20.80	67.11	30.15	9.82
14-Nov-03 11:06:00	165.87	1127.71	20.79	67.22	30.15	9.82
14-Nov-03 11:07:00	165.83	1127.78	20.78	67.33	30.15	9.82
14-Nov-03 11:08:00	165.78	1127.86	20.77	67.44	30.15	9.82
14-Nov-03 11:09:00	165.73	1127.93	20.77	67.55	30.15	9.81
14-Nov-03 11:10:00	165.67	1128.01	20.77	67.67	30.15	9.81
14-Nov-03 11:11:00	165.62	1128.08	20.77	67.78	30.15	9.80
14-Nov-03 11:12:00	165.57	1128.16	20.77	67.89	30.15	9.80
14-Nov-03 11:13:00	165.52	1128.23	20.77	68.00	30.15	9.80
14-Nov-03 11:14:00	165.47	1128.31	20.76	68.11	30.15	9.79
14-Nov-03 11:15:00	165.41	1128.39	20.76	68.23	30.15	9.79
14-Nov-03 11:16:00	165.36	1128.46	20.76	68.34	30.15	9.78
14-Nov-03 11:17:00	165.31	1128.54	20.76	68.45	30.15	9.78
14-Nov-03 11:18:00	165.26	1128.61	20.76	68.56	30.15	9.78
14-Nov-03 11:19:00	165.21	1128.69	20.76	68.68	30.15	9.77
14-Nov-03 11:20:00	165.15	1128.76	20.75	68.79	30.15	9.77
14-Nov-03 11:21:00	165.10	1128.84	20.75	68.90	30.14	9.76



14-Nov-03 11:22:00	165.05	1128.91	20.75	69.01	30.14	9.76
14-Nov-03 11:23:00	165.00	1128.96	20.75	69.12	30.14	9.76
14-Nov-03 11:24:00	164.95	1129.02	20.75	69.24	30.14	9.75
14-Nov-03 11:25:00	164.89	1129.08	20.75	69.35	30.14	9.75
14-Nov-03 11:26:00	164.84	1129.14	20.74	69.46	30.14	9.74
14-Nov-03 11:27:00	164.80	1129.20	20.74	69.56	30.14	9.73
14-Nov-03 11:28:00	164.78	1129.26	20.74	69.65	30.14	9.72
14-Nov-03 11:29:00	164.76	1129.32	20.73	69.75	30.14	9.71
14-Nov-03 11:30:00	164.74	1129.38	20.73	69.84	30.14	9.70
14-Nov-03 11:31:00	164.72	1129.44	20.72	69.94	30.14	9.70
14-Nov-03 11:32:00	164.71	1129.50	20.71	70.03	30.14	9.69
14-Nov-03 11:33:00	164.69	1129.56	20.71	70.13	30.14	9.68
14-Nov-03 11:34:00	164.67	1129.62	20.70	70.22	30.14	9.67
14-Nov-03 11:35:00	164.65	1129.68	20.70	70.32	30.14	9.66
14-Nov-03 11:36:00	164.63	1129.73	20.69	70.42	30.14	9.65
14-Nov-03 11:37:00	164.61	1129.79	20.68	70.51	30.14	9.64
14-Nov-03 11:38:00	164.60	1129.85	20.68	70.61	30.14	9.63
14-Nov-03 11:39:00	164.58	1129.91	20.67	70.70	30.14	9.62
14-Nov-03 11:40:00	164.56	1129.97	20.66	70.80	30.14	9.61
14-Nov-03 11:41:00	164.54	1130.03	20.66	70.89	30.14	9.60
14-Nov-03 11:42:00	164.52	1130.09	20.65	70.99	30.14	9.59
14-Nov-03 11:43:00	164.50	1130.15	20.65	71.08	30.13	9.58
14-Nov-03 11:44:00	164.48	1130.21	20.64	71.18	30.13	9.57
14-Nov-03 11:45:00	164.47	1130.27	20.63	71.27	30.13	9.56
14-Nov-03 11:46:00	164.45	1130.34	20.63	71.37	30.13	9.55
14-Nov-03 11:47:00	164.43	1130.42	20.62	71.47	30.13	9.55
14-Nov-03 11:48:00	164.41	1130.50	20.61	71.56	30.13	9.55
14-Nov-03 11:49:00	164.39	1130.57	20.61	71.66	30.13	9.55
14-Nov-03 11:50:00	164.36	1130.65	20.60	71.75	30.13	9.55
14-Nov-03 11:51:00	164.26	1130.73	20.59	71.85	30.13	9.55
14-Nov-03 11:52:00	164.15	1130.80	20.58	71.93	30.13	9.55
14-Nov-03 11:53:00	164.04	1130.88	20.57	71.98	30.13	9.55
14-Nov-03 11:54:00	163.94	1130.96	20.56	72.04	30.13	9.55
14-Nov-03 11:55:00	163.83	1131.03	20.56	72.10	30.13	9.55
14-Nov-03 11:56:00	163.72	1131.11	20.55	72.16	30.13	9.55
14-Nov-03 11:57:00	163.61	1131.18	20.54	72.21	30.13	9.55
14-Nov-03 11:58:00	163.50	1131.26	20.53	72.27	30.13	9.55
14-Nov-03 11:59:00	163.39	1131.34	20.52	72.33	30.13	9.55
14-Nov-03 12:00:00	163.28	1131.41	20.51	72.39	30.13	9.55
14-Nov-03 12:01:00	163.17	1131.49	20.51	72.44	30.13	9.55
14-Nov-03 12:02:00	163.06	1131.57	20.50	72.50	30.13	9.55
14-Nov-03 12:03:00	162.95	1131.64	20.49	72.56	30.13	9.55
14-Nov-03 12:04:00	162.84	1131.72	20.48	72.62	30.13	9.55
14-Nov-03 12:05:00	162.74	1131.80	20.47	72.67	30.13	9.55
14-Nov-03 12:06:00	162.63	1131.87	20.47	72.73	30.13	9.55
14-Nov-03 12:07:00	162.52	1131.95	20.46	72.79	30.13	9.55
14-Nov-03 12:08:00	162.41	1132.01	20.45	72.85	30.13	9.54
14-Nov-03 12:09:00	162.30	1132.03	20.44	72.90	30.13	9.53
14-Nov-03 12:10:00	162.19	1132.03	20.43	72.96	30.12	9.52
14-Nov-03 12:11:00	162.08	1132.04	20.43	73.02	30.12	9.51
14-Nov-03 12:12:00	161.97	1132.05	20.43	73.08	30.12	9.51
14-Nov-03 12:13:00	161.86	1132.05	20.43	73.14	30.12	9.50

14-Nov-03 12:14:00	161.81	1132.06	20.43	73.19	30.12	9.49
14-Nov-03 12:15:00	161.79	1132.06	20.44	73.25	30.12	9.48
14-Nov-03 12:16:00	161.77	1132.07	20.44	73.31	30.12	9.47
14-Nov-03 12:17:00	161.76	1132.07	20.44	73.36	30.12	9.46
14-Nov-03 12:18:00	161.74	1132.08	20.44	73.41	30.12	9.46
14-Nov-03 12:19:00	161.73	1132.09	20.44	73.46	30.12	9.45
14-Nov-03 12:20:00	161.71	1132.09	20.45	73.50	30.12	9.44
14-Nov-03 12:21:00	161.69	1132.10	20.45	73.55	30.12	9.43
14-Nov-03 12:22:00	161.68	1132.10	20.45	73.60	30.12	9.42
14-Nov-03 12:23:00	161.66	1132.11	20.45	73.64	30.12	9.41
14-Nov-03 12:24:00	161.65	1132.12	20.45	73.69	30.12	9.41
14-Nov-03 12:25:00	161.63	1132.12	20.45	73.74	30.12	9.40
14-Nov-03 12:26:00	161.62	1132.13	20.46	73.78	30.12	9.39
14-Nov-03 12:27:00	161.60	1132.13	20.46	73.83	30.12	9.38
14-Nov-03 12:28:00	161.58	1132.14	20.46	73.87	30.12	9.38
14-Nov-03 12:29:00	161.57	1132.14	20.46	73.92	30.12	9.38
14-Nov-03 12:30:00	161.55	1132.15	20.46	73.97	30.12	9.38
14-Nov-03 12:31:00	161.54	1132.16	20.47	74.01	30.12	9.38
14-Nov-03 12:32:00	161.52	1132.16	20.47	74.06	30.12	9.37
14-Nov-03 12:33:00	161.50	1132.17	20.47	74.11	30.12	9.37
14-Nov-03 12:34:00	161.49	1132.22	20.47	74.15	30.11	9.37
14-Nov-03 12:35:00	161.47	1132.30	20.47	74.20	30.11	9.37
14-Nov-03 12:36:00	161.46	1132.39	20.47	74.25	30.11	9.36
14-Nov-03 12:37:00	161.44	1132.48	20.46	74.29	30.11	9.36
14-Nov-03 12:38:00	161.45	1132.57	20.46	74.34	30.11	9.36
14-Nov-03 12:39:00	161.46	1132.66	20.45	74.38	30.11	9.36
14-Nov-03 12:40:00	161.46	1132.74	20.45	74.43	30.11	9.36
14-Nov-03 12:41:00	161.47	1132.83	20.45	74.48	30.11	9.35
14-Nov-03 12:42:00	161.48	1132.92	20.44	74.51	30.11	9.35
14-Nov-03 12:43:00	161.49	1133.01	20.44	74.53	30.11	9.35
14-Nov-03 12:44:00	161.50	1133.10	20.43	74.54	30.11	9.35
14-Nov-03 12:45:00	161.51	1133.18	20.43	74.56	30.11	9.35
14-Nov-03 12:46:00	161.51	1133.27	20.42	74.57	30.11	9.34
14-Nov-03 12:47:00	161.52	1133.36	20.42	74.59	30.11	9.34
14-Nov-03 12:48:00	161.53	1133.45	20.42	74.60	30.11	9.35
14-Nov-03 12:49:00	161.54	1133.54	20.41	74.62	30.11	9.36
14-Nov-03 12:50:00	161.55	1133.63	20.41	74.63	30.10	9.36
14-Nov-03 12:51:00	161.56	1133.71	20.40	74.65	30.10	9.37
14-Nov-03 12:52:00	161.56	1133.80	20.40	74.66	30.10	9.38
14-Nov-03 12:53:00	161.57	1133.89	20.40	74.68	30.10	9.38
14-Nov-03 12:54:00	161.58	1133.98	20.39	74.69	30.10	9.39
14-Nov-03 12:55:00	161.59	1134.07	20.39	74.71	30.10	9.40
14-Nov-03 12:56:00	161.60	1134.15	20.40	74.72	30.10	9.40
14-Nov-03 12:57:00	161.61	1134.24	20.40	74.74	30.10	9.41
14-Nov-03 12:58:00	161.61	1134.33	20.40	74.75	30.10	9.41
14-Nov-03 12:59:00	161.62	1134.36	20.41	74.77	30.10	9.42

NOVEMBER 22, 2003

**Bayside CT2A**  
11/23/03 10:00-  
15:30

	<b>MW</b>	<b>Turbine Exhaust Temp</b>	<b>Fuel Gas Flow</b>	<b>Compressor Inlet Temp</b>	<b>Barametric Pressure</b>	<b>NH3 Injection Rate</b>
	2aDWATT	2aTTXM	2aFQG	2aCTIM	2aAFPAP	2AFGCFI711
22-Nov-03 10:00:00	164.17	1130.61	20.69	69.86	30.11	9.41
22-Nov-03 10:01:00	164.12	1130.62	20.69	69.90	30.11	9.42
22-Nov-03 10:02:00	164.08	1130.63	20.69	69.94	30.11	9.44
22-Nov-03 10:03:00	164.04	1130.64	20.68	69.98	30.11	9.45
22-Nov-03 10:04:00	163.99	1130.65	20.68	70.02	30.11	9.46
22-Nov-03 10:05:00	163.95	1130.66	20.68	70.06	30.11	9.48
22-Nov-03 10:06:00	163.90	1130.67	20.67	70.10	30.11	9.49
22-Nov-03 10:07:00	163.86	1130.68	20.67	70.14	30.11	9.48
22-Nov-03 10:08:00	163.82	1130.69	20.67	70.18	30.11	9.47
22-Nov-03 10:09:00	163.77	1130.70	20.67	70.22	30.11	9.46
22-Nov-03 10:10:00	163.73	1130.71	20.66	70.26	30.11	9.46
22-Nov-03 10:11:00	163.70	1130.72	20.66	70.30	30.11	9.45
22-Nov-03 10:12:00	163.71	1130.73	20.66	70.34	30.11	9.44
22-Nov-03 10:13:00	163.71	1130.74	20.65	70.38	30.11	9.44
22-Nov-03 10:14:00	163.71	1130.75	20.65	70.42	30.10	9.43
22-Nov-03 10:15:00	163.71	1130.76	20.65	70.46	30.10	9.42
22-Nov-03 10:16:00	163.71	1130.77	20.64	70.49	30.10	9.42
22-Nov-03 10:17:00	163.71	1130.80	20.64	70.53	30.10	9.41
22-Nov-03 10:18:00	163.71	1130.87	20.64	70.57	30.10	9.40
22-Nov-03 10:19:00	163.71	1130.94	20.64	70.60	30.10	9.39
22-Nov-03 10:20:00	163.71	1131.01	20.64	70.64	30.10	9.39
22-Nov-03 10:21:00	163.71	1131.08	20.64	70.68	30.10	9.38
22-Nov-03 10:22:00	163.71	1131.15	20.63	70.71	30.10	9.37
22-Nov-03 10:23:00	163.71	1131.22	20.63	70.75	30.10	9.37
22-Nov-03 10:24:00	163.71	1131.29	20.63	70.78	30.10	9.36
22-Nov-03 10:25:00	163.71	1131.36	20.63	70.82	30.10	9.35
22-Nov-03 10:26:00	163.71	1131.43	20.63	70.86	30.10	9.35
22-Nov-03 10:27:00	163.71	1131.51	20.62	70.89	30.10	9.35
22-Nov-03 10:28:00	163.71	1131.58	20.62	70.93	30.10	9.34
22-Nov-03 10:29:00	163.71	1131.65	20.62	70.97	30.10	9.34
22-Nov-03 10:30:00	163.71	1131.72	20.62	71.00	30.10	9.34
22-Nov-03 10:31:00	163.71	1131.79	20.62	71.04	30.10	9.34
22-Nov-03 10:32:00	163.71	1131.86	20.61	71.08	30.10	9.34
22-Nov-03 10:33:00	163.71	1131.93	20.61	71.11	30.10	9.34
22-Nov-03 10:34:00	163.71	1132.00	20.61	71.15	30.10	9.33
22-Nov-03 10:35:00	163.71	1132.07	20.61	71.19	30.10	9.33
22-Nov-03 10:36:00	163.71	1132.14	20.61	71.22	30.10	9.33
22-Nov-03 10:37:00	163.67	1132.21	20.61	71.26	30.10	9.33
22-Nov-03 10:38:00	163.62	1132.28	20.61	71.30	30.10	9.33
22-Nov-03 10:39:00	163.57	1132.35	20.61	71.34	30.10	9.32
22-Nov-03 10:40:00	163.53	1132.42	20.61	71.40	30.10	9.32
22-Nov-03 10:41:00	163.48	1132.49	20.61	71.48	30.10	9.32
22-Nov-03 10:42:00	163.44	1132.54	20.61	71.55	30.10	9.32
22-Nov-03 10:43:00	163.39	1132.55	20.61	71.62	30.10	9.32
22-Nov-03 10:44:00	163.35	1132.57	20.61	71.69	30.10	9.32
22-Nov-03 10:45:00	163.30	1132.58	20.60	71.76	30.10	9.31
22-Nov-03 10:46:00	163.25	1132.59	20.60	71.84	30.10	9.31

22-Nov-03 10:47:00	163.21	1132.61	20.60	71.91	30.10	9.32
22-Nov-03 10:48:00	163.16	1132.62	20.60	71.98	30.10	9.33
22-Nov-03 10:49:00	163.12	1132.63	20.60	72.05	30.10	9.33
22-Nov-03 10:50:00	163.07	1132.65	20.60	72.12	30.10	9.34
22-Nov-03 10:51:00	163.03	1132.66	20.60	72.20	30.10	9.34
22-Nov-03 10:52:00	162.98	1132.67	20.60	72.27	30.10	9.35
22-Nov-03 10:53:00	162.94	1132.69	20.60	72.34	30.10	9.35
22-Nov-03 10:54:00	162.89	1132.70	20.60	72.41	30.10	9.36
22-Nov-03 10:55:00	162.84	1132.71	20.60	72.49	30.10	9.36
22-Nov-03 10:56:00	162.80	1132.72	20.60	72.56	30.10	9.37
22-Nov-03 10:57:00	162.75	1132.74	20.60	72.63	30.10	9.38
22-Nov-03 10:58:00	162.71	1132.75	20.60	72.70	30.10	9.38
22-Nov-03 10:59:00	162.66	1132.76	20.59	72.77	30.10	9.39
22-Nov-03 11:00:00	162.62	1132.78	20.58	72.85	30.10	9.39
22-Nov-03 11:01:00	162.61	1132.79	20.57	72.92	30.10	9.40
22-Nov-03 11:02:00	162.59	1132.80	20.57	72.99	30.10	9.40
22-Nov-03 11:03:00	162.58	1132.82	20.56	73.06	30.10	9.41
22-Nov-03 11:04:00	162.57	1132.83	20.55	73.13	30.10	9.41
22-Nov-03 11:05:00	162.55	1132.82	20.55	73.16	30.10	9.42
22-Nov-03 11:06:00	162.54	1132.82	20.54	73.18	30.10	9.43
22-Nov-03 11:07:00	162.53	1132.82	20.53	73.20	30.10	9.44
22-Nov-03 11:08:00	162.51	1132.81	20.53	73.22	30.10	9.45
22-Nov-03 11:09:00	162.50	1132.81	20.52	73.24	30.10	9.47
22-Nov-03 11:10:00	162.48	1132.80	20.51	73.25	30.10	9.48
22-Nov-03 11:11:00	162.47	1132.80	20.50	73.27	30.10	9.49
22-Nov-03 11:12:00	162.46	1132.79	20.50	73.29	30.10	9.50
22-Nov-03 11:13:00	162.44	1132.79	20.49	73.31	30.10	9.52
22-Nov-03 11:14:00	162.43	1132.79	20.48	73.32	30.10	9.53
22-Nov-03 11:15:00	162.41	1132.78	20.48	73.34	30.10	9.54
22-Nov-03 11:16:00	162.40	1132.78	20.48	73.36	30.09	9.55
22-Nov-03 11:17:00	162.39	1132.77	20.48	73.38	30.09	9.57
22-Nov-03 11:18:00	162.37	1132.77	20.48	73.39	30.09	9.58
22-Nov-03 11:19:00	162.36	1132.76	20.48	73.41	30.09	9.59
22-Nov-03 11:20:00	162.35	1132.76	20.48	73.43	30.09	9.60
22-Nov-03 11:21:00	162.33	1132.76	20.47	73.45	30.09	9.62
22-Nov-03 11:22:00	162.32	1132.80	20.47	73.47	30.09	9.63
22-Nov-03 11:23:00	162.31	1132.85	20.47	73.48	30.09	9.64
22-Nov-03 11:24:00	162.30	1132.90	20.47	73.50	30.09	9.66
22-Nov-03 11:25:00	162.28	1132.95	20.47	73.52	30.09	9.67
22-Nov-03 11:26:00	162.27	1133.00	20.47	73.54	30.09	9.68
22-Nov-03 11:27:00	162.26	1133.05	20.47	73.55	30.09	9.69
22-Nov-03 11:28:00	162.25	1133.10	20.47	73.57	30.09	9.70
22-Nov-03 11:29:00	162.24	1133.15	20.47	73.59	30.09	9.69
22-Nov-03 11:30:00	162.22	1133.20	20.47	73.65	30.09	9.69
22-Nov-03 11:31:00	162.21	1133.26	20.47	73.74	30.09	9.69
22-Nov-03 11:32:00	162.20	1133.31	20.47	73.82	30.09	9.68
22-Nov-03 11:33:00	162.19	1133.36	20.47	73.91	30.09	9.68
22-Nov-03 11:34:00	162.17	1133.41	20.47	74.00	30.09	9.67
22-Nov-03 11:35:00	162.16	1133.46	20.47	74.08	30.09	9.67
22-Nov-03 11:36:00	162.15	1133.51	20.46	74.17	30.09	9.66
22-Nov-03 11:37:00	162.14	1133.56	20.46	74.25	30.09	9.66
22-Nov-03 11:38:00	162.13	1133.61	20.46	74.34	30.09	9.65

22-Nov-03 11:39:00	162.11	1133.66	20.45	74.43	30.09	9.65
22-Nov-03 11:40:00	162.10	1133.72	20.45	74.51	30.09	9.64
22-Nov-03 11:41:00	162.06	1133.77	20.45	74.60	30.09	9.64
22-Nov-03 11:42:00	162.03	1133.82	20.45	74.69	30.09	9.64
22-Nov-03 11:43:00	161.99	1133.87	20.44	74.77	30.09	9.63
22-Nov-03 11:44:00	161.96	1133.92	20.44	74.86	30.09	9.63
22-Nov-03 11:45:00	161.92	1133.94	20.44	74.94	30.08	9.62
22-Nov-03 11:46:00	161.89	1133.96	20.43	75.03	30.08	9.62
22-Nov-03 11:47:00	161.85	1133.97	20.43	75.12	30.08	9.61
22-Nov-03 11:48:00	161.82	1133.99	20.43	75.20	30.08	9.61
22-Nov-03 11:49:00	161.78	1134.01	20.42	75.29	30.08	9.61
22-Nov-03 11:50:00	161.75	1134.02	20.42	75.37	30.08	9.61
22-Nov-03 11:51:00	161.71	1134.04	20.42	75.46	30.08	9.61
22-Nov-03 11:52:00	161.68	1134.06	20.42	75.55	30.08	9.61
22-Nov-03 11:53:00	161.64	1134.07	20.41	75.63	30.08	9.61
22-Nov-03 11:54:00	161.61	1134.09	20.41	75.72	30.08	9.61
22-Nov-03 11:55:00	161.57	1134.10	20.41	75.77	30.08	9.61
22-Nov-03 11:56:00	161.54	1134.12	20.40	75.80	30.08	9.61
22-Nov-03 11:57:00	161.50	1134.14	20.40	75.83	30.08	9.61
22-Nov-03 11:58:00	161.47	1134.15	20.40	75.86	30.08	9.62
22-Nov-03 11:59:00	161.43	1134.17	20.40	75.89	30.08	9.62
22-Nov-03 12:00:00	161.41	1134.19	20.39	75.92	30.08	9.62
22-Nov-03 12:01:00	161.38	1134.20	20.39	75.95	30.07	9.62
22-Nov-03 12:02:00	161.35	1134.22	20.39	75.98	30.07	9.62
22-Nov-03 12:03:00	161.32	1134.24	20.38	76.01	30.07	9.62
22-Nov-03 12:04:00	161.29	1134.25	20.38	76.04	30.07	9.62
22-Nov-03 12:05:00	161.26	1134.27	20.38	76.07	30.07	9.62
22-Nov-03 12:06:00	161.23	1134.28	20.37	76.10	30.07	9.62
22-Nov-03 12:07:00	161.20	1134.30	20.37	76.13	30.07	9.63
22-Nov-03 12:08:00	161.17	1134.32	20.37	76.16	30.07	9.63
22-Nov-03 12:09:00	161.14	1134.34	20.36	76.19	30.07	9.63
22-Nov-03 12:10:00	161.12	1134.37	20.36	76.22	30.07	9.63
22-Nov-03 12:11:00	161.09	1134.39	20.36	76.25	30.07	9.62
22-Nov-03 12:12:00	161.06	1134.41	20.35	76.28	30.07	9.62
22-Nov-03 12:13:00	161.03	1134.43	20.35	76.31	30.07	9.62
22-Nov-03 12:14:00	161.00	1134.45	20.35	76.34	30.07	9.62
22-Nov-03 12:15:00	160.97	1134.47	20.35	76.37	30.07	9.62
22-Nov-03 12:16:00	160.94	1134.49	20.34	76.40	30.07	9.62
22-Nov-03 12:17:00	160.91	1134.51	20.34	76.43	30.06	9.62
22-Nov-03 12:18:00	160.88	1134.53	20.34	76.46	30.06	9.61
22-Nov-03 12:19:00	160.87	1134.55	20.33	76.49	30.06	9.61
22-Nov-03 12:20:00	160.89	1134.57	20.34	76.51	30.06	9.61
22-Nov-03 12:21:00	160.91	1134.60	20.34	76.52	30.06	9.61
22-Nov-03 12:22:00	160.94	1134.62	20.34	76.53	30.06	9.61
22-Nov-03 12:23:00	160.96	1134.64	20.35	76.53	30.06	9.61
22-Nov-03 12:24:00	160.99	1134.66	20.35	76.54	30.06	9.61
22-Nov-03 12:25:00	161.01	1134.68	20.35	76.55	30.06	9.60
22-Nov-03 12:26:00	161.04	1134.70	20.36	76.55	30.06	9.60
22-Nov-03 12:27:00	161.06	1134.72	20.36	76.56	30.06	9.60
22-Nov-03 12:28:00	161.09	1134.74	20.36	76.56	30.06	9.60
22-Nov-03 12:29:00	161.12	1134.76	20.37	76.57	30.06	9.60
22-Nov-03 12:30:00	161.14	1134.78	20.37	76.58	30.06	9.60

22-Nov-03 12:31:00	161.17	1134.81	20.37	76.58	30.06	9.59
22-Nov-03 12:32:00	161.19	1134.90	20.38	76.59	30.06	9.59
22-Nov-03 12:33:00	161.22	1135.00	20.38	76.59	30.06	9.59
22-Nov-03 12:34:00	161.24	1135.11	20.38	76.60	30.06	9.59
22-Nov-03 12:35:00	161.27	1135.21	20.39	76.61	30.05	9.58
22-Nov-03 12:36:00	161.29	1135.31	20.39	76.61	30.05	9.58
22-Nov-03 12:37:00	161.32	1135.42	20.39	76.62	30.05	9.58
22-Nov-03 12:38:00	161.34	1135.52	20.40	76.63	30.05	9.58
22-Nov-03 12:39:00	161.37	1135.62	20.40	76.63	30.05	9.57
22-Nov-03 12:40:00	161.39	1135.73	20.40	76.64	30.05	9.57
22-Nov-03 12:41:00	161.42	1135.83	20.41	76.64	30.05	9.57
22-Nov-03 12:42:00	161.42	1135.94	20.41	76.65	30.05	9.57
22-Nov-03 12:43:00	161.37	1136.04	20.41	76.66	30.05	9.56
22-Nov-03 12:44:00	161.32	1136.14	20.42	76.66	30.05	9.56
22-Nov-03 12:45:00	161.27	1136.25	20.41	76.67	30.05	9.56
22-Nov-03 12:46:00	161.21	1136.35	20.40	76.71	30.05	9.56
22-Nov-03 12:47:00	161.16	1136.45	20.39	76.77	30.05	9.55
22-Nov-03 12:48:00	161.10	1136.56	20.39	76.83	30.05	9.55
22-Nov-03 12:49:00	161.05	1136.66	20.38	76.89	30.05	9.55
22-Nov-03 12:50:00	161.00	1136.76	20.37	76.95	30.05	9.55
22-Nov-03 12:51:00	160.94	1136.87	20.36	77.01	30.05	9.55
22-Nov-03 12:52:00	160.89	1136.97	20.36	77.06	30.05	9.55
22-Nov-03 12:53:00	160.83	1137.07	20.35	77.12	30.05	9.55
22-Nov-03 12:54:00	160.78	1137.18	20.34	77.18	30.04	9.56
22-Nov-03 12:55:00	160.73	1137.28	20.33	77.24	30.04	9.56
22-Nov-03 12:56:00	160.67	1137.35	20.33	77.30	30.04	9.56
22-Nov-03 12:57:00	160.62	1137.31	20.32	77.36	30.04	9.57
22-Nov-03 12:58:00	160.56	1137.26	20.31	77.42	30.04	9.57
22-Nov-03 12:59:00	160.51	1137.21	20.30	77.48	30.04	9.57
22-Nov-03 13:00:00	160.46	1137.16	20.30	77.54	30.04	9.57
22-Nov-03 13:01:00	160.40	1137.11	20.29	77.60	30.04	9.58
22-Nov-03 13:02:00	160.35	1137.06	20.28	77.66	30.04	9.58
22-Nov-03 13:03:00	160.29	1137.01	20.28	77.72	30.04	9.58
22-Nov-03 13:04:00	160.23	1136.96	20.28	77.78	30.04	9.59
22-Nov-03 13:05:00	160.18	1136.91	20.28	77.84	30.04	9.59
22-Nov-03 13:06:00	160.12	1136.86	20.28	77.90	30.04	9.59
22-Nov-03 13:07:00	160.06	1136.81	20.28	77.95	30.04	9.59
22-Nov-03 13:08:00	160.01	1136.76	20.28	78.01	30.04	9.60
22-Nov-03 13:09:00	159.95	1136.71	20.28	78.07	30.04	9.60
22-Nov-03 13:10:00	159.89	1136.66	20.28	78.13	30.04	9.60
22-Nov-03 13:11:00	159.84	1136.61	20.28	78.18	30.04	9.60
22-Nov-03 13:12:00	159.78	1136.56	20.28	78.21	30.04	9.60
22-Nov-03 13:13:00	159.72	1136.51	20.28	78.25	30.04	9.60
22-Nov-03 13:14:00	159.66	1136.46	20.28	78.28	30.04	9.60
22-Nov-03 13:15:00	159.61	1136.41	20.28	78.31	30.04	9.60
22-Nov-03 13:16:00	159.55	1136.36	20.28	78.34	30.04	9.60
22-Nov-03 13:17:00	159.49	1136.31	20.28	78.37	30.04	9.60
22-Nov-03 13:18:00	159.44	1136.26	20.28	78.40	30.03	9.60
22-Nov-03 13:19:00	159.38	1136.21	20.28	78.43	30.03	9.59
22-Nov-03 13:20:00	159.32	1136.16	20.28	78.46	30.03	9.59
22-Nov-03 13:21:00	159.27	1136.15	20.28	78.49	30.03	9.59
22-Nov-03 13:22:00	159.21	1136.24	20.28	78.52	30.03	9.59

22-Nov-03 13:23:00	159.15	1136.34	20.28	78.55	30.03	9.59
22-Nov-03 13:24:00	159.10	1136.43	20.28	78.58	30.03	9.59
22-Nov-03 13:25:00	159.09	1136.52	20.28	78.62	30.03	9.59
22-Nov-03 13:26:00	159.09	1136.62	20.28	78.65	30.03	9.58
22-Nov-03 13:27:00	159.09	1136.71	20.27	78.68	30.03	9.58
22-Nov-03 13:28:00	159.09	1136.80	20.26	78.71	30.03	9.58
22-Nov-03 13:29:00	159.09	1136.90	20.26	78.74	30.03	9.58
22-Nov-03 13:30:00	159.08	1136.99	20.25	78.77	30.03	9.58
22-Nov-03 13:31:00	159.08	1137.08	20.24	78.80	30.03	9.58
22-Nov-03 13:32:00	159.08	1137.18	20.23	78.83	30.03	9.58
22-Nov-03 13:33:00	159.08	1137.27	20.22	78.86	30.03	9.58
22-Nov-03 13:34:00	159.08	1137.36	20.21	78.89	30.03	9.58
22-Nov-03 13:35:00	159.08	1137.46	20.21	78.92	30.03	9.58
22-Nov-03 13:36:00	159.08	1137.55	20.20	78.95	30.03	9.59
22-Nov-03 13:37:00	159.08	1137.64	20.19	78.93	30.03	9.59
22-Nov-03 13:38:00	159.07	1137.74	20.18	78.90	30.03	9.59
22-Nov-03 13:39:00	159.07	1137.83	20.17	78.86	30.03	9.59
22-Nov-03 13:40:00	159.07	1137.92	20.16	78.83	30.03	9.60
22-Nov-03 13:41:00	159.07	1137.94	20.16	78.79	30.03	9.60
22-Nov-03 13:42:00	159.07	1137.92	20.15	78.76	30.03	9.60
22-Nov-03 13:43:00	159.07	1137.90	20.14	78.72	30.03	9.60
22-Nov-03 13:44:00	159.06	1137.88	20.13	78.69	30.03	9.60
22-Nov-03 13:45:00	159.05	1137.86	20.12	78.66	30.03	9.61
22-Nov-03 13:46:00	159.03	1137.84	20.12	78.62	30.03	9.61
22-Nov-03 13:47:00	159.01	1137.82	20.13	78.59	30.03	9.61
22-Nov-03 13:48:00	158.99	1137.80	20.13	78.55	30.02	9.61
22-Nov-03 13:49:00	158.97	1137.78	20.14	78.52	30.02	9.62
22-Nov-03 13:50:00	158.95	1137.76	20.14	78.48	30.02	9.62
22-Nov-03 13:51:00	158.93	1137.74	20.14	78.45	30.02	9.62
22-Nov-03 13:52:00	158.91	1137.72	20.15	78.41	30.02	9.62
22-Nov-03 13:53:00	158.89	1137.70	20.15	78.38	30.02	9.62
22-Nov-03 13:54:00	158.87	1137.68	20.16	78.34	30.02	9.61
22-Nov-03 13:55:00	158.86	1137.66	20.16	78.31	30.02	9.61
22-Nov-03 13:56:00	158.84	1137.64	20.16	78.27	30.02	9.61
22-Nov-03 13:57:00	158.82	1137.62	20.17	78.24	30.02	9.61
22-Nov-03 13:58:00	158.80	1137.60	20.17	78.20	30.02	9.61
22-Nov-03 13:59:00	158.78	1137.58	20.17	78.17	30.02	9.60
22-Nov-03 14:00:00	158.76	1137.56	20.18	78.13	30.02	9.60
22-Nov-03 14:01:00	158.74	1137.54	20.18	78.10	30.02	9.60
22-Nov-03 14:02:00	158.72	1137.52	20.19	78.09	30.02	9.60
22-Nov-03 14:03:00	158.70	1137.50	20.19	78.11	30.02	9.60
22-Nov-03 14:04:00	158.68	1137.48	20.19	78.14	30.02	9.59
22-Nov-03 14:05:00	158.66	1137.46	20.20	78.16	30.02	9.59
22-Nov-03 14:06:00	158.64	1137.43	20.20	78.19	30.02	9.59
22-Nov-03 14:07:00	158.62	1137.39	20.20	78.21	30.02	9.59
22-Nov-03 14:08:00	158.61	1137.35	20.19	78.24	30.02	9.58
22-Nov-03 14:09:00	158.61	1137.31	20.19	78.26	30.02	9.58
22-Nov-03 14:10:00	158.63	1137.27	20.19	78.29	30.02	9.58
22-Nov-03 14:11:00	158.65	1137.23	20.19	78.31	30.02	9.58
22-Nov-03 14:12:00	158.67	1137.19	20.19	78.34	30.02	9.58
22-Nov-03 14:13:00	158.68	1137.15	20.19	78.36	30.02	9.57
22-Nov-03 14:14:00	158.70	1137.10	20.19	78.39	30.02	9.57



22-Nov-03 14:15:00	158.72	1137.06	20.19	78.41	30.02	9.57
22-Nov-03 14:16:00	158.73	1137.02	20.19	78.44	30.02	9.57
22-Nov-03 14:17:00	158.75	1136.98	20.19	78.46	30.02	9.57
22-Nov-03 14:18:00	158.77	1136.94	20.19	78.49	30.02	9.57
22-Nov-03 14:19:00	158.79	1136.90	20.19	78.51	30.02	9.56
22-Nov-03 14:20:00	158.80	1136.86	20.18	78.53	30.02	9.56
22-Nov-03 14:21:00	158.82	1136.82	20.18	78.56	30.02	9.56
22-Nov-03 14:22:00	158.84	1136.78	20.18	78.58	30.02	9.56
22-Nov-03 14:23:00	158.85	1136.73	20.18	78.61	30.02	9.56
22-Nov-03 14:24:00	158.87	1136.69	20.18	78.63	30.02	9.55
22-Nov-03 14:25:00	158.89	1136.65	20.18	78.66	30.02	9.55
22-Nov-03 14:26:00	158.91	1136.61	20.18	78.68	30.02	9.55
22-Nov-03 14:27:00	158.92	1136.57	20.18	78.70	30.02	9.55
22-Nov-03 14:28:00	158.94	1136.53	20.18	78.65	30.02	9.55
22-Nov-03 14:29:00	158.96	1136.50	20.18	78.60	30.02	9.55
22-Nov-03 14:30:00	158.97	1136.50	20.19	78.54	30.02	9.54
22-Nov-03 14:31:00	158.99	1136.51	20.19	78.48	30.02	9.54
22-Nov-03 14:32:00	159.01	1136.51	20.19	78.42	30.02	9.54
22-Nov-03 14:33:00	159.04	1136.52	20.19	78.36	30.02	9.54
22-Nov-03 14:34:00	159.07	1136.53	20.19	78.31	30.02	9.54
22-Nov-03 14:35:00	159.10	1136.54	20.19	78.25	30.02	9.54
22-Nov-03 14:36:00	159.12	1136.54	20.19	78.19	30.02	9.54
22-Nov-03 14:37:00	159.15	1136.55	20.20	78.13	30.02	9.55
22-Nov-03 14:38:00	159.18	1136.56	20.20	78.07	30.02	9.55
22-Nov-03 14:39:00	159.21	1136.57	20.20	78.02	30.02	9.55
22-Nov-03 14:40:00	159.24	1136.58	20.20	77.96	30.02	9.55
22-Nov-03 14:41:00	159.27	1136.58	20.20	77.90	30.02	9.55
22-Nov-03 14:42:00	159.29	1136.59	20.20	77.84	30.02	9.55
22-Nov-03 14:43:00	159.32	1136.60	20.20	77.78	30.02	9.55
22-Nov-03 14:44:00	159.35	1136.61	20.20	77.73	30.02	9.56
22-Nov-03 14:45:00	159.38	1136.61	20.21	77.67	30.02	9.56
22-Nov-03 14:46:00	159.41	1136.62	20.20	77.61	30.02	9.56
22-Nov-03 14:47:00	159.43	1136.63	20.20	77.55	30.02	9.56
22-Nov-03 14:48:00	159.46	1136.64	20.20	77.49	30.01	9.56
22-Nov-03 14:49:00	159.49	1136.67	20.19	77.44	30.01	9.56
22-Nov-03 14:50:00	159.52	1136.70	20.19	77.38	30.01	9.56
22-Nov-03 14:51:00	159.55	1136.74	20.19	77.32	30.01	9.57
22-Nov-03 14:52:00	159.55	1136.77	20.18	77.26	30.01	9.57
22-Nov-03 14:53:00	159.50	1136.81	20.18	77.26	30.01	9.57
22-Nov-03 14:54:00	159.45	1136.85	20.18	77.33	30.01	9.57
22-Nov-03 14:55:00	159.40	1136.88	20.17	77.39	30.01	9.57
22-Nov-03 14:56:00	159.35	1136.92	20.17	77.45	30.01	9.57
22-Nov-03 14:57:00	159.30	1136.96	20.17	77.52	30.01	9.56
22-Nov-03 14:58:00	159.25	1136.99	20.16	77.58	30.01	9.56
22-Nov-03 14:59:00	159.19	1137.03	20.16	77.65	30.01	9.56
22-Nov-03 15:00:00	159.14	1137.07	20.16	77.71	30.01	9.56
22-Nov-03 15:01:00	159.09	1137.10	20.15	77.78	30.01	9.56
22-Nov-03 15:02:00	159.04	1137.14	20.15	77.84	30.01	9.56
22-Nov-03 15:03:00	158.99	1137.17	20.15	77.90	30.01	9.56
22-Nov-03 15:04:00	158.94	1137.21	20.14	77.97	30.01	9.56
22-Nov-03 15:05:00	158.89	1137.19	20.14	78.03	30.01	9.56
22-Nov-03 15:06:00	158.84	1137.14	20.14	78.10	30.01	9.55

22-Nov-03 15:07:00	158.79	1137.09	20.15	78.16	30.01	9.55
22-Nov-03 15:08:00	158.74	1137.04	20.15	78.23	30.01	9.55
22-Nov-03 15:09:00	158.69	1136.99	20.15	78.29	30.01	9.55
22-Nov-03 15:10:00	158.64	1136.95	20.15	78.35	30.01	9.55
22-Nov-03 15:11:00	158.65	1136.90	20.15	78.42	30.01	9.55
22-Nov-03 15:12:00	158.67	1136.85	20.16	78.48	30.01	9.55
22-Nov-03 15:13:00	158.70	1136.80	20.16	78.55	30.01	9.55
22-Nov-03 15:14:00	158.72	1136.75	20.16	78.61	30.01	9.55
22-Nov-03 15:15:00	158.75	1136.70	20.16	78.67	30.01	9.56
22-Nov-03 15:16:00	158.77	1136.65	20.17	78.74	30.01	9.56
22-Nov-03 15:17:00	158.80	1136.60	20.17	78.80	30.01	9.57
22-Nov-03 15:18:00	158.82	1136.55	20.17	78.85	30.01	9.57
22-Nov-03 15:19:00	158.85	1136.50	20.17	78.87	30.01	9.58
22-Nov-03 15:20:00	158.87	1136.45	20.17	78.89	30.01	9.58
22-Nov-03 15:21:00	158.90	1136.40	20.18	78.91	30.01	9.59
22-Nov-03 15:22:00	158.92	1136.36	20.18	78.93	30.01	9.59
22-Nov-03 15:23:00	158.95	1136.31	20.18	78.95	30.01	9.60
22-Nov-03 15:24:00	158.97	1136.26	20.18	78.97	30.01	9.60
22-Nov-03 15:25:00	159.00	1136.21	20.18	78.99	30.01	9.61
22-Nov-03 15:26:00	159.03	1136.16	20.19	79.01	30.01	9.61
22-Nov-03 15:27:00	159.05	1136.11	20.19	79.03	30.01	9.62
22-Nov-03 15:28:00	159.08	1136.06	20.19	79.05	30.01	9.62
22-Nov-03 15:29:00	159.10	1136.01	20.19	79.07	30.01	9.63

FUEL ANALYSIS

NOVEMBER 14, 2003



### Natural Gas and Heating Value Calculations

Customer: Tampa Electric Company

Sample ID: FGT - 8030

Facility: Bayside Power Station

Analysis Date:

11/14/2003

Source: CT-2A

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

Component	% Volume	Molecular Wt.	Density* (lb/ft <sup>3</sup> )	% volume		Component Gross Btu/lb	Weight Fract. Btu	Gross* Heating Value (Btu/SCF)	Volume Fract. Btu
				x Density	weight %				
Hydrogen		2.016	0.0053	0.00000	0.0000	61100	0.00	325.0	0
Oxygen		32.000	0.0846	0.00000	0.0000	0	0.00	0.0	0
Nitrogen	0.2890	28.016	0.0744	0.00022	0.4809	0	0.00	0.0	0
CO <sub>2</sub>	0.8840	44.010	0.1170	0.00103	2.3134	0	0.00	0.0	0
CO		28.010	0.0740	0.00000	0.0000	4347	0.00	322.0	0
Methane	95.959	16.041	0.0424	0.04069	91.0040	23879	21730.86	1013.0	972.0647
Ethane	2.153	30.067	0.0803	0.00173	3.8670	22320	863.10	1792.0	38.58176
Ethylene		28.051	0.0746	0.00000	0.0000	21644	0.00	1614.0	0
Propane	0.401	44.092	0.1196	0.00048	1.0727	21661	232.36	2590.0	10.3859
propylene		42.077	0.1110	0.00000	0.0000	21041	0.00	2336.0	0
Isobutane	0.106	58.118	0.1582	0.00017	0.3751	21257	79.73	3363.0	3.56478
n-butane	0.085	58.118	0.1582	0.00013	0.3008	21308	64.09	3370.0	2.8645
Isobutene		56.102	0.1480	0.00000	0.0000	20730	0.00	3068.0	0
Isopentane	0.037	72.144	0.1904	0.00007	0.1576	21052	33.17	4008.0	1.48296
n-pentane	0.023	72.144	0.1904	0.00004	0.0979	21091	20.66	4016.0	0.92368
n-hexane	0.065	86.169	0.2274	0.00015	0.3306	20940	69.23	4762.0	3.0953
H <sub>2</sub> S		34.076	0.0911	0.00000	0.0000	7100	0.00	647.0	0

Total: 100.00

Average Density	0.04471	100.0000
Specific Gravity	0.58443	

Gross Heating Value			
Btu/lb	23093	Btu/SCF	1032.96
Net Heating Values			
Btu/lb	20889	Btu/SCF	934

\* Density (lb/ft<sup>3</sup>) and Gross Heating Value (Btu/scf) data from Perry's Chemical Engineering Handbook.

Net Heating Value (Lower Heating Value), Btu/lb, calculated as Gross Heating Value (Higher Heating Value) - 10.30 (%H<sub>2</sub> x 8.94)



**Natural Gas and Heating Value Calculations**

Customer: Tampa Electric Company  
 Facility: Bayside Power Station  
 Source: CT-2A

Sample ID: FGT - 8030  
 Analysis Date: 11/14/2003

**CALCULATION OF F FACTORS**

Component	Mol. Wt.	C Factor	H Factor	% volume	Fract. Wt.	Weight Percents			
						Carbon	Hydrogen	Nitrogen	Oxygen
Hydrogen	2.016	0	1	0.000	0.0000	0			
Oxygen	32.000	0	0	0.000	0.0000	0			
Nitrogen	28.016	0	0	0.289	8.0966	0.479168123			
CO2	44.010	0.272273	0	0.884	38.9048	0.62689118	1.673871		
CO	28.010	0.42587	0	0.000	0.0000	0	0		
Methane	16.041	0.75	0.25	95.959	1539.2783	68.3222819	22.774094		
Ethane	30.067	0.8	0.2	2.153	64.7343	3.0648418	0.7662104		
Ethylene	28.051	0.85714	0.14286	0.000	0.0000	0	0		
Propane	44.092	0.81818	0.181818	0.401	17.6809	0.8561246	0.1902501		
Propene	42.077	0.85714	0.14286	0.000	0.0000	0	0		
Isobutane	58.118	0.82759	0.17247	0.106	6.1605	0.30172807	0.0628802		
n-butane	58.118	0.82759	0.17247	0.085	4.9400	0.24195175	0.0504228		
Isobutene	56.102	0.85714	0.14286	0.000	0.0000	0	0		
Isopentane	72.144	0.83333	0.16667	0.037	2.6693	0.13164456	0.0263295		
n-pentane	72.144	0.83333	0.16667	0.023	1.6593	0.0818331	0.016367		
n-hexane	86.169	0.83721	0.16279	0.065	5.6010	0.27751264	0.0539605		
H2S	34.076	0	0.0586923	0.000	0.0000	0	0		
Totals				100.00200	1689.7251	73.9048096	23.94	0.479168123	1.673871

<b>CALCULATED VALUES</b>		
<b>O2 F Factor (dry), Fd</b>	<b>8640</b>	DSCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
<b>O2 F Factor (wet), Fw</b>	<b>10640</b>	SCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
<b>Moisture F Factor</b>	<b>2001</b>	SCF of Water/MM Btu of Fuel Burned @ 0% excess air
<b>Combust. Moisture</b>	<b>18.80</b>	volume % water in flue gas @ 0% excess air
<b>CO2 F Factor, Fc</b>	<b>1027</b>	DSCF of CO2/MM Btu of Fuel Burned @ 0% excess air
<b>Carbon Dioxide</b>	<b>11.89</b>	volume % CO2 in flue gas @ 0% O2
<b>Predicted Fo Factor</b>	<b>1.76</b>	EPA Method 3a Fo value

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Date	BTU	CO2	N2	Grav	Methan	Ethane	Propan	Ibutan	Nbutan	Ipenta	Npenta	C6
12/16/2003	1041	0.892	0.295	0.59	95.344	2.45	0.626	0.135	0.13	0.043	0.027	0.058
12/15/2003	1043	0.941	0.336	0.592	94.99	2.639	0.667	0.149	0.136	0.048	0.029	0.066
12/14/2003	1042	0.934	0.328	0.591	95.126	2.583	0.617	0.142	0.127	0.047	0.029	0.069
12/13/2003	1042	0.91	0.311	0.59	95.22	2.535	0.616	0.141	0.128	0.046	0.028	0.065
12/12/2003	1043	0.897	0.299	0.591	95.148	2.599	0.642	0.142	0.133	0.046	0.03	0.065
12/11/2003	1043	0.933	0.324	0.592	95.009	2.656	0.653	0.144	0.135	0.048	0.03	0.068
12/10/2003	1043	0.946	0.293	0.591	95.118	2.585	0.638	0.139	0.134	0.047	0.031	0.07
12/09/2003	1043	0.955	0.304	0.592	94.996	2.677	0.645	0.142	0.133	0.048	0.03	0.069
12/08/2003	1043	0.924	0.315	0.592	95.024	2.688	0.64	0.139	0.13	0.045	0.029	0.064
12/07/2003	1042	0.91	0.318	0.591	95.111	2.67	0.597	0.134	0.122	0.044	0.028	0.066
12/06/2003	1035	0.925	1.145	0.595	94.157	2.782	0.595	0.141	0.119	0.044	0.026	0.066
12/05/2003	1040	0.905	0.353	0.59	95.254	2.574	0.534	0.132	0.113	0.043	0.026	0.065
12/04/2003	1035	0.911	0.348	0.586	95.568	2.436	0.44	0.105	0.087	0.034	0.02	0.052
12/03/2003	1034	0.872	0.342	0.585	95.803	2.261	0.414	0.101	0.091	0.035	0.023	0.056
12/02/2003	1033	0.803	0.354	0.584	95.964	2.199	0.396	0.094	0.086	0.032	0.021	0.051
11/29/2003	1032	0.811	0.323	0.583	96.082	2.17	0.353	0.087	0.075	0.03	0.019	0.05
11/28/2003	1033	0.781	0.304	0.582	96.175	2.106	0.358	0.09	0.077	0.032	0.02	0.055
11/27/2003	1033	0.81	0.32	0.583	96.089	2.112	0.378	0.097	0.082	0.034	0.021	0.057
11/26/2003	1033	0.803	0.297	0.583	96.154	2.086	0.37	0.097	0.081	0.034	0.021	0.058
11/25/2003	1032	0.832	0.297	0.583	96.191	2.036	0.363	0.098	0.078	0.032	0.019	0.053
11/24/2003	1032	0.792	0.324	0.582	96.245	1.978	0.37	0.097	0.081	0.034	0.021	0.058
11/23/2003	1032	0.866	0.32	0.584	96.011	2.145	0.37	0.095	0.081	0.034	0.021	0.057
11/22/2003	1033	0.871	0.319	0.584	95.923	2.251	0.373	0.09	0.076	0.031	0.019	0.049
11/21/2003	1031	0.848	0.315	0.583	96.087	2.138	0.358	0.087	0.073	0.03	0.018	0.047
11/20/2003	1033	0.846	0.303	0.584	95.99	2.199	0.386	0.093	0.081	0.032	0.02	0.05
11/19/2003	1034	0.823	0.301	0.584	95.977	2.217	0.404	0.096	0.083	0.031	0.019	0.049
11/18/2003	1033	0.819	0.305	0.583	96.011	2.204	0.39	0.093	0.077	0.031	0.019	0.051
11/17/2003	1031	0.798	0.316	0.582	96.156	2.142	0.352	0.083	0.069	0.027	0.016	0.041
11/16/2003	1031	0.829	0.304	0.582	96.145	2.132	0.347	0.085	0.07	0.028	0.016	0.044
11/15/2003	1031	0.873	0.294	0.583	96.184	2.034	0.351	0.09	0.072	0.031	0.018	0.053
11/14/2003	1034	0.884	0.289	0.585	95.959	2.153	0.401	0.106	0.085	0.037	0.023	0.065
11/13/2003	1034	0.908	0.295	0.585	95.897	2.177	0.406	0.105	0.089	0.037	0.023	0.064
11/12/2003	1033	0.868	0.305	0.584	96.046	2.08	0.392	0.099	0.089	0.036	0.023	0.063
11/11/2003	1033	0.89	0.294	0.584	96.002	2.098	0.402	0.101	0.091	0.036	0.023	0.064
11/10/2003	1033	0.849	0.291	0.584	96.087	2.07	0.394	0.098	0.09	0.036	0.023	0.062

NOVEMBER 22, 2003





**Natural Gas and Heating Value Calculations**  
**Customer: Tampa Electric Company**  
**Facility: Bayside Power Station**  
**Source: CT-2A**

**Sample ID: FGT - Perry #1**  
**Analysis Date: 11/22/2003**

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

Component	% Volume	Molecular Wt.	Density * (lb/ft <sup>3</sup> )	% volume		Component		Gross * Heating Value (Btu/SCF)	Volume Fract. Btu
				x Density	weight %	Gross Btu/lb	Weight Fract. Btu		
Hydrogen		2.016	0.0053	0.00000	0.0000	61100	0.00	325.0	0
Oxygen		32.000	0.0846	0.00000	0.0000	0	0.00	0.0	0
Nitrogen	0.3190	28.016	0.0744	0.00024	0.5315	0	0.00	0.0	0
CO2	0.8710	44.010	0.1170	0.00102	2.2823	0	0.00	0.0	0
CO		28.010	0.0740	0.00000	0.0000	4347	0.00	322.0	0
Methane	95.923	16.041	0.0424	0.04067	91.0879	23879	21750.88	1013.0	971.7
Ethane	2.251	30.067	0.0803	0.00181	4.0482	22320	903.56	1792.0	40.33792
Ethylene		28.051	0.0746	0.00000	0.0000	21644	0.00	1614.0	0
Propane	0.373	44.092	0.1196	0.00045	0.9991	21661	216.42	2590.0	9.6607
propylene		42.077	0.1110	0.00000	0.0000	21041	0.00	2336.0	0
Isobutane	0.090	58.118	0.1582	0.00014	0.3189	21257	67.78	3363.0	3.0267
n-butane	0.076	58.118	0.1582	0.00012	0.2693	21308	57.38	3370.0	2.5612
Isobutene		56.102	0.1480	0.00000	0.0000	20730	0.00	3068.0	0
Isopentane	0.031	72.144	0.1904	0.00006	0.1322	21052	27.83	4008.0	1.24248
n-pentane	0.019	72.144	0.1904	0.00004	0.0810	21091	17.09	4016.0	0.76304
n-hexane	0.049	86.169	0.2274	0.00011	0.2496	20940	52.26	4762.0	2.33338
H2S		34.076	0.0911	0.00000	0.0000	7100	0.00	647.0	0

Total: 100.00	Average Density	0.04465	100.0000
	Specific Gravity	0.58367	

Gross Heating Value			
Btu/lb	23093	Btu/SCF	1031.63
Net Heating Values			
Btu/lb	20888	Btu/SCF	933

\* Density (lb/ft<sup>3</sup>) and Gross Heating Value (Btu/scf) data from Perry's Chemical Engineering Handbook.

Net Heating Value (Lower Heating Value), Btu/lb, calculated as Gross Heating Value (Higher Heating Value) - 10.30 (%H<sub>2</sub> x 8.94), from Steam, §9-9, Principles of Combustion, equation 9. Heat from water vaporization is assumed to be un-available.



### Natural Gas and Heating Value Calculations

Customer: Tampa Electric Company  
 Facility: Bayside Power Station  
 Source: CT-2A

Sample ID: FGT - Perry #1  
 Analysis Date: 11/22/2003

#### CALCULATION OF F FACTORS

Component	Mol. Wt.	C Factor	H Factor	% volume	Fract. Wt.	Weight Percents			
						Carbon	Hydrogen	Nitrogen	Oxygen
Hydrogen	2.016	0	1	0.000	0.0000		0		
Oxygen	32.000	0	0	0.000	0.0000				0
Nitrogen	28.016	0	0	0.319	8.9371			0.52958267	
CO2	44.010	0.272273	0	0.871	38.3327	0.6184592			1.6513567
CO	28.010	0.42587	0	0.000	0.0000	0			0
Methane	16.041	0.75	0.25	95.923	1538.7008	68.3836706	22.794557		
Ethane	30.067	0.8	0.2	2.251	67.6808	3.20842974	0.8021074		
Ethylene	28.051	0.85714	0.14286	0.000	0.0000	0	0		
Propane	44.092	0.81818	0.181818	0.373	16.4463	0.79736	0.1771913		
Propene	42.077	0.85714	0.14286	0.000	0.0000	0	0		
Isobutane	58.118	0.82759	0.17247	0.090	5.2306	0.25651062	0.0534569		
n-butane	58.118	0.82759	0.17247	0.076	4.4170	0.21660897	0.0451414		
Isobutene	56.102	0.85714	0.14286	0.000	0.0000	0	0		
Isopentane	72.144	0.83333	0.16667	0.031	2.2365	0.11043733	0.022088		
n-pentane	72.144	0.83333	0.16667	0.019	1.3707	0.06768739	0.0135378		
n-hexane	86.169	0.83721	0.16279	0.049	4.2223	0.20946839	0.0407298		
H2S	34.076	0	0.0586923	0.000	0.0000	0	0		
Totals				100.00200	1687.5749	73.8686322	23.95	0.52958267	1.6513567

CALCULATED VALUES		
<b>O2 F Factor (dry), Fd</b>	<b>8639</b>	DSCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
<b>O2 F Factor (wet), Fw</b>	<b>10641</b>	SCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
<b>Moisture F Factor</b>	<b>2002</b>	SCF of Water/MM Btu of Fuel Burned @ 0% excess air
<b>Combust. Moisture</b>	<b>18.81</b>	volume % water in flue gas @ 0% excess air
<b>CO2 F Factor, Fc</b>	<b>1027</b>	DSCF of CO2/MM Btu of Fuel Burned @ 0% excess air
<b>Carbon Dioxide</b>	<b>11.89</b>	volume % CO2 in flue gas @ 0% O2
<b>Predicted Fo Factor</b>	<b>1.76</b>	EPA Method 3a Fo value

Florida Gas Transmission-8030 Dec 17 2003 3:48 AM

Date	BTU	CO2	N2	Grav	Methan	Ethane	Propan	Ibutan	Nbutan	Ipenta	Npenta	C6
12/16/2003	1041	0.892	0.295	0.59	95.344	2.45	0.626	0.135	0.13	0.043	0.027	0.058
12/15/2003	1043	0.941	0.336	0.592	94.99	2.639	0.667	0.149	0.136	0.048	0.029	0.066
12/14/2003	1042	0.934	0.328	0.591	95.126	2.583	0.617	0.142	0.127	0.047	0.029	0.069
12/13/2003	1042	0.91	0.311	0.59	95.22	2.535	0.616	0.141	0.128	0.046	0.028	0.065
12/12/2003	1043	0.897	0.299	0.591	95.148	2.599	0.642	0.142	0.133	0.046	0.03	0.065
12/11/2003	1043	0.933	0.324	0.592	95.009	2.656	0.653	0.144	0.135	0.048	0.03	0.068
12/10/2003	1043	0.946	0.293	0.591	95.118	2.585	0.638	0.139	0.134	0.047	0.031	0.07
12/09/2003	1043	0.955	0.304	0.592	94.996	2.677	0.645	0.142	0.133	0.048	0.03	0.069
12/08/2003	1043	0.924	0.315	0.592	95.024	2.688	0.64	0.139	0.13	0.045	0.029	0.064
12/07/2003	1042	0.91	0.318	0.591	95.111	2.67	0.597	0.134	0.122	0.044	0.028	0.066
12/06/2003	1035	0.925	1.145	0.595	94.157	2.782	0.595	0.141	0.119	0.044	0.026	0.066
12/05/2003	1040	0.905	0.353	0.59	95.254	2.574	0.534	0.132	0.113	0.043	0.026	0.065
12/04/2003	1035	0.911	0.348	0.586	95.568	2.436	0.44	0.105	0.087	0.034	0.02	0.052
12/03/2003	1034	0.872	0.342	0.585	95.803	2.261	0.414	0.101	0.091	0.035	0.023	0.056
12/02/2003	1033	0.803	0.354	0.584	95.964	2.199	0.396	0.094	0.086	0.032	0.021	0.051
11/29/2003	1032	0.811	0.323	0.583	96.082	2.17	0.353	0.087	0.075	0.03	0.019	0.05
11/28/2003	1033	0.781	0.304	0.582	96.175	2.106	0.358	0.09	0.077	0.032	0.02	0.055
11/27/2003	1033	0.81	0.32	0.583	96.089	2.112	0.378	0.097	0.082	0.034	0.021	0.057
11/26/2003	1033	0.803	0.297	0.583	96.154	2.086	0.37	0.097	0.081	0.034	0.021	0.058
11/25/2003	1032	0.832	0.297	0.583	96.191	2.036	0.363	0.098	0.078	0.032	0.019	0.053
11/24/2003	1032	0.792	0.324	0.582	96.245	1.978	0.37	0.097	0.081	0.034	0.021	0.058
11/23/2003	1032	0.866	0.32	0.584	96.011	2.145	0.37	0.095	0.081	0.034	0.021	0.057
11/22/2003	1033	0.871	0.319	0.584	95.923	2.251	0.373	0.09	0.076	0.031	0.019	0.049
11/21/2003	1031	0.848	0.315	0.583	96.087	2.138	0.358	0.087	0.073	0.03	0.018	0.047
11/20/2003	1033	0.846	0.303	0.584	95.99	2.199	0.386	0.093	0.081	0.032	0.02	0.05
11/19/2003	1034	0.823	0.301	0.584	95.977	2.217	0.404	0.096	0.083	0.031	0.019	0.049
11/18/2003	1033	0.819	0.305	0.583	96.011	2.204	0.39	0.093	0.077	0.031	0.019	0.051
11/17/2003	1031	0.798	0.316	0.582	96.156	2.142	0.352	0.083	0.069	0.027	0.016	0.041
11/16/2003	1031	0.829	0.304	0.582	96.145	2.132	0.347	0.085	0.07	0.028	0.016	0.044
11/15/2003	1031	0.873	0.294	0.583	96.184	2.034	0.351	0.09	0.072	0.031	0.018	0.053
11/14/2003	1034	0.884	0.289	0.585	95.959	2.153	0.401	0.106	0.085	0.037	0.023	0.065
11/13/2003	1034	0.908	0.295	0.585	95.897	2.177	0.406	0.105	0.089	0.037	0.023	0.064
11/12/2003	1033	0.868	0.305	0.584	96.046	2.08	0.392	0.099	0.089	0.036	0.023	0.063
11/11/2003	1033	0.89	0.294	0.584	96.002	2.098	0.402	0.101	0.091	0.036	0.023	0.064
11/10/2003	1033	0.849	0.291	0.584	96.087	2.07	0.394	0.098	0.09	0.036	0.023	0.062

AMMONIA SLIP TEST INFORMATION

CALCULATED DATA



Conditional Test Method (CTM) -027  
Test Calculations

Customer: TECO  
Facility: Bayside  
Unit: 2B  
Run Number: 1  
Date: 11/12/03

Sample Time, $\theta$ :	60 minutes	Nozzle Diameter, $D_n$ :	0.189 inches
Barometric Pressure, $P_b$ :	30.00 "Hg	Nozzle Area, $A_n$ :	0.00019482 ft <sup>2</sup>
Stack Pressure, $P_s$ :	29.96 "Hg	Average Orifice Meter, $\Delta H$ :	1.040 "H <sub>2</sub> O
Effective Stack Area, $A_s$ :	283.529 ft <sup>2</sup>	Sample Volume, $V_m$ :	35.236 ft <sup>3</sup>
Pitot Coefficient, $C_p$ :	0.84 dimensionless	Average Meter Temp., $T_m$ :	89.9 °F
Gas Analysis:	4.0 % CO <sub>2</sub>	Average Stack Temp., $T_s$ :	223.8 °F
	14.0 % O <sub>2</sub>	Average $\sqrt{\Delta p}$ :	1.070 "H <sub>2</sub> O
	0.0 % CO	Condensate Volume, $V_{lc}$ :	63.6 ml
	82.0 % N <sub>2</sub>	Meter Box Y:	1.001 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E-02 \times V_{lc}$	2.998 scf
	84.906 liters
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	34.045 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.081 %
$FDA = 1.0 - B_{ws}$	0.919 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%CO))$	29.20 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	28.29 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	69.00 ft/second
$Q_s = v_s \times A_s \times 60$	1173806.5 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92)$	834269.3 dscf/minute
$I = (T_s + 460) \times ((2.67E-03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s)$	99.0 %



Calculation of NH<sub>3</sub> Concentration  
CTM - 027

Customer: TECO  
Facility: Bayside  
Unit: 2B  
Test Date: 11/12/2003

Run #1

Calculation of Volume of Ammonia Gas Present in Sample:

$$V_a = (N \times D_v \times 24.04) / (1000 \times 18) \text{ (CTM - 027, Equation 2)}$$

Where:

$V_a$  = Volume of ammonia gas in the sample  
 $N$  = 0.33 Sum of concentrations of ammonia ion in solution, mg/l  
 $D_v$  = 0.5 Dilution volume  
24.04 = liters of ideal gas per mole of substance  
1/1000 = conversion factor mg/l to g/l  
18 = weight of ammonium ion

$$V_a = 0.0002 \text{ liters}$$

Calculation of ppmv of Ammonia present in Stack Gas:

$$C_{\text{NH}_3} = (V_a / V_{m(\text{std})}) \times 10^6$$

Where:

$V_a$  = Volume of ammonia gas in the sample  
 $V_{m(\text{std})}$  = 84.906 liters  
 $C_{\text{NH}_3}$  = 2.59541 ppmv



Conditional Test Method (CTM) -027  
Test Calculations

Customer: TECO  
Facility: Bayside  
Unit: 2B  
Run Number: 2  
Date: 11/12/03

Sample Time, $\theta$ :	60 minutes	Nozzle Diameter, $D_n$ :	0.189 inches
Barometric Pressure, $P_b$ :	30.00 "Hg	Nozzle Area, $A_n$ :	0.00019482 ft <sup>2</sup>
Stack Pressure, $P_s$ :	29.96 "Hg	Average Orifice Meter, $\Delta H$ :	1.040 "H <sub>2</sub> O
Effective Stack Area, $A_s$ :	283.529 ft <sup>2</sup>	Sample Volume, $V_m$ :	35.365 ft <sup>3</sup>
Pitot Coefficient, $C_p$ :	0.84 dimensionless	Average Meter Temp., $T_m$ :	94.3 °F
Gas Analysis:	4.0 % CO <sub>2</sub>	Average Stack Temp., $T_s$ :	222.7 °F
	14.0 % O <sub>2</sub>	Average $\sqrt{\Delta p}$ :	1.063 "H <sub>2</sub> O
	0.0 % CO	Condensate Volume, $V_{lc}$ :	68.5 ml
	82.0 % N <sub>2</sub>	Meter Box Y:	1.001 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E-02 \times V_{lc}$	3.229 scf
	91.448 liters
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	33.900 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.087 %
$FDA = 1.0 - B_{ws}$	0.913 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%CO))$	29.20 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	28.23 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	68.57 ft/second
$Q_s = v_s \times A_s \times 60$	1166449.4 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92)$	824854.0 dscf/minute
$I = (T_s + 460) \times ((2.67E-03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s)$	99.7 %





Calculation of NH<sub>3</sub> Concentration  
CTM - 027

Customer: TECO  
Facility: Bayside  
Unit: 2B  
Test Date: 11/12/2003

Run #2

Calculation of Volume of Ammonia Gas Present in Sample:

$$V_a = (N \times D_v \times 24.04) / (1000 \times 18) \quad (\text{CTM - 027, Equation 2})$$

Where:

$V_a$  = Volume of ammonia gas in the sample  
 $N$  = 0.39 Sum of concentrations of ammonia ion in solution, mg/l  
 $D_v$  = 0.5 Dilution volume  
24.04 = liters of ideal gas per mole of substance  
1/1000 = conversion factor mg/l to g/l  
18 = weight of ammonium ion

$$V_a = 0.0003 \text{ liters}$$

Calculation of ppmv of Ammonia present in Stack Gas:

$$C_{\text{NH}_3} = (V_a / V_{\text{m(std)}}) \times 10^6$$

Where:

$V_a$  = Volume of ammonia gas in the sample  
 $V_{\text{m(std)}}$  = 91.448 liters

$$C_{\text{NH}_3} = 2.84789 \text{ ppmv}$$



**Conditional Test Method (CTM) -027  
Test Calculations**

Customer: TECO  
 Facility: Bayside  
 Unit: 2B  
 Run Number: 3  
 Date: 11/12/03

Sample Time, $\theta$ :	60 minutes	Nozzle Diameter, $D_n$ :	0.189 inches
Barometric Pressure, $P_b$ :	30.00 "Hg	Nozzle Area, $A_n$ :	0.00019482 ft <sup>2</sup>
Stack Pressure, $P_s$ :	29.96 "Hg	Average Orifice Meter, $\Delta H$ :	1.030 "H <sub>2</sub> O
Effective Stack Area, $A_s$ :	254.469 ft <sup>2</sup>	Sample Volume, $V_m$ :	34.679 ft <sup>3</sup>
Pitot Coefficient, $C_p$ :	0.84 dimensionless	Average Meter Temp., $T_m$ :	94.3 °F
Gas Analysis:	4.0 % CO <sub>2</sub>	Average Stack Temp., $T_s$ :	222.9 °F
	14.0 % O <sub>2</sub>	Average $\sqrt{\Delta p}$ :	1.058 "H <sub>2</sub> O
	0.0 % CO	Condensate Volume, $V_{lc}$ :	73.7 ml
	82.0 % N <sub>2</sub>	Meter Box Y:	1.001 dimensionless

**Data Calculated from Source Measurements:**

$V_{w(std)} = 4.714E-02 \times V_{lc}$	3.474 scf
	98.390 liters
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	33.239 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.095 %
$FDA = 1.0 - B_{ws}$	0.905 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%CO))$	29.20 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	28.14 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	68.37 ft/second
$Q_s = v_s \times A_s \times 60$	1043947.5 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92)$	731808.7 dscf/minute
$I = (T_s + 460) \times ((2.67E-03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s)$	98.9 %



Calculation of NH<sub>3</sub> Concentration  
CTM - 027

Customer: TECO  
Facility: Bayside  
Unit: 2B  
Test Date: 11/12/2003

Run #3

Calculation of Volume of Ammonia Gas Present in Sample:

$$V_a = (N \times D_v \times 24.04) / (1000 \times 18) \quad (\text{CTM} - 027, \text{Equation } 2)$$

Where:

$V_a$  = Volume of ammonia gas in the sample

$N$  = 0.36 Sum of concentrations of ammonia ion in solution, mg/l

$D_v$  = 0.5 Dilution volume

24.04 = liters of ideal gas per mole of substance

1/1000 = conversion factor mg/l to g/l

18 = weight of ammonium ion

$$V_a = 0.0002 \text{ liters}$$

Calculation of ppmv of Ammonia present in Stack Gas:

$$C_{\text{NH}_3} = (V_a / V_{\text{m(std)}}) \times 10^6$$

Where:

$V_a$  = Volume of ammonia gas in the sample

$V_{\text{m(std)}}$  = 98.390 liters

$$C_{\text{NH}_3} = 2.443341 \text{ ppmv}$$

FIELD DATA SHEETS

# ISOKINETIC FIELD DATA SHEET

Plant	<u>BAYSIDE</u>	Nozzle I.D. No.	<u>GL09</u>	Dry Gas Meter Volume	
Location	<u>UNIT 2B</u>	Nozzle Diameter	<u>1.89</u>	Final	<u>572.518</u> Ft. <sup>3</sup>
Date	<u>11/12/03</u>	Pitot Tube No.	<u>PT10</u>	Initial	<u>537.282</u> Ft. <sup>3</sup>
Method No.	<u>CTM027</u>	Pitot Tube (C <sub>p</sub> )	<u>1.84</u>	Net	<u>35.236</u> Ft. <sup>3</sup>
Run No.	<u>1</u>	Probe Length	<u>9 ft</u>	Equipment Leak Checks	
Box Operator	<u>SAV</u>	Probe Liner Material	<u>glass</u>	Initial	<u>0.000</u> CFM @ <u>8.0</u> "Hg
Probe Operator	<u>DAS</u>	Probe Heater Setting	<u>250</u>	Final	<u>0.000</u> CFM @ <u>4.0</u> "H <sub>2</sub> O
Time - Start:	<u>11:41</u>	End:	<u>12:54</u>	Pitot Tube	<u>OK @ 5.3</u> "H <sub>2</sub> O
Sampling Time	<u>60</u>	Pressure	Pb ("Hg): <u>30.0</u> Pg ("H <sub>2</sub> O): <u>-.5</u> Ps ("Hg): <u>29.96</u>	Moisture Determination	
Min. \ Pt.	<u>2.51 24</u>	Assumed Moisture (%)	<u>9.2</u>	Impinger	<u>56</u> ml
Meter Box No.	<u>MA07</u>	Filter Holder No.	<u>N/A</u>	Silica Gel	<u>7.6</u> gm
Stack Area Ft. <sup>2</sup>	<u>283.529</u>	Comments		Total	<u>63.6</u>
Meter Cal. (Δ H)	<u>1.723</u>	Start	Imp#1 <u>100</u> Imp#2 <u>100</u> Imp#3 <u>0</u>		
Meter Cal. (Δ Y)	<u>1.001</u>	Finish	Imp#1 <u>150</u> Imp#2 <u>106</u> Imp#3		
		O <sub>2</sub>	<u>14</u>	CO <sub>2</sub>	<u>4</u>

Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	Δ P (In. H <sub>2</sub> O)	Δ H (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	11:41	538.71	1.1	.99	224	89	239		61	2.0
2		540.2	1.2	1.08	224	89	239		61	2.2
3		541.82	1.4	1.26	224	89	235		61	3.0
4		543.44	1.4	1.26	224	89	239		62	3.0
5		545.05	1.4	1.26	222	89	238		63	3.0
6	11:56	546.68	1.3	1.19	224	89	240		63	3.0
1	12:03	547.975	1.95	.85	227	89	226		62	1.5
2		549.34	1.0	.90	226	89	235		61	1.8
3		550.71	1.0	.90	226	89	235		61	1.8
4		552.065	1.0	.90	226	89	235		61	1.8
5		553.50	1.1	.99	226	89	235		61	2.0
6	12:18	544.819	1.392	.83	220	89	240		61	1.5

Completed  
VE Anne @ 1230

Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	Δ P (In. H <sub>2</sub> O)	Δ H (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	1222	556.14	.93	.84	226	89	229		63	1.5
2		557.5	1.0	.90	226	89	235		62	1.5
3		558.92	1.1	.99	226	90	236		61	2.0
4		560.36	1.1	.99	226	90	227		63	2.0
5		561.88	1.2	1.08	226	90	230		63	2.5
6	1237	563.209	.93	.84	220	90	240		63	1.5
1	1239	564.585	1.0	.90	224	90	239		62	1.5
2		566.095	1.2	1.08	225	91	240		61	2.5
3		567.69	1.3	1.18	224	92	235		63	2.5
4		569.319	1.4	1.27	222	92	237		64	2.5
5		571.00	1.5	1.37	221	93	240		64	3.0
6	1254	572.519	1.2	1.1	220	93	235		64	2.5

Quality Assurance / Quality Control Information

Console Operator Signature:  Date: 11/12/03

Complete: \_\_\_\_\_ Legible: \_\_\_\_\_ Accurate: \_\_\_\_\_ Project Scope: \_\_\_\_\_ Reasonableness: \_\_\_\_\_

Reviewer's Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

# ISOKINETIC FIELD DATA SHEET

Plant BAYSIDE  
 Location UNIT 2B  
 Date 11/12/03  
 Method No. CTM027  
 Run No. 2  
 Box Operator SAV  
 Probe Operator DAS  
 Time - Start: 1322 End: 1431  
 Sampling Time 60  
 Min.\ Pt. 2.5/24  
 Meter Box No. M1507  
 Stack Area Ft.<sup>2</sup> 283.529  
 Meter Cal. (ΔH) 1.723  
 Meter Cal. (ΔY) 1.001

Nozzle I.D. No. GL09  
 Nozzle Diameter .189  
 Pitot Tube No. PT 10  
 Pitot Tube (C<sub>p</sub>) 1.84  
 Probe Length 9ft  
 Probe Liner Material Blow  
 Probe Heater Setting 250  
 Pressure Pb ("Hg): 30 Pg ("H<sub>2</sub>O): 7.5 Ps ("Hg): 29.96  
 Assumed Moisture (%) 9.0  
 Filter Holder No. \_\_\_\_\_  
 Comments \_\_\_\_\_  
 Start Imp#1 100 Imp#2 100 Imp#3 0  
 Finish Imp#1 136 Imp#2 106 Imp#3 0  
 O<sub>2</sub> 14 CO<sub>2</sub> 4

Dry Gas Meter Volume  
 Final 608.240 Ft.<sup>3</sup>  
 Initial 572.875 Ft.<sup>3</sup>  
 Net 35.365 Ft.<sup>3</sup>  
 Equipment Leak Checks  
 Initial 0.000 CFM @ 6 "Hg  
 Final 0.000 CFM @ 4 "H<sub>2</sub>O  
 Pitot Tube OR@ 3.5 "H<sub>2</sub>O  
 Moisture Determination  
 Impinger 62. ml  
 Silica Gel 6.5 gm  
 Total 68.5

Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	Δ P (In. H <sub>2</sub> O)	Δ H (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	1322	574.33	1.1	1.0	226	91	245		61	1.5
2		575.77	1.1	1.0	226	91	240		61	1.5
3		577.4	1.4	1.27	224	92	242		62	2.0
4		579.02	1.4	1.28	222	92	240		62	2.0
5		580.72	1.5	1.37	220	92	240		63	3.0
6		582.181	1.1	1.02	213	92	243		63	1.5
1	1339	583.51	.93	.85	224	93	239		61	1.0
2		584.98	.97	.88	225	94	240		62	1.5
3		586.26	1.0	.91	224	95	230		62	1.5
4		587.71	1.1	1.01	224	95	229		61	1.5
5		589.235	1.2	1.10	222	95	228		62	2.0
6	1354	590.565	.90	.83	215	95	237		63	1.1

Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	Δ P (In. H <sub>2</sub> O)	Δ H (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	1358	591.93	.95	.87	226	95	232		62	<del>81</del>
2		593.28	.97	.88	226	95	237		62	<del>81</del>
3		594.66	1.0	.91	226	95	235		63	1.2
4		596.04	1.0	.91	226	95	225		63	1.2
5		597.49	1.1	1.0	226	95	230		63	1.5
6	1413	598.85	0.95	.87	219	95	227		64	1.0
1	1416	600.3	1.1	1.0	226	95	225		61	1.0
2		601.83	1.2	1.1	226	96	227		62	1.8
3		603.46	1.4	1.28	223	96	225		62	2.5
4		605.10	1.4	1.29	221	96	227		62	2.5
5		606.77	1.4	1.29	220	96	224		63	2.5
6	1431	608.24	1.1	1.02	215	96	225		64	1.5

Quality Assurance / Quality Control Information

Console Operator Signature:  Date: 11/12/03

Complete: \_\_\_\_\_ Legible: \_\_\_\_\_ Accurate: \_\_\_\_\_ Project Scope: \_\_\_\_\_ Reasonableness: \_\_\_\_\_

Reviewer's Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_



# ISOKINETIC FIELD DATA SHEET

Plant	<u>BAYSIDE</u>	Nozzle I.D. No.	<u>6609</u>	Dry Gas Meter Volume	
Location	<u>UNIT 2B</u>	Nozzle Diameter	<u>.189</u>	Final	<u>643.142</u> Ft. <sup>3</sup>
Date	<u>11/12/03</u>	Pitot Tube No.	<u>PT 10</u>	Initial	<u>608.463</u> Ft. <sup>3</sup>
Method No.	<u>CTMO27</u>	Pitot Tube (C <sub>p</sub> )	<u>.84</u>	Net	<u>34.669</u> Ft. <sup>3</sup>
Run No.	<u>3</u>	Probe Length	<u>9ft</u>	Equipment Leak Checks	
Box Operator	<u>DAS</u>	Probe Liner Material	<u>Fluoro</u>	Initial	<u>0.0</u> CFM @ <u>5.0</u> "Hg
Probe Operator	<u>SAV</u>	Probe Heater Setting	<u>250</u>	Final	<u>0.0</u> CFM @ <u>2.0</u> "H <sub>2</sub> O
Time - Start:	<u>14:55</u>	Pressure	<u>Pb ("Hg): 30.00</u>	Pitot Tube	<u>OK @ 4.2</u> "H <sub>2</sub> O
End:	<u>16:07</u>	Assumed Moisture (%)	<u>9.2</u>	Moisture Determination	
Sampling Time	<u>60</u>	Filter Holder No.		Impinger	<u>26%</u> ml
Min.\ Pt.	<u>2.3/24</u>	Comments		Silica Gel	<u>5.7</u> gm
Meter Box No.	<u>MB07</u>	Start	Imp#1 <u>100</u> Imp#2 <u>100</u> Imp#3 <u>0</u>	Total	<u>73.7</u>
Stack Area Ft. <sup>2</sup>	<u>283.529</u>	Finish	Imp#1 <u>164</u> Imp#2 <u>104</u> Imp#3		
Meter Cal. (ΔH)	<u>1.723</u>	O <sub>2</sub>	<u>14</u>		
Meter Cal. (ΔY)	<u>1.001</u>	CO <sub>2</sub>	<u>4</u>		

Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	Δ P (In. H <sub>2</sub> O)	Δ H (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	14:55	609.84	1.02	<del>1.19</del> 1.02	225	95	225		61	2
2		611.37	1.1	1.0	225	95	230		57	1.5
3		612.78	1.3	1.19	223	95	232		55	1.5
4		614.35	1.4	1.28	222	95	233		54	2.0
5		615.92	1.3	1.19	221	95	228		57	2.0
6	13:10	617.48	1.2	1.11	214	95	239		57	2.0
1	13:12	618.99	0.94	0.86	225	95	232		60	1.0
2		620.35	0.98	0.89	226	95	229		57	1.0
3		621.68	0.96	0.88	226	95	236		61	1.0
4		622.05	0.98	0.89	226	95	226		61	1.0
5		624.36	1.05	0.96	224	95	232		62	1.0
6	13:27	625.675	0.91	0.84	218	95	232		62	1.0

Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	Δ P (In. H <sub>2</sub> O)	Δ H (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	15:30	627.0	0.92	0.84	224	95	224		61	1.0
2		628.6	1.00	0.91	226	94	227		61	1.0
3		629.72	<del>1.05</del>	<del>1.00</del> 0.94	224	94	227		64	1.0
4		631.18	<del>1.05</del> 1.10	<del>1.00</del> 1.05	<del>224</del> 224	94	230		64	1.0
5		632.63	<del>1.10</del> 1.15	<del>1.05</del> 1.05	<del>224</del> 224	<del>93</del> 94	225		65	1.0
6	15:45	634.11	1.10	1.01	221	93	226		65	1.0
1	15:52	635.51	1.00	0.91	225	93	229		64	1.0
2		636.91	1.05	0.94	223	93	234		60	1.0
3		638.50	1.40	1.28	221	93	235		61	1.0
4		640.03	1.45	1.33	221	93	232		61	1.0
5		641.77	1.45	1.33	220	93	230		61	1.0
6	16:07	643.142	1.20	1.11	214	93	227		61	1.0

Quality Assurance / Quality Control Information

Console Operator Signature: 

Date: 11/12/03

Complete: \_\_\_\_\_ Legible: \_\_\_\_\_ Accurate: \_\_\_\_\_ Project Scope: \_\_\_\_\_ Reasonableness: \_\_\_\_\_

Reviewer's Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

LABORATORY ANALYSIS

## Analytical Information

**Method:** CTM - 027

**Date Analyzed:** 11/24/03

**Analyst:** Bret Nicholas *B.A.H.*

**Samples:** Received recovered samples in 500ml Nalgene bottles.  
Transferred all impinger #1 and impinger #2 samples  
into 500 ml Volumetrics using DI Water.

**Instrument:** Dionex IC Model DX120  
Column: CS12A with CG12A guard  
Eluent concentration: 22mN H2SO4  
Flow rate: 1.8 mls/min

**Standards:** Stock ammonium standard 1000 mg/l as NH4  
Spex CertiPrep Lot 24-131AS Exp. August 30, 2004  
Diluted stock 10 mls to 100 mls to create an intermediate 100 mg/l standard.  
Diluted intermediate (100 mg/l) standard 10 mls to 100 mls to create an intermediate 10 mg/l standard.

Standard	Volume (mls)	Final Volume (mls)	mg/L as NH4
10 mg/l	1	100	0.10
10 mg/l	3	100	0.30
10 mg/l	5	100	0.50
10 mg/l	10	100	1.00
10 mg/l	20	100	2.00
10 mg/l	30	100	3.00
100 mg/l	5	100	5.00
100 mg/l	8	100	8.00
100 mg/l	10	100	10.00

All standards had 4 mls of 1.0 N. H2SO4 added before being brought to 100 ml volume.  
This prepares all standards in a 0.04 N H2SO4 matrix.  
A reagent blank was prepared using 4 mls of 1.0 N H2SO4 and DI water brought  
to 100 ml volume.

**Factors Used:** N to NH4 divide by 0.7765

**Eluent:** 22 mN H2SO4 prepared by diluting 44 mls of 1.0 N H2SO4 to 2 liters.

**Results:** All standards are calibrated using the NH4 concentration and integrated with peak area.  
All reported sample results are based on peak area and expressed as mg NH4 per liter

**QC:** Spex CertiPrep standard 5.00 mg/l as NH4 was run after the calibration curve and after  
the first seven samples and then after the next seven samples.  
Orion Ammonia Standard 1000 ppm as N prepared to 5.15 mg/l as NH4 was run  
after the calibration curve, after the next seven samples and after the last seven samples.  
Reagent blank was run after the calibration curve, after seven samples, and after



# ANALYSIS REQUEST & CHAIN OF CUSTODY

## ENVIRONMENTAL SERVICES

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

PROJECT REFERENCE <b>BAYSIDE</b>		PROJECT NO. <b>UNIT 2B</b>	PROJECT LOCATION (STATE) <b>FL, TAMPA</b>		REQUIRED ANALYSIS				DUE DATE <div style="border: 1px solid black; width: 100px; height: 30px;"></div>	
SAMPLER'S PRINTED NAME <b>JORGE VARINO</b>		SAMPLER'S SIGNATURE 								
P.O. NUMBER		CONTRACT NO.	SITE			<b>ICE</b>				
CLIENT NAME		CLIENT PHONE	CLIENT FAX							PRESERVATIVE
CLIENT EMAIL		CLIENT ADDRESS								
SAMPLE ID	SAMPLE DESCRIPTION	SAMPLING		* MATRIX	NUMBER OF CONTAINERS SUBMITTED				REMARKS	
		DATE	TIME							
RUN 1	RUN 1 - PROBE + 1ST IMP.	11/12/03		0.1g						
RUN 1	RUN 1 - 2ND IMP			#25g						
RUN 2	RUN 2 - PROBE + 1ST IMP									
RUN 2	RUN 2 - 2ND IMP									
RUN 3	RUN 3 - PROBE 1ST IMP									
RUN 3	RUN 3 - 2ND IMP									
BLANK	REAGANT BLANK									

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

CONTAINERS/SEALS INTACT <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	ON ICE/ 4°C <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
--	--

### SAMPLE TRANSFERS

RELINQUISHED BY:	RECEIVED BY:	DATE	TIME
PERSON'S NAME:	PERSON'S NAME: <b>Craig V. Coronado</b>	<b>11/13/03</b>	<b>9:50 am</b>
FACILITY NAME: <b>TECO / EHS / AIR SERVICES</b>	FACILITY NAME: <b>Polk Power Station / Lab</b>		
PERSON'S NAME:	PERSON'S NAME:		
FACILITY NAME:	FACILITY NAME:		
PERSON'S NAME:	PERSON'S NAME:		
FACILITY NAME:	FACILITY NAME:		
PERSON'S NAME:	PERSON'S NAME:		
FACILITY NAME:	FACILITY NAME:		

# Polk Power Laboratory

## Summary of Lab Results

**Customer:** Tampa Electric Company  
**Sampling Location/Identifier:** Bayside Units 2B & 2A  
**Test Dates:** Unit 2B - 11/12/2003 Unit 2A - 11/14/2003  
**Analytical Method for Recovered Samples:** CTM - 027  
**Analysis Date:** 11/24/03  
**Analyst:** Bret Nicholas *B.C.H.*

Sample Identification	Time	Volume (mls)	mg NH4 / L
Sample RW - 2840 0.1N. H2SO4		as received	<0.10
11/12/03 Unit 2B Run 1 Impinger #1	13:10	500	0.33
11/12/03 Unit 2B Run 1 Impinger #2	13:10	500	<0.10
11/12/03 Unit 2B Run 2 Impinger #1	14:44	500	0.39
11/12/03 Unit 2B Run 2 Impinger #2	14:44	500	<0.10
11/12/03 Unit 2B Run 3 Impinger #1	16:23	500	0.36
11/12/03 Unit 2B Run 3 Impinger #2	16:23	500	<0.10

Sample Identification	Time	Volume (mls)	mg NH4 / L
Sample RW - 2839 0.1N. H2SO4		as received	<0.10
11/14/03 Unit 2A Run 1 Impinger #1	10:14	500	0.45
11/14/03 Unit 2A Run 1 Impinger #2	10:14	500	<0.10
11/14/03 Unit 2A Run 2 Impinger #1	12:00	500	0.49
11/14/03 Unit 2A Run 2 Impinger #2	12:00	500	<0.10
11/14/03 Unit 2A Run 3 Impinger #1	13:07	500	0.45
11/14/03 Unit 2A Run 3 Impinger #2	13:07	500	<0.10

QC Information	True Value	Result	% Rec.
Reagent Blank	<0.10	<0.10	
Calibration Standard Check 5	5.00	4.94	98.8
Orion Check Standard	5.15	4.93	95.7
Reagent Blank	<0.10	<0.10	
Calibration Standard Check 5	5.00	4.91	98.2
Orion Check Standard	5.15	4.92	95.5
Reagent Blank	<0.10	<0.10	
Calibration Standard Check 5	5.00	4.91	98.2
Orion Check Standard	5.15	4.92	95.5

## BEST AVAILABLE COPY

Line	Sample	Method	Data File	Dilution	Comment
1	Reagent Blank	ctm-027.met	nh401001.dxd	1	
2	Autocal1R	ctm-027.met	nh401002.dxd	1	
3	Autocal2R	ctm-027.met	nh401003.dxd	1	
4	Autocal3R	ctm-027.met	nh401004.dxd	1	
5	Autocal4R	ctm-027.met	nh401005.dxd	1	
6	Autocal5R	ctm-027.met	nh401006.dxd	1	
7	Autocal6R	ctm-027.met	nh401007.dxd	1	
8	Autocal7R	ctm-027.met	nh401008.dxd	1	
9	Autocal8R	ctm-027.met	nh401009.dxd	1	
10	Autocal9R	ctm-027.met	nh401010.dxd	1	
11	Reagent Blank	ctm-027.met	nh401011.dxd	1	
12	Cal. Std 5 (5.00 mg/l)	ctm-027.met	nh401012.dxd	1	
13	Orion Standard T.V. = 5.	ctm-027.met	nh401013.dxd	1	
14	RW - 2840 0.1N H2SO4	ctm-027.met	nh401014.dxd	1	
15	11/12/03 Run 1 Impinger	ctm-027.met	nh401015.dxd	1	
16	11/12/03 Run 1 Impinger	ctm-027.met	nh401016.dxd	1	
17	11/12/03 Run 2 Impinger	ctm-027.met	nh401017.dxd	1	
18	11/12/03 Run 2 Impinger	ctm-027.met	nh401018.dxd	1	
19	11/12/03 Run 3 Impinger	ctm-027.met	nh401019.dxd	1	
20	11/12/03 Run 3 Impinger	ctm-027.met	nh401020.dxd	1	
21	Reagent Blank	ctm-027.met	nh401021.dxd	1	
22	Cal Std 5 (5.00 mg/l)	ctm-027.met	nh401022.dxd	1	
23	Orion Standard T.V. = 5.	ctm-027.met	nh401023.dxd	1	
24	RW - 2839 0.1N H2SO4	ctm-027.met	nh401024.dxd	1	
25	11/14/03 Run 1 Impinger	ctm-027.met	nh401025.dxd	1	
26	11/14/03 Run 1 Impinger	ctm-027.met	nh401026.dxd	1	
27	11/14/03 Run 2 Impinger	ctm-027.met	nh401027.dxd	1	
28	11/14/03 Run 2 Impinger	ctm-027.met	nh401028.dxd	1	
29	11/14/03 Run 3 Impinger	ctm-027.met	nh401029.dxd	1	
30	11/14/03 Run 3 Impinger	ctm-027.met	nh401030.dxd	1	
31	Reagent Blank	ctm-027.met	nh401031.dxd	1	
32	Cal Std 5 (5.00 mg/l)	ctm-027.met	nh403032.dxd	1	
33	Orion Standard T.V. = 5.	ctm-027.met	nh403033.dxd	1	
34	Stop Program	stopcat.met	nh4	1	

Default Method Path: C:\PEAKNET\METHOD

Default Data Path: C:\PEAKNET\DATA

Comment:

Component: NH4; Fit Type: Quadratic

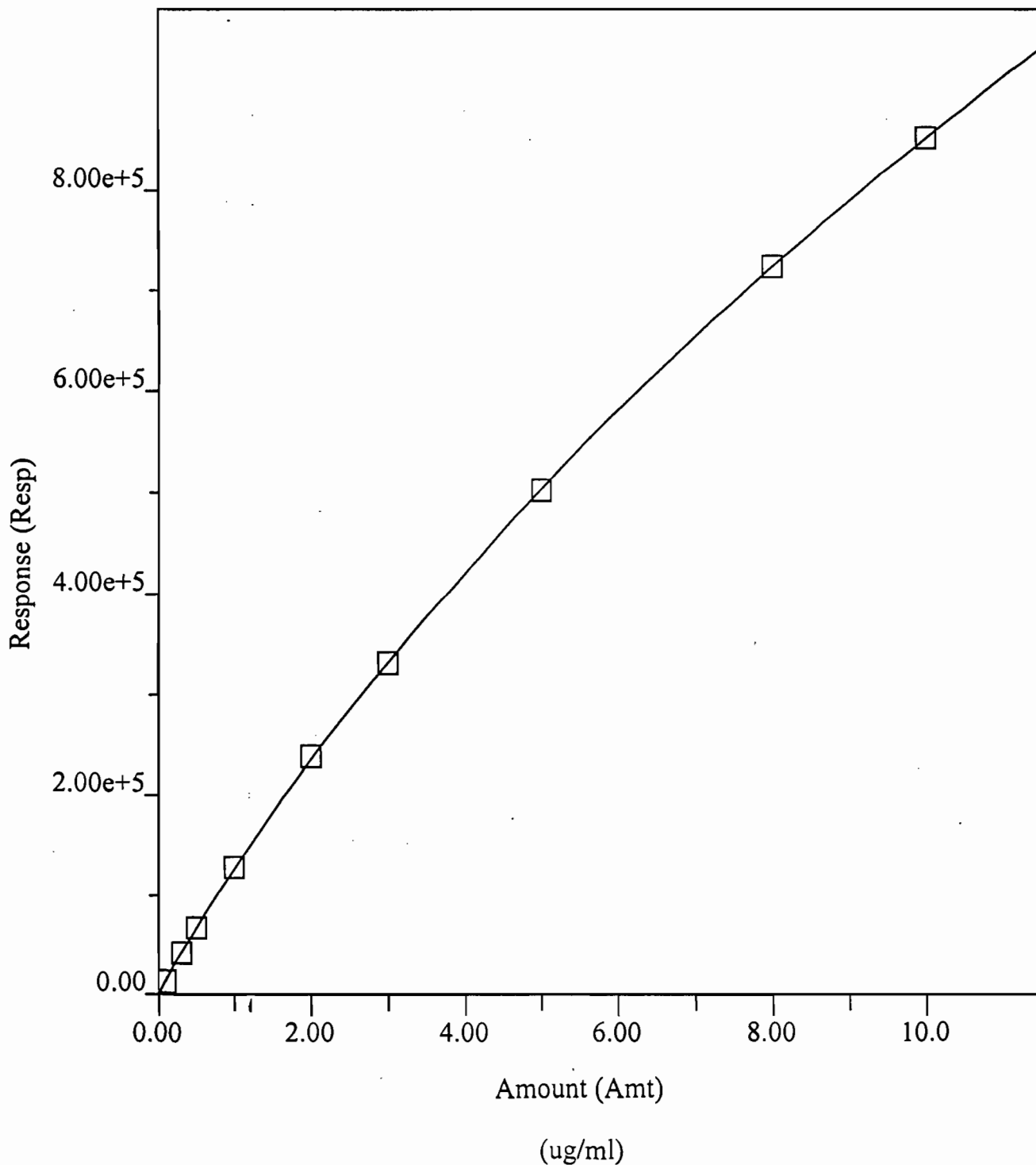
Method: c:\peaknet\method\ctm-027.met; Updated: 11/24/2003 1:20:06 PM

$r^2 = 0.999978$

$$\text{Amt} = 5.122352\text{e-}012 * \text{Resp}^2 + 7.383744\text{e-}006 * \text{Resp} + -0.01736$$

Standard: External

Calibration: Area



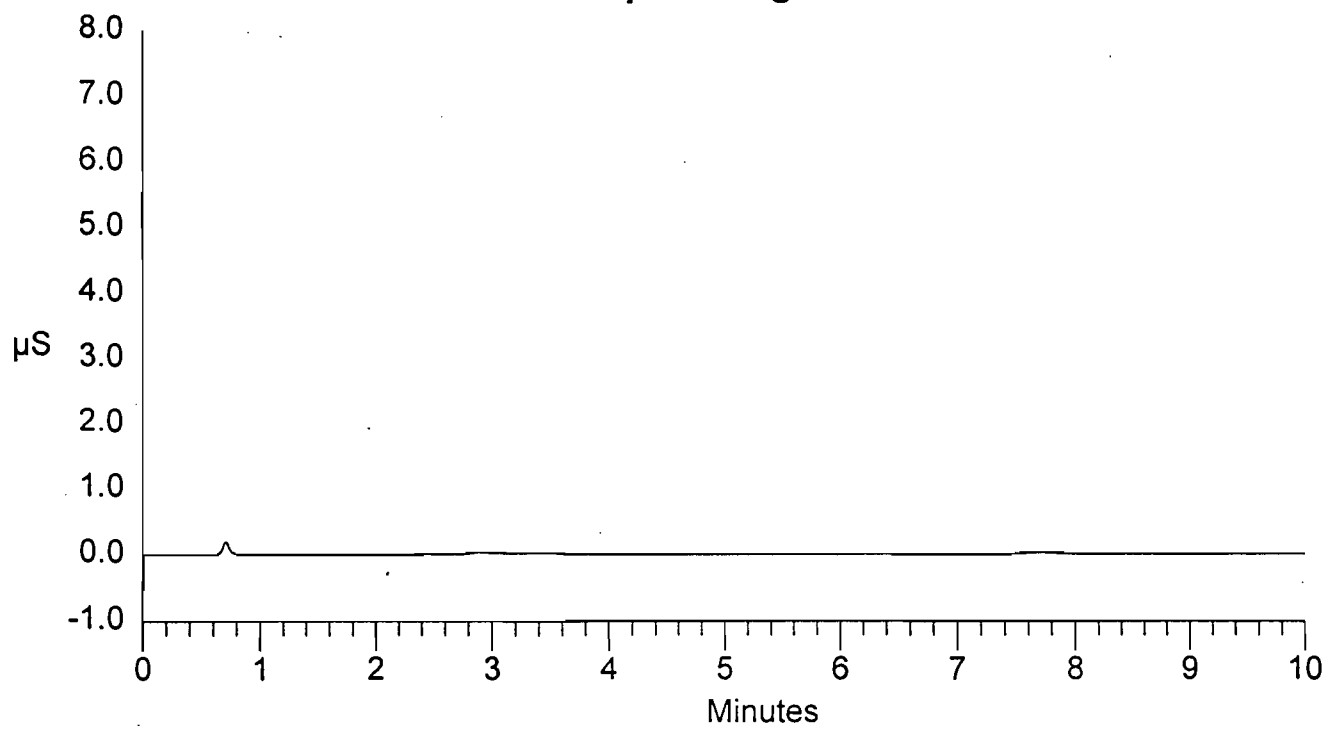


=====  
Data File : C:\PEAKNET\DATA\NH401001.DXD Report Date: 11/24/2003 11:22:33  
Sample Name: Reagent Blank Collected : 11/24/2003 11:09:29  
Inject # : 1 Vial # :  
Method File: c:\peaknet\method\ctm-027.met Calibrated : 11/10/2003 6:37:55 P  
System Name: DX-120 Detector : DX-120  
Column Type: Ionpac CS12A Operator :  
Data Points: 3000 Rate : 5.00 Hz  
Module Name: DX-120 ID:50 05 d8 Moduleware : 1.00  
=====

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
-----							
Totals			0.00	0	0		

**File: NH401001.DXD Sample Reagent Blank**



\*\*\*\*\* AUTOMATIC CALIBRATION UPDATE \*\*\*\*\*

```

=====
Data File   : C:\PEAKNET\DATA\NH401002.DXD   Report Date: 11/24/2003 11:35:33
Sample Name: Autocal1R                       Collected  : 11/24/2003 11:22:33
Inject #   : 2                               Vial #     :
Method File: c:\peaknet\method\ctm-027.met   Last Update: 11/10/2003 6:37:55 P
System Name: DX-120                          Detector   : DX-120
Cal. Level : 1                               Analyst    : Polk Lab
=====
  
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

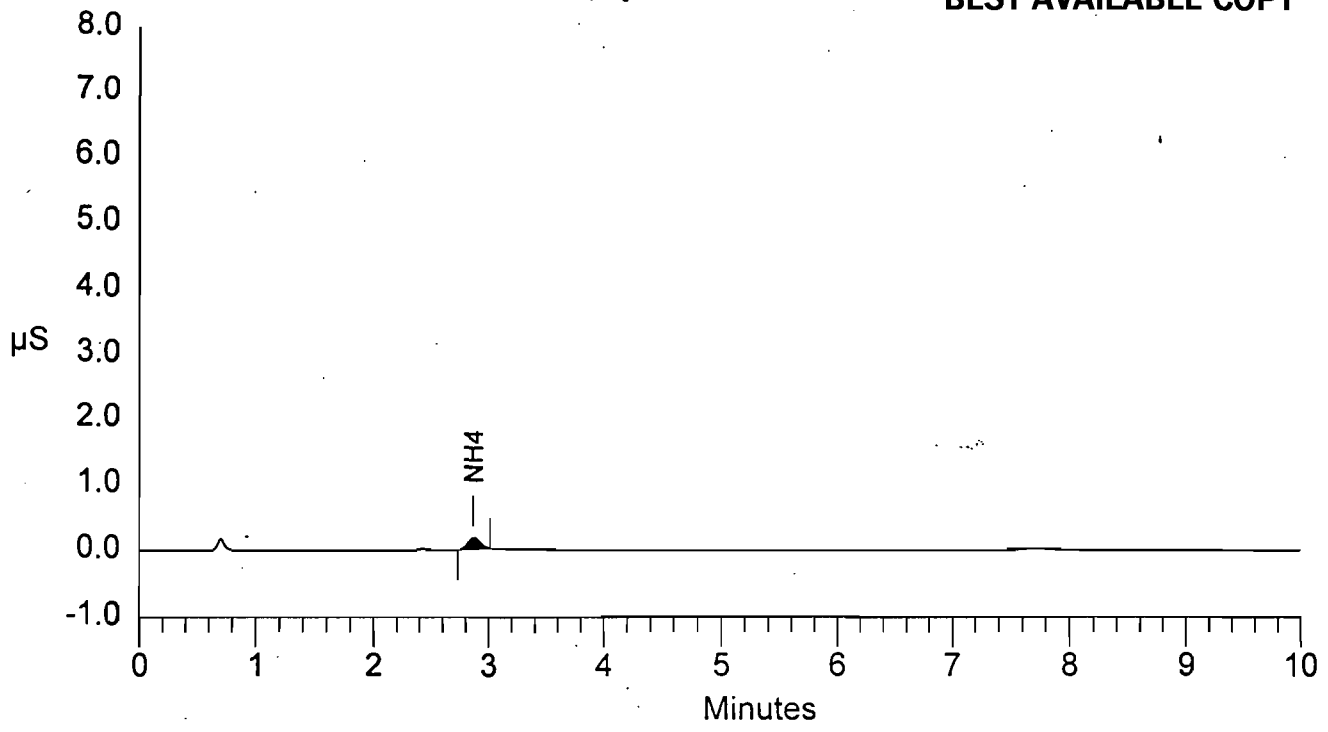
COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.92	2.87	2.87	1.793e+004	1.358e+004	1.358e+004

```

=====
Data File   : C:\PEAKNET\DATA\NH401002.DXD   Report Date: 11/24/2003 11:35:33
Sample Name: Autocal1R                       Collected  : 11/24/2003 11:22:33
Inject #   : 2                               Vial #     :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 11/24/2003 11:35:33
System Name: DX-120                          Detector   : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                            Rate       : 5.00 Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====
  
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.87	NH4	0.10	1829	13576	1	0.00
Totals			0.10	1829	13576		



```

=====
Data File   : C:\PEAKNET\DATA\NH401003.DXD   Report Date: 11/24/2003 11:48:35
Sample Name: Autocal2R                       Collected  : 11/24/2003 11:35:34
Inject #    : 3                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Last Update: 11/24/2003 11:35:33
System Name : DX-120                          Detector    : DX-120
Cal. Level  : 2                               Analyst     : Polk Lab
=====
    
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

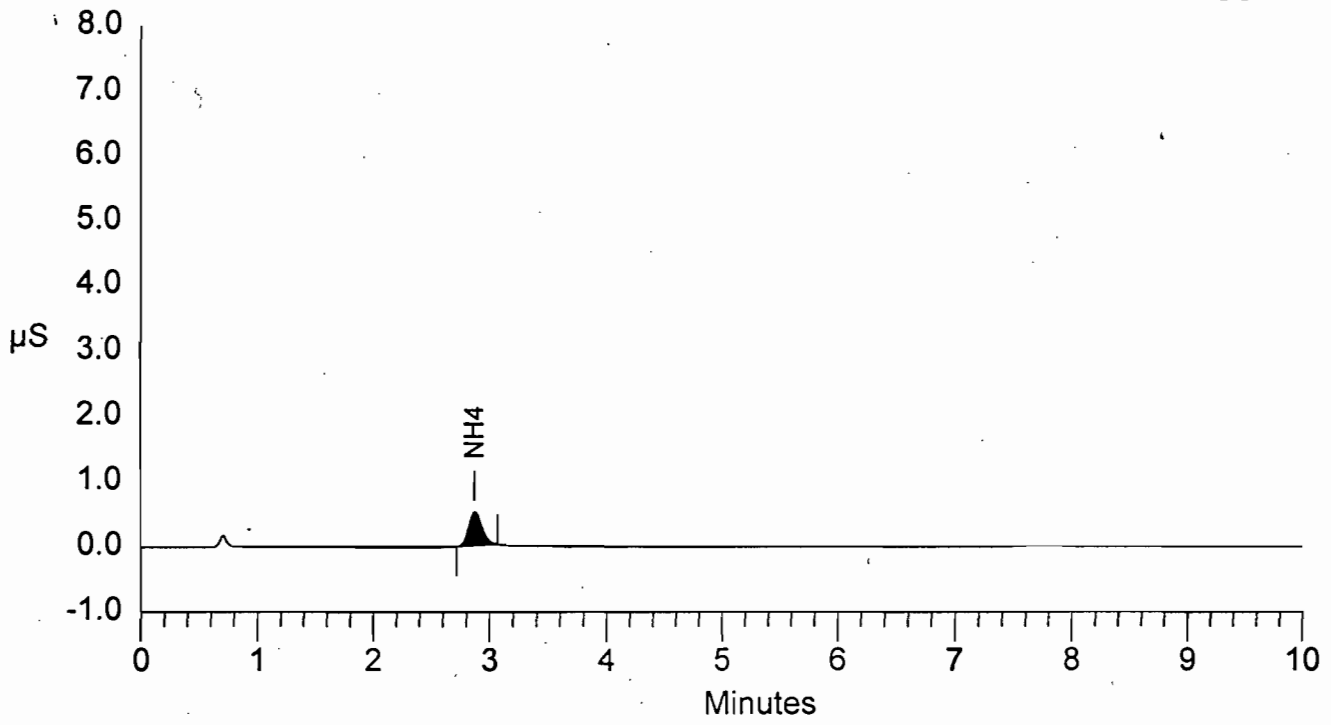
OMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.87	2.87	2.87	3.650e+004	4.154e+004	4.154e+004

```

=====
Data File   : C:\PEAKNET\DATA\NH401003.DXD   Report Date: 11/24/2003 11:48:35
Sample Name: Autocal2R                       Collected  : 11/24/2003 11:35:34
Inject #    : 3                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 11:48:35
System Name : DX-120                          Detector    : DX-120
Column Type : Ionpac CS12A                    Operator    :
Data Points : 3000                             Rate       : 5.00 Hz
Module Name : DX-120                           ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.87	NH4	0.30	5137	41541	1	0.00
Totals			0.30	5137	41541		



```

=====
Data File   : C:\PEAKNET\DATA\NH401004.DXD   Report Date: 11/24/2003 12:01:41
Sample Name: Autocal3R                       Collected  : 11/24/2003 11:48:36
Inject #    : 4                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Last Update: 11/24/2003 11:48:35
System Name : DX-120                          Detector    : DX-120
Cal. Level  : 3                               Analyst     : Polk Lab
=====
  
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

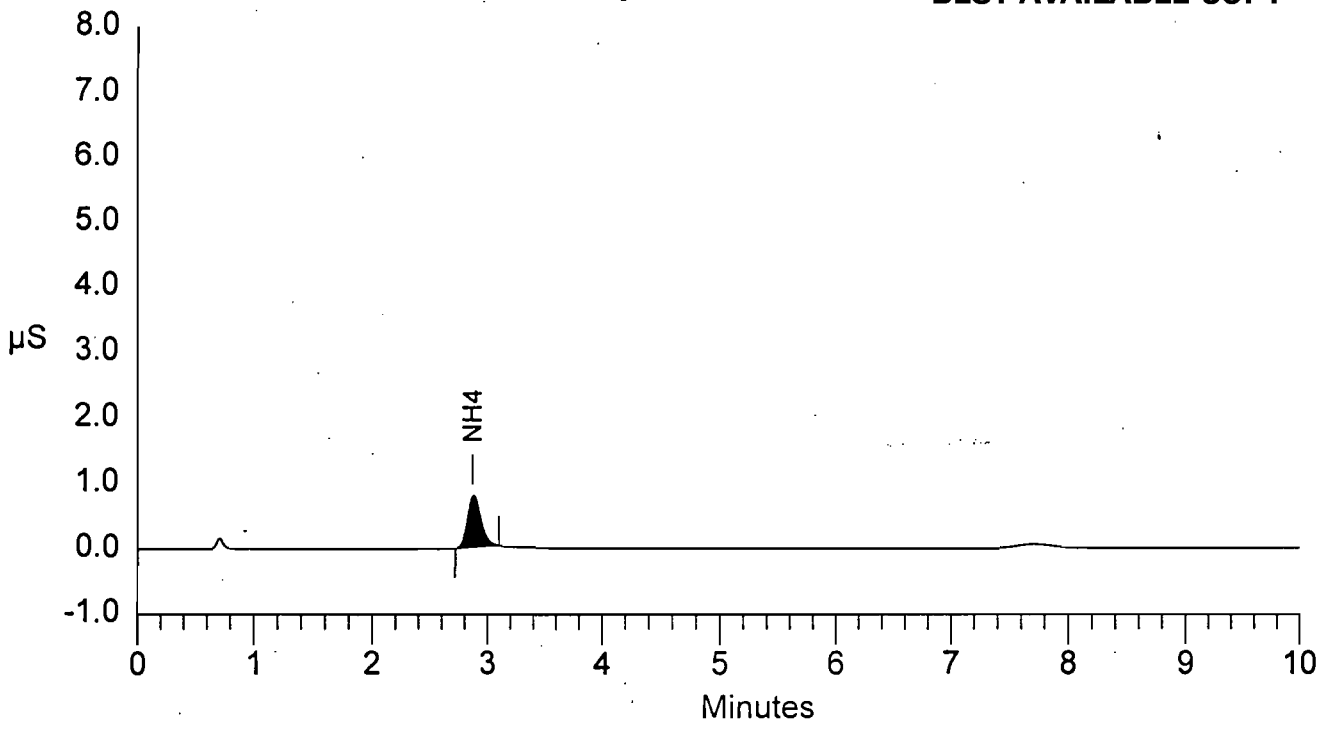
DMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.87	2.87	2.87	6.129e+004	6.676e+004	6.676e+004

```

=====
Data File   : C:\PEAKNET\DATA\NH401004.DXD   Report Date: 11/24/2003 12:01:41
Sample Name: Autocal3R                       Collected  : 11/24/2003 11:48:36
Inject #    : 4                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 12:01:41
System Name : DX-120                          Detector    : DX-120
Column Type : Ionpac CS12A                    Operator    :
Data Points : 3000                             Rate       : 5.00 Hz
Module Name : DX-120                           ID:50 05 d8 Moduleware : 1.00
=====
  
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.87	NH4	0.50	7837	66762	1	0.00
Totals			0.50	7837	66762		



```

=====
Data File   : C:\PEAKNET\DATA\NH401005.DXD   Report Date: 11/24/2003 12:14:41
Sample Name: Autocal4R                       Collected  : 11/24/2003 12:01:41
Inject #    : 5                               Vial #     :
Method File : c:\peaknet\method\ctm-027.met  Last Update: 11/24/2003 12:01:41
System Name: DX-120                           Detector   : DX-120
Cal. Level  : 4                               Analyst    : Polk Lab
=====
    
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD <sup>m</sup> RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.87	2.87	2.87	1.159e+005	1.280e+005	1.280e+005

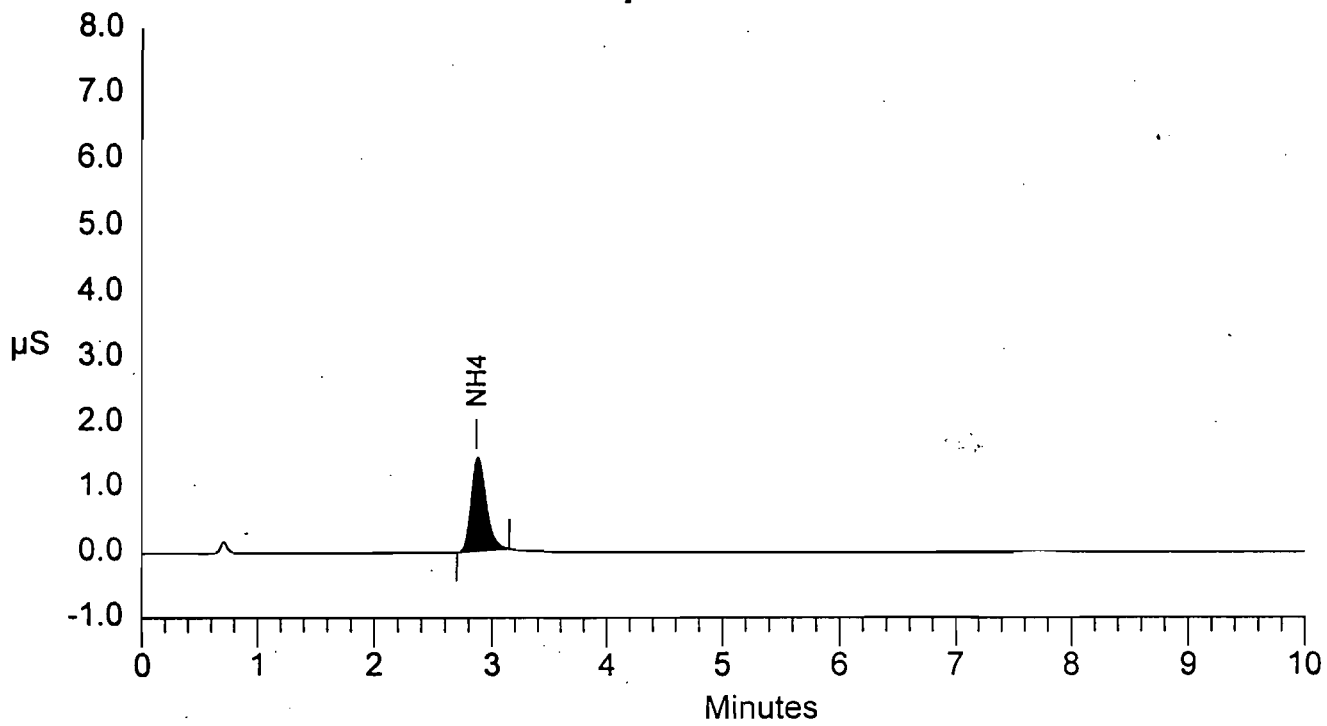
```

=====
Data File   : C:\PEAKNET\DATA\NH401005.DXD   Report Date: 11/24/2003 12:14:41
Sample Name: Autocal4R                       Collected  : 11/24/2003 12:01:41
Inject #    : 5                               Vial #     :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 12:14:41
System Name: DX-120                           Detector   : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.87	NH4	1.00	14003	128008	1	0.00
Totals			1.00	14003	128008		





\*\*\*\*\*

AUTOMATIC CALIBRATION UPDATE

\*\*\*\*\*

```

=====
Data File   : C:\PEAKNET\DATA\NH401006.DXD   Report Date: 11/24/2003 12:27:47
Sample Name: Autocal5R                       Collected  : 11/24/2003 12:14:42
Inject #    : 6                               Vial #     :
Method File : c:\peaknet\method\ctm-027.met  Last Update: 11/24/2003 12:14:41
System Name : DX-120                          Detector   : DX-120
Cal. Level  : 5                               Analyst    : Polk Lab
=====

```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

OMP NUM	COMPONENT NAME	OLD	MEASURED	NEW	OLD	MEASURED	NEW
		RET.TIME	RET.TIME	RET.TIME	RESPONSE	RESPONSE	RESPONSE
1	NH4	2.87	2.88	2.88	2.204e+005	2.383e+005	2.383e+005

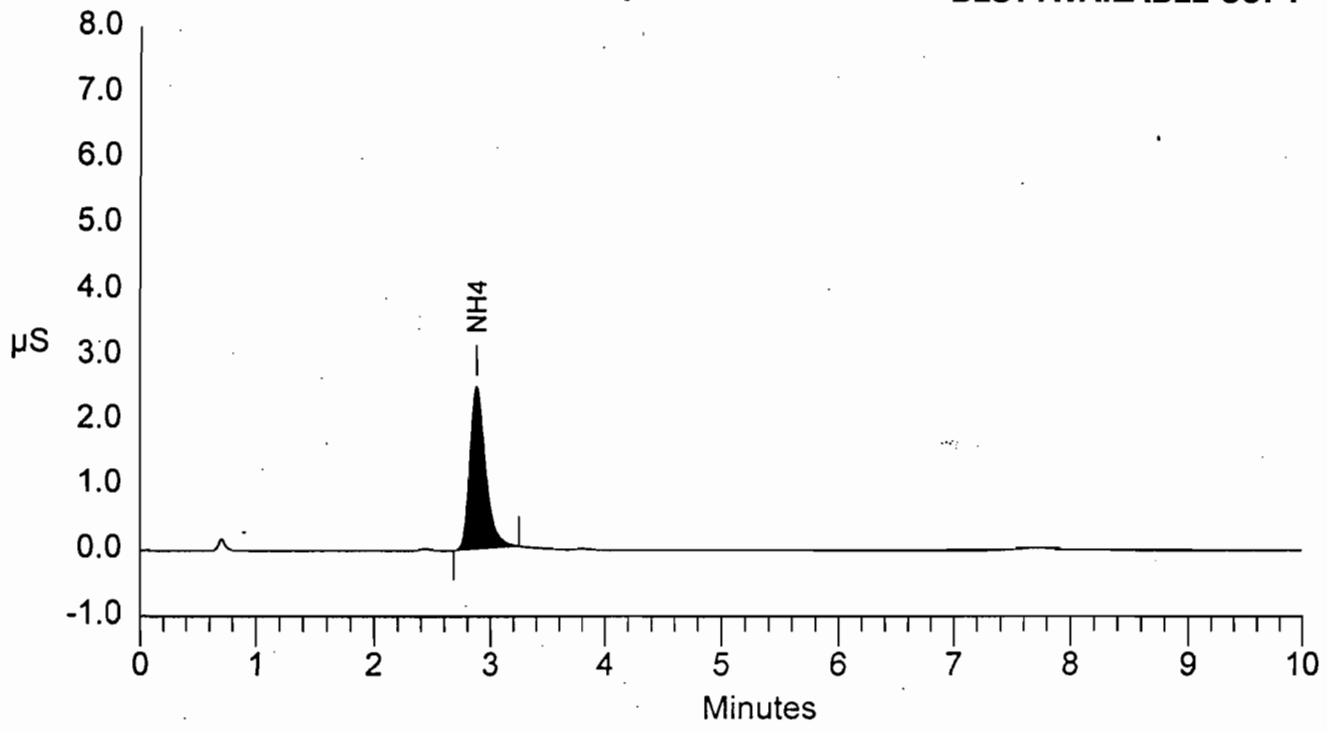
```

=====
Data File   : C:\PEAKNET\DATA\NH401006.DXD   Report Date: 11/24/2003 12:27:47
Sample Name: Autocal5R                       Collected  : 11/24/2003 12:14:42
Inject #    : 6                               Vial #     :
Method File : c:\peaknet\method\ctm-027.met  Calibrated : 11/24/2003 12:27:47
System Name : DX-120                          Detector   : DX-120
Column Type : Ionpac CS12A                    Operator    :
Data Points : 3000                             Rate       : 5.00 Hz
Module Name : DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.88	NH4	2.00	25103	238324	1	0.00
Totals			2.00	25103	238324		



\*\*\*\*\* AUTOMATIC CALIBRATION UPDATE \*\*\*\*\*

```

=====
Data File   : C:\PEAKNET\DATA\NH401007.DXD   Report Date: 11/24/2003 12:40:53
Sample Name: Autocal6R                       Collected  : 11/24/2003 12:27:47
Inject #    : 7                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Last Update: 11/24/2003 12:27:47
System Name : DX-120                          Detector    : DX-120
Cal. Level  : 6                               Analyst     : Polk Lab
=====
  
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.88	2.88	2.88	3.051e+005	3.314e+005	3.314e+005

```

=====
Data File   : C:\PEAKNET\DATA\NH401007.DXD   Report Date: 11/24/2003 12:40:53
Sample Name: Autocal6R                       Collected  : 11/24/2003 12:27:47
Inject #    : 7                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 12:40:53
System Name : DX-120                          Detector    : DX-120
Column Type : Ionpac CS12A                    Operator    :
Data Points : 3000                             Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====
  
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.88	NH4	3.00	33697	331404	1	0.00
Totals			3.00	33697	331404		

```

=====
Data File   : C:\PEAKNET\DATA\NH401010.DXD   Report Date: 11/24/2003 1:20:06 P
Sample Name: Autocal9R                       Collected  : 11/24/2003 1:07:01 P
Inject #    : 10                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Last Update: 11/24/2003 1:07:00 P
System Name: DX-120                          Detector    : DX-120
Cal. Level  : 9                              Analyst     : Polk Lab
=====
    
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

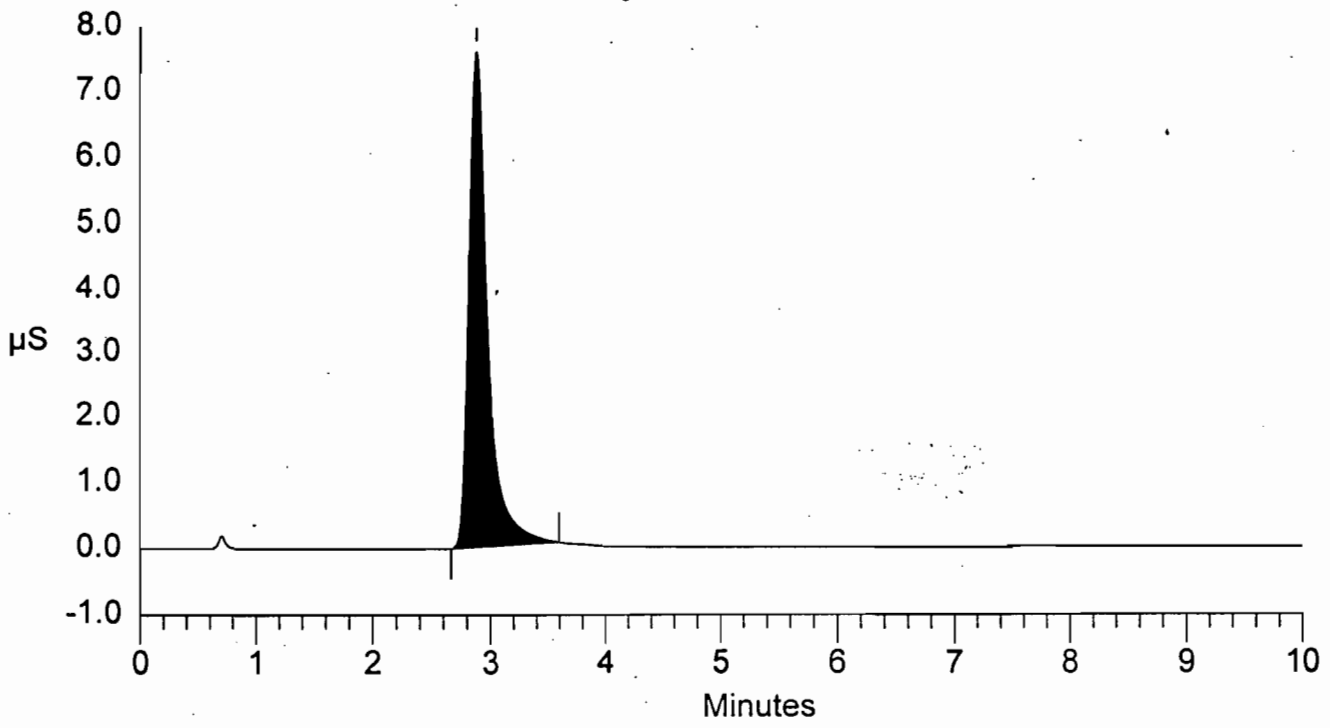
OMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.88	2.88	2.88	7.984e+005	8.529e+005	8.529e+005

```

=====
Data File   : C:\PEAKNET\DATA\NH401010.DXD   Report Date: 11/24/2003 1:20:06 P
Sample Name: Autocal9R                       Collected  : 11/24/2003 1:07:01 P
Inject #    : 10                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                            Rate        : 5.00 Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.88	NH4	10.00	75921	852866	1	0.00
Totals			10.00	75921	852866		



```

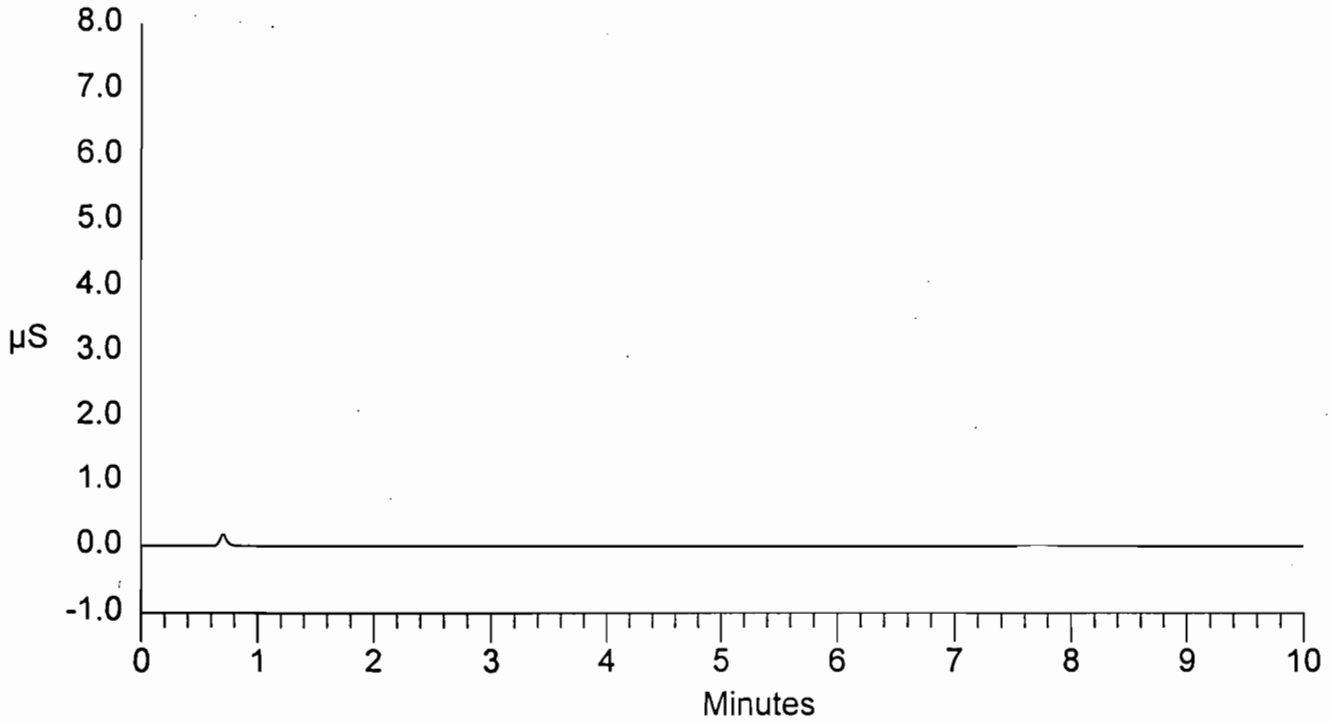
=====
Data File   : C:\PEAKNET\DATA\NH401011.DXD   Report Date: 11/24/2003 1:33:13 P
Sample Name: Reagent Blank                   Collected  : 11/24/2003 1:20:06 P
Inject #    : 11                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
-----							
Totals			0.00	0	0		

**File: NH401011.DXD Sample Reagent Blank**



```

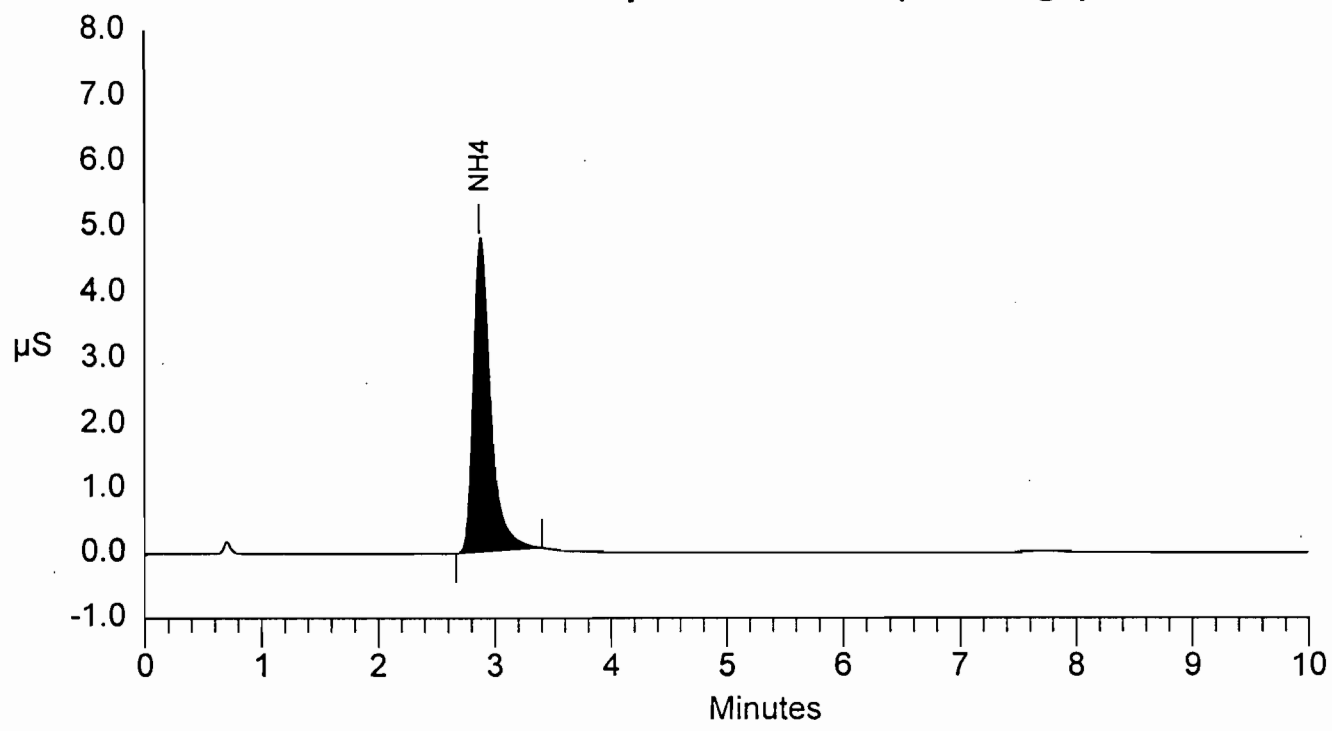
=====
Data File   : C:\PEAKNET\DATA\NH401012.DXD   Report Date: 11/24/2003 1:46:19 P
Sample Name: Cal. Std 5 (5.00 mg/l)         Collected  : 11/24/2003 1:33:13 P
Inject #    : 12                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.87	NH4	4.94	46927	498944	1	0.00
Totals			4.94	46927	498944		

**File: NH401012.DXD Sample Cal. Std 5 (5.00 mg/l)**





```

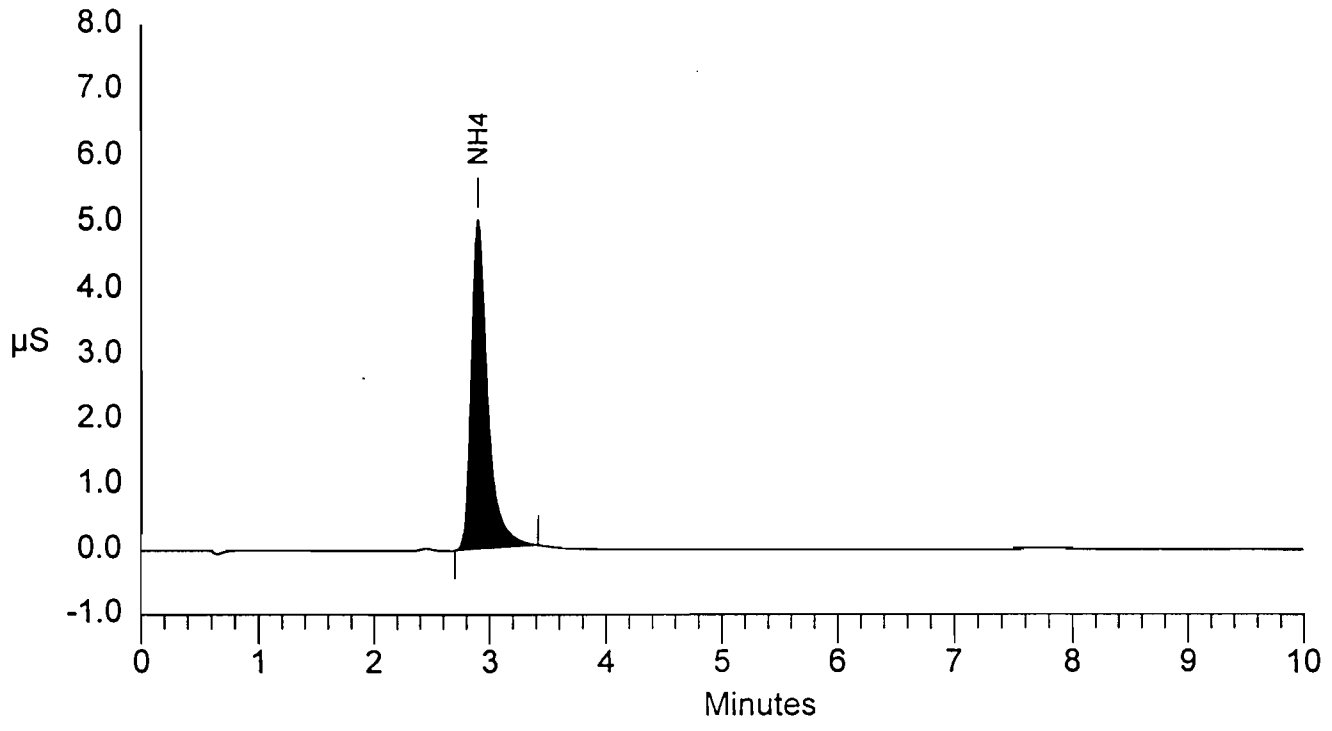
=====
Data File   : C:\PEAKNET\DATA\NH401013.DXD   Report Date: 11/24/2003 1:59:19 P
Sample Name: Orion Standard T.V.= 5.15       Collected  : 11/24/2003 1:46:19 P
Inject #    : 13                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                           Detector    : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.90	NH4	4.93	50214	497954	1	0.00
Totals			4.93	50214	497954		

**File: NH401013.DXD Sample Orion Standard T.V.= 5.15**



```

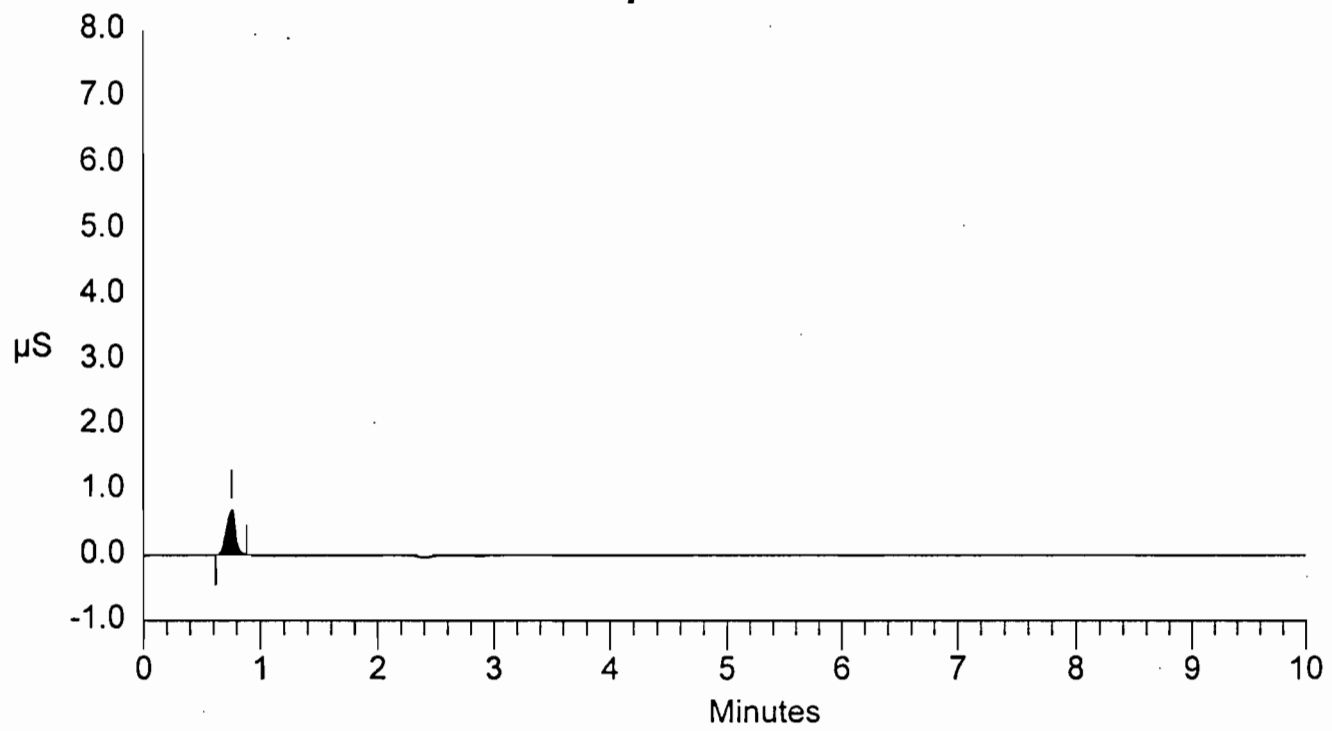
=====
Data File   : C:\PEAKNET\DATA\NH401014.DXD   Report Date: 11/24/2003 2:12:25 P
Sample Name: RW - 2840 0.1N H2SO4           Collected  : 11/24/2003 1:59:20 P
Inject #    : 14                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                           Detector    : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
Totals			0.00	0	0		

**File: NH401014.DXD Sample RW - 2840 0.1N H2SO4**



```

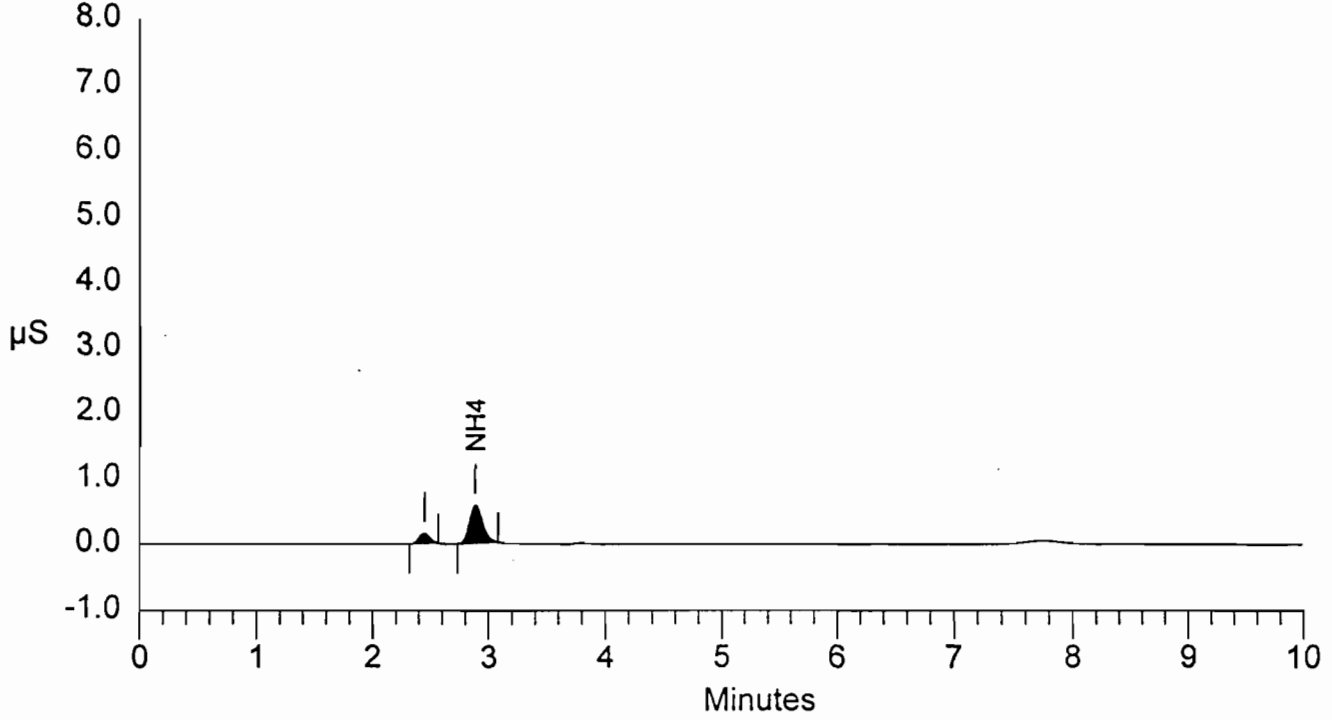
=====
Data File   : C:\PEAKNET\DATA\NH401015.DXD   Report Date: 11/24/2003 2:25:26 P
Sample Name: 11/12/03 Run 1 Impinger #1     Collected  : 11/24/2003 2:12:25 P
Inject #    : 15                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.88	NH4	0.33	5826	46093	1	0.00
Totals			0.33	5826	46093		

File: NH401015.DXD Sample 11/12/03 Run 1 Impinger #1



```

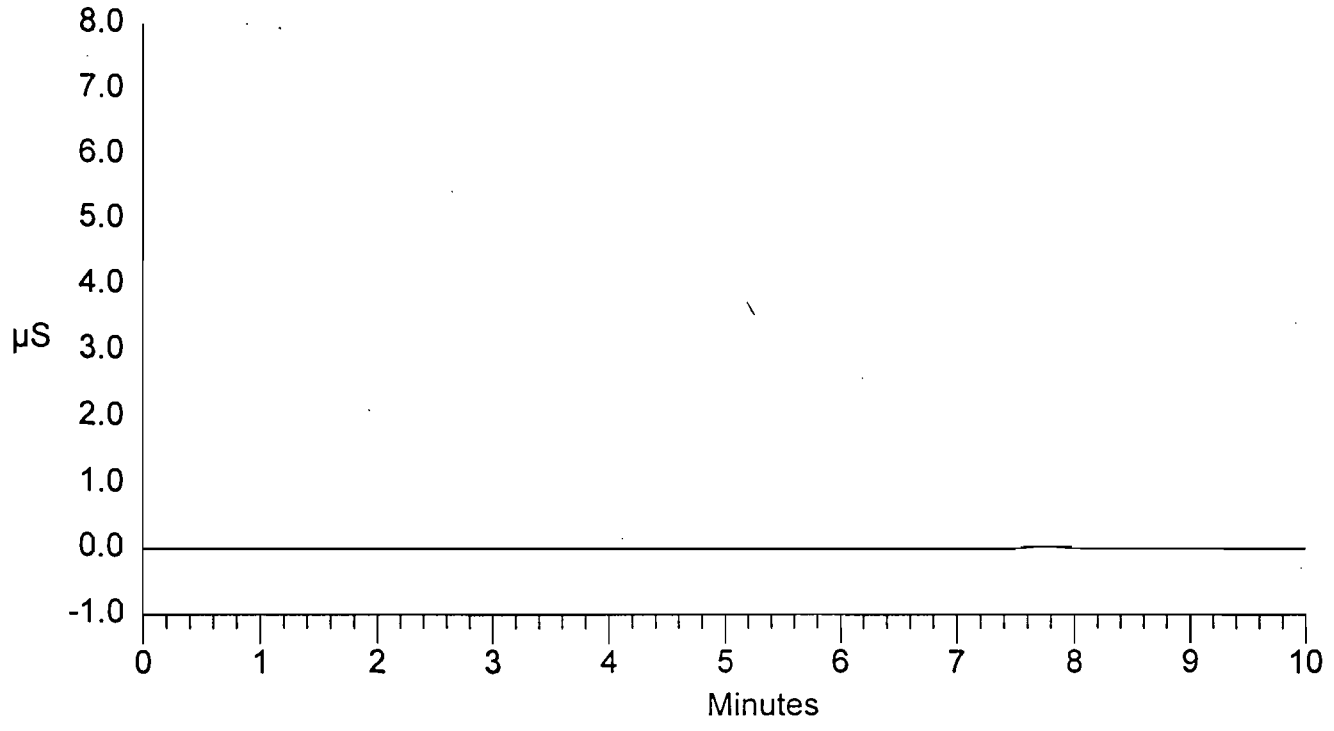
=====
Data File   : C:\PEAKNET\DATA\NH401016.DXD   Report Date: 11/24/2003 2:38:32 P
Sample Name: 11/12/03 Run 1 Impinger #2      Collected  : 11/24/2003 2:25:26 P
Inject #    : 16                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                           Detector    : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate        : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
-----							
Totals			0.00	0	0		

**File: NH401016.DXD Sample 11/12/03 Run 1 Impinger #2**



```

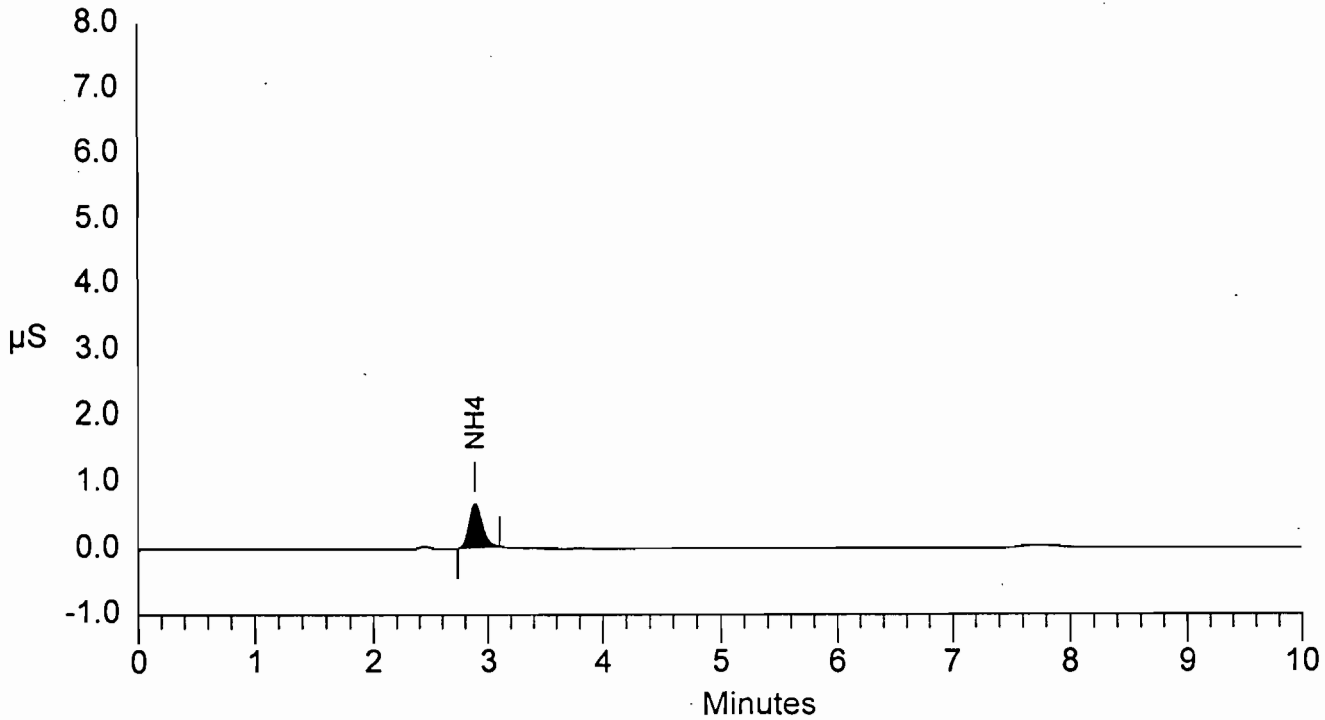
=====
Data File   : C:\PEAKNET\DATA\NH401017.DXD   Report Date: 11/24/2003 2:51:32 P
Sample Name: 11/12/03 Run 2 Impinger #1     Collected  : 11/24/2003 2:38:32 P
Inject #    : 17                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                            Rate       : 5.00   Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.88	NH4	0.39	6576	52682	1	0.00
Totals			0.39	6576	52682		

**File: NH401017.DXD Sample 11/12/03 Run 2 Impinger #1**



```

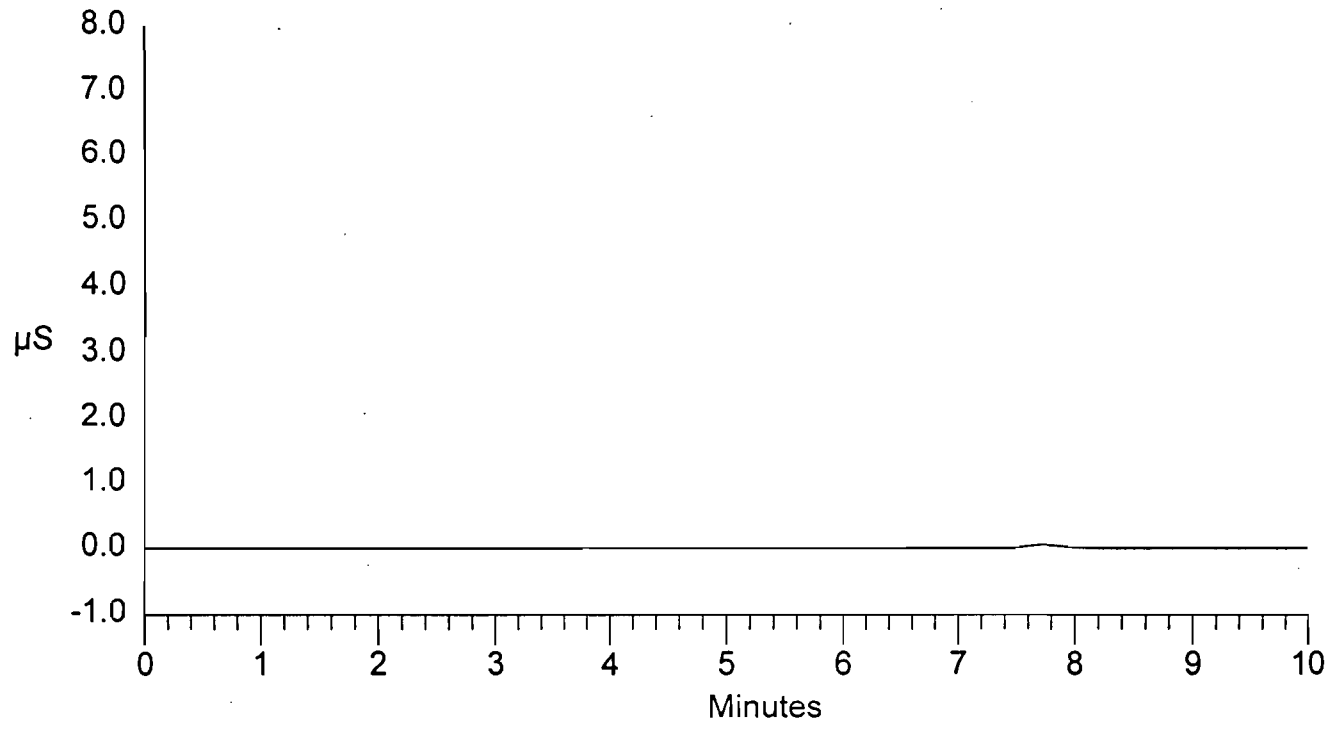
=====
Data File   : C:\PEAKNET\DATA\NH401018.DXD   Report Date: 11/24/2003 3:04:38 P
Sample Name: 11/12/03 Run 2 Impinger #2     Collected  : 11/24/2003 2:51:33 P
Inject #    : 18                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name : DX-120                           Detector    : DX-120
Column Type : Ionpac CS12A                       Operator    :
Data Points : 3000                               Rate       : 5.00   Hz
Module Name : DX-120                               ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
-----							
Totals			0.00	0	0		

**File: NH401018.DXD Sample 11/12/03 Run 2 Impinger #2**



```

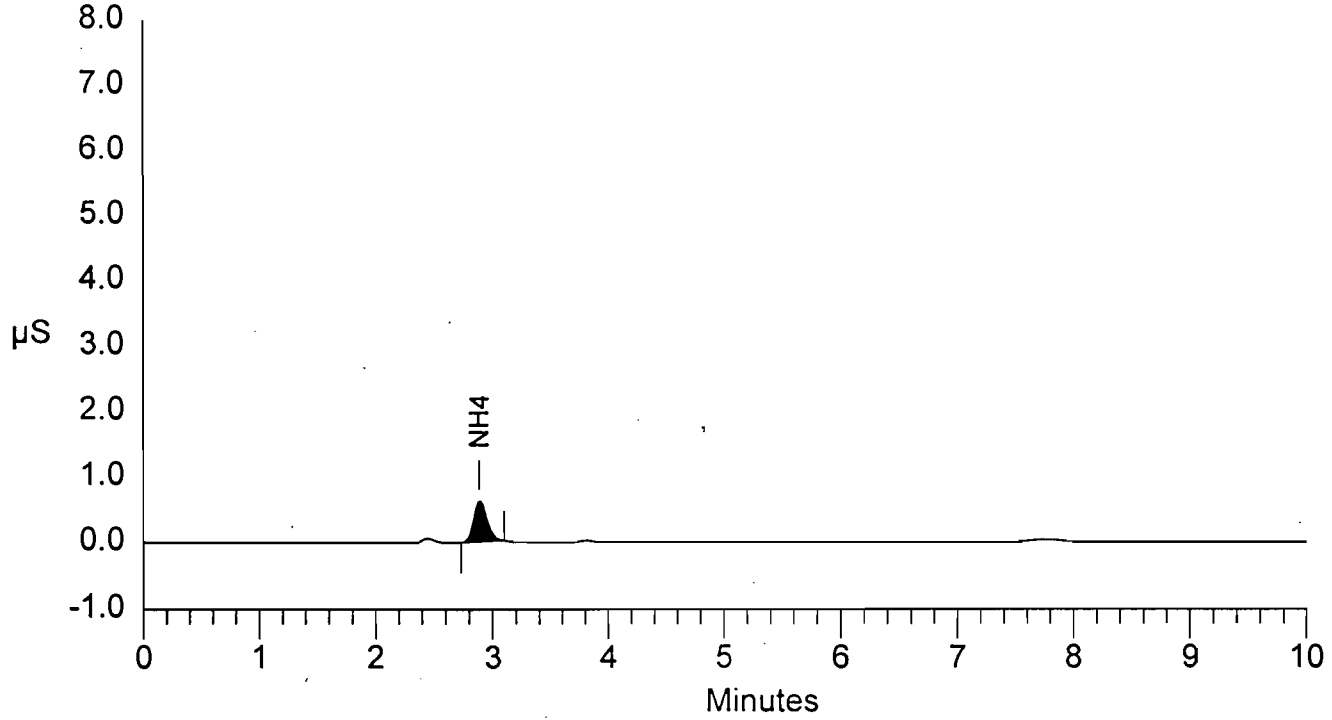
=====
Data File   : C:\PEAKNET\DATA\NH401019.DXD   Report Date: 11/24/2003 3:17:44 P
Sample Name: 11/12/03 Run 3 Impinger #1     Collected  : 11/24/2003 3:04:39 P
Inject #    : 19                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                            Rate       : 5.00 Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.88	NH4	0.36	6110	49291	1	0.00
Totals			0.36	6110	49291		

File: NH401019.DXD Sample 11/12/03 Run 3 Impinger #1



```

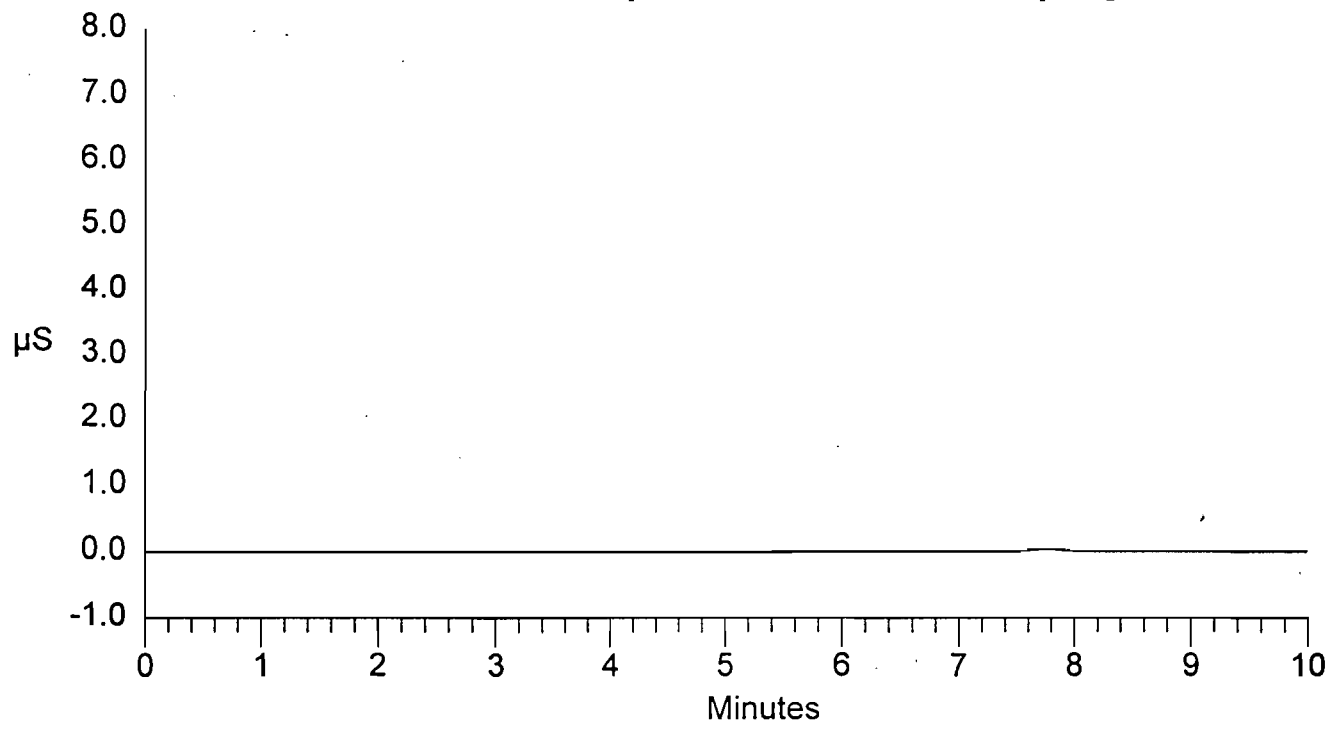
=====
Data File   : C:\PEAKNET\DATA\NH401020.DXD   Report Date: 11/24/2003 3:30:45 P
Sample Name: 11/12/03 Run 3 Impinger #2     Collected  : 11/24/2003 3:17:44 P
Inject #    : 20                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                            Rate       : 5.00 Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
Totals			0.00	0	0		

**File: NH401020.DXD Sample 11/12/03 Run 3 Impinger #2**





```

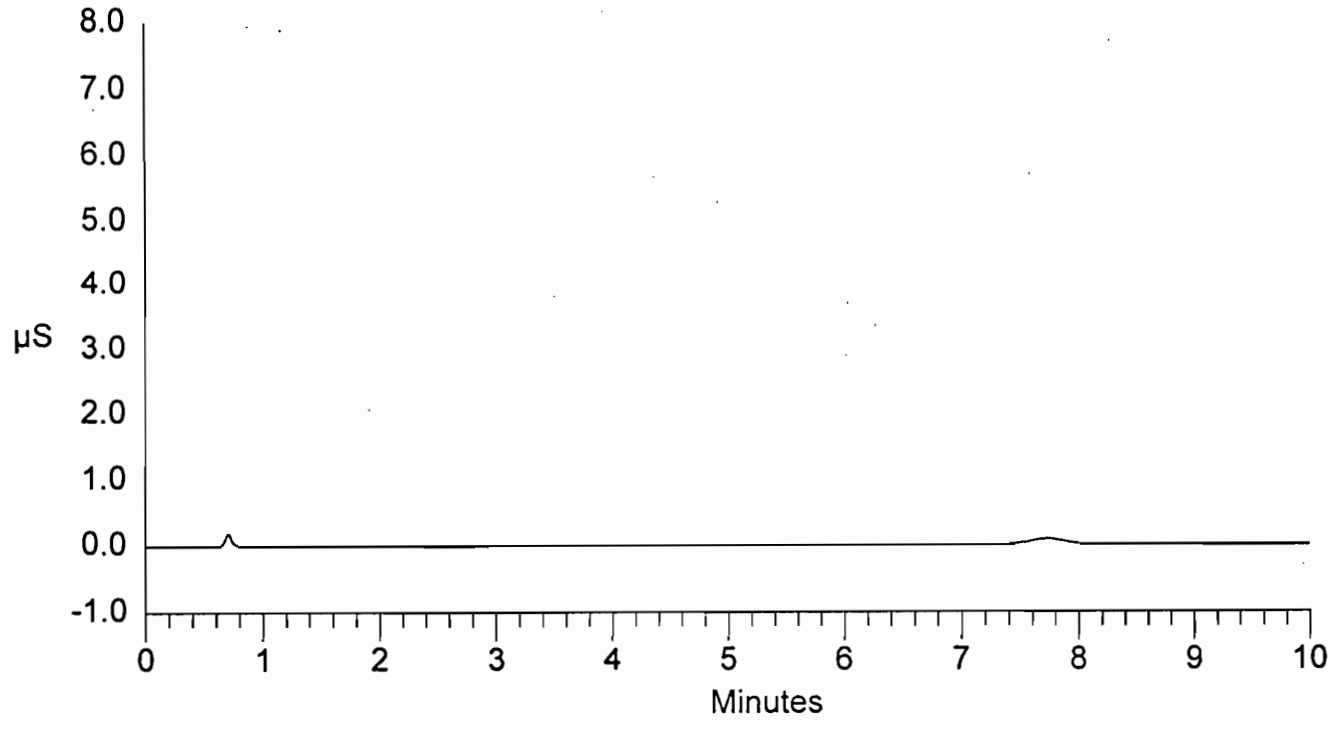
=====
Data File   : C:\PEAKNET\DATA\NH401021.DXD   Report Date: 11/24/2003 3:43:51 P
Sample Name: Reagent Blank                   Collected  : 11/24/2003 3:30:46 P
Inject #    : 21                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
-----							
Totals			0.00	0	0		

**File: NH401021.DXD Sample Reagent Blank**



```

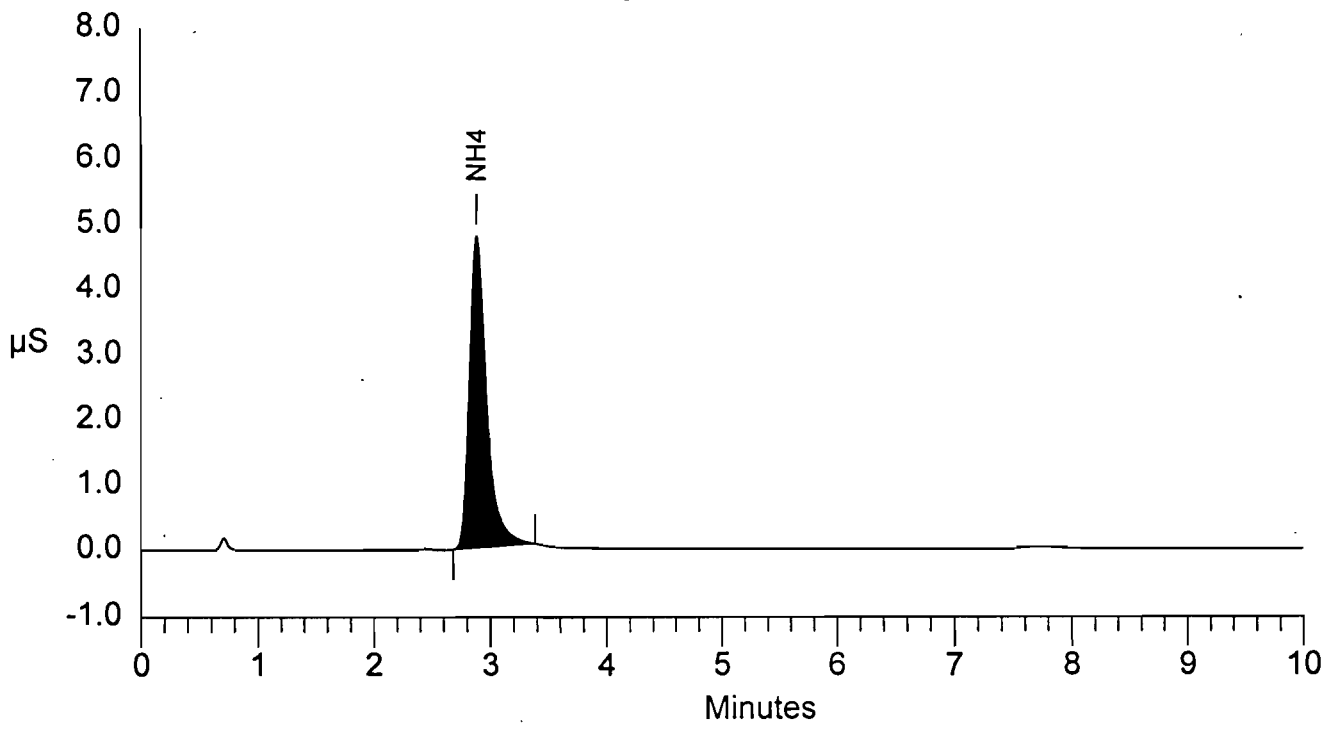
=====
Data File   : C:\PEAKNET\DATA\NH401022.DXD   Report Date: 11/24/2003 3:56:57 P
Sample Name: Cal Std 5 (5.00 mg/l)           Collected  : 11/24/2003 3:43:51 P
Inject #    : 22                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.88	NH4	4.91	48049	496390	1	0.00
Totals			4.91	48049	496390		

File: NH401022.DXD Sample Cal Std 5 (5.00 mg/l)



```

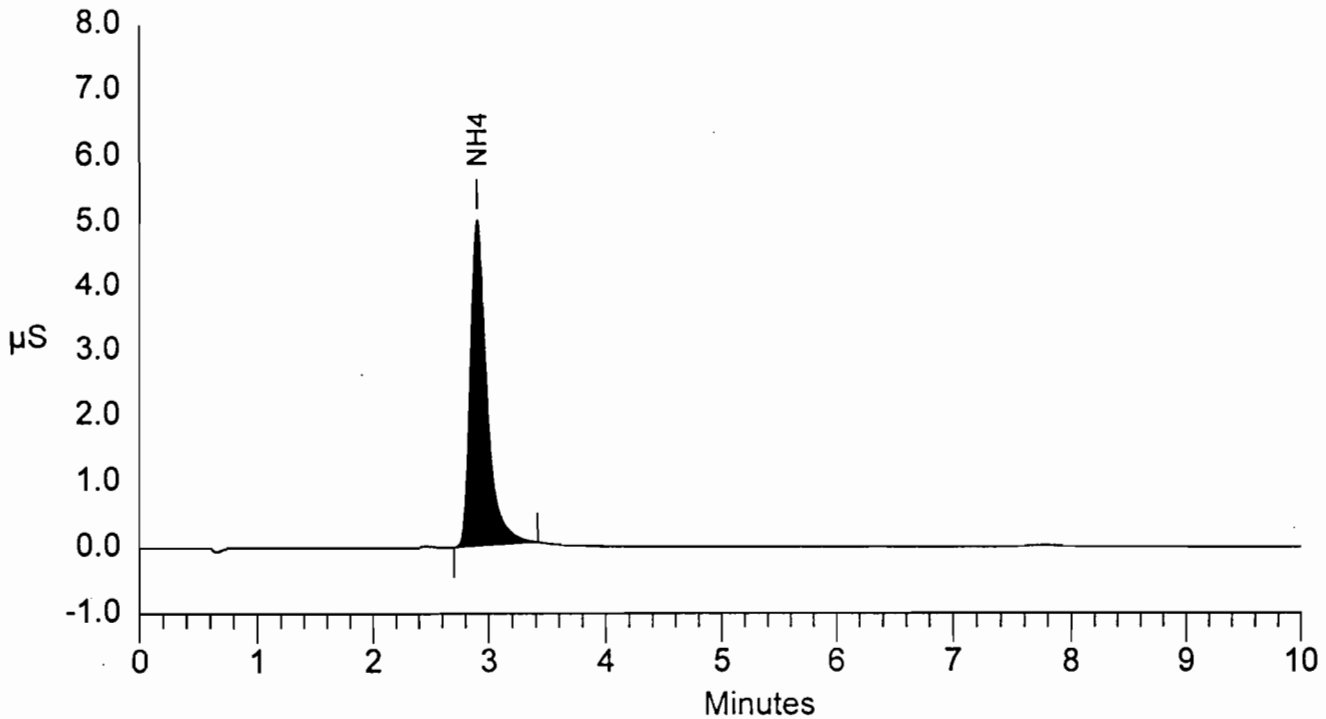
=====
Data File   : C:\PEAKNET\DATA\NH401023.DXD   Report Date: 11/24/2003 4:09:57 P
Sample Name: Orion Standard T.V. = 5.15     Collected  : 11/24/2003 3:56:57 P
Inject #    : 23                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                            Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.90	NH4	4.92	50094	496919	1	0.00
Totals			4.92	50094	496919		

File: NH401023.DXD Sample Orion Standard T.V. = 5.15



```

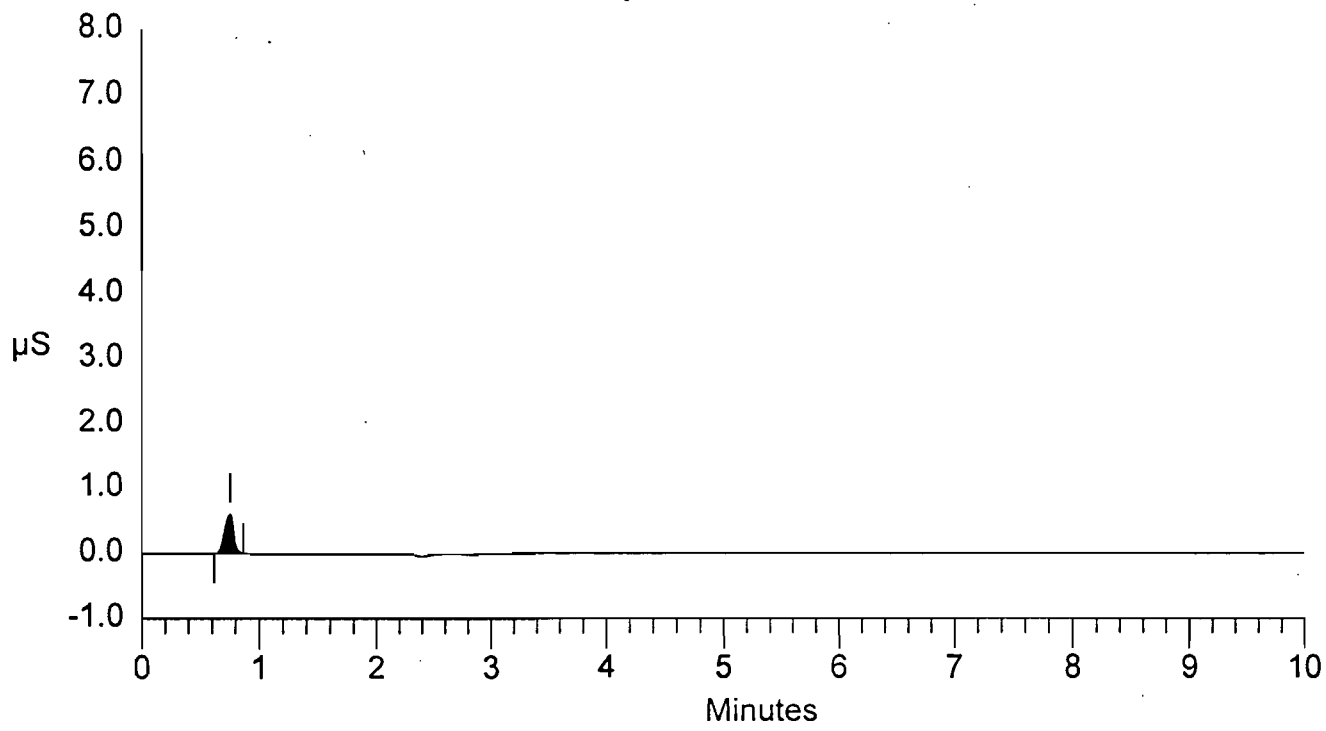
=====
Data File   : C:\PEAKNET\DATA\NH401024.DXD   Report Date: 11/24/2003 4:23:03 P
Sample Name: RW - 2839 0.1N H2SO4           Collected  : 11/24/2003 4:09:58 P
Inject #    : 24                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
-----							
Totals			0.00	0	0		

**File: NH401024.DXD Sample RW - 2839 0.1N H2SO4**



```

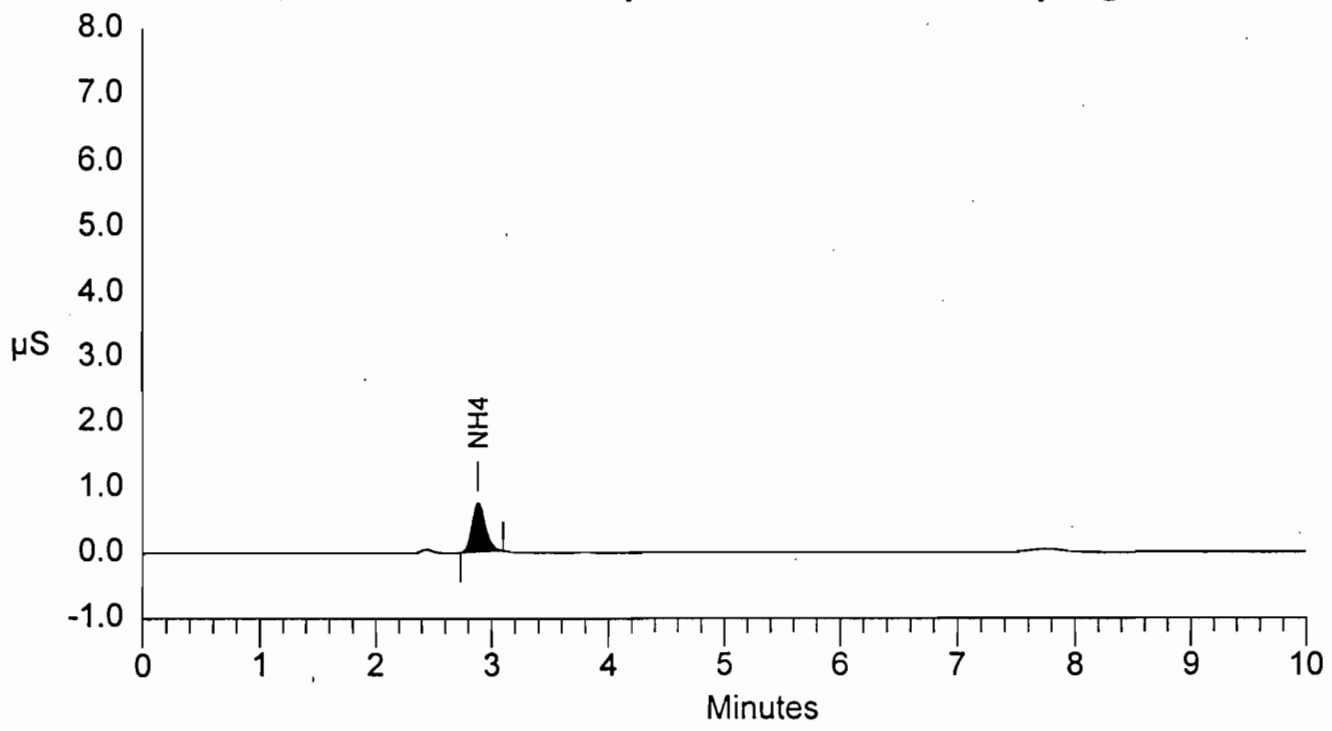
=====
Data File   : C:\PEAKNET\DATA\NH401025.DXD   Report Date: 11/24/2003 4:36:04 P
Sample Name: 11/14/03 Run 1 Impinger #1     Collected  : 11/24/2003 4:23:03 P
Inject #    : 25                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name : DX-120                           Detector    : DX-120
Column Type : Ionpac CS12A                     Operator    :
Data Points : 3000                             Rate       : 5.00   Hz
Module Name : DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.88	NH4	0.45	7574	60924	1	0.00
Totals			0.45	7574	60924		

File: NH401025.DXD Sample 11/14/03 Run 1 Impinger #1



```

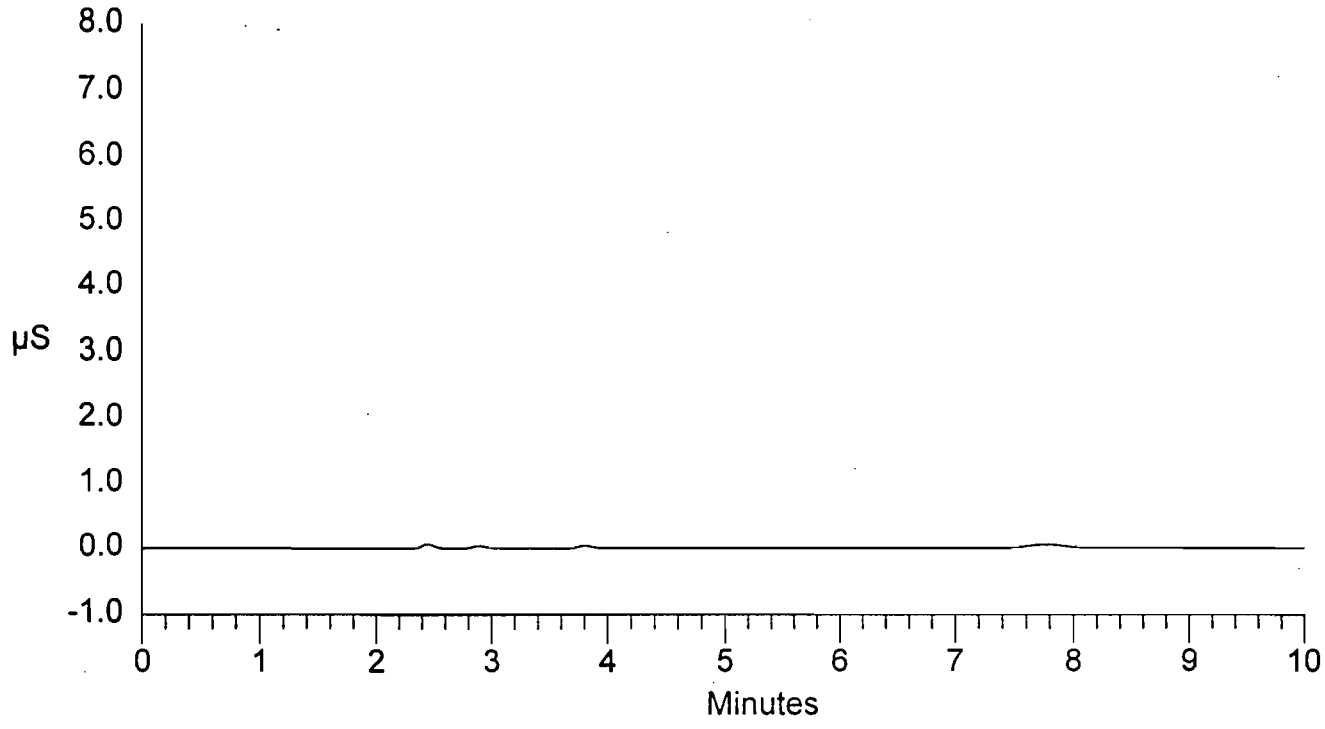
=====
Data File   : C:\PEAKNET\DATA\NH401026.DXD   Report Date: 11/24/2003 4:49:10 P
Sample Name: 11/14/03 Run 1 Impinger #2     Collected  : 11/24/2003 4:36:04 P
Inject #    : 26                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name : DX-120                          Detector    : DX-120
Column Type : Ionpac CS12A                    Operator    :
Data Points : 3000                             Rate       : 5.00 Hz
Module Name : DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
-----							
Totals			0.00	0	0		

**File: NH401026.DXD Sample 11/14/03 Run 1 Impinger #2**



```

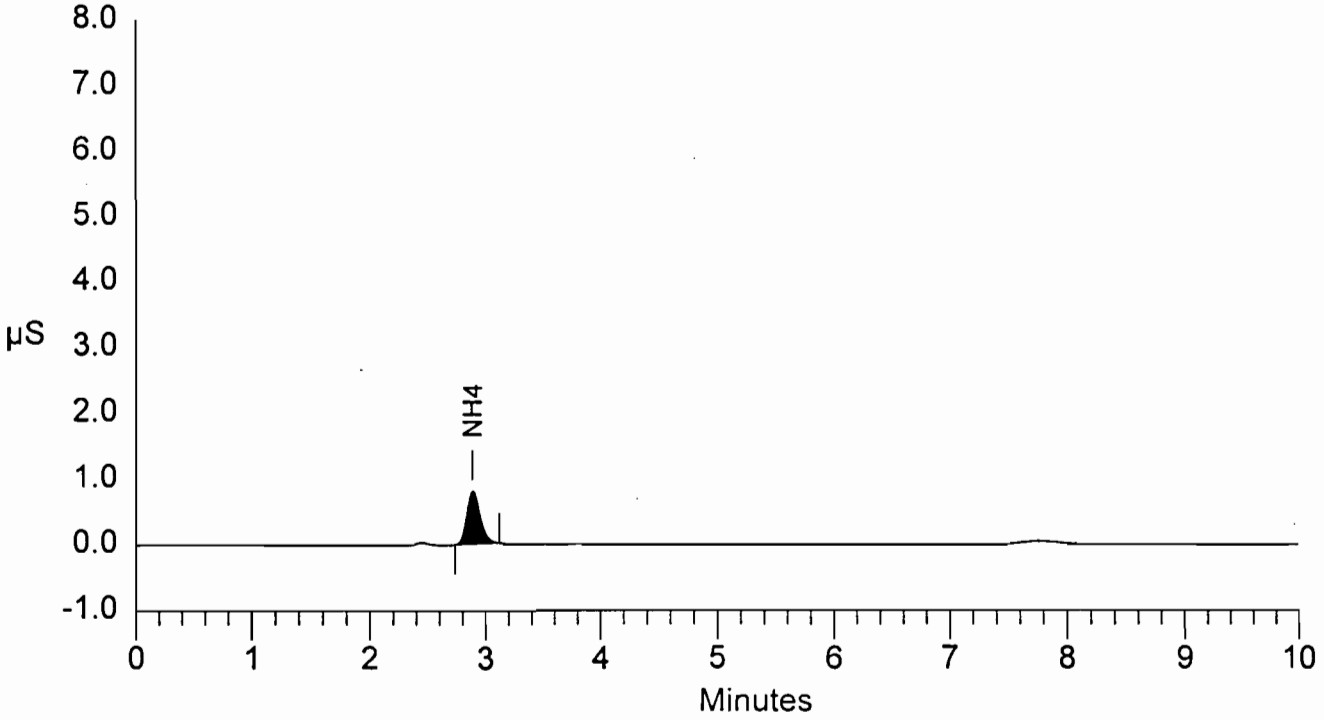
=====
Data File   : C:\PEAKNET\DATA\NH401027.DXD   Report Date: 11/24/2003 5:02:16 P
Sample Name: 11/14/03 Run 2 Impinger #1     Collected  : 11/24/2003 4:49:11 P
Inject #    : 27                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                           Detector    : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate       : 5.00   Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.88	NH4	0.49	8088	66035	1	0.00
Totals			0.49	8088	66035		

**File: NH401027.DXD Sample 11/14/03 Run 2 Impinger #1**



```

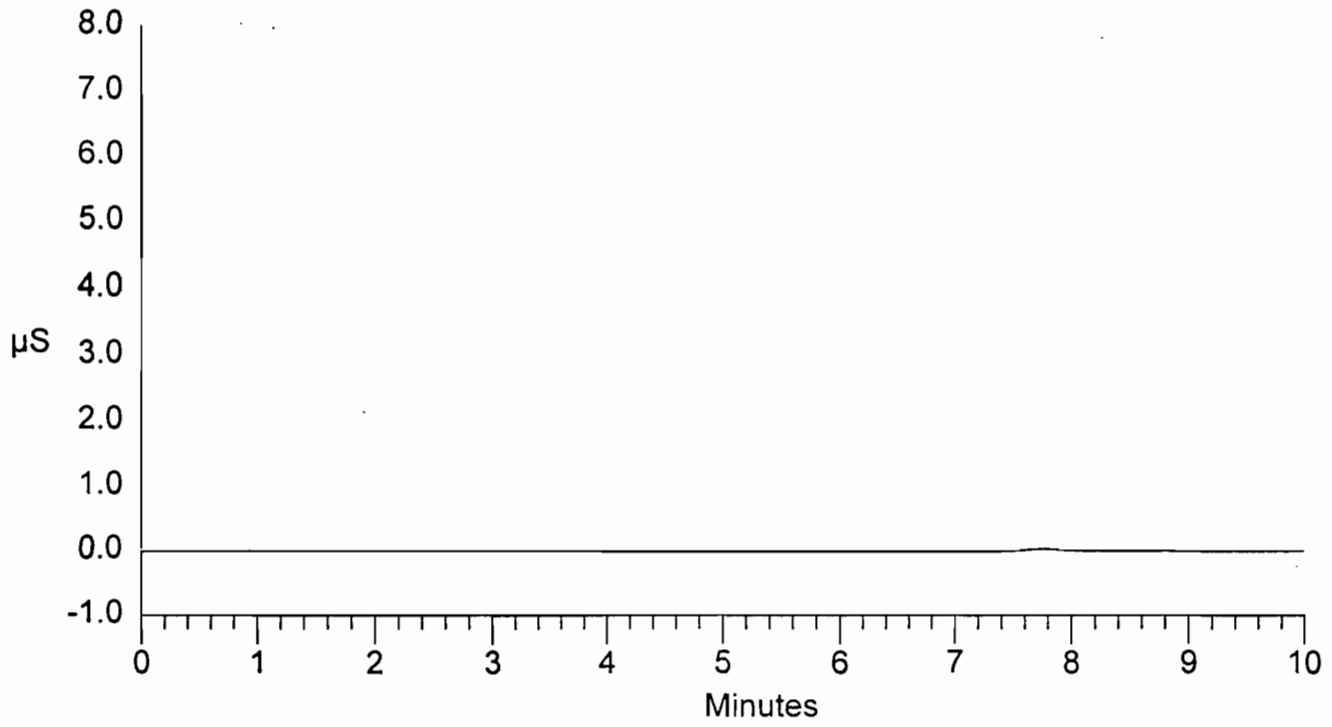
=====
Data File   : C:\PEAKNET\DATA\NH401028.DXD   Report Date: 11/24/2003 5:15:16 P
Sample Name: 11/14/03 Run 2 Impinger #2     Collected  : 11/24/2003 5:02:16 P
Inject #    : 28                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                            Rate        : 5.00 Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
Totals			0.00	0	0		

**File: NH401028.DXD Sample 11/14/03 Run 2 Impinger #2**





```

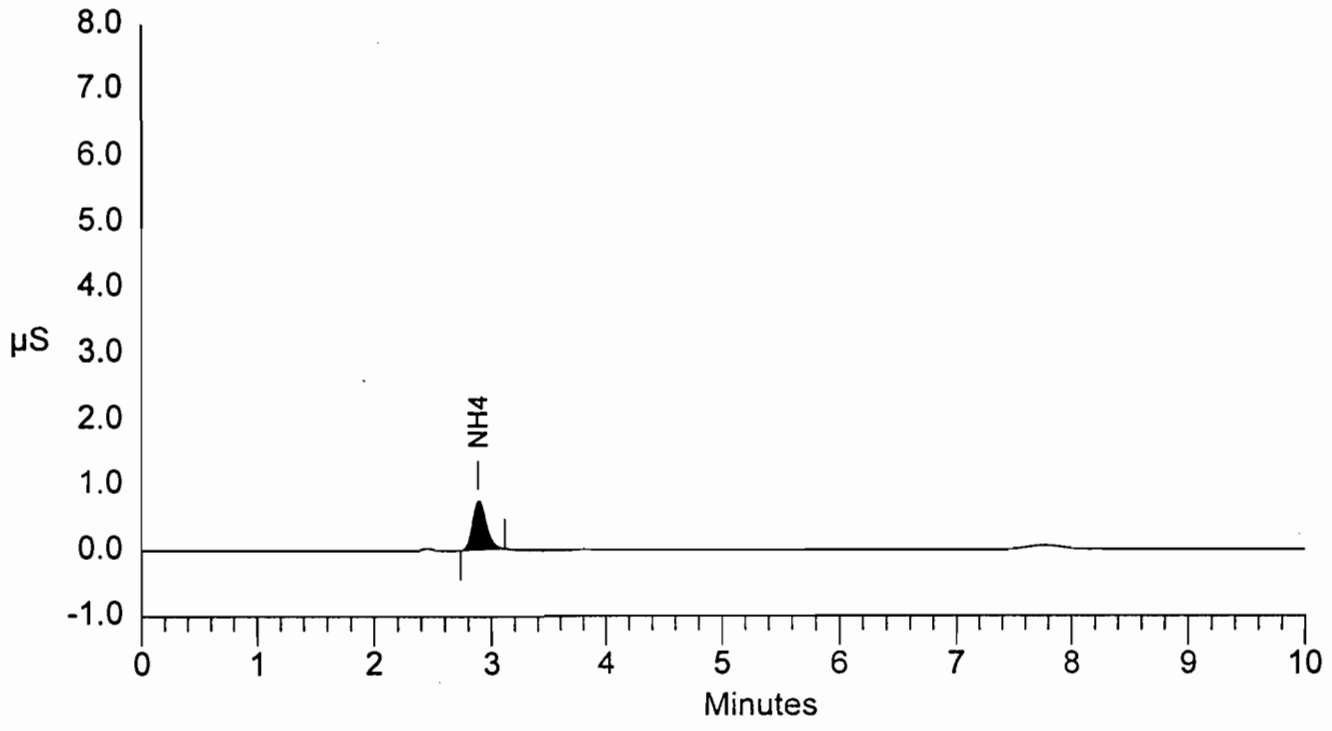
=====
Data File   : C:\PEAKNET\DATA\NH401029.DXD   Report Date: 11/24/2003 5:28:22 P
Sample Name: 11/14/03 Run 3 Impinger #1     Collected  : 11/24/2003 5:15:16 P
Inject #    : 29                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name : DX-120                          Detector    : DX-120
Column Type : Ionpac CS12A                    Operator    :
Data Points : 3000                             Rate       : 5.00 Hz
Module Name : DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.88	NH4	0.45	7358	60558	1	0.00
Totals			0.45	7358	60558		

**File: NH401029.DXD Sample 11/14/03 Run 3 Impinger #1**



```

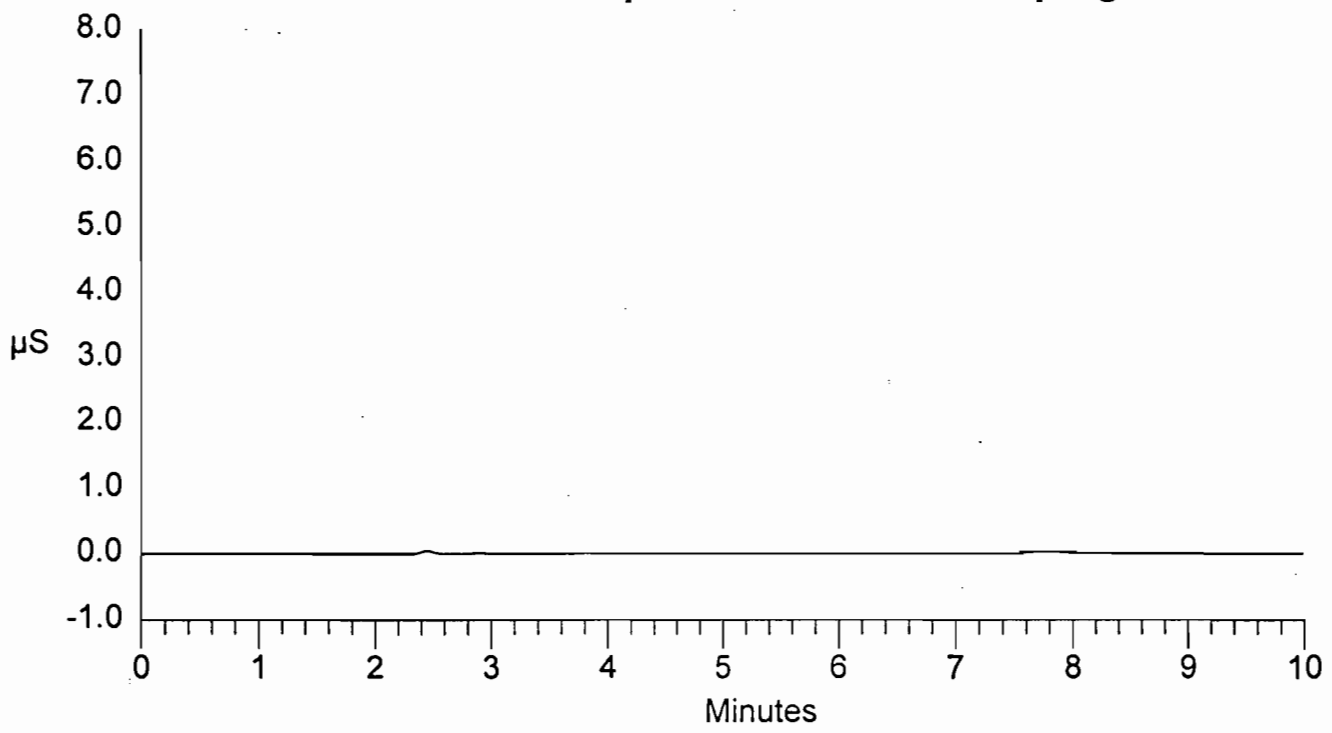
=====
Data File   : C:\PEAKNET\DATA\NH401030.DXD   Report Date: 11/24/2003 5:41:23 P
Sample Name: 11/14/03 Run 3 Impinger #2     Collected  : 11/24/2003 5:28:23 P
Inject #    : 30                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                            Rate        : 5.00 Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
Totals			0.00	0	0		

**File: NH401030.DXD Sample 11/14/03 Run 3 Impinger #2**



```

=====
Data File   : C:\PEAKNET\DATA\NH401031.DXD   Report Date: 11/24/2003 5:54:29 P
Sample Name: Reagent Blank                   Collected  : 11/24/2003 5:41:24 P
Inject #    : 31                             Vial #     :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                            Rate       : 5.00 Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

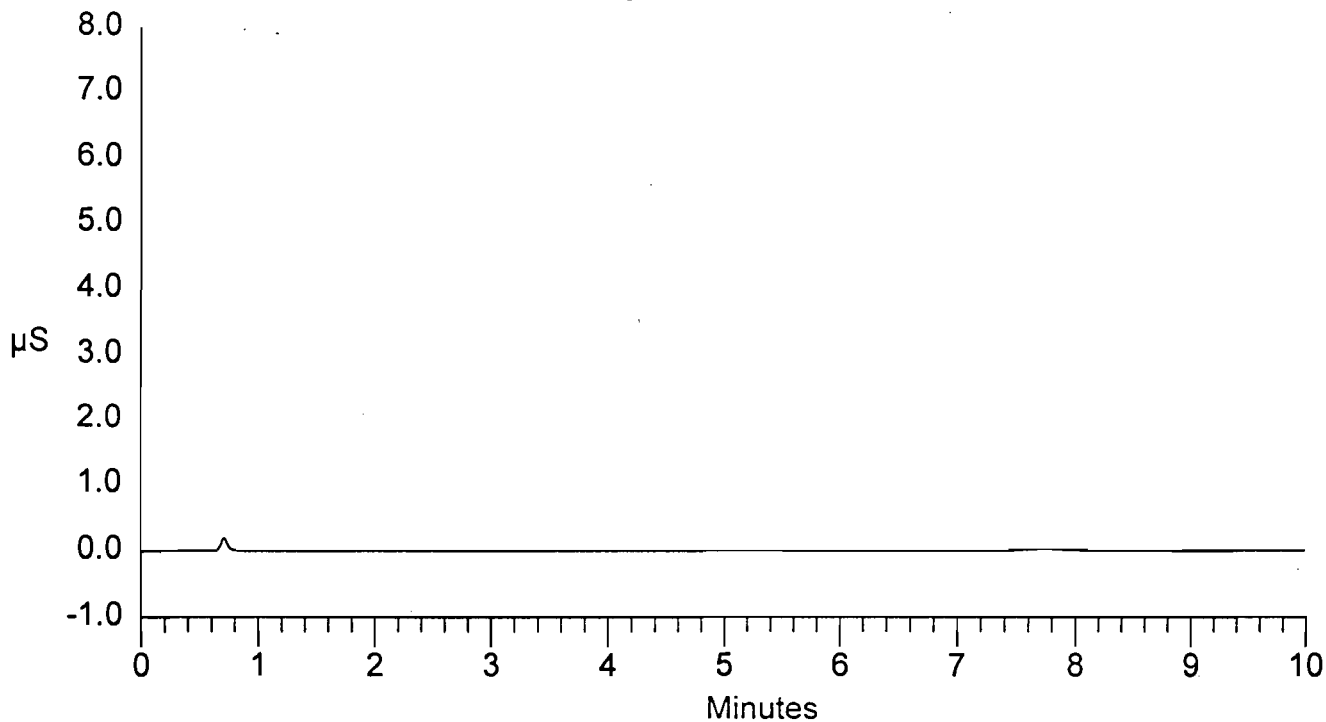
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
---------	----------	----------------	---------------------	--------	------	----------	--------

Totals 0.00 0 0

**File: NH401031.DXD Sample Reagent Blank**



```

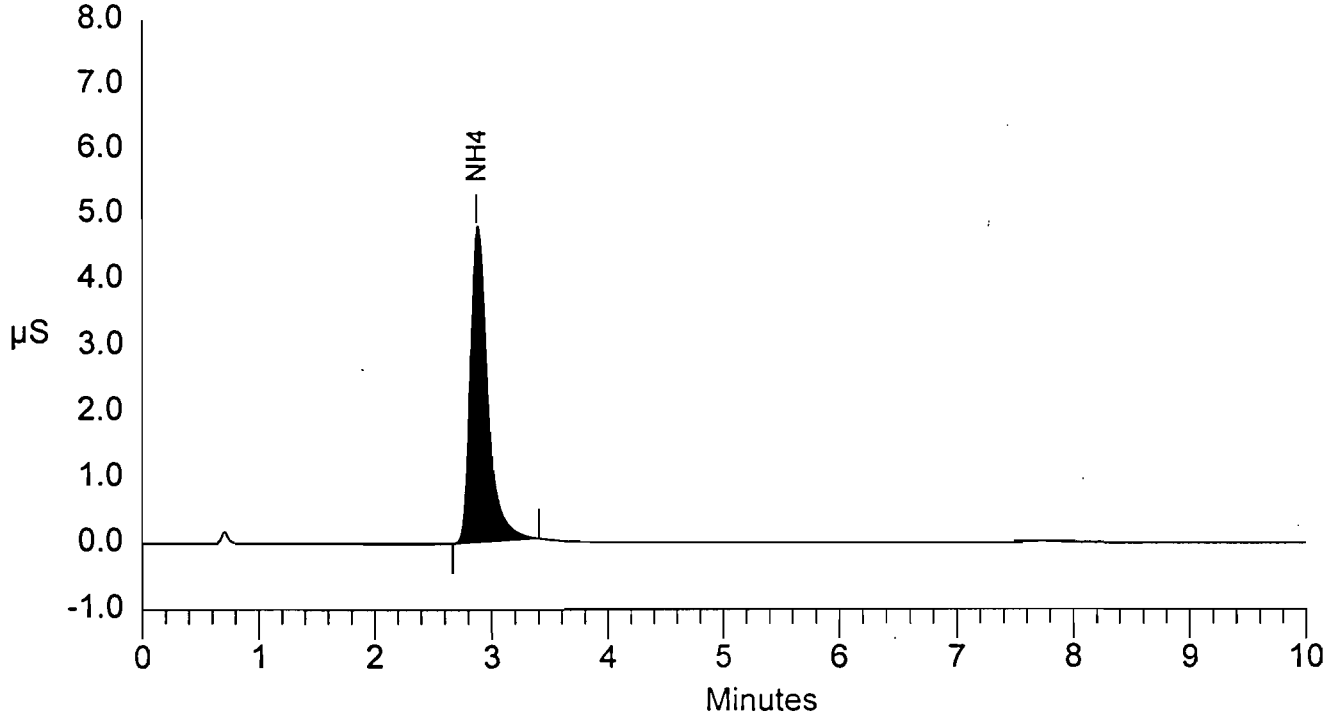
=====
Data File   : C:\PEAKNET\DATA\NH403032.DXD   Report Date: 11/24/2003 6:07:29 P
Sample Name: Cal Std 5 (5.00 mg/l)           Collected  : 11/24/2003 5:54:29 P
Inject #    : 32                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:20:06 P
System Name : DX-120                           Detector    : DX-120
Column Type : Ionpac CS12A                     Operator    :
Data Points : 3000                             Rate       : 5.00 Hz
Module Name : DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.87	NH4	4.91	46603	496500	1	0.00
Totals			4.91	46603	496500		

**File: NH403032.DXD Sample Cal Std 5 (5.00 mg/l)**



```

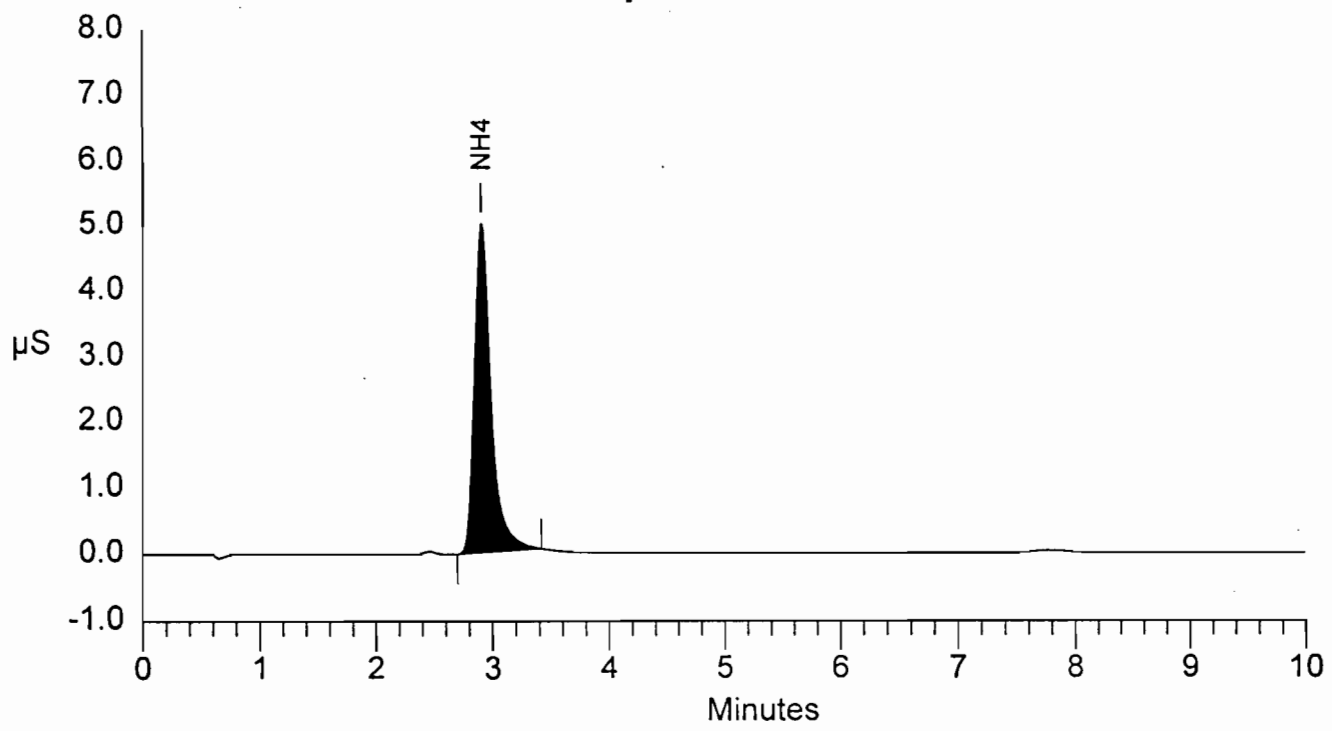
=====
Data File   : C:\PEAKNET\DATA\NH403033.DXD   Report Date: 11/24/2003 6:20:35 P
Sample Name: Orion Standard T.V. = 5.15      Collected  : 11/24/2003 6:07:30 P
Inject #    : 33                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 11/24/2003 1:20:06 P
System Name: DX-120                           Detector    : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

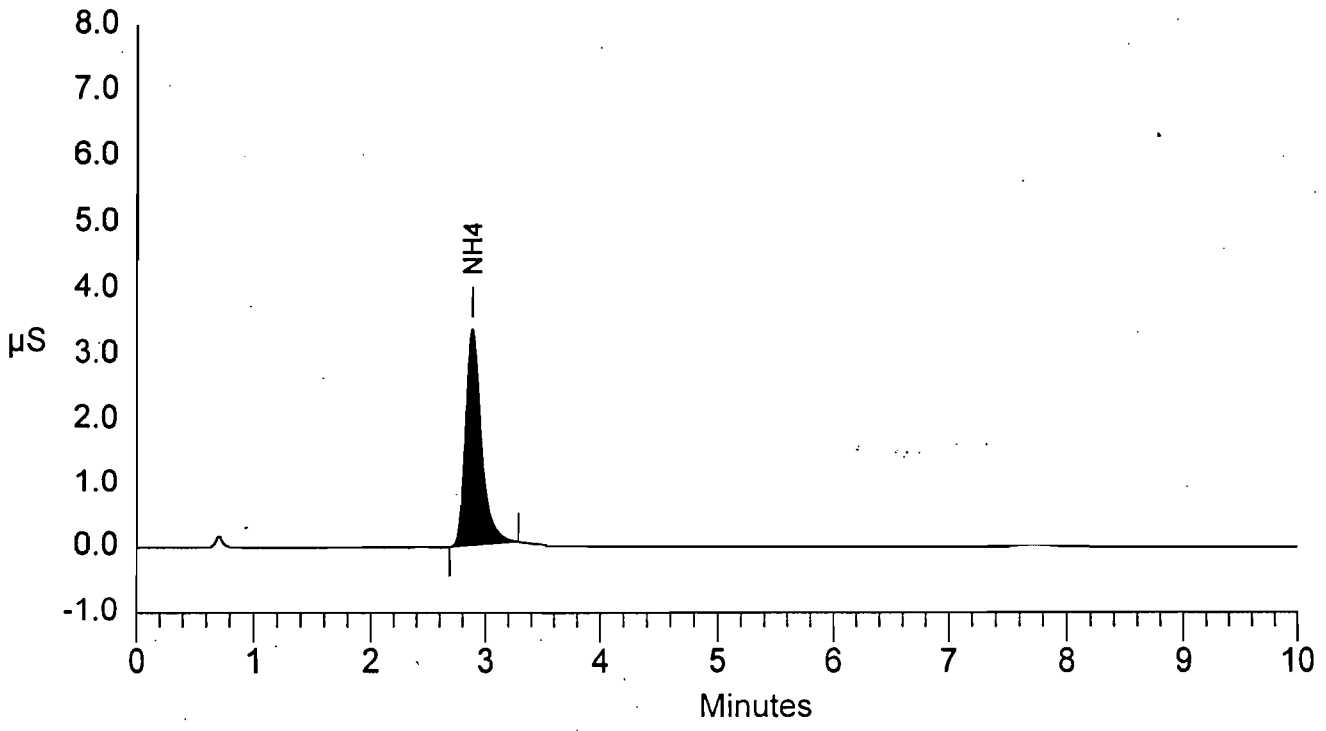
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.90	NH4	4.92	50052	497318	1	0.00
Totals			4.92	50052	497318		

**File: NH403033.DXD Sample Orion Standard T.V. = 5.15**





```

=====
Data File   : C:\PEAKNET\DATA\NH401008.DXD   Report Date: 11/24/2003 12:54:00
Sample Name: Autocal7R                      Collected  : 11/24/2003 12:40:54
Inject #    : 8                              Vial #      :
Method File : c:\peaknet\method\ctm-027.met Last Update: 11/24/2003 12:40:53
System Name : DX-120                         Detector    : DX-120
Cal. Level  : 7                              Analyst     : Polk Lab
=====
  
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

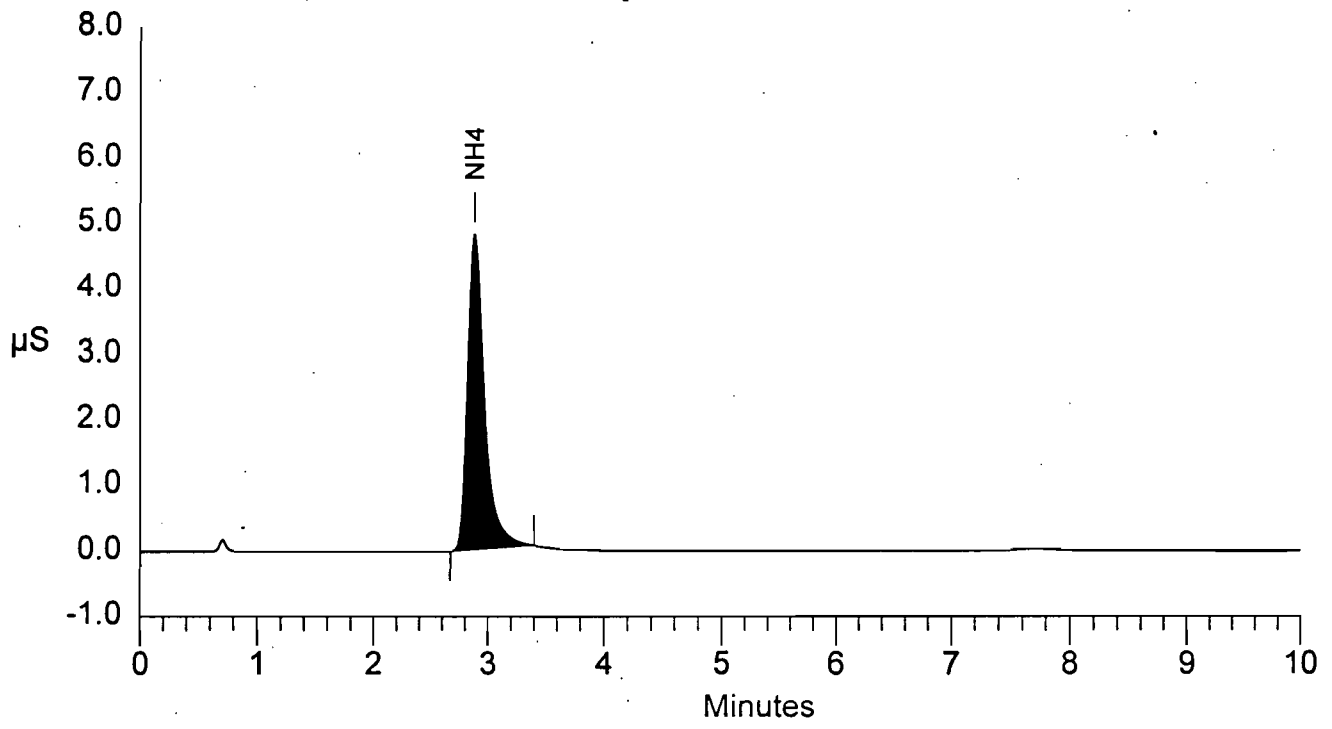
OMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.88	2.88	2.88	4.641e+005	5.016e+005	5.016e+005

```

=====
Data File   : C:\PEAKNET\DATA\NH401008.DXD   Report Date: 11/24/2003 12:54:00
Sample Name: Autocal7R                      Collected  : 11/24/2003 12:40:54
Inject #    : 8                              Vial #      :
Method File : c:\peaknet\method\ctm-027.met   Calibrated  : 11/24/2003 12:54:00
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====
  
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.88	NH4	5.00	48246	501570	1	0.00
Totals			5.00	48246	501570		





```

=====
Data File   : C:\PEAKNET\DATA\NH401009.DXD   Report Date: 11/24/2003 1:07:00 P
Sample Name: Autocal8R                     Collected  : 11/24/2003 12:54:00
Inject #    : 9                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Last Update: 11/24/2003 12:54:00
System Name: DX-120                         Detector    : DX-120
Cal. Level  : 8                             Analyst     : Polk Lab
=====
  
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

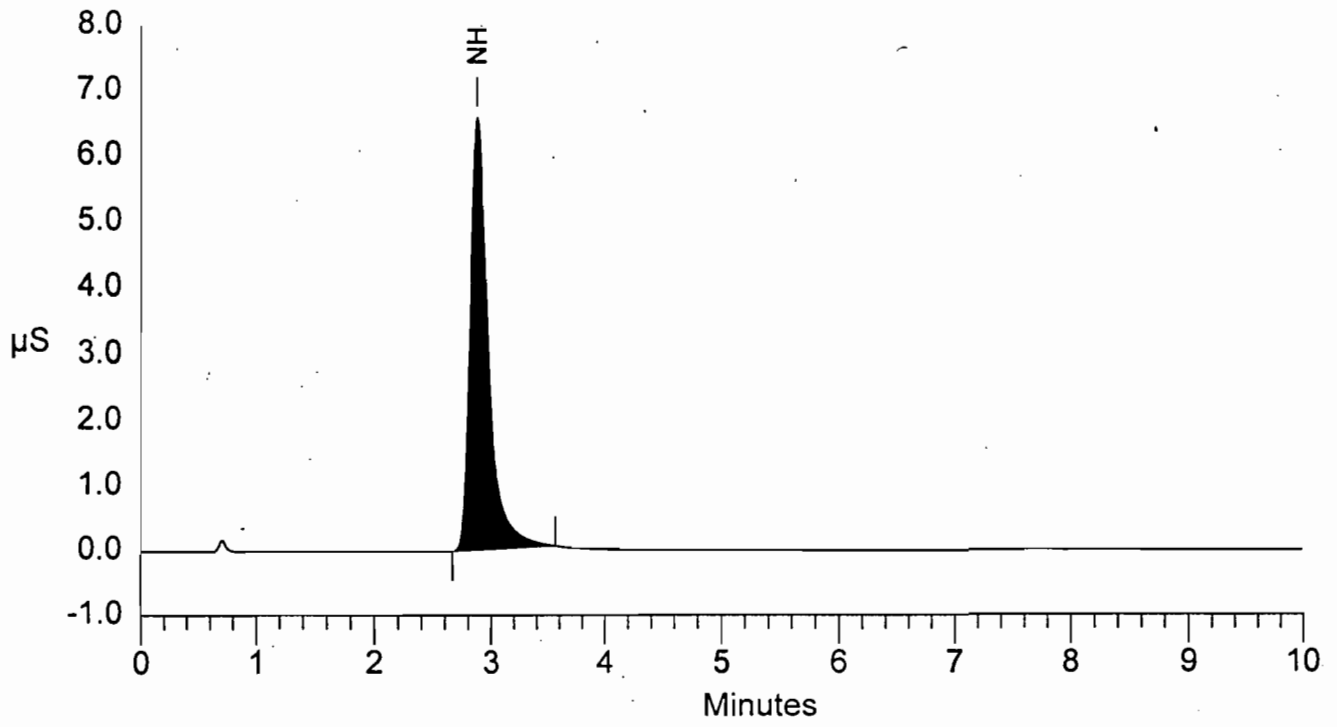
COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.88	2.88	2.88	6.727e+005	7.232e+005	7.232e+005

```

=====
Data File   : C:\PEAKNET\DATA\NH401009.DXD   Report Date: 11/24/2003 1:07:00 P
Sample Name: Autocal8R                     Collected  : 11/24/2003 12:54:00
Inject #    : 9                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 11/24/2003 1:07:00 P
System Name: DX-120                         Detector    : DX-120
Column Type: Ionpac CS12A                  Operator    :
Data Points: 3000                           Rate       : 5.00 Hz
Module Name: DX-120                         ID:50 05 d8 Moduleware : 1.00
=====
  
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.88	NH4	8.00	65592	723200	1	0.00
Totals			8.00	65592	723200		



EQUIPMENT CALIBRATIONS

## SUMMARY OF EQUIPMENT CALIBRATIONS

<u>EQUIPMENT</u>	<u>CAL DATE</u>	<u>METHOD</u>	<u>RESULTS</u>
CONSOLE (MB 07)		USEPA RM 5	
INITIAL	10/02/2003	(ORIFICE)	1.001
POST TEST	11/17/2003		1.005
NOZZLE (GL09)		CALIPER	
INITIAL	10/02/2003	MEASUREMENTS	0.189
POST TEST	None (glass)		
PYROMETER (PY 09)	10/03/2003	ASTM THERMOMETER	$\pm 2^{\circ}$ F
PITOT TUBE (PT 10)	10/08/2003	USEPA RM 2	$C_p = 0.84$
BAROMETER (BR 02)	10/02/2003	NWS COMPARISON	$\pm 0.01$ " Hg

**EPA Method 5  
Meter Box Calibration  
Pre-Test Orifice Method  
English Meter Box Units, English K' Factor**

Revised: 7/25/95                      Version: 2.2

Model #: Thermo  
Instrument Code No.: ^MB07  
Sample Number: AA71435

Date: \_\_\_\_\_> 10/02/2003  
Barometric Pressure: \_\_\_\_\_> 29.99 (in. Hg)  
Theoretical Critical Vacuum: \_\_\_\_\_> 14.15 (in. Hg)  
Calibrated By: \_\_\_\_\_> RAB

!!!!!!!

**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)<sup>3</sup>\*(deg R)<sup>0.5</sup>/((in.Hg)\*(min)).

!!!!!!!

----- DRY GAS METER READINGS -----

----- CRITICAL ORIFICE READINGS -----

dH (in H <sub>2</sub> O)	Time (min)	Volume Initial (cu.ft)	Volume Final (cu.ft)	Volume Total (cu.ft)	Initial Temps		Final Temps		Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in.Hg)	-- Ambient Temperature --		
					Inlet (deg.F)	Outlet (deg.F)	Inlet (deg.F)	Outlet (deg.F)				Initial (deg.F)	Final (deg.F)	Average (deg.F)
0.63	15	931.707	938.573	6.866	76	74	77	74	48	0.3483	20	73	73	73
1.1	15	953.667	962.822	9.155	78	75	80	76	55	0.4660	18	73	73	73
1.9	12	973.435	982.872	9.437	82	77	83	78	63	0.5971	16	73	73	73
3.65	11	991.730	1003.626	11.896	87	79	89	80	73	0.8177	14	74	74	74

\*\*\*\*\* RESULTS \*\*\*\*\*

-- DRY GAS METER --

----- ORIFICE -----

-- DRY GAS METER --

----- ORIFICE -----

VOLUME CORRECTED Vm(std) (cu.ft)	VOLUME CORRECTED Vm(std) (liters)
6.797	192.48
9.039	255.99
9.288	263.04
11.677	330.70

VOLUME CORRECTED Vcr(std) (cu.ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu.ft)
6.787	192.20	6.838
9.080	257.15	9.148
9.308	263.59	9.378
11.673	330.59	11.783

CALIBRATION FACTOR Y	
Value (number)	Variation (number)
0.999	-0.003
1.005	0.003
1.002	0.001
1.000	-0.002

CALIBRATION FACTOR dH@		
Value (in.H <sub>2</sub> O)	Value (mm.H <sub>2</sub> O)	Variation (in.H <sub>2</sub> O)
1.712	43.48	-0.011
1.663	42.25	-0.059
1.741	44.22	0.018
1.774	45.07	0.052

Average Y ----->

1.001

1.723    43.75    <----- Average dH@

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 H<sub>2</sub>O 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.

REVIEWED BY: \_\_\_\_\_

Date: \_\_\_\_\_

**EPA Method 5  
Meter Box Calibration  
Post-Test Orifice Method  
English Meter Box Units, English K' Factor**

Revised: 7/25/95                      Version: 2.2

Model #: Themo Anderson MST  
Instrument Code No. MB07  
Sample No.  
Test Designation Payne Creek

Date: \_\_\_\_\_> 11/17/2003  
Barometric Pressure: \_\_\_\_\_> 30.18 (in. Hg)  
Theoretical Critical Vacuum: \_\_\_\_\_> 14.24 (in. Hg)  
Calibration By: \_\_\_\_\_> crd

!!!!!!!  
**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)<sup>3</sup>/(deg R)<sup>0.5</sup>/((in.Hg)\*(min)).  
!!!!!!!

----- DRY GAS METER READINGS -----

----- CRITICAL ORIFICE READINGS -----

dH (in H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Initial Temps		Final Temps		Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Ambient Temperature		
					Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)				Initial (deg F)	Final (deg F)	Average (deg F)
1.15	11	653.100	659.747	6.647	70	73	72	75	55	0.466	17.5	73	73	73
1.15	12	659.747	667.028	7.281	72	75	74	77	55	0.466	17.5	73	73	73
1.15	10	667.028	673.110	6.082	74	77	75	78	55	0.466	17.5	73	73	73

\*\*\*\*\* RESULTS \*\*\*\*\*

--- DRY GAS METER ---

----- ORIFICE -----

--- DRY GAS METER ---

----- ORIFICE -----

VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)
6.664	188.73
7.272	205.95
6.058	171.56

VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu ft)
6.701	189.77	6.709
7.310	207.02	7.319
6.092	172.52	6.099

CALIBRATION FACTOR Y	
Value (number)	Variation (number)
1.006	0.000
1.005	0.000
1.006	0.000

CALIBRATION FACTOR dH@		
Value (in H2O)	Value (mm H2O)	Variation (in H2O)
1.743	44.28	0.006
1.737	44.12	-0.001
1.732	43.99	-0.005

**Average Y -----> 1.005**  
**Prior Y 1.001**  
**% Difference -0.44%**

1.737    44.13    <----- Average dH@

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 H2O that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +/-0.2.

REVIEWED BY: \_\_\_\_\_

Date: \_\_\_\_\_

# NOZZLE CALIBRATION DATA FORM

## GLASS NOZZLE SET

DATE: 10/02/03

CALIBRATOR: R A Barthelette Jr.

NOZZLE I. D.	NOZZLE DIAMETER (IN.)			D diff.	D avg
	D1	D2	D3		
^GN01	0.128	0.128	0.128	0.000	0.128
^GN02	0.189	0.189	0.189	0.000	0.189
^GN03	0.254	0.254	0.254	0.000	0.254
^GN04	0.313	0.313	0.313	0.000	0.313
^GN05	0.374	0.374	0.374	0.000	0.374
^GN06	0.429	0.429	0.429	0.000	0.429
^GN07	0.504	0.504	0.504	0.000	0.504
^GNO8	0.128	0.128	0.128	0.000	0.128
^GNO9	0.189	0.189	0.189	0.000	0.189
^GN10	0.254	0.254	0.254	0.000	0.254
^GN11	0.313	0.313	0.313	0.000	0.313
^GN12	0.374	0.374	0.374	0.000	0.374
^GN13	0.429	0.429	0.429	0.000	0.429
^GN14	0.504	0.504	0.504	0.000	0.504
^GN15	0.193	0.193	0.193	0.000	0.193
^GN16	0.197	0.197	0.197	0.000	0.197
^GN17	0.224	0.224	0.224	0.000	0.224
^GN18	0.224	0.224	0.224	0.000	0.224
^GN19	0.251	0.251	0.251	0.000	0.251
^GN20	0.251	0.251	0.251	0.000	0.251
^GN21	0.287	0.287	0.287	0.000	0.287

where:

*D 1,2,3 = three different nozzle diameters, (in); each diameter must be measured to the nearest 0.001 in.*

*D diff. = maximum difference between any two diameters, (in.) must be .004 in. or less.*

*D avg. = average of D1, D2, and D3.*

REVIEWED BY: \_\_\_\_\_

DATE: \_\_\_\_\_

Page 1

OF 1



## Pyrometer Calibration

### Pyrometer Under Test

Pyrometer Number: ^PY09  
Labworks Sample # AA71435  
Calibration Date: 10/03/2003

### Calibrator Information

Calibrator Type/Manufacturer: Hart Scientific  
Calibrator Serial Number: AOA024  
Date of Last Calibration: 02/10/2003  
Calibration Personnel (Typed and Signature): Robert Barthelette Jr.

### Calibration Data

Calibration Point	Reference Temperature	Pyrometer Indication	Difference
1	400	400	0
2	212	211	1
3	32	32	0

Reference temperatures must encompass the expected range of measurement. These three points should be ~ 32 degrees, ~212 degrees, and ~ 400 degrees Farenheit.

Difference is calculated as follows:

$$(\text{reference temperature}) - (\text{pyrometer indication})$$

### Quality Control Data

Calibration Point	Difference
1	Pass
2	Pass
3	Pass

This data has been reviewed and is certified as meeting all project quality objectives.

Reviewer: \_\_\_\_\_ Date: \_\_\_\_\_





PITOT TUBE CALIBRATION DATA SHEET

Pitot Tube ID # pt10
Calibration Date: 10/08/2003

Operating Quarter: 4
Repaired? Y N N/A

Alpha and Beta Angle Determinations

alpha 1 0.4 degrees Pass
alpha 2 0.7 degrees Pass
beta 1 0.2 degrees Pass
beta 2 0.4 degrees Pass

Gamma, Theta, A, Z, and W Determinations

psi 0.2 degrees
A 2.44 cm
Z 0.009 cm Pass
o 0.4 degrees
W 0.017 cm Pass

Acceptable Limits:
Dt 0.48 < Dt < 0.95 cm
alpha < 10 degrees
(alpha1 measured across top impact openings)
(alpha2 measured across bottom impact openings)
beta1 < 5 degrees (alongside top impact openings)
beta2 < 5 degrees (alongside bottom impact openings)
Z < 0.32 cm (Asinpsi)
W < 0.08 cm (Asino)
A distance between tips
o angle of plane on side of pitots
psi angle between tips

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

Comments: REMOVABLE

Calibrated by:
Printed Name: JORGE A VARINO Date: 10/08/2003

Quality Assurance Review / Approval:
Date:

**BAROMETER CALIBRATION DATA FORM**

CALIBRATOR: RAB

DATE: 10/02/2003  
INST. NO: ^BR02  
SAMPLE NO. AA 71435COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

TIME OF READING	BAROMETER READING (HG")	REFERENCE STANDARD READING (HG")	DIFFERENCE (HG")
9:22	29.98	29.98	0.00
11:23	29.98	30.01	-0.03
12:37	29.98	30.01	-0.03
0:00		0.00	0.00

**\*NOTE: BAROMETRIC READINGS MUST AGREE WITHIN 0.1 INCHES HG OF READINGS OBTAINED FROM THE REFERENCE STANDARD, THE TAMPA INTERNATIONAL AIRPORT TO BE DEEMED ACCEPTABLE.**

REVIEWED BY:  
DATE:H:\Environmental Services\Air\Calibration Data\Barometer\2003\[10-02-03.xls]^BR01  
REVISED 5-9-96

**EPA Method 5  
Meter Box Calibration  
Post-Test Orifice Method  
English Meter Box Units, English K' Factor**

Revised: 7/25/95                      Version: 2.2

Model #: MST  
Instrument Code No. MB06  
Sample No.  
Test Designation Bayside 2A,B,C,D

Date: \_\_\_\_\_> 12/22/2003  
Barometric Pressure: \_\_\_\_\_> 30.22 (in. Hg)  
Theoretical Critical Vacuum: \_\_\_\_\_> 14.25 (in. Hg)  
Calibration By: \_\_\_\_\_> CRD

!!!!!!!  
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)<sup>3</sup>/(deg R)<sup>0.5</sup>/((in.Hg)<sup>3</sup>(min)).  
!!!!!!!

----- DRY GAS METER READINGS -----

----- CRITICAL ORIFICE READINGS -----

dH (in. H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Initial Temps.		Final Temps.		Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in. Hg)	Ambient Temperature		
					Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)				Initial (deg F)	Final (deg F)	Average (deg F)
1.15	10	19.350	25.337	5.987	67	69	68	70	55	0.466	19	71	70	70.5
1.15	10	25.337	31.341	6.004	68	70	68	70	55	0.466	19	70	71	70.5
1.15	10	31.341	37.372	6.031	68	70	69	72	55	0.466	19	71	71	71

\*\*\*\*\* RESULTS \*\*\*\*\*

-- DRY GAS METER --

----- ORIFICE -----

-- DRY GAS METER --

----- ORIFICE -----

VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)
6.056	171.50
6.067	171.82
6.086	172.35

VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr
6.114	173.15	6.085
6.114	173.15	6.085
6.111	173.07	6.087

CALIBRATION FACTOR Y	
Value (number)	Variation (number)
1.010	0.002
1.008	0.001
1.004	-0.003

CALIBRATION FACTOR dH@		
Value (in H2O)	Value (mm H2O)	Variation (in H2O)
1.746	44.35	0.001
1.744	44.31	0.000
1.744	44.29	-0.001

Average Y ----->  
Prior Y  
% Difference

1.007  
1.004  
-0.32%

1.745    44.32    <----- Average dH@

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 H2O that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +0.2.

REVIEWED BY: \_\_\_\_\_

Date: \_\_\_\_\_



Environmental Services  
Air Services Group

### POST TEST NOZZLE CALIBRATION

Calibration Date: 12/22/2003  
Calibration Personnel: CRD  
Test Designation: Bayside 2A,B,C,D

Nozzle Identifier	Nozzle Diameter (inches)				
	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>difference</sub>	D <sub>average</sub>
GN09	0.189	0.189	0.189	0.000	0.189

Where:

D<sub>1,2,3</sub> = Results of triplicate diameter measurements, from three different cross sections measured to the nearest 0.001 inch.

D<sub>difference</sub> = Maximum difference between any two diameters in inches.  
Maximum difference must be  $\leq 0.004$  inches.

D<sub>average</sub> = Average of D<sub>1</sub>, D<sub>2</sub>, D<sub>3</sub>

QA/QC Review by: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

CARBON MONOXIDE / NITROGEN OXIDES TEST INFORMATION

SUMMARIZED RUN DATA AND QUALITY ASSURANCE/CONTROL

Bayside 2B - Report			
RUN 1			
12/16/2003			
9:31			
Linearity Check - Calibration Error	O2	CO	NOX
Analyzer Range	25	10	15
Units	%	PPM	PPM
Low Level Certified Value (PPM or %)			4.47
Mid Level Certified Value (PPM or %)	13.65	3	8.26
High Level Certified Value (PPM or %)	20.9	6.29	12.6
Zero Level Observed	0.063	-0.006	0.025
Low Level Observed	-	-	4.457
Mid Level Observed	13.677	3.017	8.303
High Level Observed	20.88	6.304	12.588
% Difference from Zero to Target	0.25	-0.06	0.17
% Difference from Low to Target	0	0	-0.09
% Difference from Mid to Target	0.11	0.17	0.29
% Difference from High to Target	-0.08	0.14	-0.08
Analyzer Range	25	10	15
Units	%	PPM	PPM
Actual Zero From Linearity	0.063	-0.006	0.025
Actual Span From Linearity	13.677	3.017	4.457
Initial Readings			
Zero	0.063	-0.006	0.135
Span	13.616	3.042	4.457
Final Readings			
Zero	0.063	0.053	0.135
Span	13.616	3.042	4.457
Initial Sampling System Bias			
Zero Bias (Run-System Cal)	0	0	0.73
Span Bias	-0.24	0.25	0
Final Sampling System Bias			
Zero Bias (Run-System Cal)	0	0.59	0.73
Span Bias	-0.24	0.25	0
Calculated Drift			
Zero Drift (Run-Run)	0	0.59	0
Span Drift	0	0	0
Run Results			
Raw Results	13.83	1.08	3.5
Corrected Results (ppmv)	13.87	1.05	3.48

Bayside 2B - Report			
RUN 2			
12/16/2003			
10:31			
Linearity Check - Calibration Error	O2	CO	NOX
Analyzer Range	25	10	15
Units	%	PPM	PPM
Low Level Certified Value (PPM or %)			4.47
Mid Level Certified Value (PPM or %)	13.65	3	8.26
High Level Certified Value (PPM or %)	20.9	6.29	12.6
Zero Level Observed	0.063	-0.006	0.025
Low Level Observed	-	-	4.457
Mid Level Observed	13.677	3.017	8.303
High Level Observed	20.88	6.304	12.588
% Difference from Zero to Target	0.25	-0.06	0.17
% Difference from Low to Target	0	0	-0.09
% Difference from Mid to Target	0.11	0.17	0.29
% Difference from High to Target	-0.08	0.14	-0.08
Analyzer Range	25	10	15
Units	%	PPM	PPM
Actual Zero From Linearity	0.063	-0.006	0.025
Actual Span From Linearity	13.677	3.017	4.457
Initial Readings			
Zero	0.063	0.053	0.135
Span	13.616	3.042	4.457
Final Readings			
Zero	0.063	0.043	0.099
Span	13.616	3.056	4.457
Initial Sampling System Bias			
Zero Bias (Run-System Cal)	0	0.59	0.73
Span Bias	-0.24	0.25	0
Final Sampling System Bias			
Zero Bias (Run-System Cal)	0	0.49	0.49
Span Bias	-0.24	0.39	0
Calculated Drift			
Zero Drift (Run-Run)	0	-0.1	-0.24
Span Drift	0	0.14	0
Run Results			
Raw Results	13.82	1.19	3.44
Corrected Results (ppmv)	13.86	1.14	3.42



Bayside 2B - Report			
RUN 3			
12/16/2003			
11:08			
Linearity Check - Calibration Error	O2	CO	NOX
Analyzer Range	25	10	15
Units	%	PPM	PPM
Low Level Certified Value (PPM or %)			4.47
Mid Level Certified Value (PPM or %)	13.65	3	8.26
High Level Certified Value (PPM or %)	20.9	6.29	12.6
Zero Level Observed	0.063	-0.006	0.025
Low Level Observed	-	-	4.457
Mid Level Observed	13.677	3.017	8.303
High Level Observed	20.88	6.304	12.588
% Difference from Zero to Target	0.25	-0.06	0.17
% Difference from Low to Target	0	0	-0.09
% Difference from Mid to Target	0.11	0.17	0.29
% Difference from High to Target	-0.08	0.14	-0.08
Analyzer Range	25	10	15
Units	%	PPM	PPM
Actual Zero From Linearity	0.063	-0.006	0.025
Actual Span From Linearity	13.677	3.017	4.457
Initial Readings			
Zero	0.063	0.043	0.099
Span	13.616	3.056	4.457
Final Readings			
Zero	0.063	0.057	0.099
Span	13.616	3.032	4.384
Initial Sampling System Bias			
Zero Bias (Run-System Cal)	0	0.49	0.49
Span Bias	-0.24	0.39	0
Final Sampling System Bias			
Zero Bias (Run-System Cal)	0	0.63	0.49
Span Bias	-0.24	0.15	-0.49
Calculated Drift			
Zero Drift (Run-Run)	0	0.14	0
Span Drift	0	-0.24	-0.49
Run Results			
Raw Results	13.81	0.98	3.41
Corrected Results (ppmv)	13.85	0.93	3.42

Bayside 2B - Report			
RUN 4			
12/16/2003			
11:45			
Linearity Check - Calibration Error	O2	CO	NOX
Analyzer Range	25	10	15
Units	%	PPM	PPM
Low Level Certified Value (PPM or %)			4.47
Mid Level Certified Value (PPM or %)	13.65	3	8.26
High Level Certified Value (PPM or %)	20.9	6.29	12.6
Zero Level Observed	0.063	-0.006	0.025
Low Level Observed	-	-	4.457
Mid Level Observed	13.677	3.017	8.303
High Level Observed	20.88	6.304	12.588
% Difference from Zero to Target	0.25	-0.06	0.17
% Difference from Low to Target	0	0	-0.09
% Difference from Mid to Target	0.11	0.17	0.29
% Difference from High to Target	-0.08	0.14	-0.08
Analyzer Range	25	10	15
Units	%	PPM	PPM
Actual Zero From Linearity	0.063	-0.006	0.025
Actual Span From Linearity	13.677	3.017	4.457
Initial Readings			
Zero	0.063	0.057	0.099
Span	13.616	3.032	4.384
Final Readings			
Zero	0.063	0.057	0.099
Span	13.616	3.037	4.457
Initial Sampling System Bias			
Zero Bias (Run-System Cal)	0	0.63	0.49
Span Bias	-0.24	0.15	-0.49
Final Sampling System Bias			
Zero Bias (Run-System Cal)	0	0.63	0.49
Span Bias	-0.24	0.2	0
Calculated Drift			
Zero Drift (Run-Run)	0	0	0
Span Drift	0	0.05	0.49
Run Results			
Raw Results	13.81	1.16	3.41
Corrected Results (ppmv)	13.85	1.11	3.42

Bayside 2B - Report			
RUN 5			
12/16/2003			
12:20			
Linearity Check - Calibration Error	O2	CO	NOX
Analyzer Range	25	10	15
Units	%	PPM	PPM
Low Level Certified Value (PPM or %)			4.47
Mid Level Certified Value (PPM or %)	13.65	3	8.26
High Level Certified Value (PPM or %)	20.9	6.29	12.6
Zero Level Observed	0.063	-0.006	0.025
Low Level Observed	-	-	4.457
Mid Level Observed	13.677	3.017	8.303
High Level Observed	20.88	6.304	12.588
% Difference from Zero to Target	0.25	-0.06	0.17
% Difference from Low to Target	0	0	-0.09
% Difference from Mid to Target	0.11	0.17	0.29
% Difference from High to Target	-0.08	0.14	-0.08
Analyzer Range	25	10	15
Units	%	PPM	PPM
Actual Zero From Linearity	0.063	-0.006	0.025
Actual Span From Linearity	13.677	3.017	4.457
Initial Readings			
Zero	0.063	0.057	0.099
Span	13.616	3.037	4.457
Final Readings			
Zero	0.063	0.043	0.099
Span	13.616	3.027	4.457
Initial Sampling System Bias			
Zero Bias (Run-System Cal)	0	0.63	0.49
Span Bias	-0.24	0.2	0
Final Sampling System Bias			
Zero Bias (Run-System Cal)	0	0.49	0.49
Span Bias	-0.24	0.1	0
Calculated Drift			
Zero Drift (Run-Run)	0	-0.14	0
Span Drift	0	-0.1	0
Run Results			
Raw Results	13.8	1.31	3.37
Corrected Results (ppmv)	13.84	1.27	3.36

Bayside 2B - Report			
RUN 6			
12/16/2003			
12:53			
Linearity Check - Calibration Error	O2	CO	NOX
Analyzer Range	25	10	15
Units	%	PPM	PPM
Low Level Certified Value (PPM or %)			4.47
Mid Level Certified Value (PPM or %)	13.65	3	8.26
High Level Certified Value (PPM or %)	20.9	6.29	12.6
Zero Level Observed	0.063	-0.006	0.025
Low Level Observed	-	-	4.457
Mid Level Observed	13.677	3.017	8.303
High Level Observed	20.88	6.304	12.588
% Difference from Zero to Target	0.25	-0.06	0.17
% Difference from Low to Target	0	0	-0.09
% Difference from Mid to Target	0.11	0.17	0.29
% Difference from High to Target	-0.08	0.14	-0.08
Analyzer Range	25	10	15
Units	%	PPM	PPM
Actual Zero From Linearity	0.063	-0.006	0.025
Actual Span From Linearity	13.677	3.017	4.457
Initial Readings			
Zero	0.063	0.043	0.099
Span	13.616	3.027	4.457
Final Readings			
Zero	0.063	0.038	0.099
Span	13.616	3.032	4.457
Initial Sampling System Bias			
Zero Bias (Run-System Cal)	0	0.49	0.49
Span Bias	-0.24	0.1	0
Final Sampling System Bias			
Zero Bias (Run-System Cal)	0	0.44	0.49
Span Bias	-0.24	0.15	0
Calculated Drift			
Zero Drift (Run-Run)	0	-0.05	0
Span Drift	0	0.05	0
Run Results			
Raw Results	13.8	1.22	3.32
Corrected Results (ppmv)	13.84	1.18	3.3

Bayside 2B - Report			
RUN 7			
12/16/2003			
13:29			
Linearity Check - Calibration Error	O2	CO	NOX
Analyzer Range	25	10	15
Units	%	PPM	PPM
Low Level Certified Value (PPM or %)			4.47
Mid Level Certified Value (PPM or %)	13.65	3	8.26
High Level Certified Value (PPM or %)	20.9	6.29	12.6
Zero Level Observed	0.063	-0.006	0.025
Low Level Observed	-	-	4.457
Mid Level Observed	13.677	3.017	8.303
High Level Observed	20.88	6.304	12.588
% Difference from Zero to Target	0.25	-0.06	0.17
% Difference from Low to Target	0	0	-0.09
% Difference from Mid to Target	0.11	0.17	0.29
% Difference from High to Target	-0.08	0.14	-0.08
Analyzer Range	25	10	15
Units	%	PPM	PPM
Actual Zero From Linearity	0.063	-0.006	0.025
Actual Span From Linearity	13.677	3.017	4.457
Initial Readings			
Zero	0.063	0.038	0.099
Span	13.616	3.032	4.457
Final Readings			
Zero	0.063	0.023	0.062
Span	13.616	3.032	4.457
Initial Sampling System Bias			
Zero Bias (Run-System Cal)	0	0.44	0.49
Span Bias	-0.24	0.15	0
Final Sampling System Bias			
Zero Bias (Run-System Cal)	0	0.29	0.25
Span Bias	-0.24	0.15	0
Calculated Drift			
Zero Drift (Run-Run)	0	-0.15	-0.25
Span Drift	0	0	0
Run Results			
Raw Results	13.76	1.15	3.33
Corrected Results (ppmv)	13.8	1.12	3.32

Bayside 2B - Report			
RUN 8			
12/16/2003			
14:07			
Linearity Check - Calibration Error	O2	CO	NOX
Analyzer Range	25	10	15
Units	%	PPM	PPM
Low Level Certified Value (PPM or %)			4.47
Mid Level Certified Value (PPM or %)	13.65	3	8.26
High Level Certified Value (PPM or %)	20.9	6.29	12.6
Zero Level Observed	0.063	-0.006	0.025
Low Level Observed	-	-	4.457
Mid Level Observed	13.677	3.017	8.303
High Level Observed	20.88	6.304	12.588
% Difference from Zero to Target	0.25	-0.06	0.17
% Difference from Low to Target	0	0	-0.09
% Difference from Mid to Target	0.11	0.17	0.29
% Difference from High to Target	-0.08	0.14	-0.08
Analyzer Range	25	10	15
Units	%	PPM	PPM
Actual Zero From Linearity	0.063	-0.006	0.025
Actual Span From Linearity	13.677	3.017	4.457
Initial Readings			
Zero	0.063	0.023	0.062
Span	13.616	3.032	4.457
Final Readings			
Zero	0.063	0.023	0.062
Span	13.616	3.032	4.421
Initial Sampling System Bias			
Zero Bias (Run-System Cal)	0	0.29	0.25
Span Bias	-0.24	0.15	0
Final Sampling System Bias			
Zero Bias (Run-System Cal)	0	0.29	0.25
Span Bias	-0.24	0.15	-0.24
Calculated Drift			
Zero Drift (Run-Run)	0	0	0
Span Drift	0	0	-0.24
Run Results			
Raw Results	13.76	1.06	3.38
Corrected Results (ppmv)	13.8	1.03	3.39

Bayside 2B - Report			
RUN 9			
12/16/2003			
14:42			
Linearity Check - Calibration Error	O2	CO	NOX
Analyzer Range	25	10	15
Units	%	PPM	PPM
Low Level Certified Value (PPM or %)			4.47
Mid Level Certified Value (PPM or %)	13.65	3	8.26
High Level Certified Value (PPM or %)	20.9	6.29	12.6
Zero Level Observed	0.063	-0.006	0.025
Low Level Observed	-	-	4.457
Mid Level Observed	13.677	3.017	8.303
High Level Observed	20.88	6.304	12.588
% Difference from Zero to Target	0.25	-0.06	0.17
% Difference from Low to Target	0	0	-0.09
% Difference from Mid to Target	0.11	0.17	0.29
% Difference from High to Target	-0.08	0.14	-0.08
Analyzer Range	25	10	15
Units	%	PPM	PPM
Actual Zero From Linearity	0.063	-0.006	0.025
Actual Span From Linearity	13.677	3.017	4.457
Initial Readings			
Zero	0.063	0.023	0.062
Span	13.616	3.032	4.421
Final Readings			
Zero	0.063	0.023	0.025
Span	13.616	3.027	4.421
Initial Sampling System Bias			
Zero Bias (Run-System Cal)	0	0.29	0.25
Span Bias	-0.24	0.15	-0.24
Final Sampling System Bias			
Zero Bias (Run-System Cal)	0	0.29	0
Span Bias	-0.24	0.1	-0.24
Calculated Drift			
Zero Drift (Run-Run)	0	0	-0.25
Span Drift	0	-0.05	0
Run Results			
Raw Results	13.77	0.92	3.39
Corrected Results (ppmv)	13.81	0.9	3.42

RUN LOG



Date	Time	O2 (%)	CO2 (%)	CO (PPM)	NOX (PPM)	Status
12/16/2003	7:52:01 AM	20.76	-0.06	1.72	0.1	
12/16/2003	7:52:31 AM	20.7	-0.06	5.25	0.1	
12/16/2003	7:53:01 AM	20.76	-0.01	5.13	0.1	
12/16/2003	7:53:31 AM	20.58	4.1	2.53	3.5	
12/16/2003	7:54:01 AM	20.7	-0.01	1.08	0.9	
12/16/2003	7:54:31 AM	17.58	-0.06	0.63	0.03	
12/16/2003	7:55:01 AM	2.08	-0.01	0.42	0.03	Linearity Check
12/16/2003	7:55:31 AM	0.31	-0.01	0.18	0.03	Linearity Check
12/16/2003	7:56:01 AM	0.12	-0.01	-0.04	0.03	Linearity Check
12/16/2003	7:56:31 AM	0.06	-0.01	-0.05	0.03	Linearity Check
12/16/2003	7:57:01 AM	0.12	0.04	-0.02	1.86	Linearity Check
12/16/2003	7:57:31 AM	0.12	-0.01	-0.1	10.21	Linearity Check
12/16/2003	7:58:01 AM	0.06	-0.01	-0.25	12.66	Linearity Check
12/16/2003	7:58:31 AM	-0.06	-0.01	-0.29	12.66	Linearity Check
12/16/2003	7:59:01 AM	0	-0.01	-0.28	12.59	Linearity Check
12/16/2003	7:59:31 AM	0	-0.01	-0.32	12.59	Linearity Check
12/16/2003	8:00:01 AM	0	-0.01	-0.32	12.66	Linearity Check
12/16/2003	8:00:31 AM	0.12	-0.01	-0.38	5.85	Linearity Check
12/16/2003	8:01:01 AM	0	0.04	-0.32	9	Linearity Check
12/16/2003	8:01:31 AM	-0.06	-0.01	-0.32	9.04	Linearity Check
12/16/2003	8:02:01 AM	0	-0.01	-0.33	8.93	Linearity Check
12/16/2003	8:02:31 AM	-0.06	0.04	-0.37	8.85	Linearity Check
12/16/2003	8:03:01 AM	-0.06	-0.01	-0.35	8.82	Linearity Check
12/16/2003	8:03:31 AM	-0.06	0.04	-0.3	8.78	Linearity Check
12/16/2003	8:04:01 AM	-0.06	0.04	-0.31	8.71	Linearity Check
12/16/2003	8:04:31 AM	-0.06	-0.01	-0.32	8.3	Linearity Check
12/16/2003	8:05:01 AM	-0.06	0.04	-0.3	8.3	Linearity Check
12/16/2003	8:05:31 AM	-0.06	-0.01	-0.29	6.36	Linearity Check
12/16/2003	8:06:02 AM	0	0.04	-0.26	4.31	Linearity Check
12/16/2003	8:06:31 AM	-0.06	-0.01	-0.29	4.64	Linearity Check
12/16/2003	8:07:01 AM	-0.06	-0.01	-0.29	4.53	Linearity Check
12/16/2003	8:07:31 AM	-0.06	0.04	-0.28	4.46	Linearity Check
12/16/2003	8:08:01 AM	-0.06	-0.01	-0.34	4.46	Linearity Check
12/16/2003	8:08:31 AM	-0.06	-0.01	-0.28	4.49	Linearity Check
12/16/2003	8:09:01 AM	-0.06	-0.01	-0.25	4.42	Linearity Check
12/16/2003	8:09:31 AM	-0.06	-0.01	-0.28	4.49	Linearity Check
12/16/2003	8:10:01 AM	-0.06	-0.01	-0.24	4.49	Linearity Check
12/16/2003	8:10:31 AM	0.06	-0.01	2.05	0.1	Linearity Check
12/16/2003	8:11:01 AM	-0.06	-0.01	4.84	0.1	Linearity Check
12/16/2003	8:11:31 AM	-0.06	0.04	5.26	0.03	Linearity Check
12/16/2003	8:12:01 AM	-0.06	-0.01	5.33	0.03	Linearity Check
12/16/2003	8:12:31 AM	-0.06	0.04	5.35	0.03	Linearity Check

12/16/2003	8:13:01 AM	-0.06	-0.01	6.3	0.03	Linearity Check
12/16/2003	8:13:31 AM	-0.06	-0.01	5.98	0.28	Linearity Check
12/16/2003	8:14:01 AM	0	-0.01	3.81	0.06	Linearity Check
12/16/2003	8:14:31 AM	0	-0.01	2.98	0.03	Linearity Check
12/16/2003	8:15:01 AM	-0.06	-0.01	2.93	0.03	Linearity Check
12/16/2003	8:15:31 AM	-0.06	-0.01	2.9	0.03	Linearity Check
12/16/2003	8:16:01 AM	-0.06	0.04	2.88	0.03	Linearity Check
12/16/2003	8:16:31 AM	-0.06	-0.01	2.88	0.03	Linearity Check
12/16/2003	8:17:01 AM	-0.06	0.04	4.54	-0.01	Linearity Check
12/16/2003	8:17:31 AM	-0.06	0.04	6.06	0.03	Linearity Check
12/16/2003	8:18:01 AM	-0.06	0.04	6.29	-0.01	Linearity Check
12/16/2003	8:18:31 AM	-0.06	-0.01	5.84	0.03	Linearity Check
12/16/2003	8:19:01 AM	-0.06	-0.01	3.78	0.03	Linearity Check
12/16/2003	8:19:31 AM	-0.06	-0.01	3.07	-0.01	Linearity Check
12/16/2003	8:20:01 AM	-0.06	-0.01	2.97	0.03	Linearity Check
12/16/2003	8:20:31 AM	-0.06	0.04	2.9	0.03	Linearity Check
12/16/2003	8:21:01 AM	-0.06	0.09	1.9	0.14	Linearity Check
12/16/2003	8:21:31 AM	4.7	0.04	0.7	0.14	Linearity Check
12/16/2003	8:22:01 AM	17.22	0.09	0.59	0.14	Linearity Check
12/16/2003	8:22:31 AM	13.62	0.19	0.67	0.06	Linearity Check
12/16/2003	8:23:01 AM	20.03	0.19	0.75	0.06	Linearity Check
12/16/2003	8:23:31 AM	20.58	0.19	0.74	0.06	Linearity Check
12/16/2003	8:24:01 AM	20.88	0.19	0.75	0.06	Linearity Check
12/16/2003	8:24:31 AM	20.94	0.04	0.73	0.06	Linearity Check
12/16/2003	8:25:01 AM	20.76	-0.01	0.55	0.1	Linearity Check
12/16/2003	8:25:31 AM	14.71	-0.01	0.1	0.03	Linearity Check
12/16/2003	8:26:01 AM	13.74	-0.01	-0.11	0.03	Linearity Check
12/16/2003	8:26:31 AM	13.68	-0.01	-0.16	0.03	Linearity Check
12/16/2003	8:27:01 AM	13.74	0.09	0.02	0.06	Linearity Check
12/16/2003	8:27:31 AM	13.74	0.04	0.41	0.1	Linearity Check
12/16/2003	8:28:01 AM	18.87	0.04	0.52	0.1	Linearity Check
12/16/2003	8:28:31 AM	14.17	9.66	0.48	9.8	Linearity Check
12/16/2003	8:29:01 AM	0.98	10.35	-0.05	0.68	Linearity Check
12/16/2003	8:29:31 AM	0.06	10.39	-0.32	0.57	Linearity Check
12/16/2003	8:30:01 AM	2.08	13.86	-0.46	0.03	Linearity Check
12/16/2003	8:30:31 AM	5.74	17.77	-0.46	0.03	Linearity Check
12/16/2003	8:31:01 AM	6.23	11.03	-0.46	0.03	Linearity Check
12/16/2003	8:31:31 AM	2.51	10.1	-0.46	0.79	Linearity Check
12/16/2003	8:32:01 AM	0.12	10.05	-0.46	0.43	Linearity Check
12/16/2003	8:32:32 AM	0	4.14	-0.3	3.43	Linearity Check
12/16/2003	8:33:02 AM	0	4.14	-0.3	3.43	Linearity Check
12/16/2003	8:33:31 AM	13.62	4.19	0.83	3.8	Converter Check - 1
12/16/2003	8:34:01 AM	13.74	4.14	0.85	3.83	Converter Check - 1

12/16/2003	8:34:31 AM	13.8	4.14	0.88	3.83 Converter Check - 1
12/16/2003	8:35:01 AM	13.8	4.19	0.83	3.87 Converter Check - 1
12/16/2003	8:35:31 AM	13.8	4.14	0.8	3.87 Converter Check - 1
12/16/2003	8:36:01 AM	13.8	4.19	0.87	3.87 Converter Check - 1
12/16/2003	8:36:31 AM	13.8	4.19	0.92	3.87 Converter Check - 1
12/16/2003	8:37:01 AM	13.8	4.19	0.83	3.87 Converter Check - 1
12/16/2003	8:37:31 AM	13.8	4.14	0.84	3.87 Converter Check - 1
12/16/2003	8:38:01 AM	13.8	4.19	0.88	3.91 Converter Check - 1
12/16/2003	8:38:31 AM	13.86	4.19	0.82	3.87 Converter Check - 1
12/16/2003	8:39:01 AM	13.8	4.14	0.86	3.83 Converter Check - 1
12/16/2003	8:39:31 AM	13.8	1.9	0.87	3.87 Converter Check - 1
12/16/2003	8:40:01 AM	10.75	0.14	1.38	3.91 Converter Check - 1
12/16/2003	8:40:31 AM	1.04	0.09	2.81	3.87 Converter Check - 1
12/16/2003	8:41:01 AM	0.12	0.04	3.12	3.87 Converter Check - 1
12/16/2003	8:41:31 AM	0.06	3.75	3.02	3.91 Converter Check - 1
12/16/2003	8:42:01 AM	9.04	4.14	1.89	3.87 Converter Check - 1
12/16/2003	8:42:31 AM	13.49	3.22	1.13	3.87 Converter Check - 1
12/16/2003	8:43:01 AM	4.4	10.05	0.75	3.87 Converter Check - 1
12/16/2003	8:43:31 AM	0.25	10	-0.15	3.91 Converter Check - 1
12/16/2003	8:44:01 AM	0	10	-0.35	3.91 Converter Check - 1
12/16/2003	8:44:31 AM	0	7.46	-0.3	3.91 Converter Check - 1
12/16/2003	8:45:01 AM	1.47	0.09	1.15	3.87 Converter Check - 1
12/16/2003	8:45:31 AM	0.06	0.09	2.94	3.91 Converter Check - 1
12/16/2003	8:46:01 AM	0	0.04	2.39	3.91 Converter Check - 1
12/16/2003	8:46:31 AM	-0.06	0.04	0.59	3.87 Converter Check - 1
12/16/2003	8:47:01 AM	-0.06	-0.01	0.15	3.87 Converter Check - 1
12/16/2003	8:47:31 AM	-0.06	-0.01	0.07	3.87 Converter Check - 1
12/16/2003	8:48:01 AM	0	-0.01	0.04	3.91 Converter Check - 1
12/16/2003	8:48:31 AM	-0.06	-0.01	-0.04	3.87 Converter Check - 1
12/16/2003	8:49:01 AM	-0.06	-0.01	1.15	3.87 Converter Check - 1
12/16/2003	8:49:31 AM	1.04	0.04	2.74	3.91 Converter Check - 1
12/16/2003	8:50:01 AM	0.49	-0.01	3.04	3.87 Converter Check - 1
12/16/2003	8:50:31 AM	0	-0.01	3.01	3.91 Converter Check - 1
12/16/2003	8:51:01 AM	0.37	-0.01	2.82	3.87 Converter Check - 1
12/16/2003	8:51:31 AM	10.93	-0.06	1.05	3.87 Converter Check - 1
12/16/2003	8:52:01 AM	13.37	-0.01	0.11	3.87 Converter Check - 1
12/16/2003	8:52:31 AM	13.55	-0.01	0.03	3.87 Converter Check - 1
12/16/2003	8:53:01 AM	13.55	-0.01	-0.03	3.91 Converter Check - 1
12/16/2003	8:53:31 AM	13.62	3.95	0.13	3.87 Converter Check - 1
12/16/2003	8:54:01 AM	13.68	0.04	0.61	3.87 Converter Check - 1
12/16/2003	8:54:31 AM	3.05	4.05	0.47	3.87 Converter Check - 1
12/16/2003	8:55:01 AM	12.58	4.05	0.78	3.87 Converter Check - 1
12/16/2003	8:55:31 AM	13.68	4.05	0.82	3.87 Converter Check - 1

12/16/2003	8:56:01 AM	13.8	4.1	0.82	3.87 Converter Check - 1
12/16/2003	8:56:31 AM	13.8	4.05	0.86	3.87 Converter Check - 1
12/16/2003	8:57:01 AM	13.8	4.1	0.86	3.87 Converter Check - 1
12/16/2003	8:57:31 AM	13.8	4.1	0.84	3.91 Converter Check - 1
12/16/2003	8:58:01 AM	13.8	4.1	0.82	3.87 Converter Check - 1
12/16/2003	8:58:31 AM	13.8	4.05	0.77	3.87 Converter Check - 1
12/16/2003	8:59:01 AM	13.8	4.05	0.81	3.87 Converter Check - 1
12/16/2003	8:59:31 AM	13.74	4.1	0.89	3.91 Converter Check - 1
12/16/2003	9:00:01 AM	13.8	4.05	0.84	3.87 Converter Check - 1
12/16/2003	9:00:31 AM	13.8	4.05	0.81	3.87 Converter Check - 1
12/16/2003	9:01:01 AM	13.8	4.05	0.85	3.91 Converter Check - 1
12/16/2003	9:01:31 AM	13.8	4.05	0.85	3.87 Converter Check - 1
12/16/2003	9:02:01 AM	13.8	4.1	0.83	3.91 Converter Check - 1
12/16/2003	9:02:31 AM	13.8	4.05	0.84	3.87 Converter Check - 1
12/16/2003	9:03:01 AM	13.8	4.1	0.8	3.87 Converter Check - 1
12/16/2003	9:03:31 AM	13.8	4.1	0.81	3.87 Converter Check - 2
12/16/2003	9:04:01 AM	13.8	4.1	0.85	3.83
12/16/2003	9:04:31 AM	13.8	4.05	0.81	3.47
12/16/2003	9:05:01 AM	13.8	0.09	0.74	0.17
12/16/2003	9:05:31 AM	2.38	0.04	0.37	0.1 Initial Span - Zero
12/16/2003	9:06:01 AM	0.31	0.04	0.16	0.1 Initial Span - Zero
12/16/2003	9:06:31 AM	0.12	-0.01	0.02	0.06 Initial Span - Zero
12/16/2003	9:07:01 AM	0.06	0.04	0.02	0.1 Initial Span - Zero
12/16/2003	9:07:31 AM	0.06	-0.01	0.06	0.06 Initial Span - Zero
12/16/2003	9:08:01 AM	0.06	0.04	-0.01	0.06 Initial Span - Zero
12/16/2003	9:08:31 AM	0	-0.01	-0.01	0.06 Initial Span - Zero
12/16/2003	9:09:01 AM	5.68	-0.01	-0.04	0.06 Initial Span - Zero
12/16/2003	9:09:31 AM	12.88	0.04	0.01	0.06 Initial Span - Zero
12/16/2003	9:10:01 AM	13.55	-0.01	-0.01	0.06 Initial Span - Zero
12/16/2003	9:10:31 AM	13.55	-0.01	0.02	0.06 Initial Span - Span
12/16/2003	9:11:01 AM	13.62	-0.01	0.13	0.06 Initial Span - Span
12/16/2003	9:11:31 AM	6.53	-0.01	1.7	0.06 Initial Span - Span
12/16/2003	9:12:01 AM	0.55	-0.01	2.88	0.1 Initial Span - Span
12/16/2003	9:12:31 AM	0.06	-0.01	6.32	0.06 Initial Span - Span
12/16/2003	9:13:01 AM	0.06	0.04	3.05	0.06 Initial Span - Span
12/16/2003	9:13:31 AM	0	-0.01	3.08	0.06 Initial Span - Span
12/16/2003	9:14:01 AM	0	0.77	3.06	0.21 Initial Span - Span
12/16/2003	9:14:31 AM	0.61	-0.01	2.28	3.43 Initial Span - Span
12/16/2003	9:15:01 AM	0.06	-0.01	0.29	4.46 Initial Span - Span
12/16/2003	9:15:31 AM	-0.06	-0.01	-0.19	4.42 Initial Span - Span
12/16/2003	9:16:01 AM	-0.06	9.17	-0.06	2.88 Initial Span - Span
12/16/2003	9:16:31 AM	-0.06	9.86	-0.01	0.54 Initial Span - Span
12/16/2003	9:17:01 AM	-0.06	9.91	-0.3	0.39 Initial Span - Span

12/16/2003	9:17:31 AM	-0.06	9.95	-0.28	0.32	Initial Span - Span
12/16/2003	9:18:01 AM	-0.06	9.95	-0.4	0.32	Initial Span - Span
12/16/2003	9:18:31 AM	-0.06	4.14	-0.16	3.39	Initial Span - Span
12/16/2003	9:19:01 AM	11.11	4.14	0.46	3.39	Initial Span - Span
12/16/2003	9:19:31 AM	13.55	4.1	0.76	3.36	Initial Span - Span
12/16/2003	9:20:01 AM	13.68	4.1	0.86	3.39	Initial Span - Span
12/16/2003	9:20:31 AM	13.74	4.1	0.86	3.43	Initial Span - Span
12/16/2003	9:21:01 AM	12.39	0.09	0.7	0.1	Initial Span - Span
12/16/2003	9:21:31 AM	1.41	0.04	0.36	0.03	Initial Span - Span
12/16/2003	9:22:01 AM	0.19	0.04	0.27	0.03	Initial Span - Span
12/16/2003	9:22:31 AM	0.06	0.04	0.11	0.03	Initial Span - Span
12/16/2003	9:23:01 AM	0	-0.01	0.06	0.06	Initial Span - Span
12/16/2003	9:23:31 AM	0	0.04	-0.01	0.03	Initial Span - Span
12/16/2003	9:24:01 AM	1.41	4.05	0.39	3.32	Initial Span - Span
12/16/2003	9:24:31 AM	12.03	4.05	0.76	3.36	Initial Span - Span
12/16/2003	9:25:01 AM	13.62	4.1	0.89	3.47	Initial Span - Span
12/16/2003	9:25:31 AM	13.68	4.1	0.86	3.39	Initial Span - Span
12/16/2003	9:26:01 AM	13.74	4.05	0.81	3.43	Initial Span - Span
12/16/2003	9:26:31 AM	13.68	4.1	0.88	3.43	Initial Span - Span
12/16/2003	9:27:01 AM	13.74	4.05	0.89	3.43	Initial Span - Span
12/16/2003	9:27:31 AM	13.74	4.1	0.96	3.47	Initial Span - Span
12/16/2003	9:28:01 AM	13.8	4.1	0.92	3.43	Initial Span - Span
12/16/2003	9:28:31 AM	13.74	4.1	0.93	3.47	Initial Span - Span
12/16/2003	9:29:01 AM	13.74	4.1	0.93	3.47	Initial Span - Span
12/16/2003	9:29:31 AM	13.8	4.05	0.89	3.47	Initial Span - Span
12/16/2003	9:30:01 AM	13.8	4.1	0.97	3.47	Initial Span - Span
12/16/2003	9:30:31 AM	13.8	4.1	0.88	3.47	Initial Span - Span
12/16/2003	9:31:01 AM	13.8	4.1	0.97	3.47	Initial Span - Span
12/16/2003	9:31:32 AM	13.8	4.1	0.99	3.47	Initial Span - Span
12/16/2003	9:32:02 AM	13.8	4.1	0.99	3.47	Initial Span - Span
12/16/2003	9:32:32 AM	13.8	4.1	0.99	3.47	Initial Span - Span
12/16/2003	9:33:02 AM	13.8	4.1	0.99	3.47	Initial Span - Span
12/16/2003	9:33:32 AM	13.8	4.1	0.99	3.47	Initial Span - Span
12/16/2003	9:34:02 AM	13.8	4.1	0.99	3.47	Initial Span - Span
12/16/2003	9:34:31 AM	13.8	4.05	0.96	3.54	Strat Test (Run 1) - 1
12/16/2003	9:35:01 AM	13.86	4.14	0.96	3.54	Strat Test (Run 1) - 1
12/16/2003	9:35:31 AM	13.8	4.1	0.92	3.5	Strat Test (Run 1) - 1
12/16/2003	9:36:01 AM	13.86	4.1	0.92	3.5	Strat Test (Run 1) - 1
12/16/2003	9:36:31 AM	13.86	4.14	0.98	3.5	Strat Test (Run 1) - 1
12/16/2003	9:37:01 AM	13.8	4.1	1.02	3.54	Strat Test (Run 1) - 1
12/16/2003	9:37:31 AM	13.8	4.1	1.01	3.5	Strat Test (Run 1) - 1
12/16/2003	9:38:01 AM	13.8	4.1	0.97	3.47	Strat Test (Run 1) - 1
12/16/2003	9:38:31 AM	13.8	4.1	0.99	3.43	Strat Test (Run 1) - 1

12/16/2003	9:39:01 AM	13.86	4.14	0.94	3.47 Strat Test (Run 1) - 1
12/16/2003	9:39:31 AM	13.8	4.05	0.92	3.43 Strat Test (Run 1) - 1
12/16/2003	9:40:01 AM	13.86	4.1	0.91	3.47 Run Paused
12/16/2003	9:40:31 AM	13.86	4.1	0.92	3.43 Run Paused
12/16/2003	9:41:01 AM	13.86	4.1	0.95	3.36 Run Paused
12/16/2003	9:41:31 AM	13.86	4.1	0.9	3.39 Run Paused
12/16/2003	9:42:01 AM	13.86	4.1	0.86	3.39 Run Paused
12/16/2003	9:42:31 AM	13.86	3.46	0.85	3.32 Run Paused
12/16/2003	9:43:01 AM	16.3	0.29	0.66	0.21 Run Paused
12/16/2003	9:43:31 AM	18.56	4.05	0.58	3.47 Run Paused
12/16/2003	9:44:01 AM	14.29	4.05	0.88	3.5 Run Paused
12/16/2003	9:44:31 AM	13.86	4.1	0.9	3.5 Run Paused
12/16/2003	9:45:01 AM	13.86	4.1	0.95	3.5 Strat Test (Run 1) - 1
12/16/2003	9:45:31 AM	13.86	4.1	1.04	3.5 Strat Test (Run 1) - 1
12/16/2003	9:46:01 AM	13.8	4.05	1.03	3.5 Strat Test (Run 1) - 1
12/16/2003	9:46:31 AM	13.8	4.05	0.91	3.5 Strat Test (Run 1) - 1
12/16/2003	9:47:01 AM	13.8	4.1	1.11	3.58 Strat Test (Run 1) - 1
12/16/2003	9:47:31 AM	13.8	4.05	1.34	3.54 Strat Test (Run 1) - 1
12/16/2003	9:48:01 AM	13.8	4.1	1.17	3.54 Strat Test (Run 1) - 1
12/16/2003	9:48:31 AM	13.8	4.1	1.13	3.54 Strat Test (Run 1) - 1
12/16/2003	9:49:01 AM	13.8	4.1	0.96	3.54 Strat Test (Run 1) - 1
12/16/2003	9:49:31 AM	13.8	4.1	0.87	3.54 Strat Test (Run 1) - 1
12/16/2003	9:50:01 AM	13.8	4.05	0.96	3.58 Strat Test (Run 1) - 1
12/16/2003	9:50:31 AM	13.8	4.05	1.16	3.58 Strat Test (Run 1) - 1
12/16/2003	9:51:01 AM	13.86	4.1	1.2	3.61 Strat Test (Run 1) - 1
12/16/2003	9:51:31 AM	13.8	4.1	1.14	3.61 Run Paused
12/16/2003	9:52:01 AM	13.86	3.61	1.18	3.65 Run Paused
12/16/2003	9:52:31 AM	16.3	0.09	0.76	0.21 Run Paused
12/16/2003	9:53:01 AM	20.51	0.09	0.48	0.17 Run Paused
12/16/2003	9:53:31 AM	20.94	0.04	0.42	0.17 Run Paused
12/16/2003	9:54:01 AM	21	0.24	0.41	0.14 Run Paused
12/16/2003	9:54:31 AM	18.87	4.05	0.86	3.5 Run Paused
12/16/2003	9:55:01 AM	14.35	4.05	1.21	3.54 Run Paused
12/16/2003	9:55:31 AM	13.86	4.1	1.01	3.54 Run Paused
12/16/2003	9:56:01 AM	13.86	4.1	1.19	3.5 Strat Test (Run 1) - 1
12/16/2003	9:56:31 AM	13.86	4.1	1.06	3.5 Strat Test (Run 1) - 1
12/16/2003	9:57:01 AM	13.86	4.1	1.13	3.5 Strat Test (Run 1) - 1
12/16/2003	9:57:31 AM	13.86	4.1	1.21	3.5 Strat Test (Run 1) - 1
12/16/2003	9:58:01 AM	13.86	4.1	1.15	3.5 Strat Test (Run 1) - 1
12/16/2003	9:58:31 AM	13.8	4.1	1.2	3.5 Strat Test (Run 1) - 1
12/16/2003	9:59:02 AM	13.8	4.05	1.19	3.5 Strat Test (Run 1) - 1
12/16/2003	9:59:31 AM	13.8	4.1	1.04	3.5 Strat Test (Run 1) - 1
12/16/2003	10:00:01 AM	13.86	4.1	0.96	3.54 Strat Test (Run 1) - 1

12/16/2003	10:00:31 AM	13.8	4.1	0.96	3.5 Strat Test (Run 1) - 1
12/16/2003	10:01:01 AM	13.8	4.1	0.93	3.54 Strat Test (Run 1) - 1
12/16/2003	10:01:31 AM	13.8	4.05	1.01	3.5 Strat Test (Run 1) - 1
12/16/2003	10:02:01 AM	13.86	4.1	1.07	3.47 Strat Test (Run 1) - 1
12/16/2003	10:02:31 AM	13.86	4.1	1	3.47 Run Paused
12/16/2003	10:03:01 AM	13.86	4.1	0.97	3.43 Run Paused
12/16/2003	10:03:31 AM	13.8	0.14	1.02	0.54 Run Paused
12/16/2003	10:04:01 AM	19.23	0.09	0.64	0.14 Run Paused
12/16/2003	10:04:31 AM	20.88	0.09	0.43	0.14 Run Paused
12/16/2003	10:05:01 AM	21	0.04	0.35	0.14 Run Paused
12/16/2003	10:05:31 AM	20.51	4.05	0.53	3.39 Run Paused
12/16/2003	10:06:01 AM	14.71	4.05	1.05	3.43 Run Paused
12/16/2003	10:06:31 AM	13.98	4.1	1.24	3.47 Run Paused
12/16/2003	10:07:01 AM	13.92	4.1	1.25	3.43 Run Paused
12/16/2003	10:07:31 AM	13.92	4.05	1.29	3.47 Strat Test (Run 1) - 1
12/16/2003	10:08:01 AM	13.86	4.1	1.24	3.47 Strat Test (Run 1) - 1
12/16/2003	10:08:31 AM	13.86	4.05	1.31	3.47 Strat Test (Run 1) - 1
12/16/2003	10:09:01 AM	13.8	4.05	1.22	3.47 Strat Test (Run 1) - 1
12/16/2003	10:09:31 AM	13.86	4.1	1.23	3.47 Strat Test (Run 1) - 1
12/16/2003	10:10:01 AM	13.86	4.05	1.21	3.5 Strat Test (Run 1) - 1
12/16/2003	10:10:31 AM	13.86	4.05	1.3	3.47 Strat Test (Run 1) - 1
12/16/2003	10:11:01 AM	13.86	4.1	1.38	3.5 Strat Test (Run 1) - 1
12/16/2003	10:11:31 AM	13.8	4.1	1.37	3.43 Strat Test (Run 1) - 1
12/16/2003	10:12:01 AM	13.8	4.05	1.48	3.43 Strat Test (Run 1) - 1
12/16/2003	10:12:31 AM	13.86	4.1	1.37	3.47 Strat Test (Run 1) - 1
12/16/2003	10:13:01 AM	13.86	4.1	1.28	3.47 Strat Test (Run 1) - 2
12/16/2003	10:13:31 AM	13.86	4.1	1.37	3.43
12/16/2003	10:14:01 AM	13.86	4.1	1.49	3.43
12/16/2003	10:14:31 AM	13.49	0.09	1.29	0.21
12/16/2003	10:15:01 AM	2.08	0.04	0.65	0.14
12/16/2003	10:15:31 AM	0.25	0.04	0.27	0.1 Run 1 Span - Zero
12/16/2003	10:16:01 AM	0.12	0.04	0.16	0.1 Run 1 Span - Zero
12/16/2003	10:16:31 AM	0.06	-0.01	0.13	0.14 Run 1 Span - Zero
12/16/2003	10:17:01 AM	0.06	-0.01	0.07	0.1 Run 1 Span - Zero
12/16/2003	10:17:31 AM	0	-0.01	0.13	0.1 Run 1 Span - Zero
12/16/2003	10:18:01 AM	0.06	-0.01	0.04	3.5 Run 1 Span - Zero
12/16/2003	10:18:31 AM	0	0.04	-0.09	4.46 Run 1 Span - Span
12/16/2003	10:19:01 AM	0	-0.01	-0.22	4.46 Run 1 Span - Span
12/16/2003	10:19:31 AM	0	-0.01	-0.03	3.8 Run 1 Span - Span
12/16/2003	10:20:01 AM	0.19	-0.01	1.82	0.1 Run 1 Span - Span
12/16/2003	10:20:31 AM	0	-0.01	2.97	0.1 Run 1 Span - Span
12/16/2003	10:21:01 AM	0	0.04	3.07	0.1 Run 1 Span - Span
12/16/2003	10:21:31 AM	-0.06	-0.01	3.03	0.06 Run 1 Span - Span

12/16/2003	10:22:01 AM	-0.06	9.22	2.32	1.01	Run 1 Span - Span
12/16/2003	10:22:31 AM	-0.06	9.91	0.42	0.39	Run 1 Span - Span
12/16/2003	10:23:01 AM	-0.06	9.95	-0.22	0.36	Run 1 Span - Span
12/16/2003	10:23:31 AM	-0.06	9.95	-0.28	0.32	Run 1 Span - Span
12/16/2003	10:24:01 AM	0.67	0.14	-0.14	0.06	Run 1 Span - Span
12/16/2003	10:24:31 AM	11.78	0.04	0.19	0.06	Run 1 Span - Span
12/16/2003	10:25:01 AM	13.43	0.04	0.31	0.06	Run 1 Span - Span
12/16/2003	10:25:31 AM	13.55	-0.01	0.25	0.06	Run 1 Span - Span
12/16/2003	10:26:01 AM	13.62	-0.01	0.13	0.06	Run 1 Span - Span
12/16/2003	10:26:31 AM	13.62	4	0.36	2.99	Run 1 Span - Span
12/16/2003	10:27:01 AM	13.74	4.05	1.09	3.32	Run 1 Span - Span
12/16/2003	10:27:31 AM	13.8	4.05	1.27	3.32	Run 1 Span - Span
12/16/2003	10:28:01 AM	13.8	4.1	1.02	3.36	Run 1 Span - Span
12/16/2003	10:28:31 AM	13.8	4.05	0.9	3.32	Run 1 Span - Span
12/16/2003	10:29:01 AM	13.8	4.05	0.83	3.36	Run 1 Span - Span
12/16/2003	10:29:31 AM	13.8	4.1	0.83	3.36	Run 1 Span - Span
12/16/2003	10:30:01 AM	13.8	4.05	0.96	3.32	Run 1 Span - Span
12/16/2003	10:30:31 AM	13.8	4.1	1.27	3.32	Run 1 Span - Span
12/16/2003	10:31:01 AM	13.8	4.05	1.07	3.36	Run 1 Span - Span
12/16/2003	10:31:31 AM	13.8	4.1	1.03	3.36	Run 1 Span - Span
12/16/2003	10:32:01 AM	13.8	4.1	1.03	3.36	Run 1 Span - Span
12/16/2003	10:32:31 AM	13.8	4.05	1.21	3.39	Run 2 - 1
12/16/2003	10:33:01 AM	13.8	4.05	1.35	3.39	Run 2 - 1
12/16/2003	10:33:31 AM	13.8	4.1	1.44	3.43	Run 2 - 1
12/16/2003	10:34:01 AM	13.8	4.05	1.44	3.43	Run 2 - 1
12/16/2003	10:34:31 AM	13.8	4.1	1.22	3.47	Run 2 - 1
12/16/2003	10:35:01 AM	13.8	4.1	1.15	3.43	Run 2 - 1
12/16/2003	10:35:31 AM	13.8	4.1	1.02	3.47	Run 2 - 1
12/16/2003	10:36:01 AM	13.8	4.05	1.08	3.47	Run 2 - 1
12/16/2003	10:36:31 AM	13.86	4.1	1.07	3.47	Run 2 - 1
12/16/2003	10:37:01 AM	13.8	4.1	1.2	3.5	Run 2 - 1
12/16/2003	10:37:31 AM	13.8	4.05	1.28	3.47	Run 2 - 1
12/16/2003	10:38:01 AM	13.8	4.05	1.24	3.47	Run 2 - 1
12/16/2003	10:38:31 AM	13.8	4.1	1.21	3.5	Run 2 - 1
12/16/2003	10:39:01 AM	13.86	4.1	1.15	3.43	Run 2 - 1
12/16/2003	10:39:31 AM	13.86	4.1	1.21	3.47	Run 2 - 1
12/16/2003	10:40:01 AM	13.86	4.14	1.34	3.47	Run 2 - 1
12/16/2003	10:40:31 AM	13.86	4.1	1.31	3.39	Run 2 - 1
12/16/2003	10:41:01 AM	13.8	4.1	1.25	3.43	Run 2 - 1
12/16/2003	10:41:31 AM	13.8	4.1	1.22	3.47	Run 2 - 1
12/16/2003	10:42:01 AM	13.86	4.1	1.34	3.43	Run 2 - 1
12/16/2003	10:42:31 AM	13.86	4.1	1.62	3.43	Run 2 - 1
12/16/2003	10:43:01 AM	13.8	4.05	1.58	3.43	Run 2 - 1



12/16/2003	10:43:31 AM	13.86	4.1	1.29	3.43	Run 2 - 1
12/16/2003	10:44:01 AM	13.86	4.1	1.19	3.43	Run 2 - 1
12/16/2003	10:44:33 AM	13.86	4.05	1.17	3.43	Run 2 - 1
12/16/2003	10:45:01 AM	13.92	4.1	1.09	3.39	Run 2 - 1
12/16/2003	10:45:31 AM	13.86	4.05	1.01	3.43	Run 2 - 1
12/16/2003	10:46:01 AM	13.86	4.1	1.14	3.39	Run 2 - 1
12/16/2003	10:46:31 AM	13.8	4.05	1.09	3.43	Run 2 - 1
12/16/2003	10:47:01 AM	13.8	4.1	1.15	3.43	Run 2 - 1
12/16/2003	10:47:31 AM	13.86	4.05	1.14	3.39	Run 2 - 1
12/16/2003	10:48:01 AM	13.86	4.1	1.15	3.43	Run 2 - 1
12/16/2003	10:48:31 AM	13.8	4.05	1.22	3.39	Run 2 - 1
12/16/2003	10:49:01 AM	13.86	4.1	1.13	3.39	Run 2 - 1
12/16/2003	10:49:31 AM	13.86	4.1	1.01	3.43	Run 2 - 1
12/16/2003	10:50:01 AM	13.86	4.1	1.04	3.43	Run 2 - 1
12/16/2003	10:50:31 AM	13.8	4.05	1.13	3.39	Run 2 - 1
12/16/2003	10:51:01 AM	13.8	4.05	1.12	3.47	Run 2 - 1
12/16/2003	10:51:31 AM	13.8	4.1	1.01	3.47	Run 2 - 1
12/16/2003	10:52:01 AM	13.86	4.1	0.98	3.43	Run 2 - 1
12/16/2003	10:52:31 AM	13.8	4.1	1.05	3.47	Run 2 - 1
12/16/2003	10:53:01 AM	13.8	4.1	0.94	3.47	Run 2 - 1
12/16/2003	10:53:31 AM	13.86	4.1	0.99	3.47	
12/16/2003	10:54:01 AM	13.86	0.09	0.88	0.21	
12/16/2003	10:54:31 AM	3.67	0.04	0.56	0.14	Run 2 Span - Zero
12/16/2003	10:55:01 AM	0.37	0.04	0.19	0.1	Run 2 Span - Zero
12/16/2003	10:55:31 AM	0.12	0.04	0.08	0.1	Run 2 Span - Zero
12/16/2003	10:56:01 AM	0.06	-0.01	0.07	0.1	Run 2 Span - Zero
12/16/2003	10:56:31 AM	0	-0.01	0.13	0.1	Run 2 Span - Zero
12/16/2003	10:57:01 AM	0	-0.01	0.15	0.21	Run 2 Span - Zero
12/16/2003	10:57:31 AM	0	-0.01	-0.02	4.49	Run 2 Span - Zero
12/16/2003	10:58:01 AM	0.06	-0.01	-0.1	4.42	Run 2 Span - Span
12/16/2003	10:58:31 AM	0	-0.01	-0.19	4.42	Run 2 Span - Span
12/16/2003	10:59:01 AM	0	-0.01	1.05	0.17	Run 2 Span - Span
12/16/2003	10:59:31 AM	0	0.04	2.81	0.1	Run 2 Span - Span
12/16/2003	11:00:01 AM	0	-0.01	3.09	0.1	Run 2 Span - Span
12/16/2003	11:00:31 AM	0	0.04	3.12	0.06	Run 2 Span - Span
12/16/2003	11:01:01 AM	0	-0.01	3.02	0.1	Run 2 Span - Span
12/16/2003	11:01:31 AM	8.24	-0.01	1.25	0.06	Run 2 Span - Span
12/16/2003	11:02:01 AM	13.13	-0.01	0.17	0.1	Run 2 Span - Span
12/16/2003	11:02:31 AM	13.55	-0.01	0.06	0.1	Run 2 Span - Span
12/16/2003	11:03:01 AM	13.62	-0.01	0.06	0.06	Run 2 Span - Span
12/16/2003	11:03:31 AM	13.62	-0.06	0.1	0.06	Run 2 Span - Span
12/16/2003	11:04:01 AM	13.37	9.56	0.06	0.61	Run 2 Span - Span
12/16/2003	11:04:31 AM	2.02	9.91	-0.14	0.32	Run 2 Span - Span

12/16/2003	11:05:01 AM	0.12	9.91	-0.27	0.36	Run 2 Span - Span
12/16/2003	11:05:31 AM	-0.06	9.91	-0.28	0.32	Run 2 Span - Span
12/16/2003	11:06:01 AM	-0.06	9.91	-0.32	0.28	Run 2 Span - Span
12/16/2003	11:06:31 AM	-0.06	4.24	-0.24	0.94	Run 2 Span - Span
12/16/2003	11:07:01 AM	9.34	4.1	0.5	3.43	Run 2 Span - Span
12/16/2003	11:07:31 AM	13.37	4.1	0.97	3.43	Run 2 Span - Span
12/16/2003	11:08:01 AM	13.68	4.1	0.98	3.47	Run 2 Span - Span
12/16/2003	11:08:32 AM	13.74	4.1	0.99	3.43	Run 2 Span - Span
12/16/2003	11:09:01 AM	13.74	4.1	0.99	3.43	Run 3 - 1
12/16/2003	11:09:31 AM	13.74	4.1	0.97	3.39	Run 3 - 1
12/16/2003	11:10:01 AM	13.8	4.1	0.93	3.39	Run 3 - 1
12/16/2003	11:10:31 AM	13.8	4.1	0.94	3.43	Run 3 - 1
12/16/2003	11:11:01 AM	13.74	4.1	0.93	3.39	Run 3 - 1
12/16/2003	11:11:31 AM	13.8	4.1	0.94	3.39	Run 3 - 1
12/16/2003	11:12:01 AM	13.8	4.1	0.95	3.43	Run 3 - 1
12/16/2003	11:12:31 AM	13.8	4.1	0.92	3.36	Run 3 - 1
12/16/2003	11:13:01 AM	13.8	4.05	0.96	3.39	Run 3 - 1
12/16/2003	11:13:31 AM	13.8	4.1	0.93	3.39	Run 3 - 1
12/16/2003	11:14:01 AM	13.8	4.1	0.92	3.43	Run 3 - 1
12/16/2003	11:14:31 AM	13.86	4.1	0.9	3.39	Run 3 - 1
12/16/2003	11:15:01 AM	13.86	4.1	0.88	3.36	Run 3 - 1
12/16/2003	11:15:31 AM	13.8	4.05	0.92	3.43	Run 3 - 1
12/16/2003	11:16:01 AM	13.86	4.1	0.93	3.39	Run 3 - 1
12/16/2003	11:16:31 AM	13.86	4.1	0.9	3.39	Run 3 - 1
12/16/2003	11:17:01 AM	13.8	4.05	0.93	3.43	Run 3 - 1
12/16/2003	11:17:31 AM	13.8	4.05	0.9	3.43	Run 3 - 1
12/16/2003	11:18:01 AM	13.86	4.1	0.93	3.47	Run 3 - 1
12/16/2003	11:18:31 AM	13.86	4.1	0.93	3.43	Run 3 - 1
12/16/2003	11:19:01 AM	13.86	4.1	0.91	3.47	Run 3 - 1
12/16/2003	11:19:31 AM	13.8	4.05	0.89	3.43	Run 3 - 1
12/16/2003	11:20:01 AM	13.8	4.05	0.9	3.43	Run 3 - 1
12/16/2003	11:20:31 AM	13.8	4.05	0.9	3.43	Run 3 - 1
12/16/2003	11:21:01 AM	13.8	4.05	0.97	3.43	Run 3 - 1
12/16/2003	11:21:31 AM	13.8	4.1	0.88	3.39	Run 3 - 1
12/16/2003	11:22:01 AM	13.8	4.1	0.9	3.43	Run 3 - 1
12/16/2003	11:22:31 AM	13.8	4.1	0.92	3.43	Run 3 - 1
12/16/2003	11:23:01 AM	13.8	4.1	0.97	3.43	Run 3 - 1
12/16/2003	11:23:31 AM	13.86	4.1	1.13	3.39	Run 3 - 1
12/16/2003	11:24:01 AM	13.8	4.1	1.19	3.39	Run 3 - 1
12/16/2003	11:24:31 AM	13.8	4.1	1.07	3.39	Run 3 - 1
12/16/2003	11:25:01 AM	13.8	4.1	1.22	3.43	Run 3 - 1
12/16/2003	11:25:31 AM	13.8	4.1	1.27	3.39	Run 3 - 1
12/16/2003	11:26:01 AM	13.8	4.05	1.2	3.39	Run 3 - 1

12/16/2003	11:26:31 AM	13.8	4.1	1.06	3.39	Run 3 - 1
12/16/2003	11:27:01 AM	13.86	4.1	1.03	3.43	Run 3 - 1
12/16/2003	11:27:31 AM	13.8	4.05	1.01	3.32	Run 3 - 1
12/16/2003	11:28:01 AM	13.8	4.05	0.98	3.39	Run 3 - 1
12/16/2003	11:28:31 AM	13.86	4.1	0.98	3.36	Run 3 - 1
12/16/2003	11:29:01 AM	13.86	4.1	1.01	3.39	Run 3 - 1
12/16/2003	11:29:31 AM	13.8	4.05	1.22	3.39	Run 3 - 1
12/16/2003	11:30:01 AM	13.8	4.05	1.33	3.32	Run 3 - 1
12/16/2003	11:30:31 AM	13.86	4.05	1.3	3.32	
12/16/2003	11:31:01 AM	12.46	0.09	0.9	0.17	
12/16/2003	11:31:31 AM	1.47	0.09	0.44	0.1	Run 3 Span - Zero
12/16/2003	11:32:01 AM	0.19	-0.01	0.28	0.1	Run 3 Span - Zero
12/16/2003	11:32:31 AM	0.12	0.04	0.17	0.06	Run 3 Span - Zero
12/16/2003	11:33:01 AM	0.06	-0.01	0.13	0.06	Run 3 Span - Zero
12/16/2003	11:33:31 AM	0.12	-0.01	0.11	0.06	Run 3 Span - Zero
12/16/2003	11:34:01 AM	0	0.04	0.07	1.38	Run 3 Span - Zero
12/16/2003	11:34:31 AM	0.06	0.04	-0.05	4.42	Run 3 Span - Zero
12/16/2003	11:35:01 AM	0.06	0.04	-0.18	4.38	Run 3 Span - Span
12/16/2003	11:35:31 AM	0	-0.01	-0.16	4.35	Run 3 Span - Span
12/16/2003	11:36:01 AM	0	8.59	-0.13	3.39	Run 3 Span - Span
12/16/2003	11:36:31 AM	-0.06	9.81	-0.16	0.39	Run 3 Span - Span
12/16/2003	11:37:01 AM	-0.06	9.91	-0.24	0.36	Run 3 Span - Span
12/16/2003	11:37:31 AM	-0.06	9.91	-0.27	0.32	Run 3 Span - Span
12/16/2003	11:38:01 AM	-0.06	9.91	-0.31	0.32	Run 3 Span - Span
12/16/2003	11:38:31 AM	-0.06	0.24	-0.19	0.1	Run 3 Span - Span
12/16/2003	11:39:01 AM	10.75	0.09	0.14	0.06	Run 3 Span - Zero
12/16/2003	11:39:31 AM	13.31	0.04	0.29	0.06	Run 3 Span - Zero
12/16/2003	11:40:01 AM	13.55	0.04	0.3	0.06	Run 3 Span - Zero
12/16/2003	11:40:31 AM	13.55	0.04	0.23	0.03	Run 3 Span - Span
12/16/2003	11:41:01 AM	13.55	-0.01	0.15	0.03	Run 3 Span - Span
12/16/2003	11:41:31 AM	13.62	0.04	0.21	0.03	Run 3 Span - Span
12/16/2003	11:42:01 AM	7.63	-0.01	1.7	0.06	Run 3 Span - Span
12/16/2003	11:42:31 AM	0.67	-0.01	3.01	0.03	Run 3 Span - Span
12/16/2003	11:43:01 AM	0.06	-0.01	3.16	0.03	Run 3 Span - Span
12/16/2003	11:43:31 AM	0	3.95	3.07	2.92	Run 3 Span - Span
12/16/2003	11:44:01 AM	8.85	4.05	1.89	3.43	Run 3 Span - Span
12/16/2003	11:44:31 AM	13.31	4.1	1.15	3.5	Run 3 Span - Span
12/16/2003	11:45:01 AM	13.68	4.1	1.14	3.5	Run 3 Span - Span
12/16/2003	11:45:32 AM	13.68	4.05	1.14	3.5	Run 3 Span - Span
12/16/2003	11:46:02 AM	13.68	4.05	1.14	3.5	Run 3 Span - Span
12/16/2003	11:46:31 AM	13.8	4.05	1.18	3.43	Run 4 - 1
12/16/2003	11:47:01 AM	13.8	4.05	1.17	3.39	Run 4 - 1
12/16/2003	11:47:31 AM	13.8	4.1	1.14	3.43	Run 4 - 1

12/16/2003	11:48:01 AM	13.8	4.05	1.2	3.43	Run 4 - 1
12/16/2003	11:48:31 AM	13.86	4.1	1.18	3.39	Run 4 - 1
12/16/2003	11:49:01 AM	13.8	4.05	1.32	3.32	Run 4 - 1
12/16/2003	11:49:31 AM	13.8	4.05	1.33	3.36	Run 4 - 1
12/16/2003	11:50:01 AM	13.8	4.1	1.32	3.36	Run 4 - 1
12/16/2003	11:50:31 AM	13.8	4.05	1.29	3.36	Run 4 - 1
12/16/2003	11:51:01 AM	13.8	4.1	1.08	3.36	Run 4 - 1
12/16/2003	11:51:31 AM	13.86	4.1	0.98	3.32	Run 4 - 1
12/16/2003	11:52:01 AM	13.8	4.1	0.93	3.39	Run 4 - 1
12/16/2003	11:52:31 AM	13.86	4.1	0.89	3.36	Run 4 - 1
12/16/2003	11:53:01 AM	13.8	4.05	1.08	3.36	Run 4 - 1
12/16/2003	11:53:31 AM	13.8	4.1	1.3	3.39	Run 4 - 1
12/16/2003	11:54:01 AM	13.8	4.05	1.14	3.39	Run 4 - 1
12/16/2003	11:54:31 AM	13.8	4.1	1.22	3.47	Run 4 - 1
12/16/2003	11:55:01 AM	13.8	4.05	1.19	3.39	Run 4 - 1
12/16/2003	11:55:31 AM	13.86	4.1	1.27	3.43	Run 4 - 1
12/16/2003	11:56:01 AM	13.86	4.1	1.28	3.47	Run 4 - 1
12/16/2003	11:56:31 AM	13.8	4.1	1.25	3.47	Run 4 - 1
12/16/2003	11:57:01 AM	13.8	4.05	1.19	3.5	Run 4 - 1
12/16/2003	11:57:31 AM	13.86	4.1	1.13	3.47	Run 4 - 1
12/16/2003	11:58:01 AM	13.8	4.05	1.11	3.47	Run 4 - 1
12/16/2003	11:58:31 AM	13.86	4.1	1.14	3.47	Run 4 - 1
12/16/2003	11:59:01 AM	13.8	4.05	1.13	3.43	Run 4 - 1
12/16/2003	11:59:31 AM	13.8	4.05	1.1	3.39	Run 4 - 1
12/16/2003	12:00:01 PM	13.8	4.05	1.06	3.47	Run 4 - 1
12/16/2003	12:00:31 PM	13.86	4.1	1.03	3.47	Run 4 - 1
12/16/2003	12:01:01 PM	13.8	4.1	1.08	3.47	Run 4 - 1
12/16/2003	12:01:31 PM	13.86	4.05	1.04	3.43	Run 4 - 1
12/16/2003	12:02:01 PM	13.86	4.1	1.03	3.43	Run 4 - 1
12/16/2003	12:02:31 PM	13.8	4.05	1.08	3.43	Run 4 - 1
12/16/2003	12:03:01 PM	13.8	4.05	1.11	3.43	Run 4 - 1
12/16/2003	12:03:31 PM	13.8	4.05	1.12	3.36	Run 4 - 1
12/16/2003	12:04:01 PM	13.8	4.05	1.23	3.43	Run 4 - 1
12/16/2003	12:04:31 PM	13.86	4.1	1.25	3.43	Run 4 - 1
12/16/2003	12:05:01 PM	13.86	4.1	1.28	3.43	Run 4 - 1
12/16/2003	12:05:31 PM	13.86	4.1	1.28	3.39	Run 4 - 1
12/16/2003	12:06:01 PM	13.8	4.1	1.21	3.39	Run 4 - 1
12/16/2003	12:06:31 PM	13.8	4.05	1.11	3.36	Run 4 - 1
12/16/2003	12:07:01 PM	13.8	4.1	1.06	3.32	Run 4 - 1
12/16/2003	12:07:31 PM	13.8	0.58	1.08	1.49	
12/16/2003	12:08:01 PM	5.8	0.04	1.16	0.06	Run 4 Span - Zero
12/16/2003	12:08:31 PM	0.55	0.04	0.44	0.06	Run 4 Span - Zero
12/16/2003	12:09:01 PM	0.12	-0.01	0.22	0.06	Run 4 Span - Zero

12/16/2003	12:09:31 PM	0.12	0.04	0.15	0.1	Run 4 Span - Zero
12/16/2003	12:10:01 PM	0.06	-0.01	0.17	0.06	Run 4 Span - Zero
12/16/2003	12:10:31 PM	0.06	-0.01	0.15	0.36	Run 4 Span - Zero
12/16/2003	12:11:01 PM	0	-0.01	0.01	4.57	Run 4 Span - Zero
12/16/2003	12:11:31 PM	0.06	0.04	-0.09	4.42	Run 4 Span - Span
12/16/2003	12:12:01 PM	0.06	-0.01	-0.13	4.42	Run 4 Span - Span
12/16/2003	12:12:31 PM	0.06	0.04	0.72	0.14	Run 4 Span - Zero
12/16/2003	12:13:01 PM	0	-0.01	2.62	0.14	Run 4 Span - Zero
12/16/2003	12:13:31 PM	0	-0.01	3.1	0.06	Run 4 Span - Span
12/16/2003	12:14:01 PM	0	2.19	3.13	0.1	Run 4 Span - Span
12/16/2003	12:14:31 PM	0	9.81	1.85	0.5	Run 4 Span - Span
12/16/2003	12:15:01 PM	-0.06	9.86	-0.03	0.36	Run 4 Span - Span
12/16/2003	12:15:31 PM	-0.06	9.91	-0.26	0.28	Run 4 Span - Span
12/16/2003	12:16:01 PM	0	9.91	-0.31	0.28	Run 4 Span - Span
12/16/2003	12:16:31 PM	0.25	0.14	-0.12	0.06	Run 4 Span - Span
12/16/2003	12:17:01 PM	11.54	0.04	0.17	0.06	Run 4 Span - Span
12/16/2003	12:17:31 PM	13.43	0.04	0.31	0.03	Run 4 Span - Span
12/16/2003	12:18:01 PM	13.55	-0.01	0.32	0.06	Run 4 Span - Span
12/16/2003	12:18:31 PM	13.55	-0.01	0.21	0.03	Run 4 Span - Span
12/16/2003	12:19:01 PM	13.62	4.05	0.4	3.21	Run 4 Span - Span
12/16/2003	12:19:31 PM	13.74	4.1	1.28	3.39	Run 4 Span - Span
12/16/2003	12:20:01 PM	13.8	4.1	1.44	3.36	Run 4 Span - Span
12/16/2003	12:20:32 PM	13.74	4.05	1.43	3.36	Run 4 Span - Span
12/16/2003	12:21:01 PM	13.74	4.05	1.38	3.39	Run 5 - 1
12/16/2003	12:21:31 PM	13.74	4.1	1.24	3.43	Run 5 - 1
12/16/2003	12:22:01 PM	13.8	4.1	1.33	3.43	Run 5 - 1
12/16/2003	12:22:31 PM	13.74	4.05	1.24	3.39	Run 5 - 1
12/16/2003	12:23:01 PM	13.74	4.05	1.26	3.36	Run 5 - 1
12/16/2003	12:23:31 PM	13.74	4.05	1.33	3.32	Run 5 - 1
12/16/2003	12:24:01 PM	13.8	4.1	1.34	3.39	Run 5 - 1
12/16/2003	12:24:31 PM	13.8	4.1	1.49	3.36	Run 5 - 1
12/16/2003	12:25:01 PM	13.8	4.1	1.38	3.32	Run 5 - 1
12/16/2003	12:25:31 PM	13.8	4.05	1.37	3.32	Run 5 - 1
12/16/2003	12:26:01 PM	13.8	4.1	1.38	3.36	Run 5 - 1
12/16/2003	12:26:31 PM	13.8	4.1	1.35	3.32	Run 5 - 1
12/16/2003	12:27:01 PM	13.8	4.1	1.37	3.32	Run 5 - 1
12/16/2003	12:27:31 PM	13.8	4.05	1.35	3.32	Run 5 - 1
12/16/2003	12:28:01 PM	13.8	4.05	1.27	3.36	Run 5 - 1
12/16/2003	12:28:31 PM	13.8	4.1	1.26	3.36	Run 5 - 1
12/16/2003	12:29:01 PM	13.86	4.1	1.24	3.36	Run 5 - 1
12/16/2003	12:29:31 PM	13.8	4.1	1.15	3.36	Run 5 - 1
12/16/2003	12:30:01 PM	13.8	4.05	1.29	3.36	Run 5 - 1
12/16/2003	12:30:31 PM	13.8	4.05	1.24	3.36	Run 5 - 1

12/16/2003	12:31:01 PM	13.8	4.05	1.32	3.39 Run 5 - 1
12/16/2003	12:31:31 PM	13.86	4.1	1.44	3.39 Run 5 - 1
12/16/2003	12:32:01 PM	13.8	4.05	1.22	3.36 Run 5 - 1
12/16/2003	12:32:31 PM	13.8	4.1	1.2	3.39 Run 5 - 1
12/16/2003	12:33:01 PM	13.8	4.1	1.14	3.39 Run 5 - 1
12/16/2003	12:33:31 PM	13.8	4.05	1.13	3.39 Run 5 - 1
12/16/2003	12:34:01 PM	13.8	4.1	1.34	3.43 Run 5 - 1
12/16/2003	12:34:31 PM	13.8	4.1	1.56	3.39 Run 5 - 1
12/16/2003	12:35:01 PM	13.8	4.05	1.36	3.43 Run 5 - 1
12/16/2003	12:35:31 PM	13.8	4.1	1.35	3.39 Run 5 - 1
12/16/2003	12:36:01 PM	13.74	4.05	1.33	3.32 Run 5 - 1
12/16/2003	12:36:31 PM	13.8	4.1	1.38	3.36 Run 5 - 1
12/16/2003	12:37:01 PM	13.8	4.1	1.17	3.36 Run 5 - 1
12/16/2003	12:37:31 PM	13.8	4.05	1.16	3.36 Run 5 - 1
12/16/2003	12:38:01 PM	13.8	4.1	1.44	3.39 Run 5 - 1
12/16/2003	12:38:31 PM	13.74	4.05	1.37	3.39 Run 5 - 1
12/16/2003	12:39:01 PM	13.8	4.1	1.31	3.39 Run 5 - 1
12/16/2003	12:39:31 PM	13.8	4.05	1.26	3.36 Run 5 - 1
12/16/2003	12:40:01 PM	13.86	4.1	1.37	3.36 Run 5 - 1
12/16/2003	12:40:31 PM	13.8	4.05	1.44	3.36 Run 5 - 1
12/16/2003	12:41:01 PM	13.86	4.1	1.24	3.39 Run 5 - 1
12/16/2003	12:41:31 PM	13.8	4.05	1.18	3.36 Run 5 - 1
12/16/2003	12:42:01 PM	13.8	4.05	1.28	3.29 Run 5 - 1
12/16/2003	12:42:31 PM	13.8	4.05	1.18	3.32
12/16/2003	12:43:01 PM	13.86	4	1.09	3.29
12/16/2003	12:43:31 PM	9.34	0.04	0.87	0.1 Run 5 Span - Zero
12/16/2003	12:44:01 PM	0.67	-0.01	0.57	0.06 Run 5 Span - Zero
12/16/2003	12:44:31 PM	0.06	-0.01	0.31	0.1 Run 5 Span - Zero
12/16/2003	12:45:01 PM	0.06	-0.01	0.13	0.1 Run 5 Span - Zero
12/16/2003	12:45:31 PM	0.06	0.04	0.18	1.93 Run 5 Span - Zero
12/16/2003	12:46:01 PM	0.06	0.04	-0.07	4.46 Run 5 Span - Span
12/16/2003	12:46:31 PM	0	-0.01	-0.09	4.46 Run 5 Span - Span
12/16/2003	12:47:01 PM	0.06	0.04	0.73	0.14 Run 5 Span - Span
12/16/2003	12:47:31 PM	0	-0.01	2.83	0.1 Run 5 Span - Span
12/16/2003	12:48:01 PM	0	-0.01	3.21	0.06 Run 5 Span - Span
12/16/2003	12:48:31 PM	0	9.61	2.5	0.46 Run 5 Span - Span
12/16/2003	12:49:01 PM	-0.06	9.86	0.53	0.28 Run 5 Span - Span
12/16/2003	12:49:31 PM	-0.06	9.91	-0.14	0.32 Run 5 Span - Span
12/16/2003	12:50:01 PM	1.1	0.09	-0.15	0.03 Run 5 Span - Span
12/16/2003	12:50:31 PM	12.7	0.04	0.21	0.06 Run 5 Span - Span
12/16/2003	12:51:01 PM	13.49	0.04	0.33	0.06 Run 5 Span - Span
12/16/2003	12:51:31 PM	13.62	0.04	0.25	0.06 Run 5 Span - Span
12/16/2003	12:52:01 PM	13.62	-0.01	0.14	-0.01 Run 5 Span - Span

12/16/2003	12:52:31 PM	13.68	4.05	0.72	3.29 Run 5 Span - Span
12/16/2003	12:53:01 PM	13.74	4.1	1.28	3.29 Run 5 Span - Span
12/16/2003	12:53:32 PM	13.74	4.1	1.35	3.29 Run 5 Span - Span
12/16/2003	12:54:01 PM	13.74	4.1	1.35	3.29 Run 6 - 1
12/16/2003	12:54:31 PM	13.74	4.05	1.21	3.29 Run 6 - 1
12/16/2003	12:55:01 PM	13.74	4.05	1.18	3.32 Run 6 - 1
12/16/2003	12:55:31 PM	13.8	4.05	1.19	3.25 Run 6 - 1
12/16/2003	12:56:01 PM	13.86	4.1	1.15	3.32 Run 6 - 1
12/16/2003	12:56:31 PM	13.86	4.1	1.22	3.32 Run 6 - 1
12/16/2003	12:57:01 PM	13.8	4.05	1.36	3.32 Run 6 - 1
12/16/2003	12:57:31 PM	13.8	4.05	1.38	3.36 Run 6 - 1
12/16/2003	12:58:01 PM	13.8	4.05	1.31	3.32 Run 6 - 1
12/16/2003	12:58:31 PM	13.8	4.05	1.23	3.36 Run 6 - 1
12/16/2003	12:59:01 PM	13.8	4.05	1.35	3.39 Run 6 - 1
12/16/2003	12:59:31 PM	13.8	4.1	1.22	3.36 Run 6 - 1
12/16/2003	1:00:01 PM	13.74	4.05	1.06	3.39 Run 6 - 1
12/16/2003	1:00:31 PM	13.8	4.1	1.11	3.39 Run 6 - 1
12/16/2003	1:01:01 PM	13.8	4.05	1.15	3.36 Run 6 - 1
12/16/2003	1:01:31 PM	13.8	4.1	1.2	3.39 Run 6 - 1
12/16/2003	1:02:01 PM	13.8	4.05	1.18	3.36 Run 6 - 1
12/16/2003	1:02:31 PM	13.8	4.1	1.25	3.39 Run 6 - 1
12/16/2003	1:03:01 PM	13.8	4.05	1.24	3.36 Run 6 - 1
12/16/2003	1:03:31 PM	13.8	4.05	1.21	3.36 Run 6 - 1
12/16/2003	1:04:01 PM	13.8	4.1	1.19	3.36 Run 6 - 1
12/16/2003	1:04:31 PM	13.8	4.1	1.22	3.32 Run 6 - 1
12/16/2003	1:05:01 PM	13.8	4.05	1.34	3.32 Run 6 - 1
12/16/2003	1:05:31 PM	13.8	4.1	1.35	3.32 Run 6 - 1
12/16/2003	1:06:01 PM	13.8	4.05	1.28	3.29 Run 6 - 1
12/16/2003	1:06:31 PM	13.8	4.05	1.17	3.29 Run 6 - 1
12/16/2003	1:07:01 PM	13.8	4.1	1.09	3.29 Run 6 - 1
12/16/2003	1:07:31 PM	13.8	4.05	1.14	3.29 Run 6 - 1
12/16/2003	1:08:01 PM	13.8	4.05	1.19	3.29 Run 6 - 1
12/16/2003	1:08:31 PM	13.86	4.1	1.24	3.25 Run 6 - 1
12/16/2003	1:09:01 PM	13.86	4.1	1.28	3.29 Run 6 - 1
12/16/2003	1:09:31 PM	13.8	4.05	1.28	3.36 Run 6 - 1
12/16/2003	1:10:01 PM	13.8	4.1	1.28	3.29 Run 6 - 1
12/16/2003	1:10:31 PM	13.86	4.1	1.23	3.32 Run 6 - 1
12/16/2003	1:11:01 PM	13.8	4.05	1.2	3.25 Run 6 - 1
12/16/2003	1:11:31 PM	13.8	4.05	1.29	3.32 Run 6 - 1
12/16/2003	1:12:01 PM	13.8	4.1	1.18	3.32 Run 6 - 1
12/16/2003	1:12:31 PM	13.8	4.05	1.11	3.29 Run 6 - 1
12/16/2003	1:13:01 PM	13.74	4.05	1.19	3.32 Run 6 - 1
12/16/2003	1:13:31 PM	13.8	4.05	1.14	3.29 Run 6 - 1

12/16/2003	1:14:01 PM	13.8	4.1	1.14	3.32 Run 6 - 1
12/16/2003	1:14:31 PM	13.8	4.1	1.31	3.32 Run 6 - 1
12/16/2003	1:15:01 PM	13.8	4.1	1.42	3.29 Run 6 - 1
12/16/2003	1:15:31 PM	13.74	2	1.33	3.29
12/16/2003	1:16:01 PM	11.85	0.04	0.87	0.1 Run 6 Span - Zero
12/16/2003	1:16:31 PM	1.41	-0.01	0.38	0.06 Run 6 Span - Zero
12/16/2003	1:17:01 PM	0.19	0.04	0.25	0.1 Run 6 Span - Zero
12/16/2003	1:17:31 PM	0.06	-0.01	0.21	0.06 Run 6 Span - Zero
12/16/2003	1:18:01 PM	0.12	0.04	0.17	0.06 Run 6 Span - Zero
12/16/2003	1:18:31 PM	0	-0.01	0.13	0.03 Run 6 Span - Zero
12/16/2003	1:19:01 PM	0.06	0.04	-0.01	4.46 Run 6 Span - Span
12/16/2003	1:19:31 PM	0	-0.01	-0.11	4.42 Run 6 Span - Span
12/16/2003	1:20:01 PM	0	-0.01	0.19	1.56 Run 6 Span - Span
12/16/2003	1:20:31 PM	0	-0.01	2.28	0.1 Run 6 Span - Span
12/16/2003	1:21:01 PM	0	-0.01	3.08	0.06 Run 6 Span - Span
12/16/2003	1:21:31 PM	0	0.04	3.08	0.06 Run 6 Span - Span
12/16/2003	1:22:01 PM	0	9.76	2.51	0.54 Run 6 Span - Span
12/16/2003	1:22:31 PM	-0.06	9.91	0.36	0.32 Run 6 Span - Span
12/16/2003	1:23:01 PM	-0.06	9.86	-0.24	0.28 Run 6 Span - Span
12/16/2003	1:23:31 PM	-0.06	9.91	-0.35	0.28 Run 6 Span - Span
12/16/2003	1:24:01 PM	-0.06	9.91	-0.28	0.25 Run 6 Span - Span
12/16/2003	1:24:31 PM	-0.06	9.91	-0.26	0.28 Run 6 Span - Span
12/16/2003	1:25:01 PM	6.9	0.09	-0.12	0.03 Run 6 Span - Span
12/16/2003	1:25:31 PM	13.25	0.04	0.21	-0.01 Run 6 Span - Span
12/16/2003	1:26:01 PM	13.55	-0.01	0.3	0.03 Run 6 Span - Span
12/16/2003	1:26:31 PM	13.62	0.04	0.2	-0.01 Run 6 Span - Span
12/16/2003	1:27:01 PM	13.55	3.7	0.34	0.06 Run 6 Span - Span
12/16/2003	1:27:31 PM	13.68	4.05	0.9	3.21 Run 6 Span - Span
12/16/2003	1:28:01 PM	13.74	4.1	1.23	3.21
12/16/2003	1:28:31 PM	13.68	4.05	1.29	3.25
12/16/2003	1:29:01 PM	13.74	4.05	1.26	3.25
12/16/2003	1:29:32 PM	13.68	4.1	1.09	3.29
12/16/2003	1:30:01 PM	13.68	4.1	1.09	3.29 Run 7 - 1
12/16/2003	1:30:31 PM	13.74	4.1	1.2	3.25 Run 7 - 1
12/16/2003	1:31:01 PM	13.74	4.05	1.17	3.32 Run 7 - 1
12/16/2003	1:31:31 PM	13.74	4.1	1.27	3.25 Run 7 - 1
12/16/2003	1:32:01 PM	13.74	4.05	1.35	3.29 Run 7 - 1
12/16/2003	1:32:31 PM	13.74	4.1	1.28	3.32 Run 7 - 1
12/16/2003	1:33:01 PM	13.74	4.1	1.22	3.29 Run 7 - 1
12/16/2003	1:33:31 PM	13.74	4.05	1.22	3.32 Run 7 - 1
12/16/2003	1:34:01 PM	13.74	4.05	1.2	3.32 Run 7 - 1
12/16/2003	1:34:31 PM	13.8	4.1	1.21	3.29 Run 7 - 1
12/16/2003	1:35:01 PM	13.8	4.1	1.17	3.29 Run 7 - 1



12/16/2003	1:35:31 PM	13.8	4.1	1.21	3.29 Run 7 - 1
12/16/2003	1:36:01 PM	13.74	4.05	1.07	3.29 Run 7 - 1
12/16/2003	1:36:31 PM	13.8	4.1	1.11	3.29 Run 7 - 1
12/16/2003	1:37:01 PM	13.8	4.1	1.18	3.29 Run 7 - 1
12/16/2003	1:37:31 PM	13.74	4.1	1.14	3.36 Run 7 - 1
12/16/2003	1:38:01 PM	13.8	4.1	1.57	3.32 Run 7 - 1
12/16/2003	1:38:31 PM	13.74	4.05	1.67	3.36 Run 7 - 1
12/16/2003	1:39:01 PM	13.74	4.1	1.59	3.36 Run 7 - 1
12/16/2003	1:39:31 PM	13.8	4.1	1.33	3.32 Run 7 - 1
12/16/2003	1:40:01 PM	13.74	4.05	1.22	3.36 Run 7 - 1
12/16/2003	1:40:31 PM	13.74	4.1	1.2	3.36 Run 7 - 1
12/16/2003	1:41:01 PM	13.74	4.05	1.05	3.39 Run 7 - 1
12/16/2003	1:41:31 PM	13.74	4.1	1.09	3.39 Run 7 - 1
12/16/2003	1:42:01 PM	13.74	4.05	1.09	3.39 Run 7 - 1
12/16/2003	1:42:31 PM	13.8	4.05	1.12	3.36 Run 7 - 1
12/16/2003	1:43:01 PM	13.74	4.1	1.07	3.39 Run 7 - 1
12/16/2003	1:43:31 PM	13.74	4.1	1.13	3.36 Run 7 - 1
12/16/2003	1:44:01 PM	13.8	4.1	1.22	3.39 Run 7 - 1
12/16/2003	1:44:31 PM	13.8	4.1	1.15	3.36 Run 7 - 1
12/16/2003	1:45:01 PM	13.74	4	1.1	3.36 Run 7 - 1
12/16/2003	1:45:31 PM	13.74	4.05	1.03	3.39 Run 7 - 1
12/16/2003	1:46:01 PM	13.74	4.05	1.04	3.36 Run 7 - 1
12/16/2003	1:46:31 PM	13.8	4.05	0.99	3.36 Run 7 - 1
12/16/2003	1:47:01 PM	13.8	4.05	0.92	3.39 Run 7 - 1
12/16/2003	1:47:31 PM	13.8	4.05	0.9	3.36 Run 7 - 1
12/16/2003	1:48:01 PM	13.8	4.1	0.91	3.36 Run 7 - 1
12/16/2003	1:48:31 PM	13.8	4.05	0.87	3.36 Run 7 - 1
12/16/2003	1:49:01 PM	13.8	4.05	0.86	3.36 Run 7 - 1
12/16/2003	1:49:31 PM	13.8	4.05	0.86	3.36 Run 7 - 1
12/16/2003	1:50:01 PM	13.8	4.1	0.94	3.36 Run 7 - 1
12/16/2003	1:50:31 PM	13.8	4.05	1.21	3.32 Run 7 - 1
12/16/2003	1:51:01 PM	13.8	4.05	1.1	3.36 Run 7 - 1
12/16/2003	1:51:31 PM	13.74	4.05	1.19	3.36
12/16/2003	1:52:01 PM	13.37	0.04	0.97	0.1 Run 7 Span - Zero
12/16/2003	1:52:31 PM	1.65	-0.01	0.47	0.06 Run 7 Span - Zero
12/16/2003	1:53:01 PM	0.19	-0.01	0.25	0.06 Run 7 Span - Zero
12/16/2003	1:53:31 PM	0.06	-0.01	0.19	0.06 Run 7 Span - Zero
12/16/2003	1:54:01 PM	0.06	-0.01	0.14	0.06 Run 7 Span - Zero
12/16/2003	1:54:31 PM	0	-0.01	0.06	3.8 Run 7 Span - Zero
12/16/2003	1:55:01 PM	0	-0.01	-0.17	4.46 Run 7 Span - Span
12/16/2003	1:55:31 PM	0	-0.01	-0.21	4.46 Run 7 Span - Span
12/16/2003	1:56:01 PM	0	0.04	1.22	0.1 Run 7 Span - Span
12/16/2003	1:56:31 PM	0	-0.01	3.05	0.06 Run 7 Span - Span

12/16/2003	1:57:01 PM	0	-0.01	3.13	0.06 Run 7 Span - Span
12/16/2003	1:57:31 PM	0	9.61	2.29	0.39
12/16/2003	1:58:01 PM	-0.06	9.81	0.29	0.32
12/16/2003	1:58:31 PM	-0.06	9.86	-0.26	0.32
12/16/2003	1:59:01 PM	0	9.86	-0.34	0.28
12/16/2003	1:59:31 PM	-0.06	9.86	-0.28	0.25
12/16/2003	2:00:01 PM	-0.06	9.86	-0.34	0.25
12/16/2003	2:00:31 PM	0	9.91	-0.35	0.25 Run 7 Span - Span
12/16/2003	2:01:01 PM	-0.06	9.91	-0.32	0.25 Run 7 Span - Span
12/16/2003	2:01:31 PM	-0.06	9.91	-0.29	0.28 Run 7 Span - Span
12/16/2003	2:02:01 PM	-0.06	9.91	-0.29	0.25 Run 7 Span - Span
12/16/2003	2:02:31 PM	-0.06	9.86	-0.27	0.25 Run 7 Span - Span
12/16/2003	2:03:01 PM	-0.06	0.14	-0.26	0.17 Run 7 Span - Span
12/16/2003	2:03:31 PM	12.21	0.09	0.08	0.03 Run 7 Span - Span
12/16/2003	2:04:01 PM	13.49	0.04	0.33	0.03 Run 7 Span - Span
12/16/2003	2:04:31 PM	13.55	0.04	0.26	0.03 Run 7 Span - Span
12/16/2003	2:05:01 PM	13.62	-0.01	0.2	0.03 Run 7 Span - Span
12/16/2003	2:05:31 PM	13.62	4.05	0.52	3.25 Run 7 Span - Span
12/16/2003	2:06:01 PM	13.68	4.05	0.9	3.36 Run 7 Span - Span
12/16/2003	2:06:31 PM	13.68	4.05	0.95	3.43 Run 7 Span - Span
12/16/2003	2:07:01 PM	13.68	4.05	0.9	3.43 Run 7 Span - Span
12/16/2003	2:07:32 PM	13.74	4.05	0.9	3.39 Run 7 Span - Span
12/16/2003	2:08:02 PM	13.68	4.05	1.09	3.36 Run 8 - 1
12/16/2003	2:08:31 PM	13.68	4.05	1.2	3.36 Run 8 - 1
12/16/2003	2:09:01 PM	13.68	4.05	1.35	3.39 Run 8 - 1
12/16/2003	2:09:31 PM	13.74	4.05	1.32	3.39 Run 8 - 1
12/16/2003	2:10:01 PM	13.74	4.05	1.19	3.39 Run 8 - 1
12/16/2003	2:10:31 PM	13.74	4.05	1.07	3.39 Run 8 - 1
12/16/2003	2:11:01 PM	13.74	4.05	1.04	3.39 Run 8 - 1
12/16/2003	2:11:31 PM	13.8	4.05	1.05	3.39 Run 8 - 1
12/16/2003	2:12:01 PM	13.74	4.05	1.01	3.39 Run 8 - 1
12/16/2003	2:12:31 PM	13.74	4.05	1.01	3.39 Run 8 - 1
12/16/2003	2:13:01 PM	13.74	4.05	0.96	3.36 Run 8 - 1
12/16/2003	2:13:31 PM	13.8	4.05	0.91	3.36 Run 8 - 1
12/16/2003	2:14:01 PM	13.8	4.05	0.94	3.39 Run 8 - 1
12/16/2003	2:14:31 PM	13.8	4.05	0.86	3.39 Run 8 - 1
12/16/2003	2:15:01 PM	13.74	4	0.93	3.39 Run 8 - 1
12/16/2003	2:15:31 PM	13.74	4.05	0.94	3.43 Run 8 - 1
12/16/2003	2:16:01 PM	13.8	4	0.95	3.39 Run 8 - 1
12/16/2003	2:16:31 PM	13.74	4	0.91	3.39 Run 8 - 1
12/16/2003	2:17:01 PM	13.74	4.05	0.94	3.43 Run 8 - 1
12/16/2003	2:17:31 PM	13.8	4.05	0.97	3.39 Run 8 - 1
12/16/2003	2:18:01 PM	13.74	4.05	0.99	3.39 Run 8 - 1

12/16/2003	2:18:31 PM	13.74	4.05	0.95	3.39 Run 8 - 1
12/16/2003	2:19:01 PM	13.8	4.05	1.01	3.36 Run 8 - 1
12/16/2003	2:19:31 PM	13.8	4.05	0.98	3.32 Run 8 - 1
12/16/2003	2:20:01 PM	13.74	4.05	1.19	3.36 Run 8 - 1
12/16/2003	2:20:31 PM	13.74	4.05	1.09	3.39 Run 8 - 1
12/16/2003	2:21:01 PM	13.74	4.05	0.99	3.43 Run 8 - 1
12/16/2003	2:21:31 PM	13.74	4.05	1.03	3.39 Run 8 - 1
12/16/2003	2:22:01 PM	13.74	4.05	1.16	3.32 Run 8 - 1
12/16/2003	2:22:31 PM	13.8	4.05	1.18	3.39 Run 8 - 1
12/16/2003	2:23:01 PM	13.8	4.05	1.14	3.39 Run 8 - 1
12/16/2003	2:23:31 PM	13.8	4.05	1.21	3.36 Run 8 - 1
12/16/2003	2:24:01 PM	13.74	4.05	1.31	3.36 Run 8 - 1
12/16/2003	2:24:31 PM	13.8	4.05	1.21	3.39 Run 8 - 1
12/16/2003	2:25:01 PM	13.74	4.05	1.15	3.39 Run 8 - 1
12/16/2003	2:25:31 PM	13.8	4.05	1.04	3.36 Run 8 - 1
12/16/2003	2:26:01 PM	13.8	4.05	1.1	3.36 Run 8 - 1
12/16/2003	2:26:31 PM	13.8	4	1.09	3.36 Run 8 - 1
12/16/2003	2:27:01 PM	13.8	4.05	1.04	3.39 Run 8 - 1
12/16/2003	2:27:31 PM	13.8	4	1.01	3.39 Run 8 - 1
12/16/2003	2:28:01 PM	13.8	4.05	1.03	3.39 Run 8 - 1
12/16/2003	2:28:31 PM	13.8	4.05	1.02	3.32 Run 8 - 1
12/16/2003	2:29:01 PM	13.8	4.05	1.15	3.43 Run 8 - 1
12/16/2003	2:29:31 PM	13.8	0.19	1.11	0.43
12/16/2003	2:30:01 PM	7.39	0.04	0.63	0.1 Run 8 Span - Zero
12/16/2003	2:30:31 PM	0.73	-0.01	0.31	0.1 Run 8 Span - Zero
12/16/2003	2:31:02 PM	0.12	0.04	0.19	0.1 Run 8 Span - Zero
12/16/2003	2:31:31 PM	0.06	-0.01	0.18	0.1 Run 8 Span - Zero
12/16/2003	2:32:01 PM	0.06	-0.01	0.12	0.06 Run 8 Span - Zero
12/16/2003	2:32:31 PM	0.06	0.04	0.16	1.12 Run 8 Span - Zero
12/16/2003	2:33:01 PM	0.06	0.04	0.01	4.53 Run 8 Span - Zero
12/16/2003	2:33:31 PM	0	-0.01	-0.13	4.49 Run 8 Span - Zero
12/16/2003	2:34:01 PM	0	-0.01	0.4	0.25 Run 8 Span - Zero
12/16/2003	2:34:31 PM	0	0.04	2.37	0.1 Run 8 Span - Zero
12/16/2003	2:35:01 PM	0	-0.01	3.1	0.1 Run 8 Span - Span
12/16/2003	2:35:31 PM	0	-0.01	3.16	0.06 Run 8 Span - Span
12/16/2003	2:36:01 PM	0	9.66	2.43	0.57 Run 8 Span - Span
12/16/2003	2:36:31 PM	0	9.86	0.45	0.32 Run 8 Span - Span
12/16/2003	2:37:01 PM	0	9.91	-0.18	0.28 Run 8 Span - Span
12/16/2003	2:37:31 PM	-0.06	9.81	-0.28	0.28 Run 8 Span - Span
12/16/2003	2:38:01 PM	-0.06	0.14	-0.16	0.06 Run 8 Span - Span
12/16/2003	2:38:31 PM	10.5	0.04	0.15	0.06 Run 8 Span - Span
12/16/2003	2:39:01 PM	13.25	0.04	0.33	0.03 Run 8 Span - Span
12/16/2003	2:39:31 PM	13.55	-0.01	0.28	0.03 Run 8 Span - Span

12/16/2003	2:40:01 PM	13.62	0.04	0.18	0.03 Run 8 Span - Span
12/16/2003	2:40:31 PM	13.62	4	0.49	3.14 Run 8 Span - Span
12/16/2003	2:41:01 PM	13.74	4.05	0.92	3.36 Run 8 Span - Span
12/16/2003	2:41:31 PM	13.74	4	0.95	3.36 Run 8 Span - Span
12/16/2003	2:42:01 PM	13.74	4.05	0.98	3.36 Run 8 Span - Span
12/16/2003	2:42:31 PM	13.68	4.05	0.94	3.39 Run 8 Span - Span
12/16/2003	2:43:01 PM	13.68	4.05	0.9	3.36 Run 8 Span - Span
12/16/2003	2:43:31 PM	13.74	4.05	1.02	3.32 Run 9 - 1
12/16/2003	2:44:01 PM	13.74	4.05	0.95	3.39 Run 9 - 1
12/16/2003	2:44:31 PM	13.8	4.05	0.91	3.36 Run 9 - 1
12/16/2003	2:45:01 PM	13.74	4.05	0.96	3.39 Run 9 - 1
12/16/2003	2:45:31 PM	13.74	4.05	0.95	3.36 Run 9 - 1
12/16/2003	2:46:01 PM	13.74	4.05	0.92	3.39 Run 9 - 1
12/16/2003	2:46:31 PM	13.74	4.05	0.94	3.39 Run 9 - 1
12/16/2003	2:47:01 PM	13.74	4.05	0.93	3.43 Run 9 - 1
12/16/2003	2:47:31 PM	13.74	4.05	0.92	3.43 Run 9 - 1
12/16/2003	2:48:01 PM	13.74	4.05	0.92	3.43 Run 9 - 1
12/16/2003	2:48:31 PM	13.74	4.05	0.98	3.47 Run 9 - 1
12/16/2003	2:49:01 PM	13.74	4.05	0.99	3.39 Run 9 - 1
12/16/2003	2:49:31 PM	13.74	4.05	0.96	3.43 Run 9 - 1
12/16/2003	2:50:01 PM	13.8	4.05	1.02	3.39 Run 9 - 1
12/16/2003	2:50:31 PM	13.74	4.05	0.97	3.39 Run 9 - 1
12/16/2003	2:51:01 PM	13.8	4.05	0.99	3.43 Run 9 - 1
12/16/2003	2:51:31 PM	13.8	4.05	0.97	3.43 Run 9 - 1
12/16/2003	2:52:01 PM	13.74	4	0.93	3.43 Run 9 - 1
12/16/2003	2:52:31 PM	13.74	4.05	0.94	3.43 Run 9 - 1
12/16/2003	2:53:01 PM	13.74	4.05	0.91	3.43 Run 9 - 1
12/16/2003	2:53:31 PM	13.8	4.05	0.9	3.39 Run 9 - 1
12/16/2003	2:54:01 PM	13.74	4.05	0.85	3.39 Run 9 - 1
12/16/2003	2:54:31 PM	13.8	4.05	0.83	3.43 Run 9 - 1
12/16/2003	2:55:01 PM	13.8	4.05	0.86	3.36 Run 9 - 1
12/16/2003	2:55:31 PM	13.74	4	0.89	3.36 Run 9 - 1
12/16/2003	2:56:01 PM	13.8	4.05	0.89	3.39 Run 9 - 1
12/16/2003	2:56:31 PM	13.74	4.05	0.88	3.36 Run 9 - 1
12/16/2003	2:57:01 PM	13.8	4.05	0.85	3.39 Run 9 - 1
12/16/2003	2:57:31 PM	13.74	4.05	0.93	3.39 Run 9 - 1
12/16/2003	2:58:01 PM	13.74	4.05	0.89	3.39 Run 9 - 1
12/16/2003	2:58:31 PM	13.74	4	0.84	3.36 Run 9 - 1
12/16/2003	2:59:01 PM	13.74	4.05	0.89	3.36 Run 9 - 1
12/16/2003	2:59:31 PM	13.8	4.05	0.92	3.36 Run 9 - 1
12/16/2003	3:00:01 PM	13.8	4.05	0.9	3.39 Run 9 - 1
12/16/2003	3:00:31 PM	13.74	4	0.96	3.39 Run 9 - 1
12/16/2003	3:01:01 PM	13.8	4.05	0.97	3.39 Run 9 - 1

12/16/2003	3:01:31 PM	13.8	4.1	0.84	3.39	Run 9 - 1
12/16/2003	3:02:01 PM	13.8	4.05	1	3.39	Run 9 - 1
12/16/2003	3:02:31 PM	13.8	4.05	0.94	3.39	Run 9 - 1
12/16/2003	3:03:01 PM	13.8	4.05	0.92	3.39	Run 9 - 1
12/16/2003	3:03:31 PM	13.8	4.05	0.9	3.36	Run 9 - 1
12/16/2003	3:04:01 PM	13.74	4.05	0.88	3.39	Run 9 - 1
12/16/2003	3:04:31 PM	13.8	0.19	0.91	1.09	
12/16/2003	3:05:01 PM	6.66	-0.01	0.63	0.1	Run 9 Span - Zero
12/16/2003	3:05:31 PM	0.61	0.04	0.33	0.06	Run 9 Span - Zero
12/16/2003	3:06:01 PM	0.12	-0.01	0.21	0.06	Run 9 Span - Zero
12/16/2003	3:06:31 PM	0.06	-0.01	0.17	0.03	Run 9 Span - Zero
12/16/2003	3:07:01 PM	0.06	-0.01	0.11	0.06	Run 9 Span - Zero
12/16/2003	3:07:31 PM	0.06	-0.01	0.09	3.61	Run 9 Span - Zero
12/16/2003	3:08:01 PM	0	-0.01	-0.05	4.46	Run 9 Span - Span
12/16/2003	3:08:31 PM	0.06	-0.01	-0.13	4.42	Run 9 Span - Span
12/16/2003	3:09:01 PM	0	-0.01	-0.14	4.46	Run 9 Span - Span
12/16/2003	3:09:31 PM	0	-0.01	1.34	0.14	Run 9 Span - Span
12/16/2003	3:10:01 PM	-0.06	-0.01	2.88	0.1	Run 9 Span - Span
12/16/2003	3:10:31 PM	0	-0.01	3.14	0.06	Run 9 Span - Span
12/16/2003	3:11:01 PM	-0.06	2.43	3.16	0.83	Run 9 Span - Span
12/16/2003	3:11:31 PM	0.61	9.76	1.78	0.54	Run 9 Span - Span
12/16/2003	3:12:01 PM	0	9.91	0.03	0.28	Run 9 Span - Span
12/16/2003	3:12:31 PM	-0.06	9.95	-0.15	0.28	Run 9 Span - Span
12/16/2003	3:13:01 PM	-0.06	9.91	-0.17	0.25	Run 9 Span - Span
12/16/2003	3:13:31 PM	-0.06	3.07	-0.2	0.25	Run 9 Span - Span
12/16/2003	3:14:01 PM	9.28	0.09	0	0.03	Run 9 Span - Span
12/16/2003	3:14:31 PM	13.37	0.09	0.32	-0.01	Run 9 Span - Span
12/16/2003	3:15:01 PM	13.55	0.04	0.42	0.03	Run 9 Span - Span
12/16/2003	3:15:31 PM	13.62	0.04	0.27	-0.01	Run 9 Span - Span
12/16/2003	3:16:01 PM	13.62	4.05	0.41	3.25	Run 9 Span - Span
12/16/2003	3:16:31 PM	13.68	4.1	0.85	3.43	Run 9 Span - Span
12/16/2003	3:17:01 PM	13.68	4.1	0.95	3.39	Run 9 Span - Span
12/16/2003	3:17:31 PM	13.74	4.1	0.86	3.43	Run 9 Span - Span
12/16/2003	3:18:01 PM	13.68	4.1	0.9	3.43	Run 9 Span - Span
12/16/2003	3:18:31 PM	13.68	4.1	0.91	3.43	Run 9 Span - Span
12/16/2003	3:19:01 PM	13.8	4.1	0.87	3.39	Run 9 Span - Span
12/16/2003	3:19:32 PM	13.74	4.05	0.82	3.39	Run 9 Span - Span
12/16/2003	3:20:01 PM	13.74	4.05	0.84	3.36	Run 9 Span - Span
12/16/2003	3:20:31 PM	13.74	4.05	0.88	3.39	Run 9 Span - Span
12/16/2003	3:21:01 PM	13.74	4.1	0.9	3.36	Run 9 Span - Span
12/16/2003	3:21:31 PM	13.8	4.1	0.87	3.39	Run 9 Span - Span
12/16/2003	3:22:01 PM	13.74	4.05	0.83	3.36	Run 9 Span - Span
12/16/2003	3:22:31 PM	13.74	4.1	0.9	3.36	Run 9 Span - Span

12/16/2003	3:23:01 PM	13.74	4.1	0.96	3.36 Run 9 Span - Span
12/16/2003	3:23:31 PM	13.8	4.14	0.94	3.39 Run 9 Span - Span
12/16/2003	3:24:01 PM	13.74	4.1	0.85	3.39 Run 9 Span - Span
12/16/2003	3:24:31 PM	13.74	4.1	0.97	3.36 Run 9 Span - Span
12/16/2003	3:25:01 PM	13.68	4.05	0.95	3.36 Run 9 Span - Span
12/16/2003	3:25:31 PM	13.74	4.05	0.89	3.36 Run 9 Span - Span
12/16/2003	3:26:01 PM	13.74	4.1	0.83	3.39 Run 9 Span - Span
12/16/2003	3:26:31 PM	13.8	4.1	0.88	3.32 Run 9 Span - Span
12/16/2003	3:27:01 PM	13.74	4.1	0.82	3.36 Run 9 Span - Span
12/16/2003	3:27:31 PM	13.74	4.1	0.86	3.36 Run 9 Span - Span
12/16/2003	3:28:01 PM	13.74	4.05	0.93	3.36 Run 9 Span - Span
12/16/2003	3:28:31 PM	13.8	4.1	0.9	3.36 Run 9 Span - Span
12/16/2003	3:29:01 PM	13.74	4.1	0.93	3.39 Run 9 Span - Span
12/16/2003	3:29:31 PM	13.74	4.1	0.9	3.36 Run 9 Span - Span
12/16/2003	3:30:01 PM	13.8	4.1	0.9	3.32 Run 9 Span - Span
12/16/2003	3:30:31 PM	13.74	4.05	0.93	3.39 Run 9 Span - Span
12/16/2003	3:31:01 PM	13.8	4.1	0.93	3.36 Run 9 Span - Span
12/16/2003	3:31:31 PM	13.8	4.1	0.86	3.39 Run 9 Span - Span
12/16/2003	3:32:01 PM	13.8	4.1	0.93	3.39 Run 9 Span - Span

CONVERTER EFFICIENCY TEST



**Reference Method 20  
Converter Efficiency Test  
Data Summary**

Analyzer Serial Number: 42CHL-69577-363

Test Date: 12/16/2003

Maximum 1-minute Value in 30-minute Period:	3.91	ppm
Value at End of 30-minute Period:	3.87	ppm
Difference Observed:	-0.04	ppm
Converter Efficiency:	98.98	%
Percent Decrease:	1.02	%

Converter Efficiency calculated as:

$$\frac{\text{Value at End of 30-minute Period}}{\text{Maximum Value in 30-minute Period}} \times 100$$

Converter is acceptable providing decrease is less than or equal to 2.0%.



Date	Time	NOX (PPM)	Status
12/16/2003	8:33:31 AM	3.8	Converter Check - 1
12/16/2003	8:34:01 AM	3.83	Converter Check - 1
12/16/2003	8:34:31 AM	3.83	Converter Check - 1
12/16/2003	8:35:01 AM	3.87	Converter Check - 1
12/16/2003	8:35:31 AM	3.87	Converter Check - 1
12/16/2003	8:36:01 AM	3.87	Converter Check - 1
12/16/2003	8:36:31 AM	3.87	Converter Check - 1
12/16/2003	8:37:01 AM	3.87	Converter Check - 1
12/16/2003	8:37:31 AM	3.87	Converter Check - 1
12/16/2003	8:38:01 AM	3.91	Converter Check - 1
12/16/2003	8:38:31 AM	3.87	Converter Check - 1
12/16/2003	8:39:01 AM	3.83	Converter Check - 1
12/16/2003	8:39:31 AM	3.87	Converter Check - 1
12/16/2003	8:40:01 AM	3.91	Converter Check - 1
12/16/2003	8:40:31 AM	3.87	Converter Check - 1
12/16/2003	8:41:01 AM	3.87	Converter Check - 1
12/16/2003	8:41:31 AM	3.91	Converter Check - 1
12/16/2003	8:42:01 AM	3.87	Converter Check - 1
12/16/2003	8:42:31 AM	3.87	Converter Check - 1
12/16/2003	8:43:01 AM	3.87	Converter Check - 1
12/16/2003	8:43:31 AM	3.91	Converter Check - 1
12/16/2003	8:44:01 AM	3.91	Converter Check - 1
12/16/2003	8:44:31 AM	3.91	Converter Check - 1
12/16/2003	8:45:01 AM	3.87	Converter Check - 1
12/16/2003	8:45:31 AM	3.91	Converter Check - 1
12/16/2003	8:46:01 AM	3.91	Converter Check - 1
12/16/2003	8:46:31 AM	3.87	Converter Check - 1
12/16/2003	8:47:01 AM	3.87	Converter Check - 1
12/16/2003	8:47:31 AM	3.87	Converter Check - 1
12/16/2003	8:48:01 AM	3.91	Converter Check - 1
12/16/2003	8:48:31 AM	3.87	Converter Check - 1
12/16/2003	8:49:01 AM	3.87	Converter Check - 1
12/16/2003	8:49:31 AM	3.91	Converter Check - 1
12/16/2003	8:50:01 AM	3.87	Converter Check - 1
12/16/2003	8:50:31 AM	3.91	Converter Check - 1
12/16/2003	8:51:01 AM	3.87	Converter Check - 1
12/16/2003	8:51:31 AM	3.87	Converter Check - 1
12/16/2003	8:52:01 AM	3.87	Converter Check - 1
12/16/2003	8:52:31 AM	3.87	Converter Check - 1
12/16/2003	8:53:01 AM	3.91	Converter Check - 1
12/16/2003	8:53:31 AM	3.87	Converter Check - 1
12/16/2003	8:54:01 AM	3.87	Converter Check - 1

12/16/2003	8:54:31 AM	3.87 Converter Check - 1
12/16/2003	8:55:01 AM	3.87 Converter Check - 1
12/16/2003	8:55:31 AM	3.87 Converter Check - 1
12/16/2003	8:56:01 AM	3.87 Converter Check - 1
12/16/2003	8:56:31 AM	3.87 Converter Check - 1
12/16/2003	8:57:01 AM	3.87 Converter Check - 1
12/16/2003	8:57:31 AM	3.91 Converter Check - 1
12/16/2003	8:58:01 AM	3.87 Converter Check - 1
12/16/2003	8:58:31 AM	3.87 Converter Check - 1
12/16/2003	8:59:01 AM	3.87 Converter Check - 1
12/16/2003	8:59:31 AM	3.91 Converter Check - 1
12/16/2003	9:00:01 AM	3.87 Converter Check - 1
12/16/2003	9:00:31 AM	3.87 Converter Check - 1
12/16/2003	9:01:01 AM	3.91 Converter Check - 1
12/16/2003	9:01:31 AM	3.87 Converter Check - 1
12/16/2003	9:02:01 AM	3.91 Converter Check - 1
12/16/2003	9:02:31 AM	3.87 Converter Check - 1
12/16/2003	9:03:01 AM	3.87 Converter Check - 1

CYLINDER GAS CERTIFICATES

**CERTIFIED MASTER CLASS**

*Single-Certified Calibration Standard*



**Scott Specialty Gases**

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

**RDS04**

**CERTIFICATE OF ACCURACY: Certified Master Class Calibration Standard**

**Product Information**

Project No.: 01-95261-006  
Item No.: 01020000840PAL  
P.O. No.: E-N06925

**Customer**

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA, FL 33619

Cylinder Number: ALM026412  
Cylinder Size: AL  
Certification Date: 21Aug2003  
Expiration Date: 19Feb2004

**CERTIFIED CONCENTRATION**

<u>Component Name</u>	<u>Concentration (Moles)</u>	<u>Accuracy (+/-%)</u>
CARBON MONOXIDE	3.00 PPM	2
NITROGEN	BALANCE	

**TRACEABILITY**

Traceable To

NIST

APPROVED BY:

JOHN C. FITZ

DATE:

## SPECIFICATIONS

<u>Component Name</u>	<u>Requested Concentration (Moles)</u>	<u>Certified Concentration (Moles)</u>	<u>Blend Tolerance Result (+/- %)</u>	<u>Certified Accuracy Result (+/- %)</u>
CARBON MONOXIDE	3. PPM	3.00 PPM	.0	2.00
NITROGEN	BAL	BAL		

## TRACEABILITY

Traceable To  
NIST

## PHYSICAL PROPERTIES

Cylinder Size: AL                      Pressure: 2000 PSIG  
Expiration Date: 19Feb2004

Min. Cyl. Pressure: 150 PSIG

## SPECIAL HANDLING INSTRUCTIONS

Do not use or store cylinder at or below the stated dew point temperature. Possible condensation of heavier components could result. In the event the cylinder has been exposed to temperatures at or below the dew point, place cylinder in heated area for 24 hours and then roll cylinder for 15 minutes to re-mix.

Use of calibration standards at or below dew point temperature may result in calibration error.

RATA CLASS *CES HARD 5*  
 Dual-Analyzed Calibration Standard *re-cert.*



**Scott Specialty Gases**

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: EN-75516  
 Project No.: 01-84921-001

Customer

TAMPA ELECTRIC COMPANY  
 DAVID SMITH  
 5010 CAUSEWAY BLVD  
 TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: ALM063413      Certification Date: 13Feb2003      Exp. Date: 12Feb2004  
 Cylinder Pressure\*\*\*: 1250 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	6.29 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.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NT/RM 2635	03Apr2003	ALM020670	25.78 PPM	CARBON MONOXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS/6E/KN-240	30Jan2003	NDIR

**ANALYZER READINGS**

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

First Triad Analysis      Second Triad Analysis      Calibration Curve

**CARBON MONOXIDE**

Date: 06Aug2002	Response Unit: VOLTS	
Z1 = -0.00400	R1 = 2.54380	T1 = 0.60600
R2 = 2.54240	Z2 = -0.00340	T2 = 0.60320
Z3 = -0.00700	T3 = 0.60060	R3 = 2.54390
Avg. Concentration:	6.230	PPM

Date: 13Feb2003	Response Unit: VOLTS	
Z1 = -0.00310	R1 = 2.53330	T1 = 0.60820
R2 = 2.53100	Z2 = -0.00100	T2 = 0.60910
Z3 = -0.00540	T3 = 0.60930	R3 = 2.53000
Avg. Concentration:	6.290	PPM

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999951	2635
Constants:	A = 6.6140E-02
B = 1.0194E+01	C =
D =	E =

APPROVED BY:

*[Signature]*  
 JOHN C. FITZ

RATA CLASS



Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-01495-001

Customer

TAMPA ELECTRIC COMPANY  
CHARLES DUFENY  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

ANALYTICAL INFORMATION

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

Cylinder Number: AAL3073 Certification Date: 13Nov2003 Exp. Date: 12Nov2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	4.46 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	4.47 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2627	15Jan2004	AAL069671	5.180 PPM	NITRIC OXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
TECO/10/9741111S	06Nov2003	CHEMILMINESCENT

ANALYZER READINGS

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

NITRIC OXIDE

Date: 26Aug2003	Response Unit: VOLTS		
Z1 = 0.00020	R1 = 0.87080	T1 = 0.74970	
R2 = 0.87070	Z2 = 0.00020	T2 = 0.74980	
Z3 = 0.00020	T3 = 0.75070	R3 = 0.86970	
Avg. Concentration:	4.460	PPM	

Date: 13Nov2003	Response Unit: VOLTS		
Z1 = 0.00030	R1 = 0.86580	T1 = 0.74680	
R2 = 0.86610	Z2 = 0.00030	T2 = 0.74670	
Z3 = 0.00030	T3 = 0.74710	R3 = 0.86770	
Avg. Concentration:	4.460	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999992	2627
Constants:	A = 0.001488
B = 5.993653	C =
D =	E =

APPROVED BY:

KIMBERLY NILES

RATA CLASS **RDSII**  
Dual-Analyzed Calibration Standard



**Scott Specialty Gases**

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-95261-009

Customer

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: AAL15968 Certification Date: 26Aug2003 Exp. Date: 25Aug2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT

CERTIFIED CONCENTRATION (Moles)

ANALYTICAL

ACCURACY\*\*

TRACEABILITY

NITRIC OXIDE	8.24 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	8.26 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

REFERENCE STANDARD

<u>TYPE/SRM NO.</u>	<u>EXPIRATION DATE</u>	<u>CYLINDER NUMBER</u>	<u>CONCENTRATION</u>	<u>COMPONENT</u>
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#  
HORIBA/CLA220/5708850810

DATE LAST CALIBRATED  
21Aug2003

ANALYTICAL PRINCIPLE  
CHEMILUMINESCENCE

**ANALYZER READINGS**

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

**NITRIC OXIDE**

Date: 19Aug2003	Response Unit: VOLTS	
Z1 = 0.00460	R1 = 3.94120	T1 = 1.80100
R2 = 3.93760	Z2 = 0.00380	T2 = 1.79720
Z3 = 0.00490	T3 = 1.79740	R3 = 3.92910
Avg. Concentration:	8.220	PPM

Date: 26Aug2003	Response Unit: VOLTS	
Z1 = 0.00520	R1 = 3.78620	T1 = 1.73250
R2 = 3.78260	Z2 = 0.00820	T2 = 1.73300
Z3 = 0.00720	T3 = 1.73030	R3 = 3.77760
Avg. Concentration:	8.250	PPM

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999998	2629
Constants:	A = -0.016438
B = 4.632947	C =
D =	E =

APPROVED BY:

  
KIMBERLY NILES



RATA CLASS **R0512**  
Dual-Analyzed Calibration Standard



**Scott Specialty Gases**

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-95261-012

Customer

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: AAL6916 Certification Date: 26Aug2003 Exp. Date: 25Aug2005  
Cylinder Pressure\*\*\*: 2000 PSIG

<u>COMPONENT</u>	<u>CERTIFIED CONCENTRATION (Moles)</u>	<u>ANALYTICAL ACCURACY**</u>	<u>TRACEABILITY</u>
NITRIC OXIDE	12.5 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	12.6 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

**REFERENCE STANDARD**

<u>TYPE/SRM NO.</u>	<u>EXPIRATION DATE</u>	<u>CYLINDER NUMBER</u>	<u>CONCENTRATION</u>	<u>COMPONENT</u>
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

**INSTRUMENTATION**

<u>INSTRUMENT/MODEL/SERIAL#</u>	<u>DATE LAST CALIBRATED</u>	<u>ANALYTICAL PRINCIPLE</u>
HORIBA/CLA220/5708850810	21Aug2003	CHEMILUMINESCENCE

**ANALYZER READINGS**

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

**NITRIC OXIDE**

Date: 19Aug2003	Response Unit: VOLTS		
Z1 = 0.00710	R1 = 3.92820	T1 = 2.72460	
R2 = 3.93490	Z2 = 0.00720	T2 = 2.72850	
Z3 = 0.00440	T3 = 2.72410	R3 = 3.92940	
Avg. Concentration:	12.50	PPM	

Date: 26Aug2003	Response Unit: VOLTS		
Z1 = 0.00490	R1 = 3.79000	T1 = 2.62890	
R2 = 3.78830	Z2 = 0.00560	T2 = 2.62770	
Z3 = 0.00460	T3 = 2.62620	R3 = 3.79020	
Avg. Concentration:	12.51	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999998	2629
Constants:	A = -0.016438
B = 4.632947	C =
D =	E =

APPROVED BY:

  
KIMBERLY NILES

RATA CLASS **GR55**  
Dual-Analyzed Calibration Standard



**Scott Specialty Gases**

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7220

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: EN-75516  
Project No.: 01-90442-002

Customer

TAMPA ELECTRIC COMPANY  
DAVID SMITH  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: ALM007852      Certification Date: 12May2003      Exp. Date: 11May2006  
Cylinder Pressure\*\*\*: 2015 PSIG

<u>COMPONENT</u>	<u>CERTIFIED CONCENTRATION (Moles)</u>	<u>ANALYTICAL ACCURACY**</u>	<u>TRACEABILITY</u>
OXYGEN	13.65 %	+/- 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.

**REFERENCE STANDARD**

<u>TYPE/SRM NO.</u>	<u>EXPIRATION DATE</u>	<u>CYLINDER NUMBER</u>	<u>CONCENTRATION</u>	<u>COMPONENT</u>
RM 2350	01Feb2004	A4341	23.51 %	OXYGEN

**INSTRUMENTATION**

<u>INSTRUMENT/MODEL/SERIAL#</u>	<u>DATE LAST CALIBRATED</u>	<u>ANALYTICAL PRINCIPLE</u>
BECKMAN/755/2002571	09May2003	PARAMAGNETIC

**ANALYZER READINGS**

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

**OXYGEN**

Date: 12May2003	Response Unit: VOLTS	
Z1 = 0.00030	R1 = 0.95420	T1 = 0.55410
R2 = 0.95460	Z2 = 0.00060	T2 = 0.55440
Z3 = 0.00040	T3 = 0.55440	R3 = 0.95450
Avg. Concentration:	13.65	%



Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = 0.999999	2350
Constants:	A = 2.4646E+01
B = -1.6507E-02	C =
D =	E =

APPROVED BY:

JOE SMITH

VISIBLE EMISSIONS OBSERVATIONS



VISIBLE EMISSION OBSERVATION

E-496 R 10/85

SOURCE NAME		SOURCE LOCATION		OBSERVATION DATE			START TIME		STOP TIME				
Dayside CT-2B		Tampa, FL		11/12/2003			12:00		12:30				
TYPE OF FACILITY				SEC.				SEC.					
Combined Cycle Combustion Turbine - firing NG				MIN	0	15	30	45	MIN	0	15	30	45
DISTANCE FROM OBSERVER				1				31					
~670'				2				32					
SKY CONDITIONS/PLUME BACKGROUND				3				33					
clear / background is blue				4				34					
SOURCE LAYOUT SKETCH				DRAW NORTH ARROW				5					
				6				36					
				7				37					
				8				38					
				9				39					
				10				40					
				11				41					
AVERAGE OPACITY -				12				42					
				13				43					
WIND SPEED (EST.)		WIND DIRECTION (EST.)		14				44					
gentle breeze ~6-10 mph		N to NNE		15				45					
OBSERVER'S NAME (PRINT)				16				46					
R.A. McDarby				17				47					
OBSERVER'S SIGNATURE		DATE		18				48					
<i>R.A. McDarby</i>		11/12/2003		19				49					
COMMENTS				20				50					
30 minute as per PSD-FL-301A Testing				21				51					
Requirements #1B - 150' stack 19'-10'				22				52					
maximum observed: 0%				23				53					
minimum observed: 0%				24				54					
maximum 6 minute observed: 0%				25				55					
COPY OF VISIBLE EMISSIONS CERTIFICATION CARD				26				56					
				27				57					
				28				58					
				29				59					
				30				60					

PLANT OPERATIONAL DATA

NOVEMBER 12, 2003

**Bayside CT2B**  
**11/12/03 11:40 -**  
**16:10**

	<b>MW</b>	<b>Turbine Exhaust Temp</b>	<b>Fuel Gas Flow</b>	<b>Compressor Inlet Temp</b>	<b>Barametric Pressure</b>	<b>NH3 Injection Rate</b>
	<b>2bDWATT</b>	<b>2bTTXM</b>	<b>2bFQG</b>	<b>2bCTIM</b>	<b>2bAFPAP</b>	<b>2bFGCFI711</b>
12-Nov-03 11:40:00	164.58	1131.01	20.67	68.23	30.13	8.62
12-Nov-03 11:41:00	164.60	1130.99	20.68	68.24	30.13	8.61
12-Nov-03 11:42:00	164.63	1130.98	20.68	68.25	30.13	8.60
12-Nov-03 11:43:00	164.65	1130.97	20.68	68.26	30.13	8.60
12-Nov-03 11:44:00	164.68	1130.96	20.68	68.27	30.13	8.60
12-Nov-03 11:45:00	164.70	1130.95	20.68	68.27	30.13	8.60
12-Nov-03 11:46:00	164.73	1130.94	20.69	68.28	30.13	8.60
12-Nov-03 11:47:00	164.76	1130.93	20.69	68.29	30.13	8.60
12-Nov-03 11:48:00	164.78	1130.91	20.69	68.30	30.13	8.60
12-Nov-03 11:49:00	164.81	1130.90	20.69	68.31	30.13	8.60
12-Nov-03 11:50:00	164.83	1130.89	20.69	68.32	30.13	8.60
12-Nov-03 11:51:00	164.86	1130.88	20.70	68.33	30.13	8.60
12-Nov-03 11:52:00	164.88	1130.87	20.70	68.33	30.13	8.59
12-Nov-03 11:53:00	164.91	1130.86	20.70	68.34	30.13	8.59
12-Nov-03 11:54:00	164.94	1130.85	20.70	68.35	30.13	8.59
12-Nov-03 11:55:00	164.96	1130.84	20.70	68.35	30.13	8.59
12-Nov-03 11:56:00	164.99	1130.82	20.71	68.36	30.12	8.59
12-Nov-03 11:57:00	165.01	1130.81	20.71	68.36	30.12	8.59
12-Nov-03 11:58:00	165.04	1130.80	20.71	68.37	30.12	8.59
12-Nov-03 11:59:00	165.06	1130.79	20.71	68.37	30.12	8.59
12-Nov-03 12:00:00	165.07	1130.78	20.71	68.38	30.12	8.59
12-Nov-03 12:01:00	165.03	1130.81	20.72	68.38	30.12	8.59
12-Nov-03 12:02:00	164.99	1130.85	20.72	68.39	30.12	8.59
12-Nov-03 12:03:00	164.95	1130.89	20.71	68.39	30.12	8.58
12-Nov-03 12:04:00	164.91	1130.93	20.71	68.40	30.12	8.58
12-Nov-03 12:05:00	164.87	1130.97	20.71	68.40	30.12	8.57
12-Nov-03 12:06:00	164.83	1131.01	20.71	68.41	30.12	8.56
12-Nov-03 12:07:00	164.79	1131.05	20.71	68.41	30.12	8.55
12-Nov-03 12:08:00	164.75	1131.09	20.71	68.42	30.12	8.55
12-Nov-03 12:09:00	164.71	1131.13	20.70	68.42	30.12	8.54
12-Nov-03 12:10:00	164.67	1131.17	20.70	68.43	30.12	8.53
12-Nov-03 12:11:00	164.63	1131.21	20.70	68.43	30.12	8.52
12-Nov-03 12:12:00	164.58	1131.25	20.70	68.44	30.12	8.52
12-Nov-03 12:13:00	164.54	1131.29	20.70	68.44	30.12	8.51
12-Nov-03 12:14:00	164.50	1131.33	20.69	68.45	30.12	8.50
12-Nov-03 12:15:00	164.46	1131.38	20.69	68.45	30.12	8.49
12-Nov-03 12:16:00	164.42	1131.42	20.69	68.46	30.12	8.49
12-Nov-03 12:17:00	164.38	1131.46	20.69	68.46	30.12	8.48
12-Nov-03 12:18:00	164.34	1131.50	20.69	68.47	30.12	8.47
12-Nov-03 12:19:00	164.30	1131.54	20.69	68.49	30.12	8.46
12-Nov-03 12:20:00	164.28	1131.57	20.68	68.51	30.12	8.46
12-Nov-03 12:21:00	164.29	1131.58	20.68	68.53	30.12	8.45
12-Nov-03 12:22:00	164.30	1131.58	20.68	68.55	30.12	8.44
12-Nov-03 12:23:00	164.32	1131.57	20.68	68.57	30.12	8.43
12-Nov-03 12:24:00	164.33	1131.57	20.67	68.59	30.12	8.44
12-Nov-03 12:25:00	164.34	1131.57	20.67	68.61	30.12	8.44
12-Nov-03 12:26:00	164.36	1131.56	20.67	68.63	30.12	8.44
12-Nov-03 12:27:00	164.37	1131.56	20.66	68.65	30.11	8.45

12-Nov-03 12:28:00	164.38	1131.56	20.66	68.67	30.11	8.45
12-Nov-03 12:29:00	164.39	1131.55	20.66	68.70	30.11	8.45
12-Nov-03 12:30:00	164.41	1131.55	20.65	68.72	30.11	8.46
12-Nov-03 12:31:00	164.42	1131.55	20.65	68.74	30.11	8.46
12-Nov-03 12:32:00	164.43	1131.54	20.65	68.76	30.11	8.46
12-Nov-03 12:33:00	164.45	1131.54	20.64	68.78	30.11	8.47
12-Nov-03 12:34:00	164.46	1131.54	20.64	68.80	30.11	8.47
12-Nov-03 12:35:00	164.47	1131.53	20.64	68.82	30.11	8.47
12-Nov-03 12:36:00	164.48	1131.53	20.63	68.84	30.11	8.47
12-Nov-03 12:37:00	164.50	1131.53	20.63	68.86	30.11	8.48
12-Nov-03 12:38:00	164.51	1131.52	20.63	68.88	30.11	8.48
12-Nov-03 12:39:00	164.52	1131.52	20.62	68.90	30.11	8.48
12-Nov-03 12:40:00	164.53	1131.52	20.62	68.92	30.11	8.49
12-Nov-03 12:41:00	164.54	1131.51	20.62	68.93	30.10	8.49
12-Nov-03 12:42:00	164.54	1131.51	20.62	68.88	30.10	8.49
12-Nov-03 12:43:00	164.54	1131.49	20.62	68.82	30.10	8.50
12-Nov-03 12:44:00	164.55	1131.46	20.62	68.77	30.10	8.50
12-Nov-03 12:45:00	164.55	1131.44	20.63	68.72	30.10	8.50
12-Nov-03 12:46:00	164.55	1131.41	20.63	68.66	30.10	8.51
12-Nov-03 12:47:00	164.56	1131.39	20.63	68.61	30.10	8.51
12-Nov-03 12:48:00	164.56	1131.36	20.64	68.55	30.10	8.52
12-Nov-03 12:49:00	164.57	1131.33	20.64	68.50	30.10	8.52
12-Nov-03 12:50:00	164.57	1131.31	20.65	68.45	30.10	8.53
12-Nov-03 12:51:00	164.57	1131.28	20.65	68.39	30.10	8.53
12-Nov-03 12:52:00	164.58	1131.26	20.65	68.34	30.10	8.54
12-Nov-03 12:53:00	164.58	1131.23	20.66	68.28	30.10	8.54
12-Nov-03 12:54:00	164.58	1131.21	20.66	68.23	30.10	8.55
12-Nov-03 12:55:00	164.59	1131.18	20.66	68.17	30.09	8.55
12-Nov-03 12:56:00	164.59	1131.16	20.67	68.12	30.09	8.56
12-Nov-03 12:57:00	164.59	1131.13	20.67	68.07	30.09	8.56
12-Nov-03 12:58:00	164.60	1131.11	20.67	68.01	30.09	8.57
12-Nov-03 12:59:00	164.60	1131.08	20.68	67.96	30.09	8.57
12-Nov-03 13:00:00	164.60	1131.06	20.68	67.92	30.09	8.58
12-Nov-03 13:01:00	164.57	1131.03	20.68	67.96	30.09	8.58
12-Nov-03 13:02:00	164.55	1131.01	20.68	68.03	30.09	8.59
12-Nov-03 13:03:00	164.52	1131.05	20.68	68.09	30.09	8.59
12-Nov-03 13:04:00	164.50	1131.13	20.68	68.16	30.09	8.60
12-Nov-03 13:05:00	164.47	1131.22	20.67	68.22	30.09	8.60
12-Nov-03 13:06:00	164.44	1131.30	20.67	68.29	30.09	8.60
12-Nov-03 13:07:00	164.42	1131.38	20.67	68.35	30.09	8.59
12-Nov-03 13:08:00	164.39	1131.47	20.66	68.42	30.09	8.59
12-Nov-03 13:09:00	164.37	1131.55	20.66	68.48	30.09	8.58
12-Nov-03 13:10:00	164.34	1131.64	20.66	68.55	30.09	8.58
12-Nov-03 13:11:00	164.32	1131.72	20.65	68.61	30.09	8.57
12-Nov-03 13:12:00	164.29	1131.80	20.65	68.68	30.09	8.56
12-Nov-03 13:13:00	164.26	1131.89	20.65	68.75	30.09	8.56
12-Nov-03 13:14:00	164.24	1131.97	20.65	68.81	30.09	8.55
12-Nov-03 13:15:00	164.21	1132.06	20.64	68.88	30.09	8.55
12-Nov-03 13:16:00	164.19	1132.14	20.64	68.94	30.09	8.54
12-Nov-03 13:17:00	164.16	1132.22	20.64	69.01	30.09	8.54
12-Nov-03 13:18:00	164.14	1132.30	20.63	69.07	30.09	8.53
12-Nov-03 13:19:00	164.11	1132.34	20.63	69.14	30.08	8.53



12-Nov-03 13:20:00	164.09	1132.37	20.63	69.20	30.08	8.52
12-Nov-03 13:21:00	164.09	1132.40	20.62	69.21	30.08	8.52
12-Nov-03 13:22:00	164.08	1132.43	20.62	69.21	30.08	8.51
12-Nov-03 13:23:00	164.07	1132.46	20.62	69.21	30.08	8.51
12-Nov-03 13:24:00	164.07	1132.49	20.62	69.20	30.08	8.50
12-Nov-03 13:25:00	164.06	1132.52	20.62	69.20	30.08	8.50
12-Nov-03 13:26:00	164.06	1132.55	20.62	69.20	30.08	8.49
12-Nov-03 13:27:00	164.05	1132.58	20.62	69.19	30.08	8.48
12-Nov-03 13:28:00	164.05	1132.61	20.62	69.19	30.08	8.48
12-Nov-03 13:29:00	164.04	1132.64	20.62	69.19	30.08	8.47
12-Nov-03 13:30:00	164.04	1132.67	20.62	69.19	30.08	8.46
12-Nov-03 13:31:00	164.03	1132.69	20.62	69.18	30.08	8.46
12-Nov-03 13:32:00	164.02	1132.72	20.61	69.18	30.08	8.45
12-Nov-03 13:33:00	164.02	1132.75	20.61	69.18	30.08	8.44
12-Nov-03 13:34:00	164.01	1132.78	20.61	69.18	30.08	8.44
12-Nov-03 13:35:00	164.01	1132.81	20.61	69.17	30.08	8.43
12-Nov-03 13:36:00	164.00	1132.84	20.61	69.17	30.08	8.42
12-Nov-03 13:37:00	164.00	1132.87	20.61	69.17	30.08	8.42
12-Nov-03 13:38:00	163.99	1132.89	20.61	69.17	30.08	8.41
12-Nov-03 13:39:00	163.99	1132.87	20.61	69.16	30.07	8.40
12-Nov-03 13:40:00	163.98	1132.83	20.61	69.16	30.07	8.39
12-Nov-03 13:41:00	163.99	1132.79	20.61	69.15	30.07	8.39
12-Nov-03 13:42:00	163.99	1132.75	20.61	69.13	30.07	8.38
12-Nov-03 13:43:00	163.99	1132.71	20.61	69.11	30.07	8.37
12-Nov-03 13:44:00	164.00	1132.67	20.61	69.09	30.07	8.37
12-Nov-03 13:45:00	164.00	1132.63	20.61	69.07	30.07	8.36
12-Nov-03 13:46:00	164.00	1132.59	20.61	69.05	30.07	8.35
12-Nov-03 13:47:00	164.01	1132.56	20.61	69.03	30.07	8.36
12-Nov-03 13:48:00	164.01	1132.52	20.61	69.01	30.07	8.36
12-Nov-03 13:49:00	164.02	1132.48	20.62	68.99	30.07	8.36
12-Nov-03 13:50:00	164.02	1132.44	20.62	68.97	30.07	8.36
12-Nov-03 13:51:00	164.02	1132.40	20.62	68.95	30.07	8.36
12-Nov-03 13:52:00	164.03	1132.36	20.62	68.94	30.07	8.37
12-Nov-03 13:53:00	164.03	1132.32	20.62	68.92	30.07	8.37
12-Nov-03 13:54:00	164.03	1132.28	20.62	68.90	30.07	8.37
12-Nov-03 13:55:00	164.04	1132.24	20.62	68.88	30.07	8.37
12-Nov-03 13:56:00	164.04	1132.21	20.62	68.86	30.07	8.37
12-Nov-03 13:57:00	164.05	1132.17	20.62	68.84	30.07	8.38
12-Nov-03 13:58:00	164.05	1132.13	20.62	68.82	30.07	8.38
12-Nov-03 13:59:00	164.05	1132.09	20.63	68.80	30.07	8.38
12-Nov-03 14:00:00	164.06	1132.05	20.63	68.78	30.07	8.38
12-Nov-03 14:01:00	164.08	1132.01	20.63	68.76	30.07	8.38
12-Nov-03 14:02:00	164.09	1131.97	20.63	68.76	30.07	8.39
12-Nov-03 14:03:00	164.11	1131.97	20.63	68.76	30.07	8.39
12-Nov-03 14:04:00	164.13	1132.01	20.62	68.76	30.07	8.39
12-Nov-03 14:05:00	164.14	1132.06	20.62	68.76	30.07	8.39
12-Nov-03 14:06:00	164.16	1132.10	20.62	68.76	30.07	8.39
12-Nov-03 14:07:00	164.17	1132.15	20.62	68.77	30.07	8.40
12-Nov-03 14:08:00	164.19	1132.20	20.62	68.77	30.07	8.40
12-Nov-03 14:09:00	164.21	1132.24	20.62	68.77	30.07	8.39
12-Nov-03 14:10:00	164.22	1132.29	20.62	68.77	30.07	8.39
12-Nov-03 14:11:00	164.24	1132.33	20.61	68.77	30.07	8.39

12-Nov-03 14:12:00	164.26	1132.38	20.61	68.77	30.07	8.39
12-Nov-03 14:13:00	164.27	1132.42	20.61	68.78	30.07	8.39
12-Nov-03 14:14:00	164.29	1132.47	20.61	68.78	30.07	8.39
12-Nov-03 14:15:00	164.31	1132.51	20.61	68.78	30.07	8.39
12-Nov-03 14:16:00	164.32	1132.56	20.61	68.78	30.07	8.39
12-Nov-03 14:17:00	164.34	1132.60	20.61	68.78	30.07	8.39
12-Nov-03 14:18:00	164.36	1132.65	20.61	68.79	30.07	8.38
12-Nov-03 14:19:00	164.37	1132.69	20.60	68.79	30.07	8.38
12-Nov-03 14:20:00	164.38	1132.74	20.60	68.79	30.07	8.38
12-Nov-03 14:21:00	164.35	1132.78	20.60	68.79	30.07	8.38
12-Nov-03 14:22:00	164.32	1132.83	20.60	68.79	30.07	8.38
12-Nov-03 14:23:00	164.28	1132.87	20.60	68.79	30.07	8.38
12-Nov-03 14:24:00	164.25	1132.92	20.60	68.80	30.07	8.38
12-Nov-03 14:25:00	164.22	1132.96	20.60	68.82	30.06	8.38
12-Nov-03 14:26:00	164.19	1132.99	20.60	68.84	30.06	8.38
12-Nov-03 14:27:00	164.16	1133.01	20.59	68.86	30.06	8.38
12-Nov-03 14:28:00	164.13	1133.03	20.59	68.89	30.06	8.38
12-Nov-03 14:29:00	164.10	1133.04	20.59	68.91	30.06	8.39
12-Nov-03 14:30:00	164.07	1133.06	20.59	68.93	30.06	8.39
12-Nov-03 14:31:00	164.04	1133.08	20.59	68.95	30.06	8.40
12-Nov-03 14:32:00	164.00	1133.10	20.59	68.97	30.06	8.40
12-Nov-03 14:33:00	163.97	1133.12	20.59	68.99	30.06	8.41
12-Nov-03 14:34:00	163.94	1133.14	20.59	69.02	30.06	8.42
12-Nov-03 14:35:00	163.91	1133.15	20.59	69.04	30.06	8.42
12-Nov-03 14:36:00	163.88	1133.17	20.58	69.06	30.06	8.43
12-Nov-03 14:37:00	163.85	1133.19	20.58	69.08	30.06	8.43
12-Nov-03 14:38:00	163.82	1133.21	20.58	69.10	30.06	8.44
12-Nov-03 14:39:00	163.79	1133.23	20.58	69.13	30.06	8.44
12-Nov-03 14:40:00	163.76	1133.25	20.58	69.15	30.06	8.45
12-Nov-03 14:41:00	163.76	1133.26	20.58	69.17	30.06	8.45
12-Nov-03 14:42:00	163.76	1133.28	20.58	69.21	30.06	8.46
12-Nov-03 14:43:00	163.76	1133.30	20.58	69.25	30.06	8.47
12-Nov-03 14:44:00	163.75	1133.32	20.58	69.30	30.06	8.47
12-Nov-03 14:45:00	163.75	1133.34	20.58	69.34	30.06	8.48
12-Nov-03 14:46:00	163.75	1133.34	20.59	69.39	30.06	8.48
12-Nov-03 14:47:00	163.75	1133.34	20.59	69.44	30.06	8.49
12-Nov-03 14:48:00	163.75	1133.34	20.59	69.48	30.06	8.49
12-Nov-03 14:49:00	163.75	1133.34	20.59	69.53	30.06	8.48
12-Nov-03 14:50:00	163.74	1133.34	20.59	69.58	30.06	8.48
12-Nov-03 14:51:00	163.74	1133.34	20.60	69.62	30.05	8.47
12-Nov-03 14:52:00	163.74	1133.34	20.60	69.67	30.05	8.46
12-Nov-03 14:53:00	163.74	1133.34	20.60	69.72	30.05	8.45
12-Nov-03 14:54:00	163.74	1133.34	20.60	69.76	30.05	8.45
12-Nov-03 14:55:00	163.73	1133.34	20.60	69.81	30.05	8.44
12-Nov-03 14:56:00	163.73	1133.34	20.60	69.86	30.05	8.43
12-Nov-03 14:57:00	163.73	1133.34	20.61	69.90	30.05	8.43
12-Nov-03 14:58:00	163.73	1133.34	20.61	69.95	30.05	8.42
12-Nov-03 14:59:00	163.73	1133.34	20.61	69.99	30.05	8.41
12-Nov-03 15:00:00	163.72	1133.34	20.61	70.04	30.05	8.41
12-Nov-03 15:01:00	163.71	1133.34	20.61	70.09	30.05	8.40
12-Nov-03 15:02:00	163.70	1133.34	20.61	70.13	30.05	8.39
12-Nov-03 15:03:00	163.68	1133.34	20.62	70.18	30.05	8.38

12-Nov-03 15:04:00	163.67	1133.34	20.61	70.23	30.05	8.38
12-Nov-03 15:05:00	163.66	1133.34	20.60	70.27	30.05	8.37
12-Nov-03 15:06:00	163.65	1133.35	20.59	70.32	30.05	8.36
12-Nov-03 15:07:00	163.63	1133.36	20.59	70.31	30.05	8.36
12-Nov-03 15:08:00	163.62	1133.37	20.58	70.27	30.05	8.35
12-Nov-03 15:09:00	163.61	1133.38	20.57	70.22	30.05	8.34
12-Nov-03 15:10:00	163.60	1133.39	20.56	70.17	30.05	8.34
12-Nov-03 15:11:00	163.58	1133.40	20.55	70.12	30.05	8.33
12-Nov-03 15:12:00	163.57	1133.42	20.55	70.07	30.05	8.33
12-Nov-03 15:13:00	163.56	1133.43	20.54	70.02	30.05	8.32
12-Nov-03 15:14:00	163.54	1133.44	20.53	69.97	30.05	8.31
12-Nov-03 15:15:00	163.53	1133.45	20.52	69.92	30.05	8.31
12-Nov-03 15:16:00	163.52	1133.46	20.51	69.88	30.05	8.30
12-Nov-03 15:17:00	163.51	1133.47	20.50	69.83	30.05	8.30
12-Nov-03 15:18:00	163.49	1133.48	20.50	69.78	30.05	8.29
12-Nov-03 15:19:00	163.48	1133.49	20.49	69.73	30.05	8.29
12-Nov-03 15:20:00	163.47	1133.50	20.48	69.68	30.05	8.28
12-Nov-03 15:21:00	163.48	1133.51	20.48	69.63	30.05	8.27
12-Nov-03 15:22:00	163.48	1133.53	20.48	69.58	30.05	8.27
12-Nov-03 15:23:00	163.49	1133.54	20.48	69.53	30.05	8.26
12-Nov-03 15:24:00	163.49	1133.55	20.48	69.48	30.05	8.26
12-Nov-03 15:25:00	163.50	1133.56	20.48	69.44	30.05	8.25
12-Nov-03 15:26:00	163.50	1133.54	20.49	69.39	30.05	8.24
12-Nov-03 15:27:00	163.51	1133.50	20.49	69.34	30.05	8.24
12-Nov-03 15:28:00	163.51	1133.47	20.49	69.29	30.05	8.23
12-Nov-03 15:29:00	163.52	1133.44	20.49	69.24	30.05	8.23
12-Nov-03 15:30:00	163.53	1133.40	20.50	69.22	30.05	8.23
12-Nov-03 15:31:00	163.53	1133.37	20.50	69.20	30.05	8.23
12-Nov-03 15:32:00	163.54	1133.34	20.50	69.18	30.05	8.23
12-Nov-03 15:33:00	163.54	1133.31	20.50	69.17	30.05	8.23
12-Nov-03 15:34:00	163.55	1133.27	20.51	69.15	30.05	8.22
12-Nov-03 15:35:00	163.55	1133.24	20.51	69.13	30.05	8.22
12-Nov-03 15:36:00	163.56	1133.21	20.51	69.11	30.05	8.22
12-Nov-03 15:37:00	163.56	1133.17	20.51	69.09	30.05	8.22
12-Nov-03 15:38:00	163.57	1133.14	20.52	69.07	30.05	8.22
12-Nov-03 15:39:00	163.57	1133.11	20.52	69.05	30.05	8.22
12-Nov-03 15:40:00	163.58	1133.08	20.52	69.03	30.05	8.22
12-Nov-03 15:41:00	163.60	1133.04	20.52	69.02	30.05	8.22
12-Nov-03 15:42:00	163.61	1133.01	20.53	69.00	30.05	8.22
12-Nov-03 15:43:00	163.63	1132.98	20.53	68.98	30.05	8.22
12-Nov-03 15:44:00	163.64	1132.94	20.54	68.96	30.05	8.22
12-Nov-03 15:45:00	163.66	1132.91	20.54	68.94	30.05	8.22
12-Nov-03 15:46:00	163.67	1132.88	20.54	68.92	30.05	8.22
12-Nov-03 15:47:00	163.68	1132.85	20.55	68.90	30.05	8.22
12-Nov-03 15:48:00	163.70	1132.82	20.55	68.88	30.04	8.21
12-Nov-03 15:49:00	163.71	1132.79	20.56	68.87	30.04	8.21
12-Nov-03 15:50:00	163.73	1132.76	20.56	68.85	30.04	8.22
12-Nov-03 15:51:00	163.74	1132.73	20.56	68.83	30.04	8.23
12-Nov-03 15:52:00	163.76	1132.70	20.57	68.85	30.04	8.23
12-Nov-03 15:53:00	163.77	1132.67	20.57	68.88	30.04	8.24
12-Nov-03 15:54:00	163.79	1132.64	20.58	68.92	30.04	8.25
12-Nov-03 15:55:00	163.80	1132.61	20.58	68.95	30.04	8.26

12-Nov-03 15:56:00	163.82	1132.58	20.58	68.98	30.04	8.27
12-Nov-03 15:57:00	163.83	1132.55	20.59	69.01	30.04	8.28
12-Nov-03 15:58:00	163.85	1132.52	20.59	69.05	30.04	8.28
12-Nov-03 15:59:00	163.86	1132.48	20.59	69.08	30.04	8.29
12-Nov-03 16:00:00	163.86	1132.45	20.60	69.11	30.04	8.30
12-Nov-03 16:01:00	163.84	1132.42	20.60	69.15	30.04	8.31
12-Nov-03 16:02:00	163.80	1132.39	20.60	69.18	30.04	8.32
12-Nov-03 16:03:00	163.77	1132.36	20.59	69.21	30.04	8.33
12-Nov-03 16:04:00	163.74	1132.33	20.59	69.25	30.04	8.33
12-Nov-03 16:05:00	163.71	1132.30	20.58	69.28	30.04	8.34
12-Nov-03 16:06:00	163.68	1132.27	20.58	69.31	30.04	8.35
12-Nov-03 16:07:00	163.65	1132.24	20.57	69.35	30.04	8.36
12-Nov-03 16:08:00	163.62	1132.21	20.57	69.38	30.04	8.37
12-Nov-03 16:09:00	163.59	1132.18	20.56	69.41	30.04	8.38

DECEMBER 16, 2003

**Bayside CT2B**  
**12/16/03 9:30 -**  
**15:05**

	MW	Turbine Exhaust Temp	Fuel Gas Flow	Compressor Inlet Temp	Barametric Pressure	NH3 Injection Rate
	2bDWATT	2bTTXM	2bFQG	2bCTIM	2BAFPAP	2BFGCFI711
16-Dec-03 09:30:00	167.07	1124.79	20.85	63.22	30.16	8.81
16-Dec-03 09:31:00	167.03	1124.90	20.84	63.30	30.16	8.81
16-Dec-03 09:32:00	166.99	1125.01	20.84	63.38	30.16	8.80
16-Dec-03 09:33:00	166.95	1125.11	20.83	63.46	30.16	8.80
16-Dec-03 09:34:00	166.91	1125.22	20.82	63.55	30.16	8.79
16-Dec-03 09:35:00	166.86	1125.33	20.82	63.65	30.16	8.78
16-Dec-03 09:36:00	166.82	1125.44	20.81	63.77	30.16	8.78
16-Dec-03 09:37:00	166.78	1125.54	20.81	63.88	30.16	8.77
16-Dec-03 09:38:00	166.74	1125.65	20.80	63.99	30.17	8.77
16-Dec-03 09:39:00	166.69	1125.76	20.79	64.10	30.16	8.76
16-Dec-03 09:40:00	166.65	1125.87	20.79	64.21	30.16	8.76
16-Dec-03 09:41:00	166.61	1125.97	20.78	64.33	30.16	8.75
16-Dec-03 09:42:00	166.57	1126.08	20.78	64.44	30.16	8.75
16-Dec-03 09:43:00	166.53	1126.18	20.77	64.55	30.16	8.74
16-Dec-03 09:44:00	166.48	1126.28	20.76	64.66	30.16	8.73
16-Dec-03 09:45:00	166.44	1126.39	20.76	64.77	30.16	8.73
16-Dec-03 09:46:00	166.40	1126.49	20.75	64.89	30.16	8.72
16-Dec-03 09:47:00	166.36	1126.59	20.75	65.00	30.16	8.72
16-Dec-03 09:48:00	166.31	1126.69	20.74	65.11	30.16	8.71
16-Dec-03 09:49:00	166.26	1126.79	20.73	65.22	30.16	8.71
16-Dec-03 09:50:00	166.20	1126.89	20.73	65.33	30.16	8.70
16-Dec-03 09:51:00	166.14	1127.00	20.72	65.45	30.16	8.70
16-Dec-03 09:52:00	166.09	1127.10	20.72	65.56	30.16	8.69
16-Dec-03 09:53:00	166.03	1127.20	20.71	65.66	30.16	8.70
16-Dec-03 09:54:00	165.97	1127.30	20.71	65.74	30.16	8.71
16-Dec-03 09:55:00	165.92	1127.40	20.71	65.81	30.16	8.73
16-Dec-03 09:56:00	165.86	1127.51	20.70	65.88	30.16	8.74
16-Dec-03 09:57:00	165.80	1127.61	20.70	65.95	30.16	8.75
16-Dec-03 09:58:00	165.75	1127.71	20.70	66.02	30.16	8.76
16-Dec-03 09:59:00	165.69	1127.79	20.70	66.10	30.16	8.77
16-Dec-03 10:00:00	165.63	1127.83	20.69	66.17	30.16	8.79
16-Dec-03 10:01:00	165.58	1127.88	20.69	66.24	30.16	8.80
16-Dec-03 10:02:00	165.52	1127.92	20.69	66.31	30.16	8.81
16-Dec-03 10:03:00	165.46	1127.97	20.69	66.38	30.16	8.82
16-Dec-03 10:04:00	165.41	1128.01	20.68	66.45	30.16	8.83
16-Dec-03 10:05:00	165.35	1128.05	20.68	66.53	30.16	8.84
16-Dec-03 10:06:00	165.29	1128.10	20.68	66.60	30.16	8.86
16-Dec-03 10:07:00	165.24	1128.14	20.68	66.67	30.17	8.87
16-Dec-03 10:08:00	165.18	1128.19	20.67	66.74	30.17	8.88
16-Dec-03 10:09:00	165.12	1128.23	20.67	66.81	30.17	8.89
16-Dec-03 10:10:00	165.05	1128.27	20.67	66.89	30.17	8.90
16-Dec-03 10:11:00	164.99	1128.32	20.67	66.96	30.17	8.92
16-Dec-03 10:12:00	164.93	1128.36	20.66	67.03	30.17	8.93
16-Dec-03 10:13:00	164.87	1128.40	20.66	67.10	30.17	8.94
16-Dec-03 10:14:00	164.81	1128.45	20.66	67.16	30.17	8.93
16-Dec-03 10:15:00	164.74	1128.49	20.66	67.23	30.17	8.93
16-Dec-03 10:16:00	164.68	1128.54	20.66	67.29	30.17	8.92
16-Dec-03 10:17:00	164.62	1128.58	20.66	67.35	30.17	8.92

16-Dec-03 10:18:00	164.56	1128.62	20.65	67.41	30.17	8.91
16-Dec-03 10:19:00	164.49	1128.69	20.65	67.47	30.17	8.91
16-Dec-03 10:20:00	164.43	1128.81	20.65	67.53	30.17	8.90
16-Dec-03 10:21:00	164.37	1128.93	20.65	67.59	30.17	8.90
16-Dec-03 10:22:00	164.31	1129.05	20.65	67.66	30.17	8.89
16-Dec-03 10:23:00	164.25	1129.17	20.65	67.72	30.17	8.89
16-Dec-03 10:24:00	164.18	1129.29	20.65	67.78	30.17	8.88
16-Dec-03 10:25:00	164.12	1129.41	20.64	67.84	30.17	8.88
16-Dec-03 10:26:00	164.06	1129.53	20.64	67.90	30.16	8.87
16-Dec-03 10:27:00	164.00	1129.65	20.64	67.96	30.16	8.87
16-Dec-03 10:28:00	163.94	1129.77	20.64	68.02	30.16	8.87
16-Dec-03 10:29:00	163.91	1129.89	20.64	68.09	30.16	8.86
16-Dec-03 10:30:00	163.89	1130.01	20.64	68.15	30.16	8.86
16-Dec-03 10:31:00	163.86	1130.13	20.64	68.21	30.16	8.85
16-Dec-03 10:32:00	163.83	1130.25	20.64	68.27	30.16	8.85
16-Dec-03 10:33:00	163.80	1130.36	20.63	68.34	30.16	8.84
16-Dec-03 10:34:00	163.78	1130.48	20.63	68.40	30.16	8.84
16-Dec-03 10:35:00	163.75	1130.60	20.62	68.47	30.16	8.84
16-Dec-03 10:36:00	163.72	1130.72	20.62	68.54	30.16	8.84
16-Dec-03 10:37:00	163.69	1130.84	20.61	68.61	30.16	8.84
16-Dec-03 10:38:00	163.67	1130.96	20.61	68.68	30.16	8.85
16-Dec-03 10:39:00	163.64	1131.08	20.60	68.75	30.16	8.85
16-Dec-03 10:40:00	163.61	1131.20	20.59	68.82	30.16	8.85
16-Dec-03 10:41:00	163.58	1131.28	20.59	68.89	30.16	8.85
16-Dec-03 10:42:00	163.56	1131.35	20.58	68.95	30.16	8.86
16-Dec-03 10:43:00	163.53	1131.42	20.58	69.02	30.16	8.86
16-Dec-03 10:44:00	163.50	1131.49	20.57	69.09	30.16	8.86
16-Dec-03 10:45:00	163.47	1131.56	20.57	69.16	30.16	8.86
16-Dec-03 10:46:00	163.45	1131.63	20.56	69.23	30.16	8.87
16-Dec-03 10:47:00	163.42	1131.70	20.55	69.30	30.16	8.87
16-Dec-03 10:48:00	163.40	1131.78	20.55	69.37	30.16	8.87
16-Dec-03 10:49:00	163.39	1131.85	20.54	69.44	30.16	8.87
16-Dec-03 10:50:00	163.38	1131.92	20.54	69.50	30.16	8.88
16-Dec-03 10:51:00	163.37	1131.99	20.53	69.57	30.16	8.88
16-Dec-03 10:52:00	163.37	1132.06	20.53	69.64	30.16	8.88
16-Dec-03 10:53:00	163.36	1132.13	20.52	69.71	30.16	8.88
16-Dec-03 10:54:00	163.35	1132.20	20.52	69.77	30.15	8.89
16-Dec-03 10:55:00	163.34	1132.27	20.51	69.83	30.15	8.89
16-Dec-03 10:56:00	163.34	1132.34	20.50	69.89	30.15	8.89
16-Dec-03 10:57:00	163.33	1132.42	20.50	69.94	30.15	8.88
16-Dec-03 10:58:00	163.32	1132.49	20.49	70.00	30.15	8.88
16-Dec-03 10:59:00	163.31	1132.54	20.49	70.06	30.15	8.88
16-Dec-03 11:00:00	163.31	1132.56	20.48	70.12	30.15	8.88
16-Dec-03 11:01:00	163.30	1132.58	20.48	70.17	30.15	8.87
16-Dec-03 11:02:00	163.29	1132.60	20.47	70.23	30.15	8.87
16-Dec-03 11:03:00	163.29	1132.62	20.47	70.29	30.15	8.87
16-Dec-03 11:04:00	163.28	1132.64	20.46	70.35	30.15	8.87
16-Dec-03 11:05:00	163.27	1132.66	20.46	70.40	30.15	8.87
16-Dec-03 11:06:00	163.26	1132.68	20.45	70.46	30.15	8.86
16-Dec-03 11:07:00	163.26	1132.70	20.45	70.52	30.15	8.86
16-Dec-03 11:08:00	163.24	1132.72	20.44	70.58	30.15	8.86
16-Dec-03 11:09:00	163.16	1132.74	20.44	70.63	30.15	8.86

16-Dec-03 11:10:00	163.08	1132.76	20.43	70.69	30.15	8.85
16-Dec-03 11:11:00	163.00	1132.78	20.43	70.75	30.15	8.85
16-Dec-03 11:12:00	162.93	1132.81	20.42	70.81	30.15	8.85
16-Dec-03 11:13:00	162.85	1132.83	20.42	70.86	30.15	8.85
16-Dec-03 11:14:00	162.77	1132.85	20.41	70.92	30.15	8.85
16-Dec-03 11:15:00	162.69	1132.87	20.41	70.98	30.15	8.84
16-Dec-03 11:16:00	162.61	1132.89	20.40	71.04	30.15	8.83
16-Dec-03 11:17:00	162.53	1132.91	20.40	71.10	30.15	8.83
16-Dec-03 11:18:00	162.45	1132.93	20.39	71.15	30.15	8.82
16-Dec-03 11:19:00	162.37	1132.95	20.38	71.21	30.15	8.81
16-Dec-03 11:20:00	162.30	1132.97	20.37	71.26	30.15	8.80
16-Dec-03 11:21:00	162.22	1133.04	20.36	71.31	30.15	8.79
16-Dec-03 11:22:00	162.14	1133.14	20.35	71.36	30.14	8.78
16-Dec-03 11:23:00	162.06	1133.24	20.34	71.42	30.14	8.78
16-Dec-03 11:24:00	161.98	1133.34	20.33	71.47	30.14	8.77
16-Dec-03 11:25:00	161.90	1133.44	20.32	71.52	30.14	8.76
16-Dec-03 11:26:00	161.82	1133.55	20.31	71.57	30.14	8.75
16-Dec-03 11:27:00	161.74	1133.65	20.30	71.63	30.14	8.74
16-Dec-03 11:28:00	161.67	1133.75	20.29	71.68	30.14	8.73
16-Dec-03 11:29:00	161.62	1133.85	20.28	71.73	30.14	8.73
16-Dec-03 11:30:00	161.57	1133.95	20.27	71.78	30.14	8.72
16-Dec-03 11:31:00	161.52	1134.05	20.26	71.84	30.14	8.71
16-Dec-03 11:32:00	161.47	1134.16	20.25	71.89	30.14	8.70
16-Dec-03 11:33:00	161.42	1134.26	20.24	71.94	30.14	8.69
16-Dec-03 11:34:00	161.37	1134.36	20.23	71.99	30.13	8.68
16-Dec-03 11:35:00	161.32	1134.46	20.22	72.05	30.13	8.68
16-Dec-03 11:36:00	161.27	1134.56	20.21	72.10	30.13	8.67
16-Dec-03 11:37:00	161.22	1134.66	20.21	72.15	30.13	8.68
16-Dec-03 11:38:00	161.17	1134.77	20.21	72.20	30.13	8.68
16-Dec-03 11:39:00	161.13	1134.87	20.21	72.25	30.13	8.69
16-Dec-03 11:40:00	161.08	1134.97	20.21	72.31	30.13	8.70
16-Dec-03 11:41:00	161.03	1135.07	20.21	72.36	30.13	8.71
16-Dec-03 11:42:00	160.98	1135.17	20.21	72.40	30.13	8.71
16-Dec-03 11:43:00	160.93	1135.25	20.21	72.44	30.13	8.72
16-Dec-03 11:44:00	160.88	1135.25	20.21	72.47	30.13	8.73
16-Dec-03 11:45:00	160.83	1135.26	20.21	72.50	30.13	8.73
16-Dec-03 11:46:00	160.78	1135.27	20.21	72.53	30.13	8.74
16-Dec-03 11:47:00	160.73	1135.27	20.20	72.56	30.12	8.75
16-Dec-03 11:48:00	160.70	1135.28	20.20	72.60	30.12	8.76
16-Dec-03 11:49:00	160.72	1135.29	20.20	72.63	30.12	8.76
16-Dec-03 11:50:00	160.76	1135.29	20.20	72.66	30.12	8.77
16-Dec-03 11:51:00	160.79	1135.30	20.20	72.69	30.12	8.78
16-Dec-03 11:52:00	160.82	1135.31	20.20	72.73	30.12	8.79
16-Dec-03 11:53:00	160.85	1135.31	20.20	72.76	30.12	8.79
16-Dec-03 11:54:00	160.89	1135.32	20.20	72.79	30.12	8.80
16-Dec-03 11:55:00	160.92	1135.33	20.20	72.82	30.12	8.81
16-Dec-03 11:56:00	160.95	1135.33	20.20	72.85	30.12	8.81
16-Dec-03 11:57:00	160.99	1135.34	20.20	72.89	30.12	8.82
16-Dec-03 11:58:00	161.02	1135.35	20.20	72.92	30.12	8.83
16-Dec-03 11:59:00	161.05	1135.35	20.20	72.95	30.12	8.84
16-Dec-03 12:00:00	161.08	1135.36	20.20	72.98	30.11	8.84
16-Dec-03 12:01:00	161.12	1135.37	20.20	73.01	30.11	8.85



16-Dec-03 12:02:00	161.15	1135.37	20.20	73.05	30.11	8.86
16-Dec-03 12:03:00	161.18	1135.38	20.20	73.08	30.11	8.86
16-Dec-03 12:04:00	161.22	1135.39	20.20	73.11	30.11	8.87
16-Dec-03 12:05:00	161.25	1135.41	20.21	73.14	30.11	8.88
16-Dec-03 12:06:00	161.28	1135.46	20.21	73.17	30.11	8.88
16-Dec-03 12:07:00	161.32	1135.51	20.21	73.20	30.11	8.89
16-Dec-03 12:08:00	161.33	1135.56	20.21	73.22	30.11	8.90
16-Dec-03 12:09:00	161.30	1135.61	20.21	73.23	30.11	8.91
16-Dec-03 12:10:00	161.25	1135.66	20.21	73.25	30.11	8.91
16-Dec-03 12:11:00	161.20	1135.71	20.21	73.26	30.11	8.92
16-Dec-03 12:12:00	161.16	1135.76	20.21	73.27	30.11	8.93
16-Dec-03 12:13:00	161.11	1135.81	20.21	73.28	30.10	8.93
16-Dec-03 12:14:00	161.07	1135.86	20.21	73.30	30.10	8.94
16-Dec-03 12:15:00	161.02	1135.92	20.21	73.31	30.10	8.95
16-Dec-03 12:16:00	160.98	1135.97	20.21	73.32	30.10	8.95
16-Dec-03 12:17:00	160.93	1136.02	20.21	73.34	30.10	8.96
16-Dec-03 12:18:00	160.88	1136.07	20.21	73.35	30.10	8.96
16-Dec-03 12:19:00	160.84	1136.12	20.21	73.36	30.10	8.96
16-Dec-03 12:20:00	160.79	1136.17	20.21	73.38	30.10	8.96
16-Dec-03 12:21:00	160.75	1136.22	20.21	73.39	30.10	8.96
16-Dec-03 12:22:00	160.70	1136.27	20.21	73.40	30.10	8.96
16-Dec-03 12:23:00	160.66	1136.32	20.21	73.41	30.10	8.96
16-Dec-03 12:24:00	160.61	1136.37	20.21	73.43	30.10	8.96
16-Dec-03 12:25:00	160.56	1136.42	20.21	73.44	30.10	8.96
16-Dec-03 12:26:00	160.52	1136.47	20.21	73.45	30.09	8.96
16-Dec-03 12:27:00	160.47	1136.49	20.22	73.47	30.09	8.96
16-Dec-03 12:28:00	160.43	1136.50	20.22	73.48	30.09	8.96
16-Dec-03 12:29:00	160.43	1136.50	20.22	73.49	30.09	8.97
16-Dec-03 12:30:00	160.43	1136.51	20.22	73.51	30.09	8.97
16-Dec-03 12:31:00	160.44	1136.51	20.22	73.52	30.09	8.97
16-Dec-03 12:32:00	160.44	1136.51	20.22	73.53	30.09	8.97
16-Dec-03 12:33:00	160.44	1136.52	20.22	73.53	30.09	8.97
16-Dec-03 12:34:00	160.44	1136.52	20.22	73.53	30.09	8.97
16-Dec-03 12:35:00	160.44	1136.52	20.22	73.53	30.09	8.97
16-Dec-03 12:36:00	160.44	1136.53	20.21	73.53	30.09	8.97
16-Dec-03 12:37:00	160.45	1136.53	20.20	73.53	30.09	8.97
16-Dec-03 12:38:00	160.45	1136.54	20.20	73.53	30.09	8.96
16-Dec-03 12:39:00	160.45	1136.54	20.19	73.53	30.09	8.96
16-Dec-03 12:40:00	160.45	1136.54	20.19	73.53	30.09	8.95
16-Dec-03 12:41:00	160.45	1136.55	20.18	73.53	30.08	8.95
16-Dec-03 12:42:00	160.46	1136.55	20.18	73.53	30.08	8.94
16-Dec-03 12:43:00	160.46	1136.56	20.17	73.53	30.08	8.94
16-Dec-03 12:44:00	160.46	1136.56	20.16	73.53	30.08	8.93
16-Dec-03 12:45:00	160.46	1136.56	20.16	73.53	30.08	8.93
16-Dec-03 12:46:00	160.46	1136.57	20.15	73.53	30.08	8.92
16-Dec-03 12:47:00	160.46	1136.58	20.15	73.53	30.08	8.92
16-Dec-03 12:48:00	160.46	1136.59	20.14	73.53	30.08	8.92
16-Dec-03 12:49:00	160.44	1136.60	20.14	73.53	30.08	8.91
16-Dec-03 12:50:00	160.41	1136.61	20.13	73.53	30.08	8.91
16-Dec-03 12:51:00	160.39	1136.62	20.12	73.53	30.08	8.90
16-Dec-03 12:52:00	160.36	1136.63	20.12	73.53	30.08	8.90
16-Dec-03 12:53:00	160.34	1136.64	20.11	73.53	30.08	8.89

16-Dec-03 12:54:00	160.31	1136.65	20.11	73.53	30.08	8.89
16-Dec-03 12:55:00	160.29	1136.66	20.10	73.53	30.08	8.88
16-Dec-03 12:56:00	160.26	1136.66	20.09	73.54	30.08	8.88
16-Dec-03 12:57:00	160.23	1136.67	20.09	73.58	30.08	8.87
16-Dec-03 12:58:00	160.21	1136.68	20.08	73.63	30.08	8.88
16-Dec-03 12:59:00	160.18	1136.69	20.09	73.68	30.08	8.89
16-Dec-03 13:00:00	160.16	1136.70	20.09	73.73	30.08	8.90
16-Dec-03 13:01:00	160.13	1136.71	20.10	73.78	30.07	8.91
16-Dec-03 13:02:00	160.11	1136.72	20.10	73.83	30.07	8.92
16-Dec-03 13:03:00	160.08	1136.73	20.10	73.88	30.07	8.93
16-Dec-03 13:04:00	160.05	1136.74	20.11	73.93	30.07	8.94
16-Dec-03 13:05:00	160.03	1136.75	20.11	73.97	30.07	8.95
16-Dec-03 13:06:00	160.00	1136.76	20.12	74.02	30.07	8.96
16-Dec-03 13:07:00	159.98	1136.77	20.12	74.07	30.07	8.96
16-Dec-03 13:08:00	159.97	1136.77	20.12	74.12	30.07	8.97
16-Dec-03 13:09:00	160.02	1136.77	20.13	74.17	30.07	8.98
16-Dec-03 13:10:00	160.09	1136.71	20.13	74.22	30.07	8.99
16-Dec-03 13:11:00	160.15	1136.63	20.14	74.27	30.07	9.00
16-Dec-03 13:12:00	160.22	1136.55	20.14	74.32	30.07	9.01
16-Dec-03 13:13:00	160.29	1136.47	20.15	74.37	30.07	9.02
16-Dec-03 13:14:00	160.35	1136.39	20.15	74.42	30.07	9.03
16-Dec-03 13:15:00	160.42	1136.30	20.15	74.43	30.07	9.04
16-Dec-03 13:16:00	160.48	1136.22	20.16	74.31	30.07	9.05
16-Dec-03 13:17:00	160.55	1136.14	20.16	74.19	30.07	9.06
16-Dec-03 13:18:00	160.62	1136.06	20.17	74.07	30.07	9.06
16-Dec-03 13:19:00	160.68	1135.98	20.17	73.94	30.07	9.05
16-Dec-03 13:20:00	160.75	1135.90	20.18	73.82	30.06	9.03
16-Dec-03 13:21:00	160.81	1135.82	20.18	73.70	30.06	9.02
16-Dec-03 13:22:00	160.88	1135.74	20.18	73.58	30.06	9.01
16-Dec-03 13:23:00	160.94	1135.66	20.19	73.45	30.06	8.99
16-Dec-03 13:24:00	161.01	1135.58	20.19	73.33	30.06	8.98
16-Dec-03 13:25:00	161.08	1135.50	20.20	73.21	30.06	8.97
16-Dec-03 13:26:00	161.14	1135.48	20.20	73.08	30.06	8.95
16-Dec-03 13:27:00	161.21	1135.50	20.20	72.96	30.06	8.94
16-Dec-03 13:28:00	161.26	1135.51	20.21	72.84	30.06	8.93
16-Dec-03 13:29:00	161.28	1135.53	20.21	72.72	30.06	8.91
16-Dec-03 13:30:00	161.28	1135.55	20.22	72.59	30.06	8.90
16-Dec-03 13:31:00	161.28	1135.57	20.22	72.47	30.06	8.89
16-Dec-03 13:32:00	161.29	1135.59	20.23	72.35	30.06	8.87
16-Dec-03 13:33:00	161.29	1135.61	20.23	72.22	30.06	8.86
16-Dec-03 13:34:00	161.29	1135.63	20.23	72.10	30.06	8.85
16-Dec-03 13:35:00	161.30	1135.65	20.24	71.98	30.05	8.83
16-Dec-03 13:36:00	161.30	1135.67	20.24	71.89	30.05	8.82
16-Dec-03 13:37:00	161.30	1135.69	20.25	71.94	30.05	8.80
16-Dec-03 13:38:00	161.31	1135.71	20.25	71.99	30.05	8.79
16-Dec-03 13:39:00	161.31	1135.72	20.26	72.05	30.05	8.80
16-Dec-03 13:40:00	161.32	1135.74	20.26	72.10	30.05	8.80
16-Dec-03 13:41:00	161.32	1135.76	20.26	72.16	30.05	8.81
16-Dec-03 13:42:00	161.32	1135.78	20.27	72.22	30.05	8.81
16-Dec-03 13:43:00	161.33	1135.80	20.27	72.27	30.05	8.82
16-Dec-03 13:44:00	161.33	1135.82	20.28	72.33	30.05	8.83
16-Dec-03 13:45:00	161.33	1135.84	20.28	72.38	30.05	8.83

16-Dec-03 13:46:00	161.34	1135.86	20.28	72.44	30.05	8.84
16-Dec-03 13:47:00	161.34	1135.88	20.29	72.49	30.05	8.84
16-Dec-03 13:48:00	161.34	1135.90	20.29	72.55	30.05	8.85
16-Dec-03 13:49:00	161.31	1135.91	20.29	72.61	30.05	8.85
16-Dec-03 13:50:00	161.27	1135.91	20.29	72.66	30.05	8.86
16-Dec-03 13:51:00	161.23	1135.92	20.29	72.72	30.05	8.86
16-Dec-03 13:52:00	161.19	1135.93	20.29	72.77	30.05	8.87
16-Dec-03 13:53:00	161.15	1135.93	20.28	72.83	30.05	8.88
16-Dec-03 13:54:00	161.12	1135.94	20.28	72.89	30.05	8.88
16-Dec-03 13:55:00	161.08	1135.94	20.28	72.94	30.05	8.89
16-Dec-03 13:56:00	161.04	1135.95	20.28	73.00	30.05	8.89
16-Dec-03 13:57:00	161.00	1135.96	20.28	73.05	30.05	8.90
16-Dec-03 13:58:00	160.96	1135.96	20.27	73.06	30.05	8.90
16-Dec-03 13:59:00	160.92	1135.97	20.27	73.07	30.06	8.90
16-Dec-03 14:00:00	160.89	1135.97	20.27	73.08	30.06	8.90
16-Dec-03 14:01:00	160.85	1135.98	20.27	73.09	30.06	8.90
16-Dec-03 14:02:00	160.81	1135.99	20.27	73.10	30.06	8.90
16-Dec-03 14:03:00	160.77	1135.99	20.26	73.10	30.06	8.90
16-Dec-03 14:04:00	160.73	1136.00	20.26	73.11	30.06	8.90
16-Dec-03 14:05:00	160.69	1136.00	20.26	73.12	30.06	8.90
16-Dec-03 14:06:00	160.66	1136.01	20.26	73.13	30.06	8.89
16-Dec-03 14:07:00	160.62	1136.02	20.26	73.14	30.06	8.89
16-Dec-03 14:08:00	160.58	1136.02	20.26	73.14	30.06	8.89
16-Dec-03 14:09:00	160.57	1136.03	20.25	73.15	30.06	8.89
16-Dec-03 14:10:00	160.57	1136.03	20.25	73.16	30.06	8.89
16-Dec-03 14:11:00	160.57	1136.04	20.25	73.17	30.06	8.89
16-Dec-03 14:12:00	160.57	1136.05	20.25	73.18	30.06	8.89
16-Dec-03 14:13:00	160.57	1136.06	20.25	73.19	30.06	8.89
16-Dec-03 14:14:00	160.57	1136.10	20.25	73.19	30.06	8.89
16-Dec-03 14:15:00	160.56	1136.15	20.25	73.20	30.06	8.89
16-Dec-03 14:16:00	160.56	1136.21	20.25	73.21	30.06	8.88
16-Dec-03 14:17:00	160.56	1136.26	20.25	73.22	30.06	8.88
16-Dec-03 14:18:00	160.56	1136.31	20.25	73.25	30.06	8.88
16-Dec-03 14:19:00	160.56	1136.36	20.24	73.28	30.06	8.88
16-Dec-03 14:20:00	160.55	1136.41	20.24	73.30	30.06	8.88
16-Dec-03 14:21:00	160.55	1136.46	20.24	73.33	30.06	8.88
16-Dec-03 14:22:00	160.55	1136.51	20.24	73.36	30.06	8.87
16-Dec-03 14:23:00	160.55	1136.56	20.24	73.39	30.06	8.87
16-Dec-03 14:24:00	160.55	1136.61	20.24	73.42	30.06	8.86
16-Dec-03 14:25:00	160.55	1136.66	20.24	73.45	30.05	8.86
16-Dec-03 14:26:00	160.54	1136.71	20.24	73.48	30.05	8.86
16-Dec-03 14:27:00	160.54	1136.76	20.24	73.51	30.05	8.85
16-Dec-03 14:28:00	160.54	1136.82	20.23	73.53	30.05	8.85
16-Dec-03 14:29:00	160.56	1136.87	20.23	73.56	30.05	8.84
16-Dec-03 14:30:00	160.58	1136.92	20.23	73.59	30.05	8.84
16-Dec-03 14:31:00	160.60	1136.97	20.23	73.62	30.05	8.84
16-Dec-03 14:32:00	160.62	1137.02	20.23	73.65	30.05	8.83
16-Dec-03 14:33:00	160.64	1137.07	20.23	73.68	30.05	8.83
16-Dec-03 14:34:00	160.66	1137.12	20.22	73.71	30.05	8.82
16-Dec-03 14:35:00	160.68	1137.17	20.22	73.74	30.05	8.82
16-Dec-03 14:36:00	160.70	1137.22	20.22	73.76	30.05	8.82
16-Dec-03 14:37:00	160.72	1137.27	20.22	73.79	30.05	8.81

16-Dec-03 14:38:00	160.74	1137.29	20.22	73.82	30.05	8.81
16-Dec-03 14:39:00	160.76	1137.27	20.22	73.85	30.05	8.80
16-Dec-03 14:40:00	160.78	1137.25	20.22	73.88	30.05	8.80
16-Dec-03 14:41:00	160.80	1137.23	20.21	73.91	30.05	8.80
16-Dec-03 14:42:00	160.82	1137.22	20.21	73.93	30.05	8.80
16-Dec-03 14:43:00	160.84	1137.20	20.21	73.95	30.05	8.81
16-Dec-03 14:44:00	160.86	1137.18	20.21	73.96	30.05	8.81
16-Dec-03 14:45:00	160.88	1137.16	20.21	73.97	30.05	8.81
16-Dec-03 14:46:00	160.90	1137.15	20.20	73.99	30.05	8.81
16-Dec-03 14:47:00	160.92	1137.13	20.20	74.00	30.05	8.82
16-Dec-03 14:48:00	160.94	1137.11	20.20	74.01	30.05	8.82
16-Dec-03 14:49:00	160.92	1137.09	20.19	74.03	30.05	8.82
16-Dec-03 14:50:00	160.90	1137.08	20.19	74.04	30.05	8.82
16-Dec-03 14:51:00	160.88	1137.06	20.19	74.05	30.05	8.83
16-Dec-03 14:52:00	160.86	1137.04	20.18	74.06	30.05	8.83
16-Dec-03 14:53:00	160.84	1137.02	20.18	74.08	30.05	8.83
16-Dec-03 14:54:00	160.81	1137.00	20.18	74.09	30.05	8.83
16-Dec-03 14:55:00	160.79	1136.99	20.17	74.10	30.05	8.83
16-Dec-03 14:56:00	160.77	1136.97	20.17	74.11	30.05	8.84
16-Dec-03 14:57:00	160.75	1136.95	20.17	74.13	30.05	8.84
16-Dec-03 14:58:00	160.73	1136.93	20.16	74.14	30.05	8.84
16-Dec-03 14:59:00	160.70	1136.92	20.16	74.15	30.05	8.84
16-Dec-03 15:00:00	160.68	1136.90	20.16	74.16	30.05	8.85
16-Dec-03 15:01:00	160.66	1136.88	20.15	74.18	30.04	8.85
16-Dec-03 15:02:00	160.64	1136.86	20.15	74.19	30.04	8.85
16-Dec-03 15:03:00	160.62	1136.88	20.15	74.20	30.04	8.85
16-Dec-03 15:04:00	160.59	1136.92	20.14	74.21	30.04	8.85

FUEL ANALYSIS

NOVEMBER 12, 2003



### Natural Gas and Heating Value Calculations

Customer: Tampa Electric Company  
 Facility: Bayside Power Station  
 Source: CT-2B

Sample ID: FGT - Perry Stream #1  
 Analysis Date: 11/12/2003

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

Component	% Volume	Molecular Wt.	Density* (lb/ft <sup>3</sup> )	% volume		Component Gross Btu/lb	Weight Fract. Btu	Gross* Heating Value (Btu/SCF)	Volume Fract. Btu
				x Density	weight %				
Hydrogen		2.016	0.0053	0.00000	0.0000	61100	0.00	325.0	0
Oxygen		32.000	0.0846	0.00000	0.0000	0	0.00	0.0	0
Nitrogen	0.3050	28.016	0.0744	0.00023	0.5081	0	0.00	0.0	0
CO <sub>2</sub>	0.8680	44.010	0.1170	0.00102	2.2741	0	0.00	0.0	0
CO		28.010	0.0740	0.00000	0.0000	4347	0.00	322.0	0
Methane	96.046	16.041	0.0424	0.04072	91.1896	23879	21775.16	1013.0	972.946
Ethane	2.080	30.067	0.0803	0.00167	3.7401	22320	834.78	1792.0	37.2736
Ethylene		28.051	0.0746	0.00000	0.0000	21644	0.00	1614.0	0
Propane	0.392	44.092	0.1196	0.00047	1.0498	21661	227.40	2590.0	10.1528
propylene		42.077	0.1110	0.00000	0.0000	21041	0.00	2336.0	0
Isobutane	0.099	58.118	0.1582	0.00016	0.3507	21257	74.55	3363.0	3.32937
n-butane	0.089	58.118	0.1582	0.00014	0.3153	21308	67.18	3370.0	2.9993
Isobutene		56.102	0.1480	0.00000	0.0000	20730	0.00	3068.0	0
Isopentane	0.036	72.144	0.1904	0.00007	0.1535	21052	32.31	4008.0	1.44288
n-pentane	0.023	72.144	0.1904	0.00004	0.0981	21091	20.68	4016.0	0.92368
n-hexane	0.063	86.169	0.2274	0.00014	0.3208	20940	67.18	4762.0	3.00006
H <sub>2</sub> S		34.076	0.0911	0.00000	0.0000	7100	0.00	647.0	0

Total: 100.00

Average Density	0.04466	100.0000
Specific Gravity	0.58377	

Gross Heating Value		
Btu/lb	23099	Btu/SCF 1032.07
Net Heating Values		
Btu/lb	20894	Btu/SCF 933

\* Density (lb/ft<sup>3</sup>) and Gross Heating Value (Btu/scf) data from Perry's Chemical Engineering Handbook.

Net Heating Value (Lower Heating Value), Btu/lb, calculated as Gross Heating Value (Higher Heating Value) - 10.30 (%H<sub>2</sub> x 8.94), from Steam, §9-9, Principles of Combustion, equation 9.

Heat from water vaporization is assumed to be un-available.



### Natural Gas and Heating Value Calculations

Customer: Tampa Electric Company  
 Facility: Bayside Power Station  
 Source: CT-2B

Sample ID: FGT - Perry Stream #1  
 Analysis Date: 11/12/2003

#### CALCULATION OF F FACTORS

Component	Mol. Wt.	C Factor	H Factor	% volume	Fract. Wt.	Weight Percents			
						Carbon	Hydrogen	Nitrogen	Oxygen
Hydrogen	2.016	0	1	0.000	0.0000		0		
Oxygen	32.000	0	0	0.000	0.0000				0
Nitrogen	28.016	0	0	0.305	8.5449			0.506256999	
CO2	44.010	0.272273	0	0.868	38.2007	0.61622703			1.6453965
CO	28.010	0.42587	0	0.000	0.0000	0			0
Methane	16.041	0.75	0.25	96.046	1540.6739	68.4600255	22.820009		
Ethane	30.067	0.8	0.2	2.080	62.5394	2.96420675	0.7410517		
Ethylene	28.051	0.85714	0.14286	0.000	0.0000	0	0		
Propane	44.092	0.81818	0.181818	0.392	17.2841	0.8378375	0.1861863		
Propene	42.077	0.85714	0.14286	0.000	0.0000	0	0		
Isobutane	58.118	0.82759	0.17247	0.099	5.7537	0.28211499	0.0587928		
n-butane	58.118	0.82759	0.17247	0.089	5.1725	0.25361853	0.0528542		
Isobutene	56.102	0.85714	0.14286	0.000	0.0000	0	0		
Isopentane	72.144	0.83333	0.16667	0.036	2.5972	0.12822857	0.0256463		
n-pentane	72.144	0.83333	0.16667	0.023	1.6593	0.08192381	0.0163852		
n-hexane	86.169	0.83721	0.16279	0.063	5.4286	0.26927193	0.0523582		
H2S	34.076	0	0.0586923	0.000	0.0000	0	0		
Totals				100.00100	1687.8542	73.8934547	23.95	0.506256999	1.6453965

CALCULATED VALUES		
<b>O2 F Factor (dry), Fd</b>	<b>8639</b>	DSCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
<b>O2 F Factor (wet), Fw</b>	<b>10641</b>	SCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
<b>Moisture F Factor</b>	<b>2001</b>	SCF of Water/MM Btu of Fuel Burned @ 0% excess air
<b>Combust. Moisture</b>	<b>18.81</b>	volume % water in flue gas @ 0% excess air
<b>CO2 F Factor, Fc</b>	<b>1027</b>	DSCF of CO2/MM Btu of Fuel Burned @ 0% excess air
<b>Carbon Dioxide</b>	<b>11.89</b>	volume % CO2 in flue gas @ 0% O2
<b>Predicted Fo Factor</b>	<b>1.76</b>	EPA Method 3a Fo value



Florida Gas Transmission-8030 Dec 17 2003 3:48 AM

Date	BTU	CO2	N2	Grav	Methan	Ethane	Propan	Ibutan	Nbutan	Ipenta	Npenta	C6
12/16/2003	1041	0.892	0.295	0.59	95.344	2.45	0.626	0.135	0.13	0.043	0.027	0.058
12/15/2003	1043	0.941	0.336	0.592	94.99	2.639	0.667	0.149	0.136	0.048	0.029	0.066
12/14/2003	1042	0.934	0.328	0.591	95.126	2.583	0.617	0.142	0.127	0.047	0.029	0.069
12/13/2003	1042	0.91	0.311	0.59	95.22	2.535	0.616	0.141	0.128	0.046	0.028	0.065
12/12/2003	1043	0.897	0.299	0.591	95.148	2.599	0.642	0.142	0.133	0.046	0.03	0.065
12/11/2003	1043	0.933	0.324	0.592	95.009	2.656	0.653	0.144	0.135	0.048	0.03	0.068
12/10/2003	1043	0.946	0.293	0.591	95.118	2.585	0.638	0.139	0.134	0.047	0.031	0.07
12/09/2003	1043	0.955	0.304	0.592	94.996	2.677	0.645	0.142	0.133	0.048	0.03	0.069
12/08/2003	1043	0.924	0.315	0.592	95.024	2.688	0.64	0.139	0.13	0.045	0.029	0.064
12/07/2003	1042	0.91	0.318	0.591	95.111	2.67	0.597	0.134	0.122	0.044	0.028	0.066
12/06/2003	1035	0.925	1.145	0.595	94.157	2.782	0.595	0.141	0.119	0.044	0.026	0.066
12/05/2003	1040	0.905	0.353	0.59	95.254	2.574	0.534	0.132	0.113	0.043	0.026	0.065
12/04/2003	1035	0.911	0.348	0.586	95.568	2.436	0.44	0.105	0.087	0.034	0.02	0.052
12/03/2003	1034	0.872	0.342	0.585	95.803	2.261	0.414	0.101	0.091	0.035	0.023	0.056
12/02/2003	1033	0.803	0.354	0.584	95.964	2.199	0.396	0.094	0.086	0.032	0.021	0.051
11/29/2003	1032	0.811	0.323	0.583	96.082	2.17	0.353	0.087	0.075	0.03	0.019	0.05
11/28/2003	1033	0.781	0.304	0.582	96.175	2.106	0.358	0.09	0.077	0.032	0.02	0.055
11/27/2003	1033	0.81	0.32	0.583	96.089	2.112	0.378	0.097	0.082	0.034	0.021	0.057
11/26/2003	1033	0.803	0.297	0.583	96.154	2.086	0.37	0.097	0.081	0.034	0.021	0.058
11/25/2003	1032	0.832	0.297	0.583	96.191	2.036	0.363	0.098	0.078	0.032	0.019	0.053
11/24/2003	1032	0.792	0.324	0.582	96.245	1.978	0.37	0.097	0.081	0.034	0.021	0.058
11/23/2003	1032	0.866	0.32	0.584	96.011	2.145	0.37	0.095	0.081	0.034	0.021	0.057
11/22/2003	1033	0.871	0.319	0.584	95.923	2.251	0.373	0.09	0.076	0.031	0.019	0.049
11/21/2003	1031	0.848	0.315	0.583	96.087	2.138	0.358	0.087	0.073	0.03	0.018	0.047
11/20/2003	1033	0.846	0.303	0.584	95.99	2.199	0.386	0.093	0.081	0.032	0.02	0.05
11/19/2003	1034	0.823	0.301	0.584	95.977	2.217	0.404	0.096	0.083	0.031	0.019	0.049
11/18/2003	1033	0.819	0.305	0.583	96.011	2.204	0.39	0.093	0.077	0.031	0.019	0.051
11/17/2003	1031	0.798	0.316	0.582	96.156	2.142	0.352	0.083	0.069	0.027	0.016	0.041
11/16/2003	1031	0.829	0.304	0.582	96.145	2.132	0.347	0.085	0.07	0.028	0.016	0.044
11/15/2003	1031	0.873	0.294	0.583	96.184	2.034	0.351	0.09	0.072	0.031	0.018	0.053
11/14/2003	1034	0.884	0.289	0.585	95.959	2.153	0.401	0.106	0.085	0.037	0.023	0.065
11/13/2003	1034	0.908	0.295	0.585	95.897	2.177	0.406	0.105	0.089	0.037	0.023	0.064
11/12/2003	1033	0.868	0.305	0.584	96.046	2.08	0.392	0.099	0.089	0.036	0.023	0.063
11/11/2003	1033	0.89	0.294	0.584	96.002	2.098	0.402	0.101	0.091	0.036	0.023	0.064
11/10/2003	1033	0.849	0.291	0.584	96.087	2.07	0.394	0.098	0.09	0.036	0.023	0.062

DECEMBER 16, 2003



### Natural Gas and Heating Value Calculations

Customer: Tampa Electric Company  
 Facility: Bayside Power Station  
 Source: CT-2B

Sample ID: FGT - Perry Stream #1  
 Analysis Date: 12/16/2003

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

Component	% Volume	Molecular Wt.	Density * (lb/ft <sup>3</sup> )	% volume		Component Gross Btu/lb	Weight Fract. Btu	Gross * Heating Value (Btu/SCF)	Volume Fract. Btu
				x Density	weight %				
Hydrogen		2.016	0.0053	0.00000	0.0000	61100	0.00	325.0	0
Oxygen		32.000	0.0846	0.00000	0.0000	0	0.00	0.0	0
Nitrogen	0.2950	28.016	0.0744	0.00022	0.4868	0	0.00	0.0	0
CO2	0.8920	44.010	0.1170	0.00104	2.3146	0	0.00	0.0	0
CO		28.010	0.0740	0.00000	0.0000	4347	0.00	322.0	0
Methane	95.344	16.041	0.0424	0.04043	89.6571	23879	21409.21	1013.0	965.8347
Ethane	2.450	30.067	0.0803	0.00197	4.3632	22320	973.87	1792.0	43.904
Ethylene		28.051	0.0746	0.00000	0.0000	21644	0.00	1614.0	0
Propane	0.626	44.092	0.1196	0.00075	1.6605	21661	359.67	2590.0	16.2134
propylene		42.077	0.1110	0.00000	0.0000	21041	0.00	2336.0	0
Isobutane	0.135	58.118	0.1582	0.00021	0.4737	21257	100.69	3363.0	4.54005
n-butane	0.130	58.118	0.1582	0.00021	0.4561	21308	97.19	3370.0	4.381
Isobutene		56.102	0.1480	0.00000	0.0000	20730	0.00	3068.0	0
Isopentane	0.043	72.144	0.1904	0.00008	0.1816	21052	38.23	4008.0	1.72344
n-pentane	0.027	72.144	0.1904	0.00005	0.1140	21091	24.05	4016.0	1.08432
n-hexane	0.058	86.169	0.2274	0.00013	0.2925	20940	61.25	4762.0	2.76196
H2S		34.076	0.0911	0.00000	0.0000	7100	0.00	647.0	0

Total: 100.00

Average Density	0.04509	100.0000
Specific Gravity	0.58940	

Gross Heating Value		
Btu/lb	23064	Btu/SCF 1040.44
Net Heating Values		
Btu/lb	20867	Btu/SCF 941

\* Density (lb/ft<sup>3</sup>) and Gross Heating Value (Btu/scf) data from Perry's Chemical Engineering Handbook.

Net Heating Value (Lower Heating Value), Btu/lb, calculated as Gross Heating Value (Higher Heating Value) - 10.30 (%H<sub>2</sub> x 8.94), from Steam, §9-9, Principles of Combustion, equation 9.

Heat from water vaporization is assumed to be un-available.



### Natural Gas and Heating Value Calculations

Customer: Tampa Electric Company  
 Facility: Bayside Power Station  
 Source: CT-2B

Sample ID: FGT - Perry Stream #1  
 Analysis Date: 12/16/2003

#### CALCULATION OF F FACTORS

Component	Mol. Wt.	C Factor	H Factor	% volume	Fract. Wt.	Weight Percents			
						Carbon	Hydrogen	Nitrogen	Oxygen
Hydrogen	2.016	0	1	0.000	0.0000		0		
Oxygen	32.000	0	0	0.000	0.0000				0
Nitrogen	28.016	0	0	0.295	8.2647			0.485118525	
CO2	44.010	0.272273	0	0.892	39.2569	0.62739422			1.6752142
CO	28.010	0.42587	0	0.000	0.0000	0			0
Methane	16.041	0.75	0.25	95.344	1529.4131	67.3295613	22.443187		
Ethane	30.067	0.8	0.2	2.450	73.6642	3.45912203	0.8647805		
Ethylene	28.051	0.85714	0.14286	0.000	0.0000	0	0		
Propane	44.092	0.81818	0.181818	0.626	27.6016	1.32557012	0.2945715		
Propene	42.077	0.85714	0.14286	0.000	0.0000	0	0		
Isobutane	58.118	0.82759	0.17247	0.135	7.8459	0.38113548	0.0794287		
n-butane	58.118	0.82759	0.17247	0.130	7.5553	0.36701935	0.0764869		
Isobutene	56.102	0.85714	0.14286	0.000	0.0000	0	0		
Isopentane	72.144	0.83333	0.16667	0.043	3.1022	0.15174186	0.0303491		
n-pentane	72.144	0.83333	0.16667	0.027	1.9479	0.09527977	0.0190564		
n-hexane	86.169	0.83721	0.16279	0.058	4.9978	0.24560272	0.0477558		
H2S	34.076	0	0.0586923	0.000	0.0000	0	0		
Totals				100.00000	1703.6496	73.9824269	23.86	0.485118525	1.6752142

CALCULATED VALUES		
<b>O2 F Factor (dry), Fd</b>	<b>8642</b>	DSCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
<b>O2 F Factor (wet), Fw</b>	<b>10638</b>	SCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
<b>Moisture F Factor</b>	<b>1996</b>	SCF of Water/MM Btu of Fuel Burned @ 0% excess air
<b>Combust. Moisture</b>	<b>18.76</b>	volume % water in flue gas @ 0% excess air
<b>CO2 F Factor, Fc</b>	<b>1030</b>	DSCF of CO2/MM Btu of Fuel Burned @ 0% excess air
<b>Carbon Dioxide</b>	<b>11.91</b>	volume % CO2 in flue gas @ 0% O2
<b>Predicted Fo Factor</b>	<b>1.75</b>	EPA Method 3a Fo value

Florida Gas Transmission-8030 Dec 17 2003 3:48 AM

Date	BTU	CO2	N2	Grav	Methan	Ethane	Propan	Ibutan	Nbutan	Ipenta	Npenta	C6
12/16/2003	1041	0.892	0.295	0.59	95.344	2.45	0.626	0.135	0.13	0.043	0.027	0.058
12/15/2003	1043	0.941	0.336	0.592	94.99	2.639	0.667	0.149	0.136	0.048	0.029	0.066
12/14/2003	1042	0.934	0.328	0.591	95.126	2.583	0.617	0.142	0.127	0.047	0.029	0.069
12/13/2003	1042	0.91	0.311	0.59	95.22	2.535	0.616	0.141	0.128	0.046	0.028	0.065
12/12/2003	1043	0.897	0.299	0.591	95.148	2.599	0.642	0.142	0.133	0.046	0.03	0.065
12/11/2003	1043	0.933	0.324	0.592	95.009	2.656	0.653	0.144	0.135	0.048	0.03	0.068
12/10/2003	1043	0.946	0.293	0.591	95.118	2.585	0.638	0.139	0.134	0.047	0.031	0.07
12/09/2003	1043	0.955	0.304	0.592	94.996	2.677	0.645	0.142	0.133	0.048	0.03	0.069
12/08/2003	1043	0.924	0.315	0.592	95.024	2.688	0.64	0.139	0.13	0.045	0.029	0.064
12/07/2003	1042	0.91	0.318	0.591	95.111	2.67	0.597	0.134	0.122	0.044	0.028	0.066
12/06/2003	1035	0.925	1.145	0.595	94.157	2.782	0.595	0.141	0.119	0.044	0.026	0.066
12/05/2003	1040	0.905	0.353	0.59	95.254	2.574	0.534	0.132	0.113	0.043	0.026	0.065
12/04/2003	1035	0.911	0.348	0.586	95.568	2.436	0.44	0.105	0.087	0.034	0.02	0.052
12/03/2003	1034	0.872	0.342	0.585	95.803	2.261	0.414	0.101	0.091	0.035	0.023	0.056
12/02/2003	1033	0.803	0.354	0.584	95.964	2.199	0.396	0.094	0.086	0.032	0.021	0.051
11/29/2003	1032	0.811	0.323	0.583	96.082	2.17	0.353	0.087	0.075	0.03	0.019	0.05
11/28/2003	1033	0.781	0.304	0.582	96.175	2.106	0.358	0.09	0.077	0.032	0.02	0.055
11/27/2003	1033	0.81	0.32	0.583	96.089	2.112	0.378	0.097	0.082	0.034	0.021	0.057
11/26/2003	1033	0.803	0.297	0.583	96.154	2.086	0.37	0.097	0.081	0.034	0.021	0.058
11/25/2003	1032	0.832	0.297	0.583	96.191	2.036	0.363	0.098	0.078	0.032	0.019	0.053
11/24/2003	1032	0.792	0.324	0.582	96.245	1.978	0.37	0.097	0.081	0.034	0.021	0.058
11/23/2003	1032	0.866	0.32	0.584	96.011	2.145	0.37	0.095	0.081	0.034	0.021	0.057
11/22/2003	1033	0.871	0.319	0.584	95.923	2.251	0.373	0.09	0.076	0.031	0.019	0.049
11/21/2003	1031	0.848	0.315	0.583	96.087	2.138	0.358	0.087	0.073	0.03	0.018	0.047
11/20/2003	1033	0.846	0.303	0.584	95.99	2.199	0.386	0.093	0.081	0.032	0.02	0.05
11/19/2003	1034	0.823	0.301	0.584	95.977	2.217	0.404	0.096	0.083	0.031	0.019	0.049
11/18/2003	1033	0.819	0.305	0.583	96.011	2.204	0.39	0.093	0.077	0.031	0.019	0.051
11/17/2003	1031	0.798	0.316	0.582	96.156	2.142	0.352	0.083	0.069	0.027	0.016	0.041
11/16/2003	1031	0.829	0.304	0.582	96.145	2.132	0.347	0.085	0.07	0.028	0.016	0.044
11/15/2003	1031	0.873	0.294	0.583	96.184	2.034	0.351	0.09	0.072	0.031	0.018	0.053
11/14/2003	1034	0.884	0.289	0.585	95.959	2.153	0.401	0.106	0.085	0.037	0.023	0.065
11/13/2003	1034	0.908	0.295	0.585	95.897	2.177	0.406	0.105	0.089	0.037	0.023	0.064
11/12/2003	1033	0.868	0.305	0.584	96.046	2.08	0.392	0.099	0.089	0.036	0.023	0.063
11/11/2003	1033	0.89	0.294	0.584	96.002	2.098	0.402	0.101	0.091	0.036	0.023	0.064
11/10/2003	1033	0.849	0.291	0.584	96.087	2.07	0.394	0.098	0.09	0.036	0.023	0.062

**INITIAL COMPLIANCE DEMONSTRATION  
AMMONIA SLIP, CARBON MONOXIDE,  
NITROGEN OXIDES, and VISIBLE EMISSIONS  
DECEMBER 20, 2003  
BAYSIDE POWER STATION  
UNIT # 2  
FACILITY ID NUMBER: 0570040  
EMISSION UNIT ID NOS: -023, -024, -025, & -026**

**VOLUME 2**

**APPENDICES C, D, & E**

**RECEIVED**  
FEB 03 2004  
BUREAU OF AIR REGULATION

AMMONIA SLIP TEST INFORMATION

CALCULATED DATA





Conditional Test Method (CTM) -027  
Test Calculations

Customer: TECO  
Facility: Bayside  
Unit: 2C  
Run Number: 1  
Date: 12/19/03

Sample Time, $\theta$ :	60 minutes	Nozzle Diameter, $D_n$ :	0.189 inches
Barometric Pressure, $P_b$ :	30.04 "Hg	Nozzle Area, $A_n$ :	0.00019482 ft <sup>2</sup>
Stack Pressure, $P_s$ :	30.00 "Hg	Average Orifice Meter, $\Delta H$ :	1.124 "H <sub>2</sub> O
Effective Stack Area, $A_s$ :	283.529 ft <sup>2</sup>	Sample Volume, $V_m$ :	35.719 ft <sup>3</sup>
Pitot Coefficient, $C_p$ :	0.84 dimensionless	Average Meter Temp., $T_m$ :	79.1 °F
Gas Analysis:	4.1 % CO <sub>2</sub>	Average Stack Temp., $T_s$ :	233.3 °F
	13.9 % O <sub>2</sub>	Average $\sqrt{\Delta p}$ :	1.115 "H <sub>2</sub> O
	0.0 % CO	Condensate Volume, $V_{lc}$ :	64.3 ml
	82.0 % N <sub>2</sub>	Meter Box Y:	1.004 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E-02 \times V_{lc}$	3.031 scf
	85.841 liters
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	35.360 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.079 %
$FDA = 1.0 - B_{ws}$	0.921 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%CO))$	29.21 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	28.33 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{T_s + 460}) / (M_s \times P_s)$	72.31 ft/second
$Q_s = v_s \times A_s \times 60$	1230092.0 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92)$	865093.4 dscf/minute
$I = (T_s + 460) \times ((2.67E-03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s)$	99.1 %



Calculation of NH<sub>3</sub> Concentration  
CTM - 027

Customer: TECO  
Facility: Bayside  
Unit: 2C  
Test Date: 12/19/2003

Run #1

Calculation of Volume of Ammonia Gas Present in Sample:

$$V_a = (N \times D_v \times 24.04) / (1000 \times 18) \quad (\text{CTM} - 027, \text{Equation } 2)$$

Where:

$V_a$  = Volume of ammonia gas in the sample  
 $N$  = 0.56 Sum of concentrations of ammonia ion in solution, mg/l  
 $D_v$  = 0.5 Dilution volume  
24.04 = liters of ideal gas per mole of substance  
1/1000 = conversion factor mg/l to g/l  
18 = weight of ammonium ion

$$V_a = 0.0004 \text{ liters}$$

Calculation of ppmv of Ammonia present in Stack Gas:

$$C_{\text{NH}_3} = (V_a / V_{m(\text{std})}) \times 10^6$$

Where:

$V_a$  = Volume of ammonia gas in the sample  
 $V_{m(\text{std})}$  = 85.841 liters

$$C_{\text{NH}_3} = 4.356384 \text{ ppmv}$$



Conditional Test Method (CTM) -027  
Test Calculations

Customer: TECO  
Facility: Bayside  
Unit: 2C  
Run Number: 2  
Date: 12/19/03

Sample Time, $\theta$ :	60 minutes	Nozzle Diameter, $D_n$ :	0.189 inches
Barometric Pressure, $P_b$ :	30.08 "Hg	Nozzle Area, $A_n$ :	0.00019482 ft <sup>2</sup>
Stack Pressure, $P_s$ :	30.04 "Hg	Average Orifice Meter, $\Delta H$ :	1.168 "H <sub>2</sub> O
Effective Stack Area, $A_s$ :	283.529 ft <sup>2</sup>	Sample Volume, $V_m$ :	36.720 ft <sup>3</sup>
Pitot Coefficient, $C_p$ :	0.84 dimensionless	Average Meter Temp., $T_m$ :	89.3 °F
Gas Analysis:	4.1 % CO <sub>2</sub>	Average Stack Temp., $T_s$ :	228.8 °F
	13.9 % O <sub>2</sub>	Average $\sqrt{\Delta p}$ :	1.123 "H <sub>2</sub> O
	0.0 % CO	Condensate Volume, $V_{lc}$ :	61.7 ml
	82.0 % N <sub>2</sub>	Meter Box Y:	1.004 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E-02 \times V_{lc}$	2.909 scf
	82.370 liters
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	35.732 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.075 %
$FDA = 1.0 - B_{ws}$	0.925 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%CO))$	29.21 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	28.37 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	72.49 ft/second
$Q_s = v_s \times A_s \times 60$	1233143.8 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92)$	877510.6 dscf/minute
$I = (T_s + 460) \times ((2.67E-03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times Y)$	98.8 %



Conditional Test Method (CTM) -027  
Test Calculations

Customer: TECO  
Facility: Bayside  
Unit: 2C  
Run Number: 2  
Date: 12/19/03

Sample Time, $\theta$ :	60 minutes	Nozzle Diameter, $D_n$ :	0.189 inches
Barometric Pressure, $P_b$ :	30.08 "Hg	Nozzle Area, $A_n$ :	0.00019482 ft <sup>2</sup>
Stack Pressure, $P_s$ :	30.04 "Hg	Average Orifice Meter, $\Delta H$ :	1.168 "H <sub>2</sub> O
Effective Stack Area, $A_s$ :	283.529 ft <sup>2</sup>	Sample Volume, $V_m$ :	36.720 ft <sup>3</sup>
Pitot Coefficient, $C_p$ :	0.84 dimensionless	Average Meter Temp., $T_m$ :	89.3 °F
Gas Analysis:	4.1 % CO <sub>2</sub>	Average Stack Temp., $T_s$ :	228.8 °F
	13.9 % O <sub>2</sub>	Average $\sqrt{\Delta p}$ :	1.123 "H <sub>2</sub> O
	0.0 % CO	Condensate Volume, $V_{ic}$ :	61.7 ml
	82.0 % N <sub>2</sub>	Meter Box Y:	1.004 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E-02 \times V_{ic}$	2.909 scf
	82.370 liters
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	35.732 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.075 %
$FDA = 1.0 - B_{ws}$	0.925 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%CO))$	29.21 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	28.37 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{T_s + 460}) / (M_s \times P_s)$	72.49 ft/second
$Q_s = v_s \times A_s \times 60$	1233143.8 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92)$	877510.6 dscf/minute
$I = (T_s + 460) \times ((2.67E-03 \times V_{ic}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s)$	98.8 %



Environmental Services  
Air Services Group

Conditional Test Method (CTM) -027  
Test Calculations

Customer: TECO  
Facility: Bayside  
Unit: 2C  
Run Number: 3  
Date: 12/19/03

Sample Time, $\theta$ :	60 minutes	Nozzle Diameter, $D_n$ :	0.189 inches
Barometric Pressure, $P_b$ :	30.04 "Hg	Nozzle Area, $A_n$ :	0.00019482 ft <sup>2</sup>
Stack Pressure, $P_s$ :	30.00 "Hg	Average Orifice Meter, $\Delta H$ :	1.141 "H <sub>2</sub> O
Effective Stack Area, $A_s$ :	254.469 ft <sup>2</sup>	Sample Volume, $V_m$ :	36.400 ft <sup>3</sup>
Pitot Coefficient, $C_p$ :	0.84 dimensionless	Average Meter Temp., $T_m$ :	86.0 °F
Gas Analysis:	4.1 % CO <sub>2</sub>	Average Stack Temp., $T_s$ :	229.7 °F
	13.9 % O <sub>2</sub>	Average $\sqrt{\Delta p}$ :	1.113 "H <sub>2</sub> O
	0.0 % CO	Condensate Volume, $V_{lc}$ :	63.4 ml
	82.0 % N <sub>2</sub>	Meter Box Y:	1.004 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E-02 \times V_{lc}$	2.989 scf
	84.639 liters
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	35.579 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.077 %
$FDA = 1.0 - B_{ws}$	0.923 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%CO))$	29.21 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	28.34 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	71.98 ft/second
$Q_s = v_s \times A_s \times 60$	1099019.8 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92)$	778162.6 dscf/minute
$I = (T_s + 460) \times ((2.67E-03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s)$	99.5 %



Calculation of NH<sub>3</sub> Concentration  
CTM - 027

Customer: TECO  
Facility: Bayside  
Unit: 2C  
Test Date: 12/19/2003

Run #3

Calculation of Volume of Ammonia Gas Present in Sample:

$$V_a = (N \times D_v \times 24.04) / (1000 \times 18) \quad (\text{CTM - 027, Equation 2})$$

Where:

$V_a$  = Volume of ammonia gas in the sample

$N$  = 0.68 Sum of concentrations of ammonia ion in solution, mg/l

$D_v$  = 0.5 Dilution volume

24.04 = liters of ideal gas per mole of substance

1/1000 = conversion factor mg/l to g/l

18 = weight of ammonium ion

$$V_a = 0.0005 \text{ liters}$$

Calculation of ppmv of Ammonia present in Stack Gas:

$$C_{\text{NH}_3} = (V_a / V_{m(\text{std})}) \times 10^6$$

Where:

$V_a$  = Volume of ammonia gas in the sample

$V_{m(\text{std})}$  = 84.639 liters

$$C_{\text{NH}_3} = 5.364988 \text{ ppmv}$$

FIELD DATA SHEETS

# ISOKINETIC FIELD DATA SHEET

Plant	<u>Bayside</u>	Nozzle I.D. No.	<u>02009</u>	Dry Gas Meter Volume	
Location	<u>2C</u>	Nozzle Diameter	<u>0.189</u>	Final	<u>179.070</u> Fl. <sup>3</sup>
Date	<u>12-19-03</u>	Pitot Tube No.		Initial	<u>142.350</u> Fl. <sup>3</sup>
Method No.	<u>CTM-027</u>	Pitot Tube (C <sub>p</sub> )	<u>0.84</u>	Net	<u>36.720</u> Fl. <sup>3</sup>
Run No.	<u>2</u>	Probe Length	<u>8'</u>	Equipment Leak Checks	
Box Operator	<u>JAV</u>	Probe Liner Material	<u>PVDF</u>	Initial	<u>0.00</u> CFM @ <u>8'</u> *Hg
Probe Operator	<u>CD</u>	Probe Heater Setting	<u>250</u>	Final	<u>0.00</u> CFM @ <u>7'</u> *Hg
Time - Start:	<u>1141</u>	Pressure	<u>Pb (*Hg): 30.08 Pg (*H<sub>2</sub>O): -.6 Ps (*Hg): 30.04</u>	Pitot Tube	<u>OK @ 4.3</u> *H <sub>2</sub> O
Time - End:	<u>1252</u>	Assumed Moisture (%)	<u>9%</u>	Moisture Determination	
Sampling Time	<u>60</u>	Filter Holder No.	<u>N/A</u>	Impinger	<u>54</u> ml
Min. \ Pt	<u>2.5</u>	Comments		Silica Gel	<u>7.7</u> gm
Meter Box No.	<u>MB06</u>	Start	Imp#1 <u>100</u> Imp#2 <u>100</u> Imp#3 <u>0</u>	Total	<u>61.7</u>
Stack Area Ft. <sup>2</sup>	<u>283.529</u>	Finish	Imp#1 <u>146</u> Imp#2 <u>108</u> Imp#3 <u>0</u>		
Meter Cal. (Δ H)	<u>1.769</u>	O <sub>2</sub>	<u>13.9</u>		
Meter Cal. (Δ Y)	<u>1.004</u>	CO <sub>2</sub>	<u>4.1</u>		

Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	Δ P (In. H <sub>2</sub> O)	Δ H (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	1141	143.85	1.2	1.1	232	<del>238</del>	239		57	4.0
2		145.35	1.2	1.1	232	87	246		52	4.0
3		146.94	1.4	1.29	229	87	245		53	5.0
4		148.64	1.6	1.47	228	88	245		54	5.5
5		150.37	1.6	1.48	227	89	248		57	5.5
6	1156	151.94	1.3	1.21	225	89	247		58	4.5
1	1159	153.38	1.1	1.02	230	92	233		56	3.5
2		154.90	1.3	1.20	233	92	243		53	4.5
3		158.46	1.3	1.20	232	92	243		52	5.0
4		158.07	1.4	1.29	231	90	247		54	5.3
5		159.64	1.3	1.20	230	90	243		54	5.0
6	1214	160.997	1.8	1.91	222	90	240		55	3.5



# ISOKINETIC FIELD DATA SHEET

Plant Bayside  
 Location 2C  
 Date 12-19-03  
 Method No. (M-007)  
 Run No. 1  
 Box Operator CHD  
 Probe Operator JMV  
 Time - Start: 9:36 End: 11:02  
 Sampling Time 60  
 Min. \ Pt. 2.5  
 Meter Box No. m806  
 Stack Area Ft.<sup>2</sup> 283.529  
 Meter Cal. (Δ H) 1.064  
 Meter Cal. (Δ Y) 1.869

Nozzle I.D. No. 6009  
 Nozzle Diameter 0.189  
 Pitot Tube No. \_\_\_\_\_  
 Pitot Tube (C<sub>p</sub>) 0.84  
 Probe Length 8  
 Probe Liner Material P/ret  
 Probe Heater Setting 250  
 Pressure Pb (\*Hg): 30.64 Pg (\*H<sub>2</sub>O): -.6 Ps (\*Hg):  
 Assumed Moisture (%) 9  
 Filter Holder No. \_\_\_\_\_  
 Comments \_\_\_\_\_  
 Start Imp#1 100 Imp#2 100 Imp#3 0  
 Finish Imp#1 148 Imp#2 109 Imp#3 0  
 O<sub>2</sub> 13.9 CO<sub>2</sub> 4.1

Dry Gas Meter Volume  
 Final 42.017 Ft.<sup>3</sup>  
 Initial 6.298 Ft.<sup>3</sup>  
 Net 35.719 Ft.<sup>3</sup>

Equipment Leak Checks  
 Initial 0.00 CFM @ 15 \*Hg  
 Final 0.00 CFM @ 7 \*Hg  
 Pitot Tube OK @ 6 \*Hg

Moisture Determination  
 Impinger 57 ml  
 Silica Gel 7.3 gm  
 Total 64.3

Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	Δ P (In. H <sub>2</sub> O)	Δ H (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	936	7.77	1.2	1.08	231	77	246	1	58	4.5
2		9.23	1.2	1.07	234	75	251	1	53	4.5
3		10.68	1.2	1.07	233	74	251	1	52	4.5
4		12.25	1.4	1.25	232	74	251	1	51	5
5		13.82	1.4	1.25	233	74	251	1	51	5
6	951	15.384	1.4	1.25	232	75	251	1	54	5
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1	1009	16.70	0.99	0.89	229	76	251	1	52	4
2		18.06	1.0	0.90	237	70	237	1	51	4
3		19.37	0.98	0.88	236	78	236	1	51	4
4		20.81	1.2	1.07	235	78	230	1	49	4
5		22.210	1.1	0.99	235	79	233	1	52	4
6	1024	23.599	1.1	0.99	233	79	233	1	52	4

Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	$\Delta P$ (In. H <sub>2</sub> O)	$\Delta H$ (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	1030	25.07	1.2	1.08	233	79	216	1	50	4
2		26.41	1.0	0.90	235	79	245		48	4
3		27.85	1.2	1.08	236	80	240	1	52	4
4		29.37	1.3	1.17	236	80	236		49	5
5		30.84	1.2	1.08	236	83	230	1	50	4
6	1045	32.306	1.2	1.09	237	83	228	1	52	4
-	-	-	-	-	-	-	-	-	-	-
1	1047	33.84	1.3	1.17	233	80	250		53	5
2		35.36	1.3	1.17	234	81	245	1	53	5
3		36.93	1.4	1.27	232	81	240	1	53	5
4		38.65	1.6	1.46	232	84	240	1	53	6
5		40.38	1.6	1.46	230	85	238	1	53	6
6	1102	42.017	1.5	1.37	228	85	220	1	54	5

Quality Assurance / Quality Control Information

Console Operator Signature: *Chh N Nyan*

Date: 12-19-03

Complete: \_\_\_\_\_ Legible: \_\_\_\_\_ Accurate: \_\_\_\_\_ Project Scope: \_\_\_\_\_ Reasonableness: \_\_\_\_\_

Reviewer's Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	$\Delta P$ (In. H <sub>2</sub> O)	$\Delta H$ (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	1604	98.95	1.1	1.01	230	86	232	1	53	4
2		100.37	1.1	1.00	233	86	237		55	4
3		101.83	1.2	1.09	232	83	247	1	56	4
4		103.29	1.2	1.09	232	82	243	1	56	4
5		104.75	1.2	1.09	230	82	246		56	4
6	1619	106.017	0.9	0.82	228	83	245	1	56	3
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1	1621	107.49	1.2	1.09	230	83	223	1	57	4
2		109.03	1.3	1.18	230	83	221	1	57	4
3		110.67	1.5	1.37	230	83	220	1	57	5
4		112.33	1.5	1.37	228	82	220	1	58	5
5		114.01	1.6	1.46	227	83	217	1	58	5
6	1636	115.652	1.5	1.38	223	82	217	1	59	5

Quality Assurance / Quality Control Information

Console Operator Signature: Chris N. [Signature]

Date: 12-19-03

Complete: \_\_\_\_\_ Legible: \_\_\_\_\_ Accurate: \_\_\_\_\_ Project Scope: \_\_\_\_\_ Reasonableness: \_\_\_\_\_

Reviewer's Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	Δ P (In. H <sub>2</sub> O)	Δ H (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	1217	162.43	1.1	1.07	231	89	224	1	52	3.8
2		163.90	1.2	1.1	232	89	226		52	4.3
3		165.39	1.2	1.1	232	89	226	1	53	4.3
4		166.88	1.2	1.1	231	88	225		54	4.3
5		168.43	1.3	1.19	230	88	227	1	54	4.5
6	1232	169.800	1.0	.93	220	88	235		55	3.5
	—	—	—	—	—	—	—	+	—	—
1	1237	171.218	1.1	1.01	230	89	255		55	3.5
2		172.71	1.2	1.1	230	89	250	1	55	4.5
3		174.265	1.3	1.2	230	89	250		56	5.0
4		175.935	1.5	1.38	229	89	251	1	56	5.5
5		177.61	1.5	1.39	225	90	249		57	5.5
6	1252	179.07	1.1	1.03	220	90	245	1	56	3.5

Quality Assurance / Quality Control Information

Console Operator Signature: 

Date: 12-19-03

Complete: \_\_\_\_\_ Legible: \_\_\_\_\_ Accurate: \_\_\_\_\_ Project Scope: \_\_\_\_\_ Reasonableness: \_\_\_\_\_

Reviewer's Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

# ISOKINETIC FIELD DATA SHEET

Plant Bayside  
 Location 22  
 Date 12-19-03  
 Method No. CTM027  
 Run No. 3  
 Box Operator CND  
 Probe Operator JAV  
 Time - Start: 1320 End: 1636  
 Sampling Time 60  
 Min. \ Pt. 2.5  
 Meter Box No. m806  
 Stack Area Ft.<sup>2</sup> 283.529  
 Meter Cal. (Δ H) 1.769  
 Meter Cal. (Δ Y) 1.004

Nozzle I.D. No. 6009  
 Nozzle Diameter 0.189  
 Pitot Tube No. \_\_\_\_\_  
 Pitot Tube (C<sub>p</sub>) 0.84  
 Probe Length 8'  
 Probe Liner Material \_\_\_\_\_  
 Probe Heater Setting 250  
 Pressure Pb (\*Hg): 30.07 Pg (\*H<sub>2</sub>O): ~.6 Ps (\*Hg):  
 Assumed Moisture (%) 9  
 Filter Holder No. \_\_\_\_\_  
 Comments \_\_\_\_\_  
 Start Imp#1 100 Imp#2 100 Imp#3 0  
 Finish Imp#1 148 Imp#2 108 Imp#3 0  
 O<sub>2</sub> 13.9 CO<sub>2</sub> 4.1

Dry Gas Meter Volume  
 Final 115.652 Ft.<sup>3</sup>  
 Initial 79.252 Ft.<sup>3</sup>  
 Net 36.400 Ft.<sup>3</sup>

Equipment Leak Checks  
 Initial 0.000 CFM @ 15 \*Hg  
 Final 0.000 CFM @ 7 \*H<sub>2</sub>O  
 Pitot Tube ok @ 6 \*H<sub>2</sub>O

Moisture Determination  
 Impinger 56 ml  
 Silica Gel 7.4 gm  
 Total 63.4

Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	Δ P (In. H <sub>2</sub> O)	Δ H (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	1320	80.75	1.2	1.11	229	90	253		58	4
2	<del>1320</del>	82.3	1.2	1.11	230	90	252		58	4
3		83.81	1.2	1.11	225	88	251		55	5
4		85.5	1.5	1.38	230	88	251		55	5
5		87.1	1.5	1.38	228	88	255		56	5
6	1335.44 CND	88.862	1.5	1.39	229	90	251		57	5
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1	1347	90.32	1.1	1.01	229	89	221		54	4
2		91.75	1.0	0.92	232	89	220		54	4
3		93.46	1.1	1.01	232	89	226		54	4
4		94.59	1.1	1.01	232	90	230		55	4
5		96.07	1.2	1.1	232	89	225		55	4
6	1402		1.0	0.92	231	87	227		55	4

LABORATORY ANALYSIS

## Analytical Information

**Method:** CTM - 027

**Date Analyzed:** 12/30/03

**Analyst:** Bret Nicholas

**Samples:** Received recovered samples in 500ml Nalgene bottles.  
Transferred all impinger #1 and impinger #2 samples into 500 ml Volumetrics using DI Water.

**Instrument:** Dionex IC Model DX120  
Column: CS12A with CG12A guard  
Eluent concentration: 22mN H2SO4  
Flow rate: 1.8 mls/min

**Standards:** Stock ammonium standard 1000 mg/l as NH4  
Spex CertiPrep Lot 24-131AS Exp. August 30, 2004  
Diluted stock 10 mls to 100 mls to create an intermediate 100 mg/l standard.  
Diluted intermediate (100 mg/l) standard 10 mls to 100 mls to create an intermediate 10 mg/l standard.

Standard	Volume (mls)	Final Volume (mls)	mg/L as NH4
10 mg/l	0.5	100	0.05
10 mg/l	1	100	0.10
10 mg/l	3	100	0.30
10 mg/l	5	100	0.50
10 mg/l	10	100	1.00
10 mg/l	20	100	2.00
100 mg/l	30	100	3.00
100 mg/l	5	100	5.00

All standards had 4 mls of 1.0 N H2SO4 added before being brought to 100 ml volume.  
This prepares all standards in a 0.04 N H2SO4 matrix.  
A reagent blank was prepared using 4 mls of 1.0 N H2SO4 and DI water brought to 100 ml volume.

**Factors Used:** N to NH4 divide by 0.7765

**Eluent:** 22 mN H2SO4 prepared by diluting 44 mls of 1.0 N H2SO4 to 2 liters.

**Results:** All standards are calibrated using the NH4 concentration and integrated with peak area.  
All reported sample results are based on peak area and expressed as mg NH4 per liter

**QC:** Spex CertiPrep standard 1.00 mg/l as NH4 was run after the calibration curve and after the first seven samples and then after the next ten samples.  
Orion Ammonia Standard 1000 ppm as N prepared to 1.29 mg/l as NH4 was run after the calibration curve, after the next seven samples and after the last ten samples.  
Reagent blank was run after the calibration curve, after seven samples, and after

# Polk Power Laboratory

## Summary of Lab Results

**Customer:** Tampa Electric  
**Sampling Location/Identifier:** Bayside Units 2C and 2D  
**Test Dates:** Unit 2D - 12/17/2003 Unit 2C - 12/19/2003  
**Analytical Method for Recovered Samples:** CTM - 027  
**Analysis Date:** 12/30/03  
**Analyst:** Bret Nicholas

Sample Identification	Time	Volume (mls)	mg NH4 / L
12/17/03 Unit 2D Blank	14:15	500	<0.05
12/17/03 Unit 2D Run 1 Impinger #1	10:15	500	0.49
12/17/03 Unit 2D Run 1 Impinger #2	10:15	500	<0.05
12/17/03 Unit 2D Run 2 Impinger #1	12:30	500	0.53
12/17/03 Unit 2D Run 2 Impinger #2	12:30	500	<0.05
12/17/03 Unit 2D Run 3 Impinger #1	14:15	500	0.57
12/17/03 Unit 2D Run 3 Impinger #2	14:15	500	<0.05

Sample Identification	Time	Volume (mls)	mg NH4 / L
12/19/03 Unit 2C Blank	17:00	500	0.11
12/19/03 Unit 2C Run 1 Impinger #1	11:15	500	0.67
12/19/03 Unit 2C Run 1 Impinger #2	11:15	500	<0.05
12/19/03 Unit 2C Run 2 Impinger #1	13:00	500	0.75
12/19/03 Unit 2C Run 2 Impinger #2	13:00	500	<0.05
12/19/03 Unit 2C Run 3 Impinger #1	16:45	500	0.79
12/19/03 Unit 2C Run 3 Impinger #2	16:45	500	<0.05

QC Information	True Value	Result	% Rec.
Reagent Blank	<0.05	0.11	
Calibration Standard Check 5	1.00	1.01	101.0
Orion Check Standard	1.29	1.29	100.0
Reagent Blank	<0.05	<0.05	
Calibration Standard Check 5	1.00	1.01	101.0
Orion Check Standard	1.29	1.27	98.4
Reagent Blank	<0.05	<0.05	
Calibration Standard Check 5	1.00	1.02	102.0
Orion Check Standard	1.29	1.27	98.4



PROJECT REFERENCE <i>Bayside 2C 2D</i>		PROJECT NO.	PROJECT LOCATION (STATE) <i>FL</i>	REQUIRED ANALYSIS				DUE DATE <div style="border: 1px solid black; width: 100px; height: 30px;"></div>
SAMPLER'S PRINTED NAME <i>Charles Dufeny</i>		SAMPLER'S SIGNATURE <i>Charles Dufeny</i>		<i>Leo-1113</i>				<input type="checkbox"/> EMAIL RESULTS
P.O. NUMBER	CONTRACT NO.	SITE <i>Bayside 2-D,C</i>						<input type="checkbox"/> FAX RESULTS
CLIENT NAME <i>TECO-BPS</i>	CLIENT PHONE <i>813-630-7362</i>	CLIENT FAX						<input type="checkbox"/> MAIL RESULTS
CLIENT EMAIL	CLIENT ADDRESS			PRESERVATIVE			NUMBER OF COOLERS SUBMITTED PER SHIPMENT:	

SAMPLE ID	SAMPLE DESCRIPTION	SAMPLING		* MATRIX	NUMBER OF CONTAINERS SUBMITTED				REMARKS
		DATE	TIME						
2D Rm1-1	1 <sup>st</sup> Impinger	12/17/03	1015		1				
2D Rm1-2	2 <sup>nd</sup> Impinger	12/17/03	1015		1				
2D Rm2-1	1 <sup>st</sup> Impinger	12/17/03	1230		1				
2D Rm2-2	2 <sup>nd</sup> Impinger	12/17/03	1230		1				
2D Rm3-1	1 <sup>st</sup> Impinger	12/17/03	1415		1				
2D Rm3-2	2 <sup>nd</sup> Impinger	12/17/03	1415		1				
2D Blank	0.1N 15004 Blank	12/17/03	1415		1				
2C Rm1	1 <sup>st</sup> Impinger	12/19/03	1115		1				
2C Rm1	2 <sup>nd</sup> Impinger	12/19/03	1115		1				
2C Rm2	1 <sup>st</sup> Impinger	12/19/03	1300		1				
2C Rm2	2 <sup>nd</sup> Impinger	12/19/03	1300		1				
2C Rm3	1 <sup>st</sup> Impinger	12/19/03	1645		1				
2C Rm3	2 <sup>nd</sup> Impinger	12/19/03	1645		1				
2C Blank	0.1N 15004 Blank	12/19/03	1700		1				

\* GW: GROUND WATER    SW: SURFACE WATER    DW: DRINKING WATER    WW: WASTE WATER    C: COAL    O: OIL    SO: SOIL/SOIL

CONTAINERS/SEALS INTACT <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	ON ICE/4°C <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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**SAMPLE TRANSFERS**

<b>RELINQUISHED BY:</b>	<b>RECEIVED BY:</b>		
PERSON'S NAME: <i>Charles Dufeny</i>	PERSON'S NAME: <i>Jessie Warner</i>	<i>12-22-03</i>	<i>0905</i>
FACILITY NAME: <i>TECO</i>	FACILITY NAME: <i>TECO</i>		
PERSON'S NAME: <i>Jessie Warner</i>	PERSON'S NAME: <i>Bret Nicholas</i>	<i>12-23-03</i>	<i>0700</i>
FACILITY NAME: <i>TECO</i>	FACILITY NAME: <i>Park Road</i>		
PERSON'S NAME:	PERSON'S NAME:		
FACILITY NAME:	FACILITY NAME:		
PERSON'S NAME:	PERSON'S NAME:		
FACILITY NAME:	FACILITY NAME:		

Component: NH4; Fit Type: Quadratic

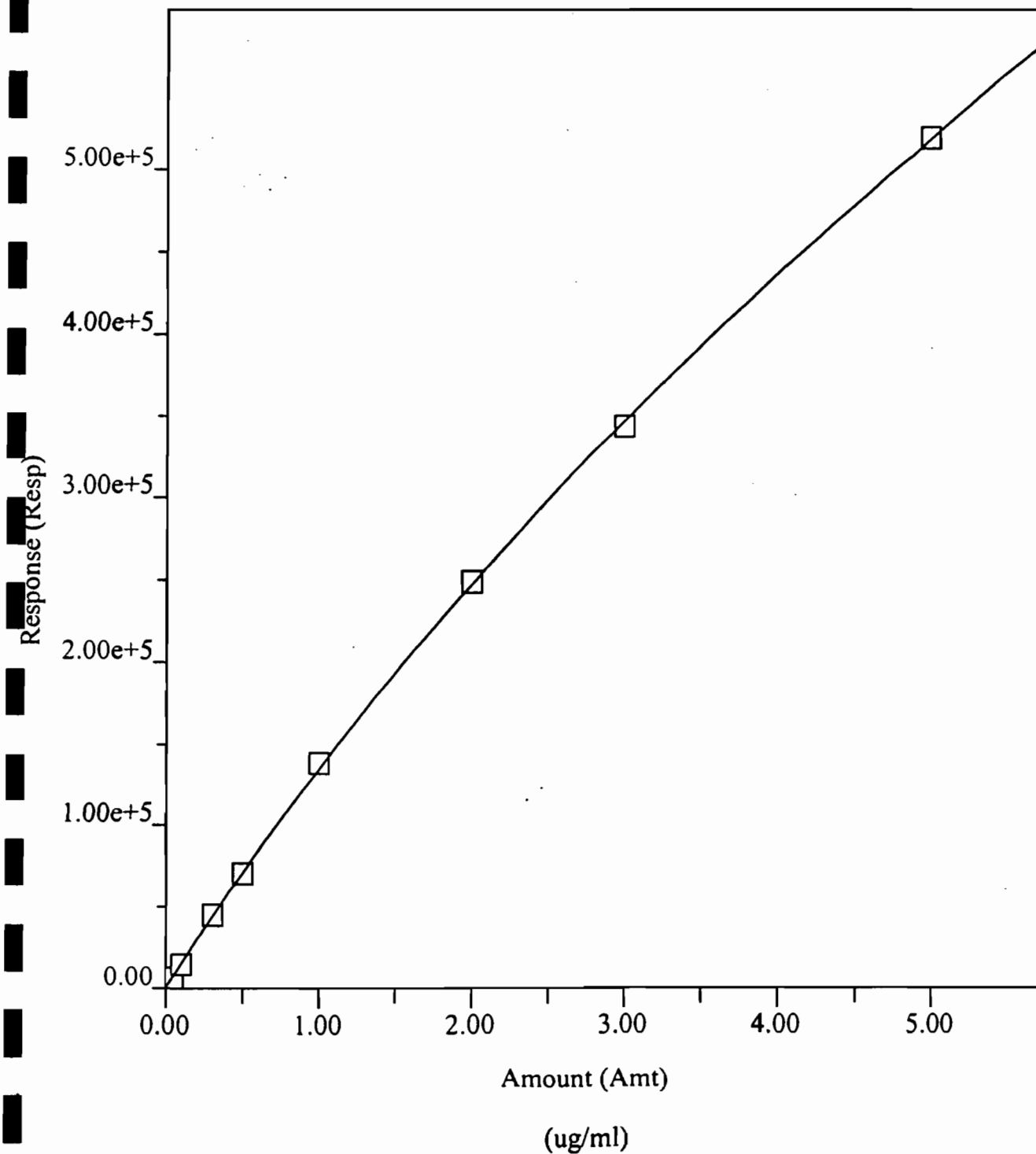
Method: c:\peaknet\method\ctm-027.met; Updated: 12/30/2003 5:10:54 PM

$r^2 = 0.999870$

$$\text{Amt} = 5.697282\text{e-}012 * \text{Resp}^2 + 6.693179\text{e-}006 * \text{Resp} - 0.00795$$

Standard: External

Calibration: Area



Line	Sample	Method	Data File	Dilution	Comment
1	Reagent Blank	ctm-027.met	nh406001.dxd	1	
2	Autocal1R	ctm-027.met	nh406002.dxd	1	
3	Autocal2R	ctm-027.met	nh406003.dxd	1	
4	Autocal3R	ctm-027.met	nh406004.dxd	1	
5	Autocal4R	ctm-027.met	nh406005.dxd	1	
6	Autocal5R	ctm-027.met	nh406006.dxd	1	
7	Autocal6R	ctm-027.met	nh406007.dxd	1	
8	Autocal7R	ctm-027.met	nh406008.dxd	1	
9	Autocal8R	ctm-027.met	nh405009.dxd	1	
10	Reagent Blank	ctm-027.met	nh405010.dxd	1	
11	Cal. Std 1 (1.00 mg/l)	ctm-027.met	nh405011.dxd	1	
12	Orion Standard T.V. = 1.	ctm-027.met	nh405012.dxd	1	
13	12/17/03 Blank	ctm-027.met	nh405013.dxd	1	
14	12/17/03 Run 1 Impinger	ctm-027.met	nh405014.dxd	1	
15	12/17/03 Run 1 Impinger	ctm-027.met	nh405015.dxd	1	
16	12/17/03 Run 2 Impinger	ctm-027.met	nh405016.dxd	1	
17	12/17/03 Run 2 Impinger	ctm-027.met	nh405017.dxd	1	
18	12/17/03 Run 3 Impinger	ctm-027.met	nh405018.dxd	1	
19	12/17/03 Run 3 Impinger	ctm-027.met	nh405019.dxd	1	
20	Reagent Blank	ctm-027.met	nh405020.dxd	1	
21	Cal Std 1 (1.00 mg/l)	ctm-027.met	nh405021.dxd	1	
22	Orion Standard T.V. = 1.	ctm-027.met	nh405022.dxd	1	
23	12/19/03 Blank	ctm-027.met	nh405023.dxd	1	
24	12/19/03 Run 1 Impinger	ctm-027.met	nh404024.dxd	1	
25	12/19/03 Run 1 Impinger	ctm-027.met	nh404025.dxd	1	
26	12/19/03 Run 2 Impinger	ctm-027.met	nh404026.dxd	1	
27	12/19/03 Run 2 Impinger	ctm-027.met	nh404027.dxd	1	
28	12/19/03 Run 3 Impinger	ctm-027.met	nh404028.dxd	1	
29	12/19/03 Run 3 Impinger	ctm-027.met	nh404029.dxd	1	
30	Reagent Blank	ctm-027.met	nh404030.dxd	1	
31	Cal Std 1 (1.00 mg/l)	ctm-027.met	nh404031.dxd	1	
32	Orion Standard T.V. = 1.	ctm-027.met	nh404032.dxd	1	
33	Stop Program	stopcat.met	nh4	1	

Default Method Path: C:\PEAKNET\METHOD

Default Data Path: C:\PEAKNET\DATA

Comment:

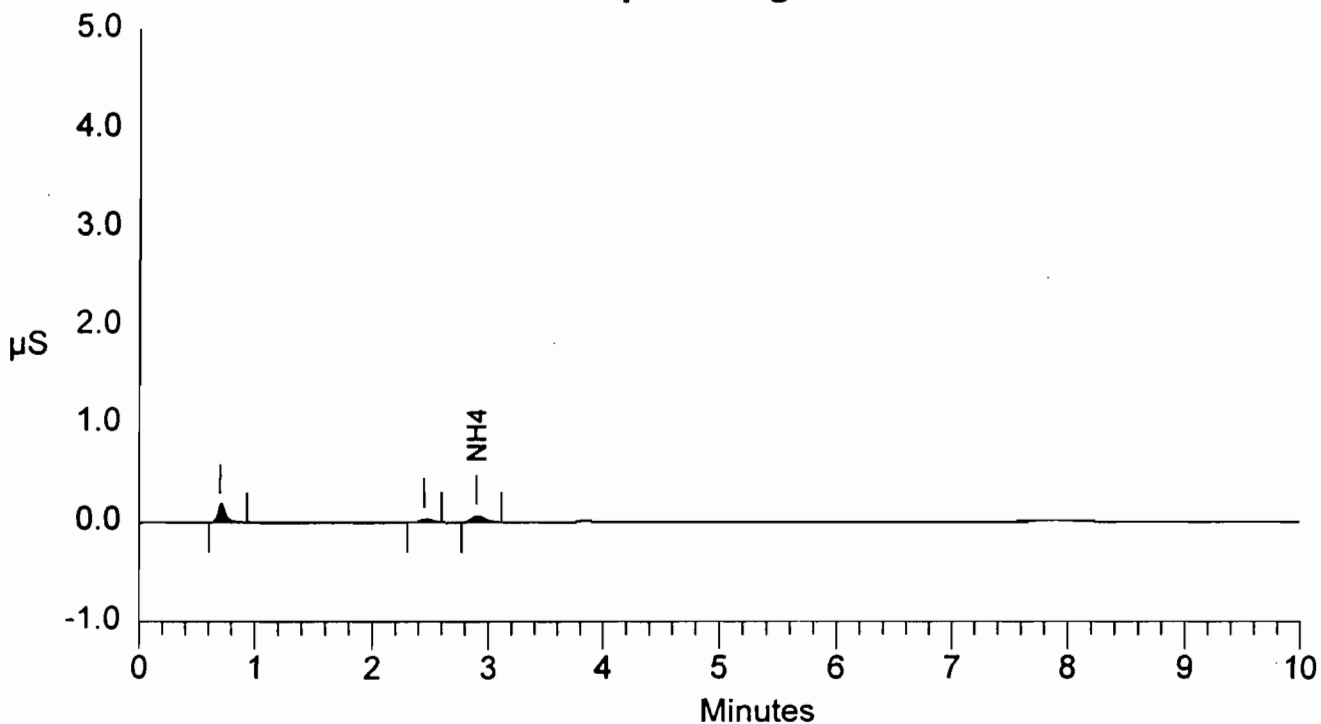
```

Data File   : C:\PEAKNET\DATA\NH406001.DXD   Report Date: 12/30/2003 3:26:43 P
Sample Name : Reagent Blank                   Collected  : 12/30/2003 3:13:39 P
Inject #    : 1                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 3:04:00 P
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator     :
Data Points : 3000                           Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

PK. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
3	2.90	NH4	-0.02	627	4976	1	0.00
Totals			-0.02	627	4976		

**File: NH406001.DXD Sample Reagent Blank**



\*\*\*\*\* AUTOMATIC CALIBRATION UPDATE \*\*\*\*\*

```

=====
Data File   : C:\PEAKNET\DATA\NH406002.DXD   Report Date: 12/30/2003 3:39:43 P
Sample Name: Autocal1R                       Collected  : 12/30/2003 3:26:43 P
Project #   : 2                               Vial #     :
Method File : c:\peaknet\method\ctm-027.met  Last Update: 12/30/2003 3:04:00 P
System Name : DX-120                          Detector   : DX-120
Cal. Level  : 1                              Analyst    : Polk Lab
=====
    
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.92	2.92	2.92	6.771e+003	6.788e+003	6.788e+003

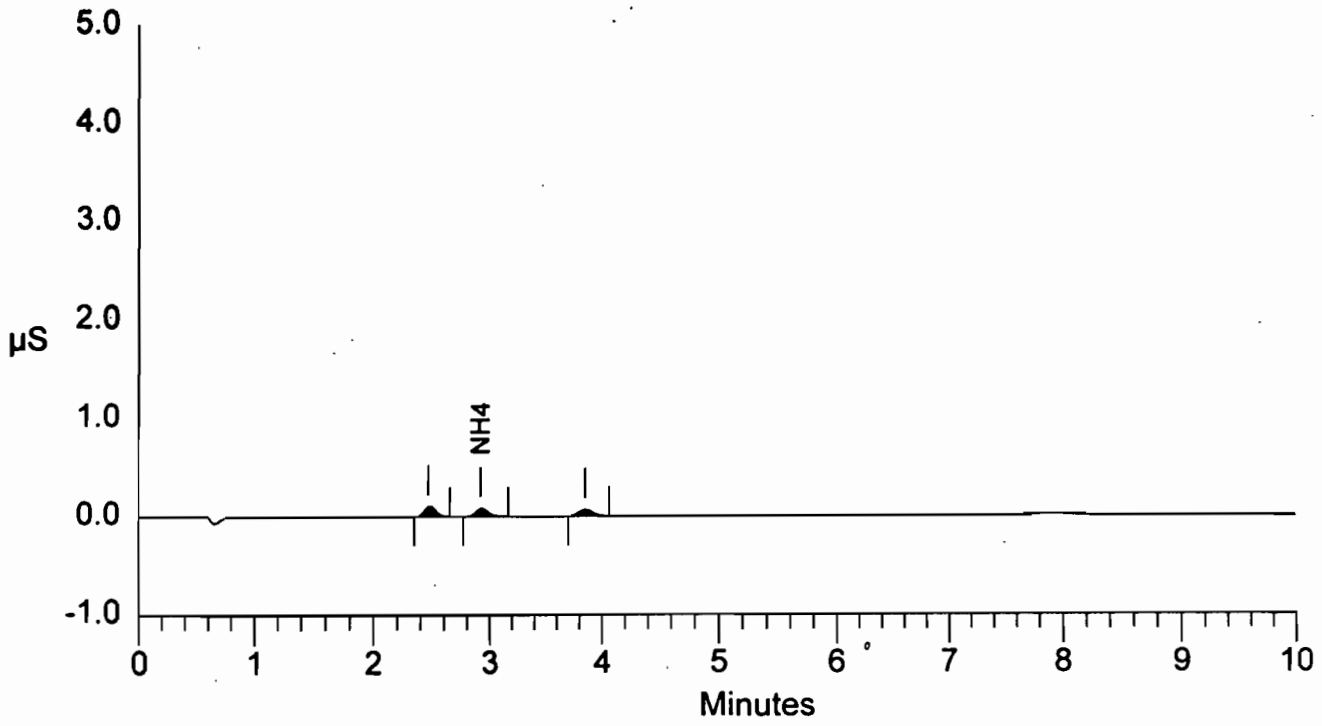
```

=====
Data File   : C:\PEAKNET\DATA\NH406002.DXD   Report Date: 12/30/2003 3:39:43 P
Sample Name: Autocal1R                       Collected  : 12/30/2003 3:26:43 P
Project #   : 2                               Vial #     :
Method File : c:\peaknet\method\ctm-027.met  Calibrated : 12/30/2003 3:39:43 P
System Name : DX-120                          Detector   : DX-120
Column Type : Ionpac CS12A                    Operator    :
Data Points : 3000                            Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Ret. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	0.05	863	6788	1	0.00
Totals			0.05	863	6788		

File: NH406002.DXD Sample Autocal1R



\*\*\*\*\* AUTOMATIC CALIBRATION UPDATE \*\*\*\*\*

```

=====
Data File   : C:\PEAKNET\DATA\NH406003.DXD   Report Date: 12/30/2003 3:52:49 P
Sample Name: Autocal2R                       Collected  : 12/30/2003 3:39:44 P
Inject #    : 3                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Last Update: 12/30/2003 3:39:43 P
System Name: DX-120                           Detector    : DX-120
Cal. Level  : 2                               Analyst     : Polk Lab
=====
    
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.92	2.92	2.92	4.154e+004	1.514e+004	1.514e+004

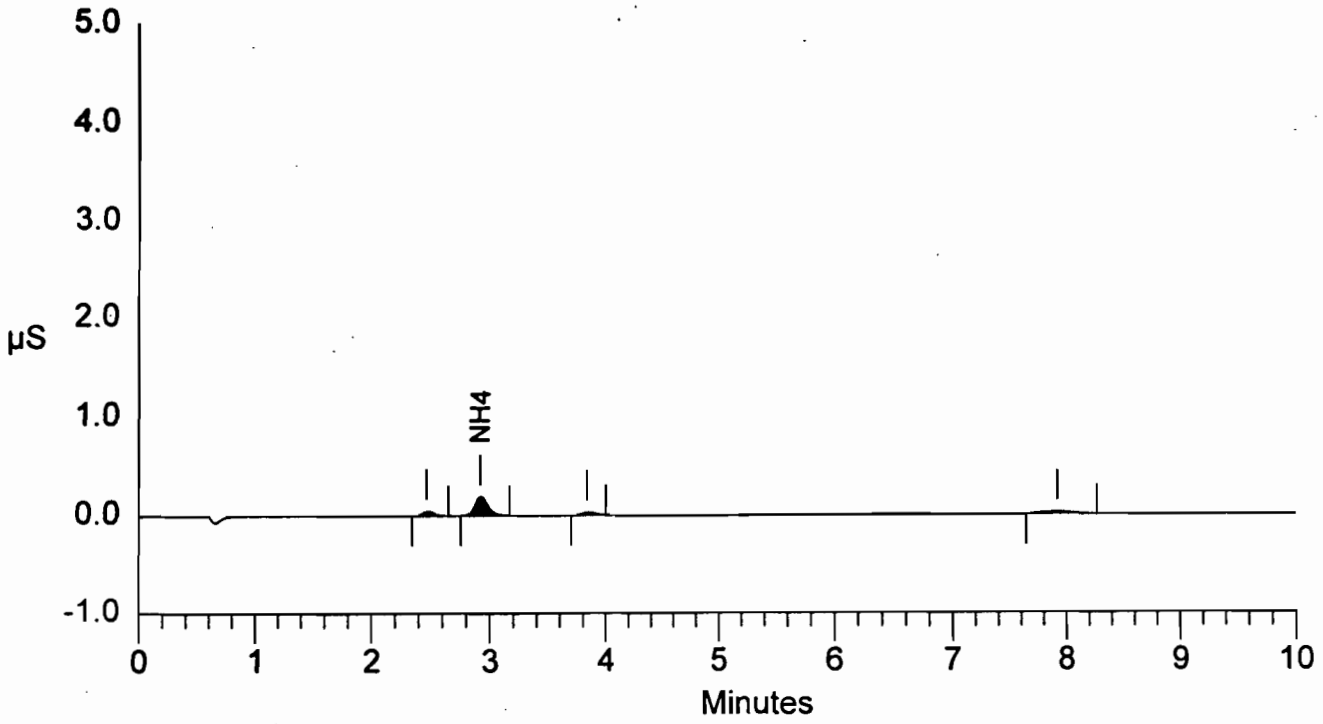
```

=====
Data File   : C:\PEAKNET\DATA\NH406003.DXD   Report Date: 12/30/2003 3:52:49 P
Sample Name: Autocal2R                       Collected  : 12/30/2003 3:39:44 P
Inject #    : 3                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 12/30/2003 3:52:49 P
System Name: DX-120                           Detector    : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2.92	NH4	0.10	1926	15139	1	0.00
Totals		0.10	1926	15139		

File: NH406003.DXD Sample Autocal2R





AUTOMATIC CALIBRATION UPDATE

```

*****
Data File   : C:\PEAKNET\DATA\NH406004.DXD   Report Date: 12/30/2003 4:05:50 P
Sample Name: Autocal3R                       Collected  : 12/30/2003 3:52:49 P
Inject #    : 4                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Last Update: 12/30/2003 3:52:49 P
System Name: DX-120                           Detector    : DX-120
Cal. Level  : 3                               Analyst     : Polk Lab
*****

```

COMPONENTS FOUND IN THIS RUN

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.92	2.92	2.92	6.676e+004	4.521e+004	4.521e+004

```

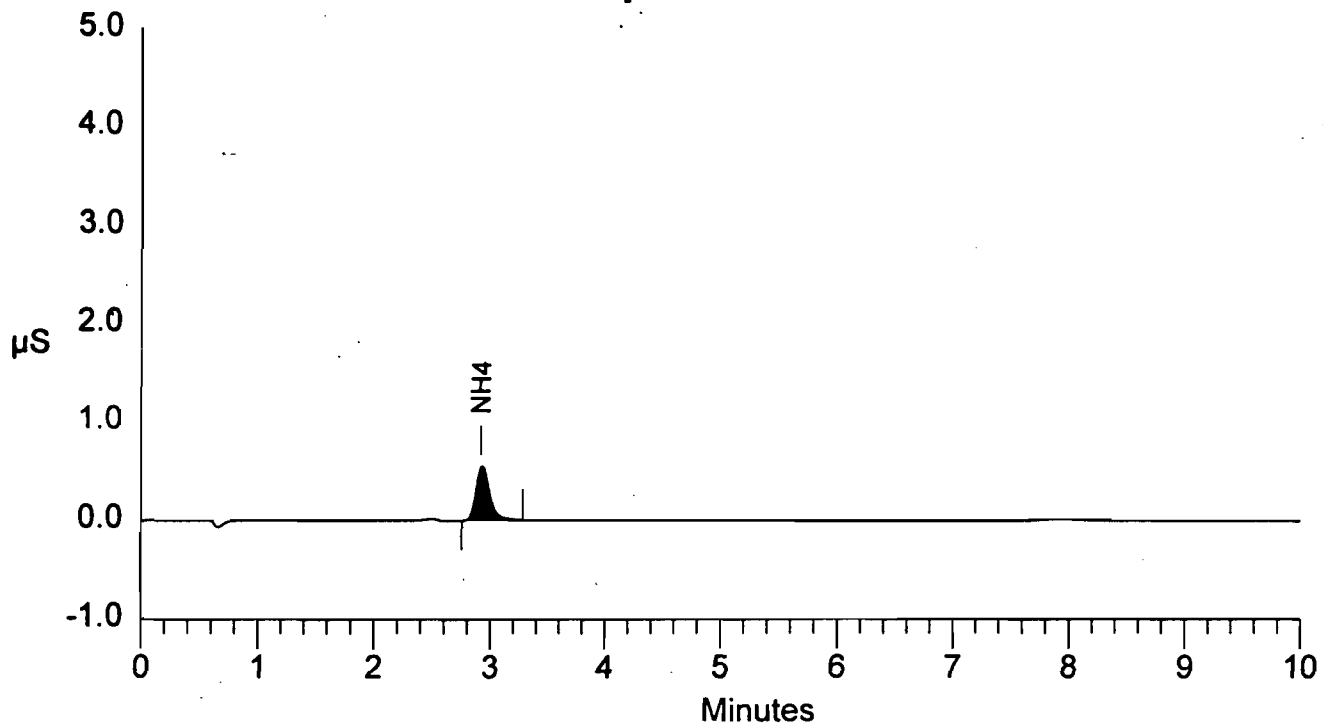
Data File   : C:\PEAKNET\DATA\NH406004.DXD   Report Date: 12/30/2003 4:05:50 P
Sample Name: Autocal3R                       Collected  : 12/30/2003 3:52:49 P
Inject #    : 4                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 12/30/2003 4:05:50 P
System Name: DX-120                           Detector    : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
*****

```

Component Report: Components Found

Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2.92	NH4	0.30	5363	45209	1	0.00
Totals		0.30	5363	45209		

File: NH406004.DXD Sample Autocal3R



\*\*\*\*\* AUTOMATIC CALIBRATION UPDATE \*\*\*\*\*

```

=====
Data File   : C:\PEAKNET\DATA\NH406005.DXD   Report Date: 12/30/2003 4:18:51 P
Sample Name: Autocal4R                       Collected  : 12/30/2003 4:05:50 P
Inject #    : 5                               Vial #     :
Method File: c:\peaknet\method\ctm-027.met   Last Update: 12/30/2003 4:05:50 P
System Name: DX-120                           Detector   : DX-120
Cal. Level  : 4                               Analyst    : Polk Lab
=====

```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.92	2.92	2.92	1.280e+005	7.107e+004	7.107e+004

```

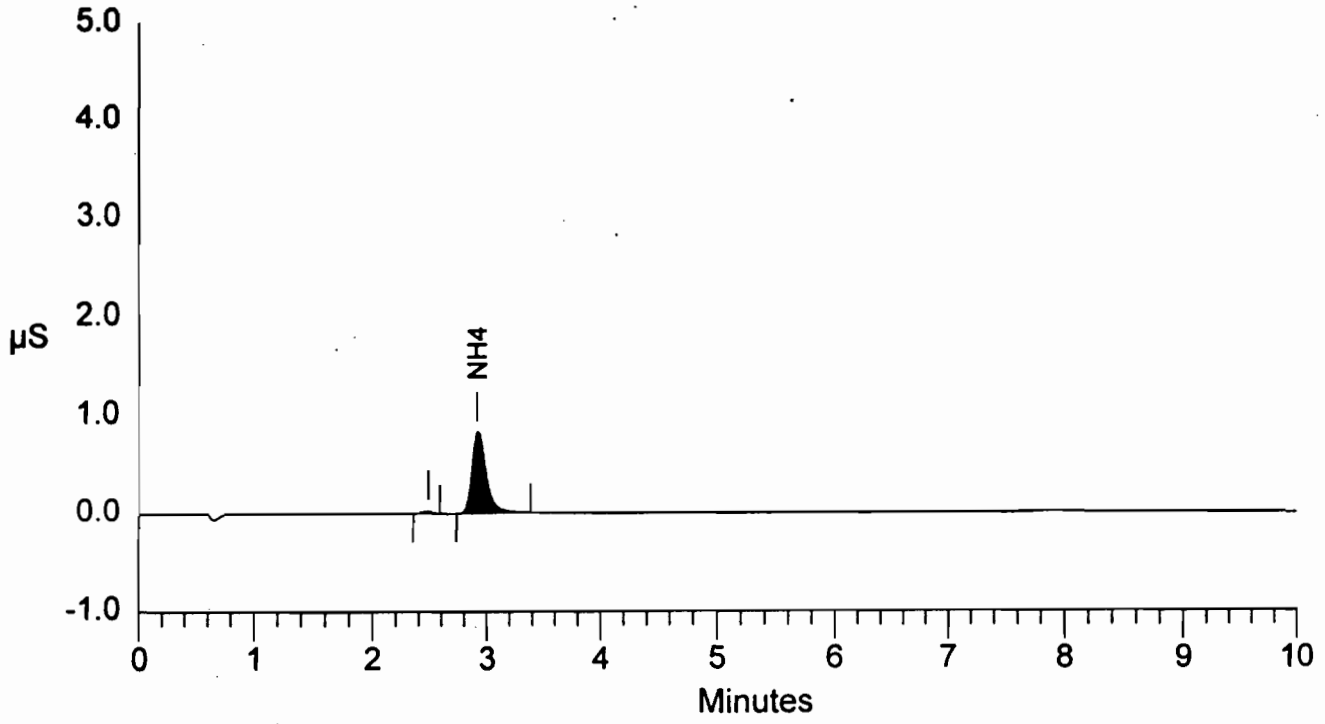
=====
Data File   : C:\PEAKNET\DATA\NH406005.DXD   Report Date: 12/30/2003 4:18:51 P
Sample Name: Autocal4R                       Collected  : 12/30/2003 4:05:50 P
Inject #    : 5                               Vial #     :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 12/30/2003 4:18:51 P
System Name: DX-120                           Detector   : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Comp Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	0.50	8199	71074	1	0.00
Totals			0.50	8199	71074		

File: NH406005.DXD Sample Autocal4R



AUTOMATIC CALIBRATION UPDATE

Data File : C:\PEAKNET\DATA\NH406006.DXD Report Date: 12/30/2003 4:31:52 P
Sample Name: Autocal5R Collected : 12/30/2003 4:18:52 P
Inject # : 6 Vial # :
Method File: c:\peaknet\method\ctm-027.met Last Update: 12/30/2003 4:18:51 P
System Name: DX-120 Detector : DX-120
Cal. Level : 5 Analyst : Polk Lab

COMPONENTS FOUND IN THIS RUN

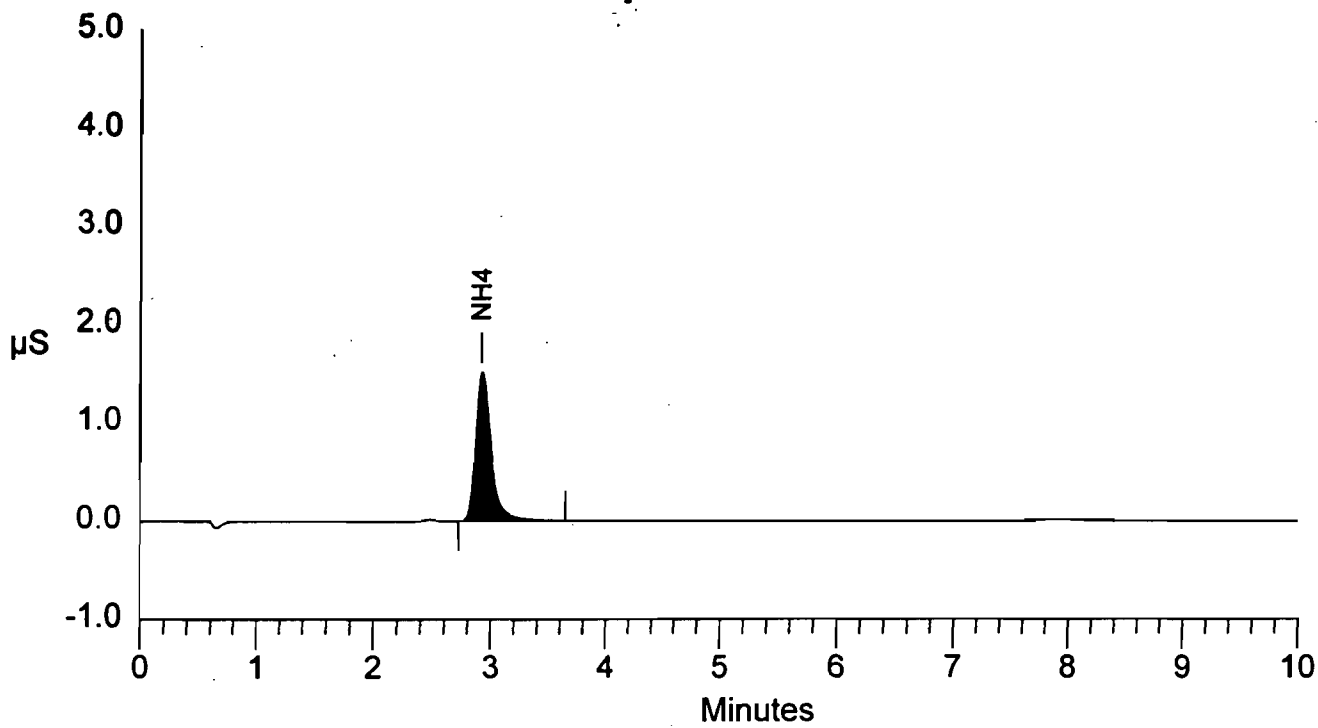
Table with 8 columns: COMP, COMPONENT, OLD RET.TIME, MEASURED RET.TIME, NEW RET.TIME, OLD RESPONSE, MEASURED RESPONSE, NEW RESPONSE. Row 1: 1 NH4, 2.92, 2.92, 2.92, 2.383e+005, 1.385e+005, 1.385e+005

Data File : C:\PEAKNET\DATA\NH406006.DXD Report Date: 12/30/2003 4:31:52 P
Sample Name: Autocal5R Collected : 12/30/2003 4:18:52 P
Inject # : 6 Vial # :
Method File: c:\peaknet\method\ctm-027.met Calibrated : 12/30/2003 4:31:52 P
System Name: DX-120 Detector : DX-120
Column Type: Ionpac CS12A Operator :
Data Points: 3000 Rate : 5.00 Hz
Module Name: DX-120 ID:50 05 d8 Moduleware : 1.00

Component Report: Components Found

Table with 7 columns: Ret. Num, Ret Time, Component Name, Concentration ug/ml, Height, Area, Bl. Code, %Delta. Row 1: 1, 2.92, NH4, 1.00, 14931, 138463, 1, 0.00. Totals: 1.00, 14931, 138463

**File: NH406006.DXD Sample Autocal5R**



\*\*\*\*\* AUTOMATIC CALIBRATION UPDATE \*\*\*\*\*

```

=====
Data File   : C:\PEAKNET\DATA\NH406007.DXD   Report Date: 12/30/2003 4:44:52 P
Sample Name: Autocal6R                       Collected  : 12/30/2003 4:31:52 P
Inject #    : 7                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Last Update: 12/30/2003 4:31:52 P
System Name: DX-120                           Detector    : DX-120
Cal. Level  : 6                               Analyst     : Polk Lab
=====
    
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.92	2.92	2.92	3.314e+005	2.491e+005	2.491e+005

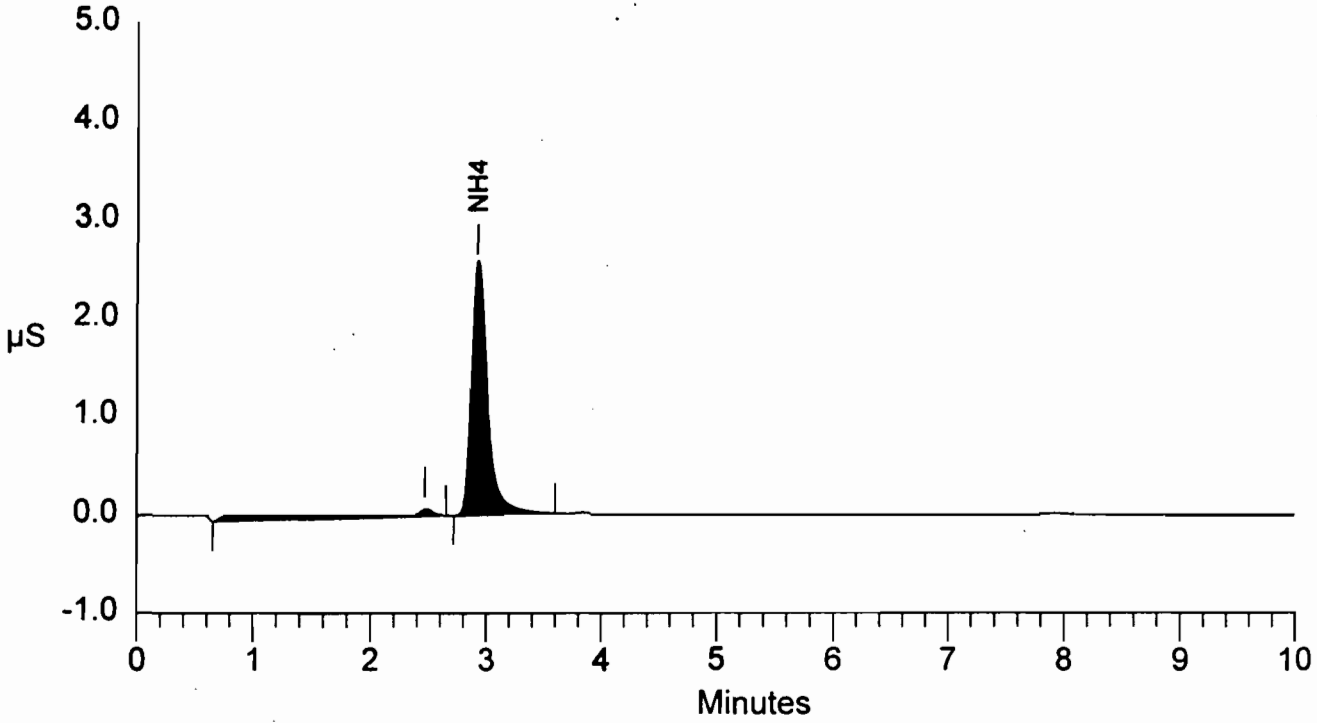
```

=====
Data File   : C:\PEAKNET\DATA\NH406007.DXD   Report Date: 12/30/2003 4:44:52 P
Sample Name: Autocal6R                       Collected  : 12/30/2003 4:31:52 P
Inject #    : 7                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 12/30/2003 4:44:52 P
System Name: DX-120                           Detector    : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2.92	NH4	2.00	25420	249149	2	0.00
Totals		2.00	25420	249149		

File: NH406007.DXD Sample Autocal6R





AUTOMATIC CALIBRATION UPDATE

```

*****
Data File   : C:\PEAKNET\DATA\NH406008.DXD   Report Date: 12/30/2003 4:57:53 P
Sample Name: Autocal7R                       Collected  : 12/30/2003 4:44:53 P
Inject #    : 8                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Last Update: 12/30/2003 4:44:52 P
System Name: DX-120                           Detector    : DX-120
Cal. Level  : 7                               Analyst     : Polk Lab
*****

```

COMPONENTS FOUND IN THIS RUN

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.92	2.92	2.92	5.016e+005	3.433e+005	3.433e+005

```

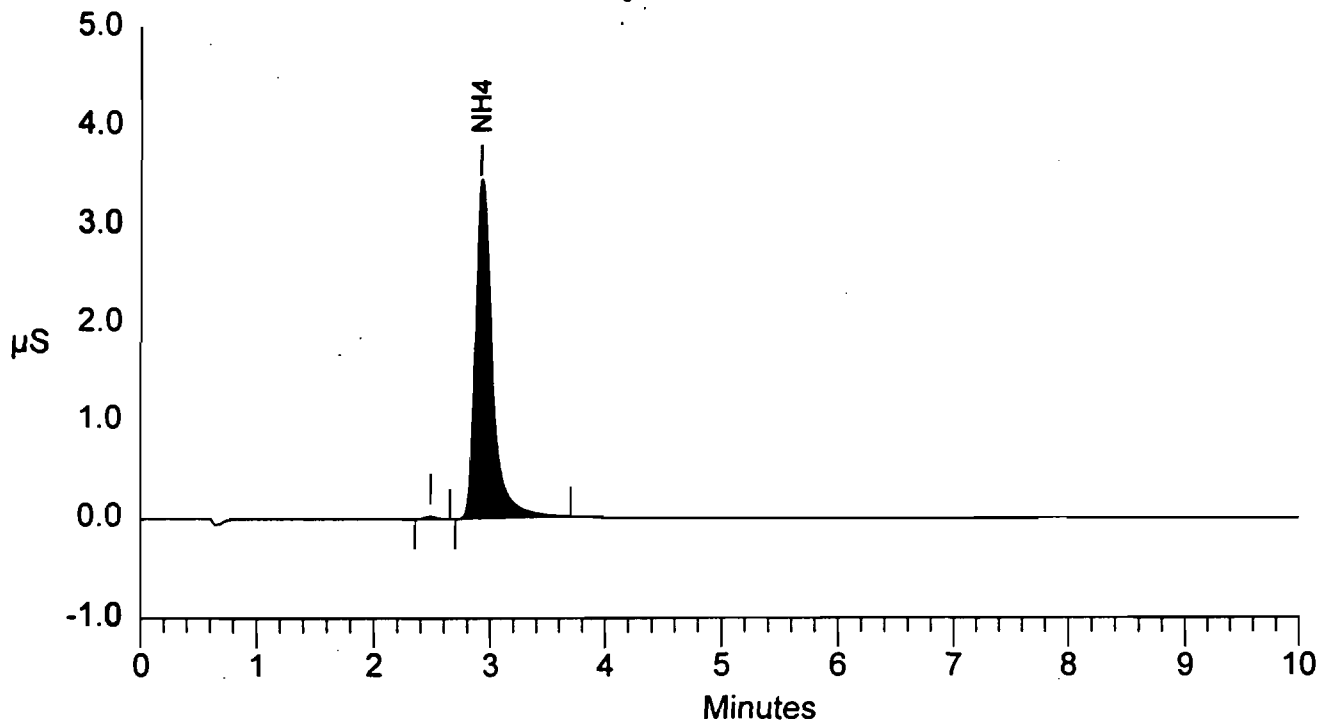
*****
Data File   : C:\PEAKNET\DATA\NH406008.DXD   Report Date: 12/30/2003 4:57:53 P
Sample Name: Autocal7R                       Collected  : 12/30/2003 4:44:53 P
Inject #    : 8                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 12/30/2003 4:57:53 P
System Name: DX-120                           Detector    : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
*****

```

Component Report: Components Found

P. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	3.00	33884	343344	1	0.00
Totals			3.00	33884	343344		

**File: NH406008.DXD Sample Autocal7R**



AUTOMATIC CALIBRATION UPDATE

```

*****
Data File   : C:\PEAKNET\DATA\NH405009.DXD   Report Date: 12/30/2003 5:10:54 P
Sample Name: Autocal8R                       Collected  : 12/30/2003 4:57:54 P
Inject #    : 9                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Last Update: 12/30/2003 4:57:53 P
System Name : DX-120                          Detector    : DX-120
Cal. Level  : 8                               Analyst     : Polk Lab
*****

```

COMPONENTS FOUND IN THIS RUN

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.92	2.92	2.92	7.232e+005	5.199e+005	5.199e+005

```

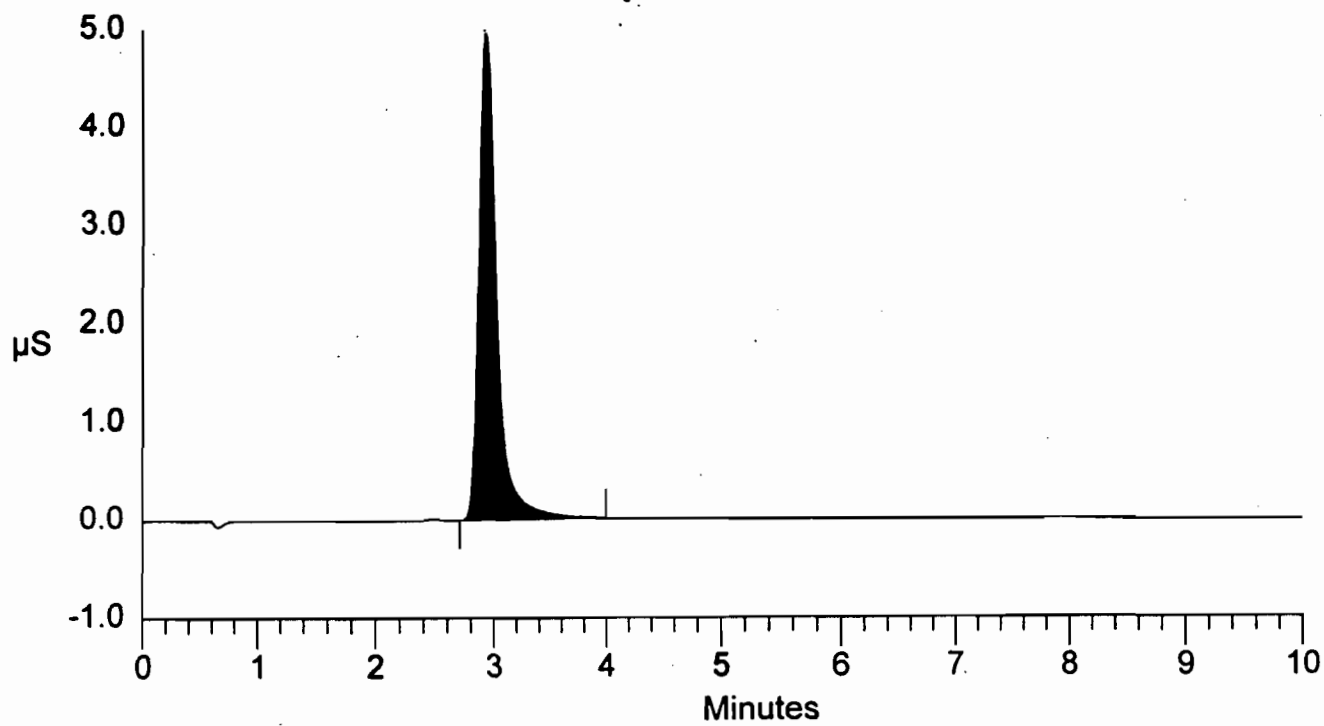
*****
Data File   : C:\PEAKNET\DATA\NH405009.DXD   Report Date: 12/30/2003 5:10:54 P
Sample Name: Autocal8R                       Collected  : 12/30/2003 4:57:54 P
Inject #    : 9                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name : DX-120                          Detector    : DX-120
Column Type : Ionpac CS12A                    Operator    :
Data Points : 3000                             Rate       : 5.00 Hz
Module Name : DX-120                           ID:50 05 d8 Moduleware : 1.00
*****

```

Component Report: Components Found

El. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.92	NH4	5.00	48651	519891	1	0.00
Totals			5.00	48651	519891		

File: NH405009.DXD Sample Autocal8R



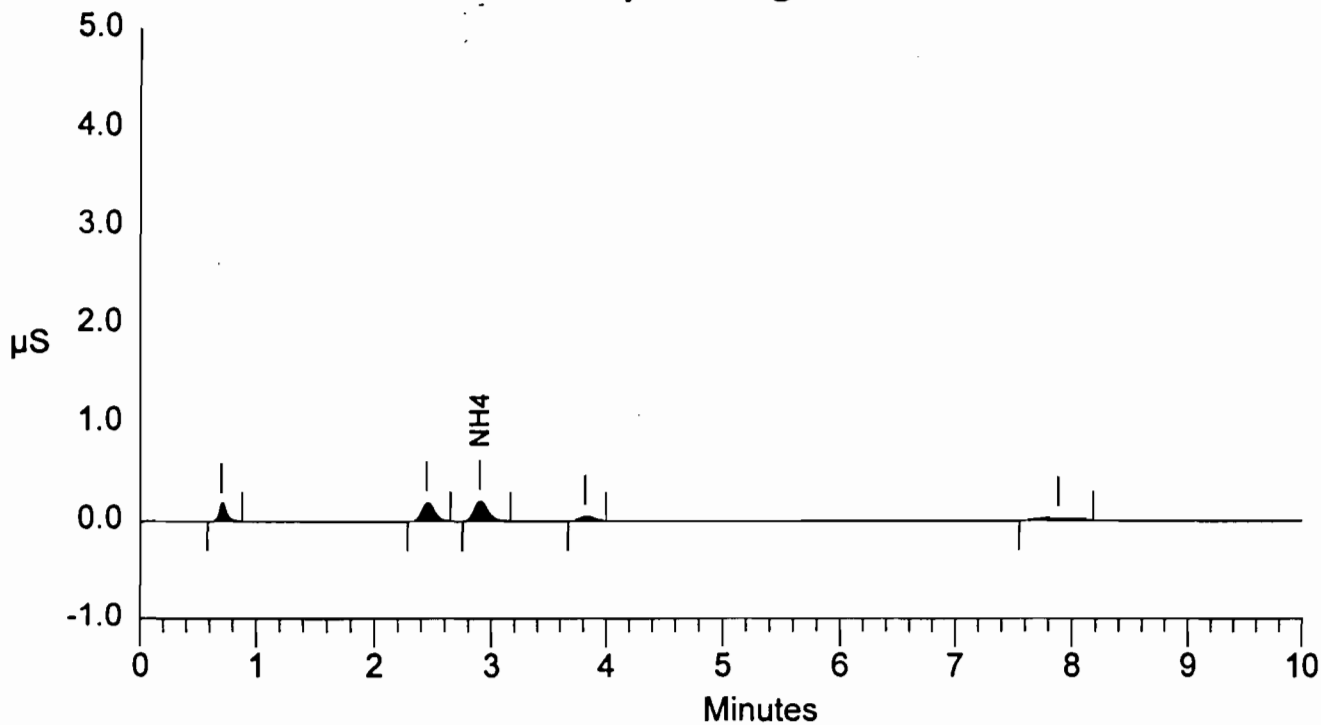
```

=====
Data File   : C:\PEAKNET\DATA\NH405010.DXD   Report Date: 12/30/2003 5:23:55 P
Sample Name: Reagent Blank                   Collected  : 12/30/2003 5:10:54 P
Inject #    : 10                             Vial #     :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 12/30/2003 5:10:54 P
System Name: DX-120                          Detector   : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                            ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Nm	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
3	2.90	NH4	0.11	2072	17179	1	0.00
Totals			0.11	2072	17179		

File: NH405010.DXD Sample Reagent Blank



```

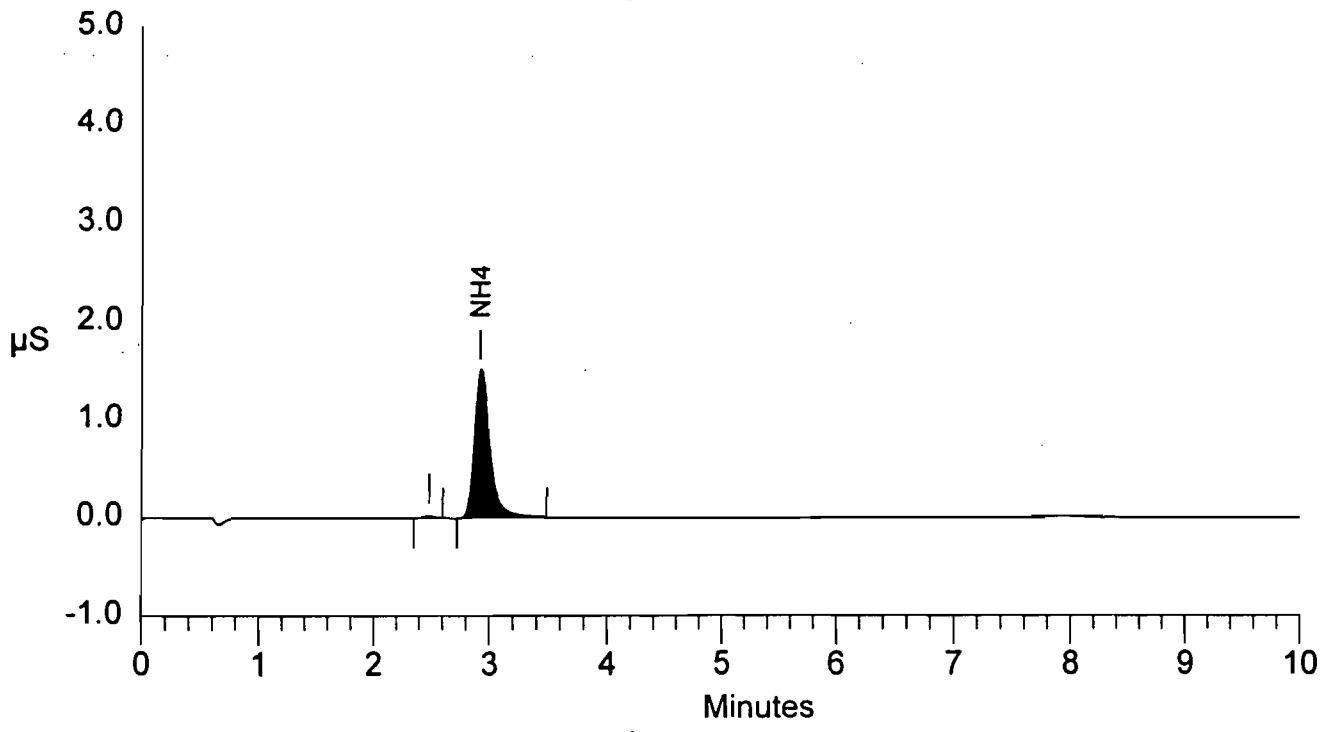
=====
Data File   : C:\PEAKNET\DATA\NH405011.DXD   Report Date: 12/30/2003 5:36:55 P
Sample Name: Cal. Std 1 (1.00 mg/l)         Collected  : 12/30/2003 5:23:55 P
Inject #    : 11                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met Calibrated : 12/30/2003 5:10:54 P
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator     :
Data Points : 3000                           Rate        : 5.00 Hz
Module Name : DX-120                         ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	1.01	14896	136214	1	0.00
Totals			1.01	14896	136214		

**File: NH405011.DXD Sample Cal. Std 1 (1.00 mg/l)**



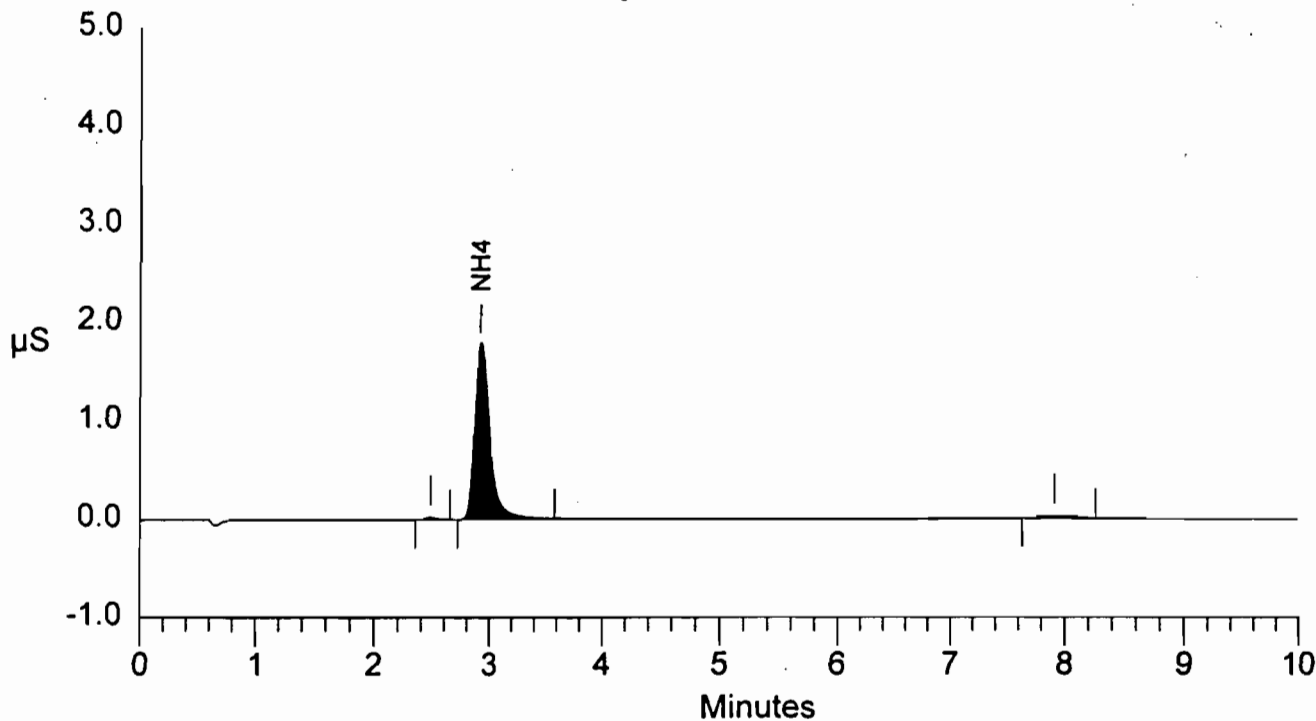
```

=====
Data File   : C:\PEAKNET\DATA\NH405012.DXD   Report Date: 12/30/2003 5:50:02 P
Sample Name: Orion Standard T.V.= 1.29       Collected  : 12/30/2003 5:36:56 P
Inject #    : 12                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 12/30/2003 5:10:54 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	1.26	17650	165609	1	0.00
Totals			1.26	17650	165609		

**File: NH405012.DXD Sample Orion Standard T.V.= 1.29**



```

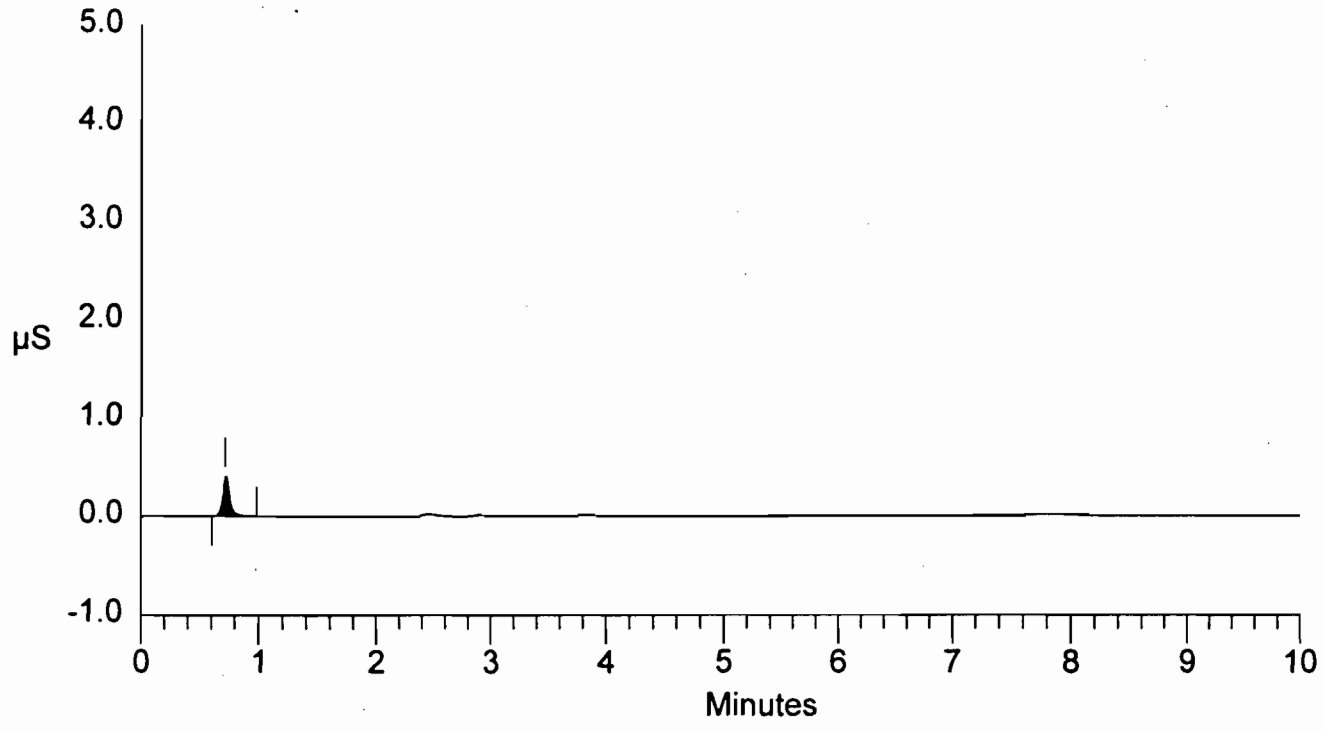
=====
Data File   : C:\PEAKNET\DATA\NH405013.DXD   Report Date: 12/30/2003 6:03:03 P
Sample Name : 12/17/03 Blank                 Collected  : 12/30/2003 5:50:03 P
Inject #    : 13                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate        : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
Totals			0.00	0	0		

**File: NH405013.DXD Sample 12/17/03 Blank**





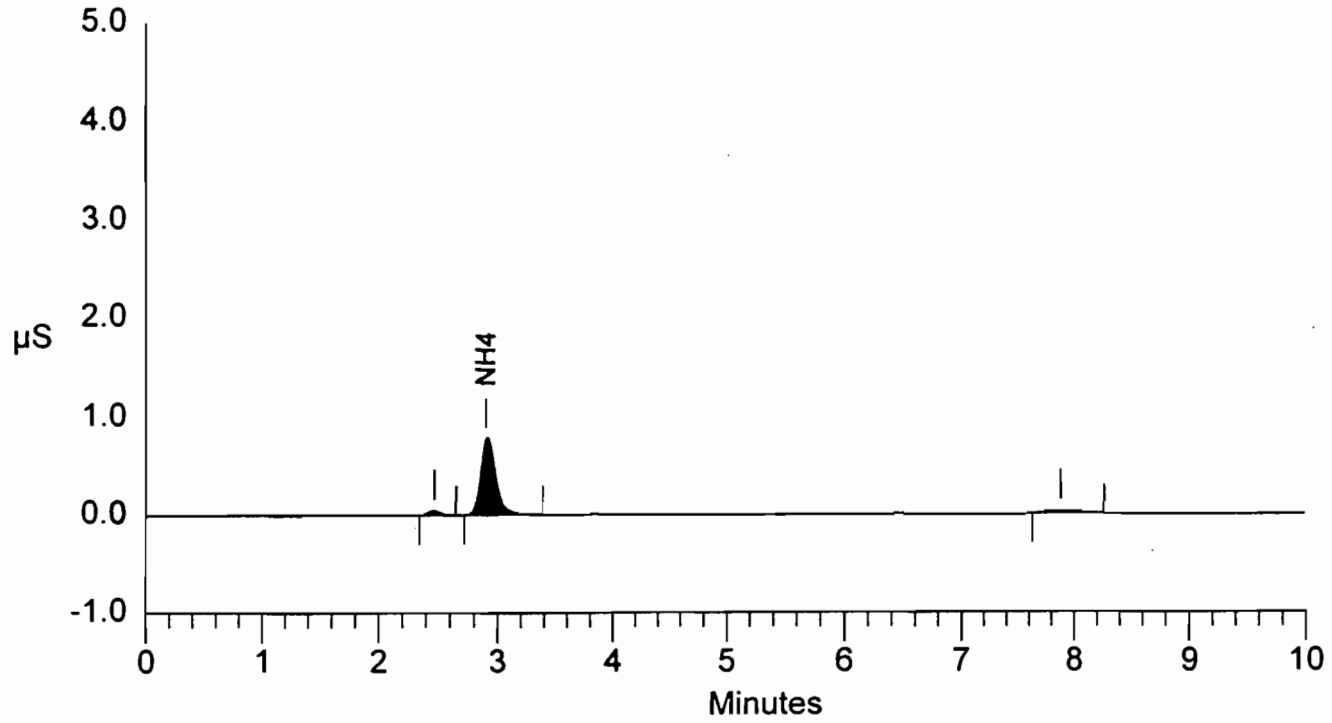
```

=====
Data File   : C:\PEAKNET\DATA\NH405014.DXD   Report Date: 12/30/2003 6:16:03 P
Sample Name: 12/17/03 Run 1 Impinger #1     Collected  : 12/30/2003 6:03:03 P
Inject #    : 14                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator     :
Data Points: 3000                            Rate        : 5.00 Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. No.	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.90	NH4	0.49	7739	69598	1	0.00
Totals			0.49	7739	69598		

**File: NH405014.DXD Sample 12/17/03 Run 1 Impinger #1**

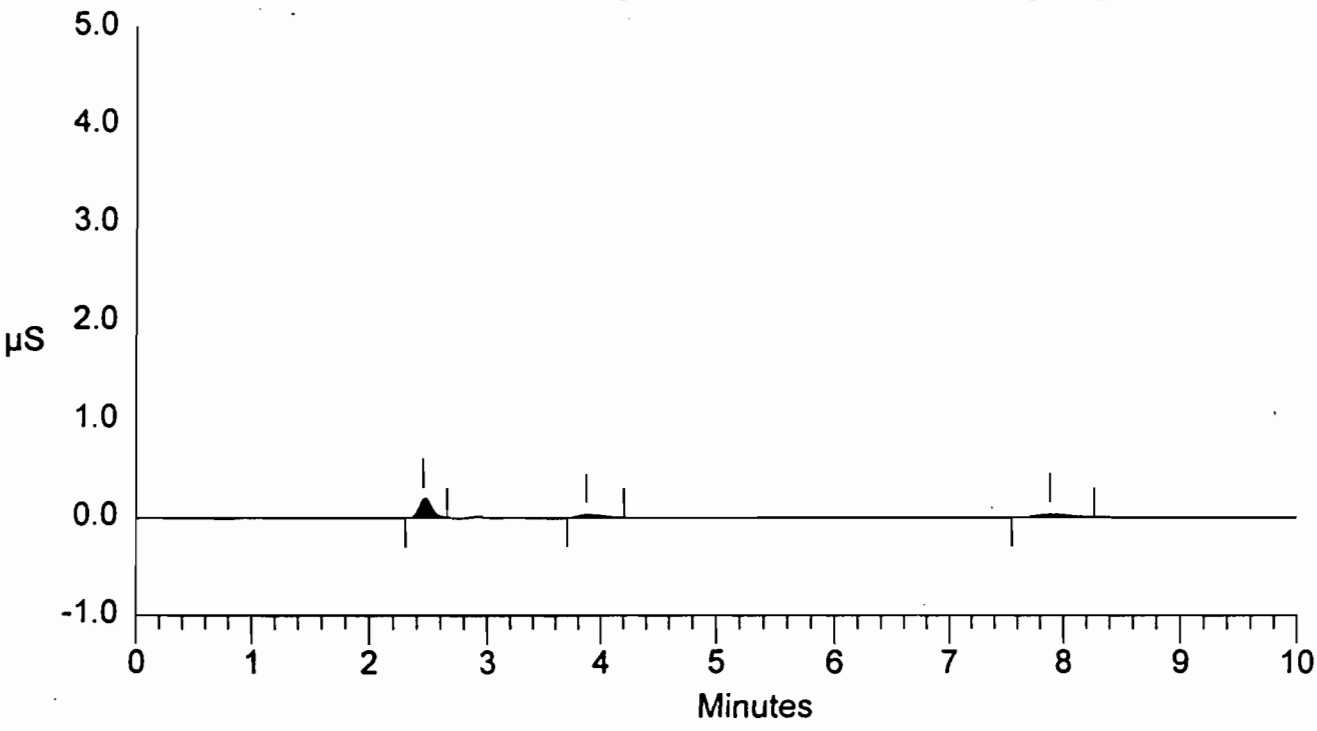


=====  
Data File : C:\PEAKNET\DATA\NH405015.DXD Report Date: 12/30/2003 6:29:04 P  
Sample Name: 12/17/03 Run 1 Impinger #2 Collected : 12/30/2003 6:16:04 P  
Inject # : 15 Vial # :  
Method File: c:\peaknet\method\ctm-027.met Calibrated : 12/30/2003 5:10:54 P  
System Name: DX-120 Detector : DX-120  
Column Type: Ionpac CS12A Operator :  
Data Points: 3000 Rate : 5.00 Hz  
Module Name: DX-120 ID:50 05 d8 Moduleware : 1.00  
=====

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
Totals			0.00	0	0		

File: NH405015.DXD Sample 12/17/03 Run 1 Impinger #2



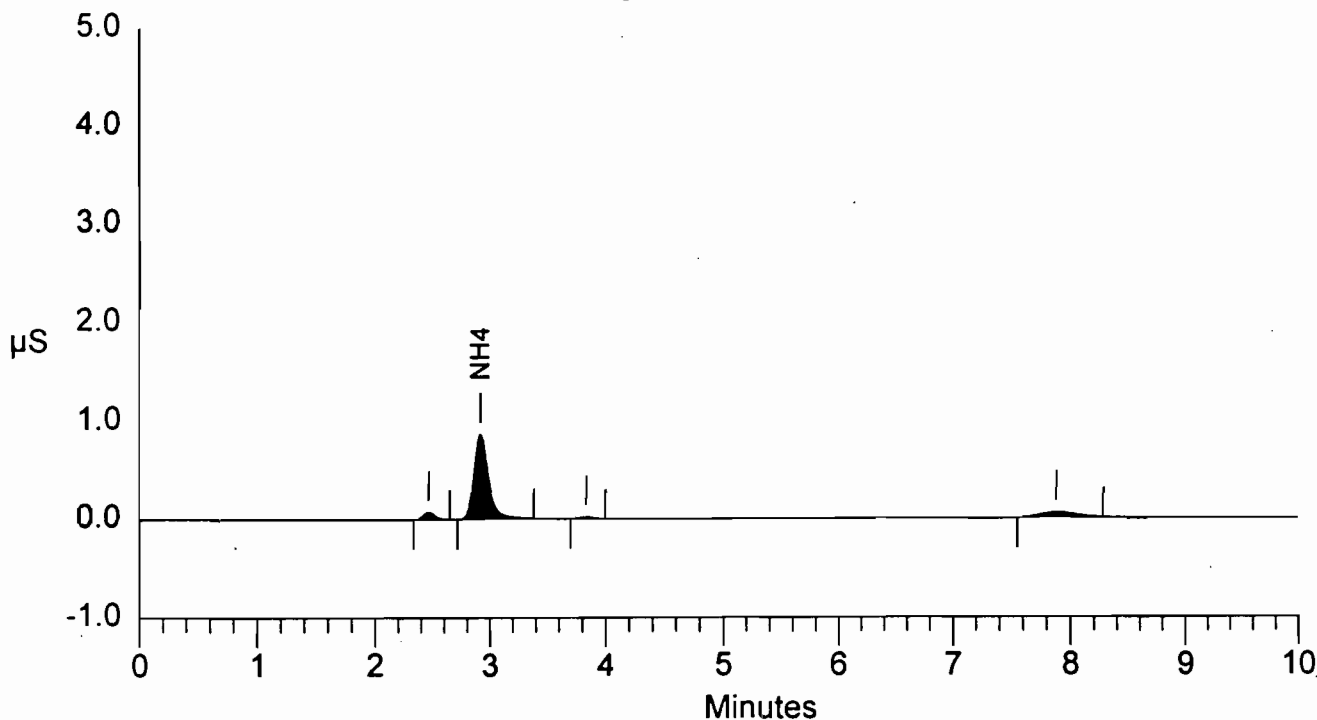
```

=====
Data File   : C:\PEAKNET\DATA\NH405016.DXD   Report Date: 12/30/2003 6:42:05 P
Sample Name: 12/17/03 Run 2 Impinger #1      Collected  : 12/30/2003 6:29:05 P
Inject #    : 16                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 12/30/2003 5:10:54 P
System Name: DX-120                           Detector    : DX-120
Column Type: Ionpac CS12A                       Operator    :
Data Points: 3000                               Rate       : 5.00 Hz
Module Name: DX-120                             ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	0.53	8643	75727	1	0.00
Totals			0.53	8643	75727		

**File: NH405016.DXD Sample 12/17/03 Run 2 Impinger #1**



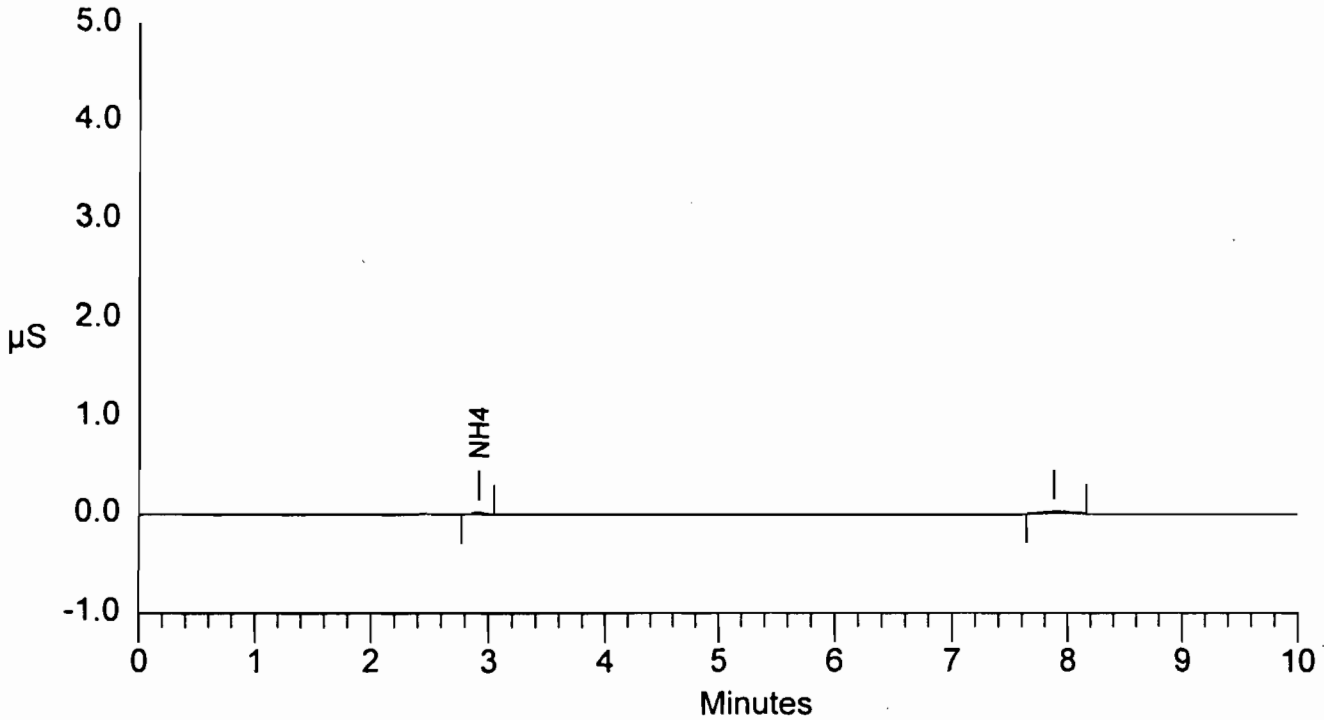
```

=====
Data File   : C:\PEAKNET\DATA\NH405017.DXD   Report Date: 12/30/2003 6:55:11 P
Sample Name : 12/17/03 Run 2 Impinger #2     Collected  : 12/30/2003 6:42:05 P
Inject #    : 17                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name : DX-120                           Detector   : DX-120
Column Type : Ionpac CS12A                     Operator    :
Data Points : 3000                             Rate       : 5.00 Hz
Module Name : DX-120                           ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.92	NH4	0.00	236	1723	1	0.00
Totals			0.00	236	1723		

**File: NH405017.DXD Sample 12/17/03 Run 2 Impinger #2**



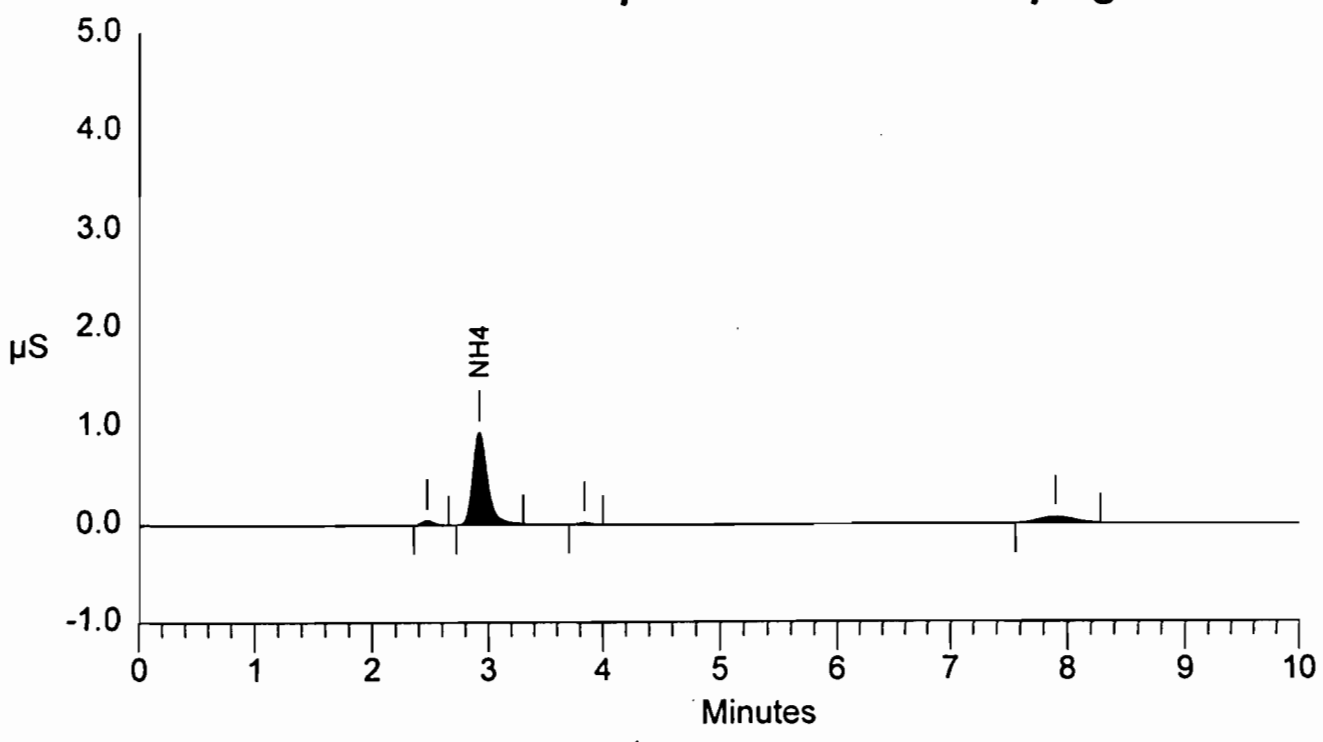
```

=====
Data File   : C:\PEAKNET\DATA\NH405018.DXD   Report Date: 12/30/2003 7:08:15 P
Sample Name: 12/17/03 Run 3 Impinger #1     Collected  : 12/30/2003 6:55:14 P
Inject #    : 18                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name : DX-120                          Detector    : DX-120
Column Type : Ionpac CS12A                    Operator    :
Data Points : 3000                            Rate       : 5.00   Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====
  
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	0.57	9368	81193	1	0.00
Totals			0.57	9368	81193		

**File: NH405018.DXD Sample 12/17/03 Run 3 Impinger #1**



```

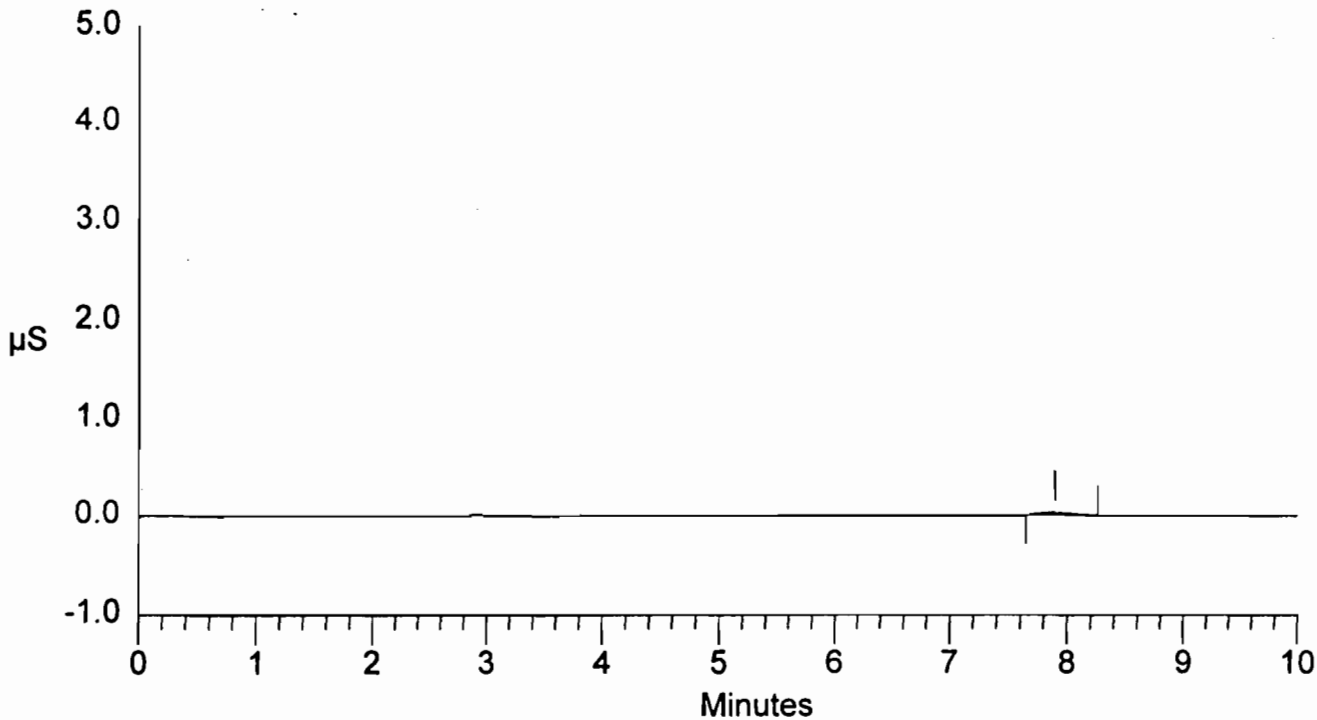
=====
Data File   : C:\PEAKNET\DATA\NH405019.DXD   Report Date: 12/30/2003 7:21:16 P
Sample Name: 12/17/03 Run 3 Impinger #2     Collected  : 12/30/2003 7:08:15 P
Inject #    : 19                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
Totals			0.00	0	0		

**File: NH405019.DXD Sample 12/17/03 Run 3 Impinger #2**

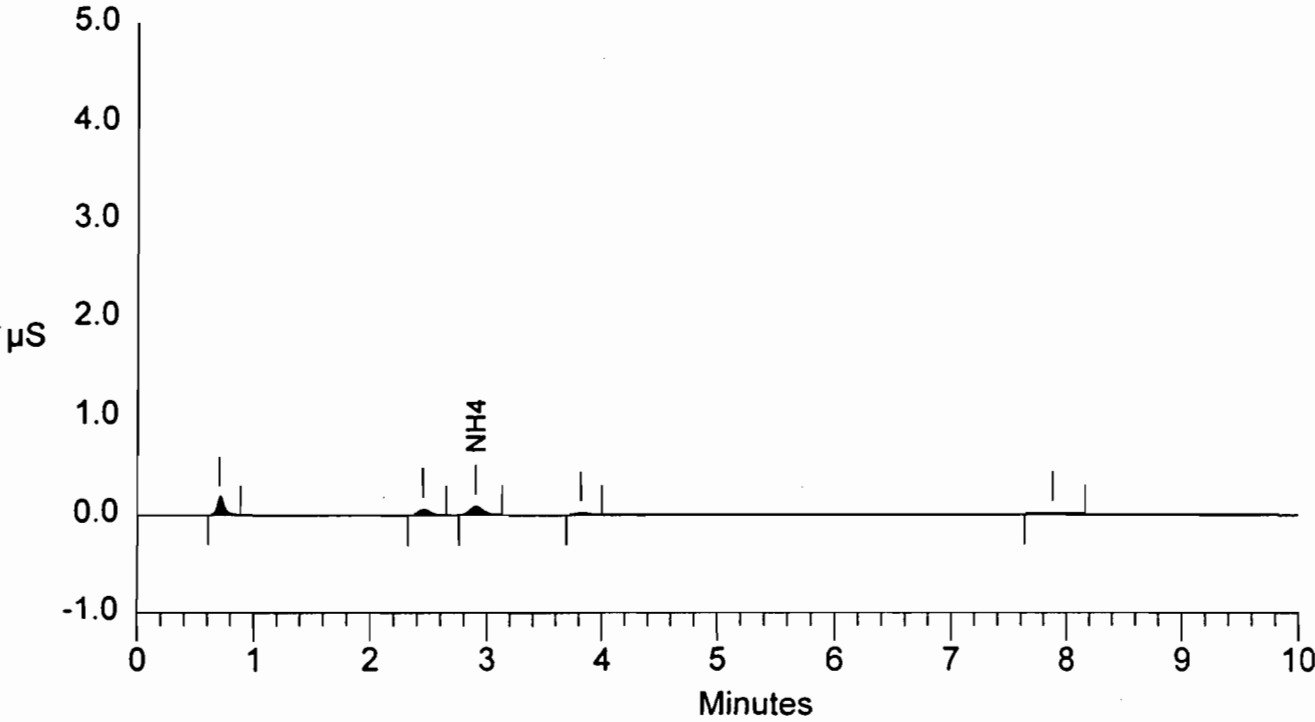


=====  
Data File : C:\PEAKNET\DATA\NH405020.DXD Report Date: 12/30/2003 7:34:16 P  
Sample Name: Reagent Blank Collected : 12/30/2003 7:21:16 P  
Inject # : 20 Vial # :  
Method File: c:\peaknet\method\ctm-027.met Calibrated : 12/30/2003 5:10:54 P  
System Name: DX-120 Detector : DX-120  
Column Type: Ionpac CS12A Operator :  
Data Points: 3000 Rate : 5.00 Hz  
Module Name: DX-120 ID:50 05 d8 Moduleware : 1.00  
=====

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
3	2.90	NH4	0.04	911	7305	1	0.00
Totals			0.04	911	7305		

File: NH405020.DXD Sample Reagent Blank



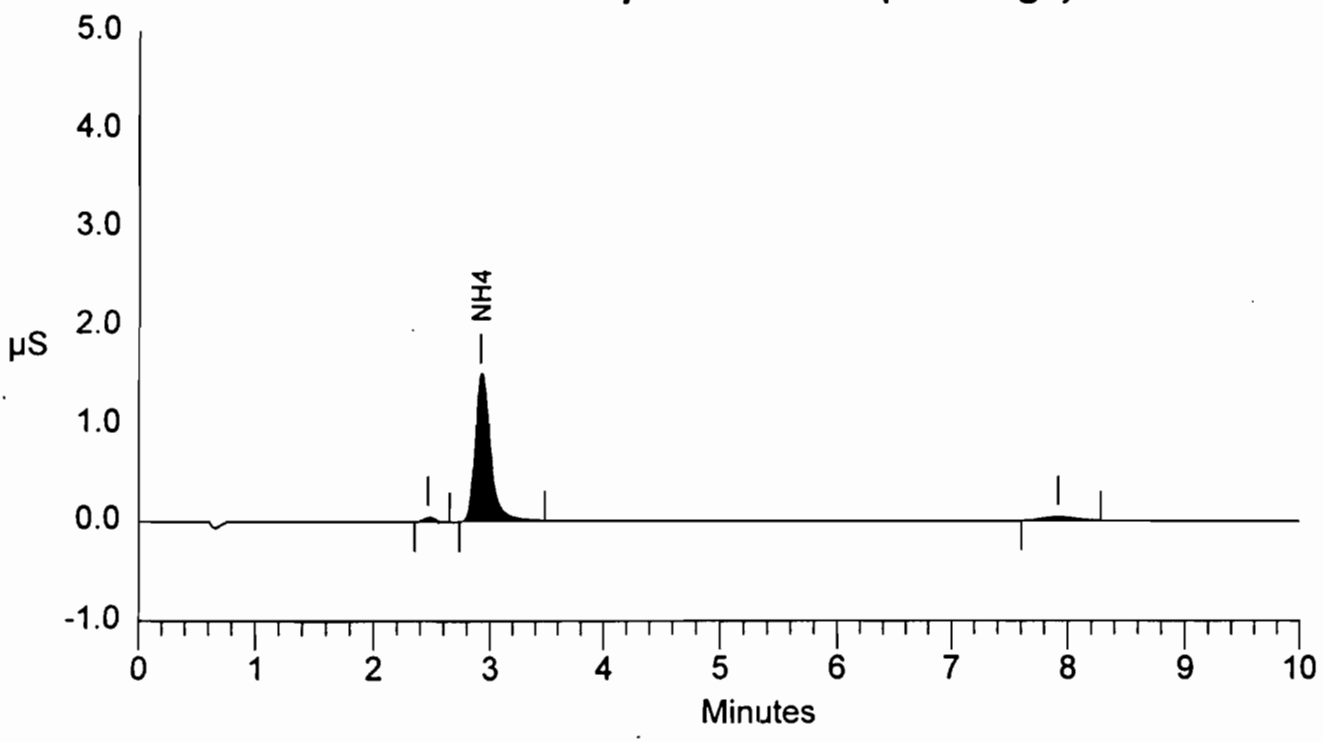
```

=====
Data File   : C:\PEAKNET\DATA\NH405021.DXD   Report Date: 12/30/2003 7:47:17 P
Sample Name : Cal Std 1 (1.00 mg/l)          Collected  : 12/30/2003 7:34:17 P
Inject #    : 21                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. No	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	1.01	14947	136477	1	0.00
Totals			1.01	14947	136477		

**File: NH405021.DXD Sample Cal Std 1 (1.00 mg/l)**





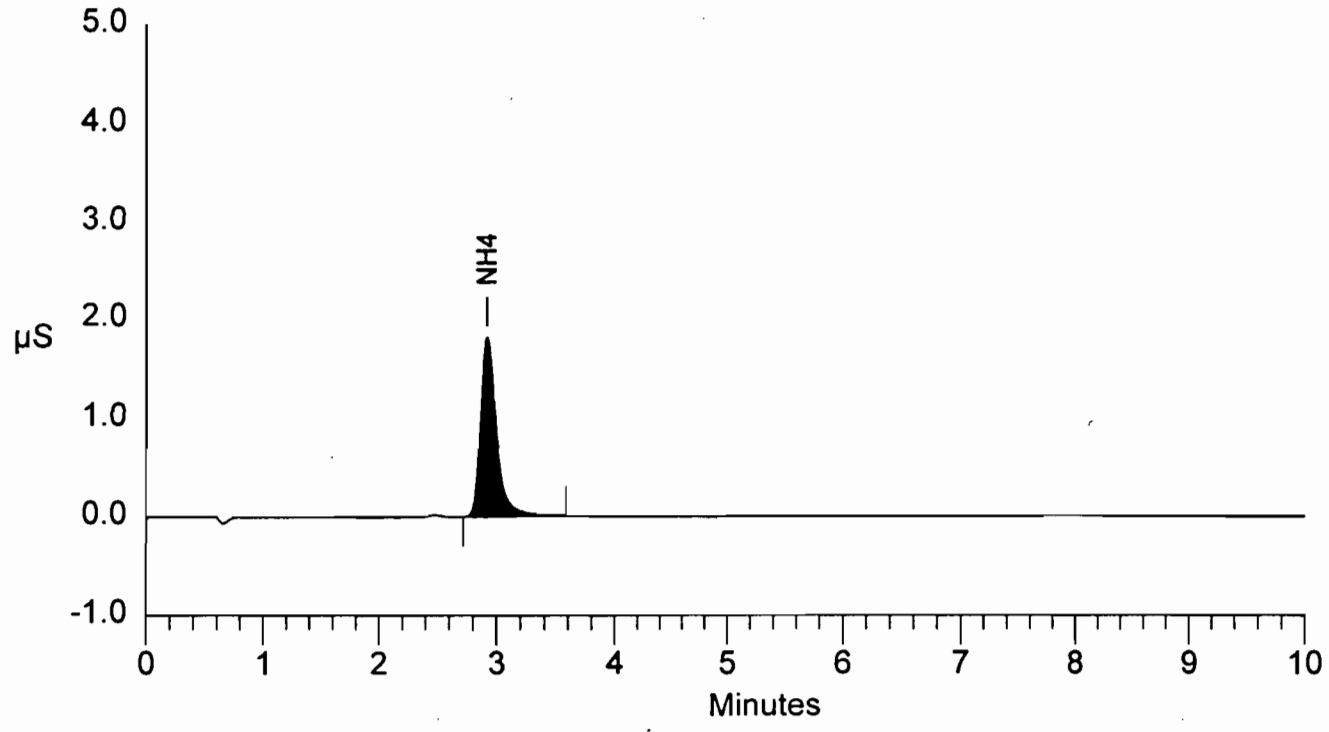
```

=====
Data File   : C:\PEAKNET\DATA\NH405022.DXD   Report Date: 12/30/2003 8:00:18 P
Sample Name: Orion Standard T.V. = 1.29     Collected  : 12/30/2003 7:47:17 P
Inject #    : 22                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 12/30/2003 5:10:54 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====
  
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.92	NH4	1.27	17995	166918	1	0.00
Totals			1.27	17995	166918		

**File: NH405022.DXD Sample Orion Standard T.V. = 1.29**

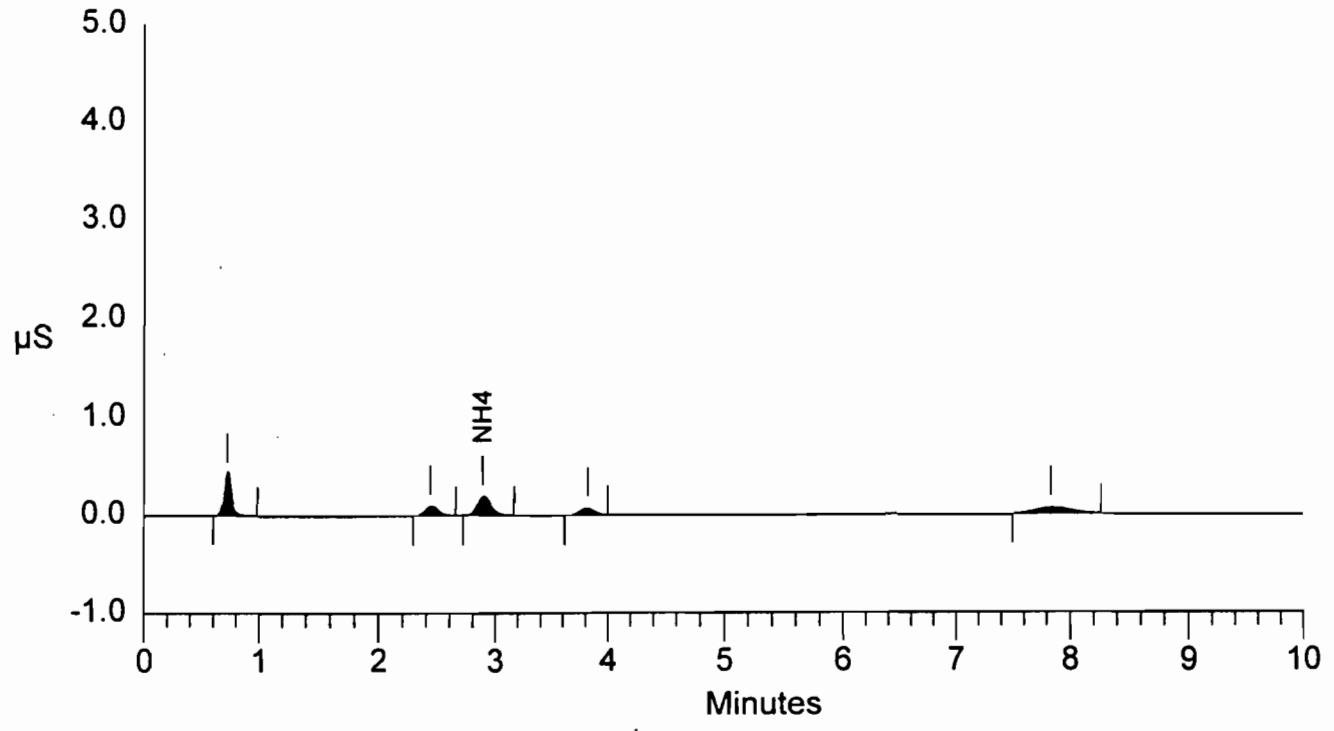


=====  
Data File : C:\PEAKNET\DATA\NH405023.DXD Report Date: 12/30/2003 8:13:18 P  
Sample Name: 12/19/03 Blank Collected : 12/30/2003 8:00:18 P  
Inject # : 23 Vial # :  
Method File: c:\peaknet\method\ctm-027.met Calibrated : 12/30/2003 5:10:54 P  
System Name: DX-120 Detector : DX-120  
Column Type: Ionpac CS12A Operator :  
Data Points: 3000 Rate : 5.00 Hz  
Module Name: DX-120 ID:50 05 d8 Moduleware : 1.00  
=====

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
3	2.88	NH4	0.11	1956	17258	1	0.00
Totals			0.11	1956	17258		

File: NH405023.DXD Sample 12/19/03 Blank



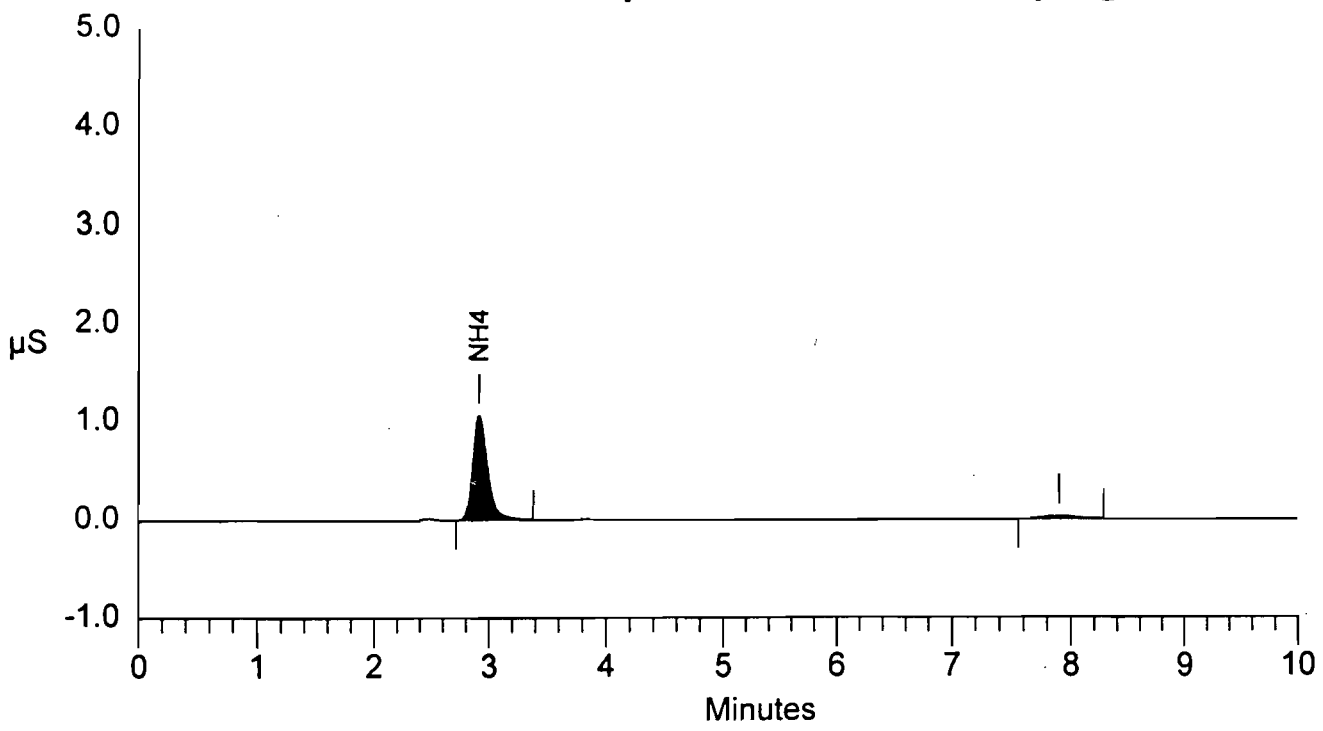
BEST AVAILABLE COPY

=====  
Data File : C:\PEAKNET\DATA\NH404024.DXD Report Date: 12/30/2003 8:26:19 P  
Sample Name: 12/19/03 Run 1 Impinger #1 Collected : 12/30/2003 8:13:19 P  
Inject # : 24 Vial # :  
Method File: c:\peaknet\method\ctm-027.met Calibrated : 12/30/2003 5:10:54 P  
System Name: DX-120 Detector : DX-120  
Column Type: Ionpac CS12A Operator :  
Data Points: 3000 Rate : 5.00 Hz  
Module Name: DX-120 ID:50 05 d8 Moduleware : 1.00  
=====

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.92	NH4	0.67	10658	94409	1	0.00
Totals			0.67	10658	94409		

File: NH404024.DXD Sample 12/19/03 Run 1 Impinger #1



```

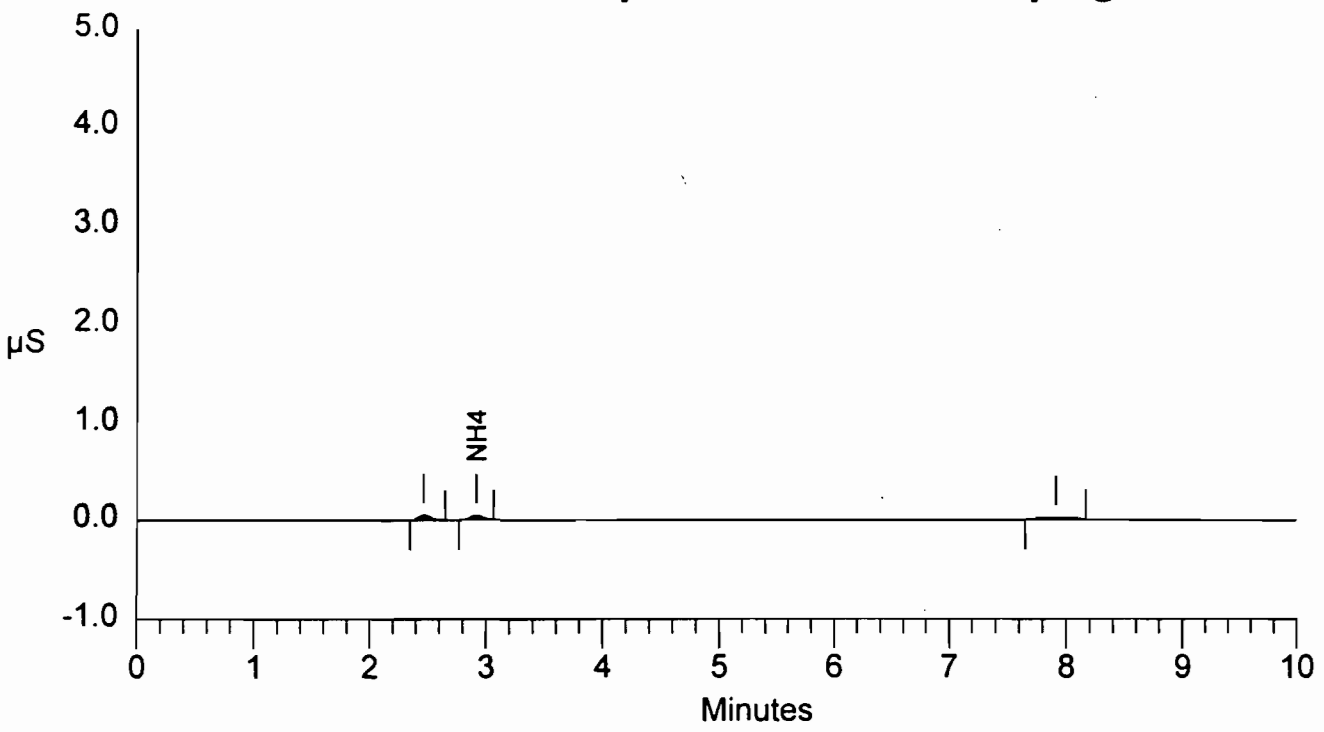
=====
Data File   : C:\PEAKNET\DATA\NH404025.DXD   Report Date: 12/30/2003 8:39:20 P
Sample Name: 12/19/03 Run 1 Impinger #2     Collected  : 12/30/2003 8:26:20 P
Inject #    : 25                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                            Rate       : 5.00 Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	0.02	483	3523	1	0.00
Totals			0.02	483	3523		

**File: NH404025.DXD Sample 12/19/03 Run 1 Impinger #2**



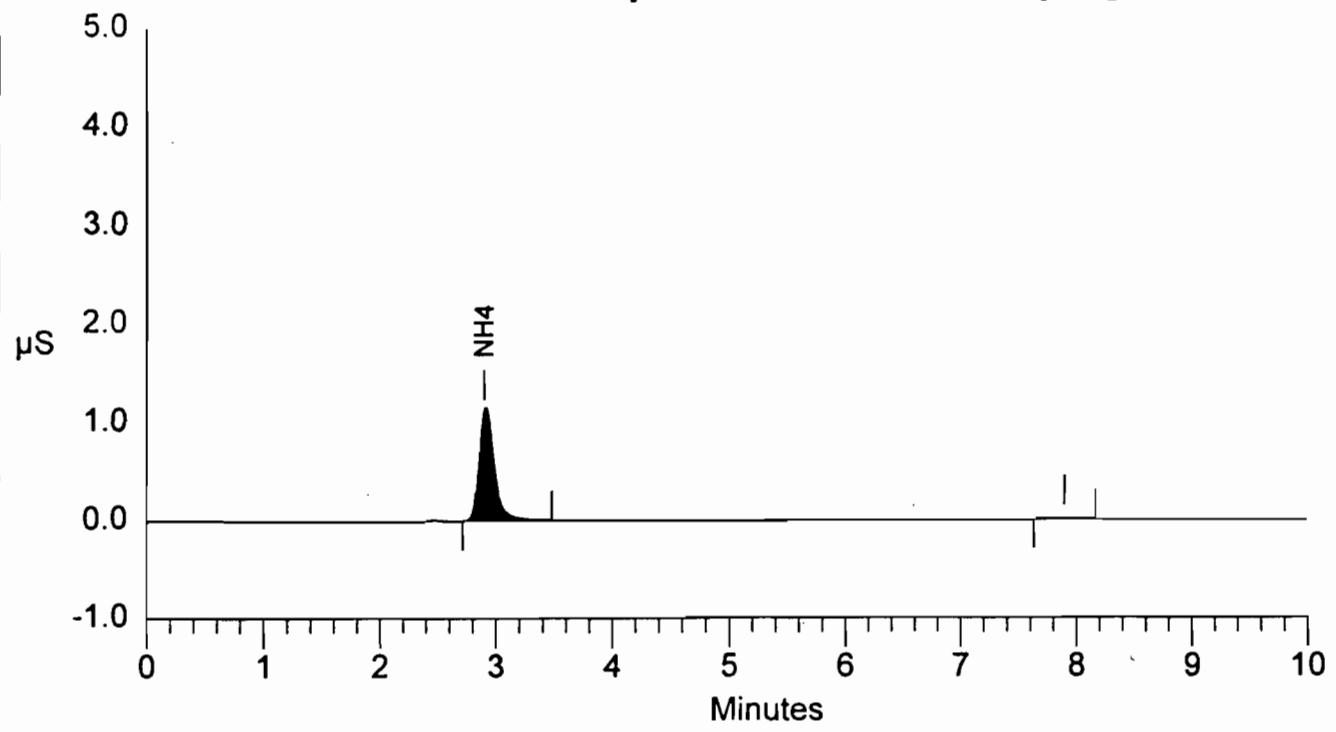
```

=====
Data File   : C:\PEAKNET\DATA\NH404026.DXD   Report Date: 12/30/2003 8:52:21 P
Sample Name : 12/19/03 Run 2 Impinger #1     Collected  : 12/30/2003 8:39:21 P
Inject #    : 26                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name : DX-120                           Detector    : DX-120
Column Type : Ionpac CS12A                     Operator    :
Data Points : 3000                             Rate       : 5.00 Hz
Module Name : DX-120                           ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.90	NH4	0.75	11140	103915	1	0.00
Totals			0.75	11140	103915		

**File: NH404026.DXD Sample 12/19/03 Run 2 Impinger #1**

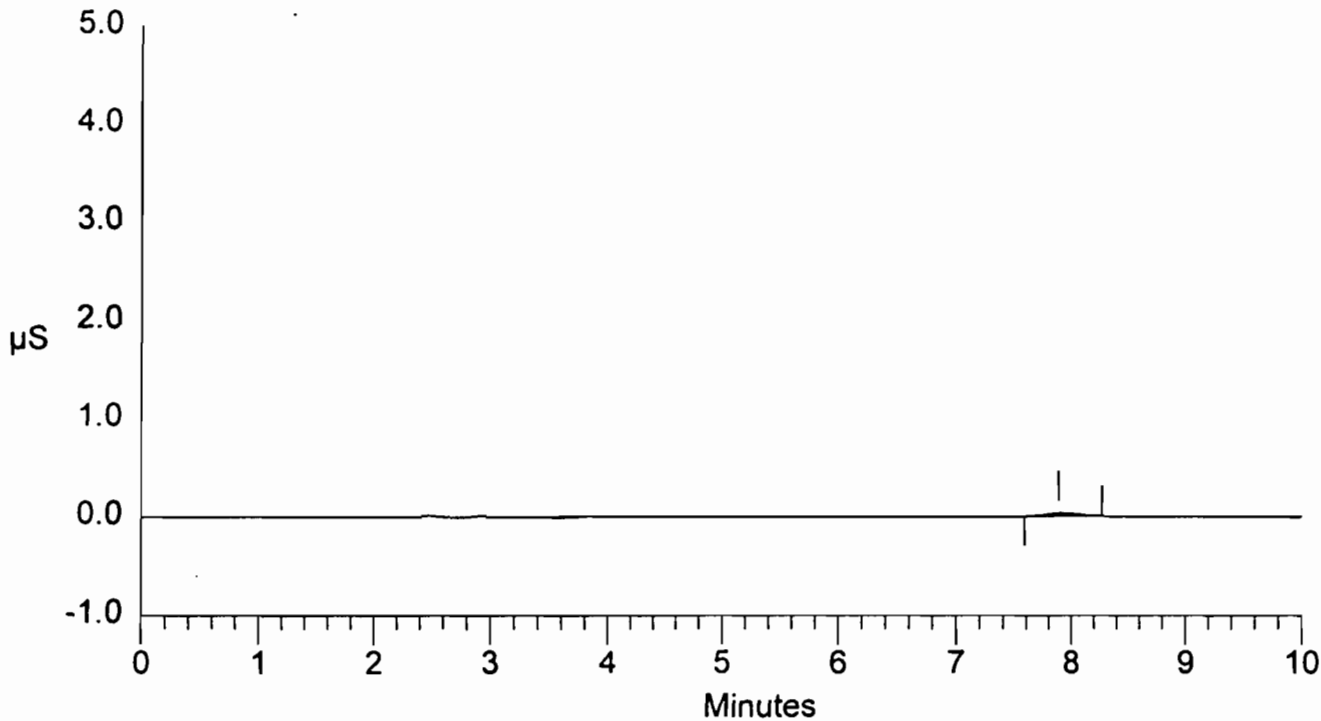


=====  
Data File : C:\PEAKNET\DATA\NH404027.DXD Report Date: 12/30/2003 9:05:21 P  
Sample Name: 12/19/03 Run 2 Impinger #2 Collected : 12/30/2003 8:52:21 P  
Inject # : 27 Vial # :  
Method File: c:\peaknet\method\ctm-027.met Calibrated : 12/30/2003 5:10:54 P  
System Name: DX-120 Detector : DX-120  
Column Type: Ionpac CS12A Operator :  
Data Points: 3000 Rate : 5.00 Hz  
Module Name: DX-120 ID:50 05 d8 Moduleware : 1.00  
=====

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
Totals			0.00	0	0		

**File: NH404027.DXD Sample 12/19/03 Run 2 Impinger #2**



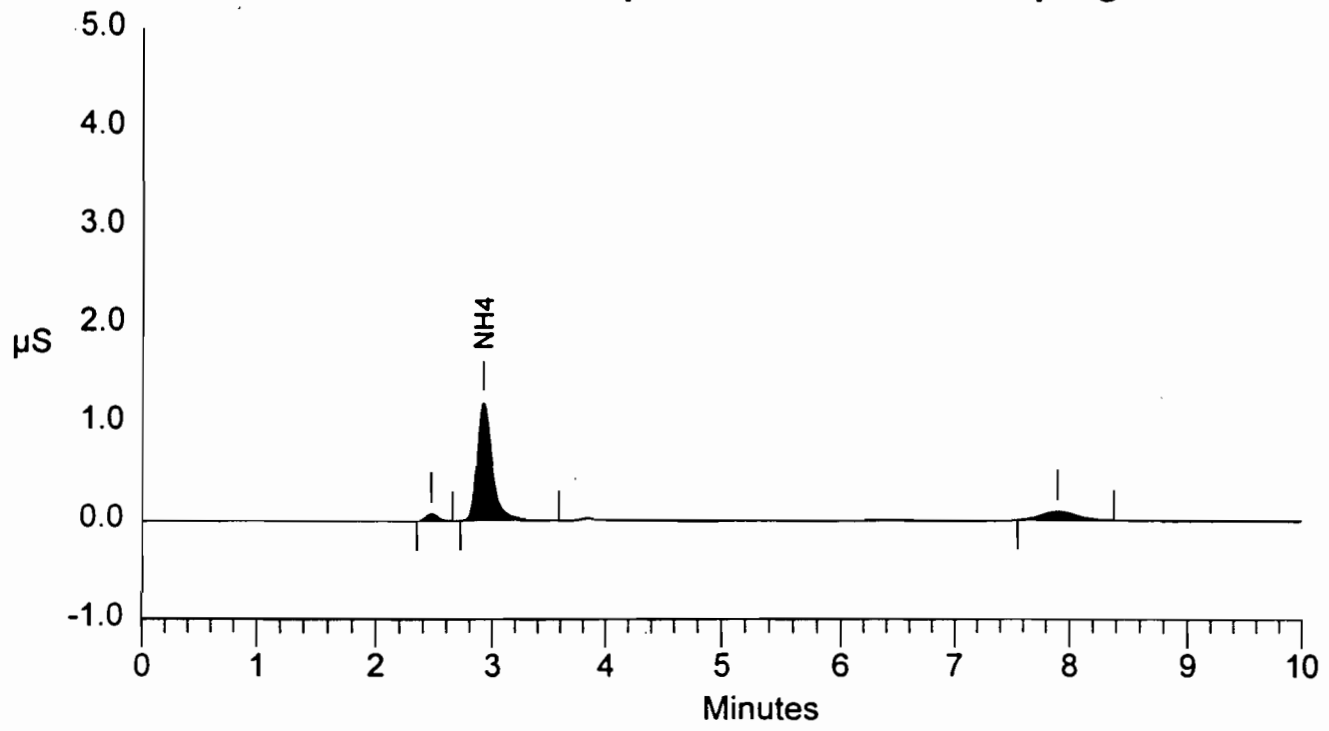
```

=====
Data File   : C:\PEAKNET\DATA\NH404028.DXD   Report Date: 12/30/2003 9:18:22 P
Sample Name: 12/19/03 Run 3 Impinger #1     Collected  : 12/30/2003 9:05:22 P
Inject #    : 28                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator     :
Data Points: 3000                            Rate        : 5.00   Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	0.79	11912	109647	1	0.00
Totals			0.79	11912	109647		

**File: NH404028.DXD Sample 12/19/03 Run 3 Impinger #1**



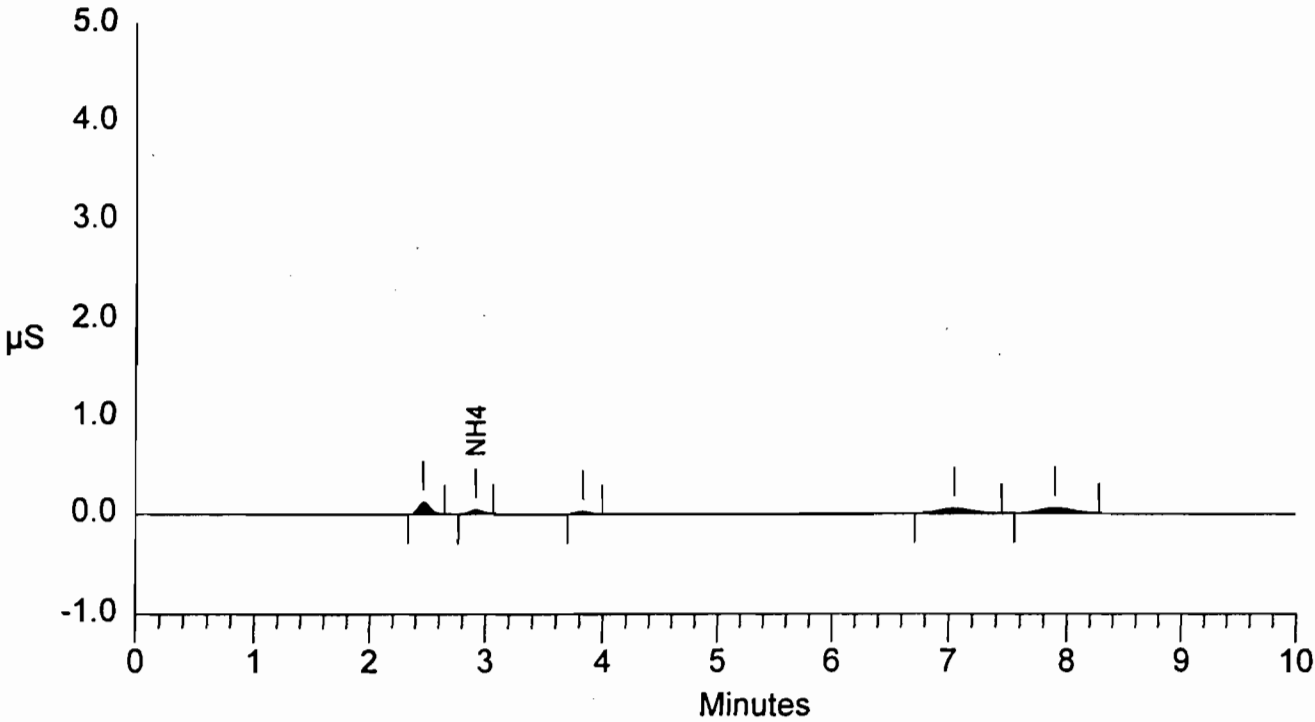
```

=====
Data File   : C:\PEAKNET\DATA\NH404029.DXD   Report Date: 12/30/2003 9:31:23 P
Sample Name: 12/19/03 Run 3 Impinger #2     Collected  : 12/30/2003 9:18:23 P
Inject #    : 29                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name: DX-120                           Detector    : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	0.01	426	3141	1	0.00
Totals			0.01	426	3141		

**File: NH404029.DXD Sample 12/19/03 Run 3 Impinger #2**





```

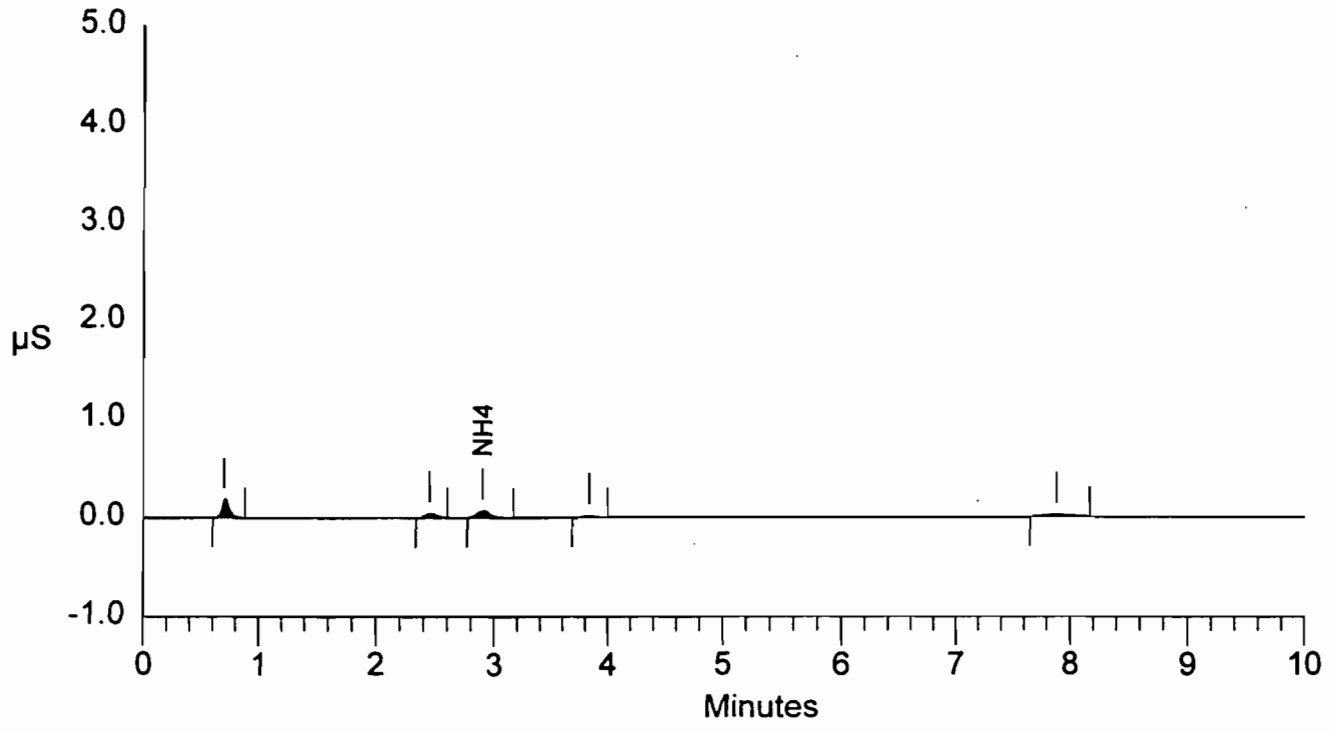
=====
Data File   : C:\PEAKNET\DATA\NH404030.DXD   Report Date: 12/30/2003 9:44:24 P
Sample Name: Reagent Blank                   Collected  : 12/30/2003 9:31:23 P
Inject #    : 30                             Vial #     :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 12/30/2003 5:10:54 P
System Name: DX-120                          Detector   : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
3	2.90	NH4	0.03	685	5587	1	0.00
Totals			0.03	685	5587		

**File: NH404030.DXD Sample Reagent Blank**

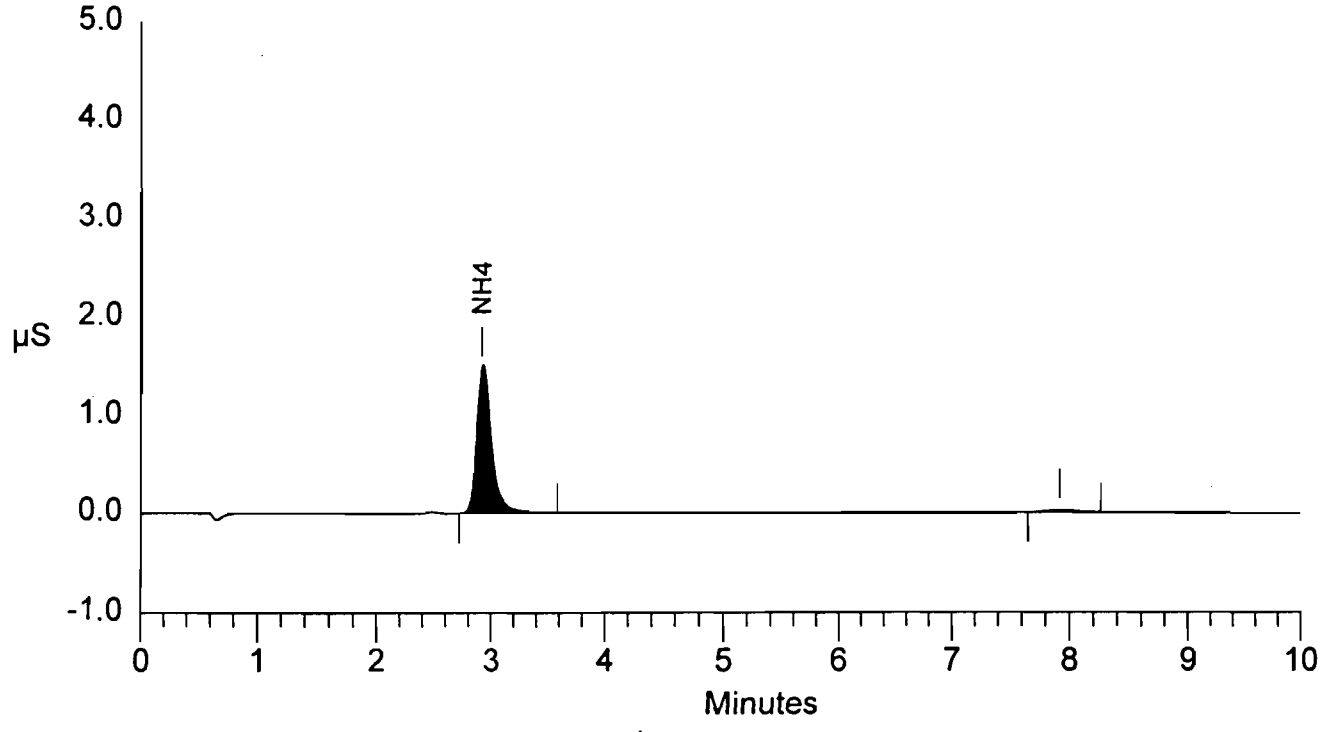


=====  
Data File : C:\PEAKNET\DATA\NH404031.DXD Report Date: 12/30/2003 9:57:24 P  
Sample Name: Cal Std 1 (1.00 mg/l) Collected : 12/30/2003 9:44:24 P  
Inject # : 31 Vial # :  
Method File: c:\peaknet\method\ctm-027.met Calibrated : 12/30/2003 5:10:54 P  
System Name: DX-120 Detector : DX-120  
Column Type: Ionpac CS12A Operator :  
Data Points: 3000 Rate : 5.00 Hz  
Module Name: DX-120 ID:50 05 d8 Moduleware : 1.00  
=====

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. N	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.92	NH4	1.02	14813	137610	1	0.00
Totals			1.02	14813	137610		

File: NH404031.DXD Sample Cal Std 1 (1.00 mg/l)



```

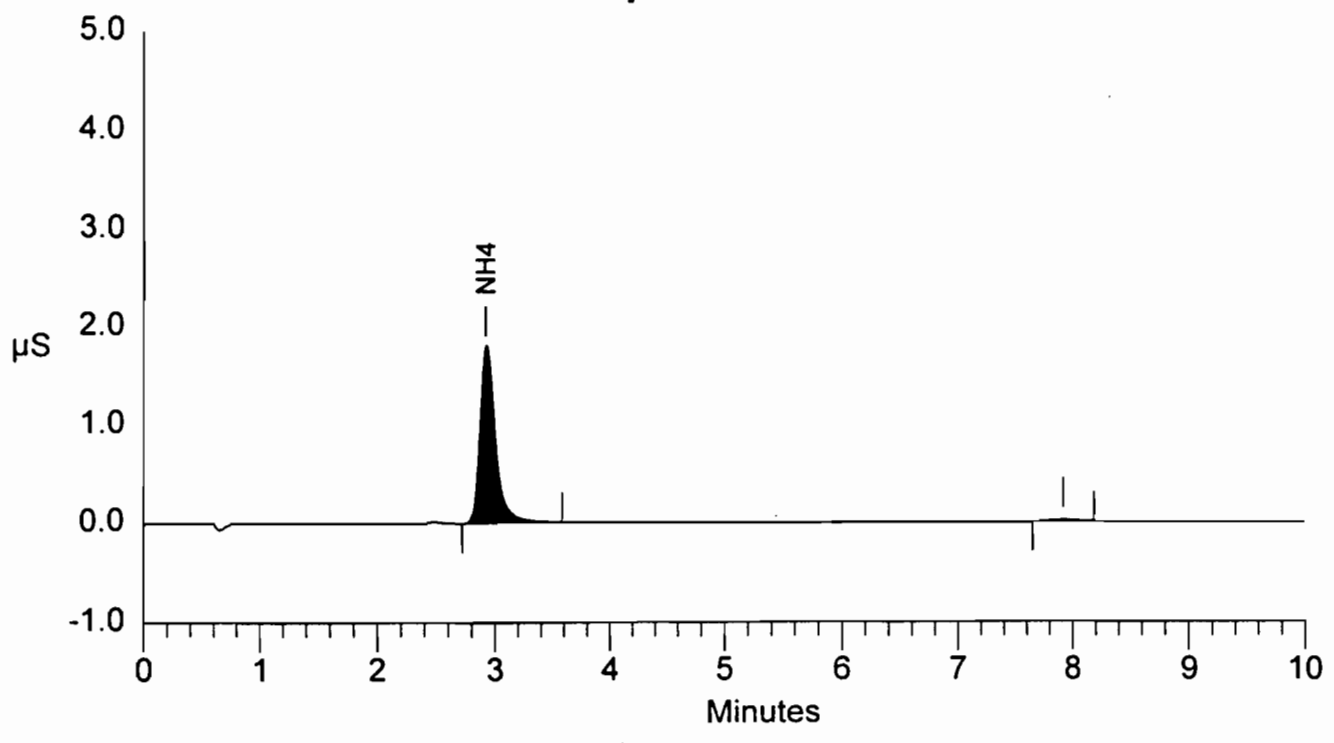
=====
Data File   : C:\PEAKNET\DATA\NH404032.DXD   Report Date: 12/30/2003 10:10:25
Sample Name: Orion Standard T.V. = 1.29     Collected  : 12/30/2003 9:57:25 P
Inject #    : 32                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                            Rate       : 5.00 Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.92	NH4	1.27	17831	167437	1	0.00
Totals			1.27	17831	167437		

**File: NH404032.DXD Sample Orion Standard T.V. = 1.29**



**EQUIPMENT CALIBRATIONS**

## SUMMARY OF EQUIPMENT CALIBRATIONS

<u>EQUIPMENT</u>	<u>CAL DATE</u>	<u>METHOD</u>	<u>RESULTS</u>
CONSOLE (MB 06)		USEPA RM 5	
INITIAL	10/02/2003	(ORIFICE)	1.004
POST TEST	12/22/2003		1.007
NOZZLE (GL09)		CALIPER	
INITIAL	10/02/2003	MEASUREMENTS	0.189
POST TEST	None (glass)		
PYROMETER (PY 09)	10/03/2003	ASTM THERMOMETER	$\pm 2^{\circ}$ F
PITOT TUBE (PT 10)	10/08/2003	USEPA RM 2	$C_p = 0.84$
BAROMETER (BR 02)	10/02/2003	NWS COMPARISON	$\pm 0.01$ " Hg

**EPA Method 5  
Meter Box Calibration  
Pre-Test Orifice Method  
English Meter Box Units, English K' Factor**

Revised: 7/25/95                      Version: 2.2

Model #: Thermo  
Instrument Code No.: ^MB06  
Sample Number: AA71435

Date: \_\_\_\_\_> 10/02/2003  
Barometric Pressure: \_\_\_\_\_> 30.01 (in. Hg)  
Theoretical Critical Vacuum: \_\_\_\_\_> 14.16 (in. Hg)  
Calibrated By: \_\_\_\_\_>

!!!!!!!  
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)<sup>3</sup>\*(deg R)<sup>0.5</sup>/((in.Hg)\*(min)).  
!!!!!!!

----- DRY GAS METER READINGS -----

----- CRITICAL ORIFICE READINGS -----

dH (in.H2O)	Time (min)	Volume			Initial Temps.		Final Temps.		Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in.Hg)	- Ambient Temperature -		
		Initial (cu.ft)	Final (cu.ft)	Total (cu.ft)	Inlet (deg.F)	Outlet (deg.F)	Inlet (deg.F)	Outlet (deg.F)				Initial (deg.F)	Final (deg.F)	Average (deg.F)
0.64	15	769.070	775.883	6.813	75	74	75	74	48	0.3483	21	73	73	73
1.15	10	783.428	789.518	6.09	77	75	78	75	55	0.4660	19.5	73	73	73
1.95	10	796.706	804.526	7.82	80	75	81	76	63	0.5971	17.5	73	73	73
3.7	10	811.905	822.644	10.739	85	75	86	77	73	0.8177	15	73	73	73

\*\*\*\*\* RESULTS \*\*\*\*\*

-- DRY GAS METER --

----- ORIFICE -----

-- DRY GAS METER --

----- ORIFICE -----

VOLUME CORRECTED Vm(std) (cu.ft)	VOLUME CORRECTED Vm(std) (liters)
6.758	191.39
6.029	170.74
7.731	218.95
10.608	300.43

VOLUME CORRECTED Vcr(std) (cu.ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu.ft)
6.791	192.33	6.838
6.057	171.55	6.099
7.762	219.81	7.815
10.629	301.02	10.702

CALIBRATION FACTOR Y	
Value (number)	Variation (number)
1.005	0.001
1.005	0.001
1.004	0.000
1.002	-0.002

CALIBRATION FACTOR dH@		
Value (in.H2O)	Value (mm.H2O)	Variation (in.H2O)
1.740	44.20	-0.029
1.741	44.22	-0.028
1.792	45.52	0.023
1.804	45.82	0.035

Average Y ----->

1.004

1.769    44.94    <----- Average dH@

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 H2O that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +/-0.2.

REVIEWED BY: \_\_\_\_\_

Date: \_\_\_\_\_

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## EPA Method 5 Meter Box Calibration Post-Test Orifice Method English Meter Box Units, English K' Factor

Revised: 7/25/95 Version: 2.2

Model #: MST  
Instrument Code No. MB06  
Sample No.  
Test Designation Bayside 2A,B,C,D

Date: \_\_\_\_\_  
Barometric Pressure: \_\_\_\_\_ 30.22 (in. Hg)  
Theoretical Critical Vacuum: \_\_\_\_\_ 14.25 (in. Hg)  
Calibration By: \_\_\_\_\_ CRD

!!!!!!  
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)<sup>3</sup>/(deg R)<sup>0.5</sup>/((in.Hg)<sup>3</sup>(min)).  
!!!!!!

### DRY GAS METER READINGS

### -CRITICAL ORIFICE READINGS-

dH@	Time (min)	Volume			Initial Temps		Final Temps		Orifice Serial #	K' Orifice Coefficient	Actual			
		Initial (cu.ft)	Final (cu.ft)	Total (cu.ft)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)			Inlet	Outlet	Average	
1.15	10	19.350	25.337	5.987	67	69	68	70	55	0.466	19	71	70	70.5
1.15	10	25.337	31.341	6.004	68	70	68	70	55	0.466	19	70	71	70.5
1.15	10	31.341	37.372	6.031	68	70	69	72	55	0.466	19	71	71	71

### RESULTS

#### -- DRY GAS METER --

#### ----- ORIFICE -----

#### -- DRY GAS METER --

#### ----- ORIFICE -----

VOLUME CORRECTED Vm(std) (cu.ft)	VOLUME CORRECTED Vm(std) (cu.ft)
6.056	171.50
6.067	171.82
6.086	172.35

VOLUME CORRECTED Vm(std) (cu.ft)	VOLUME CORRECTED Vm(std) (liters)	VOLUME NOMINAL Vm(std) (cu.ft)
6.114	173.15	6.085
6.114	173.15	6.085
6.111	173.07	6.087

CALIBRATION FACTOR Y	
Value	Variation
(Number)	(Number)
1.010	0.002
1.008	0.001
1.004	-0.003

CALIBRATION FACTOR dH@		
Value	Variation	Y
(inches)	(inches)	(Number)
1.746	44.35	0.001
1.744	44.31	0.000
1.744	44.29	-0.001

Average Y →  
Prior Y  
% Difference

1.007  
1.004  
-0.32%

1.745 44.32 ← Average dH@

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 H2O that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +0.2.

REVIEWED BY: \_\_\_\_\_

Date: \_\_\_\_\_

## NOZZLE CALIBRATION DATA FORM

### GLASS NOZZLE SET

DATE: 10/02/03

CALIBRATOR: R A Barthelette Jr.

NOZZLE I. D.	NOZZLE DIAMETER (IN.)			D diff.	D avg
	D1	D2	D3		
^GN01	0.128	0.128	0.128	0.000	0.128
^GN02	0.189	0.189	0.189	0.000	0.189
^GN03	0.254	0.254	0.254	0.000	0.254
^GN04	0.313	0.313	0.313	0.000	0.313
^GN05	0.374	0.374	0.374	0.000	0.374
^GN06	0.429	0.429	0.429	0.000	0.429
^GN07	0.504	0.504	0.504	0.000	0.504
^GNO8	0.128	0.128	0.128	0.000	0.128
^GNO9	0.189	0.189	0.189	0.000	0.189
^GN10	0.254	0.254	0.254	0.000	0.254
^GN11	0.313	0.313	0.313	0.000	0.313
^GN12	0.374	0.374	0.374	0.000	0.374
^GN13	0.429	0.429	0.429	0.000	0.429
^GN14	0.504	0.504	0.504	0.000	0.504
^GN15	0.193	0.193	0.193	0.000	0.193
^GN16	0.197	0.197	0.197	0.000	0.197
^GN17	0.224	0.224	0.224	0.000	0.224
^GN18	0.224	0.224	0.224	0.000	0.224
^GN19	0.251	0.251	0.251	0.000	0.251
^GN20	0.251	0.251	0.251	0.000	0.251
^GN21	0.287	0.287	0.287	0.000	0.287

where:

*D 1,2,3 = three different nozzle diameters, (in); each diameter must be measured to the nearest 0.001 in.*

*D diff. = maximum difference between any two diameters, (in.) must be .004 in. or less.*

*D avg. = average of D1, D2, and D3.*

REVIEWED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_

Page 1  
OF 1





Environmental Services  
Air Services Group

**POST TEST NOZZLE CALIBRATION**

Calibration Date: 12/22/2003  
 Calibration Personnel: CRD  
 Test Designation: Bayside 2A,B,C,D

Nozzle Identifier	Nozzle Diameter (inches)				
	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>difference</sub>	D <sub>average</sub>
GN09	0.189	0.189	0.189	0.000	0.189

Where:

D<sub>1,2,3</sub> = Results of triplicate diameter measurements, from three different cross sections measured to the nearest 0.001 inch.

D<sub>difference</sub> = Maximum difference between any two diameters in inches. Maximum difference must be ≤ 0.004 inches.

D<sub>average</sub> = Average of D<sub>1</sub>, D<sub>2</sub>, D<sub>3</sub>

QA/QC Review by: \_\_\_\_\_  
 Title: \_\_\_\_\_  
 Date: \_\_\_\_\_



## Pyrometer Calibration

### Pyrometer Under Test

Pyrometer Number: ^PY09  
Labworks Sample # AA71435  
Calibration Date: 10/03/2003

### Calibrator Information

Calibrator Type/Manufacturer: Hart Scientific  
Calibrator Serial Number: AOA024  
Date of Last Calibration: 02/10/2003  
Calibration Personnel (Typed and Signature): Robert Barthelette Jr.

### Calibration Data

Calibration Point	Reference Temperature	Pyrometer Indication	Difference
1	400	400	0
2	212	211	1
3	32	32	0

Reference temperatures must encompass the expected range of measurement. These three points should be ~ 32 degrees, ~212 degrees, and ~ 400 degrees Fahrenheit.

Difference is calculated as follows:

$$(\text{reference temperature}) - (\text{pyrometer indication})$$

### Quality Control Data

Calibration Point	Difference
1	Pass
2	Pass
3	Pass

This data has been reviewed and is certified as meeting all project quality objectives.

Reviewer: \_\_\_\_\_

Date: \_\_\_\_\_



PITOT TUBE CALIBRATION DATA SHEET

Pitot Tube ID # pt10

Calibration Date: 10/08/2003

Operating Quarter: 4

Openings Damaged?  Y  N

Repaired?  Y  N  N/A

Alpha and Beta Angle Determinations

$\alpha 1$  0.4 degrees *Pass*  
 $\alpha 2$  0.7 degrees *Pass*  
 $\beta 1$  0.2 degrees *Pass*  
 $\beta 2$  0.4 degrees *Pass*

Gamma, Theta, A, Z, and W Determinations

$\psi$  0.2 degrees  
A 2.44 cm  
Z 0.009 cm *Pass*  
  
 $\theta$  0.4 degrees  
W 0.017 cm *Pass*

Acceptable Limits
Dt 0.48 < Dt > 0.95 cm
$\alpha < 10$ degrees ( $\alpha 1$ measured across top impact openings) ( $\alpha 2$ measured across bottom impact openings)
$\beta 1 < 5$ degrees (alongside top impact openings)
$\beta 2 < 5$ degrees (alongside bottom impact openings)
Z < 0.32 cm (Asin $\psi$ )
W < 0.08 cm (Asino)
A distance between tips
$\theta$ angle of plane on side of pitots
$\psi$ angle between tips

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

Comments: REMOVABLE

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Calibrated by: \_\_\_\_\_  
Printed Name: JORGE A VARINO

Date: 10/08/2003

Quality Assurance Review / Approval: \_\_\_\_\_  
Date: \_\_\_\_\_

**BAROMETER CALIBRATION DATA FORM**

**CALIBRATOR: RAB**

**DATE:** 12/05/2003  
**INST. NO:** ^BR02  
**SAMPLE NO.** AA72327

**COMMENTS:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

<b>TIME OF READING</b>	<b>BAROMETER READING (HG")</b>	<b>REFERENCE STANDARD READING (HG")</b>	<b>DIFFERENCE (HG")</b>
8:00	30.00	29.99	0.01
9:55	30.05	30.05	0.00
12:33	30.00	30.03	-0.03
0:00		0.00	0.00

**\*NOTE: BAROMETRIC READINGS MUST AGREE WITHIN 0.1 INCHES HG OF READINGS OBTAINED FROM THE REFERENCE STANDARD, THE TAMPA INTERNATIONAL AIRPORT TO BE DEEMED ACCEPTABLE.**

**REVIEWED BY:**  
**DATE:**

**CARBON MONOXIDE / NITROGEN OXIDES TEST INFORMATION**

SUMMARIZED RUN DATA AND QUALITY ASSURANCE/CONTROL

Bayside 2C RATA - Report				
RUN 1				
12/20/2003				
10:51				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)			0	4.47
Mid Level Certified Value (PPM or %)	12.6	11	3	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.063	0.042	0.048	0.025
Low Level Observed	-	-	0.004	4.457
Mid Level Observed	12.578	11.029	3.003	8.23
High Level Observed	21.002	17.963	6.29	12.552
% Difference from Zero to Target	0.25	0.21	0.48	0.17
% Difference from Low to Target	0	0	0.04	-0.09
% Difference from Mid to Target	-0.09	0.14	0.03	-0.2
% Difference from High to Target	0.41	-0.18	0	-0.32
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.063	0.042	0.048	0.025
Actual Span From Linearity	12.578	11.029	3.003	4.457
Initial Readings				
Zero	0.063	0.042	0.048	0.025
Span	12.578	10.98	3.008	4.384
Final Readings				
Zero	0.124	0.042	0.018	0.025
Span	12.578	10.98	3.042	4.347
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	0	0
Span Bias	0	-0.24	0.05	-0.49
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	-0.3	0
Span Bias	0	-0.24	0.39	-0.73
Calculated Drift				
Zero Drift (Run-Run)	0.24	0	-0.3	0
Span Drift	0	0	0.34	-0.25
Run Results				
Raw Results	13.98	4.11	0.97	3.61
Corrected Results (ppmv)	14.01	4.09	0.94	3.69

Bayside 2C RATA - Report				
RUN 2				
12/20/2003				
11:30				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)			0	4.47
Mid Level Certified Value (PPM or %)	12.6	11	3	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.063	0.042	0.048	0.025
Low Level Observed	-	-	0.004	4.457
Mid Level Observed	12.578	11.029	3.003	8.23
High Level Observed	21.002	17.963	6.29	12.552
% Difference from Zero to Target	0.25	0.21	0.48	0.17
% Difference from Low to Target	0	0	0.04	-0.09
% Difference from Mid to Target	-0.09	0.14	0.03	-0.2
% Difference from High to Target	0.41	-0.18	0	-0.32
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.063	0.042	0.048	0.025
Actual Span From Linearity	12.578	11.029	3.003	4.457
Initial Readings				
Zero	0.124	0.042	0.018	0.025
Span	12.578	10.98	3.042	4.347
Final Readings				
Zero	0.124	0.042	0.048	0.062
Span	12.578	10.98	3.042	4.311
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	-0.3	0
Span Bias	0	-0.24	0.39	-0.73
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	0	0.25
Span Bias	0	-0.24	0.39	-0.97
Calculated Drift				
Zero Drift (Run-Run)	0	0	0.3	0.25
Span Drift	0	0	0	-0.24
Run Results				
Raw Results	13.99	4.1	1	3.59
Corrected Results (ppmv)	14.03	4.08	0.96	3.7



Bayside 2C RATA - Report				
RUN 3				
12/20/2003				
12:05				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)			0	4.47
Mid Level Certified Value (PPM or %)	12.6	11	3	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.063	0.042	0.048	0.025
Low Level Observed	-	-	0.004	4.457
Mid Level Observed	12.578	11.029	3.003	8.23
High Level Observed	21.002	17.963	6.29	12.552
% Difference from Zero to Target	0.25	0.21	0.48	0.17
% Difference from Low to Target	0	0	0.04	-0.09
% Difference from Mid to Target	-0.09	0.14	0.03	-0.2
% Difference from High to Target	0.41	-0.18	0	-0.32
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.063	0.042	0.048	0.025
Actual Span From Linearity	12.578	11.029	3.003	4.457
Initial Readings				
Zero	0.124	0.042	0.048	0.062
Span	12.578	10.98	3.042	4.311
Final Readings				
Zero	0.124	0.042	0.057	0.099
Span	12.578	10.98	3.056	4.347
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	0	0.25
Span Bias	0	-0.24	0.39	-0.97
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	0.09	0.49
Span Bias	0	-0.24	0.53	-0.73
Calculated Drift				
Zero Drift (Run-Run)	0	0	0.09	0.25
Span Drift	0	0	0.14	0.24
Run Results				
Raw Results	13.98	4.1	0.92	3.56
Corrected Results (ppmv)	14.02	4.08	0.87	3.66

Bayside 2C RATA - Report				
RUN 4				
12/20/2003				
12:44				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)			0	4.47
Mid Level Certified Value (PPM or %)	12.6	11	3	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.063	0.042	0.048	0.025
Low Level Observed	-	-	0.004	4.457
Mid Level Observed	12.578	11.029	3.003	8.23
High Level Observed	21.002	17.963	6.29	12.552
% Difference from Zero to Target	0.25	0.21	0.48	0.17
% Difference from Low to Target	0	0	0.04	-0.09
% Difference from Mid to Target	-0.09	0.14	0.03	-0.2
% Difference from High to Target	0.41	-0.18	0	-0.32
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.063	0.042	0.048	0.025
Actual Span From Linearity	12.578	11.029	3.003	4.457
Initial Readings				
Zero	0.124	0.042	0.057	0.099
Span	12.578	10.98	3.056	4.347
Final Readings				
Zero	0.124	0.042	0.053	0.062
Span	12.578	10.931	3.037	4.311
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	0.09	0.49
Span Bias	0	-0.24	0.53	-0.73
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	0.05	0.25
Span Bias	0	-0.49	0.34	-0.97
Calculated Drift				
Zero Drift (Run-Run)	0	0	-0.04	-0.25
Span Drift	0	-0.25	-0.19	-0.24
Run Results				
Raw Results	13.96	4.09	0.82	3.54
Corrected Results (ppmv)	14	4.08	0.77	3.64

Bayside 2C RATA - Report				
RUN 5				
12/20/2003				
13:24				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)			0	4.47
Mid Level Certified Value (PPM or %)	12.6	11	3	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.063	0.042	0.048	0.025
Low Level Observed	-	-	0.004	4.457
Mid Level Observed	12.578	11.029	3.003	8.23
High Level Observed	21.002	17.963	6.29	12.552
% Difference from Zero to Target	0.25	0.21	0.48	0.17
% Difference from Low to Target	0	0	0.04	-0.09
% Difference from Mid to Target	-0.09	0.14	0.03	-0.2
% Difference from High to Target	0.41	-0.18	0	-0.32
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.063	0.042	0.048	0.025
Actual Span From Linearity	12.578	11.029	3.003	4.457
Initial Readings				
Zero	0.124	0.042	0.053	0.062
Span	12.578	10.931	3.037	4.311
Final Readings				
Zero	0.124	0.042	0.033	0.062
Span	12.639	10.931	3.066	4.384
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	0.05	0.25
Span Bias	0	-0.49	0.34	-0.97
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	-0.15	0.25
Span Bias	0.24	-0.49	0.63	-0.49
Calculated Drift				
Zero Drift (Run-Run)	0	0	-0.2	0
Span Drift	0.24	0	0.29	0.49
Run Results				
Raw Results	13.94	4.09	0.73	3.56
Corrected Results (ppmv)	13.94	4.09	0.69	3.65

Bayside 2C RATA - Report				
RUN 6				
12/20/2003				
13:55				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)			0	4.47
Mid Level Certified Value (PPM or %)	12.6	11	3	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.063	0.042	0.048	0.025
Low Level Observed	-	-	0.004	4.457
Mid Level Observed	12.578	11.029	3.003	8.23
High Level Observed	21.002	17.963	6.29	12.552
% Difference from Zero to Target	0.25	0.21	0.48	0.17
% Difference from Low to Target	0	0	0.04	-0.09
% Difference from Mid to Target	-0.09	0.14	0.03	-0.2
% Difference from High to Target	0.41	-0.18	0	-0.32
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.063	0.042	0.048	0.025
Actual Span From Linearity	12.578	11.029	3.003	4.457
Initial Readings				
Zero	0.124	0.042	0.033	0.062
Span	12.639	10.931	3.066	4.384
Final Readings				
Zero	0.124	0.042	0.028	0.062
Span	12.639	10.931	3.027	4.384
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	-0.15	0.25
Span Bias	0.24	-0.49	0.63	-0.49
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	-0.2	0.25
Span Bias	0.24	-0.49	0.24	-0.49
Calculated Drift				
Zero Drift (Run-Run)	0	0	-0.05	0
Span Drift	0	0	-0.39	0
Run Results				
Raw Results	13.92	4.09	0.73	3.57
Corrected Results (ppmv)	13.89	4.09	0.7	3.63

Bayside 2C RATA - Report				
RUN 7				
12/20/2003				
14:26				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)			0	4.47
Mid Level Certified Value (PPM or %)	12.6	11	3	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.063	0.042	0.048	0.025
Low Level Observed	-	-	0.004	4.457
Mid Level Observed	12.578	11.029	3.003	8.23
High Level Observed	21.002	17.963	6.29	12.552
% Difference from Zero to Target	0.25	0.21	0.48	0.17
% Difference from Low to Target	0	0	0.04	-0.09
% Difference from Mid to Target	-0.09	0.14	0.03	-0.2
% Difference from High to Target	0.41	-0.18	0	-0.32
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.063	0.042	0.048	0.025
Actual Span From Linearity	12.578	11.029	3.003	4.457
Initial Readings				
Zero	0.124	0.042	0.028	0.062
Span	12.639	10.931	3.027	4.384
Final Readings				
Zero	0.124	0.042	0.048	0.062
Span	12.578	10.931	3.012	4.384
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	-0.2	0.25
Span Bias	0.24	-0.49	0.24	-0.49
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	0	0.25
Span Bias	0	-0.49	0.09	-0.49
Calculated Drift				
Zero Drift (Run-Run)	0	0	0.2	0
Span Drift	-0.24	0	-0.15	0
Run Results				
Raw Results	13.92	4.09	0.73	3.57
Corrected Results (ppmv)	13.92	4.09	0.7	3.63


Bayside 2C RATA - Report				
RUN 8				
12/20/2003				
14:57				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)			0	4.47
Mid Level Certified Value (PPM or %)	12.6	11	3	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.063	0.042	0.048	0.025
Low Level Observed	-	-	0.004	4.457
Mid Level Observed	12.578	11.029	3.003	8.23
High Level Observed	21.002	17.963	6.29	12.552
% Difference from Zero to Target	0.25	0.21	0.48	0.17
% Difference from Low to Target	0	0	0.04	-0.09
% Difference from Mid to Target	-0.09	0.14	0.03	-0.2
% Difference from High to Target	0.41	-0.18	0	-0.32
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.063	0.042	0.048	0.025
Actual Span From Linearity	12.578	11.029	3.003	4.457
Initial Readings				
Zero	0.124	0.042	0.048	0.062
Span	12.578	10.931	3.012	4.384
Final Readings				
Zero	0.124	0.042	0.023	0.062
Span	12.578	10.931	3.017	4.384
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	0	0.25
Span Bias	0	-0.49	0.09	-0.49
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	-0.25	0.25
Span Bias	0	-0.49	0.14	-0.49
Calculated Drift				
Zero Drift (Run-Run)	0	0	-0.25	0
Span Drift	0	0	0.05	0
Run Results				
Raw Results	13.92	4.09	0.76	3.58
Corrected Results (ppmv)	13.96	4.09	0.73	3.64

Bayside 2C RATA - Report				
RUN 9				
12/20/2003				
15:28				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)			0	4.47
Mid Level Certified Value (PPM or %)	12.6	11	3	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.063	0.042	0.048	0.025
Low Level Observed	-	-	0.004	4.457
Mid Level Observed	12.578	11.029	3.003	8.23
High Level Observed	21.002	17.963	6.29	12.552
% Difference from Zero to Target	0.25	0.21	0.48	0.17
% Difference from Low to Target	0	0	0.04	-0.09
% Difference from Mid to Target	-0.09	0.14	0.03	-0.2
% Difference from High to Target	0.41	-0.18	0	-0.32
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.063	0.042	0.048	0.025
Actual Span From Linearity	12.578	11.029	3.003	4.457
Initial Readings				
Zero	0.124	0.042	0.023	0.062
Span	12.578	10.931	3.017	4.384
Final Readings				
Zero	0.124	0.042	0.028	0.062
Span	12.578	10.931	3.008	4.384
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	-0.25	0.25
Span Bias	0	-0.49	0.14	-0.49
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	-0.2	0.25
Span Bias	0	-0.49	0.05	-0.49
Calculated Drift				
Zero Drift (Run-Run)	0	0	0.05	0
Span Drift	0	0	-0.09	0
Run Results				
Raw Results	13.92	4.09	0.79	3.57
Corrected Results (ppmv)	13.96	4.09	0.77	3.63

RUN LOG



Date	Time	CO2 (%)	CO (PPM)	NOX (PPM)	Status
12/19/2003	7:59:23 AM	0.04	0.19	-0.05	
12/19/2003	7:59:23 AM	0.09	0.19	-0.08	
12/19/2003	7:59:43 AM	0.04	0.2	-0.05	
12/19/2003	8:00:14 AM	0.09	0.24	-0.08	
12/19/2003	8:00:43 AM	0.09	0.44	-0.05	
12/19/2003	8:01:14 AM	0.04	0.35	-0.08	
12/19/2003	8:01:43 AM	0.04	0.25	-0.08	
12/19/2003	8:02:14 AM	0.04	0.18	-0.08	
12/19/2003	8:02:43 AM	0.04	0.31	-0.08	
12/19/2003	8:03:14 AM	0.04	0.27	-0.08	
12/19/2003	8:03:43 AM	0.04	0.22	-0.08	
12/19/2003	8:04:14 AM	0.09	0.28	-0.08	
12/19/2003	8:04:44 AM	0.04	0.29	-0.08	
12/19/2003	8:05:14 AM	0.09	0.28	-0.08	
12/19/2003	8:05:44 AM	0.09	0.16	-0.08	
12/19/2003	8:06:14 AM	0.04	0.32	-0.08	
12/19/2003	8:06:44 AM	-0.06	0.2	-0.08	
12/19/2003	8:07:14 AM	-0.01	0.12	-0.12	Linearity Check
12/19/2003	8:07:44 AM	0.04	0.07	-0.12	Linearity Check
12/19/2003	8:08:14 AM	-0.01	-0.01	0.03	Linearity Check
12/19/2003	8:08:44 AM	0.04	-0.01	-0.01	Linearity Check
12/19/2003	8:09:14 AM	-0.01	0.07	0.03	Linearity Check
12/19/2003	8:09:44 AM	0.04	0.07	0.03	Linearity Check
12/19/2003	8:10:14 AM	-0.01	0.27	0.03	Linearity Check
12/19/2003	8:10:44 AM	-0.01	-0.02	0.03	Linearity Check
12/19/2003	8:11:14 AM	4.88	-0.17	1.16	Linearity Check
12/19/2003	8:11:44 AM	0.29	-0.29	7.39	Linearity Check
12/19/2003	8:12:14 AM	0.09	-0.29	15.01	Linearity Check
12/19/2003	8:12:44 AM	0.09	-0.35	10.76	Linearity Check
12/19/2003	8:13:13 AM	0.04	-0.34	10.79	Linearity Check
12/19/2003	8:13:44 AM	0.09	-0.41	10.9	Linearity Check
12/19/2003	8:14:13 AM	0.04	-0.46	10.9	Linearity Check
12/19/2003	8:14:44 AM	0.04	-0.41	10.94	Linearity Check
12/19/2003	8:15:14 AM	0.04	-0.23	10.94	Linearity Check
12/19/2003	8:15:44 AM	-0.01	-0.36	3.54	Linearity Check
12/19/2003	8:16:14 AM	0.04	-0.41	10.9	Linearity Check
12/19/2003	8:16:44 AM	0.04	-0.4	10.9	Linearity Check
12/19/2003	8:17:14 AM	-0.01	-0.37	11.31	Linearity Check
12/19/2003	8:17:44 AM	0.04	-0.46	10.9	Linearity Check
12/19/2003	8:18:14 AM	0.04	-0.36	12.73	Linearity Check
12/19/2003	8:18:44 AM	0.04	-0.35	12.73	Linearity Check
12/19/2003	8:19:14 AM	-0.01	-0.44	12.7	Linearity Check
12/19/2003	8:19:44 AM	0.04	-0.45	12.7	Linearity Check
12/19/2003	8:20:14 AM	-0.01	-0.45	12.66	Linearity Check
12/19/2003	8:20:43 AM	-0.01	-0.46	12.66	Linearity Check
12/19/2003	8:21:14 AM	-0.01	-0.46	12.66	Linearity Check
12/19/2003	8:21:43 AM	-0.01	-0.46	12.48	Linearity Check
12/19/2003	8:22:14 AM	-0.01	-0.46	12.51	Linearity Check
12/19/2003	8:22:44 AM	0.04	-0.46	2.7	Linearity Check
12/19/2003	8:23:14 AM	-0.01	-0.46	7.64	Linearity Check
12/19/2003	8:23:44 AM	0.04	-0.45	7.97	Linearity Check

*Test Setup*  
~~*- Preparations*~~  
*- Converter Efficiency*  
*- Stratification Tests*  


12/19/2003	8:24:14 AM	-0.01	-0.46	8.08	Linearity Check
12/19/2003	8:24:44 AM	-0.01	-0.46	8.12	Linearity Check
12/19/2003	8:25:14 AM	-0.01	-0.46	8.12	Linearity Check
12/19/2003	8:25:44 AM	0.04	-0.45	8.19	Linearity Check
12/19/2003	8:26:14 AM	-0.01	-0.45	8.19	Linearity Check
12/19/2003	8:26:44 AM	-0.01	-0.45	1.27	Linearity Check
12/19/2003	8:27:14 AM	-0.01	-0.46	4.05	Linearity Check
12/19/2003	8:27:44 AM	-0.01	-0.45	4.09	Linearity Check
12/19/2003	8:28:14 AM	-0.01	-0.46	4.35	Linearity Check
12/19/2003	8:28:44 AM	-0.01	-0.46	4.42	Linearity Check
12/19/2003	8:29:13 AM	-0.01	-0.46	4.42	Linearity Check
12/19/2003	8:29:44 AM	-0.01	-0.45	0.06	Linearity Check
12/19/2003	8:30:13 AM	-0.01	-0.26	0.06	Linearity Check
12/19/2003	8:30:44 AM	-0.01	-0.36	1.49	Linearity Check
12/19/2003	8:31:13 AM	-0.01	-0.31	1.56	Linearity Check
12/19/2003	8:31:44 AM	-0.01	1.09	1.6	Linearity Check
12/19/2003	8:32:14 AM	-0.01	5.15	1.56	Linearity Check
12/19/2003	8:32:44 AM	0.04	6.3	1.6	Linearity Check
12/19/2003	8:33:14 AM	-0.01	6.46	1.6	Linearity Check
12/19/2003	8:33:44 AM	-0.01	6.37	1.6	Linearity Check
12/19/2003	8:34:14 AM	-0.01	6.33	1.64	Linearity Check
12/19/2003	8:34:44 AM	0.04	6.32	1.64	Linearity Check
12/19/2003	8:35:14 AM	-0.01	6.16	1.6	Linearity Check
12/19/2003	8:35:44 AM	-0.01	3.45	1.6	Linearity Check
12/19/2003	8:36:14 AM	-0.01	1.28	1.6	Linearity Check
12/19/2003	8:36:44 AM	-0.01	2.17	1.6	Linearity Check
12/19/2003	8:37:14 AM	-0.01	2.79	1.6	Linearity Check
12/19/2003	8:37:44 AM	-0.01	2.79	1.6	Linearity Check
12/19/2003	8:38:14 AM	-0.01	2.79	1.6	Linearity Check
12/19/2003	8:38:44 AM	-0.01	2.85	1.6	Linearity Check
12/19/2003	8:39:14 AM	-0.01	3.01	1.6	Linearity Check
12/19/2003	8:39:43 AM	-0.01	2.98	1.56	Linearity Check
12/19/2003	8:40:14 AM	14.69	2.83	1.56	Linearity Check
12/19/2003	8:40:43 AM	15.62	0.81	1.6	Linearity Check
12/19/2003	8:41:14 AM	18.11	-0.46	1.56	Linearity Check
12/19/2003	8:41:44 AM	18.01	-0.46	1.6	Linearity Check
12/19/2003	8:42:14 AM	9.81	-0.46	1.56	Linearity Check
12/19/2003	8:42:44 AM	10.2	-0.45	1.6	Linearity Check
12/19/2003	8:43:14 AM	10.05	-0.46	1.56	Linearity Check
12/19/2003	8:43:44 AM	4	-0.46	1.53	Linearity Check
12/19/2003	8:44:14 AM	0.04	-0.46	1.56	Linearity Check
12/19/2003	8:44:44 AM	0.09	-0.18	0.06	Linearity Check
12/19/2003	8:45:14 AM	0.09	-0.08	0.06	Linearity Check
12/19/2003	8:45:44 AM	0.04	-0.06	0.06	Linearity Check
12/19/2003	8:46:13 AM	0.04	-0.09	0.06	Linearity Check
12/19/2003	8:46:44 AM	0.09	-0.12	0.06	Linearity Check
12/19/2003	8:47:13 AM	0.04	-0.12	0.06	Linearity Check
12/19/2003	8:47:44 AM	0.04	-0.22	0.03	Linearity Check
12/19/2003	8:48:13 AM	0.09	-0.17	0.03	Linearity Check
12/19/2003	8:48:44 AM	0.09	-0.27	0.06	Linearity Check
12/19/2003	8:49:13 AM	0.04	-0.28	0.06	Linearity Check
12/19/2003	8:49:44 AM	0.04	-0.09	2.7	Linearity Check

12/19/2003	8:50:14 AM	0.04	-0.19	2.81 Linearity Check
12/19/2003	8:50:45 AM	0.04	-0.19	2.85 Linearity Check
12/19/2003	8:51:14 AM	0.04	-0.15	2.88 Converter Check - 1
12/19/2003	8:51:44 AM	0.04	-0.25	2.88 Converter Check - 1
12/19/2003	8:52:14 AM	0.09	-0.12	2.92 Converter Check - 1
12/19/2003	8:52:44 AM	0.04	-0.02	2.88 Converter Check - 1
12/19/2003	8:53:14 AM	0.04	0	2.92 Converter Check - 1
12/19/2003	8:53:44 AM	0.04	-0.07	2.92 Converter Check - 1
12/19/2003	8:54:14 AM	0.04	-0.07	2.92 Converter Check - 1
12/19/2003	8:54:44 AM	0.09	0.01	2.96 Converter Check - 1
12/19/2003	8:55:14 AM	0.04	-0.12	2.96 Converter Check - 1
12/19/2003	8:55:44 AM	0.04	-0.22	2.96 Converter Check - 1
12/19/2003	8:56:14 AM	0.04	-0.12	2.96 Converter Check - 1
12/19/2003	8:56:43 AM	0.04	-0.05	2.96 Converter Check - 1
12/19/2003	8:57:14 AM	0.04	0.01	2.96 Converter Check - 1
12/19/2003	8:57:43 AM	0.09	-0.01	2.99 Converter Check - 1
12/19/2003	8:58:14 AM	0.04	-0.05	2.99 Converter Check - 1
12/19/2003	8:58:43 AM	0.04	0	2.96 Converter Check - 1
12/19/2003	8:59:14 AM	0.04	-0.09	2.96 Converter Check - 1
12/19/2003	8:59:43 AM	0.04	-0.2	2.99 Converter Check - 1
12/19/2003	9:00:14 AM	0.04	-0.24	2.96 Converter Check - 1
12/19/2003	9:00:43 AM	0.04	-0.16	2.96 Converter Check - 1
12/19/2003	9:01:14 AM	0.04	-0.18	2.96 Converter Check - 1
12/19/2003	9:01:43 AM	0.04	0.02	2.96 Converter Check - 1
12/19/2003	9:02:14 AM	0.04	-0.3	2.99 Converter Check - 1
12/19/2003	9:02:43 AM	0.04	-0.13	2.96 Converter Check - 1
12/19/2003	9:03:14 AM	0.04	-0.16	2.96 Converter Check - 1
12/19/2003	9:03:43 AM	0.04	-0.03	2.99 Converter Check - 1
12/19/2003	9:04:14 AM	0.04	-0.16	3.03 Converter Check - 1
12/19/2003	9:04:43 AM	0.04	-0.05	2.99 Converter Check - 1
12/19/2003	9:05:14 AM	0.09	-0.05	3.03 Converter Check - 1
12/19/2003	9:05:44 AM	0.04	-0.09	2.99 Converter Check - 1
12/19/2003	9:06:14 AM	4	0.14	2.99 Converter Check - 1
12/19/2003	9:06:44 AM	4	0.58	2.99 Converter Check - 1
12/19/2003	9:07:14 AM	4.05	0.58	3.03 Converter Check - 1
12/19/2003	9:07:44 AM	4.05	0.55	3.03 Converter Check - 1
12/19/2003	9:08:14 AM	4.05	0.51	3.03 Converter Check - 1
12/19/2003	9:08:44 AM	4.05	0.59	2.99 Converter Check - 1
12/19/2003	9:09:14 AM	4.05	0.48	2.99 Converter Check - 1
12/19/2003	9:09:44 AM	4.05	0.51	2.99 Converter Check - 1
12/19/2003	9:10:14 AM	4.05	0.59	2.99 Converter Check - 1
12/19/2003	9:10:44 AM	4.1	0.28	3.03 Converter Check - 1
12/19/2003	9:11:14 AM	4.05	0.49	2.99 Converter Check - 1
12/19/2003	9:11:44 AM	4.05	0.5	2.99 Converter Check - 1
12/19/2003	9:12:14 AM	4.05	0.52	2.99 Converter Check - 1
12/19/2003	9:12:44 AM	4.05	0.49	2.99 Converter Check - 1
12/19/2003	9:13:14 AM	4.05	0.48	3.03 Converter Check - 1
12/19/2003	9:13:44 AM	4.05	0.57	3.03 Converter Check - 1
12/19/2003	9:14:13 AM	4.05	0.47	3.03 Converter Check - 1
12/19/2003	9:14:44 AM	4.05	0.5	3.03 Converter Check - 1
12/19/2003	9:15:13 AM	4.1	0.48	3.03 Converter Check - 1
12/19/2003	9:15:44 AM	4.05	0.48	3.03 Converter Check - 1

12/19/2003	9:16:13 AM	4.05	0.36	2.99	Converter Check - 1
12/19/2003	9:16:44 AM	4.1	0.43	3.03	Converter Check - 1
12/19/2003	9:17:14 AM	4.05	0.47	3.03	Converter Check - 1
12/19/2003	9:17:44 AM	4.1	0.52	3.03	Converter Check - 1
12/19/2003	9:18:14 AM	4.05	0.61	3.03	Converter Check - 1
12/19/2003	9:18:44 AM	4.1	0.51	3.03	Converter Check - 1
12/19/2003	9:19:14 AM	4.05	0.46	3.03	Converter Check - 1
12/19/2003	9:19:44 AM	4.05	0.44	3.03	Converter Check - 1
12/19/2003	9:20:14 AM	0.04	1.81	2.99	Converter Check - 1
12/19/2003	9:20:44 AM	3.9	2.87	3.03	Converter Check - 1
12/19/2003	9:21:14 AM	4.05	1.6	3.03	
12/19/2003	9:21:44 AM	4.05	0.7	3.03	
12/19/2003	9:22:14 AM	0.04	0.83	4.02	
12/19/2003	9:22:43 AM	0.04	0.1	4.75	
12/19/2003	9:23:14 AM	-0.01	-0.33	4.71	
12/19/2003	9:23:43 AM	-0.01	-0.42	0.17	
12/19/2003	9:24:14 AM	-0.01	-0.25	0.1	
12/19/2003	9:24:43 AM	0.04	0.12	0.1	
12/19/2003	9:25:14 AM	-0.01	0.07	0.1	
12/19/2003	9:25:44 AM	-0.01	0.15	0.06	Initial Span - Zero
12/19/2003	9:26:14 AM	-0.01	0.1	0.06	Initial Span - Zero
12/19/2003	9:26:44 AM	-0.01	-0.09	4.27	Initial Span - Zero
12/19/2003	9:27:14 AM	-0.01	-0.17	4.46	Initial Span - Zero
12/19/2003	9:27:44 AM	-0.01	-0.19	4.49	Initial Span - Span
12/19/2003	9:28:14 AM	-0.01	0.17	2.55	Initial Span - Span
12/19/2003	9:28:44 AM	-0.01	1.43	0.06	Initial Span - Span
12/19/2003	9:29:14 AM	-0.01	0.46	0.1	Initial Span - Span
12/19/2003	9:29:44 AM	0.04	0	0.06	Initial Span - Span
12/19/2003	9:30:14 AM	-0.01	0.01	0.06	Initial Span - Span
12/19/2003	9:30:44 AM	0.04	0.16	0.06	Initial Span - Span
12/19/2003	9:31:14 AM	-0.01	0.65	0.06	Initial Span - Span
12/19/2003	9:31:44 AM	-0.01	2.51	0.06	Initial Span - Span
12/19/2003	9:32:13 AM	0.04	3.03	0.06	Initial Span - Span
12/19/2003	9:32:44 AM	0.04	3.01	0.03	Initial Span - Span
12/19/2003	9:33:13 AM	9.17	2.53	0.54	Initial Span - Span
12/19/2003	9:33:44 AM	9.95	0.49	0.32	Initial Span - Span
12/19/2003	9:34:14 AM	10	-0.26	0.28	Initial Span - Span
12/19/2003	9:34:44 AM	10	-0.24	0.25	Initial Span - Span
12/19/2003	9:35:14 AM	0.14	-0.18	0.06	Initial Span - Span
12/19/2003	9:35:44 AM	0.09	0.07	0.06	Initial Span - Span
12/19/2003	9:36:14 AM	0.04	0.31	0.03	Initial Span - Span
12/19/2003	9:36:44 AM	-0.01	0.17	0.06	Initial Span - Span
12/19/2003	9:37:14 AM	3.95	0.14	0.36	Initial Span - Span
12/19/2003	9:37:44 AM	4	0.45	3.5	Initial Span - Span
12/19/2003	9:38:14 AM	4.05	0.6	3.61	Initial Span - Span
12/19/2003	9:38:44 AM	4.05	0.75	3.65	Initial Span - Span
12/19/2003	9:39:14 AM	4.05	0.7	3.61	Initial Span - Span
12/19/2003	9:39:44 AM	4.05	0.71	3.61	Initial Span - Span
12/19/2003	9:40:13 AM	4.05	0.76	3.58	Initial Span - Span
12/19/2003	9:40:44 AM	4.05	0.62	3.58	Initial Span - Span
12/19/2003	9:41:13 AM	4.05	0.76	3.61	Initial Span - Span
12/19/2003	9:41:44 AM	4.05	0.7	3.61	Initial Span - Span

12/19/2003	9:42:13 AM	4.05	0.77	3.61	Initial Span - Span
12/19/2003	9:42:44 AM	4.05	0.76	3.61	Initial Span - Span
12/19/2003	9:43:13 AM	4.05	0.75	3.65	Initial Span - Span
12/19/2003	9:43:44 AM	4.1	0.77	3.65	Initial Span - Span
12/19/2003	9:44:14 AM	4.1	0.8	3.61	Initial Span - Span
12/19/2003	9:44:44 AM	4.1	0.7	3.65	Initial Span - Span
12/19/2003	9:45:14 AM	4.05	0.73	3.69	Strat. Test (Run 1) - 1
12/19/2003	9:45:44 AM	4.1	0.74	3.54	Strat. Test (Run 1) - 1
12/19/2003	9:46:14 AM	4.05	0.71	3.54	Strat. Test (Run 1) - 1
12/19/2003	9:46:44 AM	4.1	0.74	3.47	Strat. Test (Run 1) - 1
12/19/2003	9:47:14 AM	4.1	0.69	3.47	Strat. Test (Run 1) - 1
12/19/2003	9:47:44 AM	4.05	0.68	3.43	Strat. Test (Run 1) - 1
12/19/2003	9:48:14 AM	4.1	0.67	3.43	Strat. Test (Run 1) - 1
12/19/2003	9:48:44 AM	4.05	0.73	3.32	Strat. Test (Run 1) - 1
12/19/2003	9:49:14 AM	4.05	0.72	3.47	Strat. Test (Run 1) - 1
12/19/2003	9:49:44 AM	4.05	0.72	3.43	Strat. Test (Run 1) - 1
12/19/2003	9:50:14 AM	4.05	0.8	3.36	Strat. Test (Run 1) - 1
12/19/2003	9:50:43 AM	4.05	0.73	3.39	Strat. Test (Run 1) - 1
12/19/2003	9:51:14 AM	4.05	0.63	3.36	Strat. Test (Run 1) - 1
12/19/2003	9:51:43 AM	4.05	0.59	3.29	Strat. Test (Run 1) - 1
12/19/2003	9:52:14 AM	4.05	0.67	3.32	
12/19/2003	9:52:43 AM	4.05	0.71	3.36	
12/19/2003	9:53:14 AM	4.1	0.62	3.39	
12/19/2003	9:53:44 AM	4.05	0.61	3.39	
12/19/2003	9:54:14 AM	4.05	0.69	3.29	
12/19/2003	9:54:44 AM	4.1	0.77	3.29	
12/19/2003	9:55:14 AM	4.05	0.81	3.32	
12/19/2003	9:55:44 AM	4.05	0.79	3.21	
12/19/2003	9:56:14 AM	0.19	0.63	3.29	
12/19/2003	9:56:44 AM	0.09	0.3	0.1	
12/19/2003	9:57:14 AM	4.05	0.37	3.21	
12/19/2003	9:57:44 AM	4.05	0.7	3.83	
12/19/2003	9:58:14 AM	4.05	0.73	3.83	
12/19/2003	9:58:44 AM	4.05	0.78	3.91	
12/19/2003	9:59:14 AM	4.05	0.74	3.83	Strat. Test (Run 1) - 1
12/19/2003	9:59:44 AM	4.05	0.71	3.83	Strat. Test (Run 1) - 1
12/19/2003	10:00:14 AM	4.05	0.85	3.87	Strat. Test (Run 1) - 1
12/19/2003	10:00:44 AM	4.05	0.82	3.87	Strat. Test (Run 1) - 1
12/19/2003	10:01:14 AM	4.05	0.76	3.87	Strat. Test (Run 1) - 1
12/19/2003	10:01:44 AM	4.05	0.76	3.87	Strat. Test (Run 1) - 1
12/19/2003	10:02:14 AM	4.1	0.68	3.94	Strat. Test (Run 1) - 1
12/19/2003	10:02:44 AM	4.1	0.78	3.94	Strat. Test (Run 1) - 1
12/19/2003	10:03:14 AM	4.05	0.68	4.05	Strat. Test (Run 1) - 1
12/19/2003	10:03:44 AM	4.05	0.74	4.02	Strat. Test (Run 1) - 1
12/19/2003	10:04:14 AM	4.05	0.83	3.98	Strat. Test (Run 1) - 1
12/19/2003	10:04:44 AM	4.1	0.71	4.02	Strat. Test (Run 1) - 1
12/19/2003	10:05:14 AM	4.05	0.74	4.05	Run Paused
12/19/2003	10:05:44 AM	4.05	0.78	4.02	Run Paused
12/19/2003	10:06:14 AM	4.05	0.85	4.09	Run Paused
12/19/2003	10:06:44 AM	4.05	0.75	4.13	Run Paused
12/19/2003	10:07:13 AM	1.7	0.73	4.05	Run Paused
12/19/2003	10:07:44 AM	0.09	0.48	0.14	Run Paused

12/19/2003	10:08:14 AM	0.04	0.17	0.1 Run Paused
12/19/2003	10:08:44 AM	4	0.6	3.69 Run Paused
12/19/2003	10:09:14 AM	4	0.78	3.76 Run Paused
12/19/2003	10:09:44 AM	4.05	0.78	3.72 Run Paused
12/19/2003	10:10:14 AM	4.05	0.76	3.69 Strat. Test (Run 1) - 1
12/19/2003	10:10:44 AM	4.05	0.76	3.72 Strat. Test (Run 1) - 1
12/19/2003	10:11:14 AM	4.1	0.78	3.72 Strat. Test (Run 1) - 1
12/19/2003	10:11:44 AM	4.05	0.82	3.69 Strat. Test (Run 1) - 1
12/19/2003	10:12:14 AM	4.05	0.72	3.69 Strat. Test (Run 1) - 1
12/19/2003	10:12:44 AM	4.1	0.73	3.69 Strat. Test (Run 1) - 1
12/19/2003	10:13:14 AM	4.05	0.78	3.5 Strat. Test (Run 1) - 1
12/19/2003	10:13:44 AM	4.05	0.78	3.47 Strat. Test (Run 1) - 1
12/19/2003	10:14:14 AM	4.1	0.78	3.43 Strat. Test (Run 1) - 1
12/19/2003	10:14:44 AM	4.05	0.78	3.43 Strat. Test (Run 1) - 1
12/19/2003	10:15:14 AM	4.1	0.93	3.5 Strat. Test (Run 1) - 1
12/19/2003	10:15:44 AM	4.05	0.77	3.36 Strat. Test (Run 1) - 1
12/19/2003	10:16:14 AM	4.1	0.79	3.39 Run Paused
12/19/2003	10:16:43 AM	4.05	0.81	3.21 Run Paused
12/19/2003	10:17:14 AM	4.05	0.85	3.32 Run Paused
12/19/2003	10:17:43 AM	0.14	0.69	0.14 Run Paused
12/19/2003	10:18:14 AM	0.09	0.39	0.1 Run Paused
12/19/2003	10:18:43 AM	0.09	0.3	0.1 Strat. Test (Run 1) - 1
12/19/2003	10:19:14 AM	0.09	0.22	0.1 Run Paused
12/19/2003	10:19:43 AM	4.05	0.54	3.65 Run Paused
12/19/2003	10:20:14 AM	4.1	0.96	3.72 Run Paused
12/19/2003	10:20:43 AM	4.05	0.93	3.72 Run Paused
12/19/2003	10:21:14 AM	4.1	0.72	3.76 Strat. Test (Run 1) - 1
12/19/2003	10:21:43 AM	4.1	0.77	3.8 Strat. Test (Run 1) - 1
12/19/2003	10:22:14 AM	4.05	0.72	3.76 Strat. Test (Run 1) - 1
12/19/2003	10:22:43 AM	4.05	0.79	3.76 Strat. Test (Run 1) - 1
12/19/2003	10:23:14 AM	4.05	0.81	3.69 Strat. Test (Run 1) - 1
12/19/2003	10:23:43 AM	4.05	0.8	3.72 Strat. Test (Run 1) - 1
12/19/2003	10:24:14 AM	4.1	0.65	3.76 Strat. Test (Run 1) - 1
12/19/2003	10:24:43 AM	4.05	0.68	3.76 Strat. Test (Run 1) - 1
12/19/2003	10:25:14 AM	4.1	0.76	3.76 Strat. Test (Run 1) - 1
12/19/2003	10:25:44 AM	4.05	0.76	3.76 Strat. Test (Run 1) - 1
12/19/2003	10:26:14 AM	4.05	0.74	3.69 Strat. Test (Run 1) - 1
12/19/2003	10:26:44 AM	4.1	0.58	3.83 Strat. Test (Run 1) - 1
12/19/2003	10:27:14 AM	4.05	0.79	3.76 Run Paused
12/19/2003	10:27:44 AM	4.05	0.72	3.76 Run Paused
12/19/2003	10:28:14 AM	3.61	0.69	3.69 Run Paused
12/19/2003	10:28:44 AM	0.19	0.55	0.14 Run Paused
12/19/2003	10:29:14 AM	4.05	0.62	3.5 Run Paused
12/19/2003	10:29:44 AM	4.05	0.7	3.58 Run Paused
12/19/2003	10:30:13 AM	4.05	0.79	3.58 Run Paused
12/19/2003	10:30:44 AM	4.1	0.78	3.61 Run Paused
12/19/2003	10:31:14 AM	4.05	0.82	3.58 Strat. Test (Run 1) - 1
12/19/2003	10:31:44 AM	4.05	0.72	3.65 Strat. Test (Run 1) - 1
12/19/2003	10:32:14 AM	4.05	0.78	3.65 Strat. Test (Run 1) - 1
12/19/2003	10:32:44 AM	4.1	0.89	3.65 Strat. Test (Run 1) - 1
12/19/2003	10:33:14 AM	4.1	0.85	3.61 Strat. Test (Run 1) - 1
12/19/2003	10:33:44 AM	4.05	0.9	3.5 Strat. Test (Run 1) - 1

12/19/2003	10:34:14 AM	4.05	0.85	3.58 Strat. Test (Run 1) - 1
12/19/2003	10:34:44 AM	4.1	0.74	3.54 Strat. Test (Run 1) - 1
12/19/2003	10:35:14 AM	4.05	0.67	3.5 Strat. Test (Run 1) - 1
12/19/2003	10:35:44 AM	4.1	0.67	3.5 Strat. Test (Run 1) - 1
12/19/2003	10:36:14 AM	4.1	0.82	3.32 Strat. Test (Run 1) - 1
12/19/2003	10:36:43 AM	4.05	0.85	3.36 Strat. Test (Run 1) - 1

Date	Time	O2 (%)	CO2 (%)	CO (PPM)	NOX (PPM)	Status
12/20/2003	8:07:58 AM	13.98	4.1	0.66	3.39	
12/20/2003	8:07:59 AM	13.98	4.14	0.66	3.43	
12/20/2003	8:08:18 AM	13.98	4.1	0.75	3.39	
12/20/2003	8:08:48 AM	13.92	4.1	0.84	3.36	
12/20/2003	8:09:18 AM	13.98	4.1	0.82	3.43	
12/20/2003	8:09:48 AM	13.92	4.1	0.85	3.36	
12/20/2003	8:10:17 AM	13.98	4.05	0.82	3.43	
12/20/2003	8:10:48 AM	13.98	4.1	0.82	3.47	
12/20/2003	8:11:18 AM	13.98	1.9	2.57	2.04	
12/20/2003	8:11:48 AM	12.39	0.04	4.63	0.06	
12/20/2003	8:12:18 AM	20.09	0.04	1	0.03	Linearity Check
12/20/2003	8:12:48 AM	21.06	0.09	0.21	-0.01	Linearity Check
12/20/2003	8:13:18 AM	21.06	0.04	0.11	-0.01	Linearity Check
12/20/2003	8:13:48 AM	21.12	0.09	0.09	-0.01	Linearity Check
12/20/2003	8:14:18 AM	21.12	0.04	0.09	-0.01	Linearity Check
12/20/2003	8:14:48 AM	21.12	0.04	0.1	-0.01	Linearity Check
12/20/2003	8:15:18 AM	21.12	0.38	0.16	10.9	Linearity Check
12/20/2003	8:15:47 AM	4.46	0.09	0.05	11.89	Linearity Check
12/20/2003	8:16:18 AM	0.43	0.04	-0.13	12.04	Linearity Check
12/20/2003	8:16:48 AM	0.19	0.04	-0.25	12.15	Linearity Check
12/20/2003	8:17:18 AM	0.06	0.04	-0.21	12.51	Linearity Check
12/20/2003	8:17:48 AM	0.06	0.04	-0.28	12.48	Linearity Check
12/20/2003	8:18:18 AM	0.06	0.04	-0.31	12.55	Linearity Check
12/20/2003	8:18:48 AM	0.06	0.04	-0.27	12.51	Linearity Check
12/20/2003	8:19:18 AM	0	-0.01	-0.19	12.51	Linearity Check
12/20/2003	8:19:48 AM	0	0.04	-0.24	8.34	Linearity Check
12/20/2003	8:20:18 AM	0.06	0.04	-0.21	7.9	Linearity Check
12/20/2003	8:20:48 AM	0	0.04	-0.15	8.19	Linearity Check
12/20/2003	8:21:18 AM	0	0.04	-0.28	8.19	Linearity Check
12/20/2003	8:21:48 AM	-0.06	-0.01	-0.3	8.16	Linearity Check
12/20/2003	8:22:18 AM	0	0.04	-0.26	6.29	Linearity Check
12/20/2003	8:22:48 AM	0.98	3.66	0.11	3.36	Linearity Check
12/20/2003	8:23:18 AM	10.69	3.95	0.63	3.58	Linearity Check
12/20/2003	8:23:48 AM	13.37	3.95	0.66	3.65	Linearity Check
12/20/2003	8:24:18 AM	10.14	0.04	0.36	4.49	Linearity Check
12/20/2003	8:24:48 AM	0.86	0.04	0.03	4.42	Linearity Check
12/20/2003	8:25:17 AM	0	-0.01	-0.17	4.42	Linearity Check
12/20/2003	8:25:48 AM	0	0.04	1.66	0.1	Linearity Check
12/20/2003	8:26:17 AM	-0.06	-0.01	5.47	0.03	Linearity Check
12/20/2003	8:26:48 AM	-0.06	-0.01	6.29	-0.01	Linearity Check
12/20/2003	8:27:18 AM	-0.06	-0.01	6.25	-0.01	Linearity Check
12/20/2003	8:27:48 AM	-0.06	0.04	6.29	-0.01	Linearity Check



12/20/2003	8:28:18 AM	0	3.95	5.95	2.85	Linearity Check
12/20/2003	8:28:48 AM	9.71	1.07	2.81	3.39	Linearity Check
12/20/2003	8:29:18 AM	6.66	0.04	2.67	0.03	Linearity Check
12/20/2003	8:29:48 AM	0.49	0.04	3.25	0.03	Linearity Check
12/20/2003	8:30:18 AM	-0.06	-0.01	3.05	-0.01	Linearity Check
12/20/2003	8:30:48 AM	-0.06	0.04	2.96	-0.05	Linearity Check
12/20/2003	8:31:18 AM	1.71	13.86	1.61	-0.01	Linearity Check
12/20/2003	8:31:47 AM	5.25	0.19	0.49	-0.01	Linearity Check
12/20/2003	8:32:18 AM	0.73	0.04	2.23	-0.01	Linearity Check
12/20/2003	8:32:47 AM	-0.06	0.04	3.11	-0.01	Linearity Check
12/20/2003	8:33:18 AM	-0.06	-0.01	3.15	-0.01	Linearity Check
12/20/2003	8:33:48 AM	-0.06	-0.01	3.09	-0.01	Linearity Check
12/20/2003	8:34:18 AM	4.28	0.04	2.02	-0.01	Linearity Check
12/20/2003	8:34:48 AM	19.17	0.04	0.32	-0.01	Linearity Check
12/20/2003	8:35:18 AM	20.76	-0.01	-0.04	-0.05	Linearity Check
12/20/2003	8:35:48 AM	20.94	-0.01	-0.07	-0.05	Linearity Check
12/20/2003	8:36:18 AM	21	7.32	0.04	-0.01	Linearity Check
12/20/2003	8:36:48 AM	15.14	10.54	-0.22	-0.05	Linearity Check
12/20/2003	8:37:18 AM	12.76	10.74	-0.46	-0.01	Linearity Check
12/20/2003	8:37:48 AM	12.64	10.83	-0.46	-0.05	Linearity Check
12/20/2003	8:38:18 AM	12.52	10.93	-0.46	-0.05	Linearity Check
12/20/2003	8:38:48 AM	12.52	10.93	-0.46	-0.05	Linearity Check
12/20/2003	8:39:18 AM	12.52	10.93	-0.46	-0.01	Linearity Check
12/20/2003	8:39:48 AM	12.58	16.79	-0.46	-0.05	Linearity Check
12/20/2003	8:40:18 AM	9.46	17.87	-0.46	-0.05	Linearity Check
12/20/2003	8:40:48 AM	6.53	17.96	-0.46	-0.05	Linearity Check
12/20/2003	8:41:18 AM	6.29	17.96	-0.46	-0.01	Linearity Check
12/20/2003	8:41:48 AM	6.23	17.91	-0.46	-0.05	Linearity Check
12/20/2003	8:42:18 AM	7.57	10.98	-0.46	-0.05	Linearity Check
12/20/2003	8:42:48 AM	11.97	9.12	-0.46	-0.01	Linearity Check
12/20/2003	8:43:18 AM	12.94	4.19	-0.18	3.39	Linearity Check
12/20/2003	8:43:48 AM	13.8	4.14	0.42	3.5	Linearity Check
12/20/2003	8:44:18 AM	13.92	4.14	0.67	3.5	Linearity Check
12/20/2003	8:44:48 AM	13.92	4.14	0.58	3.5	Linearity Check
12/20/2003	8:45:18 AM	13.92	4.14	0.65	3.54	Linearity Check
12/20/2003	8:45:48 AM	13.92	4.1	0.66	3.5	Linearity Check
12/20/2003	8:46:17 AM	13.92	4.1	0.67	3.5	Linearity Check
12/20/2003	8:46:48 AM	13.92	4.1	0.72	3.5	Linearity Check
12/20/2003	8:47:17 AM	13.92	4.1	0.65	3.54	Linearity Check
12/20/2003	8:47:48 AM	13.98	4.14	0.67	3.58	Linearity Check
12/20/2003	8:48:18 AM	13.92	4.1	0.75	3.54	
12/20/2003	8:48:48 AM	13.92	4.1	0.75	3.54	
12/20/2003	8:49:18 AM	13.92	4.05	0.67	3.5	

12/20/2003	8:49:48 AM	13.92	4.1	0.72	3.58
12/20/2003	8:50:18 AM	13.98	4.1	0.75	3.58
12/20/2003	8:50:48 AM	13.92	4.1	0.74	3.61
12/20/2003	8:51:18 AM	13.92	4.1	0.65	3.54
12/20/2003	8:51:48 AM	13.98	4.1	0.63	3.61
12/20/2003	8:52:18 AM	13.98	4.1	0.68	3.61
12/20/2003	8:52:48 AM	13.98	4.1	0.77	3.61
12/20/2003	8:53:18 AM	13.98	4.1	0.69	3.54
12/20/2003	8:53:48 AM	13.98	4.1	0.62	3.65
12/20/2003	8:54:18 AM	13.98	4.1	0.68	3.61
12/20/2003	8:54:48 AM	13.92	4.1	0.62	3.58
12/20/2003	8:55:18 AM	13.98	4.1	0.7	3.65
12/20/2003	8:55:47 AM	13.98	4.1	0.66	3.58
12/20/2003	8:56:18 AM	13.98	4.05	0.73	3.65
12/20/2003	8:56:47 AM	13.98	4.1	0.63	3.61
12/20/2003	8:57:18 AM	13.98	4.1	0.59	3.61
12/20/2003	8:57:47 AM	13.92	4.1	0.62	3.65
12/20/2003	8:58:18 AM	13.98	4.1	0.62	3.58
12/20/2003	8:58:48 AM	13.98	4.1	0.66	3.58
12/20/2003	8:59:18 AM	13.98	4.1	0.77	3.69
12/20/2003	8:59:48 AM	13.98	4.1	0.86	3.65
12/20/2003	9:00:18 AM	13.98	4.1	0.58	3.58
12/20/2003	9:00:48 AM	13.92	4.1	0.59	3.61
12/20/2003	9:01:18 AM	13.98	4.1	0.7	3.69
12/20/2003	9:01:48 AM	13.98	4.1	0.73	3.61
12/20/2003	9:02:18 AM	13.98	4.1	0.7	3.58
12/20/2003	9:02:48 AM	13.92	4.05	0.71	3.61
12/20/2003	9:03:18 AM	13.98	4.1	0.7	3.69
12/20/2003	9:03:48 AM	13.98	4.1	0.59	3.65
12/20/2003	9:04:18 AM	13.98	4.1	0.69	3.58
12/20/2003	9:04:48 AM	13.98	4.1	0.76	3.5
12/20/2003	9:05:18 AM	14.04	4.14	0.76	3.5
12/20/2003	9:05:48 AM	13.98	4.05	0.69	3.5
12/20/2003	9:06:18 AM	13.98	4.1	0.71	3.54
12/20/2003	9:06:48 AM	13.98	4.1	0.74	3.54
12/20/2003	9:07:18 AM	13.98	4.1	0.73	3.5
12/20/2003	9:07:48 AM	13.98	4.1	0.71	3.5
12/20/2003	9:08:18 AM	13.98	4.1	0.63	3.58
12/20/2003	9:08:48 AM	13.98	4.1	0.72	3.54
12/20/2003	9:09:18 AM	13.98	4.1	0.77	3.61
12/20/2003	9:09:48 AM	13.98	4.1	0.72	3.54
12/20/2003	9:10:17 AM	13.98	4.1	0.65	3.58
12/20/2003	9:10:48 AM	13.98	4.1	0.67	3.58

12/20/2003	9:11:18 AM	13.92	4.1	0.74	3.5
12/20/2003	9:11:48 AM	13.98	4.1	0.71	3.54
12/20/2003	9:12:18 AM	13.92	4.1	0.74	3.5
12/20/2003	9:12:48 AM	13.98	4.1	0.57	3.54
12/20/2003	9:13:18 AM	13.98	4.1	0.65	3.58
12/20/2003	9:13:48 AM	13.98	4.1	0.63	3.58
12/20/2003	9:14:18 AM	13.98	4.1	0.62	3.54
12/20/2003	9:14:48 AM	14.04	4.1	0.69	3.58
12/20/2003	9:15:18 AM	13.98	4.1	0.76	3.61
12/20/2003	9:15:48 AM	13.98	4.1	0.64	3.58
12/20/2003	9:16:18 AM	13.92	4.05	0.71	3.5
12/20/2003	9:16:48 AM	13.92	4.1	0.79	3.5
12/20/2003	9:17:18 AM	13.98	4.1	0.68	3.5
12/20/2003	9:17:48 AM	14.04	4.1	0.63	3.54
12/20/2003	9:18:18 AM	13.98	4.1	0.65	3.54
12/20/2003	9:18:48 AM	14.04	4.1	0.56	3.58
12/20/2003	9:19:18 AM	13.98	4.1	0.62	3.54
12/20/2003	9:19:47 AM	13.98	4.1	0.64	3.54
12/20/2003	9:20:18 AM	13.98	4.1	0.73	3.54
12/20/2003	9:20:48 AM	13.98	4.05	0.8	3.5
12/20/2003	9:21:18 AM	13.98	4.14	0.81	3.54
12/20/2003	9:21:48 AM	13.98	4.14	0.7	3.54
12/20/2003	9:22:18 AM	13.98	4.1	0.74	3.54
12/20/2003	9:22:48 AM	13.98	4.1	0.67	3.5
12/20/2003	9:23:18 AM	14.04	4.1	0.68	3.54
12/20/2003	9:23:48 AM	13.98	4.1	0.7	3.54
12/20/2003	9:24:18 AM	13.98	4.14	0.56	3.5
12/20/2003	9:24:47 AM	13.92	4.05	0.64	3.5
12/20/2003	9:25:18 AM	13.98	4.1	0.63	3.58
12/20/2003	9:25:48 AM	13.98	4.1	0.75	3.5
12/20/2003	9:26:18 AM	13.98	4.1	0.66	3.54
12/20/2003	9:26:48 AM	13.98	4.1	0.64	3.58
12/20/2003	9:27:18 AM	13.98	4.1	0.57	3.58
12/20/2003	9:27:48 AM	13.98	4.1	0.63	3.61
12/20/2003	9:28:18 AM	13.98	4.1	0.66	3.58
12/20/2003	9:28:48 AM	13.98	4.1	0.63	3.65
12/20/2003	9:29:18 AM	13.92	4.1	0.73	3.61
12/20/2003	9:29:48 AM	13.92	4.1	0.76	3.58
12/20/2003	9:30:18 AM	13.98	4.14	0.74	3.54
12/20/2003	9:30:48 AM	13.98	4.1	0.66	3.54
12/20/2003	9:31:18 AM	13.98	4.1	0.79	3.47
12/20/2003	9:31:48 AM	13.98	4.1	0.8	3.47
12/20/2003	9:32:18 AM	14.04	4.14	0.76	3.47

12/20/2003	9:32:48 AM	13.98	4.1	0.73	3.54
12/20/2003	9:33:18 AM	13.98	4.1	0.8	3.54
12/20/2003	9:33:48 AM	13.98	4.1	0.71	3.39
12/20/2003	9:34:18 AM	13.98	4.1	0.82	3.43
12/20/2003	9:34:48 AM	13.98	4.1	0.64	3.47
12/20/2003	9:35:18 AM	13.98	4.1	0.77	3.47
12/20/2003	9:35:48 AM	13.98	4.1	0.79	3.5
12/20/2003	9:36:18 AM	13.98	4.1	0.75	3.47
12/20/2003	9:36:48 AM	13.98	4.1	0.77	3.43
12/20/2003	9:37:17 AM	13.98	4.1	0.71	3.43
12/20/2003	9:37:48 AM	13.98	4.1	0.7	3.39
12/20/2003	9:38:17 AM	13.98	4.1	0.67	3.43
12/20/2003	9:38:48 AM	13.98	4.1	0.55	3.5
12/20/2003	9:39:17 AM	13.98	4.1	0.73	3.5
12/20/2003	9:39:48 AM	13.98	4.14	0.68	3.5
12/20/2003	9:40:18 AM	13.98	4.1	0.75	3.58
12/20/2003	9:40:48 AM	13.98	4.05	0.79	3.5
12/20/2003	9:41:18 AM	13.98	4.1	0.86	3.43
12/20/2003	9:41:48 AM	13.98	4.1	0.75	3.47
12/20/2003	9:42:18 AM	13.98	4.1	0.84	3.58
12/20/2003	9:42:48 AM	13.98	4.1	0.86	3.58
12/20/2003	9:43:18 AM	13.98	4.14	0.71	3.47
12/20/2003	9:43:48 AM	13.98	4.1	0.73	3.47
12/20/2003	9:44:18 AM	14.04	4.1	0.77	3.5
12/20/2003	9:44:48 AM	14.04	4.14	0.64	3.5
12/20/2003	9:45:18 AM	13.98	4.1	0.67	3.58
12/20/2003	9:45:48 AM	13.98	4.1	0.68	3.54
12/20/2003	9:46:18 AM	13.98	4.1	0.63	3.5
12/20/2003	9:46:48 AM	13.98	4.1	0.65	3.54
12/20/2003	9:47:18 AM	13.98	4.1	0.7	3.58
12/20/2003	9:47:48 AM	13.98	4.14	0.75	3.54
12/20/2003	9:48:18 AM	13.98	4.1	0.77	3.5
12/20/2003	9:48:48 AM	13.98	4.1	0.74	3.54
12/20/2003	9:49:18 AM	13.98	4.14	0.59	3.58
12/20/2003	9:49:48 AM	13.98	4.1	0.55	3.54
12/20/2003	9:50:18 AM	13.98	4.1	0.59	3.5
12/20/2003	9:50:47 AM	13.98	4.1	0.63	3.5
12/20/2003	9:51:18 AM	13.98	4.1	0.69	3.47
12/20/2003	9:51:47 AM	13.98	4.1	0.67	3.43
12/20/2003	9:52:18 AM	14.04	4.14	0.73	3.54
12/20/2003	9:52:47 AM	13.98	4.05	0.68	3.47
12/20/2003	9:53:18 AM	13.98	4.14	0.56	3.58
12/20/2003	9:53:48 AM	14.04	4.14	0.65	3.54

12/20/2003	9:54:18 AM	13.98	4.1	0.54	3.54
12/20/2003	9:54:48 AM	13.92	4.1	0.52	3.5
12/20/2003	9:55:18 AM	13.98	4.1	0.59	3.54
12/20/2003	9:55:48 AM	13.98	4.1	0.55	3.5
12/20/2003	9:56:18 AM	14.04	4.1	0.62	3.58
12/20/2003	9:56:48 AM	13.98	4.1	0.71	3.58
12/20/2003	9:57:18 AM	14.04	4.1	0.71	3.58
12/20/2003	9:57:47 AM	13.98	4.1	0.55	3.58
12/20/2003	9:58:18 AM	13.98	4.14	0.59	3.65
12/20/2003	9:58:48 AM	13.98	4.14	0.65	3.65
12/20/2003	9:59:18 AM	13.98	4.14	0.69	3.65
12/20/2003	9:59:48 AM	13.98	4.14	0.71	3.61
12/20/2003	10:00:18 AM	13.98	4.14	0.61	3.61
12/20/2003	10:00:48 AM	13.98	4.1	0.67	3.5
12/20/2003	10:01:18 AM	14.04	4.1	0.72	3.54
12/20/2003	10:01:48 AM	13.98	4.1	0.62	3.54
12/20/2003	10:02:18 AM	13.98	4.14	0.57	3.61
12/20/2003	10:02:48 AM	13.98	4.1	0.71	3.58
12/20/2003	10:03:18 AM	13.98	4.1	0.6	3.58
12/20/2003	10:03:48 AM	13.98	4.1	0.65	3.54
12/20/2003	10:04:18 AM	14.04	4.14	0.64	3.61
12/20/2003	10:04:48 AM	13.92	4.1	0.6	3.54
12/20/2003	10:05:18 AM	13.98	4.14	0.61	3.65
12/20/2003	10:05:48 AM	13.98	4.14	0.59	3.65
12/20/2003	10:06:18 AM	13.98	4.14	0.57	3.61
12/20/2003	10:06:48 AM	13.98	4.14	0.69	3.54
12/20/2003	10:07:18 AM	13.98	7.76	0.94	3.5
12/20/2003	10:07:48 AM	8.24	0.09	2.03	0.06
12/20/2003	10:08:18 AM	0.8	0.09	2.84	0.03
12/20/2003	10:08:48 AM	0.12	0.09	3.17	0.03
12/20/2003	10:09:18 AM	0.06	0.04	3.13	-0.01
12/20/2003	10:09:48 AM	0.06	4.05	2.77	1.71
12/20/2003	10:10:18 AM	10.62	4.1	1.38	3.47
12/20/2003	10:10:48 AM	13.62	4.1	0.7	3.47
12/20/2003	10:11:18 AM	12.03	0.04	1.37	-0.01
12/20/2003	10:11:48 AM	0.98	0.04	2.81	-0.05
12/20/2003	10:12:18 AM	0.12	0.04	3.13	-0.05
12/20/2003	10:12:48 AM	4.09	4.05	2.42	3.39
12/20/2003	10:13:18 AM	12.88	4.1	0.94	3.47
12/20/2003	10:13:48 AM	13.8	4.1	0.72	3.58
12/20/2003	10:14:18 AM	13.92	4.14	0.67	3.61
12/20/2003	10:14:48 AM	13.92	4.1	0.71	3.54
12/20/2003	10:15:17 AM	13.98	4.14	0.79	3.58

12/20/2003	10:15:48 AM	13.92	4.1	0.7	3.5
12/20/2003	10:16:18 AM	13.92	4.1	0.67	3.5
12/20/2003	10:16:48 AM	13.92	4.1	0.65	3.54
12/20/2003	10:17:18 AM	13.98	4.14	0.69	3.5
12/20/2003	10:17:48 AM	13.92	4.1	0.72	3.47
12/20/2003	10:18:18 AM	13.98	0.19	0.58	0.32
12/20/2003	10:18:48 AM	18.99	0.09	0.29	0.21
12/20/2003	10:19:18 AM	20.82	0.09	0.25	0.03
12/20/2003	10:19:48 AM	20.94	0.04	0.12	0.06
12/20/2003	10:20:18 AM	21	0.09	0.13	0.03
12/20/2003	10:20:48 AM	21	0.09	0.14	0.03
12/20/2003	10:21:18 AM	21	4.05	0.37	3.32
12/20/2003	10:21:48 AM	15.57	4.1	0.72	3.47
12/20/2003	10:22:18 AM	14.1	4.1	0.78	3.47
12/20/2003	10:22:48 AM	13.98	4.1	0.79	3.47
12/20/2003	10:23:18 AM	13.98	4.1	0.78	3.43
12/20/2003	10:23:48 AM	14.04	4.1	0.79	3.43
12/20/2003	10:24:18 AM	13.98	4.1	0.77	3.43
12/20/2003	10:24:48 AM	13.98	4.1	0.73	3.47
12/20/2003	10:25:18 AM	13.98	4.1	0.65	3.47
12/20/2003	10:25:48 AM	13.98	4.1	0.7	3.43
12/20/2003	10:26:18 AM	14.04	4.1	0.7	3.47
12/20/2003	10:26:48 AM	13.98	4.1	0.73	3.47
12/20/2003	10:27:18 AM	13.98	4.1	0.74	3.5
12/20/2003	10:27:48 AM	13.98	4.1	0.74	3.58
12/20/2003	10:28:18 AM	13.92	4.1	0.76	3.54
12/20/2003	10:28:48 AM	13.98	4.14	0.75	3.65
12/20/2003	10:29:18 AM	13.98	4.1	0.72	3.58
12/20/2003	10:29:48 AM	13.92	4.1	0.72	3.47
12/20/2003	10:30:18 AM	13.98	4.1	0.7	3.5
12/20/2003	10:30:47 AM	13.98	4.1	0.83	3.47
12/20/2003	10:31:18 AM	13.98	4.1	0.71	3.47
12/20/2003	10:31:47 AM	13.98	4.1	0.76	3.43
12/20/2003	10:32:18 AM	13.98	4.1	0.66	3.36
12/20/2003	10:32:47 AM	13.98	4.14	0.77	3.36
12/20/2003	10:33:18 AM	13.98	4.1	0.76	3.47
12/20/2003	10:33:48 AM	13.98	4.14	0.71	3.5
12/20/2003	10:34:18 AM	13.98	4.1	0.87	3.47
12/20/2003	10:34:48 AM	13.98	4.1	0.79	3.5
12/20/2003	10:35:18 AM	13.98	4.1	0.75	3.5
12/20/2003	10:35:48 AM	13.92	4.1	0.68	3.61
12/20/2003	10:36:18 AM	13.92	4.1	0.74	3.58
12/20/2003	10:36:48 AM	13.92	4.1	0.66	3.5

12/20/2003	10:37:18 AM	13.98	4.1	0.69	3.54
12/20/2003	10:37:48 AM	13.98	4.1	0.7	3.54
12/20/2003	10:38:18 AM	13.98	4.1	0.65	3.58
12/20/2003	10:38:47 AM	13.98	4.14	0.67	3.54
12/20/2003	10:39:18 AM	13.98	4.14	0.75	3.61
12/20/2003	10:39:48 AM	13.98	4.1	0.72	3.61
12/20/2003	10:40:18 AM	13.92	4.1	0.72	3.61
12/20/2003	10:40:48 AM	13.92	1.7	0.72	2.96
12/20/2003	10:41:18 AM	10.14	0.04	1.08	0.06 Initial Span - Zero
12/20/2003	10:41:48 AM	19.78	0.04	0.32	0.03 Initial Span - Zero
12/20/2003	10:42:18 AM	21	0.04	0.1	-0.01 Initial Span - Zero
12/20/2003	10:42:48 AM	21.06	-0.01	0.08	-0.01 Initial Span - Zero
12/20/2003	10:43:18 AM	21.12	-0.01	0.05	-0.01 Initial Span - Zero
12/20/2003	10:43:48 AM	21.12	0.04	-0.04	-0.01 Initial Span - Zero
12/20/2003	10:44:17 AM	21.19	0.09	0.05	3.29 Initial Span - Zero
12/20/2003	10:44:48 AM	5.5	0.04	-0.12	4.35 Initial Span - Zero
12/20/2003	10:45:17 AM	0.49	0.04	-0.22	4.38 Initial Span - Span
12/20/2003	10:45:48 AM	0.12	0.04	-0.29	4.35 Initial Span - Span
12/20/2003	10:46:18 AM	0.12	0.04	-0.14	3.98 Initial Span - Span
12/20/2003	10:46:48 AM	0.12	0.04	1.34	0.03 Initial Span - Zero
12/20/2003	10:47:18 AM	0.06	-0.01	2.76	-0.01 Initial Span - Zero
12/20/2003	10:47:48 AM	0	0.04	2.85	-0.01 Initial Span - Zero
12/20/2003	10:48:18 AM	0	-0.01	3.03	-0.01 Initial Span - Span
12/20/2003	10:48:48 AM	0	0.04	3.11	-0.01 Initial Span - Span
12/20/2003	10:49:18 AM	0.61	10.2	2.54	0.03 Initial Span - Span
12/20/2003	10:49:48 AM	10.62	10.93	0.25	-0.01 Initial Span - Span
12/20/2003	10:50:18 AM	12.46	10.93	-0.45	-0.01 Initial Span - Span
12/20/2003	10:50:48 AM	12.52	10.98	-0.45	-0.01 Initial Span - Span
12/20/2003	10:51:18 AM	12.52	10.93	-0.46	-0.01 Initial Span - Span
12/20/2003	10:51:49 AM	12.58	10.98	-0.46	-0.05 Initial Span - Span
12/20/2003	10:52:19 AM	12.58	10.98	-0.46	-0.05 Initial Span - Span
12/20/2003	10:52:49 AM	12.58	10.98	-0.46	-0.05 Initial Span - Span
12/20/2003	10:53:18 AM	13.92	4.14	0.94	3.69 Run 1 - 1
12/20/2003	10:53:48 AM	13.92	4.1	0.97	3.76 Run 1 - 1
12/20/2003	10:54:18 AM	13.98	4.14	1.06	3.72 Run 1 - 1
12/20/2003	10:54:48 AM	13.98	4.1	1.01	3.72 Run 1 - 1
12/20/2003	10:55:18 AM	13.92	4.1	1	3.72 Run 1 - 1
12/20/2003	10:55:48 AM	13.98	4.1	0.86	3.72 Run 1 - 1
12/20/2003	10:56:18 AM	13.92	4.1	0.82	3.76 Run 1 - 1
12/20/2003	10:56:48 AM	13.98	4.1	0.89	3.65 Run 1 - 1
12/20/2003	10:57:18 AM	13.98	4.14	0.99	3.72 Run 1 - 1
12/20/2003	10:57:48 AM	13.98	4.14	0.93	3.72 Run 1 - 1
12/20/2003	10:58:18 AM	13.98	4.1	0.96	3.69 Run 1 - 1

12/20/2003	10:58:48 AM	13.92	4.05	1.02	3.72	Run 1 - 1
12/20/2003	10:59:18 AM	13.98	4.1	0.96	3.65	Run 1 - 1
12/20/2003	10:59:48 AM	13.98	4.1	1	3.61	Run 1 - 1
12/20/2003	11:00:18 AM	13.98	4.14	0.87	3.61	Run 1 - 1
12/20/2003	11:00:48 AM	13.98	4.1	0.93	3.58	Run 1 - 1
12/20/2003	11:01:17 AM	13.98	4.1	0.98	3.61	Run 1 - 1
12/20/2003	11:01:48 AM	13.92	4.1	1.04	3.54	Run 1 - 1
12/20/2003	11:02:18 AM	13.98	4.14	1.03	3.61	Run 1 - 1
12/20/2003	11:02:48 AM	13.98	4.1	0.96	3.61	Run 1 - 1
12/20/2003	11:03:17 AM	13.92	4.1	1.1	3.58	Run 1 - 1
12/20/2003	11:03:48 AM	13.98	4.14	0.94	3.61	Run 1 - 1
12/20/2003	11:04:18 AM	13.98	4.1	0.9	3.54	Run 1 - 1
12/20/2003	11:04:48 AM	14.04	4.1	0.89	3.65	Run 1 - 1
12/20/2003	11:05:18 AM	13.98	4.1	1.01	3.61	Run 1 - 1
12/20/2003	11:05:48 AM	14.04	4.1	1.01	3.5	Run 1 - 1
12/20/2003	11:06:17 AM	14.04	4.14	1	3.61	Run 1 - 1
12/20/2003	11:06:48 AM	13.98	4.1	0.92	3.5	Run 1 - 1
12/20/2003	11:07:17 AM	13.98	4.14	1.02	3.5	Run 1 - 1
12/20/2003	11:07:48 AM	13.98	4.1	1.01	3.54	Run 1 - 1
12/20/2003	11:08:17 AM	14.04	4.1	1	3.61	Run 1 - 1
12/20/2003	11:08:48 AM	13.98	4.1	0.9	3.54	Run 1 - 1
12/20/2003	11:09:17 AM	14.04	4.1	0.9	3.5	Run 1 - 1
12/20/2003	11:09:48 AM	14.04	4.1	0.93	3.54	Run 1 - 1
12/20/2003	11:10:17 AM	14.04	4.1	0.98	3.58	Run 1 - 1
12/20/2003	11:10:48 AM	13.98	4.1	0.95	3.54	Run 1 - 1
12/20/2003	11:11:17 AM	13.98	4.1	1.04	3.54	Run 1 - 1
12/20/2003	11:11:48 AM	14.04	4.1	1.04	3.54	Run 1 - 1
12/20/2003	11:12:18 AM	13.98	4.1	1.01	3.54	Run 1 - 1
12/20/2003	11:12:48 AM	13.98	4.1	0.97	3.54	Run 1 - 1
12/20/2003	11:13:18 AM	14.04	4.14	0.98	3.58	Run 1 - 1
12/20/2003	11:13:48 AM	13.98	4.1	0.88	3.54	Run 1 - 1
12/20/2003	11:14:18 AM	13.98	4.14	1.03	3.58	Run 1 - 2
12/20/2003	11:14:48 AM	13.98	4.1	1.01	3.5	
12/20/2003	11:15:18 AM	13.98	4.05	0.79	1.09	
12/20/2003	11:15:48 AM	17.22	0.09	0.49	-0.12	
12/20/2003	11:16:18 AM	20.88	0.09	0.22	-0.12	
12/20/2003	11:16:48 AM	21.12	0.09	0.11	-0.05	Run 1 Span - Zero
12/20/2003	11:17:18 AM	21.12	0.04	-0.05	-0.05	Run 1 Span - Zero
12/20/2003	11:17:48 AM	21.12	0.04	0	-0.05	Run 1 Span - Zero
12/20/2003	11:18:18 AM	16.48	0.04	-0.02	4.2	Run 1 Span - Zero
12/20/2003	11:18:48 AM	1.53	0.04	-0.14	4.24	Run 1 Span - Zero
12/20/2003	11:19:18 AM	0.19	0.04	-0.09	4.31	Run 1 Span - Span
12/20/2003	11:19:47 AM	0.12	0.04	-0.22	4.31	Run 1 Span - Span



12/20/2003	11:20:18 AM	0.12	0.04	-0.21	4.35	Run 1 Span - Span
12/20/2003	11:20:47 AM	0.06	-0.01	-0.12	4.31	Run 1 Span - Span
12/20/2003	11:21:18 AM	0.06	0.04	0.29	0.83	Run 1 Span - Span
12/20/2003	11:21:47 AM	0	-0.01	2.27	-0.05	Run 1 Span - Zero
12/20/2003	11:22:18 AM	0	0.04	3.12	-0.05	Run 1 Span - Span
12/20/2003	11:22:48 AM	-0.06	-0.01	3.14	-0.05	Run 1 Span - Span
12/20/2003	11:23:18 AM	0	10.3	3.08	-0.05	Run 1 Span - Span
12/20/2003	11:23:48 AM	8.49	10.88	1.02	-0.08	Run 1 Span - Span
12/20/2003	11:24:18 AM	12.21	10.93	-0.36	-0.05	Run 1 Span - Span
12/20/2003	11:24:48 AM	12.52	10.98	-0.46	-0.05	Run 1 Span - Span
12/20/2003	11:25:18 AM	12.52	10.93	-0.46	-0.05	Run 1 Span - Span
12/20/2003	11:25:48 AM	12.52	10.05	-0.46	-0.08	Run 1 Span - Span
12/20/2003	11:26:18 AM	13.07	4.1	0.92	3.43	Run 1 Span - Span
12/20/2003	11:26:47 AM	13.8	4.1	1.87	3.47	Run 1 Span - Span
12/20/2003	11:27:18 AM	13.92	4.14	1.63	3.5	Run 1 Span - Span
12/20/2003	11:27:48 AM	13.92	4.1	1.33	3.5	Run 1 Span - Span
12/20/2003	11:28:18 AM	13.98	4.14	1.42	3.54	Run 1 Span - Span
12/20/2003	11:28:47 AM	13.92	4.1	1.32	3.54	Run 1 Span - Span
12/20/2003	11:29:18 AM	13.92	4.1	1.27	3.54	Run 1 Span - Span
12/20/2003	11:29:48 AM	13.92	4.1	1.34	3.61	Run 1 Span - Span
12/20/2003	11:30:18 AM	13.92	4.1	1.32	3.54	Run 2 - 1
12/20/2003	11:30:48 AM	13.92	4.1	1.14	3.5	Run 2 - 1
12/20/2003	11:31:18 AM	13.98	4.1	1.06	3.61	Run 2 - 1
12/20/2003	11:31:48 AM	13.98	4.1	1.21	3.65	Run 2 - 1
12/20/2003	11:32:18 AM	13.98	4.1	1.13	3.65	Run 2 - 1
12/20/2003	11:32:48 AM	13.98	4.1	1.09	3.61	Run 2 - 1
12/20/2003	11:33:17 AM	13.98	4.1	0.94	3.65	Run 2 - 1
12/20/2003	11:33:48 AM	13.98	4.1	1.06	3.65	Run 2 - 1
12/20/2003	11:34:18 AM	13.98	4.1	1.24	3.65	Run 2 - 1
12/20/2003	11:34:48 AM	13.98	4.1	1.22	3.58	Run 2 - 1
12/20/2003	11:35:18 AM	13.92	4.1	0.93	3.58	Run 2 - 1
12/20/2003	11:35:48 AM	13.98	4.14	1.19	3.65	Run 2 - 1
12/20/2003	11:36:18 AM	13.98	4.14	1.18	3.58	Run 2 - 1
12/20/2003	11:36:48 AM	13.98	4.1	1.01	3.54	Run 2 - 1
12/20/2003	11:37:18 AM	13.92	4.1	0.97	3.54	Run 2 - 1
12/20/2003	11:37:48 AM	13.98	4.1	0.94	3.54	Run 2 - 1
12/20/2003	11:38:18 AM	13.98	4.1	0.86	3.58	Run 2 - 1
12/20/2003	11:38:48 AM	13.98	4.1	0.8	3.61	Run 2 - 1
12/20/2003	11:39:18 AM	13.98	4.1	0.75	3.54	Run 2 - 1
12/20/2003	11:39:47 AM	13.98	4.14	1.06	3.58	Run 2 - 1
12/20/2003	11:40:18 AM	13.98	4.14	1.15	3.54	Run 2 - 1
12/20/2003	11:40:48 AM	13.98	4.1	1.05	3.54	Run 2 - 1
12/20/2003	11:41:18 AM	13.98	4.1	1.1	3.58	Run 2 - 1

12/20/2003	11:41:48 AM	13.98	4.14	0.88	3.58	Run 2 - 1
12/20/2003	11:42:18 AM	13.98	4.1	0.84	3.61	Run 2 - 1
12/20/2003	11:42:48 AM	13.98	4.1	0.95	3.58	Run 2 - 1
12/20/2003	11:43:18 AM	13.98	4.14	0.94	3.61	Run 2 - 1
12/20/2003	11:43:48 AM	13.98	4.1	0.79	3.61	Run 2 - 1
12/20/2003	11:44:18 AM	13.92	4.1	1.01	3.61	Run 2 - 1
12/20/2003	11:44:47 AM	13.98	4.1	1.04	3.61	Run 2 - 1
12/20/2003	11:45:18 AM	14.04	4.1	0.8	3.61	Run 2 - 1
12/20/2003	11:45:48 AM	13.98	4.1	0.79	3.58	Run 2 - 1
12/20/2003	11:46:18 AM	13.98	4.1	0.92	3.58	Run 2 - 1
12/20/2003	11:46:48 AM	14.04	4.14	0.9	3.58	Run 2 - 1
12/20/2003	11:47:18 AM	13.98	4.1	0.78	3.54	Run 2 - 1
12/20/2003	11:47:48 AM	14.04	4.14	0.95	3.54	Run 2 - 1
12/20/2003	11:48:18 AM	13.98	4.1	0.86	3.5	Run 2 - 1
12/20/2003	11:48:48 AM	13.98	4.1	1.06	3.54	Run 2 - 1
12/20/2003	11:49:18 AM	14.04	4.1	1.07	3.58	Run 2 - 1
12/20/2003	11:49:48 AM	13.98	4.1	0.81	3.58	Run 2 - 1
12/20/2003	11:50:18 AM	14.04	4.1	0.9	3.54	Run 2 - 1
12/20/2003	11:50:48 AM	13.98	4.1	0.94	3.54	Run 2 - 1
12/20/2003	11:51:18 AM	13.98	4.1	0.93	3.58	
12/20/2003	11:51:48 AM	13.98	4.1	0.97	3.54	
12/20/2003	11:52:18 AM	13.98	0.29	0.65	0.06	Run 2 Span - Zero
12/20/2003	11:52:48 AM	19.29	0.09	0.28	-0.05	Run 2 Span - Zero
12/20/2003	11:53:18 AM	21	0.09	0.1	-0.05	Run 2 Span - Zero
12/20/2003	11:53:48 AM	21.12	0.09	0.02	-0.08	Run 2 Span - Zero
12/20/2003	11:54:17 AM	21.12	0.04	-0.04	0.61	Run 2 Span - Zero
12/20/2003	11:54:48 AM	6.47	0.04	-0.17	4.35	Run 2 Span - Span
12/20/2003	11:55:17 AM	0.55	0.04	-0.22	4.27	Run 2 Span - Span
12/20/2003	11:55:48 AM	0.19	0.09	-0.23	4.31	Run 2 Span - Span
12/20/2003	11:56:17 AM	0.12	0.04	-0.29	4.35	Run 2 Span - Span
12/20/2003	11:56:48 AM	0.06	0.09	-0.27	4.31	Run 2 Span - Span
12/20/2003	11:57:17 AM	0.06	0.04	1.18	-0.05	Run 2 Span - Zero
12/20/2003	11:57:48 AM	0.06	0.04	2.83	-0.05	Run 2 Span - Zero
12/20/2003	11:58:18 AM	0	0.04	2.95	-0.05	Run 2 Span - Span
12/20/2003	11:58:48 AM	0	-0.01	2.94	-0.05	Run 2 Span - Span
12/20/2003	11:59:18 AM	0	7.76	3.09	-0.05	Run 2 Span - Span
12/20/2003	11:59:48 AM	6.72	10.83	1.41	-0.05	Run 2 Span - Span
12/20/2003	12:00:18 PM	12.03	10.93	-0.43	-0.08	Run 2 Span - Span
12/20/2003	12:00:48 PM	12.52	10.93	-0.45	-0.05	Run 2 Span - Span
12/20/2003	12:01:18 PM	12.52	10.93	-0.46	-0.05	Run 2 Span - Span
12/20/2003	12:01:48 PM	12.58	10.98	-0.46	-0.05	Run 2 Span - Span
12/20/2003	12:02:18 PM	12.52	4.78	-0.46	-0.05	Run 2 Span - Span
12/20/2003	12:02:48 PM	13.37	4.1	0.7	3.36	Run 2 Span - Span

12/20/2003	12:03:18 PM	13.86	4.14	1.26	3.43 Run 2 Span - Span
12/20/2003	12:03:48 PM	13.92	4.14	1.28	3.5 Run 2 Span - Span
12/20/2003	12:04:18 PM	13.74	4	0.93	0.43 Run 2 Span - Span
12/20/2003	12:04:48 PM	15.08	4.1	0.79	3.47 Run 2 Span - Span
12/20/2003	12:05:17 PM	14.04	4.1	1.06	3.43 Run 2 Span - Span
12/20/2003	12:05:48 PM	13.98	4.1	1.03	3.5 Run 3 - 1
12/20/2003	12:06:18 PM	13.98	4.1	0.98	3.43 Run 3 - 1
12/20/2003	12:06:48 PM	13.98	4.1	0.93	3.5 Run 3 - 1
12/20/2003	12:07:18 PM	13.92	4.1	0.92	3.61 Run 3 - 1
12/20/2003	12:07:48 PM	13.98	4.1	1.01	3.61 Run 3 - 1
12/20/2003	12:08:18 PM	13.92	4.1	1.04	3.65 Run 3 - 1
12/20/2003	12:08:48 PM	13.92	4.1	0.97	3.54 Run 3 - 1
12/20/2003	12:09:18 PM	13.98	4.05	1.1	3.58 Run 3 - 1
12/20/2003	12:09:48 PM	13.98	4.1	1.13	3.61 Run 3 - 1
12/20/2003	12:10:17 PM	13.92	4.1	1.08	3.54 Run 3 - 1
12/20/2003	12:10:48 PM	13.98	4.14	1.17	3.69 Run 3 - 1
12/20/2003	12:11:18 PM	13.98	4.1	1.1	3.65 Run 3 - 1
12/20/2003	12:11:48 PM	13.98	4.1	0.94	3.54 Run 3 - 1
12/20/2003	12:12:18 PM	13.92	4.1	0.83	3.61 Run 3 - 1
12/20/2003	12:12:48 PM	13.98	4.1	0.95	3.61 Run 3 - 1
12/20/2003	12:13:18 PM	13.98	4.1	1.07	3.58 Run 3 - 1
12/20/2003	12:13:48 PM	13.98	4.1	0.92	3.58 Run 3 - 1
12/20/2003	12:14:18 PM	13.92	4.1	0.99	3.54 Run 3 - 1
12/20/2003	12:14:48 PM	13.92	4.1	0.92	3.61 Run 3 - 1
12/20/2003	12:15:18 PM	13.98	4.1	0.97	3.61 Run 3 - 1
12/20/2003	12:15:48 PM	13.98	4.1	0.97	3.5 Run 3 - 1
12/20/2003	12:16:18 PM	13.98	4.1	0.95	3.61 Run 3 - 1
12/20/2003	12:16:48 PM	13.98	4.1	0.81	3.5 Run 3 - 1
12/20/2003	12:17:18 PM	13.98	4.1	0.85	3.58 Run 3 - 1
12/20/2003	12:17:48 PM	13.98	4.1	0.89	3.58 Run 3 - 1
12/20/2003	12:18:18 PM	13.98	4.1	0.87	3.58 Run 3 - 1
12/20/2003	12:18:48 PM	13.98	4.1	0.82	3.61 Run 3 - 1
12/20/2003	12:19:18 PM	13.98	4.1	0.84	3.58 Run 3 - 1
12/20/2003	12:19:47 PM	13.98	4.1	0.89	3.58 Run 3 - 1
12/20/2003	12:20:18 PM	14.04	4.1	0.95	3.54 Run 3 - 1
12/20/2003	12:20:48 PM	13.98	4.1	0.91	3.5 Run 3 - 1
12/20/2003	12:21:18 PM	13.98	4.1	0.89	3.47 Run 3 - 1
12/20/2003	12:21:48 PM	14.04	4.1	0.95	3.5 Run 3 - 1
12/20/2003	12:22:18 PM	13.98	4.1	0.92	3.47 Run 3 - 1
12/20/2003	12:22:48 PM	13.98	4.1	0.8	3.54 Run 3 - 1
12/20/2003	12:23:18 PM	13.98	4.1	0.81	3.54 Run 3 - 1
12/20/2003	12:23:48 PM	13.98	4.05	0.86	3.47 Run 3 - 1
12/20/2003	12:24:18 PM	13.98	4.1	0.82	3.54 Run 3 - 1

12/20/2003	12:24:48 PM	13.98	4.1	0.79	3.54 Run 3 - 1
12/20/2003	12:25:18 PM	13.98	4.05	0.88	3.5 Run 3 - 1
12/20/2003	12:25:48 PM	13.98	4.1	0.66	3.58 Run 3 - 1
12/20/2003	12:26:18 PM	13.98	4.1	0.99	3.58 Run 3 - 1
12/20/2003	12:26:48 PM	13.92	4.05	0.79	3.54
12/20/2003	12:27:18 PM	13.98	4	0.88	3.58
12/20/2003	12:27:47 PM	16.55	0.09	0.64	-0.01 Run 3 Span - Zero
12/20/2003	12:28:18 PM	20.76	0.04	0.43	-0.05 Run 3 Span - Zero
12/20/2003	12:28:48 PM	21.06	0.04	0.11	-0.08 Run 3 Span - Zero
12/20/2003	12:29:18 PM	21.19	0.04	-0.07	-0.05 Run 3 Span - Zero
12/20/2003	12:29:48 PM	20.94	0.04	0.15	3.43 Run 3 Span - Zero
12/20/2003	12:30:18 PM	2.87	0.04	-0.3	4.27 Run 3 Span - Zero
12/20/2003	12:30:48 PM	0.31	0.04	-0.32	4.31 Run 3 Span - Span
12/20/2003	12:31:18 PM	0.12	0.04	-0.24	4.31 Run 3 Span - Span
12/20/2003	12:31:48 PM	0.06	-0.01	-0.14	4.27 Run 3 Span - Zero
12/20/2003	12:32:18 PM	0.06	0.04	0.78	0.03 Run 3 Span - Zero
12/20/2003	12:32:48 PM	0	0.04	2.7	-0.05 Run 3 Span - Zero
12/20/2003	12:33:18 PM	0.06	0.04	3.05	-0.05 Run 3 Span - Span
12/20/2003	12:33:48 PM	0	0.04	3.14	-0.05 Run 3 Span - Span
12/20/2003	12:34:18 PM	0	0.04	3.14	-0.05 Run 3 Span - Span
12/20/2003	12:34:48 PM	0	0.04	3.18	-0.05 Run 3 Span - Span
12/20/2003	12:35:18 PM	0	0.19	3.05	-0.05 Run 3 Span - Span
12/20/2003	12:35:48 PM	5.13	10.78	1.56	-0.05
12/20/2003	12:36:18 PM	11.78	10.88	-0.36	-0.08
12/20/2003	12:36:48 PM	12.46	10.93	-0.45	-0.05
12/20/2003	12:37:18 PM	12.52	10.93	-0.46	-0.05
12/20/2003	12:37:48 PM	12.52	10.93	-0.46	-0.08 Run 3 Span - Span
12/20/2003	12:38:18 PM	12.52	10.93	-0.46	-0.08 Run 3 Span - Span
12/20/2003	12:38:48 PM	12.58	5.85	-0.46	-0.05 Run 3 Span - Span
12/20/2003	12:39:18 PM	13.25	4.1	0.93	3.25 Run 3 Span - Span
12/20/2003	12:39:48 PM	13.86	4.1	1.65	3.36 Run 3 Span - Span
12/20/2003	12:40:17 PM	13.92	4.1	1.5	3.43 Run 3 Span - Span
12/20/2003	12:40:48 PM	13.92	4.1	1.43	3.47 Run 3 Span - Span
12/20/2003	12:41:18 PM	13.98	4.14	1.25	3.47 Run 3 Span - Span
12/20/2003	12:41:48 PM	13.92	4.1	1.23	3.5 Run 3 Span - Span
12/20/2003	12:42:18 PM	13.92	4.1	0.62	3.54 Run 3 Span - Span
12/20/2003	12:42:48 PM	13.98	4.1	0.72	3.58 Run 3 Span - Span
12/20/2003	12:43:17 PM	13.98	4.14	1.18	3.5 Run 3 Span - Span
12/20/2003	12:43:48 PM	13.92	4.1	1.1	3.5 Run 3 Span - Span
12/20/2003	12:44:17 PM	13.98	4.1	1.12	3.5 Run 3 Span - Span
12/20/2003	12:44:48 PM	13.98	4.1	1.1	3.54 Run 3 Span - Span
12/20/2003	12:45:18 PM	13.98	4.1	1.08	3.58 Run 4 - 1
12/20/2003	12:45:48 PM	14.04	4.14	1.04	3.5 Run 4 - 1

12/20/2003	12:46:18 PM	13.98	4.05	1.02	3.5 Run 4 - 1
12/20/2003	12:46:48 PM	14.04	4.1	1.1	3.54 Run 4 - 1
12/20/2003	12:47:18 PM	14.04	4.14	1.11	3.5 Run 4 - 1
12/20/2003	12:47:48 PM	13.98	4.1	1.12	3.5 Run 4 - 1
12/20/2003	12:48:18 PM	13.98	4.05	0.89	3.47 Run 4 - 1
12/20/2003	12:48:47 PM	13.98	4.1	0.86	3.54 Run 4 - 1
12/20/2003	12:49:18 PM	14.04	4.1	0.8	3.5 Run 4 - 1
12/20/2003	12:49:47 PM	13.98	4.05	0.73	3.47 Run 4 - 1
12/20/2003	12:50:18 PM	13.98	4.05	0.77	3.5 Run 4 - 1
12/20/2003	12:50:48 PM	13.98	4.1	0.76	3.47 Run 4 - 1
12/20/2003	12:51:18 PM	13.92	4.1	0.6	3.54 Run 4 - 1
12/20/2003	12:51:48 PM	13.92	4.05	0.73	3.47 Run 4 - 1
12/20/2003	12:52:18 PM	13.92	4.1	0.73	3.61 Run 4 - 1
12/20/2003	12:52:48 PM	13.92	4.05	0.71	3.54 Run 4 - 1
12/20/2003	12:53:18 PM	13.92	4.1	0.8	3.54 Run 4 - 1
12/20/2003	12:53:48 PM	13.98	4.1	0.79	3.61 Run 4 - 1
12/20/2003	12:54:18 PM	13.98	4.14	0.82	3.61 Run 4 - 1
12/20/2003	12:54:48 PM	13.98	4.1	0.8	3.58 Run 4 - 1
12/20/2003	12:55:18 PM	13.92	4.05	0.77	3.47 Run 4 - 1
12/20/2003	12:55:47 PM	13.92	4.05	0.82	3.5 Run 4 - 1
12/20/2003	12:56:18 PM	13.98	4.1	0.77	3.58 Run 4 - 1
12/20/2003	12:56:48 PM	13.98	4.1	0.8	3.61 Run 4 - 1
12/20/2003	12:57:18 PM	13.98	4.1	0.77	3.58 Run 4 - 1
12/20/2003	12:57:48 PM	13.98	4.1	0.72	3.58 Run 4 - 1
12/20/2003	12:58:18 PM	13.92	4.05	0.77	3.5 Run 4 - 1
12/20/2003	12:58:48 PM	13.92	4.1	0.76	3.5 Run 4 - 1
12/20/2003	12:59:18 PM	13.98	4.1	0.62	3.54 Run 4 - 1
12/20/2003	12:59:48 PM	13.92	4.1	0.73	3.54 Run 4 - 1
12/20/2003	1:00:18 PM	13.98	4.1	0.74	3.54 Run 4 - 1
12/20/2003	1:00:48 PM	13.92	4.1	0.67	3.58 Run 4 - 1
12/20/2003	1:01:18 PM	13.98	4.1	0.79	3.5 Run 4 - 1
12/20/2003	1:01:48 PM	13.92	4.1	0.69	3.5 Run 4 - 1
12/20/2003	1:02:18 PM	13.98	4.1	0.81	3.54 Run 4 - 1
12/20/2003	1:02:48 PM	13.92	4.1	0.93	3.5 Run 4 - 1
12/20/2003	1:03:17 PM	13.98	4.1	0.9	3.54 Run 4 - 1
12/20/2003	1:03:48 PM	13.92	4.1	0.93	3.47 Run 4 - 1
12/20/2003	1:04:18 PM	13.98	4.1	0.94	3.5 Run 4 - 1
12/20/2003	1:04:48 PM	13.92	4.1	0.71	3.5 Run 4 - 1
12/20/2003	1:05:18 PM	13.92	4.05	0.79	3.5 Run 4 - 1
12/20/2003	1:05:48 PM	13.92	4.05	0.81	3.5 Run 4 - 1
12/20/2003	1:06:17 PM	13.92	4.1	0.81	3.47
12/20/2003	1:06:48 PM	13.92	4.1	0.73	3.47
12/20/2003	1:07:18 PM	13.98	10.83	0.58	0.06

12/20/2003	1:07:48 PM	12.88	10.93	-0.39	-0.05	Run 4 Span - Zero
12/20/2003	1:08:18 PM	12.64	10.98	-0.45	-0.01	Run 4 Span - Zero
12/20/2003	1:08:48 PM	12.58	10.93	-0.46	-0.05	Run 4 Span - Zero
12/20/2003	1:09:18 PM	12.58	10.93	-0.46	-0.05	Run 4 Span - Span
12/20/2003	1:09:48 PM	12.58	10.98	-0.45	-0.05	Run 4 Span - Span
12/20/2003	1:10:18 PM	14.29	0.14	-0.46	-0.05	Run 4 Span - Span
12/20/2003	1:10:48 PM	20.45	0.09	0.06	-0.05	Run 4 Span - Span
12/20/2003	1:11:18 PM	21.06	0.09	0.35	-0.05	Run 4 Span - Zero
12/20/2003	1:11:48 PM	21.12	0.04	0.35	-0.05	Run 4 Span - Zero
12/20/2003	1:12:18 PM	21.12	0.24	0.08	0.46	Run 4 Span - Zero
12/20/2003	1:12:48 PM	10.14	0.09	-0.07	4.24	Run 4 Span - Zero
12/20/2003	1:13:18 PM	0.73	0.04	-0.19	4.27	Run 4 Span - Span
12/20/2003	1:13:48 PM	0.19	0.09	-0.14	4.31	Run 4 Span - Zero
12/20/2003	1:14:18 PM	0.12	0.09	-0.25	4.27	Run 4 Span - Zero
12/20/2003	1:14:48 PM	0.06	0.09	-0.1	1.49	Run 4 Span - Zero
12/20/2003	1:15:18 PM	0.06	0.04	1.99	-0.01	Run 4 Span - Span
12/20/2003	1:15:48 PM	0.06	0.04	2.73	-0.01	Run 4 Span - Span
12/20/2003	1:16:18 PM	0	0.04	2.99	-0.05	Run 4 Span - Span
12/20/2003	1:16:47 PM	0.06	0.04	3.26	-0.05	Run 4 Span - Span
12/20/2003	1:17:18 PM	0	0.04	2.95	1.86	Run 4 Span - Span
12/20/2003	1:17:48 PM	0	0.04	1.2	4.24	Run 4 Span - Span
12/20/2003	1:18:18 PM	0	0.04	-0.08	4.27	Run 4 Span - Span
12/20/2003	1:18:48 PM	0	0.04	-0.35	4.27	Run 4 Span - Span
12/20/2003	1:19:18 PM	0.43	10.74	-0.46	-0.01	Run 4 Span - Span
12/20/2003	1:19:48 PM	11.05	10.88	-0.45	-0.05	Run 4 Span - Span
12/20/2003	1:20:18 PM	12.39	10.88	-0.45	-0.05	Run 4 Span - Span
12/20/2003	1:20:48 PM	12.52	10.93	-0.45	-0.05	Run 4 Span - Span
12/20/2003	1:21:18 PM	12.52	10.93	-0.46	-0.05	Run 4 Span - Span
12/20/2003	1:21:48 PM	12.52	10.93	-0.45	-0.05	Run 4 Span - Span
12/20/2003	1:22:18 PM	12.52	10.93	-0.45	-0.05	Run 4 Span - Span
12/20/2003	1:22:48 PM	12.76	4.14	-0.31	3.47	Run 4 Span - Span
12/20/2003	1:23:18 PM	13.8	4.1	0.5	3.39	Run 4 Span - Span
12/20/2003	1:23:48 PM	13.86	4.1	0.69	3.43	Run 4 Span - Span
12/20/2003	1:24:18 PM	13.92	4.1	0.7	3.43	Run 5 - 1
12/20/2003	1:24:47 PM	13.86	4.05	0.64	3.36	Run 5 - 1
12/20/2003	1:25:18 PM	13.92	4.1	0.77	3.47	Run 5 - 1
12/20/2003	1:25:47 PM	13.92	4.1	0.7	3.54	Run 5 - 1
12/20/2003	1:26:18 PM	13.92	4.1	0.67	3.47	Run 5 - 1
12/20/2003	1:26:48 PM	13.92	4.05	0.68	3.5	Run 5 - 1
12/20/2003	1:27:18 PM	13.92	4.1	0.78	3.47	Run 5 - 1
12/20/2003	1:27:48 PM	13.92	4.1	0.69	3.54	Run 5 - 1
12/20/2003	1:28:18 PM	13.92	4.1	0.7	3.5	Run 5 - 1
12/20/2003	1:28:48 PM	13.92	4.1	0.83	3.54	Run 5 - 1

12/20/2003	1:29:18 PM	13.98	4.1	0.84	3.47 Run 5 - 1
12/20/2003	1:29:48 PM	13.92	4.1	0.78	3.5 Run 5 - 1
12/20/2003	1:30:18 PM	13.92	4.05	0.73	3.5 Run 5 - 1
12/20/2003	1:30:48 PM	13.98	4.1	0.76	3.58 Run 5 - 1
12/20/2003	1:31:17 PM	13.98	4.1	0.79	3.58 Run 5 - 1
12/20/2003	1:31:48 PM	13.92	4.1	0.79	3.5 Run 5 - 1
12/20/2003	1:32:17 PM	13.92	4.1	0.89	3.5 Run 5 - 1
12/20/2003	1:32:48 PM	13.98	4.1	1	3.5 Run 5 - 1
12/20/2003	1:33:17 PM	13.92	4.05	0.84	3.54 Run 5 - 1
12/20/2003	1:33:48 PM	13.92	4.1	0.76	3.58 Run 5 - 1
12/20/2003	1:34:18 PM	13.98	4.1	0.8	3.54 Run 5 - 1
12/20/2003	1:34:48 PM	13.98	4.1	0.77	3.58 Run 5 - 1
12/20/2003	1:35:18 PM	13.98	4.1	0.66	3.61 Run 5 - 1
12/20/2003	1:35:48 PM	13.98	4.1	0.6	3.58 Run 5 - 1
12/20/2003	1:36:18 PM	13.98	4.1	0.69	3.54 Run 5 - 1
12/20/2003	1:36:48 PM	13.92	4.05	0.72	3.61 Run 5 - 1
12/20/2003	1:37:18 PM	13.92	4.05	0.71	3.58 Run 5 - 1
12/20/2003	1:37:48 PM	13.98	4.05	0.73	3.58 Run 5 - 1
12/20/2003	1:38:18 PM	13.92	4.05	0.69	3.65 Run 5 - 1
12/20/2003	1:38:48 PM	13.98	4.1	0.64	3.61 Run 5 - 1
12/20/2003	1:39:18 PM	13.92	4.05	0.49	3.65 Run 5 - 1
12/20/2003	1:39:48 PM	13.98	4.1	0.59	3.54 Run 5 - 1
12/20/2003	1:40:18 PM	13.98	4.1	0.6	3.58 Run 5 - 1
12/20/2003	1:40:48 PM	13.98	4.1	0.72	3.65 Run 5 - 1
12/20/2003	1:41:18 PM	13.98	4.1	0.72	3.65 Run 5 - 1
12/20/2003	1:41:48 PM	13.92	4.1	0.63	3.65 Run 5 - 1
12/20/2003	1:42:18 PM	13.92	4.1	0.76	3.61 Run 5 - 1
12/20/2003	1:42:48 PM	13.92	4.1	0.86	3.58 Run 5 - 1
12/20/2003	1:43:18 PM	13.92	4.1	0.82	3.65 Run 5 - 1
12/20/2003	1:43:48 PM	13.98	4.1	0.83	3.65 Run 5 - 1
12/20/2003	1:44:18 PM	13.98	4.1	0.8	3.61 Run 5 - 1
12/20/2003	1:44:48 PM	13.92	4.1	0.69	3.61 Run 5 - 1
12/20/2003	1:45:18 PM	13.98	4.1	0.74	3.65 Run 5 - 2
12/20/2003	1:45:48 PM	13.98	4.14	0.87	3.61
12/20/2003	1:46:18 PM	13.98	4.05	0.77	3.61
12/20/2003	1:46:48 PM	13.92	10.78	0.48	0.06
12/20/2003	1:47:18 PM	12.76	10.88	-0.41	0.03 Run 5 Span - Zero
12/20/2003	1:47:48 PM	12.64	10.93	-0.46	-0.01 Run 5 Span - Span
12/20/2003	1:48:18 PM	12.64	10.98	-0.46	-0.01 Run 5 Span - Span
12/20/2003	1:48:48 PM	12.58	10.93	-0.46	-0.01 Run 5 Span - Span
12/20/2003	1:49:17 PM	12.58	0.29	-0.45	3.69 Run 5 Span - Span
12/20/2003	1:49:48 PM	2.32	0.09	-0.46	4.31 Run 5 Span - Span
12/20/2003	1:50:18 PM	0.19	0.09	-0.16	4.31 Run 5 Span - Span

12/20/2003	1:50:48 PM	0.06	0.04	-0.22	4.35	Run 5 Span - Zero
12/20/2003	1:51:18 PM	0.06	0.09	-0.28	4.35	Run 5 Span - Span
12/20/2003	1:51:48 PM	0.06	0.09	-0.23	4.09	Run 5 Span - Span
12/20/2003	1:52:18 PM	0	0.04	1.56	0.03	Run 5 Span - Span
12/20/2003	1:52:48 PM	0	0.04	2.83	-0.01	Run 5 Span - Span
12/20/2003	1:53:18 PM	-0.06	0.04	3.06	-0.01	Run 5 Span - Span
12/20/2003	1:53:48 PM	0	0.04	3.08	-0.05	Run 5 Span - Span
12/20/2003	1:54:18 PM	0	3.95	2.98	1.53	Run 5 Span - Span
12/20/2003	1:54:48 PM	9.59	4.05	1.82	3.47	Run 5 Span - Span
12/20/2003	1:55:18 PM	13.55	4.05	0.74	3.5	Run 5 Span - Span
12/20/2003	1:55:48 PM	13.8	4.05	0.72	3.5	Run 5 Span - Span
12/20/2003	1:56:18 PM	13.86	4.05	0.64	3.5	Run 6 - 1
12/20/2003	1:56:48 PM	13.86	4.1	0.72	3.47	Run 6 - 1
12/20/2003	1:57:18 PM	13.86	4.1	0.71	3.47	Run 6 - 1
12/20/2003	1:57:48 PM	13.86	4.1	0.84	3.54	Run 6 - 1
12/20/2003	1:58:18 PM	13.92	4.1	0.71	3.54	Run 6 - 1
12/20/2003	1:58:48 PM	13.86	4.1	0.63	3.5	Run 6 - 1
12/20/2003	1:59:18 PM	13.86	4.1	0.83	3.39	Run 6 - 1
12/20/2003	1:59:48 PM	13.92	4.1	0.66	3.47	Run 6 - 1
12/20/2003	2:00:18 PM	13.92	4.1	0.75	3.54	Run 6 - 1
12/20/2003	2:00:48 PM	13.92	4.1	0.73	3.58	Run 6 - 1
12/20/2003	2:01:18 PM	13.92	4.1	0.81	3.5	Run 6 - 1
12/20/2003	2:01:47 PM	13.86	4.05	0.78	3.54	Run 6 - 1
12/20/2003	2:02:18 PM	13.86	4.1	0.81	3.61	Run 6 - 1
12/20/2003	2:02:47 PM	13.92	4.1	0.83	3.54	Run 6 - 1
12/20/2003	2:03:18 PM	13.92	4.1	0.76	3.61	Run 6 - 1
12/20/2003	2:03:48 PM	13.92	4.1	0.78	3.58	Run 6 - 1
12/20/2003	2:04:18 PM	13.92	4.14	0.78	3.61	Run 6 - 1
12/20/2003	2:04:48 PM	13.92	4.1	0.68	3.54	Run 6 - 1
12/20/2003	2:05:18 PM	13.98	4.1	0.71	3.54	Run 6 - 1
12/20/2003	2:05:48 PM	13.98	4.14	0.8	3.54	Run 6 - 1
12/20/2003	2:06:18 PM	13.92	4.1	0.75	3.54	Run 6 - 1
12/20/2003	2:06:48 PM	13.92	4.1	0.77	3.5	Run 6 - 1
12/20/2003	2:07:18 PM	13.98	4.1	0.81	3.58	Run 6 - 1
12/20/2003	2:07:48 PM	13.92	4.1	0.74	3.58	Run 6 - 1
12/20/2003	2:08:18 PM	13.98	4.1	0.64	3.54	Run 6 - 1
12/20/2003	2:08:48 PM	13.92	4.1	0.64	3.61	Run 6 - 1
12/20/2003	2:09:17 PM	13.98	4.1	0.68	3.58	Run 6 - 1
12/20/2003	2:09:48 PM	13.98	4.1	0.63	3.58	Run 6 - 1
12/20/2003	2:10:17 PM	13.92	4.05	0.64	3.58	Run 6 - 1
12/20/2003	2:10:48 PM	13.98	4.1	0.72	3.61	Run 6 - 1
12/20/2003	2:11:18 PM	13.92	4.1	0.73	3.61	Run 6 - 1
12/20/2003	2:11:48 PM	13.92	4.1	0.77	3.65	Run 6 - 1



12/20/2003	2:12:18 PM	13.92	4.1	0.65	3.65 Run 6 - 1
12/20/2003	2:12:48 PM	13.92	4.1	0.75	3.65 Run 6 - 1
12/20/2003	2:13:18 PM	13.98	4.1	0.77	3.65 Run 6 - 1
12/20/2003	2:13:48 PM	13.98	4.1	0.77	3.65 Run 6 - 1
12/20/2003	2:14:18 PM	13.98	4.1	0.79	3.65 Run 6 - 1
12/20/2003	2:14:48 PM	13.92	4.1	0.68	3.65 Run 6 - 1
12/20/2003	2:15:18 PM	13.92	4.1	0.63	3.69 Run 6 - 1
12/20/2003	2:15:47 PM	13.92	4.1	0.82	3.69 Run 6 - 1
12/20/2003	2:16:18 PM	13.98	4.1	0.73	3.61 Run 6 - 1
12/20/2003	2:16:47 PM	13.92	4.1	0.63	3.65 Run 6 - 1
12/20/2003	2:17:18 PM	13.92	4.1	0.59	3.61
12/20/2003	2:17:48 PM	13.92	4.05	0.63	3.58
12/20/2003	2:18:18 PM	13.43	10.74	0.99	0.1 Run 6 Span - Zero
12/20/2003	2:18:48 PM	11.6	10.88	0.02	0.03 Run 6 Span - Zero
12/20/2003	2:19:18 PM	12.52	10.93	-0.46	-0.01 Run 6 Span - Zero
12/20/2003	2:19:48 PM	12.58	10.93	-0.46	-0.01 Run 6 Span - Span
12/20/2003	2:20:18 PM	12.58	10.93	-0.46	-0.01 Run 6 Span - Span
12/20/2003	2:20:48 PM	12.58	0.58	-0.45	0.68 Run 6 Span - Span
12/20/2003	2:21:18 PM	4.09	0.09	-0.46	4.35 Run 6 Span - Span
12/20/2003	2:21:48 PM	0.31	0.09	-0.25	4.31 Run 6 Span - Span
12/20/2003	2:22:18 PM	0.06	0.09	-0.19	4.38 Run 6 Span - Zero
12/20/2003	2:22:48 PM	0.06	0.09	-0.27	4.38 Run 6 Span - Zero
12/20/2003	2:23:18 PM	0.06	0.04	0.99	0.06 Run 6 Span - Zero
12/20/2003	2:23:48 PM	0.06	0.04	2.72	-0.01 Run 6 Span - Zero
12/20/2003	2:24:18 PM	0.06	0.09	3.07	-0.01 Run 6 Span - Span
12/20/2003	2:24:48 PM	0	0.04	3.02	-0.05
12/20/2003	2:25:18 PM	4.64	4.05	2.22	3.36
12/20/2003	2:25:48 PM	13.07	4.1	0.97	3.54
12/20/2003	2:26:18 PM	13.8	4.1	0.67	3.5
12/20/2003	2:26:48 PM	13.86	4.1	0.59	3.5 Run 7 - 1
12/20/2003	2:27:18 PM	13.86	4.1	0.73	3.5 Run 7 - 1
12/20/2003	2:27:48 PM	13.86	4.1	0.73	3.54 Run 7 - 1
12/20/2003	2:28:18 PM	13.86	4.05	0.7	3.54 Run 7 - 1
12/20/2003	2:28:48 PM	13.86	4.1	0.83	3.54 Run 7 - 1
12/20/2003	2:29:18 PM	13.86	4.1	0.61	3.54 Run 7 - 1
12/20/2003	2:29:48 PM	13.86	4.1	0.66	3.5 Run 7 - 1
12/20/2003	2:30:17 PM	13.92	4.1	0.72	3.47 Run 7 - 1
12/20/2003	2:30:48 PM	13.86	4.1	0.66	3.47 Run 7 - 1
12/20/2003	2:31:18 PM	13.92	4.1	0.62	3.5 Run 7 - 1
12/20/2003	2:31:48 PM	13.92	4.1	0.66	3.54 Run 7 - 1
12/20/2003	2:32:18 PM	13.92	4.1	0.83	3.54 Run 7 - 1
12/20/2003	2:32:48 PM	13.86	4.05	0.76	3.61 Run 7 - 1
12/20/2003	2:33:18 PM	13.92	4.1	0.79	3.54 Run 7 - 1

12/20/2003	2:33:48 PM	13.92	4.1	0.9	3.58 Run 7 - 1
12/20/2003	2:34:18 PM	13.92	4.1	0.92	3.5 Run 7 - 1
12/20/2003	2:34:48 PM	13.92	4.1	0.81	3.54 Run 7 - 1
12/20/2003	2:35:18 PM	13.92	4.1	0.73	3.58 Run 7 - 1
12/20/2003	2:35:48 PM	13.92	4.1	0.72	3.54 Run 7 - 1
12/20/2003	2:36:18 PM	13.92	4.1	0.66	3.54 Run 7 - 1
12/20/2003	2:36:48 PM	13.98	4.1	0.72	3.54 Run 7 - 1
12/20/2003	2:37:18 PM	13.92	4.05	0.73	3.54 Run 7 - 1
12/20/2003	2:37:47 PM	13.98	4.1	0.81	3.61 Run 7 - 1
12/20/2003	2:38:18 PM	13.92	4.05	0.67	3.54 Run 7 - 1
12/20/2003	2:38:47 PM	13.92	4.05	0.64	3.54 Run 7 - 1
12/20/2003	2:39:18 PM	13.92	4.1	0.72	3.58 Run 7 - 1
12/20/2003	2:39:47 PM	13.98	4.1	0.71	3.65 Run 7 - 1
12/20/2003	2:40:18 PM	13.92	4.1	0.77	3.58 Run 7 - 1
12/20/2003	2:40:47 PM	13.92	4.1	0.72	3.61 Run 7 - 1
12/20/2003	2:41:18 PM	13.92	4.05	0.67	3.58 Run 7 - 1
12/20/2003	2:41:47 PM	13.92	4.1	0.87	3.61 Run 7 - 1
12/20/2003	2:42:18 PM	13.92	4.1	0.68	3.61 Run 7 - 1
12/20/2003	2:42:48 PM	13.92	4.1	0.72	3.65 Run 7 - 1
12/20/2003	2:43:18 PM	13.98	4.1	0.66	3.54 Run 7 - 1
12/20/2003	2:43:48 PM	13.92	4.05	0.65	3.54 Run 7 - 1
12/20/2003	2:44:18 PM	13.92	4.1	0.75	3.5 Run 7 - 1
12/20/2003	2:44:47 PM	13.92	4.1	0.81	3.61 Run 7 - 1
12/20/2003	2:45:18 PM	13.92	4.1	0.79	3.58 Run 7 - 1
12/20/2003	2:45:47 PM	13.98	4.1	0.7	3.61 Run 7 - 1
12/20/2003	2:46:18 PM	13.92	4.1	0.66	3.58 Run 7 - 1
12/20/2003	2:46:48 PM	13.92	4.05	0.72	3.65 Run 7 - 1
12/20/2003	2:47:18 PM	13.92	4.1	0.76	3.65 Run 7 - 1
12/20/2003	2:47:47 PM	13.98	4.1	0.84	3.61
12/20/2003	2:48:18 PM	13.92	3.9	0.72	3.61
12/20/2003	2:48:47 PM	10.01	10.74	0.72	0.06 Run 7 Span - Zero
12/20/2003	2:49:18 PM	12.09	10.93	-0.21	0.03 Run 7 Span - Zero
12/20/2003	2:49:48 PM	12.58	10.93	-0.45	0.03 Run 7 Span - Span
12/20/2003	2:50:18 PM	12.58	10.93	-0.46	-0.01 Run 7 Span - Span
12/20/2003	2:50:48 PM	12.58	10.93	-0.46	-0.01 Run 7 Span - Span
12/20/2003	2:51:18 PM	12.58	10.93	-0.45	-0.01 Run 7 Span - Span
12/20/2003	2:51:48 PM	12.58	0.29	-0.46	2.81 Run 7 Span - Span
12/20/2003	2:52:18 PM	2.32	0.09	-0.46	4.31 Run 7 Span - Span
12/20/2003	2:52:48 PM	0.19	0.09	-0.24	4.35 Run 7 Span - Span
12/20/2003	2:53:18 PM	0.06	0.04	-0.3	4.35 Run 7 Span - Span
12/20/2003	2:53:48 PM	0.06	0.04	-0.31	4.35 Run 7 Span - Zero
12/20/2003	2:54:18 PM	0.06	0.09	0.53	0.14 Run 7 Span - Zero
12/20/2003	2:54:48 PM	0	0.04	2.49	-0.01 Run 7 Span - Zero

12/20/2003	2:55:18 PM	0	0.04	2.98	-0.01 Run 7 Span - Zero
12/20/2003	2:55:48 PM	-0.06	0.04	3.14	-0.01 Run 7 Span - Span
12/20/2003	2:56:18 PM	0.19	4.1	2.77	3.21 Run 7 Span - Span
12/20/2003	2:56:48 PM	12.03	4.1	1.2	3.58 Run 7 Span - Span
12/20/2003	2:57:18 PM	13.68	4.1	0.81	3.54 Run 7 Span - Span
12/20/2003	2:57:48 PM	13.8	4.1	0.78	3.54 Run 7 Span - Span
12/20/2003	2:58:18 PM	13.86	4.1	0.58	3.58 Run 8 - 1
12/20/2003	2:58:47 PM	13.86	4.1	0.76	3.54 Run 8 - 1
12/20/2003	2:59:18 PM	13.86	4.1	0.79	3.58 Run 8 - 1
12/20/2003	2:59:48 PM	13.86	4.05	0.73	3.58 Run 8 - 1
12/20/2003	3:00:18 PM	13.86	4.1	0.76	3.5 Run 8 - 1
12/20/2003	3:00:47 PM	13.86	4.1	0.74	3.5 Run 8 - 1
12/20/2003	3:01:18 PM	13.86	4.1	0.82	3.61 Run 8 - 1
12/20/2003	3:01:47 PM	13.86	4.1	0.67	3.54 Run 8 - 1
12/20/2003	3:02:18 PM	13.92	4.1	0.75	3.54 Run 8 - 1
12/20/2003	3:02:48 PM	13.86	4.1	0.76	3.58 Run 8 - 1
12/20/2003	3:03:18 PM	13.86	4.1	0.74	3.61 Run 8 - 1
12/20/2003	3:03:48 PM	13.92	4.1	0.75	3.58 Run 8 - 1
12/20/2003	3:04:18 PM	13.92	4.14	0.75	3.54 Run 8 - 1
12/20/2003	3:04:48 PM	13.86	4.1	0.87	3.54 Run 8 - 1
12/20/2003	3:05:18 PM	13.92	4.1	0.84	3.58 Run 8 - 1
12/20/2003	3:05:48 PM	13.86	4.05	0.83	3.54 Run 8 - 1
12/20/2003	3:06:18 PM	13.92	4.1	0.86	3.54 Run 8 - 1
12/20/2003	3:06:48 PM	13.92	4.1	0.75	3.58 Run 8 - 1
12/20/2003	3:07:18 PM	13.92	4.1	0.81	3.58 Run 8 - 1
12/20/2003	3:07:48 PM	13.98	4.1	0.79	3.61 Run 8 - 1
12/20/2003	3:08:18 PM	13.98	4.1	0.85	3.58 Run 8 - 1
12/20/2003	3:08:48 PM	13.98	4.1	0.75	3.58 Run 8 - 1
12/20/2003	3:09:18 PM	13.98	4.1	0.64	3.5 Run 8 - 1
12/20/2003	3:09:48 PM	13.92	4.1	0.76	3.54 Run 8 - 1
12/20/2003	3:10:18 PM	13.98	4.14	0.77	3.58 Run 8 - 1
12/20/2003	3:10:48 PM	13.92	4.1	0.77	3.58 Run 8 - 1
12/20/2003	3:11:18 PM	13.92	4.05	0.75	3.54 Run 8 - 1
12/20/2003	3:11:48 PM	13.92	4.1	0.78	3.58 Run 8 - 1
12/20/2003	3:12:18 PM	13.98	4.05	0.71	3.61 Run 8 - 1
12/20/2003	3:12:48 PM	13.98	4.1	0.78	3.61 Run 8 - 1
12/20/2003	3:13:18 PM	13.98	4.1	0.84	3.61 Run 8 - 1
12/20/2003	3:13:48 PM	13.98	4.1	0.72	3.61 Run 8 - 1
12/20/2003	3:14:17 PM	13.92	4.1	0.81	3.65 Run 8 - 1
12/20/2003	3:14:48 PM	13.92	4.05	0.81	3.58 Run 8 - 1
12/20/2003	3:15:17 PM	13.92	4.05	0.67	3.54 Run 8 - 1
12/20/2003	3:15:48 PM	13.92	4.1	0.82	3.58 Run 8 - 1
12/20/2003	3:16:18 PM	13.92	4.05	0.85	3.61 Run 8 - 1

12/20/2003	3:16:48 PM	13.92	4.1	0.75	3.61 Run 8 - 1
12/20/2003	3:17:18 PM	13.98	4.1	0.78	3.58 Run 8 - 1
12/20/2003	3:17:48 PM	13.98	4.1	0.85	3.65 Run 8 - 1
12/20/2003	3:18:18 PM	13.92	4.1	0.78	3.61 Run 8 - 1
12/20/2003	3:18:48 PM	13.98	4.1	0.68	3.58 Run 8 - 1
12/20/2003	3:19:18 PM	13.92	4.1	0.78	3.58
12/20/2003	3:19:48 PM	13.92	4.1	0.75	3.54
12/20/2003	3:20:18 PM	13.92	10.35	0.99	1.6
12/20/2003	3:20:48 PM	10.99	10.93	0.41	0.06 Run 8 Span - Zero
12/20/2003	3:21:18 PM	12.46	10.93	-0.45	0.03 Run 8 Span - Span
12/20/2003	3:21:48 PM	12.58	10.93	-0.46	-0.01 Run 8 Span - Span
12/20/2003	3:22:18 PM	12.58	4.44	-0.46	-0.01 Run 8 Span - Span
12/20/2003	3:22:47 PM	6.05	0.09	-0.46	4.27 Run 8 Span - Span
12/20/2003	3:23:18 PM	0.43	0.09	-0.17	4.31 Run 8 Span - Zero
12/20/2003	3:23:48 PM	0.12	0.09	-0.14	4.35 Run 8 Span - Zero
12/20/2003	3:24:18 PM	0.06	0.09	-0.12	4.38 Run 8 Span - Zero
12/20/2003	3:24:48 PM	0.06	0.09	-0.08	4.38 Run 8 Span - Zero
12/20/2003	3:25:18 PM	0	0.04	1.4	0.03 Run 8 Span - Zero
12/20/2003	3:25:48 PM	0	0.04	2.87	-0.01 Run 8 Span - Zero
12/20/2003	3:26:18 PM	0	0.04	3.02	-0.01 Run 8 Span - Span
12/20/2003	3:26:49 PM	-0.06	3.9	3.04	0.03 Run 8 Span - Span
12/20/2003	3:27:18 PM	9.83	4.05	1.78	3.47 Run 8 Span - Span
12/20/2003	3:27:48 PM	13.55	4.1	0.85	3.47 Run 8 Span - Span
12/20/2003	3:28:18 PM	13.8	4.1	0.81	3.5 Run 9 - 1
12/20/2003	3:28:48 PM	13.86	4.1	0.84	3.47 Run 9 - 1
12/20/2003	3:29:18 PM	13.86	4.05	0.79	3.5 Run 9 - 1
12/20/2003	3:29:47 PM	13.86	4.1	0.72	3.58 Run 9 - 1
12/20/2003	3:30:18 PM	13.86	4.1	0.79	3.54 Run 9 - 1
12/20/2003	3:30:47 PM	13.92	4.1	0.67	3.61 Run 9 - 1
12/20/2003	3:31:18 PM	13.92	4.1	0.78	3.58 Run 9 - 1
12/20/2003	3:31:48 PM	13.86	4.1	0.77	3.54 Run 9 - 1
12/20/2003	3:32:18 PM	13.92	4.1	0.89	3.58 Run 9 - 1
12/20/2003	3:32:47 PM	13.92	4.1	0.89	3.54 Run 9 - 1
12/20/2003	3:33:18 PM	13.92	4.05	0.76	3.47 Run 9 - 1
12/20/2003	3:33:48 PM	13.92	4.1	0.72	3.54 Run 9 - 1
12/20/2003	3:34:18 PM	13.86	4.1	0.74	3.54 Run 9 - 1
12/20/2003	3:34:48 PM	13.92	4.1	0.72	3.54 Run 9 - 1
12/20/2003	3:35:18 PM	13.92	4.1	0.68	3.58 Run 9 - 1
12/20/2003	3:35:48 PM	13.86	4.05	0.74	3.58 Run 9 - 1
12/20/2003	3:36:18 PM	13.92	4.05	0.73	3.61 Run 9 - 1
12/20/2003	3:36:48 PM	13.92	4.1	0.78	3.58 Run 9 - 1
12/20/2003	3:37:18 PM	13.92	4.1	0.74	3.58 Run 9 - 1
12/20/2003	3:37:48 PM	13.92	4.1	0.79	3.58 Run 9 - 1

12/20/2003	3:38:17 PM	13.92	4.1	0.74	3.58 Run 9 - 1
12/20/2003	3:38:48 PM	13.86	4.1	0.79	3.58 Run 9 - 1
12/20/2003	3:39:18 PM	13.92	4.1	0.72	3.58 Run 9 - 1
12/20/2003	3:39:48 PM	13.92	4.05	0.82	3.58 Run 9 - 1
12/20/2003	3:40:18 PM	13.98	4.1	0.85	3.58 Run 9 - 1
12/20/2003	3:40:48 PM	13.92	4.1	0.85	3.58 Run 9 - 1
12/20/2003	3:41:18 PM	13.92	4.1	0.88	3.61 Run 9 - 1
12/20/2003	3:41:48 PM	13.92	4.05	0.95	3.58 Run 9 - 1
12/20/2003	3:42:18 PM	13.92	4.1	0.82	3.58 Run 9 - 1
12/20/2003	3:42:48 PM	13.92	4.1	0.74	3.58 Run 9 - 1
12/20/2003	3:43:18 PM	13.92	4.1	0.84	3.61 Run 9 - 1
12/20/2003	3:43:48 PM	13.92	4.1	0.83	3.58 Run 9 - 1
12/20/2003	3:44:18 PM	13.92	4.1	0.82	3.58 Run 9 - 1
12/20/2003	3:44:48 PM	13.92	4.1	0.79	3.58 Run 9 - 1
12/20/2003	3:45:18 PM	13.92	4.1	0.84	3.54 Run 9 - 1
12/20/2003	3:45:48 PM	13.92	4.1	0.84	3.58 Run 9 - 1
12/20/2003	3:46:18 PM	13.92	4.1	0.91	3.61 Run 9 - 1
12/20/2003	3:46:48 PM	13.92	4.1	0.78	3.61 Run 9 - 1
12/20/2003	3:47:18 PM	13.92	4.05	0.73	3.58 Run 9 - 1
12/20/2003	3:47:48 PM	13.92	4.1	0.85	3.58 Run 9 - 1
12/20/2003	3:48:18 PM	13.92	4.1	0.77	3.5 Run 9 - 1
12/20/2003	3:48:48 PM	13.92	4.1	0.86	3.5 Run 9 - 1
12/20/2003	3:49:18 PM	13.92	4.1	0.91	3.58 Run 9 - 2
12/20/2003	3:49:48 PM	13.92	4.1	0.97	3.54
12/20/2003	3:50:18 PM	13.92	4.1	0.79	3.54
12/20/2003	3:50:48 PM	10.32	10.74	1.04	0.03 Run 9 Span - Zero
12/20/2003	3:51:18 PM	11.97	10.93	0	-0.01 Run 9 Span - Span
12/20/2003	3:51:47 PM	12.58	10.93	-0.46	-0.01 Run 9 Span - Span
12/20/2003	3:52:18 PM	12.58	10.93	-0.46	-0.01 Run 9 Span - Span
12/20/2003	3:52:47 PM	10.08	0.14	-0.46	3.83 Run 9 Span - Span
12/20/2003	3:53:18 PM	0.8	0.09	-0.43	4.35 Run 9 Span - Span
12/20/2003	3:53:48 PM	0.12	0.09	-0.19	4.35 Run 9 Span - Zero
12/20/2003	3:54:18 PM	0.12	0.09	-0.15	4.38 Run 9 Span - Zero
12/20/2003	3:54:48 PM	0.06	0.04	-0.14	2.7 Run 9 Span - Zero
12/20/2003	3:55:18 PM	0.06	0.09	1.52	0.03 Run 9 Span - Zero
12/20/2003	3:55:48 PM	0	0.04	2.77	-0.01 Run 9 Span - Zero
12/20/2003	3:56:18 PM	0	0.04	2.86	-0.01 Run 9 Span - Zero
12/20/2003	3:56:48 PM	0	0.09	3.02	-0.01 Run 9 Span - Span
12/20/2003	3:57:18 PM	0	0.04	3.01	-0.01 Run 9 Span - Span
12/20/2003	3:57:47 PM	1.83	4.05	2.44	3.47 Run 9 Span - Span
12/20/2003	3:58:18 PM	12.64	4.05	1.02	3.54 Run 9 Span - Span
12/20/2003	3:58:48 PM	13.74	4.1	0.72	3.58 Run 9 Span - Span
12/20/2003	3:59:18 PM	13.8	4.1	0.94	3.58 Run 9 Span - Span

12/20/2003	3:59:47 PM	13.86	4.1	0.84	3.61 Run 9 Span - Span
12/20/2003	4:00:18 PM	13.86	4.1	0.76	3.58 Run 9 Span - Span
12/20/2003	4:00:47 PM	13.86	4.1	0.63	3.58 Run 9 Span - Span
12/20/2003	4:01:18 PM	13.86	4.1	0.8	3.5 Run 9 Span - Span

CONVERTER EFFICIENCY TEST



**Reference Method 20  
Converter Efficiency Test  
Data Summary**

Analyzer Serial Number: 42CHL-69577-363

Test Date: 12/19/2003

Maximum 1-minute Value in 30-minute Period:	3.03	ppm
Value at End of 30-minute Period:	3.03	ppm
Difference Observed:	0	ppm
Converter Efficiency:	100	%
Percent Decrease:	0	%

Converter Efficiency calculated as:

$$\frac{\text{Value at End of 30-minute Period}}{\text{Maximum Value in 30-minute Period}} \times 100$$

Converter is acceptable providing decrease is less than or equal to 2.0%.



Date	Time	CO2 (%)	CO (PPM)	NOX (PPM)	Status
12/19/2003	8:51:14 AM	0.04		-0.15	2.88 Converter Check - 1
12/19/2003	8:51:44 AM	0.04		-0.25	2.88 Converter Check - 1
12/19/2003	8:52:14 AM	0.09		-0.12	2.92 Converter Check - 1
12/19/2003	8:52:44 AM	0.04		-0.02	2.88 Converter Check - 1
12/19/2003	8:53:14 AM	0.04		0	2.92 Converter Check - 1
12/19/2003	8:53:44 AM	0.04		-0.07	2.92 Converter Check - 1
12/19/2003	8:54:14 AM	0.04		-0.07	2.92 Converter Check - 1
12/19/2003	8:54:44 AM	0.09		0.01	2.96 Converter Check - 1
12/19/2003	8:55:14 AM	0.04		-0.12	2.96 Converter Check - 1
12/19/2003	8:55:44 AM	0.04		-0.22	2.96 Converter Check - 1
12/19/2003	8:56:14 AM	0.04		-0.12	2.96 Converter Check - 1
12/19/2003	8:56:43 AM	0.04		-0.05	2.96 Converter Check - 1
12/19/2003	8:57:14 AM	0.04		0.01	2.96 Converter Check - 1
12/19/2003	8:57:43 AM	0.09		-0.01	2.99 Converter Check - 1
12/19/2003	8:58:14 AM	0.04		-0.05	2.99 Converter Check - 1
12/19/2003	8:58:43 AM	0.04		0	2.96 Converter Check - 1
12/19/2003	8:59:14 AM	0.04		-0.09	2.96 Converter Check - 1
12/19/2003	8:59:43 AM	0.04		-0.2	2.99 Converter Check - 1
12/19/2003	9:00:14 AM	0.04		-0.24	2.96 Converter Check - 1
12/19/2003	9:00:43 AM	0.04		-0.16	2.96 Converter Check - 1
12/19/2003	9:01:14 AM	0.04		-0.18	2.96 Converter Check - 1
12/19/2003	9:01:43 AM	0.04		0.02	2.96 Converter Check - 1
12/19/2003	9:02:14 AM	0.04		-0.3	2.99 Converter Check - 1
12/19/2003	9:02:43 AM	0.04		-0.13	2.96 Converter Check - 1
12/19/2003	9:03:14 AM	0.04		-0.16	2.96 Converter Check - 1
12/19/2003	9:03:43 AM	0.04		-0.03	2.99 Converter Check - 1
12/19/2003	9:04:14 AM	0.04		-0.16	3.03 Converter Check - 1
12/19/2003	9:04:43 AM	0.04		-0.05	2.99 Converter Check - 1
12/19/2003	9:05:14 AM	0.09		-0.05	3.03 Converter Check - 1
12/19/2003	9:05:44 AM	0.04		-0.09	2.99 Converter Check - 1
12/19/2003	9:06:14 AM	4		0.14	2.99 Converter Check - 1
12/19/2003	9:06:44 AM	4		0.58	2.99 Converter Check - 1
12/19/2003	9:07:14 AM	4.05		0.58	3.03 Converter Check - 1
12/19/2003	9:07:44 AM	4.05		0.55	3.03 Converter Check - 1
12/19/2003	9:08:14 AM	4.05		0.51	3.03 Converter Check - 1
12/19/2003	9:08:44 AM	4.05		0.59	2.99 Converter Check - 1
12/19/2003	9:09:14 AM	4.05		0.48	2.99 Converter Check - 1
12/19/2003	9:09:44 AM	4.05		0.51	2.99 Converter Check - 1
12/19/2003	9:10:14 AM	4.05		0.59	2.99 Converter Check - 1
12/19/2003	9:10:44 AM	4.1		0.28	3.03 Converter Check - 1
12/19/2003	9:11:14 AM	4.05		0.49	2.99 Converter Check - 1
12/19/2003	9:11:44 AM	4.05		0.5	2.99 Converter Check - 1
12/19/2003	9:12:14 AM	4.05		0.52	2.99 Converter Check - 1
12/19/2003	9:12:44 AM	4.05		0.49	2.99 Converter Check - 1
12/19/2003	9:13:14 AM	4.05		0.48	3.03 Converter Check - 1
12/19/2003	9:13:44 AM	4.05		0.57	3.03 Converter Check - 1
12/19/2003	9:14:13 AM	4.05		0.47	3.03 Converter Check - 1
12/19/2003	9:14:44 AM	4.05		0.5	3.03 Converter Check - 1
12/19/2003	9:15:13 AM	4.1		0.48	3.03 Converter Check - 1
12/19/2003	9:15:44 AM	4.05		0.48	3.03 Converter Check - 1
12/19/2003	9:16:13 AM	4.05		0.36	2.99 Converter Check - 1

12/19/2003	9:16:44 AM	4.1	0.43	3.03 Converter Check - 1
12/19/2003	9:17:14 AM	4.05	0.47	3.03 Converter Check - 1
12/19/2003	9:17:44 AM	4.1	0.52	3.03 Converter Check - 1
12/19/2003	9:18:14 AM	4.05	0.61	3.03 Converter Check - 1
12/19/2003	9:18:44 AM	4.1	0.51	3.03 Converter Check - 1
12/19/2003	9:19:14 AM	4.05	0.46	3.03 Converter Check - 1
12/19/2003	9:19:44 AM	4.05	0.44	3.03 Converter Check - 1
12/19/2003	9:20:14 AM	0.04	1.81	2.99 Converter Check - 1
12/19/2003	9:20:44 AM	3.9	2.87	3.03 Converter Check - 1

CYLINDER GAS CERTIFICATES

CERTIFIED MASTER CLASS

Single-Certified Calibration Standard



Scott Specialty Gases

6147 EASTON ROAD, BLDG 1, CUMSTEADVILLE, PA 13949-0310 Phone: 800-331-1953 Fax: 215-766-7226

RDS04

CERTIFICATE OF ACCURACY: Certified Master Class Calibration Standard

Product Information

Project No.: 01-95261-006  
Item No.: 01020000840PAL  
P.O. No.: E-N06925

Cylinder Number: ALM026412  
Cylinder Size: AL  
Certification Date: 21Aug2003  
Expiration Date: 19Feb2004

Customer

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA, FL 33619

CERTIFIED CONCENTRATION

Component Name	Concentration (Moles)	Accuracy (+/-%)
CARBON MONOXIDE	3.00 PPM	2
NITROGEN	BALANCE	

TRACEABILITY

Traceable To

NIST

APPROVED BY:

*John C. Fitz*  
JOHN C. FITZ

DATE:

*8/21/03*

## SPECIFICATIONS

<u>Component Name</u>	<u>Requested Concentration (Moles)</u>	<u>Certified Concentration (Moles)</u>	<u>Blend Tolerance Result (+/- %)</u>	<u>Certified Accuracy Result (+/- %)</u>
CARBON MONOXIDE	3. PPM	3.00 PPM	.0	2.00
NITROGEN	BAL	BAL		

## TRACEABILITY

Traceable To  
NIST

## PHYSICAL PROPERTIES

Cylinder Size: AL                      Pressure: 2000 PSIG  
Expiration Date: 19Feb2004

Min. Cyl. Pressure: 150 PSIG

## SPECIAL HANDLING INSTRUCTIONS

Do not use or store cylinder at or below the stated dew point temperature. Possible condensation of heavier components could result. In the event the cylinder has been exposed to temperatures at or below the dew point, place cylinder in heated area for 24 hours and then roll cylinder for 15 minutes to re-mix.

Use of calibration standards at or below dew point temperature may result in calibration error.

RATA CLASS *CES HARD 5*  
 Dual-Analyzed Calibration Standard *re-cert.*



**Scott Specialty Gases**

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

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: EN-75516  
 Project No.: 01-84921-001

Customer

TAMPA ELECTRIC COMPANY  
 DAVID SMITH  
 5010 CAUSEWAY BLVD  
 TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: ALM063413 Certification Date: 13Feb2003 Exp. Date: 12Feb2004  
 Cylinder Pressure\*\*\*: 1250 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	6.29 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.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTFRM 2635	03Apr2003	ALM020670	25.78 PPM	CARBON MONOXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS/6E/KN-240	30Jan2003	NDIR

**ANALYZER READINGS**

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

First Triad Analysis      Second Triad Analysis      Calibration Curve

**CARBON MONOXIDE**

Date: 06Aug2002 Response Unit: VOLTS

Z1 = -0.00400	R1 = 2.54380	T1 = 0.60690
R2 = 2.54240	Z2 = -0.00340	T2 = 0.60310
Z3 = -0.00700	T3 = 0.60060	R3 = 2.54390
Avg. Concentration: 6.230 PPM		

Date: 13Feb2003 Response Unit: VOLTS

Z1 = -0.00310	R1 = 2.53330	T1 = 0.60820
R2 = 2.53100	Z2 = -0.00100	T2 = 0.60910
Z3 = -0.00540	T3 = 0.60930	R3 = 2.53000
Avg. Concentration: 6.290 PPM		

Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>

r = .999951	2635
Constants:	A = 6.6140E-02
B = 1.0194E+01	C =
D =	E =

APPROVED BY:   
 JOHN C. FITZ

RATA CLASS



Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-01676-001

Customer

TAMPA ELECTRIC COMPANY  
CHARLES DUFENY  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

ANALYTICAL INFORMATION

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

Cylinder Number: ALM0407-1 Certification Date: 15Dec2003 Exp. Date: 14Dec2006  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	11.0 %	+/- 1%	Direct NIST and NMI
OXYGEN	12.6 %	+/- 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.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1675	01Jun2004	K001509	13.93 %	CARBON DIOXIDE
NTRM 2658	02Oct2006	ALM065189	9.930 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
MTI/M200/170927	12Dec2003	GC-TCD
MTI/M200/170927	12Dec2003	GC-TCD

ANALYZER READINGS

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

First Triad Analysis

Second Triad Analysis

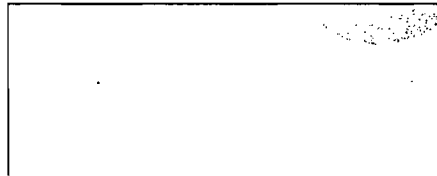
Calibration Curve

CARBON DIOXIDE

Date: 12Dec2003 Response Unit: VOLTS

Z1 = 0.00000	R1 = 636210.0	T1 = 503192.0
R2 = 636484.0	Z2 = 0.00000	T2 = 503158.0
Z3 = 0.00000	T3 = 503152.0	R3 = 636384.0

Avg. Concentration: 11.00 %



Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>

r = .999998 1675

Constants: A = 2.1891E-05  
B = 9.5568E-03 C =  
D = E =

OXYGEN

Date: 12Dec2003 Response Unit: VOLTS

Z1 = 0.00000	R1 = 323325.0	T1 = 408839.0
R2 = 323240.0	Z2 = 0.00000	T2 = 409029.0
Z3 = 0.00000	T3 = 408900.0	R3 = 323094.0

Avg. Concentration: 12.60 %



Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>

r = .999997 2658

Constants: A = -1.5960E-02  
B = 3.0872E-05 C =  
D = E =

APPROVED BY:

*Bradley C. Millman*

BRADLEY C. MILLMAN

RATA CLASS **BLD04**

Dual-Analyzed Calibration Standard



Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-95261-004

Customer

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: ALM040655 Certification Date: 22Aug2003 Exp. Date: 21Aug2006  
Cylinder Pressure\*\*\*: 1950 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	18.0 %	+/- 1%	Direct NIST and NMI
OXYGEN	6.24 %	+/- 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.

**REFERENCE STANDARD**

PE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1675	01Jun2004	K001509	13.93 %	CARBON DIOXIDE
NTRM 2659	01Jun2004	K012946	20.85 %	OXYGEN

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
MTI/M200/170927	18Aug2003	GC-TCD
BECKMAN/755/2002571	30Jul2003	PARAMAGNETIC

**ANALYZER READINGS**

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

First Triad Analysis

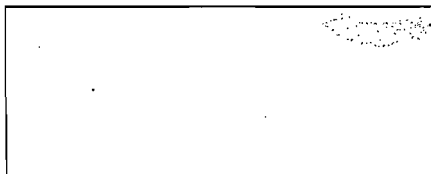
Second Triad Analysis

Calibration Curve

**CARBON DIOXIDE**

Date: 22Aug2003 Response Unit: VOLTS

Z1 = 0.00000	R1 = 635416.0	T1 = 822096.0
R2 = 635972.0	Z2 = 0.00000	T2 = 822258.0
Z3 = 0.00000	T3 = 822295.0	R3 = 636024.0
Avg. Concentration: 18.00 %		



Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>

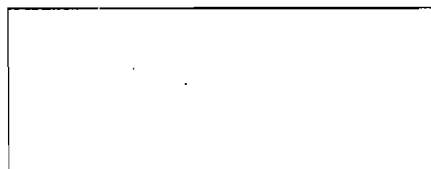
r = .99997

Constants: A = 7.7433E-03  
B = 2.1753E-05  
C =  
D = E =

**OXYGEN**

Date: 30Jul2003 Response Unit: VOLTS

Z1 = 0.00100	R1 = 0.84400	T1 = 0.25140
R2 = 0.84320	Z2 = 0.00140	T2 = 0.25120
Z3 = 0.00000	T3 = 0.25110	R3 = 0.84310
Avg. Concentration: 6.240 %		



Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>

r = .99998

Constants: A = -1.4608E-02  
B = -2.1461E+00  
C = 2.6702E+01  
D = E =

APPROVED BY:

*Bradley C. Millman*  
BRADLEY C. MILLMAN



RDS10

RATA CLASS



Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.C. No.: E-N06925  
Project No.: 01-01495-001

Customer

TAMPA ELECTRIC COMPANY  
CHARLES DUFENY  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: AAL3073 Certification Date: 13Nov2003 Exp. Date: 12Nov2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT

CERTIFIED CONCENTRATION (Moles)

ANALYTICAL

ACCURACY\*\*

TRACEABILITY

NITRIC OXIDE	4.46 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	4.47 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

REFERENCE STANDARD

<u>TYPE/SRM NO.</u>	<u>EXPIRATION DATE</u>	<u>CYLINDER NUMBER</u>	<u>CONCENTRATION</u>	<u>COMPONENT</u>
NTRM 2627	15Jan2004	AAL069671	5.180 PPM	NITRIC OXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#

TECO/10/9741111S

DATE LAST CALIBRATED

06Nov2003

ANALYTICAL PRINCIPLE

CHEMILUMINESCENT

**ANALYZER READINGS**

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

**NITRIC OXIDE**

Date: 26Aug2003		Response Unit: VOLTS	
Z1=0.00020	R1=0.87080	T1=0.74970	
R2=0.87070	Z2=0.00020	T2=0.74980	
Z3=0.00020	T3=0.75070	R3=0.86970	
Avg. Concentration: 4.460		PPM	

Date: 13Nov2003		Response Unit: VOLTS	
Z1=0.00030	R1=0.86580	T1=0.74680	
R2=0.86610	Z2=0.00030	T2=0.74670	
Z3=0.00030	T3=0.74710	R3=0.86770	
Avg. Concentration: 4.460		PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999992	2627
Constants:	A = 0.001488
B = 5.993653	C =
D =	E =

APPROVED BY:

KIMBERLY NILES

RATA CLASS **RDSII**  
Dual-Analyzed Calibration Standard



Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-95261-009

Customer

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: AAL15968 Certification Date: 26Aug2003 Exp. Date: 25Aug2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	8.24 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	8.26 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
HORIBA/CLA220/5708850810	21Aug2003	CHEMILUMINESCENCE

**ANALYZER READINGS**

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

**NITRIC OXIDE**

Date: 19Aug2003	Response Unit: VOLTS		
Z1 = 0.00460	R1 = 3.94120	T1 = 1.8010C	
R2 = 3.93760	Z2 = 0.00380	T2 = 1.7972C	
Z3 = 0.00490	T3 = 1.79740	R3 = 3.9291C	
Avg. Concentration:	8.220	PPM	

Date: 26Aug2003	Response Unit: VOLTS		
Z1 = 0.00520	R1 = 3.78620	T1 = 1.73250	
R2 = 3.78260	Z2 = 0.00820	T2 = 1.73300	
Z3 = 0.00720	T3 = 1.73030	R3 = 3.77760	
Avg. Concentration:	8.220	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999998	2629
Constants:	A = -0.016438
	B = 4.632947
	C =
	D =
	E =

APPROVED BY:

  
KIMBERLY NILES

RATA CLASS **R0512**  
Dual-Analyzed Calibration Standard



**Scott Specialty Gases**

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-95261-012

Customer

TAMPA ELECTRIC COMPANY  
Charles Dufery  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: AAL6916 Certification Date: 26Aug2003 Exp. Date: 25Aug2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	12.5 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	12.6 PPM		Reference Value Only

\*\*\* Do not use when cylinder pressure is below 50 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.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2629	02Oct2004	AAL069525	13.05 PPM	NITRIC OXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
HORIBA/CLA220/5708850810	21Aug2003	CHEMILUMINESCENCE

**ANALYZER READINGS**

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

**NITRIC OXIDE**

Date: 19Aug2003	Response Unit: VOLTS		
Z1 = 0.00710	R1 = 3.92820	T1 = 2.72460	
R2 = 3.93490	Z2 = 0.00720	T2 = 2.72850	
Z3 = 0.00440	T3 = 2.72410	R3 = 3.92940	
Avg. Concentration:	12.50	PPM	

Date: 26Aug2003	Response Unit: VOLTS		
Z1 = 0.00490	R1 = 3.79000	T1 = 2.62890	
R2 = 3.78830	Z2 = 0.00560	T2 = 2.62770	
Z3 = 0.00460	T3 = 2.62620	R3 = 3.79020	
Avg. Concentration:	12.51	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999998	2629
Constants:	A = -0.016438
B = 4.632947	C =
D =	E =

APPROVED BY:

KIMBERLY NILES

VISIBLE EMISSIONS OBSERVATIONS

**VISIBLE EMISSION OBSERVATION**

E-496 R 10/85

SOURCE NAME: 2C Bayside Power Station SOURCE LOCATION: Bayside Power Station

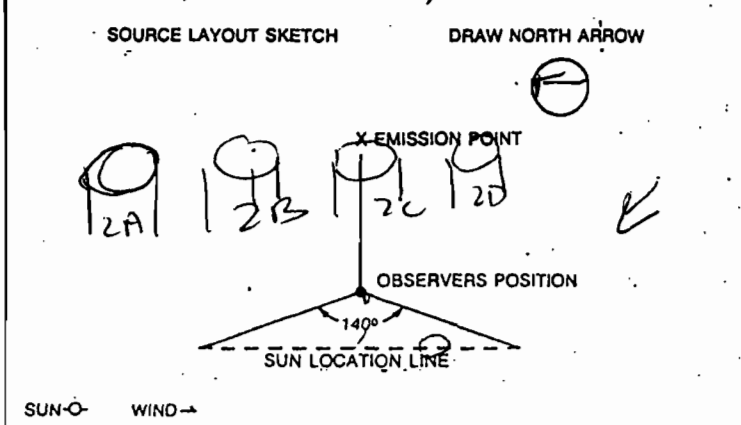
OBSERVATION DATE: 12-19-03 START TIME: 3:20 pm STOP TIME: 3:50 pm

TYPE OF FACILITY: Electric Generating

SEC.	MIN	0	15	30	45	SEC.	MIN	0	15	30	45
------	-----	---	----	----	----	------	-----	---	----	----	----

DISTANCE FROM OBSERVER: 300 ft

SKY CONDITIONS/PLUME BACKGROUND: clear / blue sky



AVERAGE OPACITY: \_\_\_\_\_

WIND SPEED (EST.): 2-5 mph WIND DIRECTION (EST.): West

OBSERVER'S NAME (PRINT): Don Latchman

OBSERVER'S SIGNATURE: [Signature] DATE: 12-19-03

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

COPY OF VISIBLE EMISSIONS CERTIFICATION CARD

2/19/2004 TMP S05  
field exp Let Exp Let  
309510  
Certification Don [Signature]

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

PLANT OPERATIONAL DATA

DECEMBER 19, 2003

Bayside CT2C  
12/19/03 09:36 -  
16:36

	MW	Turbine Exhaust Temp	Fuel Gas Flow	Compressor Inlet Temp	Barametric Pressure	NH3 Injection Rate
	2cDWATT	2cTTXM	2cFQG	2cCTIM	2cAFPAP	2cFGCFI711
19-Dec-03 09:36:00	174.0	1099.8	21.2	53.5	30.2	9.2
19-Dec-03 09:37:00	173.9	1099.8	21.2	53.6	30.2	9.2
19-Dec-03 09:38:00	173.9	1099.8	21.2	53.7	30.2	9.2
19-Dec-03 09:39:00	173.9	1099.8	21.2	53.7	30.2	9.1
19-Dec-03 09:40:00	173.9	1099.9	21.2	53.8	30.2	9.1
19-Dec-03 09:41:00	173.9	1100.0	21.2	53.9	30.2	9.1
19-Dec-03 09:42:00	173.9	1100.0	21.2	54.0	30.2	9.1
19-Dec-03 09:43:00	173.8	1100.1	21.2	54.0	30.2	9.1
19-Dec-03 09:44:00	173.8	1100.2	21.2	54.1	30.2	9.1
19-Dec-03 09:45:00	173.8	1100.3	21.2	54.2	30.2	9.1
19-Dec-03 09:46:00	173.8	1100.4	21.2	54.2	30.2	9.1
19-Dec-03 09:47:00	173.8	1100.5	21.2	54.3	30.2	9.1
19-Dec-03 09:48:00	173.7	1100.6	21.2	54.4	30.2	9.1
19-Dec-03 09:49:00	173.7	1100.6	21.2	54.5	30.2	9.1
19-Dec-03 09:50:00	173.7	1100.7	21.2	54.5	30.2	9.1
19-Dec-03 09:51:00	173.7	1100.8	21.2	54.6	30.2	9.1
19-Dec-03 09:52:00	173.7	1100.9	21.2	54.7	30.2	9.1
19-Dec-03 09:53:00	173.7	1101.0	21.2	54.8	30.2	9.1
19-Dec-03 09:54:00	173.7	1101.1	21.2	54.8	30.2	9.1
19-Dec-03 09:55:00	173.7	1101.2	21.2	54.9	30.2	9.1
19-Dec-03 09:56:00	173.7	1101.2	21.2	55.0	30.2	9.1
19-Dec-03 09:57:00	173.7	1101.3	21.2	55.0	30.2	9.1
19-Dec-03 09:58:00	173.7	1101.4	21.2	55.1	30.2	9.1
19-Dec-03 09:59:00	173.7	1101.5	21.2	55.1	30.2	9.1
19-Dec-03 10:00:00	173.7	1101.6	21.2	55.1	30.2	9.1
19-Dec-03 10:01:00	173.7	1101.7	21.2	55.1	30.2	9.1
19-Dec-03 10:02:00	173.7	1101.7	21.2	55.2	30.2	9.1
19-Dec-03 10:03:00	173.6	1101.8	21.2	55.2	30.2	9.1
19-Dec-03 10:04:00	173.6	1101.9	21.2	55.2	30.2	9.1
19-Dec-03 10:05:00	173.6	1101.9	21.2	55.2	30.2	9.1
19-Dec-03 10:06:00	173.6	1102.0	21.2	55.2	30.2	9.1
19-Dec-03 10:07:00	173.6	1102.0	21.2	55.2	30.2	9.1
19-Dec-03 10:08:00	173.6	1102.1	21.2	55.2	30.2	9.1
19-Dec-03 10:09:00	173.6	1102.2	21.2	55.2	30.2	9.1
19-Dec-03 10:10:00	173.6	1102.2	21.2	55.2	30.2	9.1
19-Dec-03 10:11:00	173.6	1102.3	21.2	55.2	30.2	9.1
19-Dec-03 10:12:00	173.6	1102.3	21.2	55.2	30.2	9.1
19-Dec-03 10:13:00	173.6	1102.4	21.2	55.2	30.2	9.1
19-Dec-03 10:14:00	173.6	1102.5	21.2	55.2	30.2	9.2
19-Dec-03 10:15:00	173.5	1102.5	21.2	55.2	30.2	9.1
19-Dec-03 10:16:00	173.5	1102.6	21.2	55.2	30.2	9.1
19-Dec-03 10:17:00	173.5	1102.6	21.2	55.2	30.2	9.1
19-Dec-03 10:18:00	173.5	1102.7	21.2	55.2	30.2	9.1
19-Dec-03 10:19:00	173.5	1102.7	21.2	55.2	30.2	9.1
19-Dec-03 10:20:00	173.5	1102.8	21.2	55.2	30.2	9.1
19-Dec-03 10:21:00	173.5	1102.9	21.2	55.2	30.2	9.1
19-Dec-03 10:22:00	173.5	1102.9	21.2	55.2	30.2	9.1
19-Dec-03 10:23:00	173.5	1103.0	21.2	55.2	30.2	9.1



19-Dec-03 10:24:00	173.4	1103.0	21.2	55.2	30.2	9.1
19-Dec-03 10:25:00	173.4	1103.0	21.2	55.2	30.2	9.1
19-Dec-03 10:26:00	173.4	1103.0	21.2	55.2	30.2	9.1
19-Dec-03 10:27:00	173.4	1103.0	21.2	55.2	30.2	9.1
19-Dec-03 10:28:00	173.4	1103.0	21.2	55.2	30.2	9.1
19-Dec-03 10:29:00	173.4	1103.0	21.2	55.3	30.2	9.1
19-Dec-03 10:30:00	173.4	1103.0	21.2	55.3	30.2	9.1
19-Dec-03 10:31:00	173.3	1103.0	21.2	55.3	30.2	9.1
19-Dec-03 10:32:00	173.3	1103.1	21.2	55.3	30.2	9.1
19-Dec-03 10:33:00	173.2	1103.1	21.2	55.3	30.2	9.1
19-Dec-03 10:34:00	173.2	1103.1	21.2	55.3	30.2	9.1
19-Dec-03 10:35:00	173.1	1103.1	21.2	55.3	30.2	9.1
19-Dec-03 10:36:00	173.1	1103.1	21.2	55.3	30.2	9.1
19-Dec-03 10:37:00	173.1	1103.1	21.2	55.4	30.2	9.1
19-Dec-03 10:38:00	173.0	1103.1	21.1	55.4	30.2	9.1
19-Dec-03 10:39:00	173.0	1103.1	21.1	55.4	30.2	9.1
19-Dec-03 10:40:00	172.9	1103.1	21.1	55.4	30.2	9.1
19-Dec-03 10:41:00	172.9	1103.1	21.1	55.4	30.2	9.1
19-Dec-03 10:42:00	172.8	1103.2	21.1	55.4	30.2	9.1
19-Dec-03 10:43:00	172.8	1103.2	21.1	55.4	30.2	9.2
19-Dec-03 10:44:00	172.8	1103.3	21.1	55.4	30.2	9.2
19-Dec-03 10:45:00	172.7	1103.4	21.1	55.5	30.2	9.2
19-Dec-03 10:46:00	172.7	1103.5	21.1	55.5	30.2	9.2
19-Dec-03 10:47:00	172.6	1103.6	21.1	55.5	30.2	9.2
19-Dec-03 10:48:00	172.6	1103.6	21.1	55.5	30.2	9.2
19-Dec-03 10:49:00	172.6	1103.7	21.1	55.5	30.2	9.2
19-Dec-03 10:50:00	172.6	1103.8	21.1	55.5	30.2	9.2
19-Dec-03 10:51:00	172.6	1103.9	21.1	55.6	30.2	9.2
19-Dec-03 10:52:00	172.6	1104.0	21.1	55.6	30.2	9.2
19-Dec-03 10:53:00	172.6	1104.0	21.1	55.6	30.2	9.2
19-Dec-03 10:54:00	172.6	1104.1	21.1	55.6	30.2	9.2
19-Dec-03 10:55:00	172.7	1104.2	21.1	55.7	30.2	9.3
19-Dec-03 10:56:00	172.7	1104.3	21.1	55.7	30.2	9.3
19-Dec-03 10:57:00	172.7	1104.4	21.1	55.7	30.2	9.3
19-Dec-03 10:58:00	172.7	1104.4	21.1	55.7	30.2	9.3
19-Dec-03 10:59:00	172.7	1104.5	21.1	55.7	30.2	9.3
19-Dec-03 11:00:00	172.7	1104.6	21.1	55.8	30.2	9.3
19-Dec-03 11:01:00	172.7	1104.7	21.1	55.8	30.2	9.3
19-Dec-03 11:02:00	172.8	1104.8	21.1	55.8	30.2	9.3
19-Dec-03 11:03:00	172.8	1104.9	21.1	55.8	30.2	9.3
19-Dec-03 11:04:00	172.8	1104.9	21.1	55.9	30.2	9.3
19-Dec-03 11:05:00	172.8	1105.0	21.1	55.9	30.2	9.3
19-Dec-03 11:06:00	172.8	1105.1	21.1	55.9	30.2	9.3
19-Dec-03 11:07:00	172.8	1105.1	21.1	55.9	30.2	9.3
19-Dec-03 11:08:00	172.9	1105.1	21.1	56.0	30.2	9.3
19-Dec-03 11:09:00	172.9	1105.1	21.1	56.0	30.2	9.3
19-Dec-03 11:10:00	172.9	1105.0	21.1	56.0	30.2	9.3
19-Dec-03 11:11:00	172.9	1105.0	21.1	56.0	30.2	9.3
19-Dec-03 11:12:00	172.8	1105.0	21.1	56.1	30.2	9.3
19-Dec-03 11:13:00	172.8	1105.0	21.1	56.1	30.2	9.3
19-Dec-03 11:14:00	172.8	1105.0	21.1	56.1	30.2	9.3
19-Dec-03 11:15:00	172.8	1105.0	21.1	56.1	30.2	9.3

19-Dec-03 11:16:00	172.8	1105.0	21.1	56.2	30.2	9.3
19-Dec-03 11:17:00	172.8	1105.0	21.1	56.2	30.2	9.3
19-Dec-03 11:18:00	172.7	1105.0	21.1	56.2	30.2	9.3
19-Dec-03 11:19:00	172.7	1105.0	21.1	56.3	30.2	9.3
19-Dec-03 11:20:00	172.7	1105.0	21.1	56.3	30.2	9.3
19-Dec-03 11:21:00	172.7	1105.0	21.1	56.3	30.2	9.3
19-Dec-03 11:22:00	172.7	1105.0	21.1	56.4	30.2	9.3
19-Dec-03 11:23:00	172.7	1105.0	21.1	56.4	30.2	9.3
19-Dec-03 11:24:00	172.7	1105.0	21.1	56.4	30.2	9.3
19-Dec-03 11:25:00	172.6	1105.0	21.1	56.4	30.2	9.3
19-Dec-03 11:26:00	172.6	1105.0	21.1	56.5	30.2	9.3
19-Dec-03 11:27:00	172.6	1104.9	21.1	56.5	30.2	9.3
19-Dec-03 11:28:00	172.6	1104.9	21.1	56.5	30.2	9.3
19-Dec-03 11:29:00	172.6	1104.9	21.1	56.6	30.2	9.3
19-Dec-03 11:30:00	172.6	1104.9	21.1	56.6	30.2	9.3
19-Dec-03 11:31:00	172.6	1104.9	21.1	56.6	30.2	9.3
19-Dec-03 11:32:00	172.6	1104.9	21.1	56.7	30.2	9.3
19-Dec-03 11:33:00	172.6	1105.0	21.1	56.7	30.2	9.3
19-Dec-03 11:34:00	172.6	1105.0	21.1	56.7	30.2	9.3
19-Dec-03 11:35:00	172.6	1105.0	21.1	56.8	30.2	9.3
19-Dec-03 11:36:00	172.7	1105.0	21.1	56.8	30.2	9.3
19-Dec-03 11:37:00	172.7	1105.1	21.1	56.8	30.2	9.3
19-Dec-03 11:38:00	172.7	1105.1	21.1	56.8	30.2	9.3
19-Dec-03 11:39:00	172.7	1105.1	21.1	56.9	30.2	9.3
19-Dec-03 11:40:00	172.7	1105.1	21.1	56.9	30.2	9.3
19-Dec-03 11:41:00	172.7	1105.2	21.1	56.9	30.2	9.3
19-Dec-03 11:42:00	172.7	1105.2	21.1	56.9	30.2	9.3
19-Dec-03 11:43:00	172.7	1105.2	21.1	56.9	30.2	9.3
19-Dec-03 11:44:00	172.7	1105.2	21.1	56.9	30.2	9.3
19-Dec-03 11:45:00	172.7	1105.2	21.1	56.9	30.2	9.3
19-Dec-03 11:46:00	172.7	1105.3	21.1	56.9	30.2	9.3
19-Dec-03 11:47:00	172.8	1105.3	21.1	56.9	30.2	9.3
19-Dec-03 11:48:00	172.8	1105.3	21.1	56.9	30.2	9.3
19-Dec-03 11:49:00	172.8	1105.3	21.1	56.9	30.2	9.3
19-Dec-03 11:50:00	172.7	1105.4	21.1	56.9	30.2	9.3
19-Dec-03 11:51:00	172.7	1105.4	21.1	56.9	30.2	9.3
19-Dec-03 11:52:00	172.6	1105.4	21.1	56.9	30.2	9.3
19-Dec-03 11:53:00	172.6	1105.4	21.1	56.9	30.2	9.3
19-Dec-03 11:54:00	172.5	1105.5	21.1	56.9	30.2	9.3
19-Dec-03 11:55:00	172.5	1105.5	21.1	57.0	30.2	9.3
19-Dec-03 11:56:00	172.4	1105.5	21.1	57.0	30.2	9.3
19-Dec-03 11:57:00	172.4	1105.5	21.1	57.0	30.2	9.2
19-Dec-03 11:58:00	172.3	1105.6	21.1	57.0	30.2	9.2
19-Dec-03 11:59:00	172.3	1105.6	21.1	57.0	30.2	9.2
19-Dec-03 12:00:00	172.3	1105.7	21.1	57.0	30.2	9.2
19-Dec-03 12:01:00	172.2	1105.7	21.1	57.0	30.2	9.2
19-Dec-03 12:02:00	172.2	1105.7	21.1	57.0	30.2	9.2
19-Dec-03 12:03:00	172.1	1105.8	21.1	57.0	30.2	9.2
19-Dec-03 12:04:00	172.1	1105.8	21.1	57.0	30.2	9.2
19-Dec-03 12:05:00	172.0	1105.8	21.1	57.0	30.2	9.2
19-Dec-03 12:06:00	172.0	1105.9	21.1	57.0	30.2	9.2
19-Dec-03 12:07:00	171.9	1105.9	21.1	57.1	30.2	9.2

19-Dec-03 12:08:00	171.9	1106.0	21.1	57.1	30.2	9.2
19-Dec-03 12:09:00	171.8	1106.0	21.1	57.1	30.2	9.2
19-Dec-03 12:10:00	171.8	1106.0	21.1	57.1	30.2	9.2
19-Dec-03 12:11:00	171.9	1106.1	21.1	57.2	30.2	9.2
19-Dec-03 12:12:00	171.9	1106.1	21.1	57.2	30.2	9.2
19-Dec-03 12:13:00	171.9	1106.1	21.1	57.2	30.2	9.2
19-Dec-03 12:14:00	171.9	1106.2	21.1	57.2	30.2	9.2
19-Dec-03 12:15:00	171.9	1106.2	21.1	57.3	30.2	9.2
19-Dec-03 12:16:00	171.9	1106.3	21.1	57.3	30.2	9.2
19-Dec-03 12:17:00	171.9	1106.3	21.1	57.3	30.2	9.2
19-Dec-03 12:18:00	172.0	1106.3	21.1	57.4	30.2	9.2
19-Dec-03 12:19:00	172.0	1106.4	21.1	57.4	30.2	9.2
19-Dec-03 12:20:00	172.0	1106.4	21.1	57.4	30.2	9.2
19-Dec-03 12:21:00	172.0	1106.5	21.1	57.4	30.1	9.2
19-Dec-03 12:22:00	172.0	1106.5	21.1	57.5	30.1	9.2
19-Dec-03 12:23:00	172.0	1106.6	21.1	57.5	30.1	9.2
19-Dec-03 12:24:00	172.1	1106.6	21.1	57.5	30.1	9.2
19-Dec-03 12:25:00	172.1	1106.6	21.1	57.5	30.1	9.2
19-Dec-03 12:26:00	172.1	1106.7	21.0	57.6	30.1	9.3
19-Dec-03 12:27:00	172.1	1106.7	21.0	57.6	30.1	9.3
19-Dec-03 12:28:00	172.1	1106.8	21.0	57.6	30.1	9.3
19-Dec-03 12:29:00	172.1	1106.8	21.0	57.7	30.1	9.3
19-Dec-03 12:30:00	172.1	1106.9	21.0	57.7	30.1	9.3
19-Dec-03 12:31:00	172.1	1106.9	21.0	57.8	30.1	9.3
19-Dec-03 12:32:00	172.1	1107.0	21.0	57.8	30.1	9.3
19-Dec-03 12:33:00	172.1	1107.0	21.0	57.9	30.1	9.3
19-Dec-03 12:34:00	172.1	1107.1	21.0	57.9	30.1	9.3
19-Dec-03 12:35:00	172.0	1107.1	21.0	58.0	30.1	9.3
19-Dec-03 12:36:00	172.0	1107.1	21.0	58.0	30.1	9.3
19-Dec-03 12:37:00	172.0	1107.2	21.0	58.1	30.1	9.3
19-Dec-03 12:38:00	172.0	1107.2	21.0	58.1	30.1	9.3
19-Dec-03 12:39:00	172.0	1107.3	21.0	58.2	30.1	9.3
19-Dec-03 12:40:00	171.9	1107.3	21.0	58.2	30.1	9.3
19-Dec-03 12:41:00	171.9	1107.4	21.0	58.3	30.1	9.3
19-Dec-03 12:42:00	171.9	1107.4	21.0	58.3	30.1	9.3
19-Dec-03 12:43:00	171.9	1107.5	21.0	58.4	30.1	9.3
19-Dec-03 12:44:00	171.9	1107.5	21.0	58.4	30.1	9.3
19-Dec-03 12:45:00	171.9	1107.5	21.0	58.5	30.1	9.3
19-Dec-03 12:46:00	171.8	1107.4	21.0	58.5	30.1	9.3
19-Dec-03 12:47:00	171.8	1107.4	21.0	58.6	30.1	9.3
19-Dec-03 12:48:00	171.8	1107.4	21.0	58.6	30.1	9.3
19-Dec-03 12:49:00	171.8	1107.4	21.0	58.7	30.1	9.3
19-Dec-03 12:50:00	171.8	1107.4	21.0	58.7	30.1	9.3
19-Dec-03 12:51:00	171.8	1107.4	21.0	58.8	30.1	9.3
19-Dec-03 12:52:00	171.8	1107.4	21.0	58.8	30.1	9.2
19-Dec-03 12:53:00	171.8	1107.3	21.0	58.9	30.1	9.2
19-Dec-03 12:54:00	171.8	1107.3	21.0	58.9	30.1	9.2
19-Dec-03 12:55:00	171.8	1107.3	21.0	58.8	30.1	9.2
19-Dec-03 12:56:00	171.8	1107.3	21.0	58.8	30.1	9.2
19-Dec-03 12:57:00	171.8	1107.3	21.0	58.7	30.1	9.2
19-Dec-03 12:58:00	171.8	1107.3	21.0	58.7	30.1	9.2
19-Dec-03 12:59:00	171.8	1107.2	21.0	58.6	30.1	9.2

19-Dec-03 13:00:00	171.8	1107.2	21.0	58.5	30.1	9.2
19-Dec-03 13:01:00	171.8	1107.2	21.0	58.5	30.1	9.2
19-Dec-03 13:02:00	171.8	1107.2	21.0	58.4	30.1	9.2
19-Dec-03 13:03:00	171.8	1107.2	21.0	58.4	30.1	9.2
19-Dec-03 13:04:00	171.8	1107.2	21.0	58.3	30.1	9.2
19-Dec-03 13:05:00	171.8	1107.1	21.0	58.3	30.1	9.2
19-Dec-03 13:06:00	171.8	1107.1	21.0	58.2	30.1	9.2
19-Dec-03 13:07:00	171.8	1107.1	21.0	58.1	30.1	9.2
19-Dec-03 13:08:00	171.8	1107.1	21.0	58.1	30.1	9.2
19-Dec-03 13:09:00	171.8	1107.2	21.0	58.0	30.1	9.1
19-Dec-03 13:10:00	171.8	1107.2	21.0	58.0	30.1	9.1
19-Dec-03 13:11:00	171.8	1107.2	21.0	57.9	30.1	9.1
19-Dec-03 13:12:00	171.7	1107.2	21.0	57.8	30.1	9.1
19-Dec-03 13:13:00	171.7	1107.3	21.0	57.8	30.1	9.1
19-Dec-03 13:14:00	171.7	1107.3	21.0	57.7	30.1	9.1
19-Dec-03 13:15:00	171.7	1107.3	21.0	57.7	30.1	9.1
19-Dec-03 13:16:00	171.7	1107.3	21.0	57.6	30.1	9.1
19-Dec-03 13:17:00	171.7	1107.3	21.0	57.6	30.1	9.1
19-Dec-03 13:18:00	171.7	1107.4	21.0	57.5	30.1	9.1
19-Dec-03 13:19:00	171.7	1107.4	21.0	57.5	30.1	9.1
19-Dec-03 13:20:00	171.6	1107.4	21.0	57.5	30.1	9.1
19-Dec-03 13:21:00	171.6	1107.4	21.0	57.4	30.1	9.1
19-Dec-03 13:22:00	171.6	1107.5	21.0	57.4	30.1	9.1
19-Dec-03 13:23:00	171.6	1107.5	21.0	57.4	30.1	9.1
19-Dec-03 13:24:00	171.6	1107.5	21.0	57.4	30.1	9.1
19-Dec-03 13:25:00	171.6	1107.5	21.0	57.3	30.1	9.1
19-Dec-03 13:26:00	171.6	1107.5	21.0	57.3	30.1	9.1
19-Dec-03 13:27:00	171.6	1107.6	21.0	57.3	30.1	9.2
19-Dec-03 13:28:00	171.5	1107.6	21.0	57.3	30.1	9.2
19-Dec-03 13:29:00	171.5	1107.7	21.0	57.3	30.1	9.2
19-Dec-03 13:30:00	171.5	1107.7	21.0	57.2	30.1	9.2
19-Dec-03 13:31:00	171.6	1107.8	21.0	57.2	30.1	9.2
19-Dec-03 13:32:00	171.6	1107.8	21.0	57.2	30.1	9.2
19-Dec-03 13:33:00	171.6	1107.9	21.0	57.2	30.1	9.2
19-Dec-03 13:34:00	171.6	1107.9	21.0	57.1	30.1	9.2
19-Dec-03 13:35:00	171.6	1107.9	21.0	57.1	30.1	9.2
19-Dec-03 13:36:00	171.6	1108.0	21.0	57.1	30.1	9.3
19-Dec-03 13:37:00	171.7	1108.0	21.0	57.1	30.1	9.3
19-Dec-03 13:38:00	171.7	1108.1	21.0	57.1	30.1	9.3
19-Dec-03 13:39:00	171.7	1108.1	21.0	57.0	30.1	9.3
19-Dec-03 13:40:00	171.7	1108.2	21.0	57.0	30.1	9.3
19-Dec-03 13:41:00	171.7	1108.2	21.0	57.0	30.1	9.3
19-Dec-03 13:42:00	171.7	1108.3	21.0	57.0	30.1	9.3
19-Dec-03 13:43:00	171.8	1108.3	21.0	56.9	30.1	9.3
19-Dec-03 13:44:00	171.8	1108.3	21.0	57.0	30.1	9.3
19-Dec-03 13:45:00	171.8	1108.4	21.0	57.0	30.1	9.3
19-Dec-03 13:46:00	171.8	1108.4	21.0	57.1	30.1	9.3
19-Dec-03 13:47:00	171.8	1108.5	21.0	57.1	30.1	9.3
19-Dec-03 13:48:00	171.8	1108.5	21.0	57.2	30.1	9.3
19-Dec-03 13:49:00	171.9	1108.6	21.0	57.3	30.1	9.3
19-Dec-03 13:50:00	171.8	1108.6	21.0	57.3	30.1	9.3
19-Dec-03 13:51:00	171.8	1108.7	21.0	57.4	30.1	9.3

BEST AVAILABLE COPY

19-Dec-03 13:52:00	171.8	1108.7	21.0	57.4	30.1	9.3
19-Dec-03 13:53:00	171.8	1108.8	21.0	57.5	30.1	9.4
19-Dec-03 13:54:00	171.8	1108.8	21.0	57.5	30.1	9.4
19-Dec-03 13:55:00	171.8	1108.9	21.0	57.6	30.1	9.4
19-Dec-03 13:56:00	171.8	1108.9	21.0	57.6	30.1	9.4
19-Dec-03 13:57:00	171.8	1109.0	21.0	57.7	30.1	9.4
19-Dec-03 13:58:00	171.8	1109.0	21.0	57.7	30.1	9.4
19-Dec-03 13:59:00	171.8	1109.1	21.0	57.8	30.1	9.4
19-Dec-03 14:00:00	171.8	1109.1	21.0	57.9	30.1	9.4
19-Dec-03 14:01:00	171.7	1109.2	21.0	57.9	30.1	9.4
19-Dec-03 14:02:00	171.7	1109.2	21.0	58.0	30.1	9.4
19-Dec-03 14:03:00	171.7	1109.3	21.0	58.0	30.1	9.4
19-Dec-03 14:04:00	171.7	1109.3	21.0	58.1	30.1	9.4
19-Dec-03 14:05:00	171.7	1109.4	21.0	58.1	30.1	9.4

DECEMBER 20, 2003

Bayside CT2C  
12/20/03 10:51 -  
15:49

	MW	Turbine Exhaust Temp	Fuel Gas Flow	Compressor Inlet Temp	Barametric Pressure	NH3 Injection Rate
	2cDWATT	2cTTXM	2cFQG	2cCTIM	2cAFPAP	2cFGCFI711
20-Dec-03 10:51:00	176.0	1094.6	21.5	48.5	30.3	9.2
20-Dec-03 10:52:00	176.0	1094.6	21.5	48.5	30.3	9.2
20-Dec-03 10:53:00	176.0	1094.6	21.5	48.5	30.3	9.2
20-Dec-03 10:54:00	176.0	1094.6	21.5	48.5	30.3	9.2
20-Dec-03 10:55:00	175.9	1094.6	21.5	48.5	30.3	9.2
20-Dec-03 10:56:00	175.9	1094.6	21.5	48.5	30.3	9.2
20-Dec-03 10:57:00	175.9	1094.6	21.5	48.5	30.3	9.2
20-Dec-03 10:58:00	175.9	1094.6	21.5	48.5	30.3	9.2
20-Dec-03 10:59:00	175.9	1094.6	21.4	48.5	30.3	9.2
20-Dec-03 11:00:00	175.9	1094.6	21.4	48.4	30.3	9.2
20-Dec-03 11:01:00	175.9	1094.6	21.4	48.4	30.3	9.1
20-Dec-03 11:02:00	175.9	1094.6	21.4	48.4	30.3	9.1
20-Dec-03 11:03:00	175.8	1094.6	21.4	48.4	30.3	9.1
20-Dec-03 11:04:00	175.8	1094.6	21.4	48.4	30.3	9.1
20-Dec-03 11:05:00	175.8	1094.6	21.4	48.4	30.3	9.1
20-Dec-03 11:06:00	175.8	1094.6	21.4	48.4	30.3	9.1
20-Dec-03 11:07:00	175.8	1094.6	21.4	48.4	30.3	9.1
20-Dec-03 11:08:00	175.8	1094.6	21.4	48.5	30.3	9.1
20-Dec-03 11:09:00	175.7	1094.6	21.4	48.6	30.3	9.1
20-Dec-03 11:10:00	175.7	1094.6	21.4	48.7	30.3	9.1
20-Dec-03 11:11:00	175.7	1094.6	21.4	48.8	30.3	9.1
20-Dec-03 11:12:00	175.7	1094.6	21.4	48.9	30.3	9.1
20-Dec-03 11:13:00	175.7	1094.6	21.4	48.9	30.3	9.1
20-Dec-03 11:14:00	175.6	1094.6	21.4	49.0	30.3	9.1
20-Dec-03 11:15:00	175.6	1094.6	21.4	49.1	30.3	9.1
20-Dec-03 11:16:00	175.6	1094.6	21.4	49.2	30.3	9.1
20-Dec-03 11:17:00	175.6	1094.6	21.4	49.3	30.3	9.1
20-Dec-03 11:18:00	175.5	1094.6	21.4	49.4	30.3	9.1
20-Dec-03 11:19:00	175.5	1094.6	21.4	49.4	30.3	9.1
20-Dec-03 11:20:00	175.5	1094.6	21.4	49.5	30.3	9.1
20-Dec-03 11:21:00	175.5	1094.6	21.4	49.6	30.3	9.2
20-Dec-03 11:22:00	175.4	1094.6	21.4	49.7	30.3	9.2
20-Dec-03 11:23:00	175.4	1094.6	21.4	49.8	30.3	9.2
20-Dec-03 11:24:00	175.4	1094.5	21.4	49.8	30.3	9.2
20-Dec-03 11:25:00	175.4	1094.5	21.4	49.9	30.3	9.2
20-Dec-03 11:26:00	175.3	1094.5	21.4	50.0	30.3	9.2
20-Dec-03 11:27:00	175.3	1094.5	21.4	50.1	30.3	9.2
20-Dec-03 11:28:00	175.3	1094.5	21.4	50.2	30.3	9.2
20-Dec-03 11:29:00	175.3	1094.5	21.4	50.3	30.3	9.2
20-Dec-03 11:30:00	175.3	1094.5	21.4	50.3	30.3	9.2
20-Dec-03 11:31:00	175.3	1094.5	21.4	50.4	30.3	9.2
20-Dec-03 11:32:00	175.3	1094.5	21.4	50.5	30.3	9.3
20-Dec-03 11:33:00	175.3	1094.5	21.4	50.5	30.3	9.3
20-Dec-03 11:34:00	175.3	1094.6	21.4	50.6	30.3	9.3
20-Dec-03 11:35:00	175.3	1094.7	21.4	50.7	30.3	9.2
20-Dec-03 11:36:00	175.3	1094.8	21.4	50.7	30.3	9.2
20-Dec-03 11:37:00	175.3	1094.9	21.4	50.8	30.3	9.2
20-Dec-03 11:38:00	175.3	1094.9	21.4	50.8	30.3	9.2

20-Dec-03 11:39:00	175.3	1095.0	21.4	50.9	30.3	9.2
20-Dec-03 11:40:00	175.3	1095.1	21.4	51.0	30.3	9.2
20-Dec-03 11:41:00	175.3	1095.2	21.4	51.0	30.3	9.2
20-Dec-03 11:42:00	175.3	1095.3	21.4	51.1	30.3	9.2
20-Dec-03 11:43:00	175.3	1095.4	21.4	51.1	30.3	9.2
20-Dec-03 11:44:00	175.3	1095.4	21.4	51.2	30.3	9.2
20-Dec-03 11:45:00	175.3	1095.5	21.4	51.3	30.3	9.2
20-Dec-03 11:46:00	175.3	1095.6	21.4	51.3	30.3	9.2
20-Dec-03 11:47:00	175.3	1095.7	21.4	51.4	30.3	9.2
20-Dec-03 11:48:00	175.3	1095.8	21.4	51.4	30.3	9.2
20-Dec-03 11:49:00	175.2	1095.9	21.4	51.5	30.3	9.2
20-Dec-03 11:50:00	175.2	1096.0	21.4	51.6	30.3	9.2
20-Dec-03 11:51:00	175.2	1096.0	21.4	51.6	30.3	9.2
20-Dec-03 11:52:00	175.1	1096.1	21.4	51.7	30.3	9.1
20-Dec-03 11:53:00	175.1	1096.2	21.3	51.7	30.3	9.1
20-Dec-03 11:54:00	175.1	1096.3	21.3	51.8	30.3	9.1
20-Dec-03 11:55:00	175.0	1096.4	21.3	51.9	30.3	9.1
20-Dec-03 11:56:00	175.0	1096.5	21.3	51.9	30.3	9.1
20-Dec-03 11:57:00	175.0	1096.6	21.3	52.0	30.3	9.1
20-Dec-03 11:58:00	174.9	1096.6	21.3	52.0	30.3	9.1
20-Dec-03 11:59:00	174.9	1096.7	21.3	52.0	30.3	9.1
20-Dec-03 12:00:00	174.8	1096.8	21.3	52.0	30.3	9.1
20-Dec-03 12:01:00	174.8	1096.9	21.3	52.0	30.3	9.2
20-Dec-03 12:02:00	174.8	1097.0	21.3	52.0	30.3	9.2
20-Dec-03 12:03:00	174.7	1097.1	21.3	52.0	30.3	9.2
20-Dec-03 12:04:00	174.7	1097.2	21.3	52.1	30.3	9.2
20-Dec-03 12:05:00	174.7	1097.3	21.3	52.1	30.3	9.2
20-Dec-03 12:06:00	174.6	1097.4	21.3	52.1	30.3	9.2
20-Dec-03 12:07:00	174.6	1097.4	21.3	52.1	30.3	9.2
20-Dec-03 12:08:00	174.6	1097.5	21.3	52.1	30.3	9.2
20-Dec-03 12:09:00	174.6	1097.6	21.3	52.1	30.3	9.2
20-Dec-03 12:10:00	174.6	1097.7	21.3	52.1	30.3	9.2
20-Dec-03 12:11:00	174.6	1097.8	21.3	52.2	30.3	9.2
20-Dec-03 12:12:00	174.6	1097.9	21.3	52.2	30.3	9.2
20-Dec-03 12:13:00	174.6	1098.0	21.3	52.2	30.3	9.2
20-Dec-03 12:14:00	174.6	1098.1	21.3	52.2	30.3	9.2
20-Dec-03 12:15:00	174.6	1098.2	21.3	52.2	30.3	9.2
20-Dec-03 12:16:00	174.6	1098.3	21.3	52.2	30.3	9.2
20-Dec-03 12:17:00	174.6	1098.3	21.3	52.3	30.3	9.2
20-Dec-03 12:18:00	174.6	1098.4	21.3	52.3	30.3	9.2
20-Dec-03 12:19:00	174.6	1098.5	21.3	52.3	30.2	9.2
20-Dec-03 12:20:00	174.6	1098.6	21.3	52.3	30.2	9.2
20-Dec-03 12:21:00	174.6	1098.6	21.3	52.3	30.2	9.2
20-Dec-03 12:22:00	174.6	1098.7	21.3	52.3	30.2	9.2
20-Dec-03 12:23:00	174.6	1098.7	21.3	52.3	30.2	9.2
20-Dec-03 12:24:00	174.7	1098.8	21.3	52.3	30.2	9.2
20-Dec-03 12:25:00	174.7	1098.8	21.3	52.2	30.2	9.2
20-Dec-03 12:26:00	174.7	1098.9	21.3	52.2	30.2	9.2
20-Dec-03 12:27:00	174.7	1098.9	21.3	52.2	30.2	9.2
20-Dec-03 12:28:00	174.7	1098.9	21.3	52.2	30.2	9.2
20-Dec-03 12:29:00	174.6	1099.0	21.3	52.2	30.2	9.2
20-Dec-03 12:30:00	174.6	1099.0	21.3	52.1	30.2	9.2



20-Dec-03 12:31:00	174.5	1099.1	21.3	52.1	30.2	9.2
20-Dec-03 12:32:00	174.5	1099.1	21.3	52.1	30.2	9.2
20-Dec-03 12:33:00	174.4	1099.2	21.3	52.1	30.2	9.2
20-Dec-03 12:34:00	174.4	1099.2	21.3	52.1	30.2	9.2
20-Dec-03 12:35:00	174.3	1099.3	21.3	52.0	30.2	9.2
20-Dec-03 12:36:00	174.3	1099.3	21.3	52.0	30.2	9.2
20-Dec-03 12:37:00	174.3	1099.4	21.3	52.0	30.2	9.2
20-Dec-03 12:38:00	174.2	1099.4	21.3	52.0	30.2	9.2
20-Dec-03 12:39:00	174.2	1099.4	21.3	52.0	30.2	9.2
20-Dec-03 12:40:00	174.1	1099.5	21.3	51.9	30.2	9.2
20-Dec-03 12:41:00	174.1	1099.5	21.3	51.9	30.2	9.2
20-Dec-03 12:42:00	174.0	1099.6	21.3	51.9	30.2	9.2
20-Dec-03 12:43:00	174.0	1099.6	21.3	51.9	30.2	9.2
20-Dec-03 12:44:00	173.9	1099.6	21.3	51.9	30.2	9.3
20-Dec-03 12:45:00	173.9	1099.6	21.3	51.9	30.2	9.3
20-Dec-03 12:46:00	173.8	1099.6	21.3	51.8	30.2	9.3
20-Dec-03 12:47:00	173.8	1099.6	21.3	51.9	30.2	9.3
20-Dec-03 12:48:00	173.7	1099.6	21.3	51.9	30.2	9.3
20-Dec-03 12:49:00	173.7	1099.6	21.3	52.0	30.2	9.3
20-Dec-03 12:50:00	173.8	1099.6	21.3	52.0	30.2	9.3
20-Dec-03 12:51:00	173.8	1099.6	21.3	52.1	30.2	9.3
20-Dec-03 12:52:00	173.8	1099.6	21.3	52.2	30.2	9.3
20-Dec-03 12:53:00	173.8	1099.6	21.3	52.2	30.2	9.3
20-Dec-03 12:54:00	173.8	1099.6	21.3	52.3	30.2	9.3
20-Dec-03 12:55:00	173.8	1099.6	21.3	52.3	30.2	9.3
20-Dec-03 12:56:00	173.9	1099.6	21.3	52.4	30.2	9.3
20-Dec-03 12:57:00	173.9	1099.6	21.3	52.4	30.2	9.3
20-Dec-03 12:58:00	173.9	1099.6	21.3	52.5	30.2	9.3
20-Dec-03 12:59:00	173.9	1099.6	21.3	52.6	30.2	9.3
20-Dec-03 13:00:00	173.9	1099.6	21.3	52.6	30.2	9.3
20-Dec-03 13:01:00	173.9	1099.6	21.3	52.7	30.2	9.3
20-Dec-03 13:02:00	174.0	1099.6	21.3	52.7	30.2	9.3
20-Dec-03 13:03:00	174.0	1099.6	21.3	52.8	30.2	9.3
20-Dec-03 13:04:00	174.0	1099.6	21.3	52.8	30.2	9.3
20-Dec-03 13:05:00	174.0	1099.6	21.3	52.9	30.2	9.3
20-Dec-03 13:06:00	174.0	1099.6	21.3	53.0	30.2	9.3
20-Dec-03 13:07:00	174.0	1099.7	21.3	53.0	30.2	9.3
20-Dec-03 13:08:00	174.0	1099.7	21.3	53.1	30.2	9.3
20-Dec-03 13:09:00	174.0	1099.8	21.3	53.1	30.2	9.3
20-Dec-03 13:10:00	174.0	1099.8	21.3	53.2	30.2	9.3
20-Dec-03 13:11:00	174.0	1099.8	21.3	53.2	30.2	9.3
20-Dec-03 13:12:00	174.0	1099.9	21.2	53.3	30.2	9.3
20-Dec-03 13:13:00	174.0	1099.9	21.2	53.3	30.2	9.3
20-Dec-03 13:14:00	174.0	1100.0	21.2	53.3	30.2	9.3
20-Dec-03 13:15:00	174.0	1100.0	21.2	53.3	30.2	9.3
20-Dec-03 13:16:00	173.9	1100.1	21.2	53.3	30.2	9.3
20-Dec-03 13:17:00	173.9	1100.1	21.2	53.3	30.2	9.3
20-Dec-03 13:18:00	173.9	1100.1	21.2	53.3	30.2	9.3
20-Dec-03 13:19:00	173.9	1100.2	21.2	53.3	30.2	9.3
20-Dec-03 13:20:00	173.9	1100.2	21.2	53.3	30.2	9.3
20-Dec-03 13:21:00	173.9	1100.3	21.2	53.3	30.2	9.3
20-Dec-03 13:22:00	173.8	1100.3	21.2	53.3	30.2	9.3

20-Dec-03 13:23:00	173.8	1100.4	21.2	53.3	30.2	9.3
20-Dec-03 13:24:00	173.8	1100.4	21.2	53.3	30.2	9.4
20-Dec-03 13:25:00	173.8	1100.5	21.2	53.3	30.2	9.4
20-Dec-03 13:26:00	173.8	1100.5	21.2	53.3	30.2	9.4
20-Dec-03 13:27:00	173.8	1100.5	21.2	53.3	30.2	9.4
20-Dec-03 13:28:00	173.8	1100.6	21.2	53.3	30.2	9.4
20-Dec-03 13:29:00	173.7	1100.7	21.2	53.3	30.2	9.4
20-Dec-03 13:30:00	173.7	1100.8	21.2	53.3	30.2	9.4
20-Dec-03 13:31:00	173.7	1100.8	21.2	53.3	30.2	9.4
20-Dec-03 13:32:00	173.7	1100.9	21.2	53.3	30.2	9.4
20-Dec-03 13:33:00	173.6	1101.0	21.2	53.3	30.2	9.4
20-Dec-03 13:34:00	173.6	1101.0	21.2	53.3	30.2	9.5
20-Dec-03 13:35:00	173.6	1101.1	21.2	53.3	30.2	9.5
20-Dec-03 13:36:00	173.6	1101.2	21.2	53.3	30.2	9.5
20-Dec-03 13:37:00	173.5	1101.3	21.2	53.3	30.2	9.5
20-Dec-03 13:38:00	173.5	1101.3	21.2	53.3	30.2	9.5
20-Dec-03 13:39:00	173.5	1101.4	21.2	53.3	30.2	9.5
20-Dec-03 13:40:00	173.5	1101.5	21.2	53.4	30.2	9.5
20-Dec-03 13:41:00	173.5	1101.5	21.3	53.4	30.2	9.5
20-Dec-03 13:42:00	173.4	1101.6	21.3	53.4	30.2	9.5
20-Dec-03 13:43:00	173.4	1101.7	21.3	53.5	30.2	9.5
20-Dec-03 13:44:00	173.4	1101.8	21.3	53.5	30.2	9.5
20-Dec-03 13:45:00	173.4	1101.8	21.3	53.5	30.2	9.5
20-Dec-03 13:46:00	173.3	1101.9	21.3	53.6	30.2	9.5
20-Dec-03 13:47:00	173.3	1102.0	21.3	53.6	30.2	9.5
20-Dec-03 13:48:00	173.3	1102.0	21.3	53.6	30.2	9.5
20-Dec-03 13:49:00	173.3	1102.1	21.3	53.7	30.2	9.5
20-Dec-03 13:50:00	173.3	1102.2	21.3	53.7	30.2	9.5
20-Dec-03 13:51:00	173.3	1102.2	21.3	53.7	30.2	9.5
20-Dec-03 13:52:00	173.3	1102.2	21.3	53.8	30.2	9.5
20-Dec-03 13:53:00	173.3	1102.3	21.3	53.8	30.2	9.5
20-Dec-03 13:54:00	173.3	1102.3	21.3	53.8	30.2	9.5
20-Dec-03 13:55:00	173.3	1102.3	21.3	53.9	30.2	9.5
20-Dec-03 13:56:00	173.4	1102.3	21.3	53.9	30.2	9.5
20-Dec-03 13:57:00	173.4	1102.3	21.3	53.9	30.2	9.5
20-Dec-03 13:58:00	173.4	1102.4	21.3	54.0	30.2	9.5
20-Dec-03 13:59:00	173.4	1102.4	21.3	54.0	30.2	9.5
20-Dec-03 14:00:00	173.4	1102.4	21.3	54.0	30.2	9.5
20-Dec-03 14:01:00	173.4	1102.4	21.3	54.1	30.2	9.5
20-Dec-03 14:02:00	173.4	1102.4	21.3	54.1	30.2	9.5
20-Dec-03 14:03:00	173.4	1102.4	21.3	54.1	30.2	9.5
20-Dec-03 14:04:00	173.4	1102.5	21.3	54.1	30.2	9.5
20-Dec-03 14:05:00	173.4	1102.5	21.3	54.1	30.2	9.5
20-Dec-03 14:06:00	173.4	1102.5	21.3	54.1	30.2	9.5
20-Dec-03 14:07:00	173.5	1102.5	21.3	54.1	30.2	9.5
20-Dec-03 14:08:00	173.5	1102.5	21.3	54.1	30.2	9.5
20-Dec-03 14:09:00	173.5	1102.6	21.3	54.1	30.2	9.5
20-Dec-03 14:10:00	173.5	1102.6	21.3	54.1	30.2	9.5
20-Dec-03 14:11:00	173.4	1102.6	21.3	54.1	30.2	9.5
20-Dec-03 14:12:00	173.4	1102.6	21.3	54.1	30.2	9.5
20-Dec-03 14:13:00	173.4	1102.6	21.3	54.1	30.2	9.5
20-Dec-03 14:14:00	173.4	1102.6	21.3	54.1	30.2	9.5



20-Dec-03 15:07:00	173.9	1102.3	21.3	54.0	30.2	9.6
20-Dec-03 15:08:00	173.9	1102.3	21.3	54.0	30.2	9.6
20-Dec-03 15:09:00	173.9	1102.2	21.3	54.0	30.2	9.6
20-Dec-03 15:10:00	173.9	1102.2	21.3	54.0	30.2	9.6
20-Dec-03 15:11:00	173.9	1102.1	21.3	54.0	30.2	9.6
20-Dec-03 15:12:00	173.8	1102.1	21.3	54.1	30.2	9.6
20-Dec-03 15:13:00	173.8	1102.1	21.3	54.1	30.2	9.6
20-Dec-03 15:14:00	173.8	1102.0	21.3	54.1	30.2	9.6
20-Dec-03 15:15:00	173.8	1102.0	21.3	54.1	30.2	9.6
20-Dec-03 15:16:00	173.8	1101.9	21.3	54.1	30.2	9.6
20-Dec-03 15:17:00	173.8	1101.9	21.3	54.2	30.2	9.6
20-Dec-03 15:18:00	173.8	1101.9	21.3	54.2	30.2	9.6
20-Dec-03 15:19:00	173.8	1101.8	21.3	54.2	30.2	9.6
20-Dec-03 15:20:00	173.8	1101.8	21.3	54.2	30.2	9.6
20-Dec-03 15:21:00	173.8	1101.7	21.3	54.2	30.2	9.6
20-Dec-03 15:22:00	173.8	1101.7	21.3	54.2	30.2	9.6
20-Dec-03 15:23:00	173.8	1101.6	21.3	54.2	30.2	9.6
20-Dec-03 15:24:00	173.8	1101.6	21.3	54.2	30.2	9.6
20-Dec-03 15:25:00	173.8	1101.6	21.2	54.2	30.2	9.6
20-Dec-03 15:26:00	173.8	1101.5	21.2	54.2	30.2	9.5
20-Dec-03 15:27:00	173.8	1101.5	21.2	54.1	30.2	9.5
20-Dec-03 15:28:00	173.8	1101.4	21.2	54.1	30.2	9.5
20-Dec-03 15:29:00	173.8	1101.4	21.2	54.1	30.2	9.5
20-Dec-03 15:30:00	173.7	1101.4	21.2	54.1	30.2	9.5
20-Dec-03 15:31:00	173.7	1101.3	21.2	54.1	30.2	9.5
20-Dec-03 15:32:00	173.7	1101.3	21.2	54.1	30.2	9.5
20-Dec-03 15:33:00	173.7	1101.3	21.2	54.1	30.2	9.5
20-Dec-03 15:34:00	173.7	1101.2	21.2	54.1	30.2	9.5
20-Dec-03 15:35:00	173.7	1101.2	21.2	54.1	30.2	9.5
20-Dec-03 15:36:00	173.7	1101.2	21.2	54.1	30.2	9.5
20-Dec-03 15:37:00	173.7	1101.1	21.2	54.1	30.2	9.5
20-Dec-03 15:38:00	173.7	1101.1	21.2	54.1	30.2	9.5
20-Dec-03 15:39:00	173.7	1101.1	21.2	54.1	30.2	9.5
20-Dec-03 15:40:00	173.7	1101.0	21.2	54.1	30.2	9.5
20-Dec-03 15:41:00	173.6	1101.0	21.2	54.1	30.2	9.5
20-Dec-03 15:42:00	173.6	1101.0	21.2	54.1	30.2	9.4
20-Dec-03 15:43:00	173.6	1100.9	21.2	54.1	30.2	9.4
20-Dec-03 15:44:00	173.6	1100.9	21.2	54.1	30.2	9.4
20-Dec-03 15:45:00	173.6	1100.9	21.2	54.0	30.2	9.5
20-Dec-03 15:46:00	173.6	1100.8	21.2	54.0	30.2	9.5
20-Dec-03 15:47:00	173.6	1100.8	21.2	53.9	30.2	9.5
20-Dec-03 15:48:00	173.6	1100.8	21.2	53.9	30.2	9.5

FUEL ANALYSIS

DECEMBER 19, 2003



### Natural Gas and Heating Value Calculations

Customer: Tampa Electric Company

Sample ID: FGT 8030/1219

Facility: Bayside Power Station

Analysis Date:

12/19/2003

Source: CT-2C

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

Component	% Volume	Molecular Wt.	Density* (lb/ft <sup>3</sup> )	% volume x		Component Gross Btu/lb	Weight Fract. Btu	Gross* Heating Value (Btu/SCF)	Volume Fract. Btu
				Density	weight %				
Hydrogen		2.016	0.0053	0.00000	0.0000	61100	0.00	325.0	0
Oxygen		32.000	0.0846	0.00000	0.0000	0	0.00	0.0	0
Nitrogen	0.3040	28.016	0.0744	0.00023	0.4993	0	0.00	0.0	0
CO2	0.8510	44.010	0.1170	0.00100	2.1980	0	0.00	0.0	0
CO		28.010	0.0740	0.00000	0.0000	4347	0.00	322.0	0
Methane	95.093	16.041	0.0424	0.04032	89.0066	23879	21253.89	1013.0	963.29209
Ethane	2.541	30.067	0.0803	0.00204	4.5043	22320	1005.36	1792.0	45.53472
Ethylene		28.051	0.0746	0.00000	0.0000	21644	0.00	1614.0	0
Propane	0.722	44.092	0.1196	0.00086	1.9062	21661	412.91	2590.0	18.6998
propylene		42.077	0.1110	0.00000	0.0000	21041	0.00	2336.0	0
Isobutane	0.163	58.118	0.1582	0.00026	0.5692	21257	121.01	3363.0	5.48169
n-butane	0.162	58.118	0.1582	0.00026	0.5658	21308	120.55	3370.0	5.4594
Isobutene		56.102	0.1480	0.00000	0.0000	20730	0.00	3068.0	0
Isopentane	0.054	72.144	0.1904	0.00010	0.2270	21052	47.78	4008.0	2.16432
n-pentane	0.035	72.144	0.1904	0.00007	0.1471	21091	31.03	4016.0	1.4056
n-hexane	0.075	86.169	0.2274	0.00017	0.3765	20940	78.84	4762.0	3.5715
H2S		34.076	0.0911	0.00000	0.0000	7100	0.00	647.0	0

Total: 100.00	Average Density	0.04530	100.0000
	Specific Gravity	0.59215	

Gross Heating Value			
Btu/lb	23071	Btu/SCF	1045.61
Net Heating Values			
Btu/lb	20877	Btu/SCF	946

\* Density (lb/ft<sup>3</sup>) and Gross Heating Value (Btu/scf) data from Perry's Chemical Engineering Handbook.

Net Heating Value (Lower Heating Value), Btu/lb, calculated as Gross Heating Value (Higher Heating Value) - 10.30 (%H<sub>2</sub> x 8.94), from Steam, §9-9, Principles of Combustion, equation 9.

Heat from water vaporization is assumed to be un-available.



### Natural Gas and Heating Value Calculations

Customer: Tampa Electric Company  
 Facility: Bayside Power Station  
 Source: CT-2C

Sample ID: FGT 8030/1219  
 Analysis Date: 12/19/2003

#### CALCULATION OF F FACTORS

Component	Mol. Wt.	C Factor	H Factor	% volume	Fract. Wt.	Weight Percents			
						Carbon	Hydrogen	Nitrogen	Oxygen
Hydrogen	2.016	0	1	0.000	0.0000		0		
Oxygen	32.000	0	0	0.000	0.0000				0
Nitrogen	28.016	0	0	0.304	8.5169			0.497665632	
CO2	44.010	0.272273	0	0.851	37.4525	0.59585892			1.591011349
CO	28.010	0.42587	0	0.000	0.0000	0			0
Methane	16.041	0.75	0.25	95.093	1525.3868	66.8496579	22.2832193		
Ethane	30.067	0.8	0.2	2.541	76.4002	3.57143449	0.89285862		
Ethylene	28.051	0.85714	0.14286	0.000	0.0000	0	0		
Propane	44.092	0.81818	0.18182	0.722	31.8344	1.52196195	0.33821418		
Propene	42.077	0.85714	0.14286	0.000	0.0000	0	0		
Isobutane	58.118	0.82759	0.17247	0.163	9.4732	0.45811176	0.09547063		
n-butane	58.118	0.82759	0.17247	0.162	9.4151	0.45530126	0.09488492		
Isobutene	56.102	0.85714	0.14286	0.000	0.0000	0	0		
Isopentane	72.144	0.83333	0.16667	0.054	3.8958	0.1897007	0.03794105		
n-pentane	72.144	0.83333	0.16667	0.035	2.5250	0.12295416	0.02459142		
n-hexane	86.169	0.83721	0.16279	0.075	6.4627	0.31615835	0.06147492		
H2S	34.076	0	0.05869	0.000	0.0000	0	0		
Totals				100.00000	1711.3627	74.0811395	23.83	0.497665632	1.591011349

#### CALCULATED VALUES

<b>O2 F Factor (dry), Fd</b>	<b>8644</b>	DSCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
<b>O2 F Factor (wet), Fw</b>	<b>10637</b>	SCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
<b>Moisture F Factor</b>	<b>1993</b>	SCF of Water/MM Btu of Fuel Burned @ 0% excess air
<b>Combust. Moisture</b>	<b>18.74</b>	volume % water in flue gas @ 0% excess air
<b>CO2 F Factor, Fc</b>	<b>1031</b>	DSCF of CO2/MM Btu of Fuel Burned @ 0% excess air
<b>Carbon Dioxide</b>	<b>11.92</b>	volume % CO2 in flue gas @ 0% O2
<b>Predicted Fo Factor</b>	<b>1.75</b>	EPA Method 3a Fo value



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Date	BTU	CO2	N2	Grav	Methan	Ethane	Propan	Ibutan	Nbutan	Ipenta	Npenta	C6	C7	H2	Helium	Oxygen
12/20/2003	1045	0.905	0.293	0.592	95.121	2.488	0.707	0.158	0.159	0.054	0.036	0.079	0	0	0	0
12/19/2003	1046	0.851	0.304	0.592	95.093	2.541	0.722	0.163	0.162	0.054	0.035	0.075	0	0	0	0
12/18/2003	1046	0.859	0.305	0.592	95.023	2.618	0.719	0.163	0.152	0.053	0.034	0.075	0	0	0	0
12/17/2003	1043	0.925	0.315	0.591	95.133	2.54	0.654	0.148	0.136	0.049	0.031	0.069	0	0	0	0
12/16/2003	1041	0.892	0.295	0.59	95.344	2.45	0.626	0.135	0.13	0.043	0.027	0.058	0	0	0	0
12/15/2003	1043	0.941	0.336	0.592	94.99	2.639	0.667	0.149	0.136	0.048	0.029	0.066	0	0	0	0
12/14/2003	1042	0.934	0.328	0.591	95.126	2.583	0.617	0.142	0.127	0.047	0.029	0.069	0	0	0	0
12/13/2003	1042	0.91	0.311	0.59	95.22	2.535	0.616	0.141	0.128	0.046	0.028	0.065	0	0	0	0
12/12/2003	1043	0.897	0.299	0.591	95.148	2.599	0.642	0.142	0.133	0.046	0.03	0.065	0	0	0	0
12/11/2003	1043	0.933	0.324	0.592	95.009	2.656	0.653	0.144	0.135	0.048	0.03	0.068	0	0	0	0
12/10/2003	1043	0.946	0.293	0.591	95.118	2.585	0.638	0.139	0.134	0.047	0.031	0.07	0	0	0	0
12/09/2003	1043	0.955	0.304	0.592	94.996	2.677	0.645	0.142	0.133	0.048	0.03	0.069	0	0	0	0
12/08/2003	1043	0.924	0.315	0.592	95.024	2.688	0.64	0.139	0.13	0.045	0.029	0.064	0	0	0	0
12/07/2003	1042	0.91	0.318	0.591	95.111	2.67	0.597	0.134	0.122	0.044	0.028	0.066	0	0	0	0
12/06/2003	1035	0.925	1.145	0.595	94.157	2.782	0.595	0.141	0.119	0.044	0.026	0.066	0	0	0	0
12/05/2003	1040	0.905	0.353	0.59	95.254	2.574	0.534	0.132	0.113	0.043	0.026	0.065	0	0	0	0
12/04/2003	1035	0.911	0.348	0.586	95.568	2.436	0.44	0.105	0.087	0.034	0.02	0.052	0	0	0	0
12/03/2003	1034	0.872	0.342	0.585	95.803	2.261	0.414	0.101	0.091	0.035	0.023	0.056	0	0	0	0
12/02/2003	1033	0.803	0.354	0.584	95.964	2.199	0.396	0.094	0.086	0.032	0.021	0.051	0	0	0	0
11/29/2003	1032	0.811	0.323	0.583	96.082	2.17	0.353	0.087	0.075	0.03	0.019	0.05	0	0	0	0
11/28/2003	1033	0.781	0.304	0.582	96.175	2.106	0.358	0.09	0.077	0.032	0.02	0.055	0	0	0	0
11/27/2003	1033	0.81	0.32	0.583	96.089	2.112	0.378	0.097	0.082	0.034	0.021	0.057	0	0	0	0
11/26/2003	1033	0.803	0.297	0.583	96.154	2.086	0.37	0.097	0.081	0.034	0.021	0.058	0	0	0	0
11/25/2003	1032	0.832	0.297	0.583	96.191	2.036	0.363	0.098	0.078	0.032	0.019	0.053	0	0	0	0
11/24/2003	1032	0.792	0.324	0.582	96.245	1.978	0.37	0.097	0.081	0.034	0.021	0.058	0	0	0	0
11/23/2003	1032	0.866	0.32	0.584	96.011	2.145	0.37	0.095	0.081	0.034	0.021	0.057	0	0	0	0
11/22/2003	1033	0.871	0.319	0.584	95.923	2.251	0.373	0.09	0.076	0.031	0.019	0.049	0	0	0	0
11/21/2003	1031	0.848	0.315	0.583	96.087	2.138	0.358	0.087	0.073	0.03	0.018	0.047	0	0	0	0
11/20/2003	1033	0.846	0.303	0.584	95.99	2.199	0.386	0.093	0.081	0.032	0.02	0.05	0	0	0	0
11/19/2003	1034	0.823	0.301	0.584	95.977	2.217	0.404	0.096	0.083	0.031	0.019	0.049	0	0	0	0
11/18/2003	1033	0.819	0.305	0.583	96.011	2.204	0.39	0.093	0.077	0.031	0.019	0.051	0	0	0	0
11/17/2003	1031	0.798	0.316	0.582	96.156	2.142	0.352	0.083	0.069	0.027	0.016	0.041	0	0	0	0
11/16/2003	1031	0.829	0.304	0.582	96.145	2.132	0.347	0.085	0.07	0.028	0.016	0.044	0	0	0	0
11/15/2003	1031	0.873	0.294	0.583	96.184	2.034	0.351	0.09	0.072	0.031	0.018	0.053	0	0	0	0
11/14/2003	1034	0.884	0.289	0.585	95.959	2.153	0.401	0.106	0.085	0.037	0.023	0.065	0	0	0	0

DECEMBER 20, 2003



**Natural Gas and Heating Value Calculations**  
 Customer: Tampa Electric Company  
 Facility: Bayside Power Station  
 Source: CT-2C

Sample ID: FGT 8030/1220  
 Analysis Date: 12/20/2003

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

Component	% Volume	Molecular Wt.	Density * (lb/ft <sup>3</sup> )	% volume		Component Gross Btu/lb	Weight Fract. Btu	Gross * Heating Value (Btu/SCF)	Volume Fract. Btu
				x Density	weight %				
Hydrogen		2.016	0.0053	0.00000	0.0000	61100	0.00	325.0	0
Oxygen		32.000	0.0846	0.00000	0.0000	0	0.00	0.0	0
Nitrogen	0.2930	28.016	0.0744	0.00022	0.4812	0	0.00	0.0	0
CO2	0.9050	44.010	0.1170	0.00106	2.3372	0	0.00	0.0	0
CO		28.010	0.0740	0.00000	0.0000	4347	0.00	322.0	0
Methane	95.121	16.041	0.0424	0.04033	89.0236	23879	21257.93	1013.0	963.5757
Ethane	2.488	30.067	0.0803	0.00200	4.4099	22320	984.29	1792.0	44.58496
Ethylene		28.051	0.0746	0.00000	0.0000	21644	0.00	1614.0	0
Propane	0.707	44.092	0.1196	0.00085	1.8664	21661	404.29	2590.0	18.3113
propylene		42.077	0.1110	0.00000	0.0000	21041	0.00	2336.0	0
Isobutane	0.158	58.118	0.1582	0.00025	0.5517	21257	117.28	3363.0	5.31354
n-butane	0.159	58.118	0.1582	0.00025	0.5552	21308	118.31	3370.0	5.3583
Isobutene		56.102	0.1480	0.00000	0.0000	20730	0.00	3068.0	0
Isopentane	0.054	72.144	0.1904	0.00010	0.2269	21052	47.78	4008.0	2.16432
n-pentane	0.036	72.144	0.1904	0.00007	0.1513	21091	31.91	4016.0	1.44576
n-hexane	0.079	86.169	0.2274	0.00018	0.3965	20940	83.03	4762.0	3.76198
H2S		34.076	0.0911	0.00000	0.0000	7100	0.00	647.0	0

Total: 100.00

Average Density	0.04530	100.0000
Specific Gravity	0.59221	

Gross Heating Value			
Btu/lb	23045	Btu/SCF	1044.52
Net Heating Values			
Btu/lb	20853	Btu/SCF	945

\* Density (lb/ft<sup>3</sup>) and Gross Heating Value (Btu/scf) data from Perry's Chemical Engineering Handbook.

Net Heating Value (Lower Heating Value), Btu/lb, calculated as Gross Heating Value (Higher Heating Value) - 10.30 (%H<sub>2</sub> x 8.94), from Steam, §9-9, Principles of Combustion, equation 9.

Heat from water vaporization is assumed to be un-available.



### Natural Gas and Heating Value Calculations

Customer: Tampa Electric Company

Sample ID: FGT 8030/1220

Facility: Bayside Power Station

Analysis Date: 12/20/2003

Source: CT-2C

#### CALCULATION OF F FACTORS

Component	Mol. Wt.	C Factor	H Factor	% volume	Fract. Wt.	Weight Percents			
						Carbon	Hydrogen	Nitrogen	Oxygen
Hydrogen	2.016	0	1	0.000	0.0000		0		
Oxygen	32.000	0	0	0.000	0.0000				0
Nitrogen	28.016	0	0	0.293	8.2087			0.479597894	
CO2	44.010	0.272273	0	0.905	39.8291	0.6335896			1.6917566
CO	28.010	0.42587	0	0.000	0.0000	0			0
Methane	16.041	0.75	0.25	95.121	1525.8360	66.8609631	22.286988		
Ethane	30.067	0.8	0.2	2.488	74.8067	3.4965036	0.8741259		
Ethylene	28.051	0.85714	0.14286	0.000	0.0000	0	0		
Propane	44.092	0.81818	0.181818	0.707	31.1730	1.4901555	0.3311461		
Propene	42.077	0.85714	0.14286	0.000	0.0000	0	0		
Isobutane	58.118	0.82759	0.17247	0.158	9.1826	0.44400361	0.0925305		
n-butane	58.118	0.82759	0.17247	0.159	9.2408	0.44681376	0.0931161		
Isobutene	56.102	0.85714	0.14286	0.000	0.0000	0	0		
Isopentane	72.144	0.83333	0.16667	0.054	3.8958	0.18967693	0.0379363		
n-pentane	72.144	0.83333	0.16667	0.036	2.5972	0.12645129	0.0252909		
n-hexane	86.169	0.83721	0.16279	0.079	6.8074	0.33297841	0.0647455		
H2S	34.076	0	0.0586923	0.000	0.0000	0	0		
Totals				100.00000	1711.5772	74.0211358	23.81	0.479597894	1.6917566

#### CALCULATED VALUES

<b>O2 F Factor (dry), Fd</b>	<b>8644</b>	DSCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
<b>O2 F Factor (wet), Fw</b>	<b>10638</b>	SCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
<b>Moisture F Factor</b>	<b>1994</b>	SCF of Water/MM Btu of Fuel Burned @ 0% excess air
<b>Combust. Moisture</b>	<b>18.74</b>	volume % water in flue gas @ 0% excess air
<b>CO2 F Factor, Fc</b>	<b>1031</b>	DSCF of CO2/MM Btu of Fuel Burned @ 0% excess air
<b>Carbon Dioxide</b>	<b>11.93</b>	volume % CO2 in flue gas @ 0% O2
<b>Predicted Fo Factor</b>	<b>1.75</b>	EPA Method 3a Fo value

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Date	BTU	CO2	N2	Grav	Methan	Ethane	Propan	Ibutan	Nbutan	Ipenta	Npenta	C6	C7	H2	Helium	Oxygen
12/20/2003	1045	0.905	0.293	0.592	95.121	2.488	0.707	0.158	0.159	0.054	0.036	0.079	0	0	0	0
12/19/2003	1046	0.851	0.304	0.592	95.093	2.541	0.722	0.163	0.162	0.054	0.035	0.075	0	0	0	0
12/18/2003	1046	0.859	0.305	0.592	95.023	2.618	0.719	0.163	0.152	0.053	0.034	0.075	0	0	0	0
12/17/2003	1043	0.925	0.315	0.591	95.133	2.54	0.654	0.148	0.136	0.049	0.031	0.069	0	0	0	0
12/16/2003	1041	0.892	0.295	0.59	95.344	2.45	0.626	0.135	0.13	0.043	0.027	0.058	0	0	0	0
12/15/2003	1043	0.941	0.336	0.592	94.99	2.639	0.667	0.149	0.136	0.048	0.029	0.066	0	0	0	0
12/14/2003	1042	0.934	0.328	0.591	95.126	2.583	0.617	0.142	0.127	0.047	0.029	0.069	0	0	0	0
12/13/2003	1042	0.91	0.311	0.59	95.22	2.535	0.616	0.141	0.128	0.046	0.028	0.065	0	0	0	0
12/12/2003	1043	0.897	0.299	0.591	95.148	2.599	0.642	0.142	0.133	0.046	0.03	0.065	0	0	0	0
12/11/2003	1043	0.933	0.324	0.592	95.009	2.656	0.653	0.144	0.135	0.048	0.03	0.068	0	0	0	0
12/10/2003	1043	0.946	0.293	0.591	95.118	2.585	0.638	0.139	0.134	0.047	0.031	0.07	0	0	0	0
12/09/2003	1043	0.955	0.304	0.592	94.996	2.677	0.645	0.142	0.133	0.048	0.03	0.069	0	0	0	0
12/08/2003	1043	0.924	0.315	0.592	95.024	2.688	0.64	0.139	0.13	0.045	0.029	0.064	0	0	0	0
12/07/2003	1042	0.91	0.318	0.591	95.111	2.67	0.597	0.134	0.122	0.044	0.028	0.066	0	0	0	0
12/06/2003	1035	0.925	1.145	0.595	94.157	2.782	0.595	0.141	0.119	0.044	0.026	0.066	0	0	0	0
12/05/2003	1040	0.905	0.353	0.59	95.254	2.574	0.534	0.132	0.113	0.043	0.026	0.065	0	0	0	0
12/04/2003	1035	0.911	0.348	0.586	95.568	2.436	0.44	0.105	0.087	0.034	0.02	0.052	0	0	0	0
12/03/2003	1034	0.872	0.342	0.585	95.803	2.261	0.414	0.101	0.091	0.035	0.023	0.056	0	0	0	0
12/02/2003	1033	0.803	0.354	0.584	95.964	2.199	0.396	0.094	0.086	0.032	0.021	0.051	0	0	0	0
11/29/2003	1032	0.811	0.323	0.583	96.082	2.17	0.353	0.087	0.075	0.03	0.019	0.05	0	0	0	0
11/28/2003	1033	0.781	0.304	0.582	96.175	2.106	0.358	0.09	0.077	0.032	0.02	0.055	0	0	0	0
11/27/2003	1033	0.81	0.32	0.583	96.089	2.112	0.378	0.097	0.082	0.034	0.021	0.057	0	0	0	0
11/26/2003	1033	0.803	0.297	0.583	96.154	2.086	0.37	0.097	0.081	0.034	0.021	0.058	0	0	0	0
11/25/2003	1022	0.832	0.297	0.583	96.191	2.036	0.363	0.098	0.078	0.032	0.019	0.053	0	0	0	0
11/24/2003	1032	0.792	0.324	0.582	96.245	1.978	0.37	0.097	0.081	0.034	0.021	0.058	0	0	0	0
11/23/2003	1032	0.866	0.32	0.584	96.011	2.145	0.37	0.095	0.081	0.034	0.021	0.057	0	0	0	0
11/22/2003	1033	0.871	0.319	0.584	95.923	2.251	0.373	0.09	0.076	0.031	0.019	0.049	0	0	0	0
11/21/2003	1031	0.848	0.315	0.583	96.087	2.138	0.358	0.087	0.073	0.03	0.018	0.047	0	0	0	0
11/20/2003	1033	0.846	0.303	0.584	95.99	2.199	0.386	0.093	0.081	0.032	0.02	0.05	0	0	0	0
11/19/2003	1034	0.823	0.301	0.584	95.977	2.217	0.404	0.096	0.083	0.031	0.019	0.049	0	0	0	0
11/18/2003	1033	0.819	0.305	0.583	96.011	2.204	0.39	0.093	0.077	0.031	0.019	0.051	0	0	0	0
11/17/2003	1031	0.798	0.316	0.582	96.156	2.142	0.352	0.083	0.069	0.027	0.016	0.041	0	0	0	0
11/16/2003	1031	0.829	0.304	0.582	96.145	2.132	0.347	0.085	0.07	0.028	0.016	0.044	0	0	0	0
11/15/2003	1031	0.873	0.294	0.583	96.184	2.034	0.351	0.09	0.072	0.031	0.018	0.053	0	0	0	0
11/14/2003	1034	0.884	0.289	0.585	95.959	2.153	0.401	0.106	0.085	0.037	0.023	0.065	0	0	0	0

AMMONIA SLIP TEST INFORMATION

CALCULATED DATA



Conditional Test Method (CTM) -027  
Test Calculations

Customer: TECO  
Facility: Bayside  
Unit: 2D  
Run Number: 1  
Date: 12/17/03

Sample Time, $\theta$ :	60 minutes	Nozzle Diameter, $D_n$ :	0.189 inches
Barometric Pressure, $P_b$ :	29.00 "Hg	Nozzle Area, $A_n$ :	0.00019482 ft <sup>2</sup>
Stack Pressure, $P_s$ :	28.95 "Hg	Average Orifice Meter, $\Delta H$ :	0.852 "H <sub>2</sub> O
Effective Stack Area, $A_s$ :	283.529 ft <sup>2</sup>	Sample Volume, $V_m$ :	31.371 ft <sup>3</sup>
Pitot Coefficient, $C_p$ :	0.84 dimensionless	Average Meter Temp., $T_m$ :	63.5 °F
Gas Analysis:	4.1 % CO <sub>2</sub>	Average Stack Temp., $T_s$ :	231.3 °F
	13.8 % O <sub>2</sub>	Average $\sqrt{\Delta p}$ :	0.980 "H <sub>2</sub> O
	0.0 % CO	Condensate Volume, $V_{lc}$ :	64.3 ml
	82.1 % N <sub>2</sub>	Meter Box Y:	1.004 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E-02 \times V_{lc}$	3.031 scf
	85.841 liters
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	30.859 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.089 %
$FDA = 1.0 - B_{ws}$	0.911 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%CO))$	29.21 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	28.21 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	64.72 ft/second
$Q_s = v_s \times A_s \times 60$	1101073.6 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92)$	740906.1 dscf/minute
$I = (T_s + 460) \times ((2.67E-03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s)$	101.0 %





Calculation of NH<sub>3</sub> Concentration  
CTM - 027

Customer: TECO  
Facility: Bayside  
Unit: 2D  
Test Date: 12/17/2003

Run #1

Calculation of Volume of Ammonia Gas Present in Sample:

$$V_a = (N \times D_v \times 24.04) / (1000 \times 18) \text{ (CTM - 027, Equation 2)}$$

Where:

$V_a$  = Volume of ammonia gas in the sample

$N$  = 0.49 Sum of concentrations of ammonia ion in solution, mg/l

$D_v$  = 0.5 Dilution volume

24.04 = liters of ideal gas per mole of substance

1/1000 = conversion factor mg/l to g/l

18 = weight of ammonium ion

$$V_a = 0.0003 \text{ liters}$$

Calculation of ppmv of Ammonia present in Stack Gas:

$$C_{\text{NH}_3} = (V_a / V_{\text{m(std)}}) \times 10^6$$

Where:

$V_a$  = Volume of ammonia gas in the sample

$V_{\text{m(std)}}$  = 85.841 liters

$$C_{\text{NH}_3} = 3.811836 \text{ ppmv}$$



Conditional Test Method (CTM) -027  
Test Calculations

Customer: TECO  
Facility: Bayside  
Unit: 2D  
Run Number: 2  
Date: 12/17/03

Sample Time, $\theta$ :	60 minutes	Nozzle Diameter, $D_n$ :	0.189 inches
Barometric Pressure, $P_b$ :	29.00 "Hg	Nozzle Area, $A_n$ :	0.00019482 ft <sup>2</sup>
Stack Pressure, $P_s$ :	28.95 "Hg	Average Orifice Meter, $\Delta H$ :	0.898 "H <sub>2</sub> O
Effective Stack Area, $A_s$ :	283.529 ft <sup>2</sup>	Sample Volume, $V_m$ :	31.812 ft <sup>3</sup>
Pitot Coefficient, $C_p$ :	0.84 dimensionless	Average Meter Temp., $T_m$ :	61.0 °F
Gas Analysis:	4.1 % CO <sub>2</sub>	Average Stack Temp., $T_s$ :	234.1 °F
	13.9 % O <sub>2</sub>	Average $\sqrt{\Delta p}$ :	1.006 "H <sub>2</sub> O
	0.0 % CO	Condensate Volume, $V_{lc}$ :	64.1 ml
	82.0 % N <sub>2</sub>	Meter Box Y:	1.004 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E-02 \times V_{lc}$	3.022 scf
	85.574 liters
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	31.447 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.088 %
$FDA = 1.0 - B_{ws}$	0.912 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%CO))$	29.21 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	28.23 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	66.59 ft/second
$Q_s = v_s \times A_s \times 60$	1132787.7 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92)$	760613.8 dscf/minute
$I = (T_s + 460) \times ((2.67E-03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s)$	100.3 %



Calculation of NH<sub>3</sub> Concentration  
CTM - 027

Customer: TECO  
Facility: Bayside  
Unit: 2D  
Test Date: 12/17/2003

Run #2

Calculation of Volume of Ammonia Gas Present in Sample:

$$V_a = (N \times D_v \times 24.04) / (1000 \times 18) \quad (\text{CTM} - 027, \text{Equation } 2)$$

Where:

$V_a$  = Volume of ammonia gas in the sample

$N$  = 0.53 Sum of concentrations of ammonia ion in solution, mg/l

$D_v$  = 0.5 Dilution volume

24.04 = liters of ideal gas per mole of substance

1/1000 = conversion factor mg/l to g/l

18 = weight of ammonium ion

$$V_a = 0.0004 \text{ liters}$$

Calculation of ppmv of Ammonia present in Stack Gas:

$$C_{\text{NH}_3} = (V_a / V_{m(\text{std})}) \times 10^6$$

Where:

$V_a$  = Volume of ammonia gas in the sample

$V_{m(\text{std})}$  = 85.574 liters

$$C_{\text{NH}_3} = 4.135871 \text{ ppmv}$$



Conditional Test Method (CTM) -027  
Test Calculations

Customer: TECO  
Facility: Bayside  
Unit: 2D  
Run Number: 3  
Date: 12/17/03

Sample Time, $\theta$ :	60 minutes	Nozzle Diameter, $D_n$ :	0.189 inches
Barometric Pressure, $P_b$ :	29.00 "Hg	Nozzle Area, $A_n$ :	0.00019482 ft <sup>2</sup>
Stack Pressure, $P_s$ :	28.95 "Hg	Average Orifice Meter, $\Delta H$ :	1.067 "H <sub>2</sub> O
Effective Stack Area, $A_s$ :	254.469 ft <sup>2</sup>	Sample Volume, $V_m$ :	34.580 ft <sup>3</sup>
Pitot Coefficient, $C_p$ :	0.84 dimensionless	Average Meter Temp., $T_m$ :	61.1 °F
Gas Analysis:	4.1 % CO <sub>2</sub>	Average Stack Temp., $T_s$ :	234.3 °F
	13.9 % O <sub>2</sub>	Average $\sqrt{\Delta p}$ :	1.111 "H <sub>2</sub> O
	0.0 % CO	Condensate Volume, $V_{lc}$ :	67.4 ml
	82.0 % N <sub>2</sub>	Meter Box Y:	1.004 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E-02 \times V_{lc}$	3.177 scf
	89.979 liters
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	34.187 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.085 %
$FDA = 1.0 - B_{ws}$	0.915 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%CO))$	29.21 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	28.26 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	73.47 ft/second
$Q_s = v_s \times A_s \times 60$	1121788.4 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92)$	755218.4 dscf/minute
$I = (T_s + 460) \times ((2.67E-03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s)$	98.5 %



Calculation of NH<sub>3</sub> Concentration  
CTM - 027

Customer: TECO  
Facility: Bayside  
Unit: 2D  
Test Date: 12/17/2003

Run #3

Calculation of Volume of Ammonia Gas Present in Sample:

$$V_a = (N \times D_v \times 24.04) / (1000 \times 18) \quad (\text{CTM} - 027, \text{Equation } 2)$$

Where:

- V<sub>a</sub> = Volume of ammonia gas in the sample
- N = 0.57 Sum of concentrations of ammonia ion in solution, mg/l
- D<sub>v</sub> = 0.5 Dilution volume
- 24.04 = liters of ideal gas per mole of substance
- 1/1000 = conversion factor mg/l to g/l
- 18 = weight of ammonium ion

$$V_a = 0.0004 \text{ liters}$$

Calculation of ppmv of Ammonia present in Stack Gas:

$$C_{\text{NH}_3} = (V_a / V_{m(\text{std})}) \times 10^6$$

Where:

- V<sub>a</sub> = Volume of ammonia gas in the sample
- V<sub>m(std)</sub> = 89.979 liters

$$C_{\text{NH}_3} = 4.230231 \text{ ppmv}$$

FIELD DATA SHEETS

# ISOKINETIC FIELD DATA SHEET

Plant Bayside  
 Location 20  
 Date 12-17-03  
 Method No. CM-027  
 Run No. 1  
 Box Operator CPD  
 Probe Operator CPD  
 Time - Start: 844 End: 1001  
 Sampling Time 60  
 Min. \ Pt. 2.5  
 Meter Box No. M306  
 Stack Area Ft.<sup>2</sup> 283.529  
 Meter Cal. (Δ H) 1.769  
 Meter Cal. (Δ Y) 1.004

Nozzle I.D. No. 0.254 G-109  
 Nozzle Diameter 0.189  
 Pitot Tube No. \_\_\_\_\_  
 Pitot Tube (C<sub>p</sub>) 0.84  
 Probe Length 8'  
 Probe Liner Material PTFE  
 Probe Heater Setting 250  
 Pressure Pb (\*Hg): 29.0 Pg (\*H2O): -0.7 Ps (\*Hg): 28.95  
 Assumed Moisture (%) 9  
 Filter Holder No. \_\_\_\_\_  
 Comments \_\_\_\_\_  
 Start Imp#1 10 Imp#2 10 Imp#3 0  
 Finish Imp#1 150 Imp#2 106 Imp#3 2  
 O<sub>2</sub> 143.8 CO<sub>2</sub> 4.1  
END

Dry Gas Meter Volume  
 Final 70.660 Ft.<sup>3</sup>  
 Initial 39.289 Ft.<sup>3</sup>  
 Net 31.371 Ft.<sup>3</sup>

Equipment Leak Checks  
 Initial 0.00 CFM @ 15 \*Hg  
 Final 0.00 CFM @ 6 \*H2O  
 Pitot Tube OK \*H2O

Moisture Determination  
 Impinger 58 ml  
 Silica Gel 6.3 gm  
 Total 64.3

Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	Δ P (In. H <sub>2</sub> O)	Δ H (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	844	40.61	1.0	0.88	230	65	248		50	3.5
2		41.974	1.1	0.96	233	65	248		50	3.5
3		43.39	1.1	0.96	233	65	248		50	3.5
4		44.84	1.2	1.06	227	64	250		55	4
5		46.23	1.1	0.97	228	64	252		52	3.5
6	859		1.1	0.97	228	64	251		52	3.5
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1	907	48.72	0.60	0.52	233	64	208		53	1
2		49.81	0.65	0.57	233	64	212		52	1
3		50.94	0.70	0.61	233	64	210		52	1
4		52.14	0.84	0.73	233	64	208		53	2
5		53.38	0.89	0.78	233	64	206		53	2
6	922	54.619	0.85	0.75	229	64	208		53	2

Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	$\Delta P$ (In. H <sub>2</sub> O)	$\Delta H$ (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	926	55.77	0.78	0.68	233	63	226	1	52	1.5
2		56.89	0.75	0.65	233	63	226		52	1.5
3		58.0	0.70	0.61	235	63	225		53	2
4		59.2	0.82	0.71	235	63	223		53	2
5		60.42	0.88	0.77	234	63	220		53	2
6	941	61.679	0.89	0.79	224	63	220		53	2
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1	946	63.0	0.98	0.86	231	62	215		53	4
2		64.45	1.2	1.05	233	62	215		53	4.5
3		65.95	1.3	1.14	230	62	210		54	4.5
4		67.6	1.3	1.14	230	63	212		54	4.5
5		69.14	1.3	1.14	230	63	209		54	4.5
6	1001	70.66	1.3	1.14	230	62	210		54	4.5

Quality Assurance / Quality Control Information

Console Operator Signature: Chris H. [Signature]

Date: 12-17-03

Complete: \_\_\_\_\_ Legible: \_\_\_\_\_ Accurate: \_\_\_\_\_ Project Scope: \_\_\_\_\_ Reasonableness: \_\_\_\_\_

Reviewer's Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_



# ISOKINETIC FIELD DATA SHEET

Plant Bayside  
 Location 2D  
 Date 12-17-03  
 Method No. CTM-007  
 Run No. 2  
 Box Operator CND  
 Probe Operator DAS  
 Time - Start: 10:57 End: 12:09  
 Sampling Time 60  
 Min. \ Pt. 2.5  
 Meter Box No. MB06  
 Stack Area Ft.<sup>2</sup> 283.529  
 Meter Cal. (Δ H) 1.769  
 Meter Cal. (Δ Y) 1.004

Nozzle I.D. No. 6609  
 Nozzle Diameter 0.189  
 Pitot Tube No. \_\_\_\_\_  
 Pitot Tube (C<sub>p</sub>) 0.84  
 Probe Length 8'  
 Probe Liner Material P/41  
 Probe Heater Setting 250  
 Pressure Pb ("Hg): 29.0 Pg ("H<sub>2</sub>O): -7 Ps ("Hg): 28.95  
 Assumed Moisture (%) 9  
 Filter Holder No. \_\_\_\_\_  
 Comments \_\_\_\_\_  
 Start Imp#1 100 Imp#2 100 Imp#3 0  
 Finish Imp#1 150 Imp#2 106 Imp#3 0  
 O<sub>2</sub> 13.9 CO<sub>2</sub> 4.1  
CND

Dry Gas Meter Volume  
 Final 103.452 Ft.<sup>3</sup>  
 Initial 71.640 Ft.<sup>3</sup>  
 Net 31.812 Ft.<sup>3</sup>

Equipment Leak Checks  
 Initial 0.00 CFM @ 10 "Hg  
 Final 0.00 CFM @ 15 "H<sub>2</sub>O  
 Pitot Tube OK @ 6 "H<sub>2</sub>O

Moisture Determination  
 Impinger 56 ml  
 Silica Gel 8.1 gm  
 Total 64.1

Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	Δ P (In. H <sub>2</sub> O)	Δ H (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	1057	73.05	1.2	1.04	233	60	205	1	51	4
2		74.33	0.91	0.79	235	61	207	1	52	3
3		75.57	0.91	0.79	233	61	207	1	52	3
4		76.79	0.95	0.83	233	61	210	1	53	2.5
5		78.10	0.96	0.83	225 <sup>233</sup> <sub>CND</sub>	61	210	1	53	2
6	1112	79.358	0.90	0.79	233 <sup>225</sup> <sub>CND</sub>	61	215	1	54	2
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1	1145	80.39	0.60	0.52	233	61	220	1	54	1.5
2		81.41	0.58	0.50	237	61	222	1	54	1.5
3		82.42	0.55	0.47	238	61	220	1	54	1.5
4		83.43	0.55	0.48	237	61	223	1	54	1.5
5		84.5	0.70	0.61	235	61	223	1	54	2.5
6	1130	85.664	0.80	0.69	237	61	225	1	54	3

Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	Δ P (In. H <sub>2</sub> O)	Δ H (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	1135	87.1	1.2	1.04	233	61	212	1	54	7
2		88.5	1.2	1.04	237	61	212		54	7
3		89.9	1.1	0.95	237	61	210		54	7
4		91.4	1.3	1.12	237	61	209		54	8
5		92.87	1.2	1.04	237	61	210		54	8
6	1150	94.324	1.2	1.085	230	61	209		54	7
<hr/>										
1	1153	95.8	1.2	1.045 <sup>END</sup>	232	61	225		55	7
2		97.24	1.2	1.04	235	61	258		55	7
3		98.82	1.5	1.30	235	61	253		55	10
4		100.42	1.5	1.30	233	61	258		57	10
5		101.97	1.4	1.22	233	61	254		58	10
6	1208	103.452	1.2	1.03 <sub>CAD</sub>	231	61	252		58	10

Quality Assurance / Quality Control Information

Console Operator Signature: *[Signature]* Date: 12-12-03

Complete: \_\_\_\_\_ Legible: \_\_\_\_\_ Accurate: \_\_\_\_\_ Project Scope: \_\_\_\_\_ Reasonableness: \_\_\_\_\_

Reviewer's Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

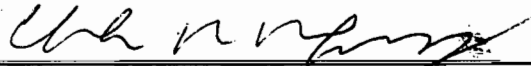
# ISOKINETIC FIELD DATA SHEET

Plant	<u>Boyside</u>	Nozzle I.D. No.	<u>6109</u>	Dry Gas Meter Volume	
Location	<u>20</u>	Nozzle Diameter	<u>0.189</u>	Final	<u>38.263</u> Ft. <sup>3</sup>
Date	<u>12-17-03</u>	Pitot Tube No.		Initial	<u>3.682</u> Ft. <sup>3</sup>
Method No.	<u>(17-027)</u>	Pitot Tube (C <sub>p</sub> )	<u>0.84</u>	Net	<u>34.580</u> Ft. <sup>3</sup>
Run No.	<u>3</u>	Probe Length	<u>81</u>	Equipment Leak Checks	
Box Operator	<u>CAI</u>	Probe Liner Material	<u>P/41</u>	Initial	<u>0.00</u> CFM @ <u>15</u> "Hg
Probe Operator	<u>AMS</u>	Probe Heater Setting	<u>250</u>	Final	<u>0.000</u> CFM @ <u>10</u> "H <sub>2</sub> O
Time - Start:	<u>1250</u> End: <u>1401</u>	Pressure	<u>Pb ("Hg): 29.0 Pg ("H<sub>2</sub>O): ~0.7Ps ("Hg): 28.55</u>	Pitot Tube	<u>OK</u> @ <u>6</u> "H <sub>2</sub> O
Sampling Time	<u>60</u>	Assumed Moisture (%)	<u>9.42</u>	Moisture Determination	
Min. \ Pt.	<u>2.5</u>	Filter Holder No.		Impinger	<u>60</u> ml
Meter Box No.	<u>m806</u>	Comments		Silica Gel	<u>7.4</u> gm
Stack Area Ft. <sup>2</sup>	<u>283.529</u>	Start	Imp#1 <u>100</u> Imp#2 <u>110</u> Imp#3 <u>0</u>	Total	<u>67.4</u>
Meter Cal. (Δ H)	<u>1.769</u>	Finish	Imp#1 <u>150</u> Imp#2 <u>110</u> Imp#3 <u>0</u>		
Meter Cal. (Δ Y)	<u>1.004</u>	O <sub>2</sub> <u>13.9</u> CO <sub>2</sub> <u>4.1</u>			

Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	Δ P (In. H <sub>2</sub> O)	Δ H (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	1250	5.24	1.3	1.12	236	61	245	1	54	4
2		6.66	1.2	1.03	235	61	248		54	4
3		8.2	1.4	1.21	233	61	250		54	4
4		9.75	1.4	1.21	233	62	253		56	4
5		11.34	1.5	1.30	232	62	252		56	5
6	1305	12.888	1.4	1.22	230	62	252		56	4
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1	1308	14.21	1.0	0.80	233	61	217		57	3
2		15.58	1.1	0.94	238	61	210		55	3
3		16.92	1.1	0.94	238	61	208		55	3
4		18.34	1.2	1.03	237	61	208		55	4
5		19.71	1.1	0.95	236	61	202		56	3
6	1323	21.097	1.2	1.03	235	61	200		56	3

Traverse Point No.	Clock Time	Gas Sample Volume (Ft <sup>3</sup> )	$\Delta P$ (In. H <sub>2</sub> O)	$\Delta H$ (In. H <sub>2</sub> O)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	1325	22.45	1.1	0.95	233	61	235	1	57	3
2		23.82	1.1	0.95	233	61	235	1	57	3
3		25.24	1.2	1.03	237	61	237	1	57	3
4		26.66	1.2	1.03	236	61	239	1	57	3
5		28.0	1.1	0.95	236	61	234	1	58	3
6	1340	29.353	1.1	0.95	235	61	235	1	58	3
-----										
1	1346	30.75	1.1	0.95	232	61	205	1	59	3
2		32.22	1.3	1.12	236	61	202	1	59	3
3		33.71	1.3	1.12	235	61	203	1	59	3
4		35.26	1.5	1.29	233	61	205	1	59	4
5		36.75	1.4	1.21	232	61	202	1	59	4
6	1401	38.262	1.4	1.22	229	61	210	1	59	4
								1		

Quality Assurance / Quality Control Information

Console Operator Signature: 

Date: 12-17-03

Complete: \_\_\_\_\_ Legible: \_\_\_\_\_ Accurate: \_\_\_\_\_ Project Scope: \_\_\_\_\_ Reasonableness: \_\_\_\_\_

Reviewer's Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

LABORATORY ANALYSIS

## Analytical Information

**Method:** CTM - 027

**Date Analyzed:** 12/30/03

**Analyst:** Bret Nicholas

**Samples:** Received recovered samples in 500ml Nalgene bottles.  
Transferred all impinger #1 and impinger #2 samples  
into 500 ml Volumetrics using DI Water.

**Instrument:** Dionex IC Model DX120  
Column: CS12A with CG12A guard  
Eluent concentration: 22mN H2SO4  
Flow rate: 1.8 ml/min

**Standards:** Stock ammonium standard 1000 mg/l as NH4  
Spex CertiPrep Lot 24-131AS Exp. August 30, 2004  
Diluted stock 10 mls to 100 mls to create an intermediate 100 mg/l standard.  
Diluted intermediate (100 mg/l) standard 10 mls to 100 mls to create an intermediate 10 mg/l standard.

Standard	Volume (mls)	Final Volume (mls)	mg/L as NH4
10 mg/l	0.5	100	0.05
10 mg/l	1	100	0.10
10 mg/l	3	100	0.30
10 mg/l	5	100	0.50
10 mg/l	10	100	1.00
10 mg/l	20	100	2.00
100 mg/l	30	100	3.00
100 mg/l	5	100	5.00

All standards had 4 mls of 1.0 N. H2SO4 added before being brought to 100 ml volume.  
This prepares all standards in a 0.04 N H2SO4 matrix.  
A reagent blank was prepared using 4 mls of 1.0 N H2SO4 and DI water brought  
to 100 ml volume.

**Factors Used:** N to NH4 divide by 0.7765

**Eluent:** 22 mN H2SO4 prepared by diluting 44 mls of 1.0 N H2SO4 to 2 liters.

**Results:** All standards are calibrated using the NH4 concentration and integrated with peak area.  
All reported sample results are based on peak area and expressed as mg NH4 per liter

**QC:** Spex CertiPrep standard 1.00 mg/l as NH4 was run after the calibration curve and after  
the first seven samples and then after the next ten samples.  
Orion Ammonia Standard 1000 ppm as N prepared to 1.29 mg/l as NH4 was run  
after the calibration curve, after the next seven samples and after the last ten samples.  
Reagent blank was run after the calibration curve, after seven samples, and after

# Polk Power Laboratory

## Summary of Lab Results

Customer: Tampa Electric

Sampling Location/Identifier: Bayside Units 2C and 2D

Test Dates: Unit 2D - 12/17/2003 Unit 2C - 12/19/2003

Analytical Method for Recovered Samples: CTM - 027

Analysis Date: 12/30/03

Analyst: Bret Nicholas

Sample Identification	Time	Volume (mls)	mg NH4 / L
12/17/03 Unit 2D Blank	14:15	500	<0.05
12/17/03 Unit 2D Run 1 Impinger #1	10:15	500	0.49
12/17/03 Unit 2D Run 1 Impinger #2	10:15	500	<0.05
12/17/03 Unit 2D Run 2 Impinger #1	12:30	500	0.53
12/17/03 Unit 2D Run 2 Impinger #2	12:30	500	<0.05
12/17/03 Unit 2D Run 3 Impinger #1	14:15	500	0.57
12/17/03 Unit 2D Run 3 Impinger #2	14:15	500	<0.05

Sample Identification	Time	Volume (mls)	mg NH4 / L
12/19/03 Unit 2C Blank	17:00	500	0.11
12/19/03 Unit 2C Run 1 Impinger #1	11:15	500	0.67
12/19/03 Unit 2C Run 1 Impinger #2	11:15	500	<0.05
12/19/03 Unit 2C Run 2 Impinger #1	13:00	500	0.75
12/19/03 Unit 2C Run 2 Impinger #2	13:00	500	<0.05
12/19/03 Unit 2C Run 3 Impinger #1	16:45	500	0.79
12/19/03 Unit 2C Run 3 Impinger #2	16:45	500	<0.05

QC Information	True Value	Result	% Rec.
Reagent Blank	<0.05	0.11	
Calibration Standard Check 5	1.00	1.01	101.0
Orion Check Standard	1.29	1.29	100.0
Reagent Blank	<0.05	<0.05	
Calibration Standard Check 5	1.00	1.01	101.0
Orion Check Standard	1.29	1.27	98.4
Reagent Blank	<0.05	<0.05	
Calibration Standard Check 5	1.00	1.02	102.0
Orion Check Standard	1.29	1.27	98.4

PROJECT REFERENCE <i>Bayside 2C, 2D</i>	PROJECT NO.	PROJECT LOCATION (STATE) <i>FL</i>	REQUIRED ANALYSIS				<b>DUE DATE</b> <div style="border: 1px solid black; width: 100px; height: 30px; margin: 5px;"></div> <input type="checkbox"/> EMAIL RESULTS <input type="checkbox"/> FAX RESULTS <input type="checkbox"/> MAIL RESULTS
SAMPLER'S PRINTED NAME <i>Charles Dufeny</i>	SAMPLER'S SIGNATURE <i>Charles Dufeny</i>		<i>CTM-027 N.H.</i>				
P.O. NUMBER	CONTRACT NO.	SITE <i>Bayside 2-D,C</i>					
CLIENT NAME <i>TECO-BPS</i>	CLIENT PHONE <i>813-630-7362</i>	CLIENT FAX					
CLIENT EMAIL	CLIENT ADDRESS		PRESERVATIVE			NUMBER OF COOLERS SUBMITTED PER SHIPMENT:	

SAMPLE ID	SAMPLE DESCRIPTION	SAMPLING		* MATRIX	NUMBER OF CONTAINERS SUBMITTED				REMARKS
		DATE	TIME						
2D Run 1-1	1 <sup>st</sup> Impinger	12/17/03	1015		1				
2D Run 1-2	2 <sup>nd</sup> Impinger	12/17/03	1015		1				
2D Run 2-1	1 <sup>st</sup> Impinger	12/17/03	1230		1				
2D Run 2-2	2 <sup>nd</sup> Impinger	12/17/03	1230		1				
2D Run 3-1	1 <sup>st</sup> Impinger	12/17/03	1415		1				
2D Run 3-2	2 <sup>nd</sup> Impinger	12/17/03	1415		1				
2D Blank	O.I.N. 15004 Blank	12/17/03	1415		1				
2C Run 1	1 <sup>st</sup> Impinger	12/19/03	1115		1				
2C Run 1	2 <sup>nd</sup> Impinger	12/19/03	1115		1				
2C Run 2	1 <sup>st</sup> Impinger	12/19/03	1300		1				
2C Run 2	2 <sup>nd</sup> Impinger	12/19/03	1300		1				
2C Run 3	1 <sup>st</sup> Impinger	12/19/03	1645		1				
2C Run 3	2 <sup>nd</sup> Impinger	12/19/03	1645		1				
2C Blank	O.I.N. 15004 Blank	12/19/03	1700		1				

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

CONTAINERS/SEALS INTACT <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	ON ICE/ 4°C <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
--	--

**SAMPLE TRANSFERS**

RELINQUISHED BY:	RECEIVED BY:	DATE	TIME
PERSON'S NAME: <i>Charles Dufeny</i> FACILITY NAME: <i>TECO (SW)</i>	PERSON'S NAME: <i>Shel Womn</i> FACILITY NAME: <i>TECO EA</i>	12-22-03	0905
PERSON'S NAME: <i>Shel Womn</i> FACILITY NAME: <i>TECO EA</i>	PERSON'S NAME: <i>Bret Nicholas</i> FACILITY NAME: <i>Polk Power Lab</i>	12-23-03	0700
PERSON'S NAME: FACILITY NAME:	PERSON'S NAME: FACILITY NAME:		
PERSON'S NAME: FACILITY NAME:	PERSON'S NAME: FACILITY NAME:		



Component: NH4; Fit Type: Quadratic

Method: c:\peaknet\method\ctm-027.met; Updated: 12/30/2003 5:10:54 PM

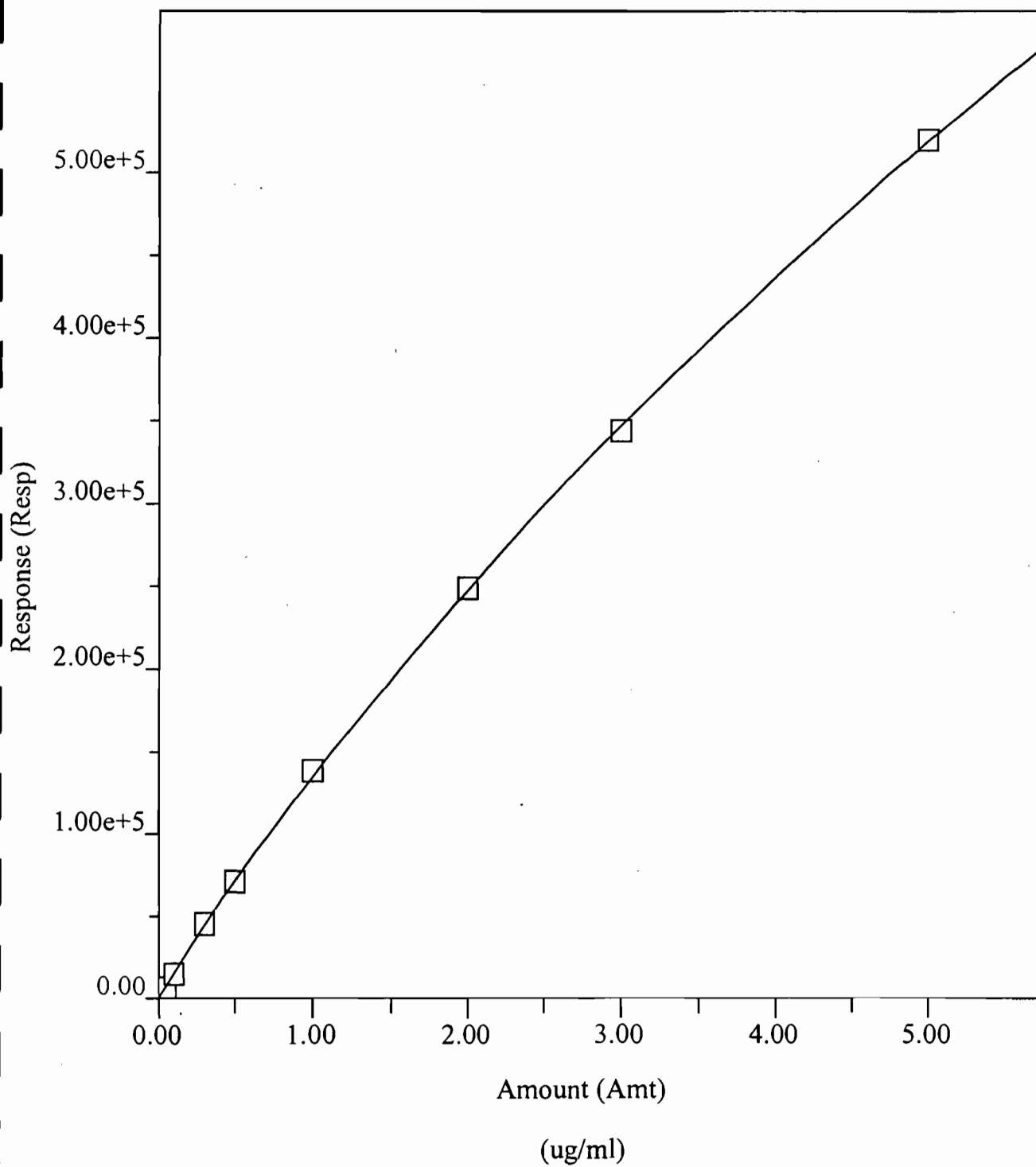
$r^2 = 0.999870$

$Amt = 5.697282e-012 * Resp^2 + 6.693179e-006 *$

$Resp + -0.00795$

Standard: External

Calibration: Area



Line	Sample	Method	Data File	Dilution	Comment
1	Reagent Blank	ctm-027.met	nh406001.dxd	1	
2	Autocal1R	ctm-027.met	nh406002.dxd	1	
3	Autocal2R	ctm-027.met	nh406003.dxd	1	
4	Autocal3R	ctm-027.met	nh406004.dxd	1	
5	Autocal4R	ctm-027.met	nh406005.dxd	1	
6	Autocal5R	ctm-027.met	nh406006.dxd	1	
7	Autocal6R	ctm-027.met	nh406007.dxd	1	
8	Autocal7R	ctm-027.met	nh406008.dxd	1	
9	Autocal8R	ctm-027.met	nh405009.dxd	1	
10	Reagent Blank	ctm-027.met	nh405010.dxd	1	
11	Cal. Std 1 (1.00 mg/l)	ctm-027.met	nh405011.dxd	1	
12	Orion Standard T.V. = 1.	ctm-027.met	nh405012.dxd	1	
13	12/17/03 Blank	ctm-027.met	nh405013.dxd	1	
14	12/17/03 Run 1 Impinger	ctm-027.met	nh405014.dxd	1	
15	12/17/03 Run 1 Impinger	ctm-027.met	nh405015.dxd	1	
16	12/17/03 Run 2 Impinger	ctm-027.met	nh405016.dxd	1	
17	12/17/03 Run 2 Impinger	ctm-027.met	nh405017.dxd	1	
18	12/17/03 Run 3 Impinger	ctm-027.met	nh405018.dxd	1	
19	12/17/03 Run 3 Impinger	ctm-027.met	nh405019.dxd	1	
20	Reagent Blank	ctm-027.met	nh405020.dxd	1	
21	Cal Std 1 (1.00 mg/l)	ctm-027.met	nh405021.dxd	1	
22	Orion Standard T.V. = 1.	ctm-027.met	nh405022.dxd	1	
23	12/19/03 Blank	ctm-027.met	nh405023.dxd	1	
24	12/19/03 Run 1 Impinger	ctm-027.met	nh404024.dxd	1	
25	12/19/03 Run 1 Impinger	ctm-027.met	nh404025.dxd	1	
26	12/19/03 Run 2 Impinger	ctm-027.met	nh404026.dxd	1	
27	12/19/03 Run 2 Impinger	ctm-027.met	nh404027.dxd	1	
28	12/19/03 Run 3 Impinger	ctm-027.met	nh404028.dxd	1	
29	12/19/03 Run 3 Impinger	ctm-027.met	nh404029.dxd	1	
30	Reagent Blank	ctm-027.met	nh404030.dxd	1	
31	Cal Std 1 (1.00 mg/l)	ctm-027.met	nh404031.dxd	1	
32	Orion Standard T.V. = 1.	ctm-027.met	nh404032.dxd	1	
33	Stop Program	stopcat.met	nh4	1	

Default Method Path: C:\PEAKNET\METHOD

Default Data Path: C:\PEAKNET\DATA

Comment:

```

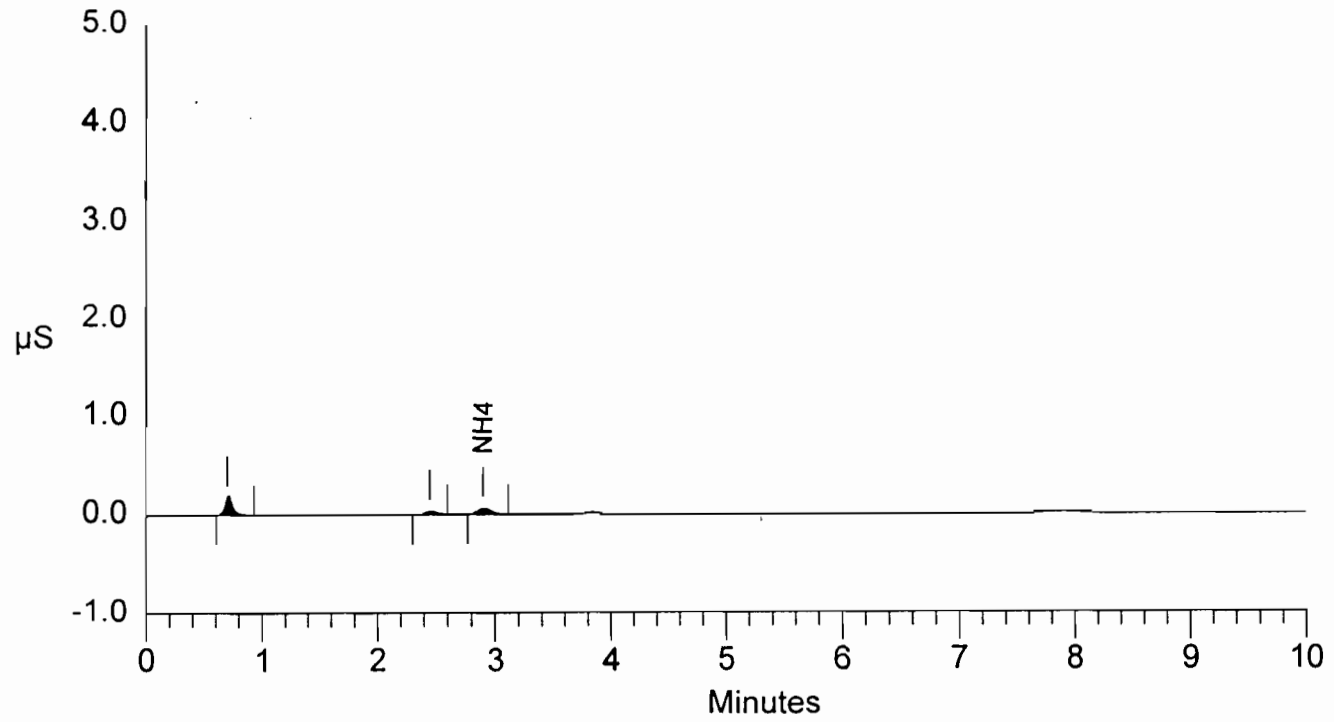
=====
Data File   : C:\PEAKNET\DATA\NH406001.DXD   Report Date: 12/30/2003 3:26:43 P
Sample Name: Reagent Blank                   Collected  : 12/30/2003 3:13:39 P
Inject #    : 1                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 3:04:00 P
System Name : DX-120                          Detector    : DX-120
Column Type : Ionpac CS12A                    Operator    :
Data Points : 3000                             Rate       : 5.00 Hz
Module Name : DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
3	2.90	NH4	-0.02	627	4976	1	0.00
Totals			-0.02	627	4976		

**File: NH406001.DXD Sample Reagent Blank**



\*\*\*\*\*  
 AUTOMATIC CALIBRATION UPDATE  
 \*\*\*\*\*

```

=====
Data File   : C:\PEAKNET\DATA\NH406002.DXD   Report Date: 12/30/2003 3:39:43 P
Sample Name: Autocal1R                       Collected  : 12/30/2003 3:26:43 P
Inject #    : 2                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Last Update: 12/30/2003 3:04:00 P
System Name: DX-120                           Detector    : DX-120
Cal. Level  : 1                               Analyst     : Polk Lab
=====
    
```

\*\*\*\*\*  
 COMPONENTS FOUND IN THIS RUN  
 \*\*\*\*\*

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.92	2.92	2.92	6.771e+003	6.788e+003	6.788e+003

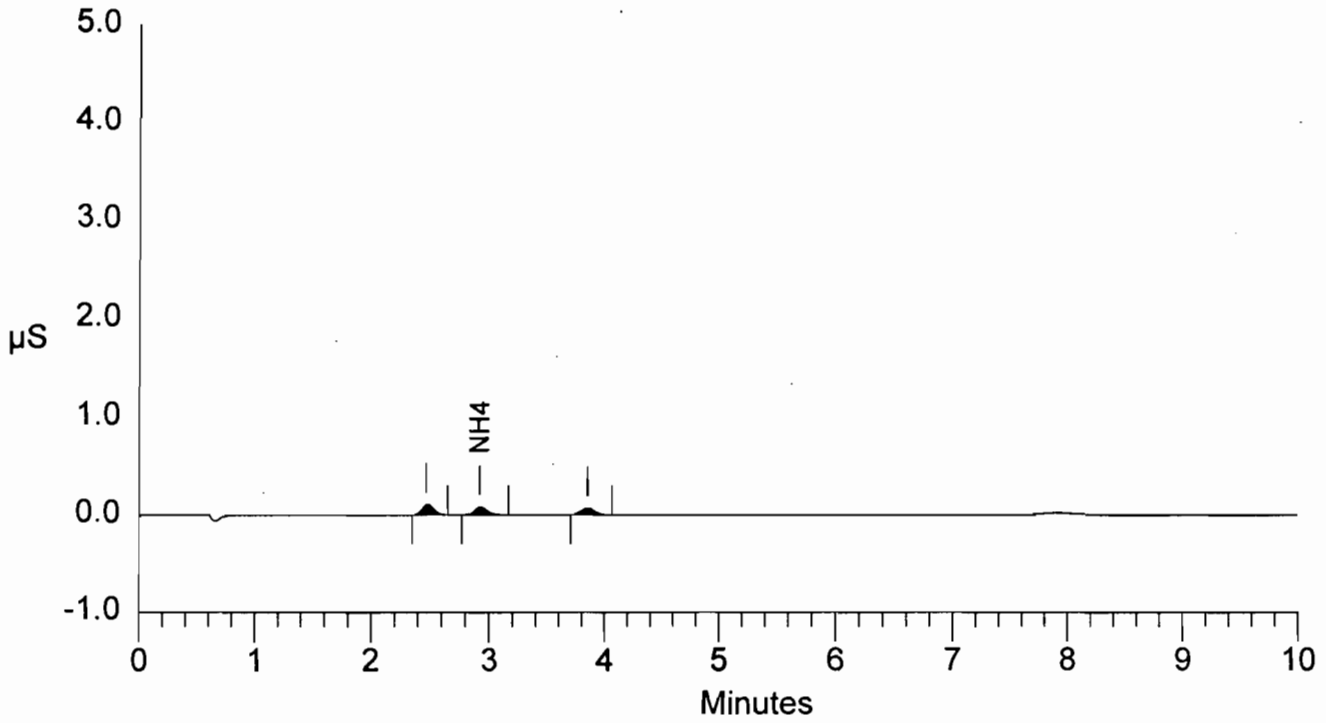
```

=====
Data File   : C:\PEAKNET\DATA\NH406002.DXD   Report Date: 12/30/2003 3:39:43 P
Sample Name: Autocal1R                       Collected  : 12/30/2003 3:26:43 P
Inject #    : 2                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 3:39:43 P
System Name: DX-120                           Detector    : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate        : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\*  
 Component Report: Components Found  
 \*\*\*\*\*

Pk. num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	0.05	863	6788	1	0.00
Totals			0.05	863	6788		

File: NH406002.DXD Sample Autocal1R



\*\*\*\*\*  
 AUTOMATIC CALIBRATION UPDATE  
 \*\*\*\*\*

```

=====
Data File   : C:\PEAKNET\DATA\NH406003.DXD   Report Date: 12/30/2003 3:52:49 P
Sample Name: Autocal2R                       Collected  : 12/30/2003 3:39:44 P
Inject #    : 3                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Last Update: 12/30/2003 3:39:43 P
System Name : DX-120                          Detector    : DX-120
Cal. Level  : 2                               Analyst     : Polk Lab
=====
  
```

\*\*\*\*\*  
 COMPONENTS FOUND IN THIS RUN  
 \*\*\*\*\*

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.92	2.92	2.92	4.154e+004	1.514e+004	1.514e+004

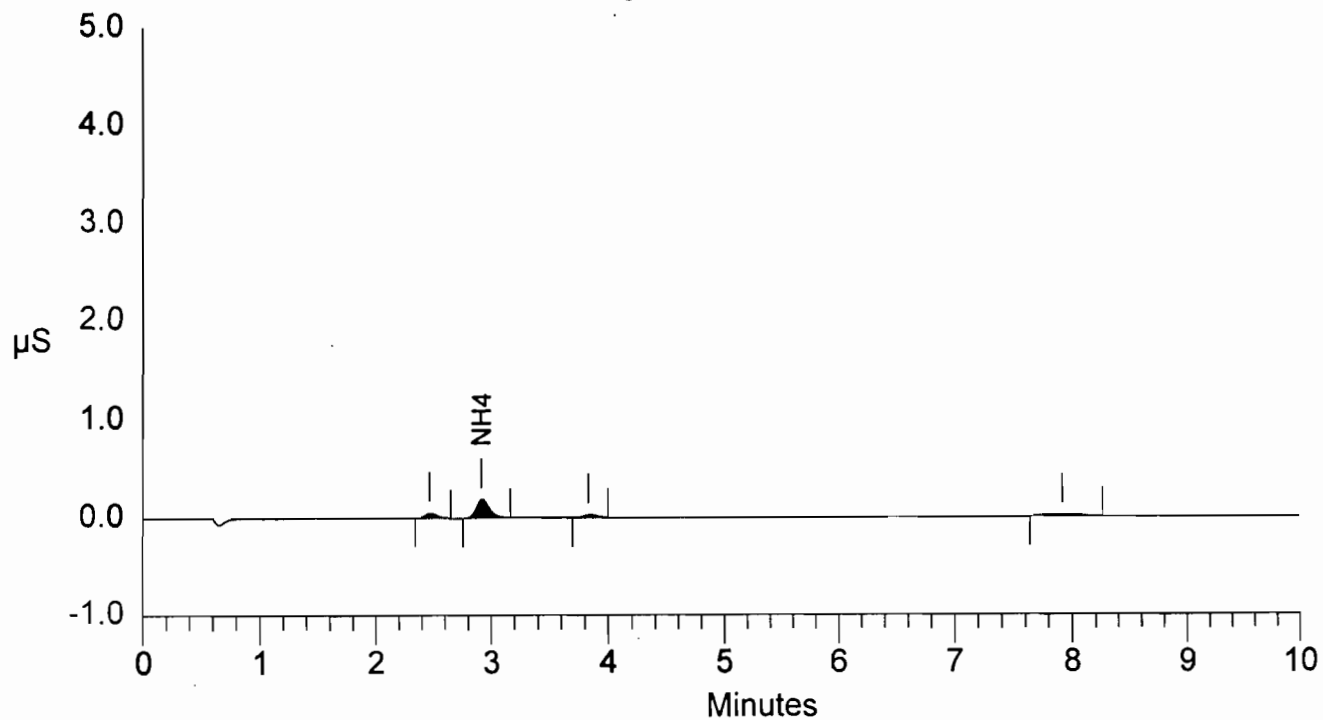
```

=====
Data File   : C:\PEAKNET\DATA\NH406003.DXD   Report Date: 12/30/2003 3:52:49 P
Sample Name: Autocal2R                       Collected  : 12/30/2003 3:39:44 P
Inject #    : 3                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 3:52:49 P
System Name : DX-120                          Detector    : DX-120
Column Type : Ionpac CS12A                    Operator    :
Data Points : 3000                            Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====
  
```

\*\*\*\*\*  
 Component Report: Components Found  
 \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	0.10	1926	15139	1	0.00
Totals			0.10	1926	15139		

File: NH406003.DXD Sample Autocal2R



\*\*\*\*\*  
AUTOMATIC CALIBRATION UPDATE  
\*\*\*\*\*

=====  
Data File : C:\PEAKNET\DATA\NH406004.DXD Report Date: 12/30/2003 4:05:50 P  
Sample Name: Autocal3R Collected : 12/30/2003 3:52:49 P  
Inject # : 4 Vial # :  
Method File: c:\peaknet\method\ctm-027.met Last Update: 12/30/2003 3:52:49 P  
System Name: DX-120 Detector : DX-120  
Cal. Level : 3 Analyst : Polk Lab  
=====

\*\*\*\*\*  
COMPONENTS FOUND IN THIS RUN  
\*\*\*\*\*

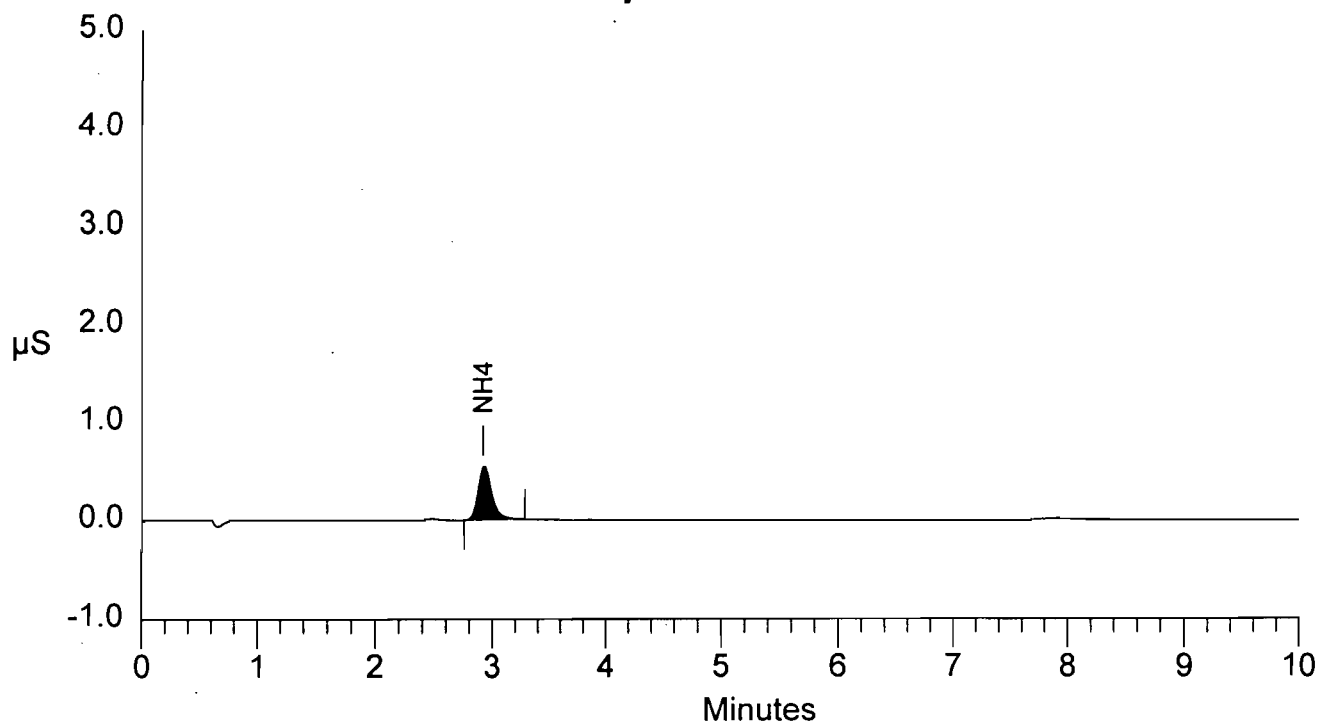
COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.92	2.92	2.92	6.676e+004	4.521e+004	4.521e+004

=====  
Data File : C:\PEAKNET\DATA\NH406004.DXD Report Date: 12/30/2003 4:05:50 P  
Sample Name: Autocal3R Collected : 12/30/2003 3:52:49 P  
Inject # : 4 Vial # :  
Method File: c:\peaknet\method\ctm-027.met Calibrated : 12/30/2003 4:05:50 P  
System Name: DX-120 Detector : DX-120  
Column Type: Ionpac CS12A Operator :  
Data Points: 3000 Rate : 5.00 Hz  
Module Name: DX-120 ID:50 05 d8 Moduleware : 1.00  
=====

\*\*\*\*\*  
Component Report: Components Found  
\*\*\*\*\*

Pk. num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.92	NH4	0.30	5363	45209	1	0.00
Totals			0.30	5363	45209		





\*\*\*\*\* AUTOMATIC CALIBRATION UPDATE \*\*\*\*\*

```

=====
Data File   : C:\PEAKNET\DATA\NH406005.DXD   Report Date: 12/30/2003 4:18:51 P
Sample Name: Autocal4R                       Collected  : 12/30/2003 4:05:50 P
Inject #    : 5                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Last Update: 12/30/2003 4:05:50 P
System Name : DX-120                          Detector    : DX-120
Cal. Level  : 4                               Analyst     : Polk Lab
=====
  
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

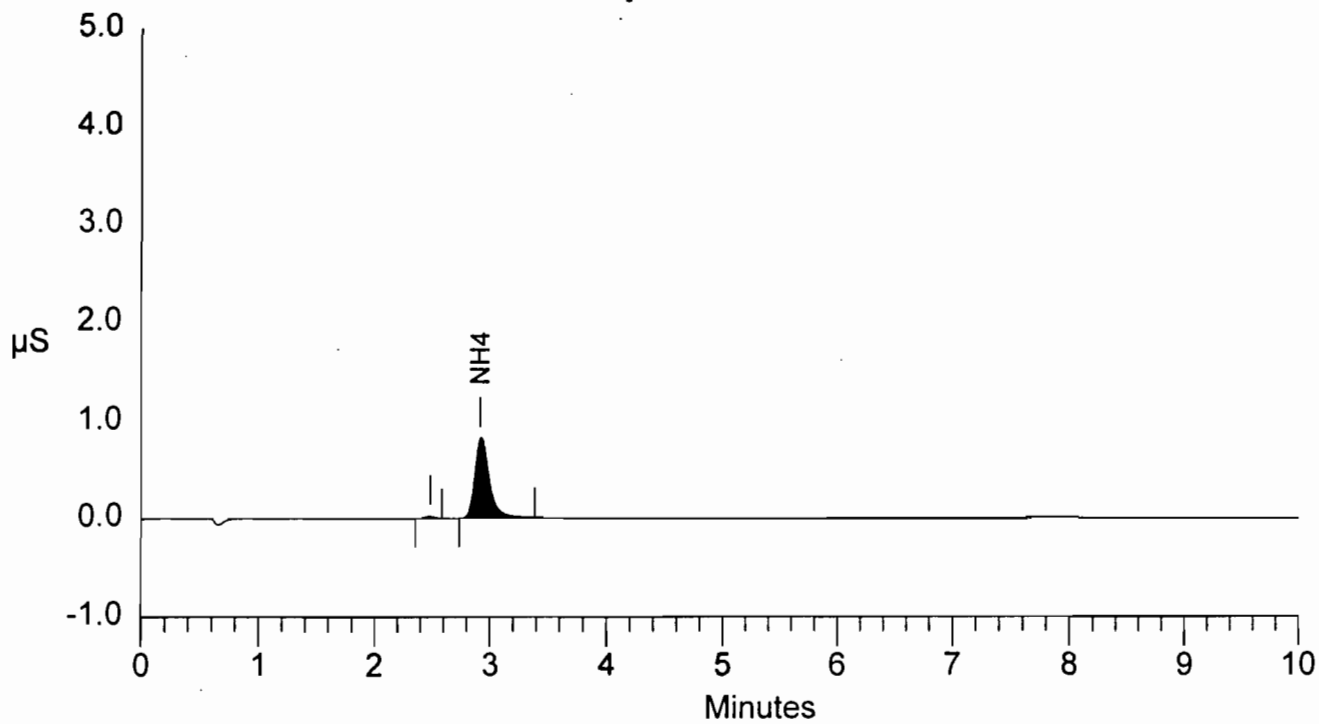
COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.92	2.92	2.92	1.280e+005	7.107e+004	7.107e+004

```

=====
Data File   : C:\PEAKNET\DATA\NH406005.DXD   Report Date: 12/30/2003 4:18:51 P
Sample Name: Autocal4R                       Collected  : 12/30/2003 4:05:50 P
Inject #    : 5                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 4:18:51 P
System Name : DX-120                          Detector    : DX-120
Column Type : Ionpac CS12A                     Operator    :
Data Points : 3000                             Rate       : 5.00 Hz
Module Name : DX-120                           ID:50 05 d8 Moduleware : 1.00
=====
  
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	0.50	8199	71074	1	0.00
Totals			0.50	8199	71074		



\*\*\*\*\*  
 \*\*\*\*\* AUTOMATIC CALIBRATION UPDATE \*\*\*\*\*  
 \*\*\*\*\*

```

=====
Data File   : C:\PEAKNET\DATA\NH406006.DXD   Report Date: 12/30/2003 4:31:52 P
Sample Name: Autocal5R                       Collected  : 12/30/2003 4:18:52 P
Inject #    : 6                               Vial #     :
Method File: c:\peaknet\method\ctm-027.met   Last Update: 12/30/2003 4:18:51 P
System Name: DX-120                           Detector   : DX-120
Cal. Level : 5                               Analyst    : Polk Lab
=====
    
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

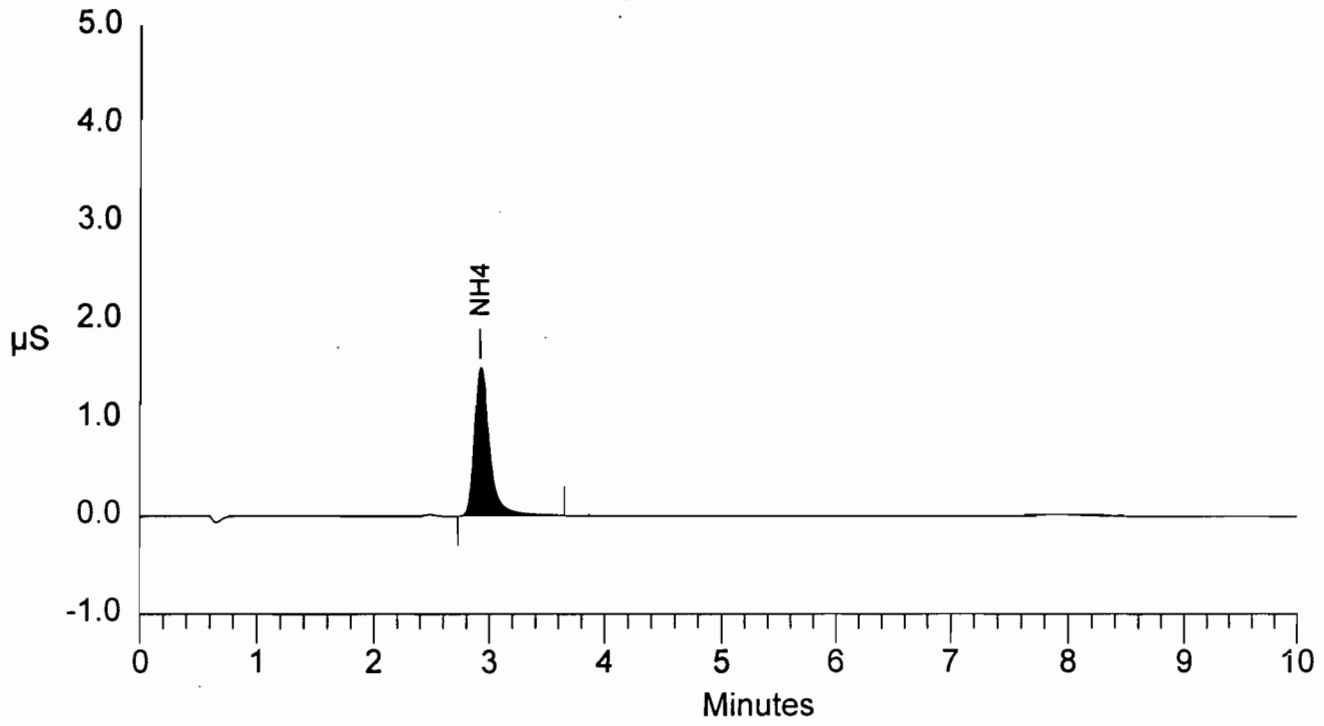
COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.92	2.92	2.92	2.383e+005	1.385e+005	1.385e+005

```

=====
Data File   : C:\PEAKNET\DATA\NH406006.DXD   Report Date: 12/30/2003 4:31:52 P
Sample Name: Autocal5R                       Collected  : 12/30/2003 4:18:52 P
Inject #    : 6                               Vial #     :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 12/30/2003 4:31:52 P
System Name: DX-120                           Detector   : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.92	NH4	1.00	14931	138463	1	0.00
Totals			1.00	14931	138463		



```

=====
Data File   : C:\PEAKNET\DATA\NH406007.DXD   Report Date: 12/30/2003 4:44:52 P
Sample Name: Autocal6R                       Collected  : 12/30/2003 4:31:52 P
Inject #    : 7                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Last Update: 12/30/2003 4:31:52 P
System Name : DX-120                          Detector    : DX-120
Cal. Level  : 6                               Analyst     : Polk Lab
=====
    
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

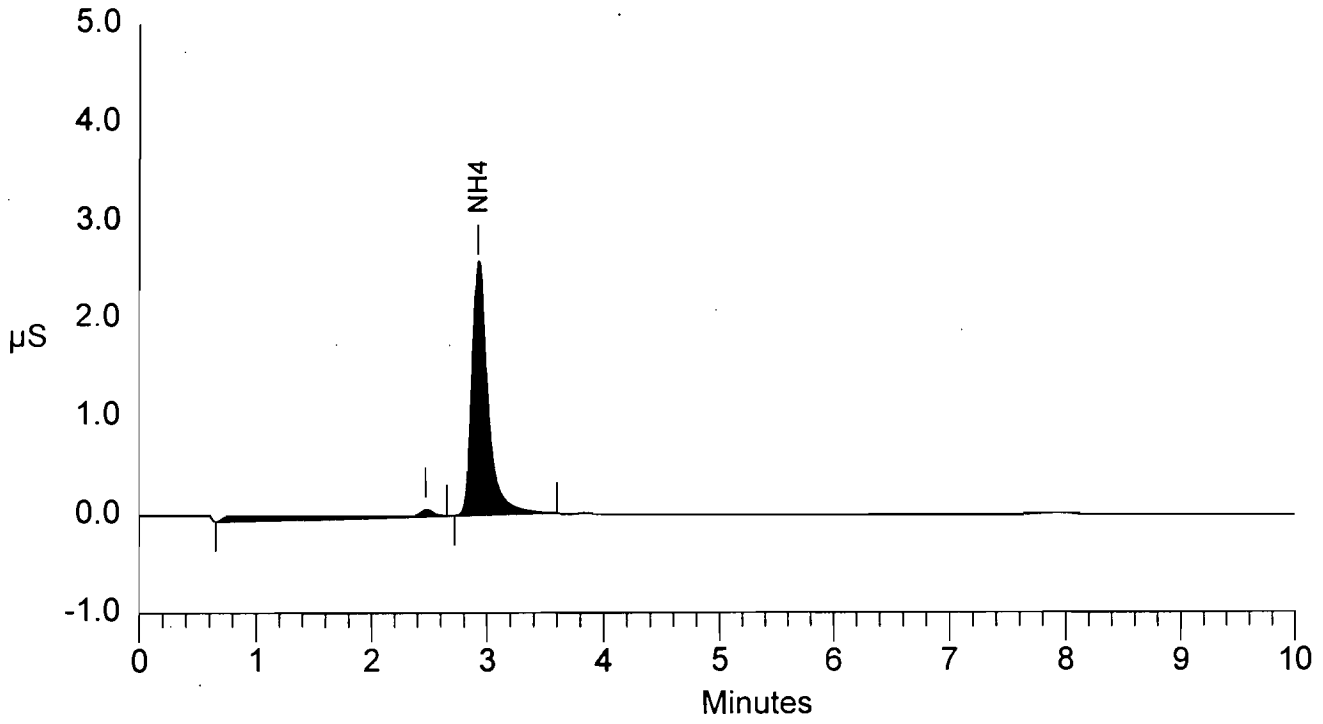
COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.92	2.92	2.92	3.314e+005	2.491e+005	2.491e+005

```

=====
Data File   : C:\PEAKNET\DATA\NH406007.DXD   Report Date: 12/30/2003 4:44:52 P
Sample Name: Autocal6R                       Collected  : 12/30/2003 4:31:52 P
Inject #    : 7                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 4:44:52 P
System Name : DX-120                          Detector    : DX-120
Column Type : Ionpac CS12A                    Operator    :
Data Points : 3000                             Rate       : 5.00 Hz
Module Name : DX-120                           ID:50 05 d8 Moduleware : 1.00
=====
    
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	2.00	25420	249149	2	0.00
Totals			2.00	25420	249149		



\*\*\*\*\* AUTOMATIC CALIBRATION UPDATE \*\*\*\*\*

```

=====
Data File   : C:\PEAKNET\DATA\NH406008.DXD   Report Date: 12/30/2003 4:57:53 P
Sample Name: Autocal7R                       Collected  : 12/30/2003 4:44:53 P
Inject #    : 8                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Last Update: 12/30/2003 4:44:52 P
System Name: DX-120                           Detector    : DX-120
Cal. Level  : 7                               Analyst     : Polk Lab
=====
  
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.92	2.92	2.92	5.016e+005	3.433e+005	3.433e+005

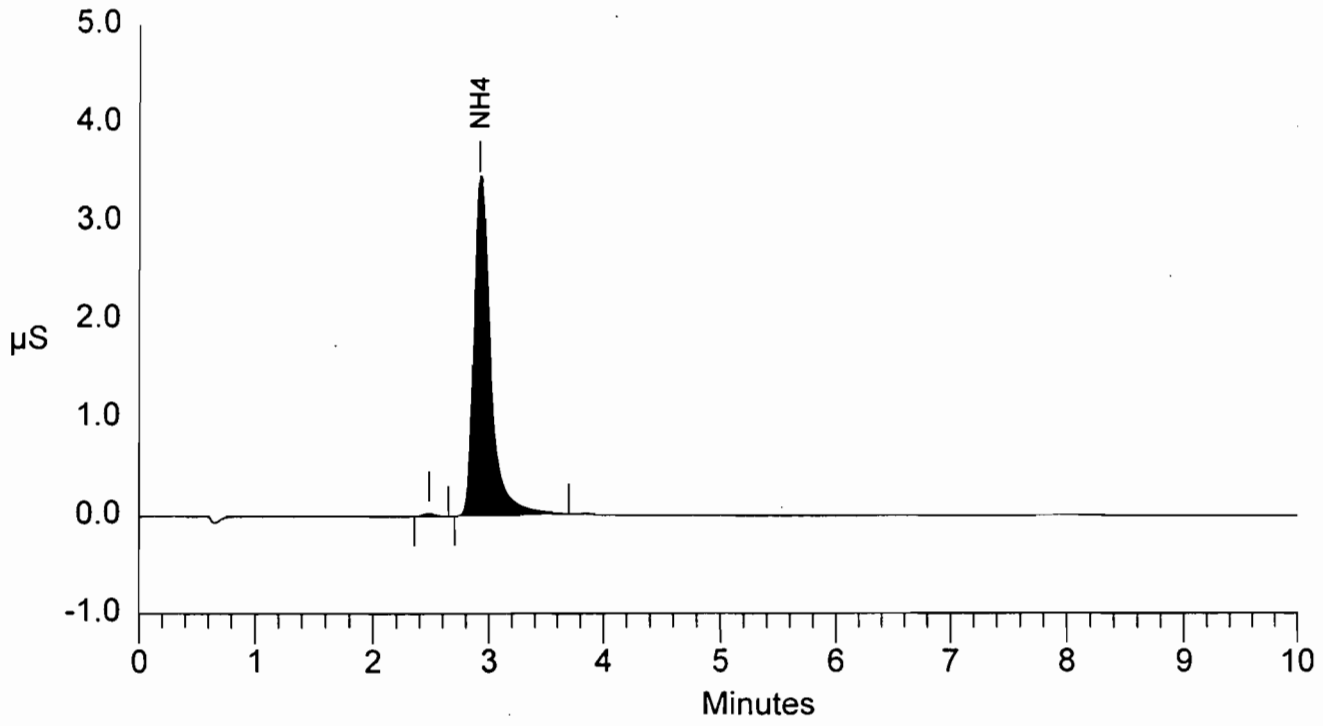
```

=====
Data File   : C:\PEAKNET\DATA\NH406008.DXD   Report Date: 12/30/2003 4:57:53 P
Sample Name: Autocal7R                       Collected  : 12/30/2003 4:44:53 P
Inject #    : 8                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 12/30/2003 4:57:53 P
System Name: DX-120                           Detector    : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====
  
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	3.00	33884	343344	1	0.00
Totals			3.00	33884	343344		





\*\*\*\*\*  
 \*\*\*\*\* AUTOMATIC CALIBRATION UPDATE \*\*\*\*\*  
 \*\*\*\*\*

```

=====
Data File   : C:\PEAKNET\DATA\NH405009.DXD   Report Date: 12/30/2003 5:10:54 P
Sample Name: Autocal8R                       Collected  : 12/30/2003 4:57:54 P
Inject #    : 9                               Vial #     :
Method File : c:\peaknet\method\ctm-027.met  Last Update: 12/30/2003 4:57:53 P
System Name : DX-120                          Detector   : DX-120
Cal. Level  : 8                               Analyst    : Polk Lab
=====
  
```

\*\*\*\*\* COMPONENTS FOUND IN THIS RUN \*\*\*\*\*

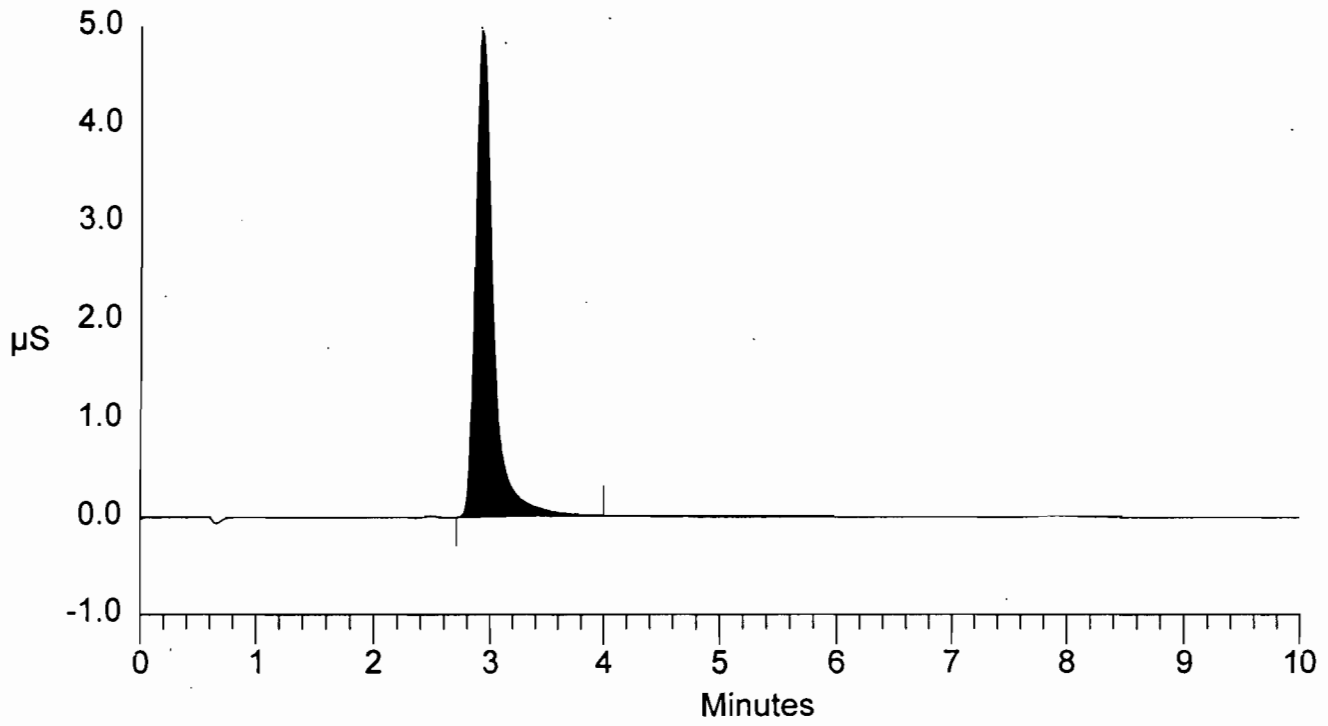
COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
1	NH4	2.92	2.92	2.92	7.232e+005	5.199e+005	5.199e+005

```

=====
Data File   : C:\PEAKNET\DATA\NH405009.DXD   Report Date: 12/30/2003 5:10:54 P
Sample Name: Autocal8R                       Collected  : 12/30/2003 4:57:54 P
Inject #    : 9                               Vial #     :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name : DX-120                          Detector   : DX-120
Column Type : Ionpac CS12A                    Operator    :
Data Points : 3000                             Rate       : 5.00 Hz
Module Name : DX-120                           ID:50 05 d8 Moduleware : 1.00
=====
  
```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.92	NH4	5.00	48651	519891	1	0.00
Totals			5.00	48651	519891		



```

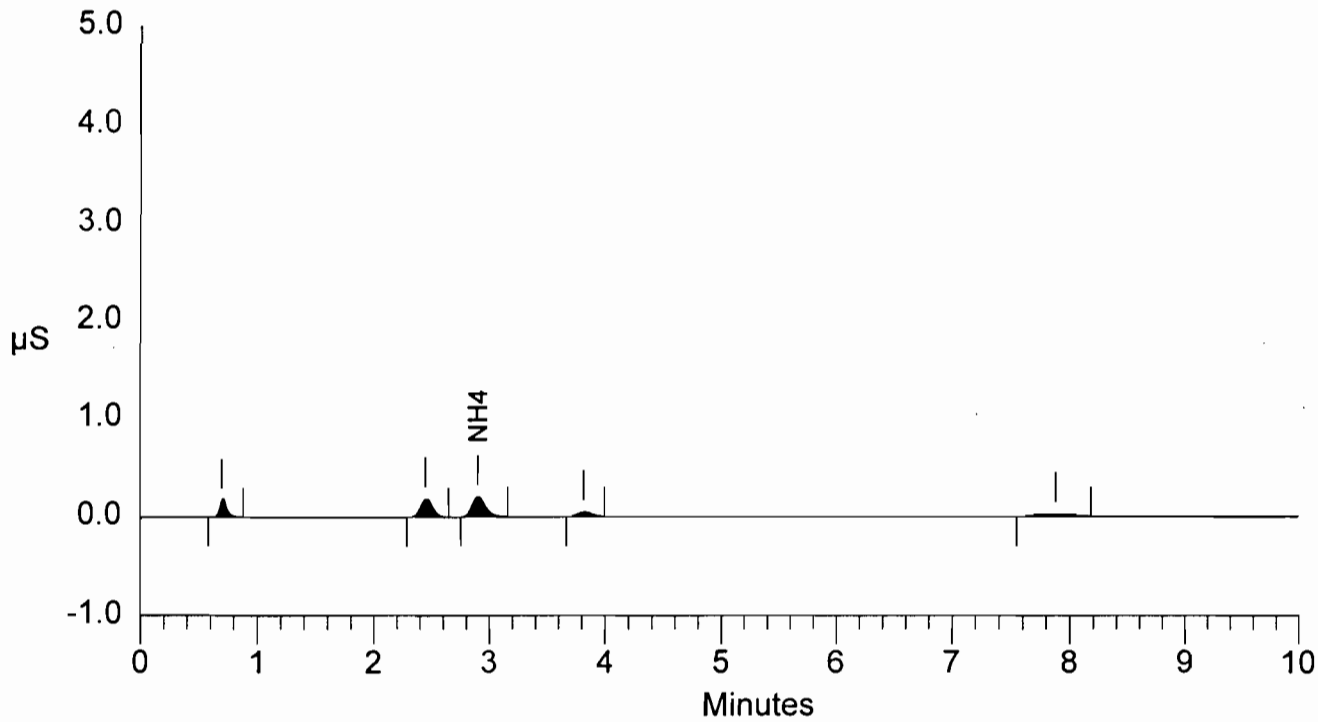
=====
Data File   : C:\PEAKNET\DATA\NH405010.DXD   Report Date: 12/30/2003 5:23:55 P
Sample Name: Reagent Blank                   Collected  : 12/30/2003 5:10:54 P
Inject #    : 10                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 12/30/2003 5:10:54 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                     Operator     :
Data Points: 3000                             Rate        : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Peak Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
3	2.90	NH4	0.11	2072	17179	1	0.00
Totals			0.11	2072	17179		

**File: NH405010.DXD Sample Reagent Blank**



```

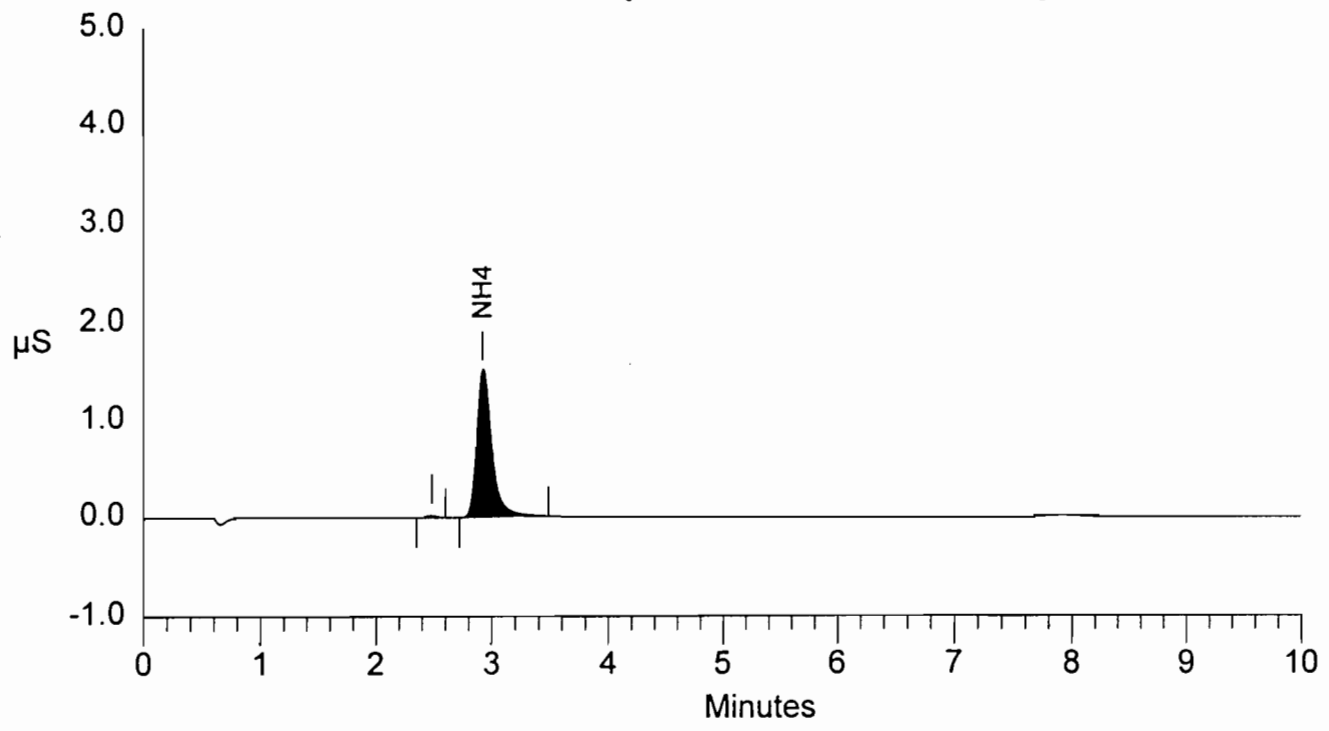
=====
Data File   : C:\PEAKNET\DATA\NH405011.DXD   Report Date: 12/30/2003 5:36:55 P
Sample Name: Cal. Std 1 (1.00 mg/l)         Collected  : 12/30/2003 5:23:55 P
Inject #    : 11                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Peak Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	1.01	14896	136214	1	0.00
Totals			1.01	14896	136214		

**File: NH405011.DXD Sample Cal. Std 1 (1.00 mg/l)**



```

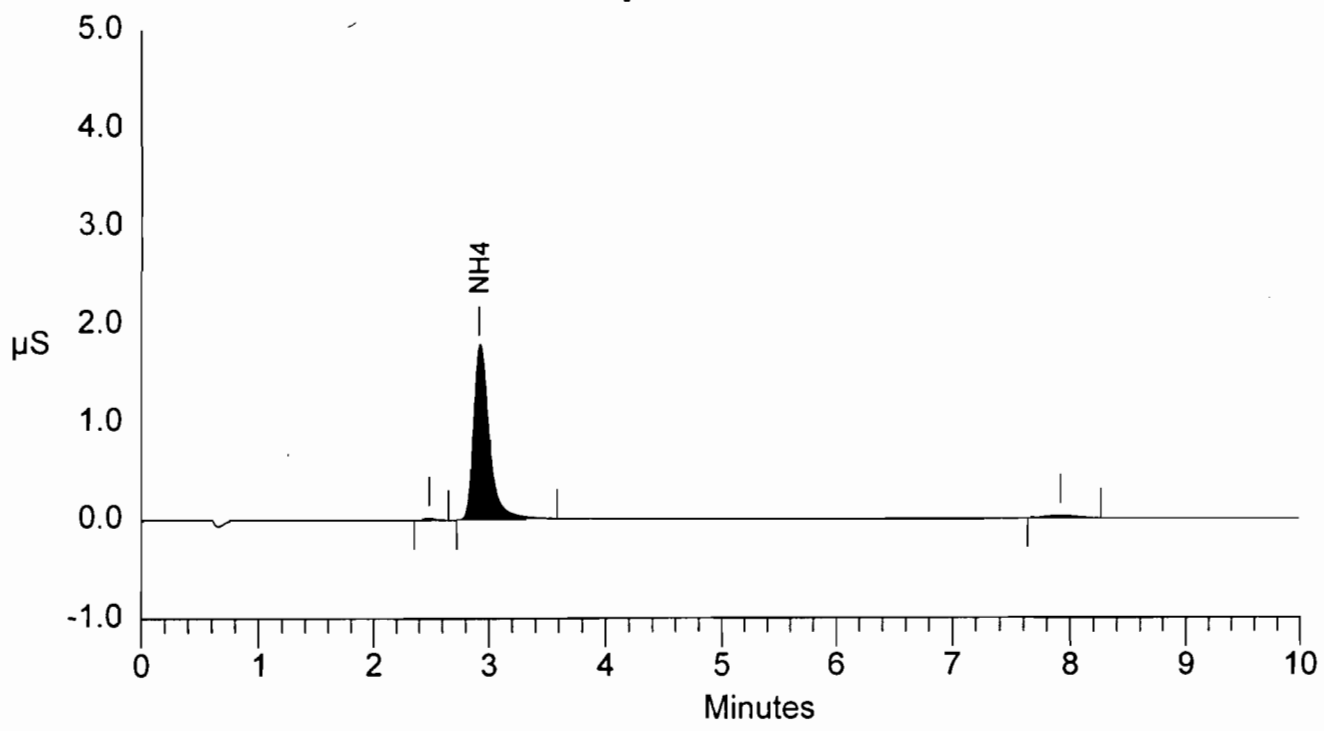
=====
Data File   : C:\PEAKNET\DATA\NH405012.DXD   Report Date: 12/30/2003 5:50:02 P
Sample Name: Orion Standard T.V.= 1.29       Collected  : 12/30/2003 5:36:56 P
Inject #    : 12                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name : DX-120                           Detector    : DX-120
Column Type : Ionpac CS12A                     Operator    :
Data Points : 3000                             Rate       : 5.00 Hz
Module Name : DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	1.26	17650	165609	1	0.00
Totals			1.26	17650	165609		

**File: NH405012.DXD Sample Orion Standard T.V.= 1.29**



```

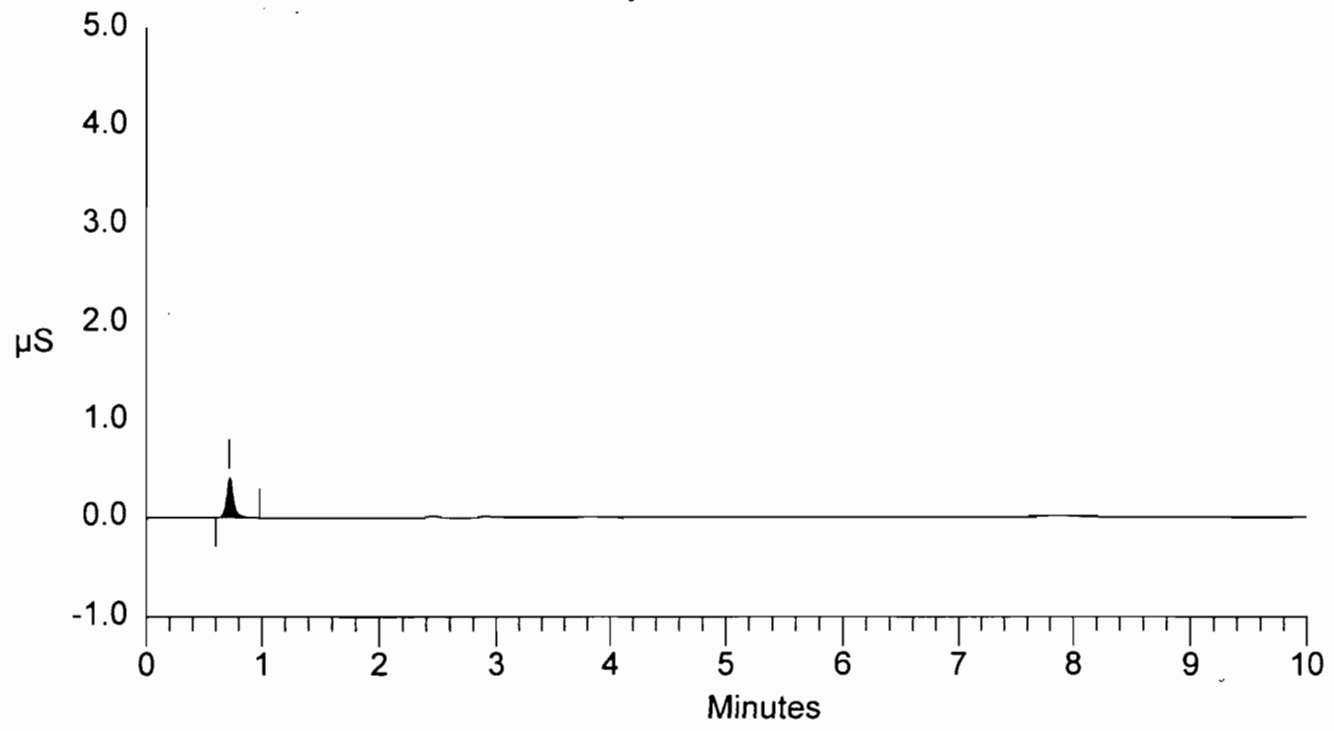
=====
Data File   : C:\PEAKNET\DATA\NH405013.DXD   Report Date: 12/30/2003 6:03:03 P
Sample Name: 12/17/03 Blank                 Collected  : 12/30/2003 5:50:03 P
Inject #    : 13                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate       : 5.00   Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Peak Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
Totals			0.00	0	0		

**File: NH405013.DXD Sample 12/17/03 Blank**



```

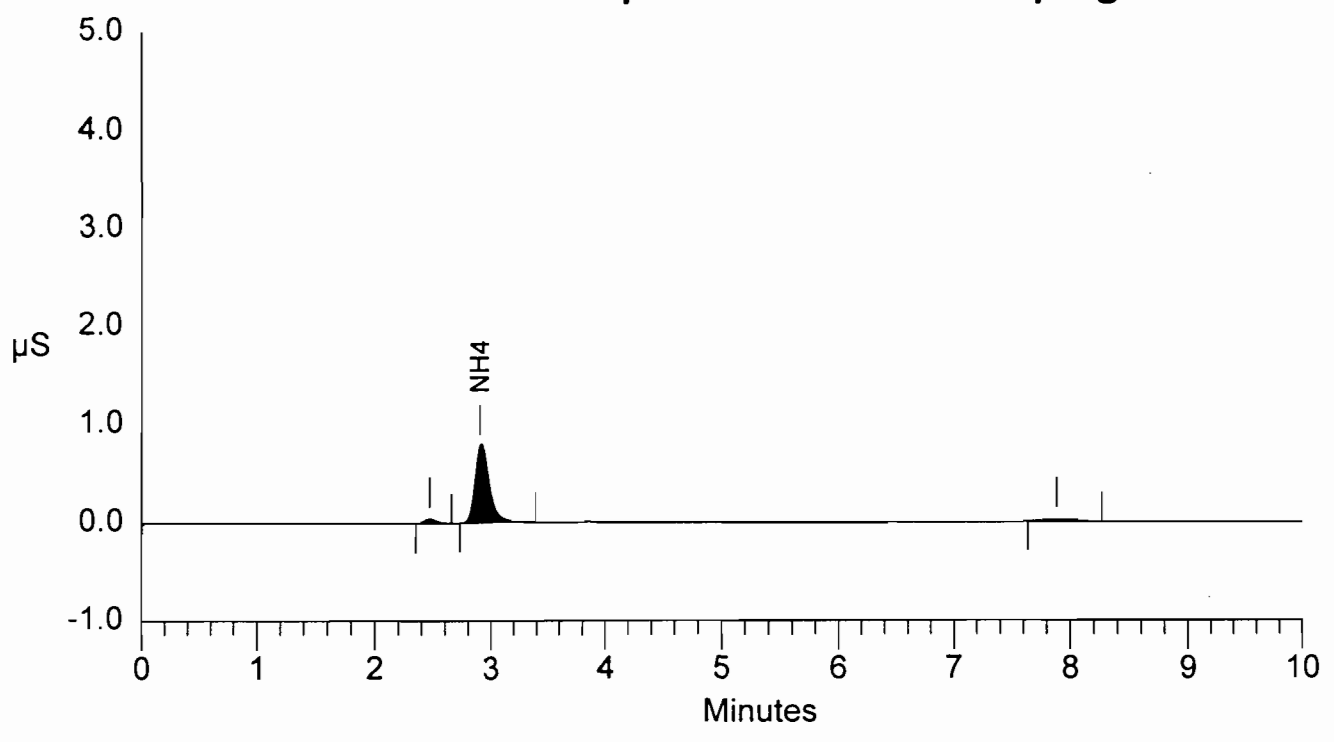
=====
Data File   : C:\PEAKNET\DATA\NH405014.DXD   Report Date: 12/30/2003 6:16:03 P
Sample Name: 12/17/03 Run 1 Impinger #1     Collected  : 12/30/2003 6:03:03 P
Inject #    : 14                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                             Rate        : 5.00 Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Peak Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.90	NH4	0.49	7739	69598	1	0.00
Totals			0.49	7739	69598		

**File: NH405014.DXD Sample 12/17/03 Run 1 Impinger #1**





```

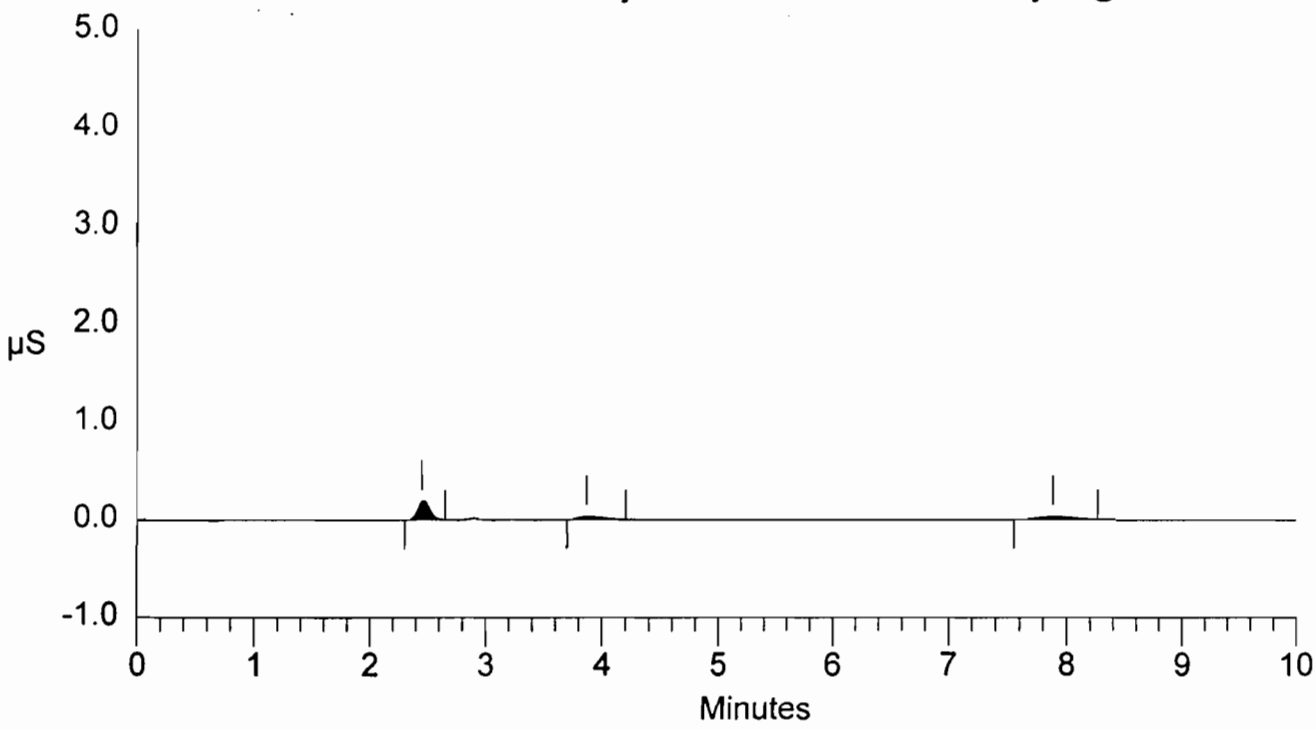
=====
Data File   : C:\PEAKNET\DATA\NH405015.DXD   Report Date: 12/30/2003 6:29:04 P
Sample Name: 12/17/03 Run 1 Impinger #2     Collected  : 12/30/2003 6:16:04 P
Inject #    : 15                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                            Rate        : 5.00 Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Peak Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
Totals			0.00	0	0		

**File: NH405015.DXD Sample 12/17/03 Run 1 Impinger #2**



```

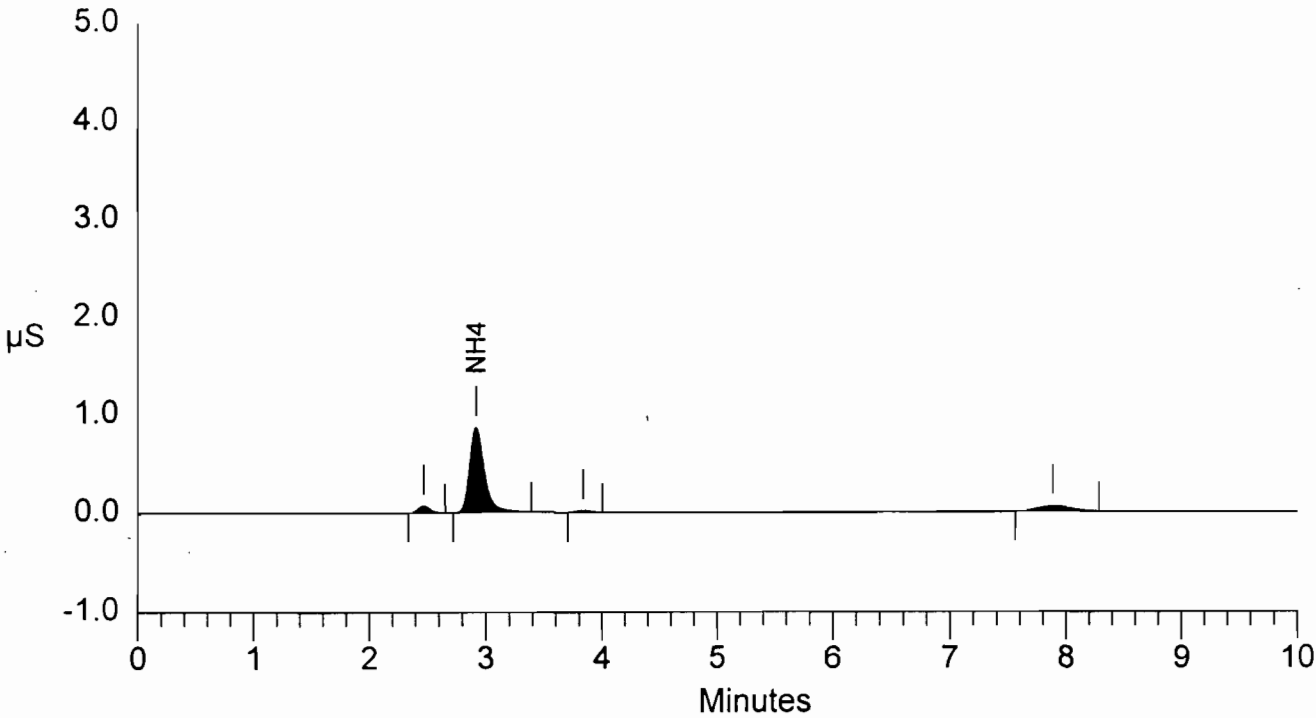
=====
Data File   : C:\PEAKNET\DATA\NH405016.DXD   Report Date: 12/30/2003 6:42:05 P
Sample Name : 12/17/03 Run 2 Impinger #1     Collected  : 12/30/2003 6:29:05 P
Inject #    : 16                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Peak Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	0.53	8643	75727	1	0.00
Totals			0.53	8643	75727		

**File: NH405016.DXD Sample 12/17/03 Run 2 Impinger #1**



```

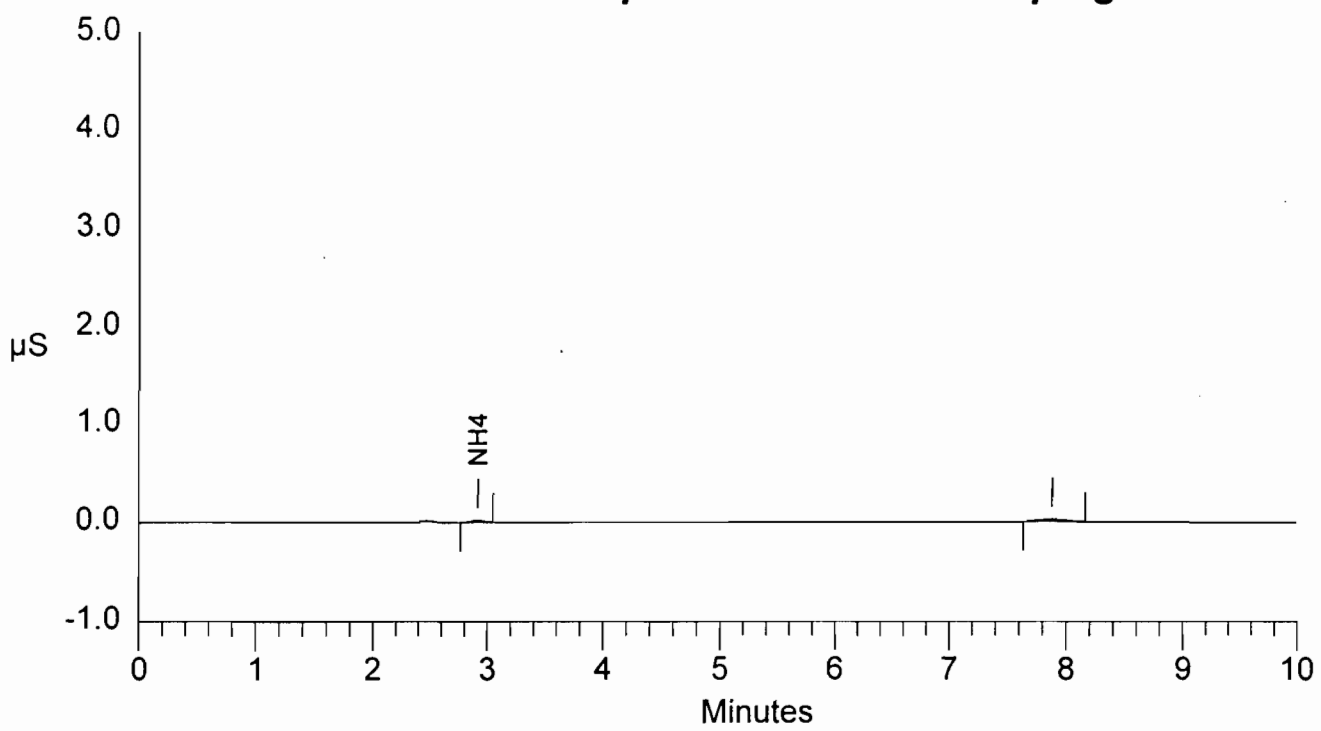
=====
Data File   : C:\PEAKNET\DATA\NH405017.DXD   Report Date: 12/30/2003 6:55:11 P
Sample Name: 12/17/03 Run 2 Impinger #2     Collected  : 12/30/2003 6:42:05 P
Inject #    : 17                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate        : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Peak Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.92	NH4	0.00	236	1723	1	0.00
Totals			0.00	236	1723		

**File: NH405017.DXD Sample 12/17/03 Run 2 Impinger #2**



```

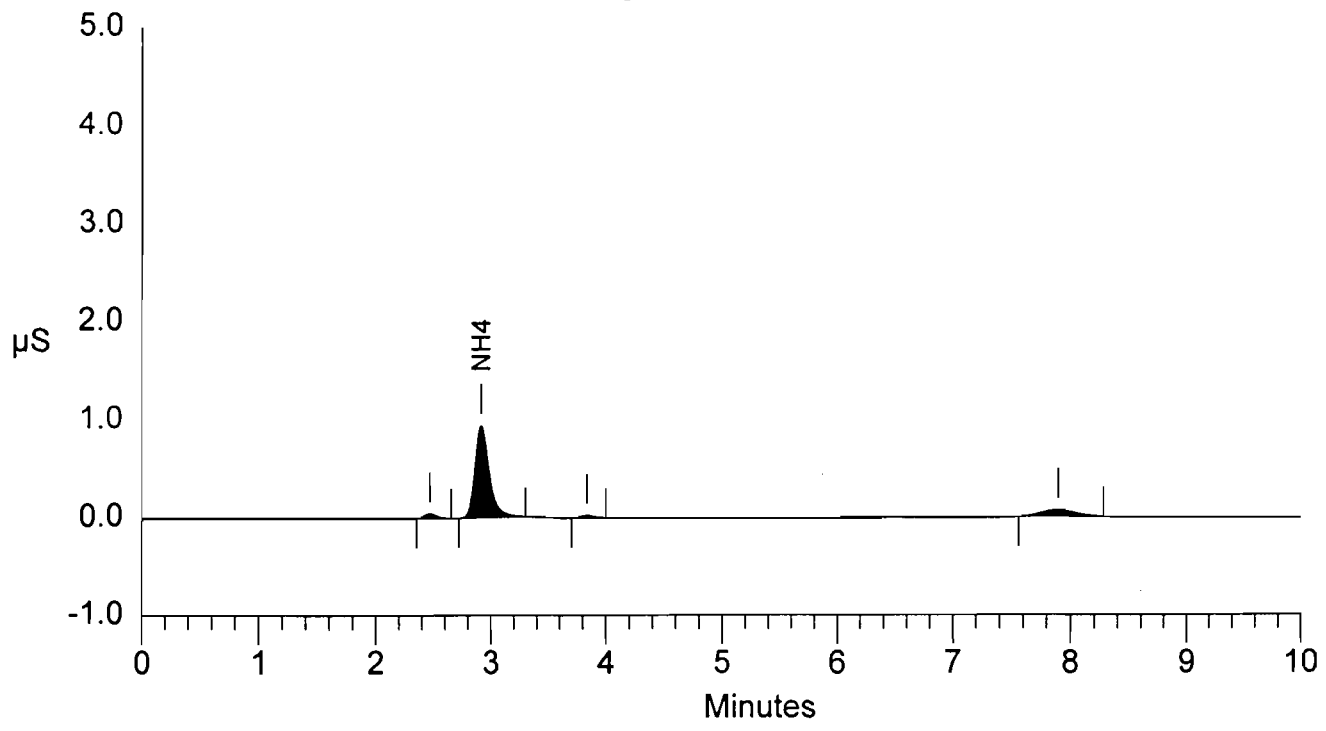
=====
Data File   : C:\PEAKNET\DATA\NH405018.DXD   Report Date: 12/30/2003 7:08:15 P
Sample Name: 12/17/03 Run 3 Impinger #1     Collected  : 12/30/2003 6:55:14 P
Inject #    : 18                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name : DX-120                          Detector    : DX-120
Column Type : Ionpac CS12A                    Operator    :
Data Points : 3000                            Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	0.57	9368	81193	1	0.00
Totals			0.57	9368	81193		

**File: NH405018.DXD Sample 12/17/03 Run 3 Impinger #1**



```

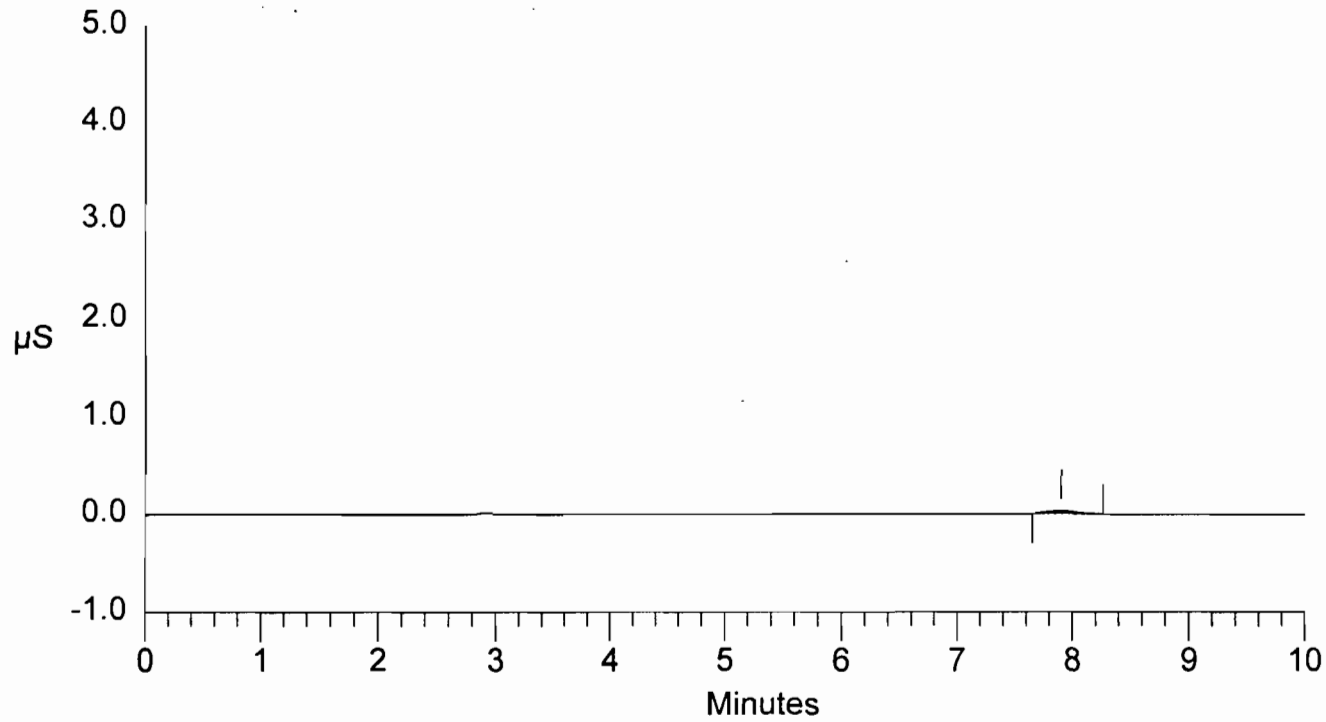
=====
Data File   : C:\PEAKNET\DATA\NH405019.DXD   Report Date: 12/30/2003 7:21:16 P
Sample Name: 12/17/03 Run 3 Impinger #2     Collected  : 12/30/2003 7:08:15 P
Inject #    : 19                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Peak Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
Totals			0.00	0	0		

**File: NH405019.DXD Sample 12/17/03 Run 3 Impinger #2**



```

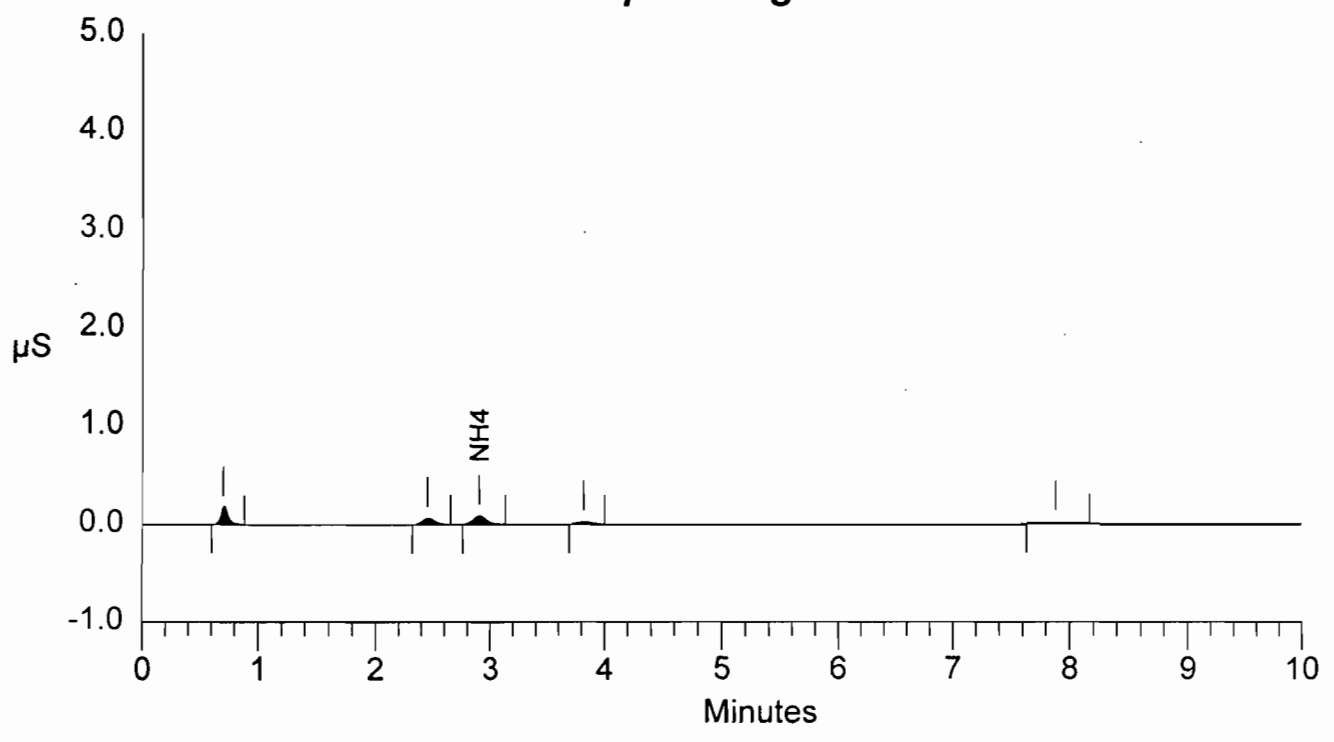
=====
Data File   : C:\PEAKNET\DATA\NH405020.DXD   Report Date: 12/30/2003 7:34:16 P
Sample Name: Reagent Blank                   Collected  : 12/30/2003 7:21:16 P
Inject #    : 20                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
3	2.90	NH4	0.04	911	7305	1	0.00
Totals			0.04	911	7305		

**File: NH405020.DXD Sample Reagent Blank**



```

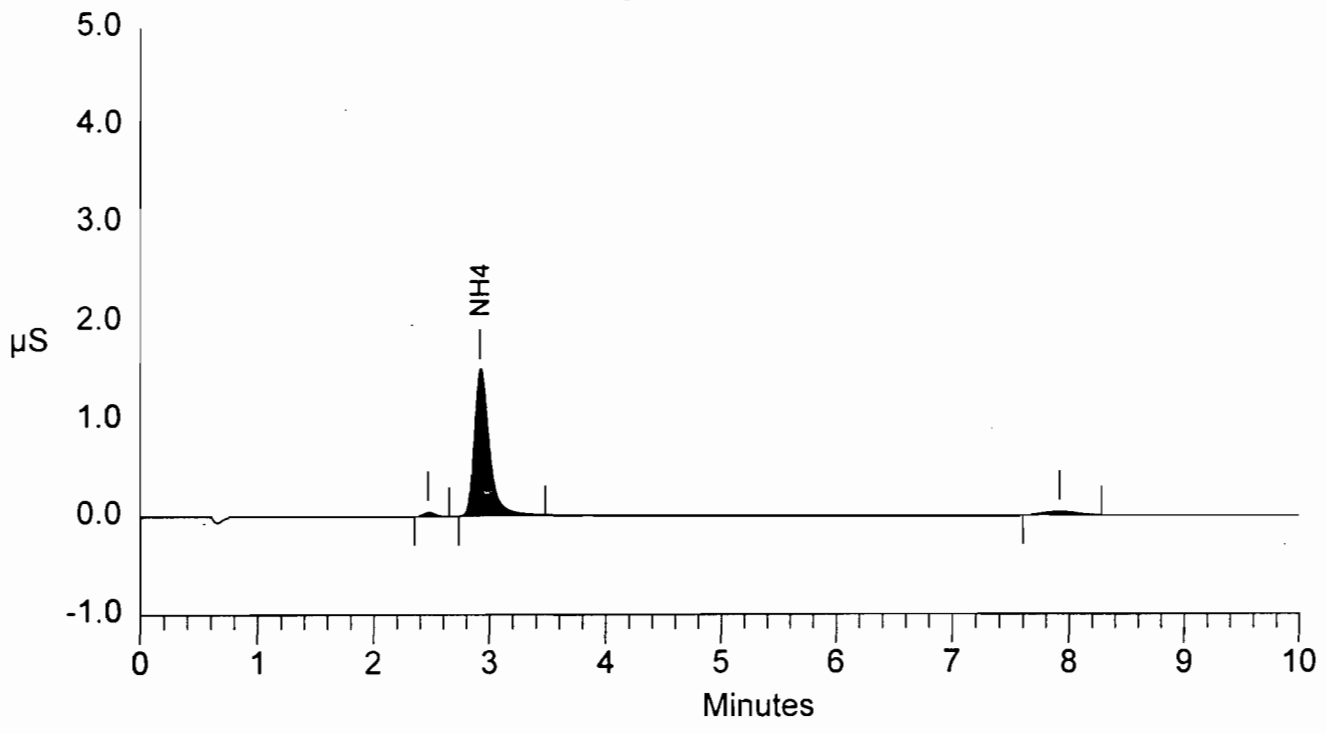
=====
Data File   : C:\PEAKNET\DATA\NH405021.DXD   Report Date: 12/30/2003 7:47:17 P
Sample Name: Cal Std 1 (1.00 mg/l)           Collected  : 12/30/2003 7:34:17 P
Inject #    : 21                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 12/30/2003 5:10:54 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                            Rate       : 5.00 Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Peak Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	1.01	14947	136477	1	0.00
Totals			1.01	14947	136477		

**File: NH405021.DXD Sample Cal Std 1 (1.00 mg/l)**



```

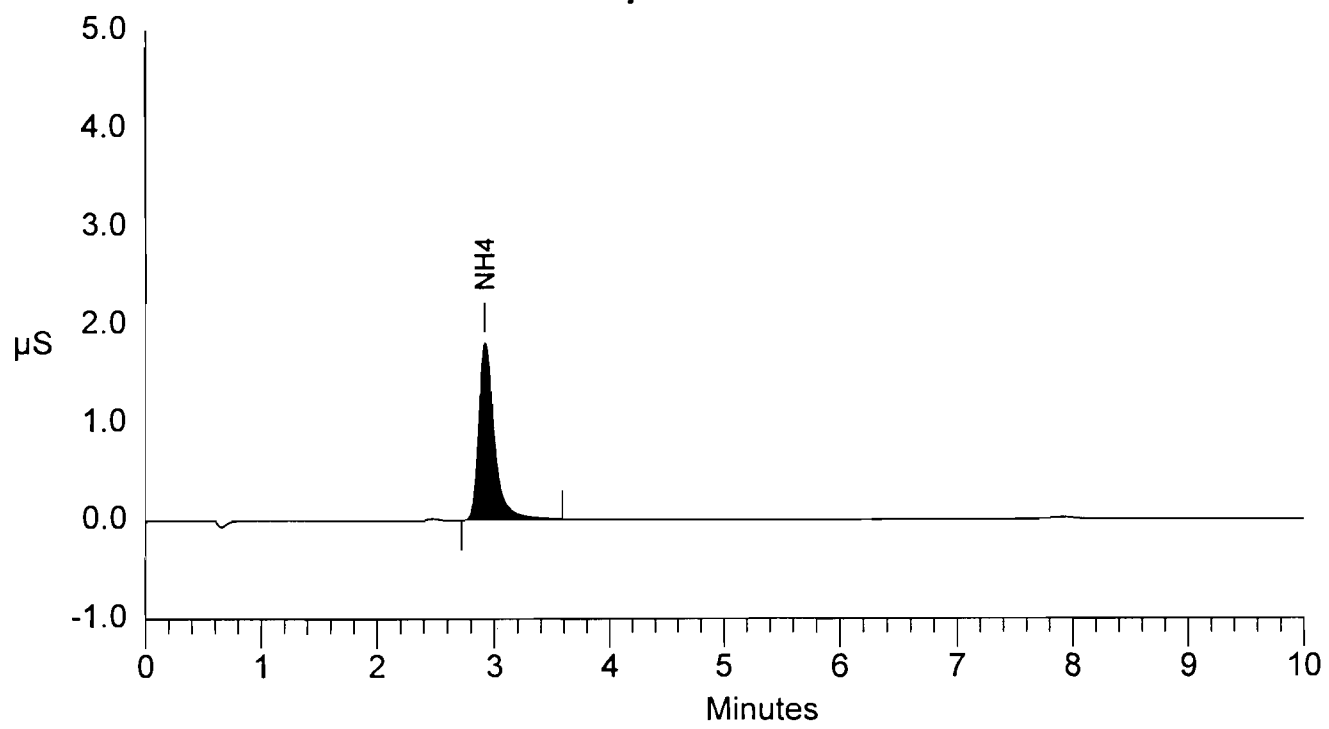
=====
Data File   : C:\PEAKNET\DATA\NH405022.DXD   Report Date: 12/30/2003 8:00:18 P
Sample Name : Orion Standard T.V. = 1.29     Collected  : 12/30/2003 7:47:17 P
Inject #    : 22                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Peak Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.92	NH4	1.27	17995	166918	1	0.00
Totals			1.27	17995	166918		

**File: NH405022.DXD Sample Orion Standard T.V. = 1.29**





```

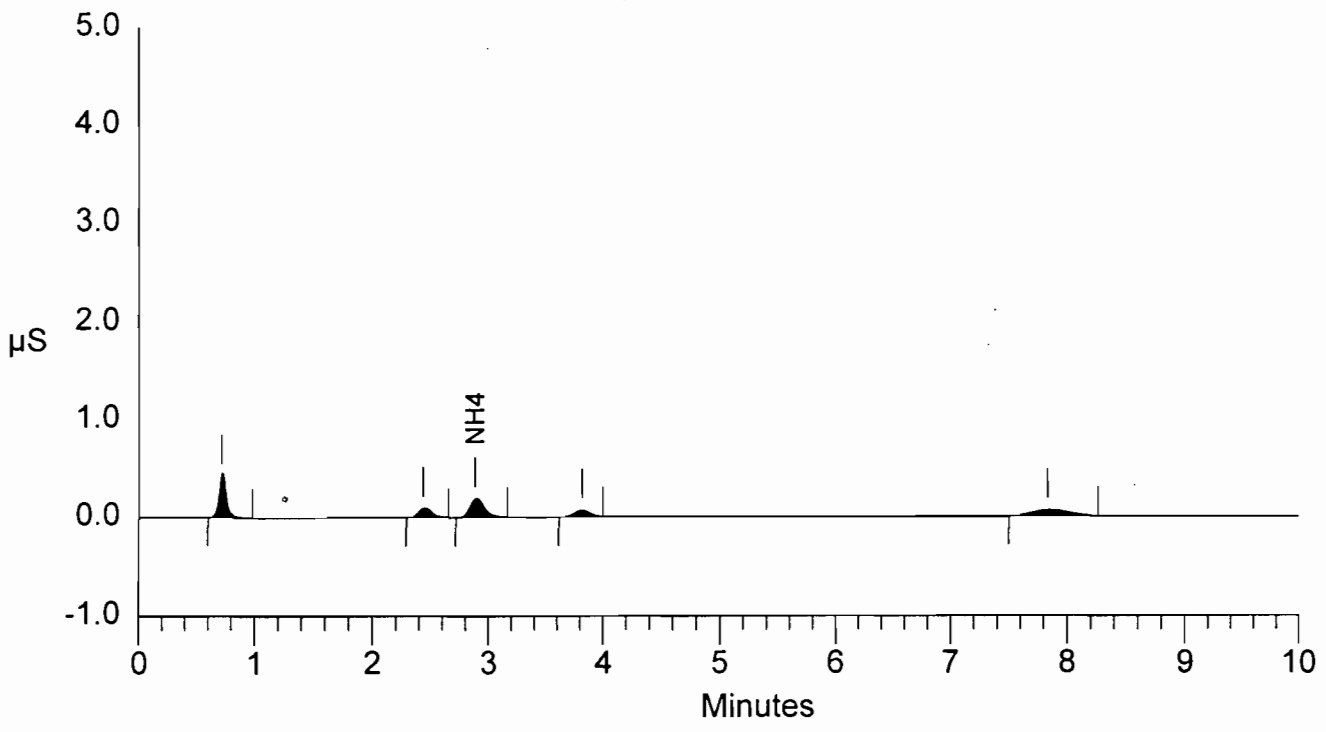
=====
Data File   : C:\PEAKNET\DATA\NH405023.DXD   Report Date: 12/30/2003 8:13:18 P
Sample Name: 12/19/03 Blank                   Collected  : 12/30/2003 8:00:18 P
Inject #    : 23                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 12/30/2003 5:10:54 P
System Name: DX-120                           Detector    : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
3	2.88	NH4	0.11	1956	17258	1	0.00
Totals			0.11	1956	17258		

**File: NH405023.DXD Sample 12/19/03 Blank**



```

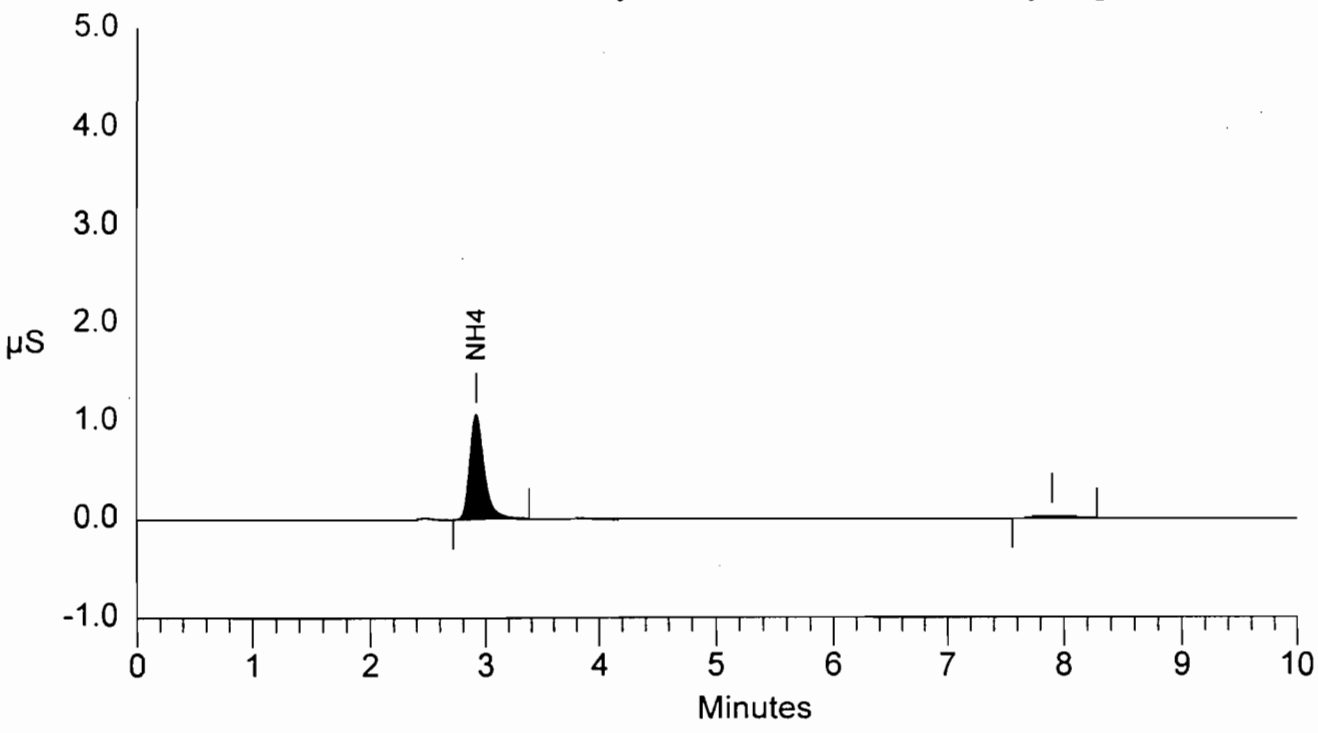
=====
Data File   : C:\PEAKNET\DATA\NH404024.DXD   Report Date: 12/30/2003 8:26:19 P
Sample Name: 12/19/03 Run 1 Impinger #1     Collected  : 12/30/2003 8:13:19 P
Inject #    : 24                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                            Rate        : 5.00   Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.92	NH4	0.67	10658	94409	1	0.00
Totals			0.67	10658	94409		

**File: NH404024.DXD Sample 12/19/03 Run 1 Impinger #1**



```

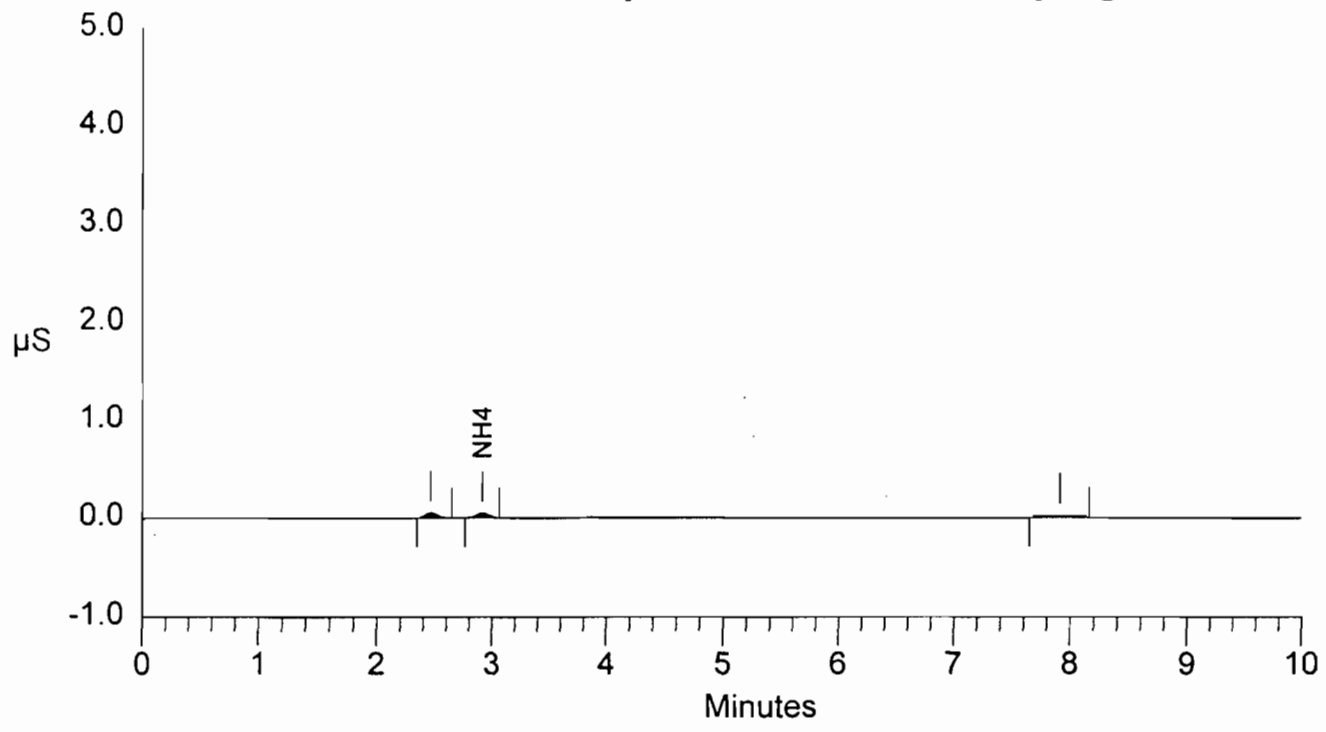
=====
Data File   : C:\PEAKNET\DATA\NH404025.DXD   Report Date: 12/30/2003 8:39:20 P
Sample Name: 12/19/03 Run 1 Impinger #2     Collected  : 12/30/2003 8:26:20 P
Inject #   : 25                               Vial #     :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name: DX-120                           Detector   : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate       : 5.00   Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Peak Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	0.02	483	3523	1	0.00
Totals			0.02	483	3523		

**File: NH404025.DXD Sample 12/19/03 Run 1 Impinger #2**



```

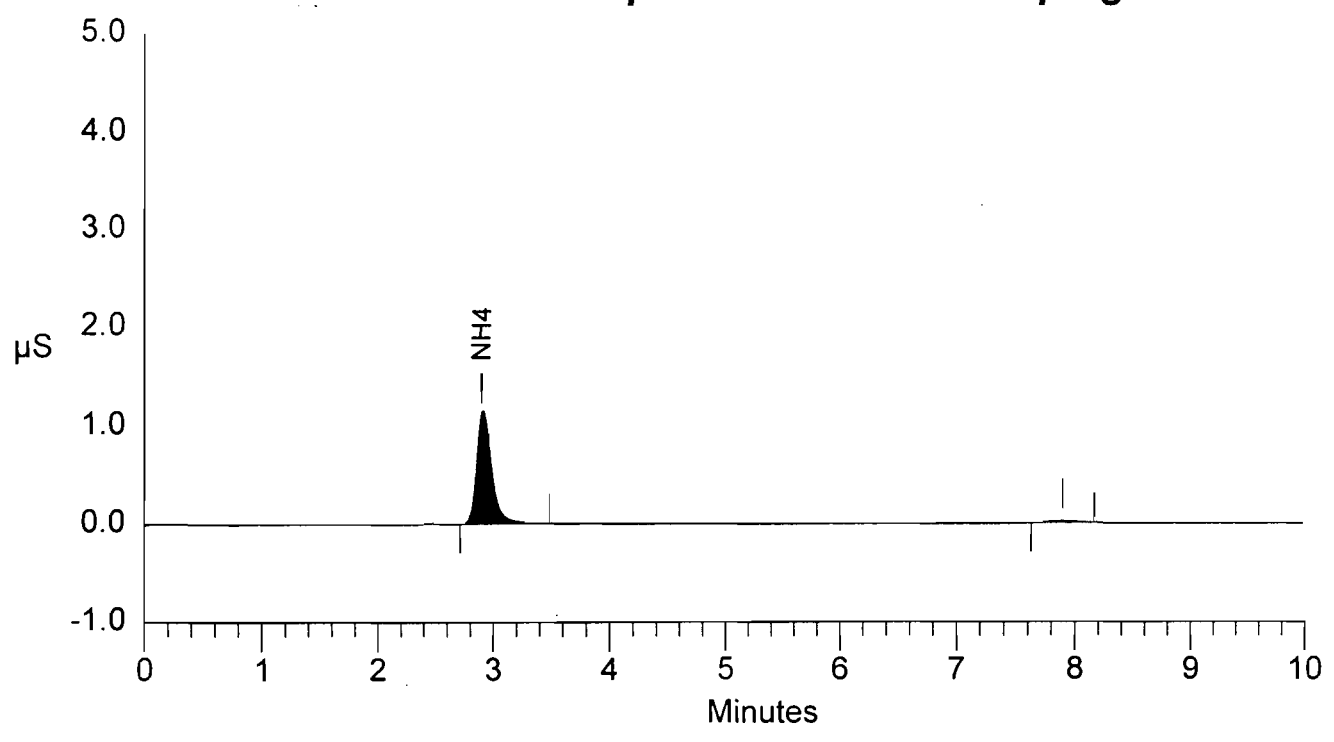
=====
Data File   : C:\PEAKNET\DATA\NH404026.DXD   Report Date: 12/30/2003 8:52:21 P
Sample Name : 12/19/03 Run 2 Impinger #1     Collected  : 12/30/2003 8:39:21 P
Inject #    : 26                               Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name : DX-120                           Detector    : DX-120
Column Type : Ionpac CS12A                     Operator    :
Data Points : 3000                             Rate       : 5.00 Hz
Module Name : DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.90	NH4	0.75	11140	103915	1	0.00
Totals			0.75	11140	103915		

**File: NH404026.DXD Sample 12/19/03 Run 2 Impinger #1**



```

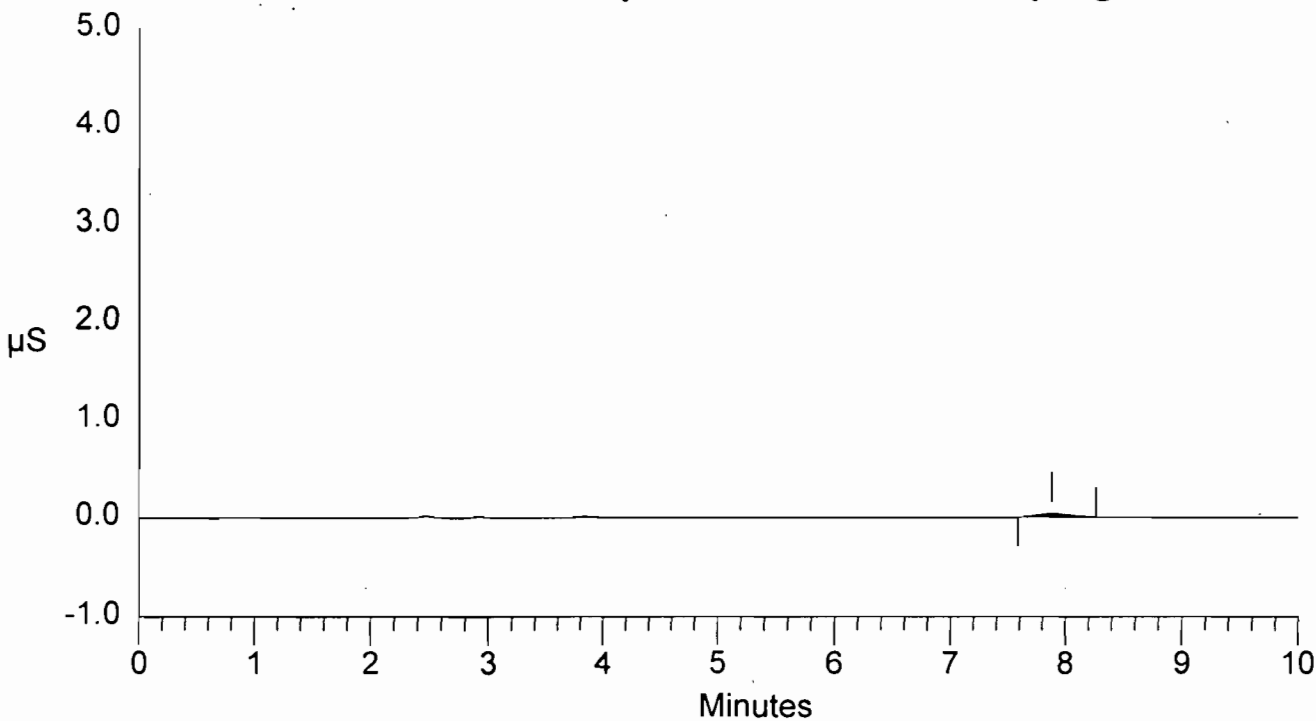
=====
Data File   : C:\PEAKNET\DATA\NH404027.DXD   Report Date: 12/30/2003 9:05:21 P
Sample Name: 12/19/03 Run 2 Impinger #2     Collected  : 12/30/2003 8:52:21 P
Inject #    : 27                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 12/30/2003 5:10:54 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                            Rate        : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
Totals			0.00	0	0		

**File: NH404027.DXD Sample 12/19/03 Run 2 Impinger #2**



```

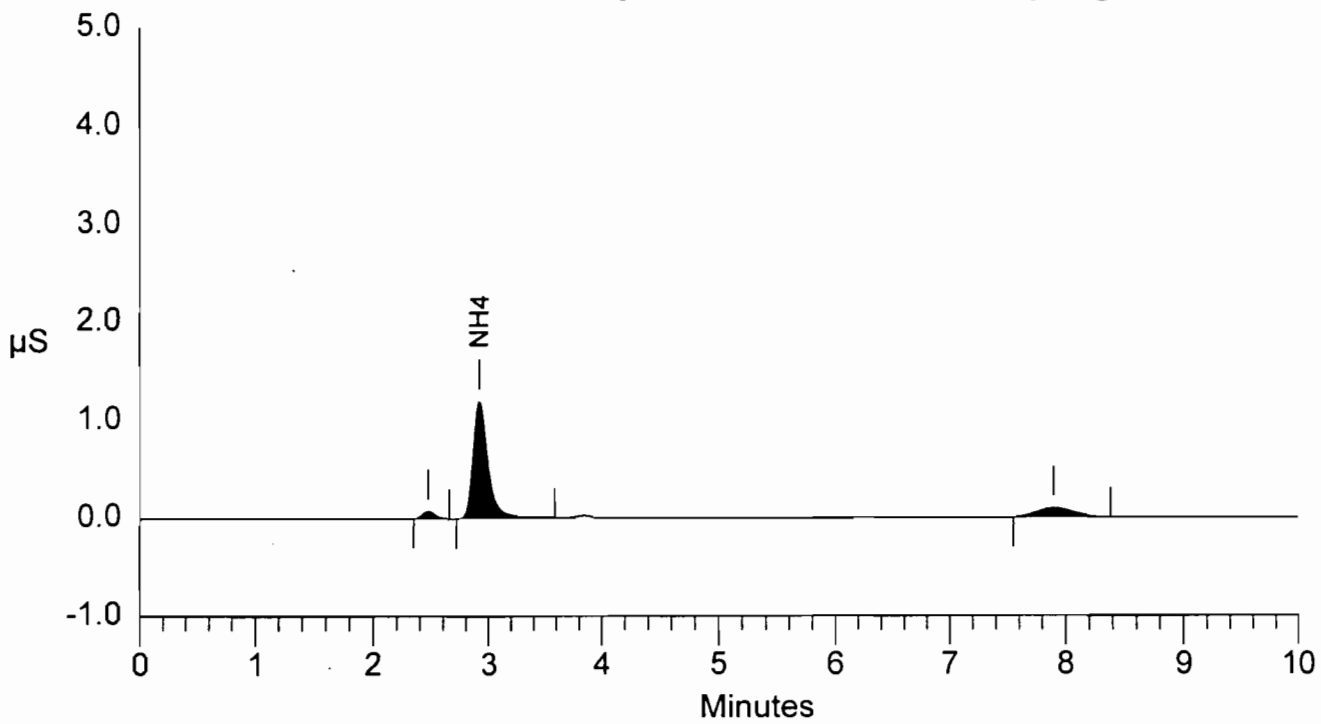
=====
Data File   : C:\PEAKNET\DATA\NH404028.DXD   Report Date: 12/30/2003 9:18:22 P
Sample Name: 12/19/03 Run 3 Impinger #1     Collected  : 12/30/2003 9:05:22 P
Inject #    : 28                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                             Rate       : 5.00   Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	0.79	11912	109647	1	0.00
Totals			0.79	11912	109647		

**File: NH404028.DXD Sample 12/19/03 Run 3 Impinger #1**



```

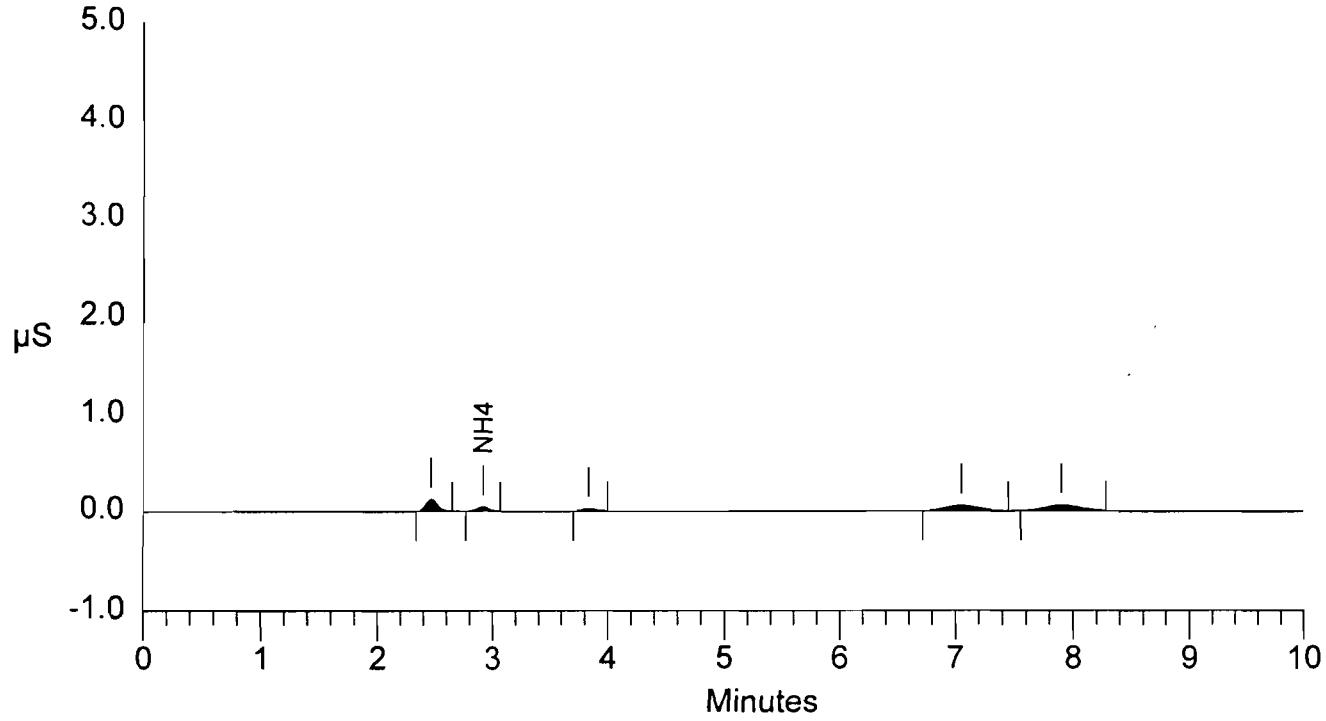
=====
Data File   : C:\PEAKNET\DATA\NH404029.DXD   Report Date: 12/30/2003 9:31:23 P
Sample Name: 12/19/03 Run 3 Impinger #2     Collected  : 12/30/2003 9:18:23 P
Inject #    : 29                             Vial #      :
Method File: c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name: DX-120                          Detector    : DX-120
Column Type: Ionpac CS12A                    Operator    :
Data Points: 3000                             Rate       : 5.00 Hz
Module Name: DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

PK. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	2.92	NH4	0.01	426	3141	1	0.00
Totals			0.01	426	3141		

**File: NH404029.DXD Sample 12/19/03 Run 3 Impinger #2**



```

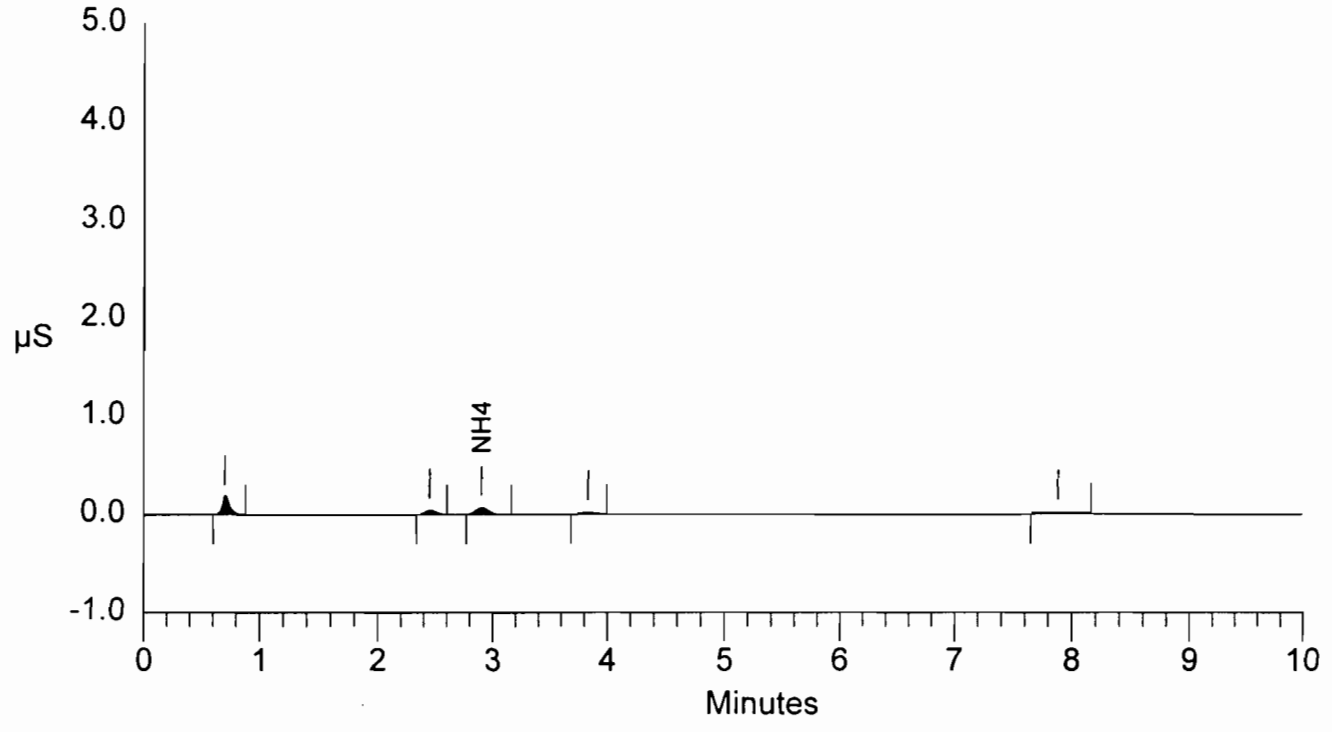
=====
Data File   : C:\PEAKNET\DATA\NH404030.DXD   Report Date: 12/30/2003 9:44:24 P
Sample Name: Reagent Blank                   Collected  : 12/30/2003 9:31:23 P
Inject #    : 30                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate       : 5.00 Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Peak Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
3	2.90	NH4	0.03	685	5587	1	0.00
Totals			0.03	685	5587		

**File: NH404030.DXD Sample Reagent Blank**





```

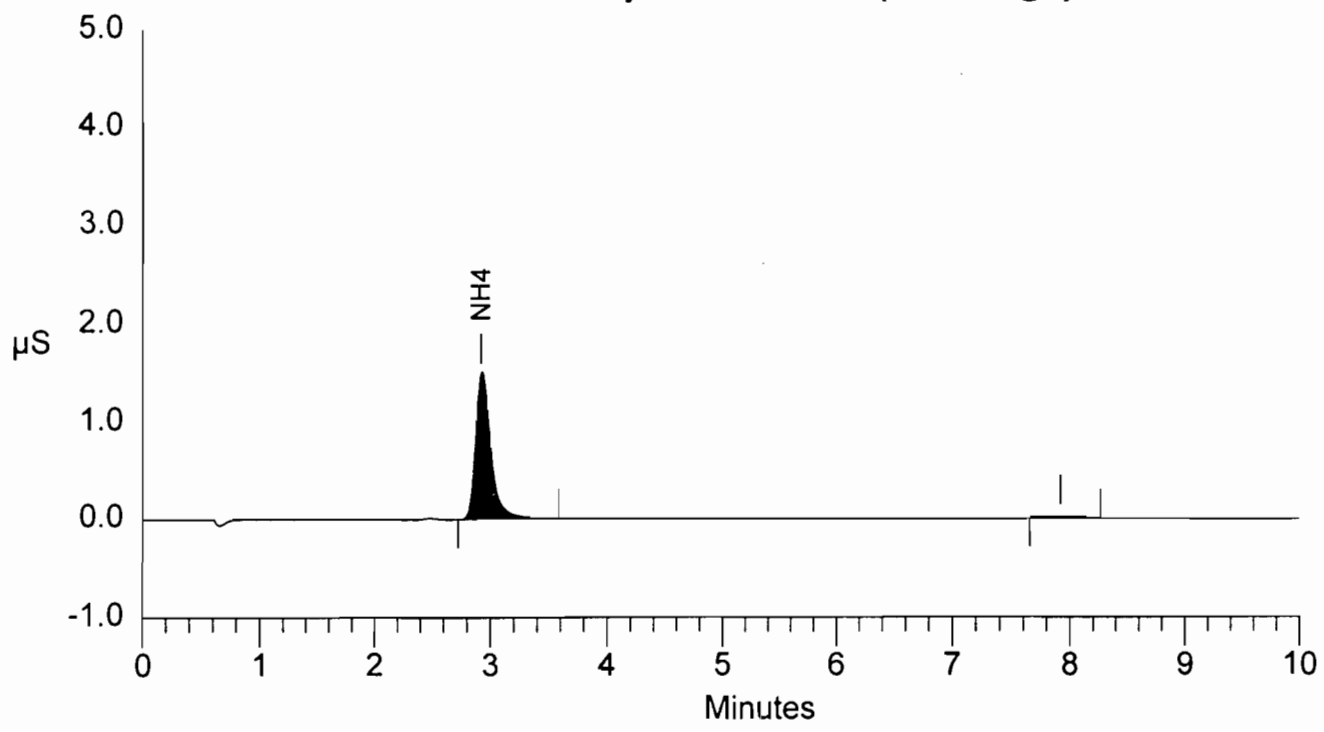
=====
Data File   : C:\PEAKNET\DATA\NH404031.DXD   Report Date: 12/30/2003 9:57:24 P
Sample Name: Cal Std 1 (1.00 mg/l)           Collected  : 12/30/2003 9:44:24 P
Inject #    : 31                             Vial #      :
Method File : c:\peaknet\method\ctm-027.met  Calibrated  : 12/30/2003 5:10:54 P
System Name : DX-120                         Detector    : DX-120
Column Type : Ionpac CS12A                   Operator    :
Data Points : 3000                           Rate       : 5.00   Hz
Module Name : DX-120                          ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.92	NH4	1.02	14813	137610	1	0.00
Totals			1.02	14813	137610		

**File: NH404031.DXD Sample Cal Std 1 (1.00 mg/l)**



```

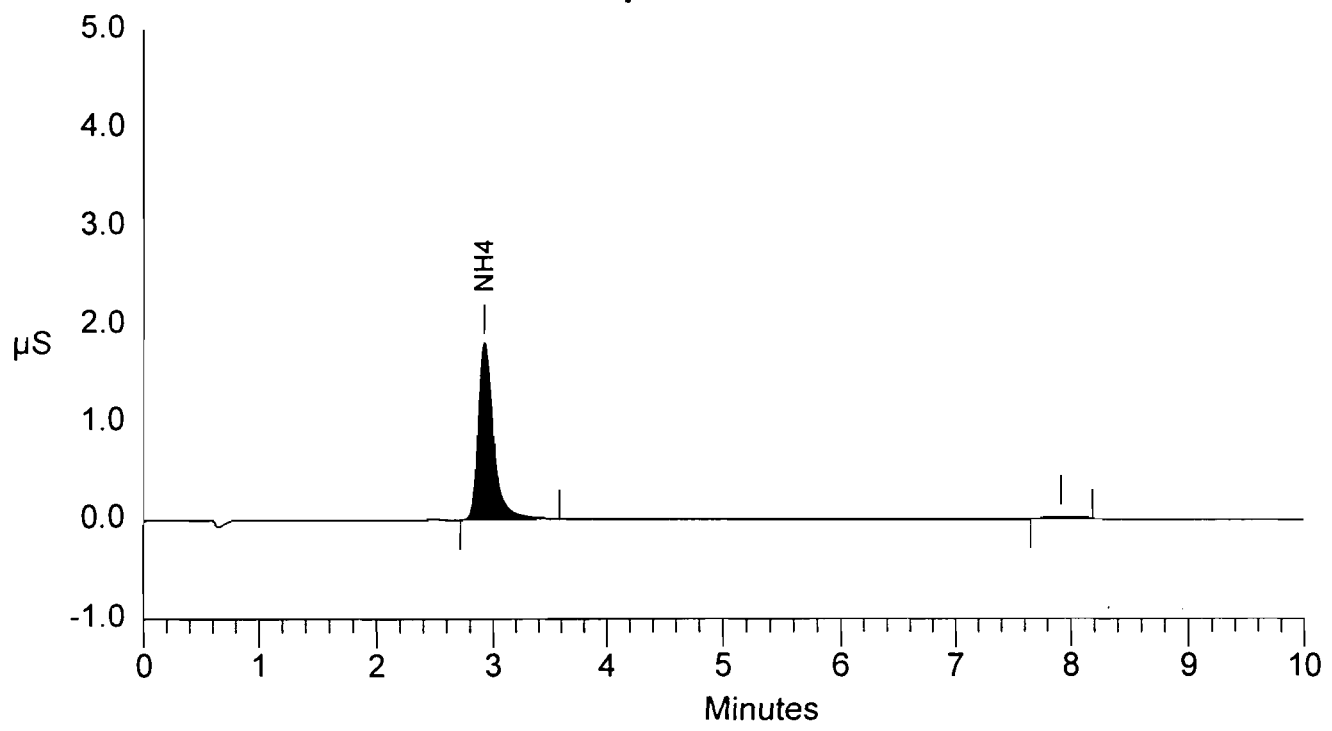
=====
Data File   : C:\PEAKNET\DATA\NH404032.DXD   Report Date: 12/30/2003 10:10:25
Sample Name: Orion Standard T.V. = 1.29      Collected  : 12/30/2003 9:57:25 P
Inject #    : 32                               Vial #      :
Method File: c:\peaknet\method\ctm-027.met   Calibrated  : 12/30/2003 5:10:54 P
System Name: DX-120                           Detector    : DX-120
Column Type: Ionpac CS12A                     Operator    :
Data Points: 3000                             Rate        : 5.00 Hz
Module Name: DX-120                           ID:50 05 d8 Moduleware : 1.00
=====

```

\*\*\*\*\* Component Report: Components Found \*\*\*\*\*

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	2.92	NH4	1.27	17831	167437	1	0.00
Totals			1.27	17831	167437		

**File: NH404032.DXD Sample Orion Standard T.V. = 1.29**



EQUIPMENT CALIBRATIONS

## SUMMARY OF EQUIPMENT CALIBRATIONS

<u>EQUIPMENT</u>	<u>CAL DATE</u>	<u>METHOD</u>	<u>RESULTS</u>
CONSOLE (MB 06)		USEPA RM 5	
INITIAL	10/02/2003	(ORIFICE)	1.004
POST TEST	12/22/2003		1.007
NOZZLE (GL09)		CALIPER	
INITIAL	10/02/2003	MEASUREMENTS	0.189
POST TEST	None (glass)		
PYROMETER (PY 09)	10/03/2003	ASTM THERMOMETER	$\pm 2^{\circ}$ F
PITOT TUBE (PT 10)	10/08/2003	USEPA RM 2	$C_p = 0.84$
BAROMETER (BR 02)	10/02/2003	NWS COMPARISON	$\pm 0.01$ " Hg

**EPA Method 5  
Meter Box Calibration  
Pre-Test Orifice Method  
English Meter Box Units, English K' Factor**

Revised: 7/25/95                      Version: 2.2

Model #: Thermo  
Instrument Code No.: \*MB06  
Sample Number: AA71435

Date: \_\_\_\_\_> 10/02/2003  
Barometric Pressure: \_\_\_\_\_> 30.01 (in. Hg)  
Theoretical Critical Vacuum: \_\_\_\_\_> 14.16 (in. Hg)  
Calibrated By: \_\_\_\_\_>

!!!!!!!  
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)<sup>3</sup>\*(deg R)<sup>0.5</sup>/((in.Hg)\*(min)).  
!!!!!!!

----- DRY GAS METER READINGS -----

----- CRITICAL ORIFICE READINGS -----

dH (in H <sub>2</sub> O)	Time (min)	Volume Initial (cu. ft)	Volume Final (cu. ft)	Volume Total (cu. ft)	Initial Temps		Final Temps		Orifice Serial#	K' Orifice Coefficient (see above)	Actual Vacuum (in. Hg)	Ambient Temperature		
					Inlet (deg. F)	Outlet (deg. F)	Inlet (deg. F)	Outlet (deg. F)				Initial (deg. F)	Final (deg. F)	Average (deg. F)
0.64	15	769.070	775.883	6.813	75	74	75	74	48	0.3483	21	73	73	73
1.15	10	783.428	789.518	6.09	77	75	78	75	55	0.4660	19.5	73	73	73
1.95	10	796.706	804.526	7.82	80	75	81	76	63	0.5971	17.5	73	73	73
3.7	10	811.905	822.644	10.739	85	75	86	77	73	0.8177	15	73	73	73

\*\*\*\*\* RESULTS \*\*\*\*\*

--- DRY GAS METER ---

----- ORIFICE -----

--- DRY GAS METER ---

----- ORIFICE -----

VOLUME CORRECTED Vm(std) (cu. ft)	VOLUME CORRECTED Vm(std) (liters)
6.758	191.39
6.029	170.74
7.731	218.95
10.608	300.43

VOLUME CORRECTED Vcr(std) (cu. ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu. ft)
6.791	192.33	6.838
6.057	171.55	6.099
7.762	219.81	7.815
10.629	301.02	10.702

CALIBRATION FACTOR Y	
Value (number)	Variation (number)
1.005	0.001
1.005	0.001
1.004	0.000
1.002	-0.002

CALIBRATION FACTOR dH@		
Value (in. H <sub>2</sub> O)	Value (mm H <sub>2</sub> O)	Variation (in. H <sub>2</sub> O)
1.740	44.20	-0.029
1.741	44.22	-0.028
1.792	45.52	0.023
1.804	45.82	0.035

Average Y ----->

1.004

1.769    44.94    <----- Average dH@

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 H<sub>2</sub>O 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.

REVIEWED BY: \_\_\_\_\_

Date: \_\_\_\_\_

**BEST AVAILABLE COPY**

**EPA Method 5  
Meter Box Calibration  
Post-Test Orifice Method  
English Meter Box Units, English K' Factor**

Revised: 7/25/95                      Version: 2.2

Model #: MST  
Instrument Code No. MB06  
Sample No.  
Test Designation Bayside 2A,B,C,D

Date: \_\_\_\_\_ → 12/22/2003  
Barometric Pressure: \_\_\_\_\_ → 30.22 (in. Hg)  
Theoretical Critical Vacuum: \_\_\_\_\_ → 14.25 (in. Hg)  
Calibration By: \_\_\_\_\_ → CRD

!!!!!!!  
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)<sup>3</sup>\*(deg R)<sup>0.5</sup>/((in.Hg)\*(min)).  
!!!!!!!

———— DRY GAS METER READINGS ————

-CRITICAL ORIFICE READINGS-

dH (in H <sub>2</sub> O)	Time (min)	Volume			Initial Temps.		Final Temps		Orifice Serial (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in. Hg)	Ambient Temp		
		Initial (cu.ft)	Final (cu.ft)	Total (cu.ft)	Inlet (deg.F)	Outlet (deg.F)	Inlet (deg.F)	Outlet (deg.F)				Room	Surf	Wind
1.15	10	19.350	25.337	5.987	67	69	68	70	55	0.466	19	71	70	70.5
1.15	10	25.337	31.341	6.004	68	70	68	70	55	0.466	19	70	71	70.5
1.15	10	31.341	37.372	6.031	68	70	69	72	55	0.466	19	71	71	71

\*\*\*\*\* RESULTS \*\*\*\*\*

— DRY GAS METER —

—— ORIFICE ——

— DRY GAS METER —

—— ORIFICE ——

VOLUME CORRECTED Vm(std) (cu.ft)	VOLUME CORRECTED Vm(std) (liters)
6.056	171.50
6.067	171.82
6.086	172.35

VOLUME CORRECTED Vc(std) (cu.ft)	VOLUME CORRECTED Vc(std) (liters)	VOLUME NOMINAL Vc (cu.ft)
6.114	173.15	6.085
6.114	173.15	6.085
6.111	173.07	6.087

CALIBRATION FACTOR Y	
Value (number)	Variation (number)
1.010	0.002
1.008	0.001
1.004	-0.003

CALIBRATION FACTOR dH@		
Value (in. H <sub>2</sub> O)	Variation (in. H <sub>2</sub> O)	Standard Deviation
1.746	44.35	0.001
1.744	44.31	0.000
1.744	44.29	-0.001

Average Y →  
Prior Y  
% Difference

1.007  
1.004  
-0.32%

1.745    44.32    ← Average dH@

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 H<sub>2</sub>O 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.

REVIEWED BY: \_\_\_\_\_

Date: \_\_\_\_\_

## NOZZLE CALIBRATION DATA FORM

### GLASS NOZZLE SET

DATE: 10/02/03

CALIBRATOR: R A Barthelette Jr.

NOZZLE I. D.	NOZZLE DIAMETER (IN.)			D diff	D avg
	D1	D2	D3		
^GN01	0.128	0.128	0.128	0.000	0.128
^GN02	0.189	0.189	0.189	0.000	0.189
^GN03	0.254	0.254	0.254	0.000	0.254
^GN04	0.313	0.313	0.313	0.000	0.313
^GN05	0.374	0.374	0.374	0.000	0.374
^GN06	0.429	0.429	0.429	0.000	0.429
^GN07	0.504	0.504	0.504	0.000	0.504
^GNO8	0.128	0.128	0.128	0.000	0.128
^GNO9	0.189	0.189	0.189	0.000	0.189
^GN10	0.254	0.254	0.254	0.000	0.254
^GN11	0.313	0.313	0.313	0.000	0.313
^GN12	0.374	0.374	0.374	0.000	0.374
^GN13	0.429	0.429	0.429	0.000	0.429
^GN14	0.504	0.504	0.504	0.000	0.504
^GN15	0.193	0.193	0.193	0.000	0.193
^GN16	0.197	0.197	0.197	0.000	0.197
^GN17	0.224	0.224	0.224	0.000	0.224
^GN18	0.224	0.224	0.224	0.000	0.224
^GN19	0.251	0.251	0.251	0.000	0.251
^GN20	0.251	0.251	0.251	0.000	0.251
^GN21	0.287	0.287	0.287	0.000	0.287

where:

*D 1,2,3 = three different nozzle diameters, (in); each diameter must be measured to the nearest 0.001 in.*

*D diff. = maximum difference between any two diameters, (in.) must be .004 in. or less.*

*D avg. = average of D1, D2, and D3.*

REVIEWED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_

Page 1  
OF 1



Environmental Services  
Air Services Group

### POST TEST NOZZLE CALIBRATION

Calibration Date: 12/22/2003  
Calibration Personnel: CRD  
Test Designation: Bayside 2A,B,C,D

Nozzle Identifier	Nozzle Diameter (inches)				
	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>difference</sub>	D <sub>average</sub>
GN09	0.189	0.189	0.189	0.000	0.189

Where:

D<sub>1,2,3</sub> = Results of triplicate diameter measurements, from three different cross sections measured to the nearest 0.001 inch.

D<sub>difference</sub> = Maximum difference between any two diameters in inches.  
Maximum difference must be  $\leq 0.004$  inches.

D<sub>average</sub> = Average of D<sub>1</sub>, D<sub>2</sub>, D<sub>3</sub>

QA/QC Review by: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_





## Pyrometer Calibration

### Pyrometer Under Test

Pyrometer Number: ^PY09  
Labworks Sample # AA71435  
Calibration Date: 10/03/2003

### Calibrator Information

Calibrator Type/Manufacturer: Hart Scientific  
Calibrator Serial Number: AOA024  
Date of Last Calibration: 02/10/2003  
Calibration Personnel (Typed and Signature): Robert Barthelette Jr.

### Calibration Data

Calibration Point	Reference Temperature	Pyrometer Indication	Difference
1	400	400	0
2	212	211	1
3	32	32	0

Reference temperatures must encompass the expected range of measurement. These three points should be ~ 32 degrees, ~212 degrees, and ~ 400 degrees Fahrenheit.

Difference is calculated as follows:

$$(\text{reference temperature}) - (\text{pyrometer indication})$$

### Quality Control Data

Calibration Point	Difference
1	Pass
2	Pass
3	Pass

This data has been reviewed and is certified as meeting all project quality objectives.

Reviewer: \_\_\_\_\_

Date: \_\_\_\_\_



PITOT TUBE CALIBRATION DATA SHEET

Pitot Tube ID # pt10

Calibration Date: 10/08/2003

Openings Damaged?  Y  N

Operating Quarter: 4

Repaired?  Y  N  N/A

Alpha and Beta Angle Determinations

$\alpha 1$  0.4 degrees *Pass*

$\alpha 2$  0.7 degrees *Pass*

$\beta 1$  0.2 degrees *Pass*

$\beta 2$  0.4 degrees *Pass*

Gamma, Theta, A, Z, and W Determinations

$\psi$  0.2 degrees

A 2.44 cm

Z 0.009 cm *Pass*

$\theta$  0.4 degrees

W 0.017 cm *Pass*

Acceptable Limits

Dt 0.48 < Dt > 0.95 cm

$\alpha < 10$  degrees

( $\alpha 1$  measured across top impact openings)

( $\alpha 2$  measured across bottom impact openings)

$\beta 1 < 5$  degrees (alongside top impact openings)

$\beta 2 < 5$  degrees (alongside bottom impact openings)

Z < 0.32 cm (Asin $\psi$ )

W < 0.08 cm (Asino)

A distance between tips

$\theta$  angle of plane on side of pitots

$\psi$  angle between tips

NOTES

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

Comments: REMOVABLE

Calibrated by: \_\_\_\_\_

Printed Name: JORGE A VARINO

Date: 10/08/2003

Quality Assurance Review / Approval: \_\_\_\_\_

Date: \_\_\_\_\_

**BAROMETER CALIBRATION DATA FORM**

CALIBRATOR: RAB

DATE: 12/05/2003  
INST. NO: ^BR02  
SAMPLE NO. AA72327

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

TIME OF READING	BAROMETER READING (HG <sup>2</sup> )	REFERENCE STANDARD READING (HG <sup>2</sup> )	DIFFERENCE (HG <sup>2</sup> )
8:00	30.00	29.99	0.01
9:55	30.05	30.05	0.00
12:33	30.00	30.03	-0.03
0:00		0.00	0.00

**\*NOTE: BAROMETRIC READINGS MUST AGREE WITHIN 0.1 INCHES HG OF READINGS OBTAINED FROM THE REFERENCE STANDARD, THE TAMPA INTERNATIONAL AIRPORT TO BE DEEMED ACCEPTABLE.**

REVIEWED BY:  
DATE:

CARBON MONOXIDE / NITROGEN OXIDES TEST INFORMATION

SUMMARIZED RUN DATA AND QUALITY ASSURANCE/CONTROL

Bayside 2D - Report				
RUN 1				
12/17/2003				
9:32				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3.09	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.061	0	0.039	0.037
Low Level Observed	-	-	-	4.468
Mid Level Observed	13.674	10.011	3.008	8.241
High Level Observed	20.877	17.971	6.304	12.489
% Difference from Zero to Target	0.24	0	0.39	0.25
% Difference from Low to Target	0	0	0	-0.01
% Difference from Mid to Target	0.1	0	-0.82	-0.13
% Difference from High to Target	-0.09	-0.14	0.14	-0.74
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.061	0	0.039	0.037
Actual Span From Linearity	13.674	10.011	3.008	4.468
Initial Readings				
Zero	0.122	0	0.02	0
Span	13.613	10.011	3.008	4.468
Final Readings				
Zero	0.061	0	0.024	0
Span	13.613	10.06	3.008	4.468
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0.24	0	-0.19	-0.25
Span Bias	-0.24	0	0	0
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	-0.15	-0.25
Span Bias	-0.24	0.25	0	0
Calculated Drift				
Zero Drift (Run-Run)	-0.24	0	0.04	0
Span Drift	0	0.25	0	0
Run Results				
Raw Results	13.8	4.16	0.86	3.74
Corrected Results (ppmv)	13.84	4.15	0.87	3.74

Bayside 2D - Report				
RUN 2				
12/17/2003				
10:46				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3.09	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.061	0	0.039	0.037
Low Level Observed	-	-	-	4.468
Mid Level Observed	13.674	10.011	3.008	8.241
High Level Observed	20.877	17.971	6.304	12.489
% Difference from Zero to Target	0.24	0	0.39	0.25
% Difference from Low to Target	0	0	0	-0.01
% Difference from Mid to Target	0.1	0	-0.82	-0.13
% Difference from High to Target	-0.09	-0.14	0.14	-0.74
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.061	0	0.039	0.037
Actual Span From Linearity	13.674	10.011	3.008	4.468
Initial Readings				
Zero	0.061	0	0.024	0
Span	13.613	10.06	3.008	4.468
Final Readings				
Zero	0.061	0	0.015	0.037
Span	13.613	10.06	3.008	4.468
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	-0.15	-0.25
Span Bias	-0.24	0.25	0	0
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	-0.24	0
Span Bias	-0.24	0.25	0	0
Calculated Drift				
Zero Drift (Run-Run)	0	0	-0.09	0.25
Span Drift	0	0	0	0
Run Results				
Raw Results	13.79	4.16	0.81	3.81
Corrected Results (ppmv)	13.83	4.14	0.82	3.81

Bayside 2D - Report				
RUN 3				
12/17/2003				
11:23				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3.09	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.061	0	0.039	0.037
Low Level Observed	-	-	-	4.468
Mid Level Observed	13.674	10.011	3.008	8.241
High Level Observed	20.877	17.971	6.304	12.489
% Difference from Zero to Target	0.24	0	0.39	0.25
% Difference from Low to Target	0	0	0	-0.01
% Difference from Mid to Target	0.1	0	-0.82	-0.13
% Difference from High to Target	-0.09	-0.14	0.14	-0.74
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.061	0	0.039	0.037
Actual Span From Linearity	13.674	10.011	3.008	4.468
Initial Readings				
Zero	0.061	0	0.015	0.037
Span	13.613	10.06	3.008	4.468
Final Readings				
Zero	0.061	0.049	0.005	0.037
Span	13.613	10.109	2.994	4.468
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0	0	-0.24	0
Span Bias	-0.24	0.25	0	0
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0.24	-0.34	0
Span Bias	-0.24	0.49	-0.14	0
Calculated Drift				
Zero Drift (Run-Run)	0	0.24	-0.1	0
Span Drift	0	0.24	-0.14	0
Run Results				
Raw Results	13.81	4.16	0.85	3.73
Corrected Results (ppmv)	13.85	4.11	0.87	3.73



Bayside 2D - Report				
RUN 4				
12/17/2003				
11:55				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3.09	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.061	0	0.039	0.037
Low Level Observed	-	-	-	4.468
Mid Level Observed	13.674	10.011	3.008	8.241
High Level Observed	20.877	17.971	6.304	12.489
% Difference from Zero to Target	0.24	0	0.39	0.25
% Difference from Low to Target	0	0	0	-0.01
% Difference from Mid to Target	0.1	0	-0.82	-0.13
% Difference from High to Target	-0.09	-0.14	0.14	-0.74
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.061	0	0.039	0.037
Actual Span From Linearity	13.674	10.011	3.008	4.468
Initial Readings				
Zero	0.061	0.049	0.005	0.037
Span	13.613	10.109	2.994	4.468
Final Readings				
Zero	0.061	0.049	0.005	0
Span	13.613	10.06	3.008	4.468
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0	0.24	-0.34	0
Span Bias	-0.24	0.49	-0.14	0
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0.24	-0.34	-0.25
Span Bias	-0.24	0.25	0	0
Calculated Drift				
Zero Drift (Run-Run)	0	0	0	-0.25
Span Drift	0	-0.24	0.14	0
Run Results				
Raw Results	13.81	4.15	0.81	3.76
Corrected Results (ppmv)	13.85	4.09	0.83	3.76

Bayside 2D - Report				
RUN 5				
12/17/2003				
12:31				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3.09	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.061	0	0.039	0.037
Low Level Observed	-	-	-	4.468
Mid Level Observed	13.674	10.011	3.008	8.241
High Level Observed	20.877	17.971	6.304	12.489
% Difference from Zero to Target	0.24	0	0.39	0.25
% Difference from Low to Target	0	0	0	-0.01
% Difference from Mid to Target	0.1	0	-0.82	-0.13
% Difference from High to Target	-0.09	-0.14	0.14	-0.74
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.061	0	0.039	0.037
Actual Span From Linearity	13.674	10.011	3.008	4.468
Initial Readings				
Zero	0.061	0.049	0.005	0
Span	13.613	10.06	3.008	4.468
Final Readings				
Zero	0.061	0.049	-0.005	0.037
Span	13.613	10.109	3.003	4.505
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0	0.24	-0.34	-0.25
Span Bias	-0.24	0.25	0	0
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0.24	-0.44	0
Span Bias	-0.24	0.49	-0.05	0.25
Calculated Drift				
Zero Drift (Run-Run)	0	0	-0.1	0.25
Span Drift	0	0.24	-0.05	0.25
Run Results				
Raw Results	13.8	4.15	0.93	3.78
Corrected Results (ppmv)	13.84	4.09	0.96	3.76

Bayside 2D - Report				
RUN 6				
12/17/2003				
13:05				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3.09	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.061	0	0.039	0.037
Low Level Observed	-	-	-	4.468
Mid Level Observed	13.674	10.011	3.008	8.241
High Level Observed	20.877	17.971	6.304	12.489
% Difference from Zero to Target	0.24	0	0.39	0.25
% Difference from Low to Target	0	0	0	-0.01
% Difference from Mid to Target	0.1	0	-0.82	-0.13
% Difference from High to Target	-0.09	-0.14	0.14	-0.74
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.061	0	0.039	0.037
Actual Span From Linearity	13.674	10.011	3.008	4.468
Initial Readings				
Zero	0.061	0.049	-0.005	0.037
Span	13.613	10.109	3.003	4.505
Final Readings				
Zero	0.061	0.049	0.02	0.037
Span	13.552	10.06	3.077	4.432
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0	0.24	-0.44	0
Span Bias	-0.24	0.49	-0.05	0.25
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0.24	-0.19	0
Span Bias	-0.49	0.25	0.69	-0.24
Calculated Drift				
Zero Drift (Run-Run)	0	0	0.25	0
Span Drift	-0.24	-0.24	0.74	-0.49
Run Results				
Raw Results	13.8	4.15	0.98	3.81
Corrected Results (ppmv)	13.87	4.09	0.99	3.81

Bayside 2D - Report				
RUN 7				
12/17/2003				
13:42				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3.09	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.061	0	0.039	0.037
Low Level Observed	-	-	-	4.468
Mid Level Observed	13.674	10.011	3.008	8.241
High Level Observed	20.877	17.971	6.304	12.489
% Difference from Zero to Target	0.24	0	0.39	0.25
% Difference from Low to Target	0	0	0	-0.01
% Difference from Mid to Target	0.1	0	-0.82	-0.13
% Difference from High to Target	-0.09	-0.14	0.14	-0.74
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.061	0	0.039	0.037
Actual Span From Linearity	13.674	10.011	3.008	4.468
Initial Readings				
Zero	0.061	0.049	0.02	0.037
Span	13.552	10.06	3.077	4.432
Final Readings				
Zero	0.061	0.049	0.039	0.037
Span	13.613	10.06	3.042	4.432
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0	0.24	-0.19	0
Span Bias	-0.49	0.25	0.69	-0.24
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0.24	0	0
Span Bias	-0.24	0.25	0.34	-0.24
Calculated Drift				
Zero Drift (Run-Run)	0	0	0.19	0
Span Drift	0.24	0	-0.35	0
Run Results				
Raw Results	13.82	4.15	0.94	3.84
Corrected Results (ppmv)	13.89	4.1	0.93	3.87

Bayside 2D - Report				
RUN 8				
12/17/2003				
14:15				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3.09	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.061	0	0.039	0.037
Low Level Observed	-	-	-	4.468
Mid Level Observed	13.674	10.011	3.008	8.241
High Level Observed	20.877	17.971	6.304	12.489
% Difference from Zero to Target	0.24	0	0.39	0.25
% Difference from Low to Target	0	0	0	-0.01
% Difference from Mid to Target	0.1	0	-0.82	-0.13
% Difference from High to Target	-0.09	-0.14	0.14	-0.74
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.061	0	0.039	0.037
Actual Span From Linearity	13.674	10.011	3.008	4.468
Initial Readings				
Zero	0.061	0.049	0.039	0.037
Span	13.613	10.06	3.042	4.432
Final Readings				
Zero	0.061	0.049	0.034	0.037
Span	13.552	10.06	3.037	4.432
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0	0.24	0	0
Span Bias	-0.24	0.25	0.34	-0.24
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0.24	-0.05	0
Span Bias	-0.49	0.25	0.29	-0.24
Calculated Drift				
Zero Drift (Run-Run)	0	0	-0.05	0
Span Drift	-0.24	0	-0.05	0
Run Results				
Raw Results	13.82	4.15	0.94	3.87
Corrected Results (ppmv)	13.89	4.1	0.93	3.9

Bayside 2D - Report				
RUN 9				
12/17/2003				
14:48				
Linearity Check - Calibration Error	O2	CO2	CO	NOX
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Low Level Certified Value (PPM or %)				4.47
Mid Level Certified Value (PPM or %)	13.65	10.01	3.09	8.26
High Level Certified Value (PPM or %)	20.9	18	6.29	12.6
Zero Level Observed	0.061	0	0.039	0.037
Low Level Observed	-	-	-	4.468
Mid Level Observed	13.674	10.011	3.008	8.241
High Level Observed	20.877	17.971	6.304	12.489
% Difference from Zero to Target	0.24	0	0.39	0.25
% Difference from Low to Target	0	0	0	-0.01
% Difference from Mid to Target	0.1	0	-0.82	-0.13
% Difference from High to Target	-0.09	-0.14	0.14	-0.74
Analyzer Range	25	20	10	15
Units	%	%	PPM	PPM
Actual Zero From Linearity	0.061	0	0.039	0.037
Actual Span From Linearity	13.674	10.011	3.008	4.468
Initial Readings				
Zero	0.061	0.049	0.034	0.037
Span	13.552	10.06	3.037	4.432
Final Readings				
Zero	0.061	0.049	0.01	0.073
Span	13.613	10.06	3.037	4.395
Initial Sampling System Bias				
Zero Bias (Run-System Cal)	0	0.24	-0.05	0
Span Bias	-0.49	0.25	0.29	-0.24
Final Sampling System Bias				
Zero Bias (Run-System Cal)	0	0.24	-0.29	0.24
Span Bias	-0.24	0.25	0.29	-0.49
Calculated Drift				
Zero Drift (Run-Run)	0	0	-0.24	0.24
Span Drift	0.24	0	0	-0.25
Run Results				
Raw Results	13.81	4.15	0.96	3.91
Corrected Results (ppmv)	13.88	4.1	0.96	3.95

RUN LOG

Date	Time	O2 (%)	CO2 (%)	CO (PPM)	NOX (PPM)	Status
12/17/2003	7:40:35 AM	1.65	1.32	0.13	0.99	
12/17/2003	7:40:36 AM	1.59	1.27	0.13	0.95	
12/17/2003	7:40:52 AM	1.59	1.27	0.13	0.95	
12/17/2003	7:41:23 AM	1.65	1.32	0.13	0.99	
12/17/2003	7:41:52 AM	1.59	1.27	0.13	0.95	
12/17/2003	7:42:22 AM	1.59	1.27	0.13	0.95	
12/17/2003	7:42:53 AM	1.65	1.32	0.13	0.99	
12/17/2003	7:43:22 AM	1.59	1.27	0.13	0.95	
12/17/2003	7:43:53 AM	20.88	0.05	0.89	0	Linearity Check
12/17/2003	7:44:22 AM	20.82	0	0.88	0	Linearity Check
12/17/2003	7:44:53 AM	12.82	-0.05	0.84	0	Linearity Check
12/17/2003	7:45:22 AM	0.92	0	0.48	0	Linearity Check
12/17/2003	7:45:53 AM	0.18	-0.05	0.46	0	Linearity Check
12/17/2003	7:46:22 AM	0.12	0	0	0	Linearity Check
12/17/2003	7:46:53 AM	0.06	0	0.04	0	Linearity Check
12/17/2003	7:47:22 AM	0.06	0	-0.01	0	Linearity Check
12/17/2003	7:47:53 AM	0	0.93	0.24	0.04	Linearity Check
12/17/2003	7:48:22 AM	0.12	3.76	0.29	3.48	Linearity Check
12/17/2003	7:48:53 AM	0.06	0.15	0.13	11.21	Linearity Check
12/17/2003	7:49:23 AM	0	0.05	0.21	11.98	Linearity Check
12/17/2003	7:49:52 AM	0	0.1	0.15	12.01	Linearity Check
12/17/2003	7:50:23 AM	0	0.05	0.15	12.09	Linearity Check
12/17/2003	7:50:52 AM	0	0.05	0.23	12.12	Linearity Check
12/17/2003	7:51:23 AM	0	0.05	0.15	12.16	Linearity Check
12/17/2003	7:51:52 AM	0	0.05	0.24	12.09	Linearity Check
12/17/2003	7:52:23 AM	0	0.05	0.29	12.12	Linearity Check
12/17/2003	7:52:52 AM	0	0.05	0.12	12.31	Linearity Check
12/17/2003	7:53:23 AM	0	0	0.04	12.49	Linearity Check
12/17/2003	7:53:52 AM	0.67	0	0.02	3.33	Linearity Check
12/17/2003	7:54:23 AM	0.06	0	0.17	8.35	Linearity Check
12/17/2003	7:54:52 AM	0	0	0.02	8.2	Linearity Check
12/17/2003	7:55:23 AM	0	0	-0.03	2.2	Linearity Check
12/17/2003	7:55:53 AM	0.06	0	-0.01	4.36	Linearity Check
12/17/2003	7:56:22 AM	0	0	-0.07	4.47	Linearity Check
12/17/2003	7:56:53 AM	-0.06	0	0.03	0.22	Linearity Check
12/17/2003	7:57:22 AM	0	0	0.2	0.18	Linearity Check
12/17/2003	7:57:53 AM	12.09	0	0.36	0.04	Linearity Check
12/17/2003	7:58:22 AM	13.49	0	0.18	0.04	Linearity Check
12/17/2003	7:58:53 AM	13.55	0	0.21	0.04	Linearity Check
12/17/2003	7:59:22 AM	13.61	15.38	0.15	0	Linearity Check
12/17/2003	7:59:53 AM	7.45	15.58	-0.04	0	Linearity Check
12/17/2003	8:00:22 AM	6.04	17.43	-0.35	0	Linearity Check



12/17/2003	8:00:53 AM	6.23	17.53	-0.45	0	Linearity Check
12/17/2003	8:01:22 AM	6.23	17.53	-0.45	0.04	Linearity Check
12/17/2003	8:01:53 AM	6.23	17.92	-0.46	0	Linearity Check
12/17/2003	8:02:23 AM	6.23	17.97	-0.45	0.04	Linearity Check
12/17/2003	8:02:52 AM	6.23	17.97	-0.45	0	Linearity Check
12/17/2003	8:03:23 AM	6.23	17.97	-0.45	0	Linearity Check
12/17/2003	8:03:52 AM	6.23	17.97	-0.45	0	Linearity Check
12/17/2003	8:04:23 AM	6.23	10.11	-0.45	0	Linearity Check
12/17/2003	8:04:52 AM	4.33	10.01	-0.35	0.4	Linearity Check
12/17/2003	8:05:23 AM	0.24	0.05	0.61	0.29	Linearity Check
12/17/2003	8:05:52 AM	0	0	4.7	0	Linearity Check
12/17/2003	8:06:23 AM	-0.06	0	7.54	0	Linearity Check
12/17/2003	8:06:52 AM	-0.06	0	7.67	0	Linearity Check
12/17/2003	8:07:23 AM	-0.06	0.05	7.68	0.04	Linearity Check
12/17/2003	8:07:52 AM	0	0.05	7.72	0	Linearity Check
12/17/2003	8:08:23 AM	-0.06	0	6.23	0.04	Linearity Check
12/17/2003	8:08:52 AM	-0.06	0	6.06	0.04	Linearity Check
12/17/2003	8:09:23 AM	-0.06	0	6.39	0	Linearity Check
12/17/2003	8:09:52 AM	-0.06	0	6.27	0	Linearity Check
12/17/2003	8:10:23 AM	-0.06	0	6.34	0	Linearity Check
12/17/2003	8:10:52 AM	0.67	0.05	4.34	0.07	Linearity Check
12/17/2003	8:11:23 AM	1.77	0.05	2.81	0	Linearity Check
12/17/2003	8:11:52 AM	0.06	0	3.04	0.04	Linearity Check
12/17/2003	8:12:23 AM	0.85	0.05	2.81	0.04	Linearity Check
12/17/2003	8:12:53 AM	17.09	0	1.17	0.04	Linearity Check
12/17/2003	8:13:22 AM	20.69	0	0.46	0.04	Linearity Check
12/17/2003	8:13:53 AM	20.94	0.05	0.43	0.04	Linearity Check
12/17/2003	8:14:22 AM	20.94	0	0.46	0.04	Linearity Check
12/17/2003	8:14:53 AM	21	0.05	0.43	0.04	Linearity Check
12/17/2003	8:15:22 AM	21	0.05	0.48	0.04	Linearity Check
12/17/2003	8:15:53 AM	21	0.05	0.36	0.04	Linearity Check
12/17/2003	8:16:22 AM	20.94	0.05	0.43	0.04	Linearity Check
12/17/2003	8:16:53 AM	21	0.05	0.41	0.04	Linearity Check
12/17/2003	8:17:23 AM	20.94	0	0.39	0.04	Linearity Check
12/17/2003	8:17:52 AM	20.94	0	0.39	0.04	Linearity Check
12/17/2003	8:18:23 AM	20.94	0.05	0.42	0.04	Linearity Check
12/17/2003	8:18:52 AM	21	0	0.42	0.04	Linearity Check
12/17/2003	8:19:23 AM	21	0.05	0.46	0.04	Linearity Check
12/17/2003	8:19:52 AM	21	0.05	0.45	0	Linearity Check
12/17/2003	8:20:24 AM	20.94	0.05	0.41	0.04	Linearity Check
12/17/2003	8:20:54 AM	20.94	0.05	0.41	0.04	Linearity Check
12/17/2003	8:21:24 AM	20.94	0.05	0.41	0.04	Linearity Check
12/17/2003	8:21:54 AM	20.94	0.05	0.41	0.04	Linearity Check

12/17/2003	8:22:24 AM	20.94	0.05	0.41	0.04 Linearity Check
12/17/2003	8:22:53 AM	20.94	0.05	0.41	0.04 Linearity Check
12/17/2003	8:23:23 AM	20.94	0.05	0.41	0.04 Linearity Check
12/17/2003	8:23:53 AM	20.94	0.05	0.41	0.04 Linearity Check
12/17/2003	8:24:23 AM	20.94	0.05	0.41	0.04 Linearity Check
12/17/2003	8:24:53 AM	20.94	0.05	0.41	0.04 Linearity Check
12/17/2003	8:25:23 AM	20.94	0.05	0.41	0.04 Linearity Check
12/17/2003	8:25:53 AM	21	0	0.41	3 Converter Check - 1
12/17/2003	8:26:22 AM	21.06	0.05	0.45	3.04 Converter Check - 1
12/17/2003	8:26:53 AM	21	0	0.51	3.08 Converter Check - 1
12/17/2003	8:27:22 AM	21.06	0.05	0.38	3.04 Converter Check - 1
12/17/2003	8:27:53 AM	21.06	0.05	0.4	3.08 Converter Check - 1
12/17/2003	8:28:22 AM	21.06	0.05	0.41	3.08 Converter Check - 1
12/17/2003	8:28:53 AM	21.06	0.05	0.34	3.04 Converter Check - 1
12/17/2003	8:29:22 AM	21.06	0.05	0.45	3.08 Converter Check - 1
12/17/2003	8:29:53 AM	21.06	0.05	0.36	3.08 Converter Check - 1
12/17/2003	8:30:22 AM	21.06	0.05	0.41	3.08 Converter Check - 1
12/17/2003	8:30:53 AM	21.06	0.05	0.4	3.08 Converter Check - 1
12/17/2003	8:31:22 AM	21.06	0	0.33	3.08 Converter Check - 1
12/17/2003	8:31:53 AM	21.12	0.05	0.38	3.08 Converter Check - 1
12/17/2003	8:32:22 AM	21.06	0.05	0.37	3.08 Converter Check - 1
12/17/2003	8:32:53 AM	21	0.05	0.29	3.08 Converter Check - 1
12/17/2003	8:33:22 AM	21	0	0.24	3.08 Converter Check - 1
12/17/2003	8:33:53 AM	21.06	0.05	0.33	3.11 Converter Check - 1
12/17/2003	8:34:22 AM	21.06	0.05	0.4	3.11 Converter Check - 1
12/17/2003	8:34:53 AM	21	0	0.43	3.11 Converter Check - 1
12/17/2003	8:35:22 AM	21.06	0.05	0.4	3.11 Converter Check - 1
12/17/2003	8:35:53 AM	21.06	0	0.49	3.11 Converter Check - 1
12/17/2003	8:36:22 AM	21.06	0.05	0.39	3.15 Converter Check - 1
12/17/2003	8:36:53 AM	21.06	0.05	0.53	3.11 Converter Check - 1
12/17/2003	8:37:22 AM	21	0.05	0.41	3.11 Converter Check - 1
12/17/2003	8:37:53 AM	21	0	0.43	3.11 Converter Check - 1
12/17/2003	8:38:22 AM	21	0	0.48	3.11 Converter Check - 1
12/17/2003	8:38:53 AM	21.06	0.05	0.45	3.11 Converter Check - 1
12/17/2003	8:39:22 AM	21	0	0.42	3.11 Converter Check - 1
12/17/2003	8:39:53 AM	21	0	0.45	3.11 Converter Check - 1
12/17/2003	8:40:22 AM	21	0.05	0.49	3.08 Converter Check - 1
12/17/2003	8:40:53 AM	21	0	0.48	3.08 Converter Check - 1
12/17/2003	8:41:22 AM	21	0.05	0.52	3.11 Converter Check - 1
12/17/2003	8:41:53 AM	21.06	0.05	0.48	3.15 Converter Check - 1
12/17/2003	8:42:22 AM	21.06	0.05	0.43	3.11 Converter Check - 1
12/17/2003	8:42:53 AM	21.06	0.05	0.29	3.15 Converter Check - 1
12/17/2003	8:43:22 AM	21.06	0.05	0.45	3.15 Converter Check - 1

12/17/2003	8:43:53 AM	21.06	0.05	0.37	3.15 Converter Check - 1
12/17/2003	8:44:23 AM	21	0.05	0.39	3.15 Converter Check - 1
12/17/2003	8:44:53 AM	21.06	0.05	0.42	3.11 Converter Check - 1
12/17/2003	8:45:23 AM	21	0.05	0.49	3.15 Converter Check - 1
12/17/2003	8:45:52 AM	21	0	0.45	3.11 Converter Check - 1
12/17/2003	8:46:22 AM	21.06	0.05	0.39	3.11 Converter Check - 1
12/17/2003	8:46:53 AM	21	0	0.42	3.11 Converter Check - 1
12/17/2003	8:47:22 AM	21	0.05	0.46	3.11 Converter Check - 1
12/17/2003	8:47:53 AM	21.06	0.05	0.52	3.11 Converter Check - 1
12/17/2003	8:48:23 AM	21.06	0.05	0.52	3.11 Converter Check - 1
12/17/2003	8:48:52 AM	21.06	0	0.56	3.11 Converter Check - 1
12/17/2003	8:49:22 AM	21.06	0.05	0.46	3.11 Converter Check - 1
12/17/2003	8:49:53 AM	21.06	0.05	0.45	3.11 Converter Check - 1
12/17/2003	8:50:22 AM	21.06	0	0.49	3.11 Converter Check - 1
12/17/2003	8:50:53 AM	21.06	0	0.5	3.11 Converter Check - 1
12/17/2003	8:51:22 AM	21.06	0.05	0.49	3.11 Converter Check - 1
12/17/2003	8:51:53 AM	21.06	0	0.45	3.11 Converter Check - 1
12/17/2003	8:52:22 AM	21.06	0.05	0.31	3.11 Converter Check - 1
12/17/2003	8:52:53 AM	20.33	0	0.36	3.11 Converter Check - 1
12/17/2003	8:53:23 AM	1.89	-0.05	0.17	3.11 Converter Check - 1
12/17/2003	8:53:53 AM	0.24	0	0.18	3.11 Converter Check - 1
12/17/2003	8:54:22 AM	0.18	0	0.23	3.11 Converter Check - 1
12/17/2003	8:54:53 AM	0.12	0	0.27	3.11 Converter Check - 1
12/17/2003	8:55:22 AM	0.55	0	0.25	3.15 Converter Check - 1
12/17/2003	8:55:53 AM	0.67	0	0.28	3.15
12/17/2003	8:56:22 AM	0.12	0	0.21	0.11
12/17/2003	8:56:53 AM	0.06	0	0.23	0.07
12/17/2003	8:57:23 AM	0.06	0	0.16	0.04 Initial Span - Zero
12/17/2003	8:57:52 AM	0	0	-0.02	0.04 Initial Span - Zero
12/17/2003	8:58:23 AM	0.06	0	-0.04	0 Initial Span - Zero
12/17/2003	8:58:52 AM	0.06	0	0.01	0 Initial Span - Zero
12/17/2003	8:59:23 AM	0	-0.05	0.17	0.04 Initial Span - Zero
12/17/2003	8:59:52 AM	0	0	0.16	3.22 Initial Span - Zero
12/17/2003	9:00:23 AM	0	0	-0.01	4.47 Initial Span - Span
12/17/2003	9:00:52 AM	0	0	-0.07	4.47 Initial Span - Span
12/17/2003	9:01:23 AM	-0.06	3.81	0.02	4.54 Initial Span - Span
12/17/2003	9:01:52 AM	0	9.82	0.08	1.03 Initial Span - Span
12/17/2003	9:02:23 AM	-0.06	10.01	-0.03	0.33 Initial Span - Span
12/17/2003	9:02:52 AM	0	10.06	-0.09	0.29 Initial Span - Span
12/17/2003	9:03:23 AM	-0.06	0.1	0.87	0.07 Initial Span - Span
12/17/2003	9:03:52 AM	-0.06	0	2.75	0.04 Initial Span - Span
12/17/2003	9:04:23 AM	-0.06	0	3.34	0.07 Initial Span - Span
12/17/2003	9:04:52 AM	-0.06	0	3.11	0.07 Initial Span - Span

12/17/2003	9:05:23 AM	0	0	1.39	0.04 Initial Span - Span
12/17/2003	9:05:53 AM	-0.06	0	0.29	0.04 Initial Span - Span
12/17/2003	9:06:23 AM	-0.06	0	0.15	0.04 Initial Span - Span
12/17/2003	9:06:53 AM	-0.06	0	0.05	0.04 Initial Span - Span
12/17/2003	9:07:22 AM	-0.06	0	0.18	0.04 Initial Span - Span
12/17/2003	9:07:53 AM	-0.06	0	1.73	0.04 Initial Span - Span
12/17/2003	9:08:22 AM	-0.06	0	2.85	0.04 Initial Span - Span
12/17/2003	9:08:53 AM	-0.06	0	3.06	0.04 Initial Span - Span
12/17/2003	9:09:22 AM	-0.06	0	3.07	0.04 Initial Span - Span
12/17/2003	9:09:53 AM	-0.06	0	2.89	0.04 Initial Span - Span
12/17/2003	9:10:22 AM	7.87	0	1.5	0 Initial Span - Span
12/17/2003	9:10:53 AM	13.12	0	0.16	0.04 Initial Span - Span
12/17/2003	9:11:22 AM	13.55	0	-0.03	0.04 Initial Span - Span
12/17/2003	9:11:53 AM	13.55	0	0.05	0.04 Initial Span - Span
12/17/2003	9:12:22 AM	13.61	0	-0.01	0 Initial Span - Span
12/17/2003	9:12:53 AM	15.44	0.05	0.05	0.04 Initial Span - Span
12/17/2003	9:13:22 AM	20.33	0	0.15	0.04 Initial Span - Span
12/17/2003	9:13:53 AM	20.88	0	0.16	0.07 Initial Span - Span
12/17/2003	9:14:23 AM	20.88	0	0.04	0.04 Initial Span - Span
12/17/2003	9:14:52 AM	20.94	0	0.19	0.04 Initial Span - Span
12/17/2003	9:15:23 AM	21	0.05	0.16	0.04 Initial Span - Span
12/17/2003	9:15:52 AM	20.94	0.05	0.04	0.04 Initial Span - Span
12/17/2003	9:16:23 AM	21	0.05	0.01	0.04 Initial Span - Span
12/17/2003	9:16:52 AM	21	0.05	0.1	0 Initial Span - Span
12/17/2003	9:17:23 AM	21	0.05	0.04	0.04 Initial Span - Span
12/17/2003	9:17:52 AM	21	0.05	0.12	0 Initial Span - Span
12/17/2003	9:18:23 AM	21	4.05	0.18	3.04 Initial Span - Span
12/17/2003	9:18:52 AM	16.05	4.15	0.61	3.92 Initial Span - Span
12/17/2003	9:19:23 AM	13.92	4.1	0.89	3.96 Initial Span - Span
12/17/2003	9:19:52 AM	13.86	4.15	0.91	3.99 Initial Span - Span
12/17/2003	9:20:23 AM	13.8	0.05	0.86	3.81 Initial Span - Span
12/17/2003	9:20:52 AM	3.6	0.05	0.17	4.58 Initial Span - Span
12/17/2003	9:21:23 AM	0.37	0	0	4.54 Initial Span - Span
12/17/2003	9:21:52 AM	0.12	0	-0.13	4.47 Initial Span - Span
12/17/2003	9:22:23 AM	0.06	0	-0.17	4.47 Initial Span - Span
12/17/2003	9:22:52 AM	0.06	4.1	0.03	3.99 Initial Span - Span
12/17/2003	9:23:23 AM	11.54	4.1	0.8	3.96 Initial Span - Span
12/17/2003	9:23:53 AM	13.55	4.1	0.93	3.96 Initial Span - Span
12/17/2003	9:24:23 AM	13.73	4.15	0.87	3.96 Initial Span - Span
12/17/2003	9:24:53 AM	13.73	4.15	0.9	3.92 Initial Span - Span
12/17/2003	9:25:22 AM	13.73	4.15	0.91	3.96 Initial Span - Span
12/17/2003	9:25:53 AM	13.73	4.15	0.86	3.92 Initial Span - Span
12/17/2003	9:26:22 AM	13.73	4.15	0.76	3.96 Initial Span - Span

12/17/2003	9:26:53 AM	13.73	4.15	0.73	3.88 Initial Span - Span
12/17/2003	9:27:22 AM	13.73	4.2	0.74	3.92 Initial Span - Span
12/17/2003	9:27:53 AM	13.73	4.15	0.87	3.92 Initial Span - Span
12/17/2003	9:28:22 AM	13.8	4.15	0.83	3.81 Initial Span - Span
12/17/2003	9:28:53 AM	13.8	0.24	0.7	4.03 Initial Span - Span
12/17/2003	9:29:22 AM	5.01	0.05	0.44	0.04 Initial Span - Span
12/17/2003	9:29:53 AM	0.43	0.05	0.28	0 Initial Span - Span
12/17/2003	9:30:22 AM	0.06	4.05	0.21	3.11 Initial Span - Span
12/17/2003	9:30:52 AM	9.95	4.1	0.7	3.74 Initial Span - Span
12/17/2003	9:31:23 AM	13.49	4.2	0.85	3.81 Initial Span - Span
12/17/2003	9:31:52 AM	13.67	4.15	0.85	3.81 Initial Span - Span
12/17/2003	9:32:23 AM	13.73	4.15	0.88	3.85 Initial Span - Span
12/17/2003	9:32:53 AM	13.73	4.15	0.88	3.85 Initial Span - Span
12/17/2003	9:33:23 AM	13.73	4.15	0.88	3.85 Initial Span - Span
12/17/2003	9:33:52 AM	13.73	4.15	0.83	3.81 Strat Test (Run 1) - 1
12/17/2003	9:34:23 AM	13.8	4.2	0.87	3.85 Strat Test (Run 1) - 1
12/17/2003	9:34:52 AM	13.8	4.2	0.91	3.88 Strat Test (Run 1) - 1
12/17/2003	9:35:23 AM	13.73	4.15	0.91	3.88 Strat Test (Run 1) - 1
12/17/2003	9:35:52 AM	13.73	4.15	0.92	3.85 Strat Test (Run 1) - 1
12/17/2003	9:36:23 AM	13.73	4.2	0.97	3.88 Strat Test (Run 1) - 1
12/17/2003	9:36:53 AM	13.8	4.2	0.92	3.85 Strat Test (Run 1) - 1
12/17/2003	9:37:23 AM	13.86	4.2	0.84	3.85 Strat Test (Run 1) - 1
12/17/2003	9:37:53 AM	13.8	4.2	0.94	3.81 Strat Test (Run 1) - 1
12/17/2003	9:38:22 AM	13.8	4.15	0.93	3.81 Strat Test (Run 1) - 1
12/17/2003	9:38:53 AM	13.8	4.2	0.73	3.81 Strat Test (Run 1) - 1
12/17/2003	9:39:22 AM	13.8	4.2	0.8	3.77 Strat Test (Run 1) - 1
12/17/2003	9:39:53 AM	13.8	4.15	0.97	3.77 Run Paused
12/17/2003	9:40:22 AM	13.86	4.15	0.85	3.81 Run Paused
12/17/2003	9:40:53 AM	13.8	0.44	0.93	3.37 Run Paused
12/17/2003	9:41:22 AM	5.86	0.05	0.46	4.32 Run Paused
12/17/2003	9:41:52 AM	0.55	0	0	4.43 Run Paused
12/17/2003	9:42:22 AM	0.12	0	-0.01	4.4 Run Paused
12/17/2003	9:42:53 AM	0.06	0	-0.12	4.43 Run Paused
12/17/2003	9:43:23 AM	0.06	0.05	-0.21	4.43 Run Paused
12/17/2003	9:43:52 AM	5.98	0.05	-0.04	0.07 Run Paused
12/17/2003	9:44:23 AM	17.52	4.1	0.41	4.03 Run Paused
12/17/2003	9:44:53 AM	14.1	4.15	0.97	4.03 Run Paused
12/17/2003	9:45:23 AM	13.8	4.15	0.99	4.1 Run Paused
12/17/2003	9:45:53 AM	13.73	3.03	0.77	4.03 Run Paused
12/17/2003	9:46:23 AM	8.3	0	0.62	0.07 Run Paused
12/17/2003	9:46:52 AM	0.73	4.1	0.35	3.81 Run Paused
12/17/2003	9:47:23 AM	11.48	4.15	0.89	3.96 Run Paused
12/17/2003	9:47:53 AM	13.61	4.2	0.96	3.99 Run Paused

12/17/2003	9:48:22 AM	13.73	4.15	0.88	3.92 Run Paused
12/17/2003	9:48:53 AM	13.73	4.15	0.71	3.96 Run Paused
12/17/2003	9:49:22 AM	13.73	4.15	0.71	3.96 Run Paused
12/17/2003	9:49:53 AM	13.73	4.15	0.95	3.96 Run Paused
12/17/2003	9:50:22 AM	13.73	4.15	0.88	3.92 Strat Test (Run 1) - 1
12/17/2003	9:50:53 AM	13.73	4.15	0.87	3.92 Strat Test (Run 1) - 1
12/17/2003	9:51:22 AM	13.8	4.2	0.99	3.92 Strat Test (Run 1) - 1
12/17/2003	9:51:53 AM	13.8	4.15	1.06	3.88 Strat Test (Run 1) - 1
12/17/2003	9:52:22 AM	13.8	4.15	0.92	3.85 Strat Test (Run 1) - 1
12/17/2003	9:52:53 AM	13.8	4.15	1.18	3.88 Strat Test (Run 1) - 1
12/17/2003	9:53:22 AM	13.8	4.15	1.08	3.85 Strat Test (Run 1) - 1
12/17/2003	9:53:53 AM	13.8	4.15	0.77	3.85 Strat Test (Run 1) - 1
12/17/2003	9:54:22 AM	13.8	4.15	0.84	3.96 Strat Test (Run 1) - 1
12/17/2003	9:54:53 AM	13.8	4.15	0.86	3.92 Strat Test (Run 1) - 1
12/17/2003	9:55:22 AM	13.8	4.2	0.79	3.92 Strat Test (Run 1) - 1
12/17/2003	9:55:53 AM	13.86	4.2	0.9	3.92 Strat Test (Run 1) - 1
12/17/2003	9:56:22 AM	13.8	4.15	0.79	3.88 Run Paused
12/17/2003	9:56:53 AM	13.8	4.15	0.78	3.88 Run Paused
12/17/2003	9:57:22 AM	13.86	0.1	0.68	0.04 Run Paused
12/17/2003	9:57:53 AM	19.9	0.05	0.36	-0.04 Run Paused
12/17/2003	9:58:22 AM	20.94	0.1	0.25	-0.04 Run Paused
12/17/2003	9:58:53 AM	20.39	4.15	0.65	3.48 Run Paused
12/17/2003	9:59:22 AM	14.65	4.15	0.99	3.63 Run Paused
12/17/2003	9:59:53 AM	13.86	4.15	0.96	3.63 Run Paused
12/17/2003	10:00:23 AM	13.8	4.15	0.76	3.63 Run Paused
12/17/2003	10:00:53 AM	13.8	4.15	0.83	3.66 Run Paused
12/17/2003	10:01:22 AM	13.8	4.15	0.93	3.59 Run Paused
12/17/2003	10:01:53 AM	13.8	4.15	0.76	3.63 Run Paused
12/17/2003	10:02:22 AM	13.8	4.15	0.96	3.66 Run Paused
12/17/2003	10:02:53 AM	13.8	4.15	0.78	3.63 Run Paused
12/17/2003	10:03:22 AM	13.8	4.15	0.77	3.66 Strat Test (Run 1) - 1
12/17/2003	10:03:53 AM	13.8	4.15	0.91	3.63 Strat Test (Run 1) - 1
12/17/2003	10:04:22 AM	13.8	4.15	0.86	3.63 Strat Test (Run 1) - 1
12/17/2003	10:04:53 AM	13.8	4.15	0.95	3.66 Strat Test (Run 1) - 1
12/17/2003	10:05:22 AM	13.86	4.2	0.88	3.7 Strat Test (Run 1) - 1
12/17/2003	10:05:53 AM	13.8	4.15	0.79	3.63 Strat Test (Run 1) - 1
12/17/2003	10:06:22 AM	13.8	4.15	0.85	3.66 Strat Test (Run 1) - 1
12/17/2003	10:06:53 AM	13.86	4.2	0.81	3.63 Strat Test (Run 1) - 1
12/17/2003	10:07:22 AM	13.86	4.15	0.84	3.59 Strat Test (Run 1) - 1
12/17/2003	10:07:53 AM	13.8	4.15	0.79	3.59 Strat Test (Run 1) - 1
12/17/2003	10:08:22 AM	13.8	4.15	0.83	3.52 Strat Test (Run 1) - 1
12/17/2003	10:08:53 AM	13.86	4.2	0.88	3.52 Strat Test (Run 1) - 1
12/17/2003	10:09:22 AM	13.86	4.15	0.87	3.52 Run Paused

12/17/2003	10:09:53 AM	13.8	4.15	0.76	3.55 Run Paused
12/17/2003	10:10:22 AM	13.86	1.95	0.68	3.52 Run Paused
12/17/2003	10:10:53 AM	17.4	0.05	0.37	0 Run Paused
12/17/2003	10:11:22 AM	20.75	0.1	0.28	0 Run Paused
12/17/2003	10:11:53 AM	21	0.05	0.08	-0.04 Run Paused
12/17/2003	10:12:22 AM	21	4.05	0.19	3.08 Run Paused
12/17/2003	10:12:53 AM	15.32	4.1	0.8	3.63 Run Paused
12/17/2003	10:13:22 AM	13.92	4.1	0.83	3.63 Run Paused
12/17/2003	10:13:53 AM	13.86	4.15	0.84	3.66 Run Paused
12/17/2003	10:14:22 AM	13.86	4.15	1.14	3.66 Strat Test (Run 1) - 1
12/17/2003	10:14:53 AM	13.8	4.15	0.85	3.59 Strat Test (Run 1) - 1
12/17/2003	10:15:22 AM	13.8	4.15	0.73	3.7 Strat Test (Run 1) - 1
12/17/2003	10:15:53 AM	13.86	4.15	0.79	3.66 Strat Test (Run 1) - 1
12/17/2003	10:16:22 AM	13.8	4.15	0.69	3.63 Strat Test (Run 1) - 1
12/17/2003	10:16:53 AM	13.8	4.1	0.93	3.63 Strat Test (Run 1) - 1
12/17/2003	10:17:23 AM	13.8	4.15	0.87	3.63 Strat Test (Run 1) - 1
12/17/2003	10:17:53 AM	13.8	4.15	0.81	3.55 Strat Test (Run 1) - 1
12/17/2003	10:18:23 AM	13.8	4.2	0.87	3.52 Strat Test (Run 1) - 1
12/17/2003	10:18:53 AM	13.8	4.15	0.68	3.55 Strat Test (Run 1) - 1
12/17/2003	10:19:23 AM	13.86	4.2	0.78	3.55 Strat Test (Run 1) - 1
12/17/2003	10:19:52 AM	13.86	4.2	0.73	3.55 Strat Test (Run 1) - 1
12/17/2003	10:20:23 AM	13.8	4.15	0.83	3.52
12/17/2003	10:20:52 AM	13.86	4.2	0.81	3.44
12/17/2003	10:21:23 AM	13.8	0.73	0.69	3.41
12/17/2003	10:21:52 AM	6.65	0	0.48	0
12/17/2003	10:22:23 AM	0.55	0	0.13	0 Run 1 Span - Zero
12/17/2003	10:22:52 AM	0.12	0	0.1	0 Run 1 Span - Zero
12/17/2003	10:23:23 AM	0.06	0	-0.01	-0.04 Run 1 Span - Zero
12/17/2003	10:23:52 AM	0.12	0	-0.04	0 Run 1 Span - Zero
12/17/2003	10:24:23 AM	0.06	0	-0.28	3.74 Run 1 Span - Zero
12/17/2003	10:24:52 AM	0.06	0.05	-0.35	4.43 Run 1 Span - Zero
12/17/2003	10:25:23 AM	0.06	0.05	-0.25	4.47 Run 1 Span - Zero
12/17/2003	10:25:52 AM	0	0	-0.18	4.47 Run 1 Span - Span
12/17/2003	10:26:23 AM	0.06	7.42	-0.21	4.43 Run 1 Span - Span
12/17/2003	10:26:52 AM	0	9.82	-0.22	0.88 Run 1 Span - Span
12/17/2003	10:27:23 AM	0	10.06	-0.34	0.29 Run 1 Span - Span
12/17/2003	10:27:52 AM	-0.06	10.06	-0.45	0.29 Run 1 Span - Span
12/17/2003	10:28:23 AM	-0.06	0.1	0.41	0.04 Run 1 Span - Span
12/17/2003	10:28:52 AM	0	0.05	2.31	0 Run 1 Span - Span
12/17/2003	10:29:23 AM	-0.06	0.05	2.98	-0.04 Run 1 Span - Span
12/17/2003	10:29:53 AM	0	0.05	2.93	-0.04 Run 1 Span - Span
12/17/2003	10:30:22 AM	0	0	2.52	-0.04 Run 1 Span - Span
12/17/2003	10:30:53 AM	11.42	0	0.65	-0.04 Run 1 Span - Span

12/17/2003	10:31:22 AM	13.37	0	0.09	-0.04	Run 1 Span - Span
12/17/2003	10:31:53 AM	13.49	0	0.05	-0.04	Run 1 Span - Span
12/17/2003	10:32:22 AM	13.55	0	0.05	-0.04	Run 1 Span - Span
12/17/2003	10:32:53 AM	13.55	0	0.1	-0.04	Run 1 Span - Span
12/17/2003	10:33:23 AM	13.61	4.1	0.42	3.63	Run 1 Span - Span
12/17/2003	10:33:52 AM	13.67	4.1	0.9	3.7	Run 1 Span - Span
12/17/2003	10:34:23 AM	13.73	4.15	0.88	3.74	Run 1 Span - Span
12/17/2003	10:34:53 AM	13.73	4.2	0.77	3.74	Run 1 Span - Span
12/17/2003	10:35:22 AM	13.73	4.15	0.78	3.7	Run 1 Span - Span
12/17/2003	10:35:53 AM	13.73	4.15	0.93	3.7	Run 1 Span - Span
12/17/2003	10:36:22 AM	13.73	4.15	1.07	3.74	
12/17/2003	10:36:53 AM	13.73	4.15	0.85	3.7	
12/17/2003	10:37:23 AM	13.73	4.15	0.93	3.74	
12/17/2003	10:37:52 AM	13.8	4.15	0.87	3.66	
12/17/2003	10:38:23 AM	13.73	4.15	0.74	3.74	
12/17/2003	10:38:52 AM	13.8	4.15	0.8	3.74	
12/17/2003	10:39:23 AM	13.73	4.1	0.86	3.74	
12/17/2003	10:39:52 AM	13.8	4.2	0.79	3.77	
12/17/2003	10:40:23 AM	13.8	0.1	0.93	0.26	
12/17/2003	10:40:52 AM	4.09	0.05	2.35	0	
12/17/2003	10:41:23 AM	0.31	0	3.08	-0.04	Linearity Check
12/17/2003	10:41:52 AM	0.06	2.73	3.02	0	Linearity Check
12/17/2003	10:42:23 AM	7.14	4.15	2.04	3.66	Linearity Check
12/17/2003	10:42:52 AM	13.12	0.54	1.06	3.77	Linearity Check
12/17/2003	10:43:23 AM	5.74	0.05	2.95	0	Linearity Check
12/17/2003	10:43:53 AM	0.43	0.05	5.8	0	Linearity Check
12/17/2003	10:44:23 AM	0.06	0	6.31	0	Linearity Check
12/17/2003	10:44:53 AM	0	0.24	6.27	-0.04	Linearity Check
12/17/2003	10:45:22 AM	4.64	4.1	4.29	3.66	Linearity Check
12/17/2003	10:45:53 AM	12.94	4.15	1.37	3.74	Linearity Check
12/17/2003	10:46:23 AM	13.67	4.15	0.84	3.81	
12/17/2003	10:46:53 AM	13.73	4.15	0.88	3.74	
12/17/2003	10:47:23 AM	13.73	4.15	0.88	3.81	Run 2 - 1
12/17/2003	10:47:53 AM	13.8	4.15	0.8	3.74	Run 2 - 1
12/17/2003	10:48:22 AM	13.8	4.15	0.76	3.74	Run 2 - 1
12/17/2003	10:48:53 AM	13.8	4.15	0.85	3.77	Run 2 - 1
12/17/2003	10:49:22 AM	13.73	4.15	0.72	3.81	Run 2 - 1
12/17/2003	10:49:53 AM	13.73	4.15	0.8	3.81	Run 2 - 1
12/17/2003	10:50:23 AM	13.8	4.2	0.86	3.85	Run 2 - 1
12/17/2003	10:50:52 AM	13.8	4.15	0.69	3.85	Run 2 - 1
12/17/2003	10:51:23 AM	13.73	4.15	0.72	3.81	Run 2 - 1
12/17/2003	10:51:52 AM	13.8	4.15	0.83	3.85	Run 2 - 1
12/17/2003	10:52:23 AM	13.8	4.15	0.81	3.85	Run 2 - 1



12/17/2003	10:52:52 AM	13.73	4.15	0.91	3.81 Run 2 - 1
12/17/2003	10:53:23 AM	13.8	4.15	0.79	3.77 Run 2 - 1
12/17/2003	10:53:53 AM	13.8	4.15	0.73	3.81 Run 2 - 1
12/17/2003	10:54:22 AM	13.8	4.15	0.68	3.85 Run 2 - 1
12/17/2003	10:54:53 AM	13.8	4.15	0.83	3.88 Run 2 - 1
12/17/2003	10:55:22 AM	13.73	4.15	0.84	3.85 Run 2 - 1
12/17/2003	10:55:52 AM	13.8	4.15	0.89	3.81 Run 2 - 1
12/17/2003	10:56:23 AM	13.8	4.15	0.89	3.85 Run 2 - 1
12/17/2003	10:56:53 AM	13.8	4.15	0.8	3.77 Run 2 - 1
12/17/2003	10:57:23 AM	13.8	4.15	0.88	3.81 Run 2 - 1
12/17/2003	10:57:52 AM	13.8	4.15	0.71	3.77 Run 2 - 1
12/17/2003	10:58:23 AM	13.8	4.15	0.75	3.81 Run 2 - 1
12/17/2003	10:58:52 AM	13.8	4.15	0.68	3.81 Run 2 - 1
12/17/2003	10:59:23 AM	13.8	4.15	0.91	3.77 Run 2 - 1
12/17/2003	10:59:53 AM	13.86	4.2	0.83	3.85 Run 2 - 1
12/17/2003	11:00:22 AM	13.8	4.15	0.81	3.88 Run 2 - 1
12/17/2003	11:00:53 AM	13.8	4.2	0.82	3.85 Run 2 - 1
12/17/2003	11:01:22 AM	13.8	4.15	0.8	3.85 Run 2 - 1
12/17/2003	11:01:53 AM	13.8	4.15	0.84	3.85 Run 2 - 1
12/17/2003	11:02:22 AM	13.86	4.2	0.84	3.88 Run 2 - 1
12/17/2003	11:02:52 AM	13.8	4.2	0.82	3.85 Run 2 - 1
12/17/2003	11:03:23 AM	13.8	4.15	0.83	3.81 Run 2 - 1
12/17/2003	11:03:52 AM	13.8	4.15	0.89	3.77 Run 2 - 1
12/17/2003	11:04:23 AM	13.8	4.15	0.87	3.74 Run 2 - 1
12/17/2003	11:04:52 AM	13.8	4.15	0.82	3.77 Run 2 - 1
12/17/2003	11:05:23 AM	13.8	4.15	0.78	3.77 Run 2 - 1
12/17/2003	11:05:52 AM	13.8	4.15	0.77	3.81 Run 2 - 1
12/17/2003	11:06:23 AM	13.86	4.2	0.92	3.81 Run 2 - 1
12/17/2003	11:06:52 AM	13.73	4.15	0.8	3.81 Run 2 - 1
12/17/2003	11:07:23 AM	13.8	4.2	0.85	3.81 Run 2 - 1
12/17/2003	11:07:52 AM	13.8	4.2	0.62	3.81 Run 2 - 1
12/17/2003	11:08:23 AM	13.8	4.15	0.89	3.81
12/17/2003	11:08:53 AM	13.8	0.24	1.22	3.81
12/17/2003	11:09:22 AM	5.19	0.05	1.6	0 Run 2 Span - Zero
12/17/2003	11:09:53 AM	0.49	0.05	0.48	0 Run 2 Span - Zero
12/17/2003	11:10:22 AM	0.12	0	0.2	0 Run 2 Span - Zero
12/17/2003	11:10:53 AM	0.12	0.05	0.1	-0.04 Run 2 Span - Zero
12/17/2003	11:11:22 AM	0.06	0.05	-0.03	-0.04 Run 2 Span - Zero
12/17/2003	11:11:53 AM	0	0	0.06	-0.04 Run 2 Span - Zero
12/17/2003	11:12:22 AM	0.06	0	0.01	3.74 Run 2 Span - Zero
12/17/2003	11:12:53 AM	0	0	-0.19	4.36 Run 2 Span - Zero
12/17/2003	11:13:22 AM	0	0	-0.32	4.47 Run 2 Span - Span
12/17/2003	11:13:53 AM	0	0	-0.37	4.36 Run 2 Span - Span

12/17/2003	11:14:22 AM	0.06	9.67	-0.2	0.55	Run 2 Span - Span
12/17/2003	11:14:53 AM	0	10.06	-0.21	0.26	Run 2 Span - Span
12/17/2003	11:15:22 AM	-0.06	10.06	-0.45	0.22	Run 2 Span - Span
12/17/2003	11:15:53 AM	-0.06	0.15	0.38	0	Run 2 Span - Span
12/17/2003	11:16:23 AM	0	0.1	2.48	-0.04	Run 2 Span - Span
12/17/2003	11:16:52 AM	0	0.05	3.17	-0.07	Run 2 Span - Span
12/17/2003	11:17:23 AM	-0.06	0.05	3.08	-0.04	Run 2 Span - Span
12/17/2003	11:17:52 AM	0	0.05	1.7	4.07	Run 2 Span - Span
12/17/2003	11:18:23 AM	-0.06	0.05	0.14	4.36	Run 2 Span - Span
12/17/2003	11:18:52 AM	0	0	-0.27	4.36	Run 2 Span - Span
12/17/2003	11:19:23 AM	-0.06	0	-0.33	0.81	Run 2 Span - Span
12/17/2003	11:19:52 AM	9.77	0	-0.16	-0.04	Run 2 Span - Span
12/17/2003	11:20:23 AM	13.31	0.05	-0.09	-0.07	Run 2 Span - Span
12/17/2003	11:20:52 AM	13.55	0.05	-0.03	-0.07	Run 2 Span - Span
12/17/2003	11:21:23 AM	13.61	0	0.14	-0.07	Run 2 Span - Span
12/17/2003	11:21:52 AM	13.61	0	-0.03	-0.07	Run 2 Span - Span
12/17/2003	11:22:23 AM	13.61	4.1	0.5	3.7	Run 2 Span - Span
12/17/2003	11:22:52 AM	13.73	4.15	0.84	3.77	Run 2 Span - Span
12/17/2003	11:23:23 AM	13.73	4.1	0.94	3.74	Run 3 - 1
12/17/2003	11:23:53 AM	13.73	4.15	1.02	3.81	Run 3 - 1
12/17/2003	11:24:22 AM	13.8	4.15	0.93	3.77	Run 3 - 1
12/17/2003	11:24:53 AM	13.73	4.15	0.95	3.74	Run 3 - 1
12/17/2003	11:25:22 AM	13.73	4.15	0.93	3.7	Run 3 - 1
12/17/2003	11:25:53 AM	13.8	4.15	0.89	3.74	Run 3 - 1
12/17/2003	11:26:22 AM	13.73	4.15	1	3.74	Run 3 - 1
12/17/2003	11:26:53 AM	13.8	4.2	0.88	3.7	Run 3 - 1
12/17/2003	11:27:22 AM	13.8	4.15	0.76	3.7	Run 3 - 1
12/17/2003	11:27:53 AM	13.8	4.15	0.86	3.7	Run 3 - 1
12/17/2003	11:28:22 AM	13.73	4.15	0.84	3.74	Run 3 - 1
12/17/2003	11:28:53 AM	13.8	4.15	0.72	3.74	Run 3 - 1
12/17/2003	11:29:22 AM	13.8	4.15	0.69	3.74	Run 3 - 1
12/17/2003	11:29:53 AM	13.8	4.15	0.89	3.74	Run 3 - 1
12/17/2003	11:30:22 AM	13.8	4.15	0.83	3.74	Run 3 - 1
12/17/2003	11:30:53 AM	13.8	4.15	0.84	3.74	Run 3 - 1
12/17/2003	11:31:22 AM	13.8	4.15	0.91	3.74	Run 3 - 1
12/17/2003	11:31:53 AM	13.8	4.15	0.74	3.7	Run 3 - 1
12/17/2003	11:32:23 AM	13.8	4.15	0.85	3.77	Run 3 - 1
12/17/2003	11:32:52 AM	13.8	4.15	0.85	3.74	Run 3 - 1
12/17/2003	11:33:23 AM	13.8	4.15	0.81	3.74	Run 3 - 1
12/17/2003	11:33:52 AM	13.86	4.2	0.88	3.66	Run 3 - 1
12/17/2003	11:34:23 AM	13.86	4.15	0.72	3.7	Run 3 - 1
12/17/2003	11:34:52 AM	13.86	4.15	0.78	3.7	Run 3 - 1
12/17/2003	11:35:23 AM	13.8	4.15	0.82	3.74	Run 3 - 1

12/17/2003	11:35:52 AM	13.86	4.15	0.91	3.7 Run 3 - 1
12/17/2003	11:36:23 AM	13.86	4.15	0.93	3.74 Run 3 - 1
12/17/2003	11:36:52 AM	13.86	4.15	0.81	3.7 Run 3 - 1
12/17/2003	11:37:23 AM	13.86	4.15	0.77	3.74 Run 3 - 1
12/17/2003	11:37:52 AM	13.86	4.15	0.67	3.77 Run 3 - 1
12/17/2003	11:38:23 AM	13.86	4.15	0.84	3.74 Run 3 - 1
12/17/2003	11:38:52 AM	13.86	4.2	1.05	3.74 Run 3 - 1
12/17/2003	11:39:23 AM	13.8	4.15	0.77	3.74 Run 3 - 1
12/17/2003	11:39:52 AM	13.86	4.2	0.77	3.7 Run 3 - 1
12/17/2003	11:40:23 AM	13.86	4.2	0.79	3.7 Run 3 - 1
12/17/2003	11:40:52 AM	13.86	4.2	0.77	3.77 Run 3 - 1
12/17/2003	11:41:23 AM	13.86	4.2	0.87	3.77 Run 3 - 1
12/17/2003	11:41:52 AM	13.8	4.15	0.94	3.74 Run 3 - 1
12/17/2003	11:42:23 AM	13.8	4.15	0.92	3.74 Run 3 - 1
12/17/2003	11:42:52 AM	13.8	4.15	0.86	3.74 Run 3 - 1
12/17/2003	11:43:23 AM	13.86	4.15	0.89	3.77 Run 3 - 1
12/17/2003	11:43:52 AM	13.8	4.15	0.83	3.74 Run 3 - 1
12/17/2003	11:44:23 AM	13.8	4.15	0.79	3.77
12/17/2003	11:44:52 AM	13.55	0.05	0.66	-0.04 Run 3 Span - Zero
12/17/2003	11:45:23 AM	1.83	0.05	0.4	-0.04 Run 3 Span - Zero
12/17/2003	11:45:52 AM	0.24	0.05	0.13	-0.04 Run 3 Span - Zero
12/17/2003	11:46:23 AM	0.06	0	-0.01	-0.04 Run 3 Span - Zero
12/17/2003	11:46:53 AM	0.06	0	-0.04	-0.07 Run 3 Span - Zero
12/17/2003	11:47:22 AM	0.06	0.05	-0.15	3.96 Run 3 Span - Zero
12/17/2003	11:47:53 AM	0	0	-0.21	4.4 Run 3 Span - Zero
12/17/2003	11:48:22 AM	0	0	-0.27	4.36 Run 3 Span - Span
12/17/2003	11:48:53 AM	0	3.86	-0.29	4.29 Run 3 Span - Span
12/17/2003	11:49:22 AM	0	9.96	-0.21	0.33 Run 3 Span - Span
12/17/2003	11:49:53 AM	-0.06	10.06	-0.33	0.18 Run 3 Span - Span
12/17/2003	11:50:22 AM	-0.06	0.24	-0.17	-0.04 Run 3 Span - Span
12/17/2003	11:50:53 AM	-0.06	0.05	1.84	-0.04 Run 3 Span - Span
12/17/2003	11:51:22 AM	0	0.05	3.09	-0.04 Run 3 Span - Span
12/17/2003	11:51:53 AM	0	0.05	3.16	-0.07 Run 3 Span - Span
12/17/2003	11:52:22 AM	0	0.05	2.6	-0.07 Run 3 Span - Span
12/17/2003	11:52:53 AM	11.17	0	0.73	-0.07 Run 3 Span - Span
12/17/2003	11:53:22 AM	13.43	0	0.14	-0.04 Run 3 Span - Span
12/17/2003	11:53:53 AM	13.61	0	-0.07	-0.07 Run 3 Span - Span
12/17/2003	11:54:22 AM	13.61	0.05	-0.17	-0.07 Run 3 Span - Span
12/17/2003	11:54:53 AM	13.67	4.1	0.39	3.7 Run 3 Span - Span
12/17/2003	11:55:22 AM	13.8	4.2	0.96	3.7 Run 3 Span - Span
12/17/2003	11:55:53 AM	13.8	4.15	0.9	3.7 Run 3 Span - Span
12/17/2003	11:56:23 AM	13.8	4.15	0.82	3.74 Run 4 - 1
12/17/2003	11:56:52 AM	13.86	4.15	0.76	3.77 Run 4 - 1

12/17/2003	11:57:23 AM	13.8	4.15	0.81	3.81 Run 4 - 1
12/17/2003	11:57:52 AM	13.8	4.15	0.65	3.77 Run 4 - 1
12/17/2003	11:58:23 AM	13.8	4.15	0.76	3.77 Run 4 - 1
12/17/2003	11:58:52 AM	13.73	4.1	0.86	3.77 Run 4 - 1
12/17/2003	11:59:23 AM	13.73	4.15	0.82	3.77 Run 4 - 1
12/17/2003	11:59:52 AM	13.8	4.15	0.92	3.85 Run 4 - 1
12/17/2003	12:00:23 PM	13.8	4.15	0.84	3.77 Run 4 - 1
12/17/2003	12:00:52 PM	13.73	4.1	0.89	3.77 Run 4 - 1
12/17/2003	12:01:22 PM	13.86	4.2	0.79	3.77 Run 4 - 1
12/17/2003	12:01:53 PM	13.73	4.15	1.06	3.77 Run 4 - 1
12/17/2003	12:02:23 PM	13.8	4.15	0.74	3.77 Run 4 - 1
12/17/2003	12:02:52 PM	13.86	4.2	0.9	3.81 Run 4 - 1
12/17/2003	12:03:23 PM	13.8	4.2	0.76	3.81 Run 4 - 1
12/17/2003	12:03:52 PM	13.8	4.15	0.65	3.81 Run 4 - 1
12/17/2003	12:04:23 PM	13.8	4.15	0.79	3.81 Run 4 - 1
12/17/2003	12:04:52 PM	13.8	4.15	0.98	3.77 Run 4 - 1
12/17/2003	12:05:23 PM	13.8	4.15	0.95	3.81 Run 4 - 1
12/17/2003	12:05:52 PM	13.8	4.1	0.96	3.74 Run 4 - 1
12/17/2003	12:06:23 PM	13.8	4.15	0.8	3.77 Run 4 - 1
12/17/2003	12:06:52 PM	13.8	4.15	0.78	3.77 Run 4 - 1
12/17/2003	12:07:23 PM	13.8	4.15	0.64	3.81 Run 4 - 1
12/17/2003	12:07:53 PM	13.86	4.2	0.75	3.77 Run 4 - 1
12/17/2003	12:08:23 PM	13.86	4.2	0.75	3.77 Run 4 - 1
12/17/2003	12:08:52 PM	13.86	4.15	0.78	3.74 Run 4 - 1
12/17/2003	12:09:23 PM	13.86	4.15	0.72	3.81 Run 4 - 1
12/17/2003	12:09:52 PM	13.86	4.15	0.84	3.77 Run 4 - 1
12/17/2003	12:10:23 PM	13.86	4.15	0.84	3.77 Run 4 - 1
12/17/2003	12:10:52 PM	13.86	4.15	0.84	3.74 Run 4 - 1
12/17/2003	12:11:23 PM	13.8	4.15	0.9	3.77 Run 4 - 1
12/17/2003	12:11:52 PM	13.86	4.15	0.76	3.7 Run 4 - 1
12/17/2003	12:12:23 PM	13.86	4.15	0.51	3.7 Run 4 - 1
12/17/2003	12:12:52 PM	13.86	4.15	0.75	3.74 Run 4 - 1
12/17/2003	12:13:23 PM	13.86	4.15	0.73	3.77 Run 4 - 1
12/17/2003	12:13:52 PM	13.86	4.15	0.66	3.74 Run 4 - 1
12/17/2003	12:14:23 PM	13.86	4.15	0.72	3.74 Run 4 - 1
12/17/2003	12:14:52 PM	13.8	4.15	0.77	3.77 Run 4 - 1
12/17/2003	12:15:23 PM	13.8	4.15	0.91	3.74 Run 4 - 1
12/17/2003	12:15:52 PM	13.8	4.15	0.81	3.74 Run 4 - 1
12/17/2003	12:16:23 PM	13.8	4.15	0.81	3.74 Run 4 - 1
12/17/2003	12:16:53 PM	13.8	4.15	0.78	3.74 Run 4 - 1
12/17/2003	12:17:23 PM	13.86	4.15	0.75	3.77
12/17/2003	12:17:53 PM	13.8	0.1	0.79	0.04 Run 4 Span - Zero
12/17/2003	12:18:22 PM	4.21	0.05	0.47	-0.04 Run 4 Span - Zero

12/17/2003 12:18:53 PM	0.43	0.05	0.12	-0.04	Run 4 Span - Zero
12/17/2003 12:19:22 PM	0.12	0.05	0.05	-0.04	Run 4 Span - Zero
12/17/2003 12:19:53 PM	0.06	0	-0.03	-0.07	Run 4 Span - Zero
12/17/2003 12:20:22 PM	0.06	0.05	0	-0.04	Run 4 Span - Zero
12/17/2003 12:20:53 PM	0	0	-0.11	3.81	Run 4 Span - Zero
12/17/2003 12:21:22 PM	0.06	0.05	-0.21	4.4	Run 4 Span - Span
12/17/2003 12:21:53 PM	0	0	-0.25	4.36	Run 4 Span - Span
12/17/2003 12:22:22 PM	0.06	0	-0.28	4.4	Run 4 Span - Span
12/17/2003 12:22:53 PM	0	0	-0.35	4.47	Run 4 Span - Span
12/17/2003 12:23:22 PM	0	0	-0.31	4.4	Run 4 Span - Span
12/17/2003 12:23:53 PM	0	9.72	-0.32	0.55	Run 4 Span - Span
12/17/2003 12:24:22 PM	0	10.06	-0.29	0.22	Run 4 Span - Span
12/17/2003 12:24:53 PM	-0.06	10.06	-0.34	0.18	Run 4 Span - Span
12/17/2003 12:25:22 PM	-0.06	10.11	-0.41	0.18	Run 4 Span - Span
12/17/2003 12:25:53 PM	-0.06	7.08	-0.43	0.15	Run 4 Span - Span
12/17/2003 12:26:22 PM	-0.06	0.1	1.15	-0.04	Run 4 Span - Zero
12/17/2003 12:26:53 PM	0	0.1	2.93	-0.07	Run 4 Span - Zero
12/17/2003 12:27:22 PM	0	0.05	3.13	-0.04	Run 4 Span - Span
12/17/2003 12:27:53 PM	0	0.05	2.72	-0.07	Run 4 Span - Span
12/17/2003 12:28:23 PM	10.19	0	0.96	-0.07	Run 4 Span - Span
12/17/2003 12:28:52 PM	13.31	0.05	0.13	-0.07	Run 4 Span - Span
12/17/2003 12:29:23 PM	13.55	0	-0.03	-0.07	Run 4 Span - Span
12/17/2003 12:29:52 PM	13.55	0.05	0.09	-0.07	Run 4 Span - Span
12/17/2003 12:30:23 PM	13.55	0.05	-0.06	-0.07	Run 4 Span - Span
12/17/2003 12:30:53 PM	13.67	4.15	0.37	3.66	Run 4 Span - Span
12/17/2003 12:31:23 PM	13.73	4.15	0.92	3.77	Run 4 Span - Span
12/17/2003 12:31:53 PM	13.73	4.1	0.96	3.77	Run 4 Span - Span
12/17/2003 12:32:22 PM	13.73	4.15	1.04	3.81	Run 5 - 1
12/17/2003 12:32:53 PM	13.73	4.15	0.97	3.77	Run 5 - 1
12/17/2003 12:33:22 PM	13.73	4.15	0.96	3.85	Run 5 - 1
12/17/2003 12:33:53 PM	13.73	4.15	1.02	3.77	Run 5 - 1
12/17/2003 12:34:22 PM	13.8	4.15	0.98	3.85	Run 5 - 1
12/17/2003 12:34:53 PM	13.8	4.2	0.91	3.81	Run 5 - 1
12/17/2003 12:35:22 PM	13.8	4.15	0.93	3.77	Run 5 - 1
12/17/2003 12:35:53 PM	13.8	4.2	0.97	3.81	Run 5 - 1
12/17/2003 12:36:22 PM	13.73	4.15	0.86	3.81	Run 5 - 1
12/17/2003 12:36:53 PM	13.8	4.15	1	3.81	Run 5 - 1
12/17/2003 12:37:22 PM	13.8	4.15	0.98	3.81	Run 5 - 1
12/17/2003 12:37:53 PM	13.8	4.15	1	3.77	Run 5 - 1
12/17/2003 12:38:22 PM	13.8	4.15	0.9	3.77	Run 5 - 1
12/17/2003 12:38:53 PM	13.8	4.15	0.9	3.74	Run 5 - 1
12/17/2003 12:39:22 PM	13.86	4.15	0.88	3.77	Run 5 - 1
12/17/2003 12:39:53 PM	13.8	4.1	0.88	3.81	Run 5 - 1

12/17/2003	12:40:22 PM	13.8	4.15	0.85	3.81	Run 5 - 1
12/17/2003	12:40:53 PM	13.86	4.15	0.94	3.77	Run 5 - 1
12/17/2003	12:41:22 PM	13.86	4.15	0.92	3.74	Run 5 - 1
12/17/2003	12:41:53 PM	13.8	4.15	0.84	3.77	Run 5 - 1
12/17/2003	12:42:22 PM	13.86	4.15	0.87	3.77	Run 5 - 1
12/17/2003	12:42:53 PM	13.86	4.15	0.89	3.77	Run 5 - 1
12/17/2003	12:43:22 PM	13.8	4.15	0.84	3.77	Run 5 - 1
12/17/2003	12:43:53 PM	13.86	4.15	0.84	3.74	Run 5 - 1
12/17/2003	12:44:22 PM	13.86	4.15	0.88	3.77	Run 5 - 1
12/17/2003	12:44:53 PM	13.8	4.1	0.94	3.7	Run 5 - 1
12/17/2003	12:45:23 PM	13.8	4.15	0.95	3.77	Run 5 - 1
12/17/2003	12:45:52 PM	13.8	4.15	1.01	3.77	Run 5 - 1
12/17/2003	12:46:22 PM	13.8	4.15	0.96	3.74	Run 5 - 1
12/17/2003	12:46:53 PM	13.8	4.15	0.95	3.74	Run 5 - 1
12/17/2003	12:47:23 PM	13.8	4.1	0.97	3.74	Run 5 - 1
12/17/2003	12:47:53 PM	13.86	4.15	0.98	3.77	Run 5 - 1
12/17/2003	12:48:23 PM	13.8	4.15	0.93	3.77	Run 5 - 1
12/17/2003	12:48:52 PM	13.86	4.15	0.9	3.81	Run 5 - 1
12/17/2003	12:49:23 PM	13.8	4.15	0.87	3.77	Run 5 - 1
12/17/2003	12:49:53 PM	13.86	4.15	0.8	3.81	Run 5 - 1
12/17/2003	12:50:23 PM	13.8	4.2	0.92	3.81	Run 5 - 1
12/17/2003	12:50:53 PM	13.86	4.2	1.01	3.85	Run 5 - 1
12/17/2003	12:51:23 PM	13.8	4.15	0.86	3.81	Run 5 - 1
12/17/2003	12:51:52 PM	13.8	4.15	0.85	3.81	Run 5 - 1
12/17/2003	12:52:23 PM	13.86	4.2	0.91	3.81	Run 5 - 1
12/17/2003	12:52:52 PM	13.86	4.2	0.99	3.81	Run 5 - 1
12/17/2003	12:53:23 PM	13.86	4	0.96	3.81	
12/17/2003	12:53:53 PM	12.82	0.05	0.62	-0.04	Run 5 Span - Zero
12/17/2003	12:54:23 PM	1.47	0.05	0.32	-0.04	Run 5 Span - Zero
12/17/2003	12:54:52 PM	0.24	0.05	0.17	-0.04	Run 5 Span - Zero
12/17/2003	12:55:23 PM	0.06	0	0.08	-0.07	Run 5 Span - Zero
12/17/2003	12:55:52 PM	0.06	0	0.01	-0.07	Run 5 Span - Zero
12/17/2003	12:56:23 PM	0.06	0.05	-0.05	-0.07	Run 5 Span - Zero
12/17/2003	12:56:52 PM	0.06	0	-0.19	4.4	Run 5 Span - Zero
12/17/2003	12:57:23 PM	0.06	0.05	-0.25	4.51	Run 5 Span - Span
12/17/2003	12:57:52 PM	0	0	-0.3	4.47	Run 5 Span - Span
12/17/2003	12:58:23 PM	0	9.67	-0.31	1.65	Run 5 Span - Span
12/17/2003	12:58:52 PM	0	10.01	-0.19	0.22	Run 5 Span - Span
12/17/2003	12:59:23 PM	0	10.06	-0.14	0.18	Run 5 Span - Span
12/17/2003	12:59:52 PM	-0.06	0.49	-0.13	0.15	Run 5 Span - Span
12/17/2003	1:00:23 PM	0	0.05	1.87	-0.04	Run 5 Span - Span
12/17/2003	1:00:52 PM	0	0.05	3.28	-0.04	Run 5 Span - Span
12/17/2003	1:01:23 PM	-0.06	0	3.07	-0.04	Run 5 Span - Span

12/17/2003	1:01:53 PM	3.6	0	2.06	-0.04 Run 5 Span - Span
12/17/2003	1:02:22 PM	12.58	0.05	0.36	-0.04 Run 5 Span - Span
12/17/2003	1:02:53 PM	13.49	0	0.09	-0.04 Run 5 Span - Span
12/17/2003	1:03:22 PM	13.55	0	0.08	-0.07 Run 5 Span - Span
12/17/2003	1:03:53 PM	13.55	0	0.17	-0.07 Run 5 Span - Span
12/17/2003	1:04:22 PM	13.61	4.1	0.48	2.75 Run 5 Span - Span
12/17/2003	1:04:53 PM	13.73	4.15	1.28	3.81 Run 5 Span - Span
12/17/2003	1:05:23 PM	13.73	4.1	1.26	3.81 Run 6 - 1
12/17/2003	1:05:52 PM	13.73	4.15	1.17	3.88 Run 6 - 1
12/17/2003	1:06:23 PM	13.8	4.15	1.13	3.77 Run 6 - 1
12/17/2003	1:06:52 PM	13.73	4.15	1.13	3.81 Run 6 - 1
12/17/2003	1:07:23 PM	13.8	4.15	0.99	3.88 Run 6 - 1
12/17/2003	1:07:52 PM	13.73	4.15	1.05	3.85 Run 6 - 1
12/17/2003	1:08:23 PM	13.8	4.15	0.91	3.85 Run 6 - 1
12/17/2003	1:08:53 PM	13.8	4.15	0.99	3.85 Run 6 - 1
12/17/2003	1:09:23 PM	13.8	4.15	0.96	3.85 Run 6 - 1
12/17/2003	1:09:53 PM	13.8	4.15	1	3.85 Run 6 - 1
12/17/2003	1:10:22 PM	13.8	4.15	0.85	3.85 Run 6 - 1
12/17/2003	1:10:53 PM	13.8	4.15	0.95	3.85 Run 6 - 1
12/17/2003	1:11:22 PM	13.86	4.15	0.99	3.81 Run 6 - 1
12/17/2003	1:11:53 PM	13.86	4.15	0.92	3.85 Run 6 - 1
12/17/2003	1:12:22 PM	13.86	4.2	1.05	3.81 Run 6 - 1
12/17/2003	1:12:53 PM	13.86	4.2	0.93	3.85 Run 6 - 1
12/17/2003	1:13:22 PM	13.8	4.15	0.91	3.77 Run 6 - 1
12/17/2003	1:13:53 PM	13.8	4.15	0.97	3.77 Run 6 - 1
12/17/2003	1:14:23 PM	13.86	4.15	1.05	3.77 Run 6 - 1
12/17/2003	1:14:52 PM	13.8	4.1	0.97	3.77 Run 6 - 1
12/17/2003	1:15:23 PM	13.8	4.15	0.94	3.81 Run 6 - 1
12/17/2003	1:15:52 PM	13.8	4.15	0.89	3.85 Run 6 - 1
12/17/2003	1:16:23 PM	13.8	4.15	1.02	3.81 Run 6 - 1
12/17/2003	1:16:53 PM	13.8	4.15	0.9	3.81 Run 6 - 1
12/17/2003	1:17:22 PM	13.8	4.15	0.94	3.74 Run 6 - 1
12/17/2003	1:17:53 PM	13.8	4.15	0.96	3.77 Run 6 - 1
12/17/2003	1:18:22 PM	13.8	4.1	1.03	3.77 Run 6 - 1
12/17/2003	1:18:53 PM	13.8	4.15	0.95	3.77 Run 6 - 1
12/17/2003	1:19:22 PM	13.8	4.15	0.97	3.81 Run 6 - 1
12/17/2003	1:19:53 PM	13.8	4.2	0.86	3.81 Run 6 - 1
12/17/2003	1:20:22 PM	13.8	4.1	0.99	3.81 Run 6 - 1
12/17/2003	1:20:52 PM	13.8	4.15	0.96	3.81 Run 6 - 1
12/17/2003	1:21:23 PM	13.8	4.15	0.88	3.81 Run 6 - 1
12/17/2003	1:21:52 PM	13.8	4.15	0.93	3.77 Run 6 - 1
12/17/2003	1:22:23 PM	13.8	4.15	0.96	3.77 Run 6 - 1
12/17/2003	1:22:52 PM	13.8	4.15	0.9	3.77 Run 6 - 1

12/17/2003	1:23:23 PM	13.8	4.15	0.84	3.81	Run 6 - 1
12/17/2003	1:23:52 PM	13.8	4.15	0.98	3.85	Run 6 - 1
12/17/2003	1:24:23 PM	13.8	4.15	0.97	3.81	Run 6 - 1
12/17/2003	1:24:53 PM	13.8	4.15	0.97	3.81	Run 6 - 1
12/17/2003	1:25:22 PM	13.8	4.15	1.03	3.85	Run 6 - 1
12/17/2003	1:25:53 PM	13.86	4.15	1.03	3.88	Run 6 - 1
12/17/2003	1:26:22 PM	13.8	4.15	0.92	3.88	
12/17/2003	1:26:53 PM	13.86	0.1	0.85	0.11	
12/17/2003	1:27:22 PM	3.54	0.05	0.44	-0.04	Run 6 Span - Zero
12/17/2003	1:27:53 PM	0.37	0.05	0.25	-0.04	Run 6 Span - Zero
12/17/2003	1:28:22 PM	0.12	0	0.14	-0.04	Run 6 Span - Zero
12/17/2003	1:28:53 PM	0.12	0.05	0.03	-0.04	Run 6 Span - Zero
12/17/2003	1:29:22 PM	0.06	0	0.04	-0.07	Run 6 Span - Zero
12/17/2003	1:29:53 PM	0.06	0	-0.07	4.21	Run 6 Span - Zero
12/17/2003	1:30:22 PM	0.06	0.05	-0.25	4.36	Run 6 Span - Zero
12/17/2003	1:30:53 PM	0	0	-0.36	4.4	Run 6 Span - Zero
12/17/2003	1:31:22 PM	0.06	0.05	-0.32	4.4	Run 6 Span - Zero
12/17/2003	1:31:53 PM	0	0	-0.21	4.4	Run 6 Span - Zero
12/17/2003	1:32:22 PM	0	0.05	-0.32	4.4	Run 6 Span - Zero
12/17/2003	1:32:53 PM	0	0	-0.31	4.4	Run 6 Span - Zero
12/17/2003	1:33:22 PM	0	0.05	-0.27	4.43	Run 6 Span - Span
12/17/2003	1:33:53 PM	-0.06	0	-0.28	4.4	Run 6 Span - Span
12/17/2003	1:34:23 PM	0	0.29	-0.31	4.36	Run 6 Span - Span
12/17/2003	1:34:53 PM	-0.06	9.96	-0.2	0.33	Run 6 Span - Span
12/17/2003	1:35:23 PM	-0.06	10.06	-0.27	0.18	Run 6 Span - Span
12/17/2003	1:35:52 PM	-0.06	0.83	-0.28	0.18	Run 6 Span - Span
12/17/2003	1:36:23 PM	-0.06	0.05	1.47	-0.04	
12/17/2003	1:36:52 PM	-0.06	0	3.02	-0.04	
12/17/2003	1:37:23 PM	-0.06	0.05	3.14	-0.04	Run 6 Span - Span
12/17/2003	1:37:52 PM	-0.06	0	3.04	-0.04	Run 6 Span - Span
12/17/2003	1:38:23 PM	0	0.05	2.45	-0.07	Run 6 Span - Span
12/17/2003	1:38:52 PM	11.35	0	0.69	-0.07	Run 6 Span - Span
12/17/2003	1:39:23 PM	13.37	0	0.09	-0.04	Run 6 Span - Span
12/17/2003	1:39:52 PM	13.55	0.05	0.19	-0.07	Run 6 Span - Span
12/17/2003	1:40:23 PM	13.55	0	0.21	-0.07	Run 6 Span - Span
12/17/2003	1:40:52 PM	13.55	0	0.09	-0.04	Run 6 Span - Span
12/17/2003	1:41:23 PM	13.61	4.05	0.58	2.2	Run 6 Span - Span
12/17/2003	1:41:52 PM	13.73	4.1	1.35	3.77	Run 6 Span - Span
12/17/2003	1:42:23 PM	13.73	4.1	1.36	3.85	Run 6 Span - Span
12/17/2003	1:42:52 PM	13.73	4.15	1.15	3.85	Run 6 Span - Span
12/17/2003	1:43:23 PM	13.8	4.1	1.02	3.85	Run 7 - 1
12/17/2003	1:43:53 PM	13.8	4.1	0.97	3.85	Run 7 - 1
12/17/2003	1:44:23 PM	13.8	4.15	1.04	3.85	Run 7 - 1



12/17/2003	1:44:52 PM	13.8	4.15	0.95	3.85 Run 7 - 1
12/17/2003	1:45:23 PM	13.8	4.15	0.94	3.88 Run 7 - 1
12/17/2003	1:45:52 PM	13.8	4.15	0.89	3.85 Run 7 - 1
12/17/2003	1:46:23 PM	13.8	4.15	0.9	3.92 Run 7 - 1
12/17/2003	1:46:52 PM	13.8	4.15	0.89	3.88 Run 7 - 1
12/17/2003	1:47:23 PM	13.86	4.15	0.94	3.92 Run 7 - 1
12/17/2003	1:47:53 PM	13.8	4.15	0.8	3.92 Run 7 - 1
12/17/2003	1:48:23 PM	13.86	4.15	0.81	3.88 Run 7 - 1
12/17/2003	1:48:52 PM	13.8	4.15	0.77	3.85 Run 7 - 1
12/17/2003	1:49:22 PM	13.86	4.15	0.89	3.85 Run 7 - 1
12/17/2003	1:49:53 PM	13.86	4.15	1.05	3.85 Run 7 - 1
12/17/2003	1:50:22 PM	13.8	4.15	0.89	3.88 Run 7 - 1
12/17/2003	1:50:53 PM	13.8	4.15	0.9	3.88 Run 7 - 1
12/17/2003	1:51:23 PM	13.86	4.15	0.91	3.88 Run 7 - 1
12/17/2003	1:51:52 PM	13.86	4.2	0.94	3.88 Run 7 - 1
12/17/2003	1:52:23 PM	13.8	4.15	0.98	3.88 Run 7 - 1
12/17/2003	1:52:52 PM	13.8	4.15	0.87	3.85 Run 7 - 1
12/17/2003	1:53:23 PM	13.8	4.15	0.89	3.88 Run 7 - 1
12/17/2003	1:53:52 PM	13.86	4.2	0.95	3.85 Run 7 - 1
12/17/2003	1:54:23 PM	13.8	4.15	0.87	3.85 Run 7 - 1
12/17/2003	1:54:52 PM	13.8	4.15	1.02	3.88 Run 7 - 1
12/17/2003	1:55:23 PM	13.8	4.15	1.06	3.88 Run 7 - 1
12/17/2003	1:55:52 PM	13.8	4.15	0.95	3.85 Run 7 - 1
12/17/2003	1:56:23 PM	13.8	4.2	0.94	3.88 Run 7 - 1
12/17/2003	1:56:52 PM	13.8	4.1	0.92	3.85 Run 7 - 1
12/17/2003	1:57:23 PM	13.86	4.15	1.05	3.81 Run 7 - 1
12/17/2003	1:57:52 PM	13.8	4.15	1.02	3.88 Run 7 - 1
12/17/2003	1:58:23 PM	13.86	4.15	0.93	3.81 Run 7 - 1
12/17/2003	1:58:52 PM	13.86	4.15	0.84	3.81 Run 7 - 1
12/17/2003	1:59:23 PM	13.8	4.15	0.95	3.81 Run 7 - 1
12/17/2003	1:59:52 PM	13.8	4.15	1.07	3.77 Run 7 - 1
12/17/2003	2:00:23 PM	13.8	4.15	0.95	3.74 Run 7 - 1
12/17/2003	2:00:52 PM	13.86	4.15	0.95	3.74 Run 7 - 1
12/17/2003	2:01:23 PM	13.86	4.15	0.9	3.77 Run 7 - 1
12/17/2003	2:01:53 PM	13.86	4.15	1.01	3.77 Run 7 - 1
12/17/2003	2:02:23 PM	13.86	4.15	1	3.77 Run 7 - 1
12/17/2003	2:02:52 PM	13.86	4.1	0.96	3.77 Run 7 - 1
12/17/2003	2:03:23 PM	13.86	4.15	1.09	3.74 Run 7 - 1
12/17/2003	2:03:53 PM	13.86	4.15	1.08	3.77 Run 7 - 1
12/17/2003	2:04:23 PM	13.86	4.15	1.01	3.81
12/17/2003	2:04:53 PM	13.86	0.1	1.01	0
12/17/2003	2:05:22 PM	3.3	0.05	0.43	-0.04 Run 7 Span - Zero
12/17/2003	2:05:53 PM	0.31	0	0.18	-0.07 Run 7 Span - Zero

12/17/2003	2:06:22 PM	0.12	0	0.1	-0.04	Run 7 Span - Zero
12/17/2003	2:06:53 PM	0.06	0	0.03	-0.04	Run 7 Span - Zero
12/17/2003	2:07:22 PM	0	0	0.07	-0.07	Run 7 Span - Zero
12/17/2003	2:07:53 PM	0.06	0	0.11	3.48	Run 7 Span - Zero
12/17/2003	2:08:22 PM	0	0	-0.05	4.43	Run 7 Span - Span
12/17/2003	2:08:53 PM	0	0	-0.2	4.4	Run 7 Span - Span
12/17/2003	2:09:22 PM	0	0	-0.24	4.36	Run 7 Span - Span
12/17/2003	2:09:53 PM	0.06	10.01	-0.2	0.29	Run 7 Span - Span
12/17/2003	2:10:22 PM	-0.06	10.06	-0.29	0.18	Run 7 Span - Span
12/17/2003	2:10:53 PM	-0.06	0.73	-0.18	0.04	Run 7 Span - Span
12/17/2003	2:11:22 PM	-0.06	0.05	1.57	-0.04	Run 7 Span - Zero
12/17/2003	2:11:53 PM	0	0.05	3.1	-0.07	Run 7 Span - Span
12/17/2003	2:12:22 PM	-0.06	0	3.22	-0.07	Run 7 Span - Span
12/17/2003	2:12:53 PM	-0.06	0	2.54	-0.04	Run 7 Span - Span
12/17/2003	2:13:22 PM	10.99	0.05	0.79	-0.04	Run 7 Span - Span
12/17/2003	2:13:53 PM	13.37	0.05	0.07	-0.07	Run 7 Span - Span
12/17/2003	2:14:22 PM	13.61	0.05	0	-0.07	Run 7 Span - Span
12/17/2003	2:14:53 PM	13.61	0	-0.04	-0.04	Run 7 Span - Span
12/17/2003	2:15:22 PM	13.61	4.1	0.29	3.77	Run 7 Span - Span
12/17/2003	2:15:54 PM	13.73	4.1	0.98	3.85	Run 7 Span - Span
12/17/2003	2:16:23 PM	13.8	4.15	1	3.88	Run 8 - 1
12/17/2003	2:16:52 PM	13.73	4.15	1.01	3.85	Run 8 - 1
12/17/2003	2:17:23 PM	13.73	4.1	0.95	3.88	Run 8 - 1
12/17/2003	2:17:52 PM	13.8	4.15	0.94	3.85	Run 8 - 1
12/17/2003	2:18:23 PM	13.8	4.15	0.85	3.88	Run 8 - 1
12/17/2003	2:18:52 PM	13.86	4.15	0.96	3.92	Run 8 - 1
12/17/2003	2:19:23 PM	13.86	4.15	0.94	3.85	Run 8 - 1
12/17/2003	2:19:52 PM	13.8	4.15	0.88	3.81	Run 8 - 1
12/17/2003	2:20:23 PM	13.73	4.15	0.89	3.85	Run 8 - 1
12/17/2003	2:20:52 PM	13.8	4.1	0.87	3.88	Run 8 - 1
12/17/2003	2:21:23 PM	13.8	4.15	0.94	3.92	Run 8 - 1
12/17/2003	2:21:52 PM	13.8	4.15	0.95	3.92	Run 8 - 1
12/17/2003	2:22:23 PM	13.8	4.15	1	3.88	Run 8 - 1
12/17/2003	2:22:53 PM	13.8	4.15	1.03	3.88	Run 8 - 1
12/17/2003	2:23:22 PM	13.8	4.15	0.92	3.88	Run 8 - 1
12/17/2003	2:23:53 PM	13.8	4.15	1.05	3.88	Run 8 - 1
12/17/2003	2:24:22 PM	13.8	4.15	0.96	3.88	Run 8 - 1
12/17/2003	2:24:53 PM	13.8	4.15	0.93	3.88	Run 8 - 1
12/17/2003	2:25:22 PM	13.8	4.15	0.95	3.88	Run 8 - 1
12/17/2003	2:25:52 PM	13.8	4.15	1.04	3.81	Run 8 - 1
12/17/2003	2:26:23 PM	13.86	4.15	1.02	3.85	Run 8 - 1
12/17/2003	2:26:53 PM	13.8	4.1	0.97	3.81	Run 8 - 1
12/17/2003	2:27:22 PM	13.86	4.2	0.94	3.88	Run 8 - 1

12/17/2003	2:27:53 PM	13.8	4.1	0.96	3.85 Run 8 - 1
12/17/2003	2:28:22 PM	13.86	4.1	0.89	3.85 Run 8 - 1
12/17/2003	2:28:53 PM	13.86	4.1	0.95	3.81 Run 8 - 1
12/17/2003	2:29:22 PM	13.86	4.2	0.98	3.88 Run 8 - 1
12/17/2003	2:29:53 PM	13.86	4.15	0.94	3.81 Run 8 - 1
12/17/2003	2:30:22 PM	13.86	4.15	0.86	3.85 Run 8 - 1
12/17/2003	2:30:53 PM	13.86	4.1	0.8	3.81 Run 8 - 1
12/17/2003	2:31:22 PM	13.86	4.15	0.97	3.85 Run 8 - 1
12/17/2003	2:31:53 PM	13.86	4.1	0.98	3.88 Run 8 - 1
12/17/2003	2:32:22 PM	13.8	4.15	0.88	3.85 Run 8 - 1
12/17/2003	2:32:53 PM	13.8	4.15	0.92	3.88 Run 8 - 1
12/17/2003	2:33:22 PM	13.8	4.15	0.96	3.85 Run 8 - 1
12/17/2003	2:33:53 PM	13.86	4.1	0.95	3.81 Run 8 - 1
12/17/2003	2:34:22 PM	13.8	4.15	0.93	3.81 Run 8 - 1
12/17/2003	2:34:53 PM	13.86	4.15	0.92	3.85 Run 8 - 1
12/17/2003	2:35:22 PM	13.86	4.15	0.96	3.88 Run 8 - 1
12/17/2003	2:35:53 PM	13.8	4.15	1	3.92 Run 8 - 1
12/17/2003	2:36:22 PM	13.86	4.15	0.97	3.88 Run 8 - 1
12/17/2003	2:36:53 PM	13.86	4.15	0.89	3.85 Run 8 - 1
12/17/2003	2:37:22 PM	13.8	2.59	0.97	3.81
12/17/2003	2:37:53 PM	13.73	3.03	0.95	3.81
12/17/2003	2:38:22 PM	10.07	0.05	0.68	0 Run 8 Span - Zero
12/17/2003	2:38:53 PM	0.92	0.05	0.32	-0.07 Run 8 Span - Zero
12/17/2003	2:39:22 PM	0.12	0	0.12	0.07 Run 8 Span - Zero
12/17/2003	2:39:53 PM	0.06	0	0.18	-0.07 Run 8 Span - Zero
12/17/2003	2:40:22 PM	0.06	0	0	-0.04 Run 8 Span - Zero
12/17/2003	2:40:53 PM	0	0	-0.02	0.26 Run 8 Span - Zero
12/17/2003	2:41:22 PM	0.06	0.05	-0.19	4.36 Run 8 Span - Zero
12/17/2003	2:41:53 PM	0.06	0	-0.25	4.4 Run 8 Span - Span
12/17/2003	2:42:23 PM	0	0	-0.21	4.4 Run 8 Span - Span
12/17/2003	2:42:53 PM	0.06	9.67	-0.04	0.77 Run 8 Span - Span
12/17/2003	2:43:23 PM	0	10.01	-0.12	0.18 Run 8 Span - Span
12/17/2003	2:43:52 PM	-0.06	10.06	-0.22	0.18 Run 8 Span - Span
12/17/2003	2:44:23 PM	-0.06	0.15	0.21	-0.04 Run 8 Span - Span
12/17/2003	2:44:52 PM	0	0.1	2.36	-0.04 Run 8 Span - Span
12/17/2003	2:45:23 PM	-0.06	0.05	3.24	-0.04 Run 8 Span - Span
12/17/2003	2:45:52 PM	0	0	3.13	-0.04 Run 8 Span - Span
12/17/2003	2:46:23 PM	4.46	0	1.82	-0.07 Run 8 Span - Span
12/17/2003	2:46:52 PM	12.7	0.05	0.31	-0.07 Run 8 Span - Span
12/17/2003	2:47:23 PM	13.49	0	0.01	-0.04 Run 8 Span - Span
12/17/2003	2:47:53 PM	13.61	0.05	0.08	-0.04 Run 8 Span - Span
12/17/2003	2:48:22 PM	13.61	4.1	0.44	3.7 Run 8 Span - Span
12/17/2003	2:48:54 PM	13.73	4.15	0.99	3.88 Run 8 Span - Span

12/17/2003	2:49:23 PM	13.73	4.15	1.13	3.85 Run 9 - 1
12/17/2003	2:49:52 PM	13.8	4.15	1.12	3.92 Run 9 - 1
12/17/2003	2:50:23 PM	13.73	4.1	0.97	3.88 Run 9 - 1
12/17/2003	2:50:52 PM	13.8	4.15	1.07	3.92 Run 9 - 1
12/17/2003	2:51:23 PM	13.8	4.15	0.94	3.92 Run 9 - 1
12/17/2003	2:51:52 PM	13.8	4.15	0.98	3.96 Run 9 - 1
12/17/2003	2:52:23 PM	13.8	4.15	1.05	3.99 Run 9 - 1
12/17/2003	2:52:52 PM	13.8	4.15	0.97	3.96 Run 9 - 1
12/17/2003	2:53:23 PM	13.8	4.15	0.99	3.96 Run 9 - 1
12/17/2003	2:53:52 PM	13.8	4.15	1.04	3.96 Run 9 - 1
12/17/2003	2:54:23 PM	13.8	4.15	1.01	3.88 Run 9 - 1
12/17/2003	2:54:52 PM	13.8	4.15	1.01	3.96 Run 9 - 1
12/17/2003	2:55:23 PM	13.8	4.15	0.83	3.88 Run 9 - 1
12/17/2003	2:55:53 PM	13.8	4.15	0.94	3.92 Run 9 - 1
12/17/2003	2:56:23 PM	13.8	4.15	0.97	3.88 Run 9 - 1
12/17/2003	2:56:52 PM	13.86	4.15	0.99	3.88 Run 9 - 1
12/17/2003	2:57:23 PM	13.86	4.15	1.02	3.85 Run 9 - 1
12/17/2003	2:57:52 PM	13.86	4.15	0.96	3.96 Run 9 - 1
12/17/2003	2:58:23 PM	13.86	4.2	0.89	3.92 Run 9 - 1
12/17/2003	2:58:52 PM	13.86	4.15	0.84	3.92 Run 9 - 1
12/17/2003	2:59:23 PM	13.86	4.15	0.94	3.88 Run 9 - 1
12/17/2003	2:59:52 PM	13.86	4.15	0.9	3.92 Run 9 - 1
12/17/2003	3:00:23 PM	13.86	4.15	0.92	3.92 Run 9 - 1
12/17/2003	3:00:52 PM	13.8	4.1	0.93	3.99 Run 9 - 1
12/17/2003	3:01:24 PM	13.8	4.1	0.85	3.99 Run 9 - 1
12/17/2003	3:01:52 PM	13.8	4.15	0.89	3.96 Run 9 - 1
12/17/2003	3:02:23 PM	13.8	4.15	0.88	3.96 Run 9 - 1
12/17/2003	3:02:52 PM	13.8	4.15	0.87	3.96 Run 9 - 1
12/17/2003	3:03:23 PM	13.8	4.15	0.97	3.96 Run 9 - 1
12/17/2003	3:03:52 PM	13.86	4.15	0.95	3.92 Run 9 - 1
12/17/2003	3:04:23 PM	13.8	4.15	1.01	3.92 Run 9 - 1
12/17/2003	3:04:53 PM	13.86	4.15	0.86	3.88 Run 9 - 1
12/17/2003	3:05:23 PM	13.8	4.15	0.86	3.85 Run 9 - 1
12/17/2003	3:05:52 PM	13.86	4.15	0.97	3.85 Run 9 - 1
12/17/2003	3:06:23 PM	13.8	4.15	0.96	3.92 Run 9 - 1
12/17/2003	3:06:52 PM	13.86	4.2	0.93	3.92 Run 9 - 1
12/17/2003	3:07:23 PM	13.8	4.15	0.91	3.85 Run 9 - 1
12/17/2003	3:07:53 PM	13.8	4.15	0.99	3.85 Run 9 - 1
12/17/2003	3:08:22 PM	13.8	4.15	0.96	3.85 Run 9 - 1
12/17/2003	3:08:53 PM	13.86	4.15	0.81	3.88 Run 9 - 1
12/17/2003	3:09:22 PM	13.8	4.15	0.89	3.88 Run 9 - 1
12/17/2003	3:09:53 PM	13.86	4.15	0.91	3.85 Run 9 - 1
12/17/2003	3:10:22 PM	13.86	4.15	0.94	3.88

12/17/2003	3:10:53 PM	13.86	3.71	0.86	3.88
12/17/2003	3:11:22 PM	12.94	0.05	0.7	-0.04 Run 9 Span - Zero
12/17/2003	3:11:53 PM	1.53	0	0.5	-0.07 Run 9 Span - Zero
12/17/2003	3:12:22 PM	0.24	0.05	0.15	-0.07 Run 9 Span - Zero
12/17/2003	3:12:53 PM	0.12	0.05	0	-0.07 Run 9 Span - Zero
12/17/2003	3:13:22 PM	0.06	0	-0.12	-0.11 Run 9 Span - Zero
12/17/2003	3:13:53 PM	0.06	0	-0.09	3.63 Run 9 Span - Zero
12/17/2003	3:14:22 PM	0.06	0.05	-0.25	4.36 Run 9 Span - Zero
12/17/2003	3:14:53 PM	0.06	0	-0.17	4.36 Run 9 Span - Zero
12/17/2003	3:15:22 PM	0	0	-0.24	4.4 Run 9 Span - Span
12/17/2003	3:15:53 PM	0	0	-0.29	4.4 Run 9 Span - Span
12/17/2003	3:16:22 PM	0	0	-0.38	4.36 Run 9 Span - Span
12/17/2003	3:16:53 PM	0	5.18	-0.23	4.36 Run 9 Span - Span
12/17/2003	3:17:23 PM	0	10.01	-0.2	0.18 Run 9 Span - Span
12/17/2003	3:17:52 PM	0	10.06	-0.23	0.15 Run 9 Span - Span
12/17/2003	3:18:23 PM	-0.06	0.44	-0.06	0.07 Run 9 Span - Zero
12/17/2003	3:18:52 PM	0	0.1	1.64	-0.07 Run 9 Span - Zero
12/17/2003	3:19:23 PM	-0.06	0.05	3.01	-0.07 Run 9 Span - Zero
12/17/2003	3:19:52 PM	0	0.05	3.06	-0.11 Run 9 Span - Span
12/17/2003	3:20:23 PM	-0.06	0.05	3.07	-0.07 Run 9 Span - Span
12/17/2003	3:20:52 PM	5.01	0.05	1.82	-0.07 Run 9 Span - Span
12/17/2003	3:21:23 PM	12.82	0.05	0.38	-0.07 Run 9 Span - Span
12/17/2003	3:21:52 PM	13.49	0	0.2	-0.11 Run 9 Span - Span
12/17/2003	3:22:23 PM	13.55	0	0.1	-0.11 Run 9 Span - Span
12/17/2003	3:22:52 PM	13.61	0	0.11	-0.07 Run 9 Span - Span
12/17/2003	3:23:23 PM	13.61	4.1	0.83	3.74 Run 9 Span - Span
12/17/2003	3:23:52 PM	13.73	4.1	1.19	3.81 Run 9 Span - Span
12/17/2003	3:24:23 PM	13.8	4.15	1.05	3.81 Run 9 Span - Span
12/17/2003	3:24:52 PM	13.8	4.15	0.96	3.85 Run 9 Span - Span
12/17/2003	3:25:23 PM	13.8	4.2	0.91	3.81 Run 9 Span - Span
12/17/2003	3:25:53 PM	13.8	4.15	0.9	3.81 Run 9 Span - Span
12/17/2003	3:26:23 PM	13.8	4.15	1.05	3.81 Run 9 Span - Span
12/17/2003	3:26:52 PM	13.8	4.15	1	3.85 Run 9 Span - Span
12/17/2003	3:27:23 PM	13.8	4.15	0.92	3.85 Run 9 Span - Span
12/17/2003	3:27:52 PM	13.8	4.15	0.93	3.88 Run 9 Span - Span
12/17/2003	3:28:22 PM	13.8	4.15	0.96	3.85 Run 9 Span - Span

CONVERTER EFFICIENCY TEST



**Reference Method 20  
Converter Efficiency Test  
Data Summary**

Analyzer Serial Number: 42CHL-69577-363

Test Date: 12/17/2003

Maximum 1-minute Value in 30-minute Period:	3.15	ppm
Value at End of 30-minute Period:	3.15	ppm
Difference Observed:	0	ppm
Converter Efficiency:	100	%
Percent Decrease:	0	%

Converter Efficiency calculated as:

$$\frac{\text{Value at End of 30-minute Period}}{\text{Maximum Value in 30-minute Period}} \times 100$$

Converter is acceptable providing decrease is less than or equal to 2.0%.

Date	Time	O2 (%)	CO2 (%)	CO (PPM)	NOX (PPM)	Status
12/17/2003	8:25:53 AM	21	0	0.41	3	Converter Check - 1
12/17/2003	8:26:22 AM	21.06	0.05	0.45	3.04	Converter Check - 1
12/17/2003	8:26:53 AM	21	0	0.51	3.08	Converter Check - 1
12/17/2003	8:27:22 AM	21.06	0.05	0.38	3.04	Converter Check - 1
12/17/2003	8:27:53 AM	21.06	0.05	0.4	3.08	Converter Check - 1
12/17/2003	8:28:22 AM	21.06	0.05	0.41	3.08	Converter Check - 1
12/17/2003	8:28:53 AM	21.06	0.05	0.34	3.04	Converter Check - 1
12/17/2003	8:29:22 AM	21.06	0.05	0.45	3.08	Converter Check - 1
12/17/2003	8:29:53 AM	21.06	0.05	0.36	3.08	Converter Check - 1
12/17/2003	8:30:22 AM	21.06	0.05	0.41	3.08	Converter Check - 1
12/17/2003	8:30:53 AM	21.06	0.05	0.4	3.08	Converter Check - 1
12/17/2003	8:31:22 AM	21.06	0	0.33	3.08	Converter Check - 1
12/17/2003	8:31:53 AM	21.12	0.05	0.38	3.08	Converter Check - 1
12/17/2003	8:32:22 AM	21.06	0.05	0.37	3.08	Converter Check - 1
12/17/2003	8:32:53 AM	21	0.05	0.29	3.08	Converter Check - 1
12/17/2003	8:33:22 AM	21	0	0.24	3.08	Converter Check - 1
12/17/2003	8:33:53 AM	21.06	0.05	0.33	3.11	Converter Check - 1
12/17/2003	8:34:22 AM	21.06	0.05	0.4	3.11	Converter Check - 1
12/17/2003	8:34:53 AM	21	0	0.43	3.11	Converter Check - 1
12/17/2003	8:35:22 AM	21.06	0.05	0.4	3.11	Converter Check - 1
12/17/2003	8:35:53 AM	21.06	0	0.49	3.11	Converter Check - 1
12/17/2003	8:36:22 AM	21.06	0.05	0.39	3.15	Converter Check - 1
12/17/2003	8:36:53 AM	21.06	0.05	0.53	3.11	Converter Check - 1
12/17/2003	8:37:22 AM	21	0.05	0.41	3.11	Converter Check - 1
12/17/2003	8:37:53 AM	21	0	0.43	3.11	Converter Check - 1
12/17/2003	8:38:22 AM	21	0	0.48	3.11	Converter Check - 1
12/17/2003	8:38:53 AM	21.06	0.05	0.45	3.11	Converter Check - 1
12/17/2003	8:39:22 AM	21	0	0.42	3.11	Converter Check - 1
12/17/2003	8:39:53 AM	21	0	0.45	3.11	Converter Check - 1
12/17/2003	8:40:22 AM	21	0.05	0.49	3.08	Converter Check - 1
12/17/2003	8:40:53 AM	21	0	0.48	3.08	Converter Check - 1
12/17/2003	8:41:22 AM	21	0.05	0.52	3.11	Converter Check - 1
12/17/2003	8:41:53 AM	21.06	0.05	0.48	3.15	Converter Check - 1
12/17/2003	8:42:22 AM	21.06	0.05	0.43	3.11	Converter Check - 1
12/17/2003	8:42:53 AM	21.06	0.05	0.29	3.15	Converter Check - 1
12/17/2003	8:43:22 AM	21.06	0.05	0.45	3.15	Converter Check - 1
12/17/2003	8:43:53 AM	21.06	0.05	0.37	3.15	Converter Check - 1
12/17/2003	8:44:23 AM	21	0.05	0.39	3.15	Converter Check - 1
12/17/2003	8:44:53 AM	21.06	0.05	0.42	3.11	Converter Check - 1
12/17/2003	8:45:23 AM	21	0.05	0.49	3.15	Converter Check - 1
12/17/2003	8:45:52 AM	21	0	0.45	3.11	Converter Check - 1
12/17/2003	8:46:22 AM	21.06	0.05	0.39	3.11	Converter Check - 1



12/17/2003	8:46:53 AM	21	0	0.42	3.11 Converter Check - 1
12/17/2003	8:47:22 AM	21	0.05	0.46	3.11 Converter Check - 1
12/17/2003	8:47:53 AM	21.06	0.05	0.52	3.11 Converter Check - 1
12/17/2003	8:48:23 AM	21.06	0.05	0.52	3.11 Converter Check - 1
12/17/2003	8:48:52 AM	21.06	0	0.56	3.11 Converter Check - 1
12/17/2003	8:49:22 AM	21.06	0.05	0.46	3.11 Converter Check - 1
12/17/2003	8:49:53 AM	21.06	0.05	0.45	3.11 Converter Check - 1
12/17/2003	8:50:22 AM	21.06	0	0.49	3.11 Converter Check - 1
12/17/2003	8:50:53 AM	21.06	0	0.5	3.11 Converter Check - 1
12/17/2003	8:51:22 AM	21.06	0.05	0.49	3.11 Converter Check - 1
12/17/2003	8:51:53 AM	21.06	0	0.45	3.11 Converter Check - 1
12/17/2003	8:52:22 AM	21.06	0.05	0.31	3.11 Converter Check - 1
12/17/2003	8:52:53 AM	20.33	0	0.36	3.11 Converter Check - 1
12/17/2003	8:53:23 AM	1.89	-0.05	0.17	3.11 Converter Check - 1
12/17/2003	8:53:53 AM	0.24	0	0.18	3.11 Converter Check - 1
12/17/2003	8:54:22 AM	0.18	0	0.23	3.11 Converter Check - 1
12/17/2003	8:54:53 AM	0.12	0	0.27	3.11 Converter Check - 1
12/17/2003	8:55:22 AM	0.55	0	0.25	3.15 Converter Check - 1
12/17/2003	8:55:53 AM	0.67	0	0.28	3.15
12/17/2003	8:56:22 AM	0.12	0	0.21	0.11

CYLINDER GAS CERTIFICATES

RATA CLASS **BLD04**



**Scott Specialty Gases**

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-95261-004

Customer

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: ALM040665 Certification Date: 22Aug2003 Exp. Date: 21Aug2006  
Cylinder Pressure\*\*\*: 1950 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	18.0 %	+/- 1%	Direct NIST and NMI
OXYGEN	6.24 %	+/- 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.

**REFERENCE STANDARD**

PE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NRM 1675	01Jun2004	K001509	13.93 %	CARBON DIOXIDE
NTRM 2659	01Jun2004	K012946	20.85 %	OXYGEN

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
MTI/M200/170927	18Aug2003	GC-TCD
BECKMAN/755/2002571	30Jul2003	PARAMAGNETIC

**ANALYZER READINGS**

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

**CARBON DIOXIDE**

Date: 22Aug2003 Response Unit: VOLTS

Z1 = 0.00000	R1 = 635416.0	T1 = 822096.0
R2 = 635972.0	Z2 = 0.00000	T2 = 822258.0
Z3 = 0.00000	T3 = 822295.0	R3 = 636024.0
Avg. Concentration: 18.00 %		



Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>

r = .999997 1675

Constants: A = 7.7433E-03

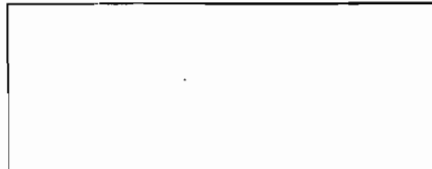
B = 2.1753E-05 C =

D = E =

**OXYGEN**

Date: 30Jul2003 Response Unit: VOLTS

Z1 = 0.00100	R1 = 0.84400	T1 = 0.25140
R2 = 0.84320	Z2 = 0.00140	T2 = 0.25120
Z3 = 0.00000	T3 = 0.25110	R3 = 0.84310
Avg. Concentration: 6.240 %		



Concentration = A + Bx + Cx<sup>2</sup> + Dx<sup>3</sup> + Ex<sup>4</sup>

r = .999998 2659

Constants: A = -1.4608E-02

B = -2.1461E+00 C = 2.6702E+01

D = E =

APPROVED BY:

*Bradley C Millman*  
BRADLEY C MILLMAN

DLUUS

**RATA CLASS**



**Scott Specialty Gases**

*Dual-Analyzed Calibration Standard*

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-01576-001

Customer

TAMPA ELECTRIC COMPANY  
CHARLES DUFENY  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: ALM040741      Certification Date: 15Dec2003      Exp. Date: 14Dec2006  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	11.0 %	+/- 1%	Direct NIST and NMI
OXYGEN	12.6 %	+/- 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.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1675	01Jun2004	K001509	13.93 %	CARBON DIOXIDE
NTRM 2658	02Oct2006	ALM065189	9.930 %	OXYGEN

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
MTI/M200/170927	12Dec2003	GC-TCD
MTI/M200/170927	12Dec2003	GC-TCD

**ANALYZER READINGS**

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

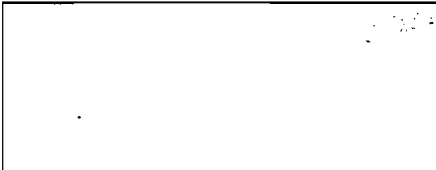
First Triad Analysis

Second Triad Analysis

Calibration Curve

**CARBON DIOXIDE**

Date: 12Dec2003	Response Unit: VOLTS
Z1 = 0.00000	R1 = 636210.0    T1 = 503192.0
R2 = 636484.0	Z2 = 0.00000    T2 = 503158.0
Z3 = 0.00000	T3 = 503152.0    R3 = 636384.0
Avg. Concentration:	11.00 %



Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = .999998    1675
Constants:    A = 2.1891E-05
B = 9.5568E-03    C =
D =    E =

**OXYGEN**

Date: 12Dec2003	Response Unit: VOLTS
Z1 = 0.00000	R1 = 323325.0    T1 = 408839.0
R2 = 323240.0	Z2 = 0.00000    T2 = 409029.0
Z3 = 0.00000	T3 = 408900.0    R3 = 323094.0
Avg. Concentration:	12.60 %



Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = .999997    2658
Constants:    A = -1.5960E-02
B = 3.0872E-05    C =
D =    E =

APPROVED BY:

*Bradley C. Millman*  
BRADLEY C. MILLMAN

RATA CLASS **R0512**  
Dual-Analyzed Calibration Standard



**Scott Specialty Gases**

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-95261-012

Customer

TAMPA ELECTRIC COMPANY  
Charles Dufery  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: AAL6916 Certification Date: 26Aug2003 Exp. Date: 25Aug2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	12.5 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	12.6 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
HORIBA/CLA220/5708850810	21Aug2003	CHEMILUMINESCENCE

**ANALYZER READINGS**

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

**NITRIC OXIDE**

Date: 19Aug2003	Response Unit: VOLTS		
Z1 = 0.00710	R1 = 3.92820	T1 = 2.72460	
R2 = 3.93490	Z2 = 0.00720	T2 = 2.72850	
Z3 = 0.00440	T3 = 2.72410	R3 = 3.92940	
Avg. Concentration:	12.50	PPM	

Date: 26Aug2003	Response Unit: VOLTS		
Z1 = 0.00490	R1 = 3.79000	T1 = 2.62890	
R2 = 3.78830	Z2 = 0.00560	T2 = 2.62770	
Z3 = 0.00460	T3 = 2.62620	R3 = 3.79020	
Avg. Concentration:	12.51	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999998	2629
Constants:	A = -0.016438
B = 4.632947	C =
D =	E =

APPROVED BY:

KIMBERLY NILES

RATA CLASS **RDSII**

Dual-Analyzed Calibration Standard



Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-95261-009

Customer

TAMPA ELECTRIC COMPANY  
Charles Dufany  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: AAL15968 Certification Date: 26Aug2003 Exp. Date: 25Aug2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	8.24 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	8.26 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2629	02Oct2004	AAL069525	18.05 PPM	NITRIC OXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
HORIBA/CLA220/5708850810	21Aug2003	CHEMILUMINESCENCE

**ANALYZER READINGS**

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

**NITRIC OXIDE**

Date: 19Aug2003	Response Unit: VOLTS		
Z1 = 0.00460	R1 = 3.94120	T1 = 1.80100	
R2 = 3.93760	Z2 = 0.00380	T2 = 1.79720	
Z3 = 0.00490	T3 = 1.79740	R3 = 3.92910	
Avg. Concentration:	8.220	PPM	

Date: 26Aug2003	Response Unit: VOLTS		
Z1 = 0.00520	R1 = 3.78620	T1 = 1.73250	
R2 = 3.78260	Z2 = 0.00820	T2 = 1.73300	
Z3 = 0.00720	T3 = 1.73030	R3 = 3.77760	
Avg. Concentration:	8.250	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999998	2629
Constants:	A = -0.016438
B = 4.632947	C =
D =	E =

APPROVED BY:

KIMBERLY NILES

RDS10

RATA CLASS



**Scott Specialty Gases**

*Dual-Analyzed Calibration Standard*

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7226

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: E-N06925  
Project No.: 01-01495-001

Customer

TAMPA ELECTRIC COMPANY  
CHARLES DUFENY  
5010 CAUSEWAY BLVD  
TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: AAL3073 Certification Date: 13Nov2003 Exp. Date: 12Nov2005  
Cylinder Pressure\*\*\*: 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	4.46 PPM	+/- 1%	Direct NIST and NMI
NITROGEN - OXYGEN FREE	BALANCE		
TOTAL OXIDES OF NITROGEN	4.47 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 as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2627	15Jan2004	AAL069671	5.180 PPM	NITRIC OXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
TECO/10/9741111S	06Nov2003	CHEMILUMINESCENT

**ANALYZER READINGS**

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

**NITRIC OXIDE**

Date: 26Aug2003	Response Unit: VOLTS		
Z1 = 0.00020	R1 = 0.87080	T1 = 0.74970	
R2 = 0.87070	Z2 = 0.00020	T2 = 0.74980	
Z3 = 0.00020	T3 = 0.75070	R3 = 0.86970	
Avg. Concentration:	4.460	PPM	

Date: 13Nov2003	Response Unit: VOLTS		
Z1 = 0.00030	R1 = 0.86580	T1 = 0.74680	
R2 = 0.86610	Z2 = 0.00030	T2 = 0.74670	
Z3 = 0.00030	T3 = 0.74710	R3 = 0.86770	
Avg. Concentration:	4.460	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999992	2627
Constants:	A = 0.001488
B = 5.993653	C =
D =	E =

APPROVED BY:

KIMBERLY NILES



Scott Specialty Gases

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18948-0310 Phone: 800-331-1953 Fax: 215-766-7226

RDS04

CERTIFICATE OF ACCURACY: Certified Master Class Calibration Standard

Product Information

Project No.: 01-95261-006  
Item No.: 01020000840PAL  
P.O. No.: E-N06925

Cylinder Number: ALM026412  
Cylinder Size: AL  
Certification Date: 21Aug2003  
Expiration Date: 19Feb2004

Customer

TAMPA ELECTRIC COMPANY  
Charles Dufeny  
5010 CAUSEWAY BLVD  
TAMPA, FL 33619

CERTIFIED CONCENTRATION

Component Name

Concentration  
(Moles)

Accuracy  
(+/-%)

CARBON MONOXIDE  
NITROGEN

3.00 PPM  
BALANCE

2

TRACEABILITY

Traceable To

NIST

APPROVED BY:

JOHN C. FITZ

DATE:

8/21/03



## SPECIFICATIONS

<u>Component Name</u>	<u>Requested Concentration (Moles)</u>	<u>Certified Concentration (Moles)</u>	<u>Blend Tolerance Result (+/- %)</u>	<u>Certified Accuracy Result (+/- %)</u>
CARBON MONOXIDE	3. PPM	3.00 PPM	.0	2.00
NITROGEN	BAL	BAL		

## TRACEABILITY

Traceable To  
NIST

## PHYSICAL PROPERTIES

Cylinder Size: AL

Pressure: 2000 PSIG  
Expiration Date: 19Feb2004

Min. Cyl. Pressure: 150 PSIG

## SPECIAL HANDLING INSTRUCTIONS

Do not use or store cylinder at or below the stated dew point temperature. Possible condensation of heavier components could result. In the event the cylinder has been exposed to temperatures at or below the dew point, place cylinder in heated area for 24 hours and then roll cylinder for 15 minutes to re-mix.

Use of calibration standards at or below dew point temperature may result in calibration error.

RATA CLASS *CES HARD 5*  
 Dual-Analyzed Calibration Standard *92-cert.*



**Scott Specialty Gases**

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310

Phone: 800-331-4953

Fax: 215-766-7225

**CERTIFICATE OF ACCURACY: EPA Protocol Gas**

Assay Laboratory

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

P.O. No.: EN-75516  
 Project No.: 01-84921-001

Customer

TAMPA ELECTRIC COMPANY  
 DAVID SMITH  
 5010 CAUSEWAY BLVD  
 TAMPA FL 33619

**ANALYTICAL INFORMATION**

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

Cylinder Number: ALM063413      Certification Date: 13Feb2003      Exp. Date: 12Feb2004  
 Cylinder Pressure\*\*\*: 1250 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	6.29 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.

**REFERENCE STANDARD**

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTFRM 2635	03Apr2003	ALM020670	25.78 PPM	CARBON MONOXIDE

**INSTRUMENTATION**

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS/6E/KN-240	30Jan2003	NDIR

**ANALYZER READINGS**

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

First Triad Analysis

Second Triad Analysis

Calibration Curve

**CARBON MONOXIDE**

Date: 06Aug2002	Response Unit: VOLTS		
Z1 = -0.00400	R1 = 2.54380	T1 = 0.60600	
R2 = 2.54240	Z2 = -0.00340	T2 = 0.60320	
Z3 = -0.00700	T3 = 0.60060	R3 = 2.54390	
Avg. Concentration:	6.230	PPM	

Date: 13Feb2003	Response Unit: VOLTS		
Z1 = -0.00310	R1 = 2.53330	T1 = 0.60820	
R2 = 2.53100	Z2 = -0.00100	T2 = 0.60910	
Z3 = -0.00540	T3 = 0.60930	R3 = 2.53000	
Avg. Concentration:	6.290	PPM	

Concentration = A + Bx + Cx <sup>2</sup> + Dx <sup>3</sup> + Ex <sup>4</sup>	
r = .999951	2635
Constants:	A = 6.6140E-02
B = 1.0194E + 01	C =
D =	E =

APPROVED BY:

JOHN C. FITZ

VISIBLE EMISSIONS OBSERVATIONS

SOURCE NAME		SOURCE LOCATION		OBSERVATION DATE				START TIME				STOP TIME			
Rayside CT-2D		Tampa FL		12/17/2003				11:40				12:10			
TYPE OF FACILITY		DISTANCE FROM OBSERVER		SEC.		MIN		SEC		MIN		SEC		MIN	
Combined Cycle Combustion Turbine - firing PNG		~825' (two rangefinders)		1	0	15	30	45	31	0	15	30	45		
SKY CONDITIONS/PLUME BACKGROUND		Broken / white, blue background		2	0	15	30	45	32						
SOURCE LAYOUT SKETCH		DRAW NORTH ARROW		3	0	15	30	45	33						
				4	0	15	30	45	34						
AVERAGE OPACITY -		0.0%		5	0	15	30	45	35						
WIND SPEED (EST.)		Fresh ~ 15-20 mph gusting		6	0	15	30	45	36						
WIND DIRECTION (EST.)		~ NNW to NNW		7	0	15	30	45	37						
OBSERVER'S NAME (PRINT)		R.A. McDarby		8	0	15	30	45	38						
OBSERVER'S SIGNATURE		[Signature]		9	0	15	30	45	39						
DATE		12/17/2003		10	0	15	30	45	40						
COMMENTS		slant angle ~ 12° (clinometer)		11	0	15	30	45	41						
30 minute VE as per PSD-FL-301A Testing requirements #1B				12	0	15	30	45	42						
maximum observed = 0%				13	0	15	30	45	43						
minimum observed = 0%				14	0	15	30	45	44						
maximum 6-minute average = 0.0%				15	0	15	30	45	45						
COPY OF VISIBLE EMISSIONS CERTIFICATION CARD				16	0	15	30	45	46						
				17	0	15	30	45	47						
				18	0	15	30	45	48						
				19	0	15	30	45	49						
				20	0	15	30	45	50						
				21	0	15	30	45	51						
				22	0	15	30	45	52						
				23	0	15	30	45	53						
				24	0	15	30	45	54						
				25	0	15	30	45	55						
				26	0	15	30	45	56						
				27	0	15	30	45	57						
				28	0	15	30	45	58						
				29	0	15	30	45	59						
				30	0	15	30	45	60						

PLANT OPERATIONAL DATA

DECEMBER 17, 2003

Bayside CT2D  
12/17/03 8:44 -  
15:09

	MW	Turbine Exhaust Temp	Fuel Gas Flow	Compressor Inlet Temp	Barametric Pressure	NH3 Injection Rate
	2dDWATT	2dTTXM	2dFQG	2dCTIM	2dAFPAP	2dFGCFI711
17-Dec-03 08:44:00	170.0	1120.7	21.2	60.0	30.0	9.0
17-Dec-03 08:45:00	170.5	1120.6	21.2	60.0	30.0	9.0
17-Dec-03 08:46:00	170.6	1120.6	21.2	60.0	30.0	9.0
17-Dec-03 08:47:00	170.6	1120.5	21.2	60.0	30.0	9.0
17-Dec-03 08:48:00	170.6	1120.4	21.2	59.9	30.0	9.0
17-Dec-03 08:49:00	170.7	1120.4	21.2	59.9	30.0	9.0
17-Dec-03 08:50:00	170.7	1120.3	21.2	59.8	30.0	9.0
17-Dec-03 08:51:00	170.7	1120.3	21.2	59.7	30.0	9.0
17-Dec-03 08:52:00	170.7	1120.2	21.2	59.7	30.0	9.0
17-Dec-03 08:53:00	170.8	1120.1	21.2	59.6	30.0	8.9
17-Dec-03 08:54:00	170.8	1120.1	21.2	59.6	30.0	8.9
17-Dec-03 08:55:00	170.8	1120.0	21.2	59.5	30.0	8.9
17-Dec-03 08:56:00	170.9	1119.9	21.2	59.5	30.0	8.9
17-Dec-03 08:57:00	170.9	1119.9	21.2	59.4	30.0	8.9
17-Dec-03 08:58:00	170.9	1119.8	21.2	59.4	30.0	8.9
17-Dec-03 08:59:00	170.9	1119.8	21.2	59.3	30.0	8.9
17-Dec-03 09:00:00	171.0	1119.7	21.2	59.3	30.0	8.9
17-Dec-03 09:01:00	171.0	1119.6	21.2	59.2	30.0	8.9
17-Dec-03 09:02:00	171.0	1119.6	21.2	59.2	30.0	8.9
17-Dec-03 09:03:00	171.1	1119.5	21.2	59.1	30.0	8.9
17-Dec-03 09:04:00	171.1	1119.4	21.3	59.1	30.0	8.9
17-Dec-03 09:05:00	171.1	1119.4	21.3	59.0	30.0	8.9
17-Dec-03 09:06:00	171.2	1119.3	21.3	59.0	30.0	8.9
17-Dec-03 09:07:00	171.2	1119.3	21.3	58.9	30.0	8.9
17-Dec-03 09:08:00	171.2	1119.2	21.3	58.8	30.0	8.9
17-Dec-03 09:09:00	171.3	1119.2	21.3	58.8	30.0	8.9
17-Dec-03 09:10:00	171.3	1119.1	21.3	58.7	30.0	8.9
17-Dec-03 09:11:00	171.3	1119.1	21.3	58.7	30.0	8.9
17-Dec-03 09:12:00	171.4	1119.0	21.3	58.7	30.0	8.9
17-Dec-03 09:13:00	171.4	1119.0	21.3	58.7	30.0	8.9
17-Dec-03 09:14:00	171.4	1118.9	21.3	58.6	30.0	8.9
17-Dec-03 09:15:00	171.5	1118.9	21.3	58.6	30.0	8.9
17-Dec-03 09:16:00	171.5	1118.9	21.3	58.6	30.0	8.9
17-Dec-03 09:17:00	171.5	1118.8	21.3	58.6	30.0	9.0
17-Dec-03 09:18:00	171.6	1118.8	21.3	58.6	30.0	9.0
17-Dec-03 09:19:00	171.6	1118.7	21.3	58.5	30.0	9.0
17-Dec-03 09:20:00	171.6	1118.7	21.3	58.5	30.0	9.0
17-Dec-03 09:21:00	171.7	1118.6	21.3	58.5	30.0	9.0
17-Dec-03 09:22:00	171.7	1118.6	21.2	58.5	30.0	9.0
17-Dec-03 09:23:00	171.8	1118.5	21.2	58.5	30.0	9.0
17-Dec-03 09:24:00	171.8	1118.5	21.2	58.4	30.0	9.0
17-Dec-03 09:25:00	171.8	1118.4	21.2	58.4	30.0	9.0
17-Dec-03 09:26:00	171.8	1118.4	21.2	58.4	30.0	9.0
17-Dec-03 09:27:00	171.8	1118.4	21.2	58.4	30.0	9.0
17-Dec-03 09:28:00	171.8	1118.3	21.2	58.3	30.0	9.0
17-Dec-03 09:29:00	171.8	1118.3	21.2	58.3	30.0	9.0
17-Dec-03 09:30:00	171.8	1118.3	21.2	58.3	30.0	9.0
17-Dec-03 09:31:00	171.8	1118.2	21.2	58.3	30.0	9.0

17-Dec-03 09:32:00	171.8	1118.2	21.2	58.3	30.0	9.0
17-Dec-03 09:33:00	171.8	1118.2	21.2	58.2	30.0	9.0
17-Dec-03 09:34:00	171.9	1118.2	21.2	58.2	30.0	9.0
17-Dec-03 09:35:00	171.9	1118.1	21.2	58.2	30.0	9.0
17-Dec-03 09:36:00	171.9	1118.1	21.2	58.2	30.0	9.0
17-Dec-03 09:37:00	171.9	1118.1	21.2	58.2	30.0	9.1
17-Dec-03 09:38:00	171.9	1118.0	21.2	58.2	30.0	9.1
17-Dec-03 09:39:00	171.9	1118.0	21.2	58.2	30.0	9.1
17-Dec-03 09:40:00	171.9	1118.0	21.3	58.2	30.0	9.1
17-Dec-03 09:41:00	171.9	1117.9	21.3	58.2	30.0	9.1
17-Dec-03 09:42:00	171.9	1117.9	21.3	58.2	30.0	9.1
17-Dec-03 09:43:00	171.9	1117.9	21.3	58.2	30.0	9.1
17-Dec-03 09:44:00	171.9	1117.9	21.3	58.2	30.0	9.1
17-Dec-03 09:45:00	171.9	1117.8	21.3	58.2	30.0	9.1
17-Dec-03 09:46:00	171.9	1117.8	21.3	58.2	30.0	9.1
17-Dec-03 09:47:00	171.9	1117.8	21.3	58.2	30.0	9.1
17-Dec-03 09:48:00	172.0	1117.8	21.3	58.2	30.0	9.1
17-Dec-03 09:49:00	172.0	1117.8	21.3	58.2	30.0	9.1
17-Dec-03 09:50:00	172.0	1117.7	21.3	58.2	30.0	9.1
17-Dec-03 09:51:00	172.0	1117.7	21.3	58.2	30.0	9.1
17-Dec-03 09:52:00	172.0	1117.7	21.3	58.2	30.0	9.1
17-Dec-03 09:53:00	172.1	1117.7	21.3	58.2	30.0	9.2
17-Dec-03 09:54:00	172.1	1117.7	21.3	58.2	30.0	9.2
17-Dec-03 09:55:00	172.1	1117.7	21.3	58.2	30.0	9.2
17-Dec-03 09:56:00	172.1	1117.6	21.3	58.2	30.0	9.2
17-Dec-03 09:57:00	172.1	1117.6	21.3	58.2	30.0	9.2
17-Dec-03 09:58:00	172.2	1117.6	21.3	58.2	30.0	9.2
17-Dec-03 09:59:00	172.2	1117.6	21.3	58.2	30.0	9.2
17-Dec-03 10:00:00	172.2	1117.6	21.3	58.2	30.0	9.2
17-Dec-03 10:01:00	172.2	1117.6	21.3	58.2	30.0	9.2
17-Dec-03 10:02:00	172.2	1117.5	21.3	58.2	30.0	9.2
17-Dec-03 10:03:00	172.3	1117.5	21.3	58.2	30.0	9.2
17-Dec-03 10:04:00	172.3	1117.5	21.3	58.1	30.0	9.2
17-Dec-03 10:05:00	172.3	1117.5	21.3	58.1	30.0	9.3
17-Dec-03 10:06:00	172.3	1117.5	21.3	58.1	30.0	9.3
17-Dec-03 10:07:00	172.4	1117.5	21.3	58.0	30.0	9.3
17-Dec-03 10:08:00	172.4	1117.5	21.3	58.0	30.0	9.3
17-Dec-03 10:09:00	172.5	1117.4	21.3	58.0	30.0	9.3
17-Dec-03 10:10:00	172.5	1117.4	21.2	57.9	30.0	9.3
17-Dec-03 10:11:00	172.6	1117.3	21.3	57.9	30.0	9.3
17-Dec-03 10:12:00	172.6	1117.3	21.3	57.9	30.0	9.3
17-Dec-03 10:13:00	172.7	1117.2	21.3	57.8	30.0	9.3
17-Dec-03 10:14:00	172.7	1117.2	21.3	57.8	30.0	9.3
17-Dec-03 10:15:00	172.8	1117.1	21.3	57.8	30.0	9.3
17-Dec-03 10:16:00	172.8	1117.1	21.3	57.7	30.0	9.3
17-Dec-03 10:17:00	172.9	1117.1	21.3	57.7	30.0	9.3
17-Dec-03 10:18:00	172.9	1117.0	21.3	57.6	30.0	9.3
17-Dec-03 10:19:00	173.0	1117.0	21.3	57.6	30.0	9.3
17-Dec-03 10:20:00	173.0	1116.9	21.3	57.6	30.0	9.3
17-Dec-03 10:21:00	173.1	1116.9	21.3	57.5	30.0	9.3
17-Dec-03 10:22:00	173.1	1116.8	21.3	57.5	30.0	9.3
17-Dec-03 10:23:00	173.2	1116.8	21.3	57.5	30.0	9.3



17-Dec-03 10:24:00	173.2	1116.7	21.3	57.4	30.0	9.3
17-Dec-03 10:25:00	173.3	1116.7	21.3	57.4	30.0	9.3
17-Dec-03 10:26:00	173.3	1116.7	21.4	57.4	30.0	9.3
17-Dec-03 10:27:00	173.2	1116.6	21.4	57.4	30.0	9.3
17-Dec-03 10:28:00	173.2	1116.6	21.4	57.3	30.0	9.3
17-Dec-03 10:29:00	173.2	1116.5	21.4	57.3	30.0	9.3
17-Dec-03 10:30:00	173.2	1116.5	21.4	57.3	30.0	9.3
17-Dec-03 10:31:00	173.2	1116.4	21.4	57.3	30.0	9.3
17-Dec-03 10:32:00	173.2	1116.4	21.4	57.3	30.0	9.3
17-Dec-03 10:33:00	173.1	1116.3	21.4	57.3	30.0	9.3
17-Dec-03 10:34:00	173.1	1116.3	21.4	57.3	30.0	9.3
17-Dec-03 10:35:00	173.1	1116.3	21.4	57.3	30.0	9.3
17-Dec-03 10:36:00	173.1	1116.2	21.4	57.3	30.0	9.3
17-Dec-03 10:37:00	173.1	1116.2	21.4	57.3	30.0	9.3
17-Dec-03 10:38:00	173.0	1116.2	21.4	57.3	30.0	9.3
17-Dec-03 10:39:00	173.0	1116.1	21.4	57.3	30.0	9.3
17-Dec-03 10:40:00	173.0	1116.1	21.4	57.3	30.0	9.3
17-Dec-03 10:41:00	173.0	1116.1	21.4	57.3	30.0	9.3
17-Dec-03 10:42:00	173.0	1116.0	21.4	57.3	30.0	9.3
17-Dec-03 10:43:00	173.0	1116.0	21.4	57.3	30.0	9.3
17-Dec-03 10:44:00	172.9	1116.0	21.4	57.3	30.0	9.3
17-Dec-03 10:45:00	172.9	1115.9	21.4	57.3	30.0	9.3
17-Dec-03 10:46:00	172.9	1115.9	21.4	57.3	30.0	9.3
17-Dec-03 10:47:00	172.9	1115.8	21.4	57.3	30.0	9.3
17-Dec-03 10:48:00	172.9	1115.8	21.4	57.3	30.0	9.3
17-Dec-03 10:49:00	172.9	1115.8	21.4	57.3	30.0	9.3
17-Dec-03 10:50:00	172.9	1115.7	21.4	57.3	30.0	9.3
17-Dec-03 10:51:00	172.9	1115.7	21.4	57.3	30.0	9.3
17-Dec-03 10:52:00	172.9	1115.7	21.4	57.3	30.1	9.3
17-Dec-03 10:53:00	172.9	1115.6	21.4	57.3	30.1	9.2
17-Dec-03 10:54:00	172.9	1115.6	21.4	57.3	30.1	9.2
17-Dec-03 10:55:00	172.9	1115.6	21.4	57.3	30.1	9.3
17-Dec-03 10:56:00	172.9	1115.5	21.4	57.3	30.1	9.3
17-Dec-03 10:57:00	172.9	1115.5	21.4	57.3	30.1	9.3
17-Dec-03 10:58:00	172.9	1115.5	21.4	57.3	30.1	9.3
17-Dec-03 10:59:00	172.9	1115.5	21.3	57.3	30.1	9.3
17-Dec-03 11:00:00	172.9	1115.6	21.3	57.4	30.1	9.3
17-Dec-03 11:01:00	172.9	1115.6	21.3	57.4	30.1	9.3
17-Dec-03 11:02:00	172.9	1115.7	21.3	57.4	30.1	9.3
17-Dec-03 11:03:00	172.9	1115.7	21.3	57.4	30.1	9.3
17-Dec-03 11:04:00	172.9	1115.8	21.3	57.4	30.1	9.3
17-Dec-03 11:05:00	172.9	1115.8	21.3	57.4	30.1	9.3
17-Dec-03 11:06:00	172.9	1115.8	21.3	57.4	30.1	9.3
17-Dec-03 11:07:00	172.9	1115.9	21.3	57.4	30.1	9.3
17-Dec-03 11:08:00	173.0	1115.9	21.3	57.5	30.1	9.3
17-Dec-03 11:09:00	173.0	1116.0	21.3	57.5	30.1	9.3
17-Dec-03 11:10:00	173.0	1116.0	21.3	57.5	30.1	9.3
17-Dec-03 11:11:00	173.0	1116.1	21.3	57.5	30.1	9.3
17-Dec-03 11:12:00	173.0	1116.1	21.3	57.5	30.1	9.3
17-Dec-03 11:13:00	173.0	1116.2	21.3	57.5	30.1	9.3
17-Dec-03 11:14:00	173.1	1116.2	21.3	57.5	30.1	9.3
17-Dec-03 11:15:00	173.1	1116.2	21.3	57.5	30.1	9.3

17-Dec-03 11:16:00	173.1	1116.3	21.3	57.6	30.1	9.3
17-Dec-03 11:17:00	173.1	1116.3	21.3	57.6	30.1	9.3
17-Dec-03 11:18:00	173.1	1116.4	21.3	57.6	30.1	9.3
17-Dec-03 11:19:00	173.1	1116.4	21.3	57.5	30.1	9.3
17-Dec-03 11:20:00	173.2	1116.5	21.3	57.5	30.1	9.3
17-Dec-03 11:21:00	173.2	1116.5	21.3	57.5	30.1	9.3
17-Dec-03 11:22:00	173.2	1116.5	21.3	57.5	30.1	9.4
17-Dec-03 11:23:00	173.2	1116.6	21.3	57.5	30.1	9.4
17-Dec-03 11:24:00	173.2	1116.6	21.3	57.5	30.1	9.4
17-Dec-03 11:25:00	173.2	1116.6	21.3	57.4	30.1	9.4
17-Dec-03 11:26:00	173.2	1116.6	21.3	57.4	30.1	9.4
17-Dec-03 11:27:00	173.2	1116.6	21.3	57.4	30.1	9.4
17-Dec-03 11:28:00	173.2	1116.7	21.3	57.4	30.1	9.4
17-Dec-03 11:29:00	173.2	1116.7	21.3	57.4	30.1	9.4
17-Dec-03 11:30:00	173.2	1116.7	21.3	57.4	30.1	9.4
17-Dec-03 11:31:00	173.2	1116.7	21.3	57.3	30.1	9.4
17-Dec-03 11:32:00	173.2	1116.8	21.3	57.3	30.1	9.4
17-Dec-03 11:33:00	173.2	1116.8	21.3	57.3	30.1	9.4
17-Dec-03 11:34:00	173.2	1116.8	21.3	57.3	30.1	9.4
17-Dec-03 11:35:00	173.2	1116.8	21.3	57.3	30.1	9.4
17-Dec-03 11:36:00	173.2	1116.8	21.3	57.3	30.1	9.4
17-Dec-03 11:37:00	173.2	1116.9	21.3	57.2	30.1	9.4
17-Dec-03 11:38:00	173.2	1116.9	21.3	57.2	30.1	9.4
17-Dec-03 11:39:00	173.1	1116.9	21.3	57.2	30.1	9.4
17-Dec-03 11:40:00	173.1	1116.9	21.3	57.2	30.1	9.4
17-Dec-03 11:41:00	173.1	1117.0	21.3	57.2	30.1	9.4
17-Dec-03 11:42:00	173.1	1117.0	21.3	57.2	30.1	9.4
17-Dec-03 11:43:00	173.1	1117.0	21.3	57.2	30.1	9.4
17-Dec-03 11:44:00	173.1	1117.0	21.3	57.2	30.1	9.4
17-Dec-03 11:45:00	173.1	1117.1	21.3	57.3	30.1	9.4
17-Dec-03 11:46:00	173.1	1117.1	21.3	57.3	30.1	9.4
17-Dec-03 11:47:00	173.0	1117.2	21.3	57.4	30.1	9.4
17-Dec-03 11:48:00	173.0	1117.2	21.3	57.4	30.1	9.4
17-Dec-03 11:49:00	172.9	1117.3	21.3	57.4	30.1	9.4
17-Dec-03 11:50:00	172.9	1117.3	21.3	57.5	30.1	9.4
17-Dec-03 11:51:00	172.8	1117.4	21.3	57.5	30.1	9.4
17-Dec-03 11:52:00	172.8	1117.4	21.3	57.6	30.1	9.4
17-Dec-03 11:53:00	172.7	1117.5	21.3	57.6	30.1	9.4
17-Dec-03 11:54:00	172.6	1117.5	21.3	57.7	30.1	9.4
17-Dec-03 11:55:00	172.6	1117.5	21.3	57.7	30.1	9.4
17-Dec-03 11:56:00	172.5	1117.6	21.3	57.7	30.1	9.4
17-Dec-03 11:57:00	172.5	1117.6	21.3	57.8	30.1	9.4
17-Dec-03 11:58:00	172.4	1117.7	21.3	57.8	30.1	9.4
17-Dec-03 11:59:00	172.4	1117.7	21.3	57.9	30.1	9.4
17-Dec-03 12:00:00	172.3	1117.8	21.3	57.9	30.1	9.5
17-Dec-03 12:01:00	172.3	1117.8	21.3	57.9	30.1	9.5
17-Dec-03 12:02:00	172.2	1117.9	21.3	58.0	30.1	9.5
17-Dec-03 12:03:00	172.2	1117.9	21.3	58.0	30.1	9.5
17-Dec-03 12:04:00	172.1	1117.9	21.3	58.1	30.1	9.5
17-Dec-03 12:05:00	172.1	1117.9	21.3	58.1	30.1	9.5
17-Dec-03 12:06:00	172.1	1117.9	21.3	58.1	30.1	9.5
17-Dec-03 12:07:00	172.1	1117.9	21.3	58.2	30.1	9.5

17-Dec-03 12:08:00	172.1	1117.8	21.3	58.2	30.1	9.5
17-Dec-03 12:09:00	172.1	1117.8	21.3	58.2	30.1	9.5
17-Dec-03 12:10:00	172.2	1117.7	21.3	58.2	30.1	9.5
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17-Dec-03 12:12:00	172.2	1117.7	21.3	58.2	30.0	9.5
17-Dec-03 12:13:00	172.2	1117.6	21.3	58.2	30.0	9.5
17-Dec-03 12:14:00	172.2	1117.6	21.3	58.2	30.0	9.5
17-Dec-03 12:15:00	172.2	1117.6	21.3	58.2	30.0	9.5
17-Dec-03 12:16:00	172.3	1117.5	21.4	58.2	30.0	9.5
17-Dec-03 12:17:00	172.3	1117.5	21.4	58.2	30.0	9.5
17-Dec-03 12:18:00	172.3	1117.4	21.4	58.2	30.0	9.5
17-Dec-03 12:19:00	172.3	1117.4	21.4	58.2	30.0	9.5
17-Dec-03 12:20:00	172.3	1117.4	21.4	58.1	30.0	9.5
17-Dec-03 12:21:00	172.3	1117.3	21.4	58.1	30.0	9.5
17-Dec-03 12:22:00	172.4	1117.3	21.4	58.1	30.0	9.5
17-Dec-03 12:23:00	172.4	1117.3	21.4	58.1	30.0	9.5
17-Dec-03 12:24:00	172.4	1117.2	21.4	58.1	30.0	9.5
17-Dec-03 12:25:00	172.4	1117.2	21.4	58.1	30.0	9.5
17-Dec-03 12:26:00	172.4	1117.1	21.4	58.1	30.0	9.5
17-Dec-03 12:27:00	172.4	1117.1	21.4	58.1	30.0	9.5
17-Dec-03 12:28:00	172.4	1117.0	21.4	58.1	30.0	9.5
17-Dec-03 12:29:00	172.4	1117.0	21.4	58.1	30.0	9.5
17-Dec-03 12:30:00	172.4	1116.9	21.4	58.1	30.0	9.5
17-Dec-03 12:31:00	172.4	1116.9	21.4	58.1	30.0	9.5
17-Dec-03 12:32:00	172.4	1116.8	21.4	58.1	30.0	9.5
17-Dec-03 12:33:00	172.4	1116.8	21.4	58.1	30.0	9.4
17-Dec-03 12:34:00	172.4	1116.7	21.4	58.1	30.0	9.4
17-Dec-03 12:35:00	172.4	1116.7	21.4	58.0	30.0	9.4
17-Dec-03 12:36:00	172.4	1116.6	21.4	58.0	30.0	9.4
17-Dec-03 12:37:00	172.4	1116.5	21.4	58.0	30.0	9.4
17-Dec-03 12:38:00	172.4	1116.5	21.4	57.9	30.0	9.4
17-Dec-03 12:39:00	172.4	1116.4	21.4	57.9	30.0	9.4
17-Dec-03 12:40:00	172.4	1116.4	21.4	57.9	30.0	9.4
17-Dec-03 12:41:00	172.4	1116.3	21.4	57.9	30.0	9.4
17-Dec-03 12:42:00	172.4	1116.3	21.4	57.8	30.0	9.4
17-Dec-03 12:43:00	172.4	1116.2	21.4	57.8	30.0	9.4
17-Dec-03 12:44:00	172.4	1116.2	21.4	57.8	30.0	9.4
17-Dec-03 12:45:00	172.4	1116.1	21.4	57.7	30.0	9.4
17-Dec-03 12:46:00	172.4	1116.1	21.4	57.7	30.0	9.4
17-Dec-03 12:47:00	172.5	1116.0	21.4	57.7	30.0	9.4
17-Dec-03 12:48:00	172.5	1116.0	21.4	57.7	30.0	9.4
17-Dec-03 12:49:00	172.5	1115.9	21.4	57.6	30.0	9.4
17-Dec-03 12:50:00	172.5	1115.9	21.4	57.6	30.0	9.4
17-Dec-03 12:51:00	172.6	1115.9	21.4	57.6	30.0	9.4
17-Dec-03 12:52:00	172.6	1115.8	21.4	57.5	30.0	9.4
17-Dec-03 12:53:00	172.6	1115.8	21.4	57.5	30.0	9.4
17-Dec-03 12:54:00	172.6	1115.8	21.4	57.5	30.0	9.4
17-Dec-03 12:55:00	172.7	1115.7	21.4	57.5	30.0	9.4
17-Dec-03 12:56:00	172.7	1115.7	21.4	57.4	30.0	9.4
17-Dec-03 12:57:00	172.7	1115.7	21.4	57.4	30.0	9.4
17-Dec-03 12:58:00	172.7	1115.6	21.4	57.4	30.0	9.4
17-Dec-03 12:59:00	172.8	1115.6	21.4	57.4	30.0	9.4

17-Dec-03 13:00:00	172.8	1115.6	21.4	57.4	30.0	9.4
17-Dec-03 13:01:00	172.8	1115.5	21.3	57.5	30.0	9.4
17-Dec-03 13:02:00	172.8	1115.5	21.3	57.5	30.0	9.4
17-Dec-03 13:03:00	172.9	1115.5	21.3	57.5	30.0	9.4
17-Dec-03 13:04:00	172.9	1115.4	21.3	57.5	30.0	9.4
17-Dec-03 13:05:00	172.9	1115.4	21.3	57.6	30.0	9.4
17-Dec-03 13:06:00	172.9	1115.4	21.3	57.6	30.0	9.4
17-Dec-03 13:07:00	172.9	1115.3	21.3	57.6	30.0	9.4
17-Dec-03 13:08:00	172.9	1115.3	21.3	57.6	30.0	9.4
17-Dec-03 13:09:00	172.9	1115.3	21.3	57.7	30.0	9.4
17-Dec-03 13:10:00	172.8	1115.3	21.3	57.7	30.0	9.3
17-Dec-03 13:11:00	172.8	1115.3	21.3	57.7	30.0	9.3
17-Dec-03 13:12:00	172.8	1115.4	21.3	57.8	30.0	9.3
17-Dec-03 13:13:00	172.8	1115.4	21.3	57.8	30.0	9.3
17-Dec-03 13:14:00	172.8	1115.5	21.3	57.8	30.0	9.3
17-Dec-03 13:15:00	172.8	1115.5	21.3	57.8	30.0	9.3
17-Dec-03 13:16:00	172.8	1115.5	21.3	57.9	30.0	9.3
17-Dec-03 13:17:00	172.7	1115.6	21.3	57.9	30.0	9.3
17-Dec-03 13:18:00	172.7	1115.6	21.3	57.9	30.0	9.3
17-Dec-03 13:19:00	172.7	1115.7	21.3	57.9	30.0	9.3
17-Dec-03 13:20:00	172.7	1115.7	21.3	58.0	30.0	9.3
17-Dec-03 13:21:00	172.7	1115.8	21.3	58.0	30.0	9.3
17-Dec-03 13:22:00	172.7	1115.8	21.3	58.0	30.0	9.3
17-Dec-03 13:23:00	172.7	1115.9	21.3	58.1	30.0	9.3
17-Dec-03 13:24:00	172.6	1115.9	21.3	58.0	30.0	9.3
17-Dec-03 13:25:00	172.6	1115.9	21.3	58.0	30.0	9.3
17-Dec-03 13:26:00	172.6	1116.0	21.3	58.0	30.0	9.3
17-Dec-03 13:27:00	172.7	1116.0	21.3	58.0	30.0	9.3
17-Dec-03 13:28:00	172.7	1116.1	21.3	58.0	30.0	9.3
17-Dec-03 13:29:00	172.7	1116.1	21.3	58.0	30.0	9.3
17-Dec-03 13:30:00	172.7	1116.2	21.3	57.9	30.0	9.3
17-Dec-03 13:31:00	172.7	1116.2	21.3	57.9	30.0	9.3
17-Dec-03 13:32:00	172.7	1116.3	21.3	57.9	30.0	9.3
17-Dec-03 13:33:00	172.7	1116.3	21.3	57.9	30.0	9.3
17-Dec-03 13:34:00	172.8	1116.3	21.3	57.9	30.0	9.3
17-Dec-03 13:35:00	172.8	1116.3	21.3	57.9	30.0	9.3
17-Dec-03 13:36:00	172.8	1116.3	21.3	57.8	30.0	9.3
17-Dec-03 13:37:00	172.8	1116.2	21.3	57.8	30.0	9.3
17-Dec-03 13:38:00	172.8	1116.2	21.4	57.8	30.0	9.3
17-Dec-03 13:39:00	172.8	1116.2	21.4	57.8	30.0	9.3
17-Dec-03 13:40:00	172.8	1116.1	21.4	57.8	30.0	9.3
17-Dec-03 13:41:00	172.9	1116.1	21.4	57.7	30.0	9.3
17-Dec-03 13:42:00	172.9	1116.1	21.4	57.7	30.0	9.3
17-Dec-03 13:43:00	172.9	1116.0	21.4	57.7	30.0	9.3
17-Dec-03 13:44:00	172.9	1116.0	21.4	57.7	30.0	9.3
17-Dec-03 13:45:00	172.9	1115.9	21.4	57.7	30.0	9.3
17-Dec-03 13:46:00	172.9	1115.9	21.4	57.7	30.0	9.3
17-Dec-03 13:47:00	173.0	1115.9	21.4	57.6	30.0	9.3
17-Dec-03 13:48:00	173.0	1115.8	21.4	57.6	30.0	9.3
17-Dec-03 13:49:00	173.0	1115.8	21.4	57.6	30.0	9.3
17-Dec-03 13:50:00	173.0	1115.8	21.4	57.6	30.0	9.3
17-Dec-03 13:51:00	173.0	1115.7	21.4	57.5	30.0	9.3

17-Dec-03 13:52:00	173.1	1115.7	21.4	57.5	30.0	9.3
17-Dec-03 13:53:00	173.1	1115.6	21.4	57.5	30.0	9.3
17-Dec-03 13:54:00	173.1	1115.6	21.4	57.4	30.0	9.3
17-Dec-03 13:55:00	173.1	1115.6	21.4	57.4	30.0	9.3
17-Dec-03 13:56:00	173.2	1115.5	21.4	57.4	30.0	9.3
17-Dec-03 13:57:00	173.2	1115.5	21.4	57.3	30.0	9.3
17-Dec-03 13:58:00	173.2	1115.5	21.4	57.3	30.0	9.3
17-Dec-03 13:59:00	173.2	1115.5	21.4	57.3	30.0	9.3
17-Dec-03 14:00:00	173.2	1115.5	21.4	57.2	30.0	9.3
17-Dec-03 14:01:00	173.3	1115.5	21.4	57.2	30.0	9.3
17-Dec-03 14:02:00	173.3	1115.4	21.4	57.2	30.0	9.3
17-Dec-03 14:03:00	173.3	1115.4	21.4	57.1	30.0	9.3
17-Dec-03 14:04:00	173.3	1115.4	21.4	57.1	30.0	9.3
17-Dec-03 14:05:00	173.3	1115.4	21.4	57.1	30.0	9.3
17-Dec-03 14:06:00	173.3	1115.4	21.4	57.0	30.0	9.3
17-Dec-03 14:07:00	173.3	1115.4	21.4	57.0	30.0	9.3
17-Dec-03 14:08:00	173.3	1115.4	21.4	57.0	30.0	9.3
17-Dec-03 14:09:00	173.3	1115.4	21.4	56.9	30.0	9.2
17-Dec-03 14:10:00	173.3	1115.4	21.4	56.9	30.0	9.2
17-Dec-03 14:11:00	173.2	1115.4	21.4	56.9	30.0	9.2
17-Dec-03 14:12:00	173.2	1115.4	21.4	56.8	30.0	9.2
17-Dec-03 14:13:00	173.2	1115.4	21.4	56.8	30.0	9.2
17-Dec-03 14:14:00	173.2	1115.4	21.4	56.8	30.0	9.2
17-Dec-03 14:15:00	173.2	1115.4	21.4	56.7	30.0	9.2
17-Dec-03 14:16:00	173.1	1115.4	21.4	56.7	30.0	9.2
17-Dec-03 14:17:00	173.1	1115.4	21.4	56.6	30.0	9.2
17-Dec-03 14:18:00	173.1	1115.4	21.4	56.6	30.0	9.2
17-Dec-03 14:19:00	173.1	1115.3	21.4	56.5	30.0	9.2
17-Dec-03 14:20:00	173.1	1115.3	21.4	56.4	30.0	9.2
17-Dec-03 14:21:00	173.0	1115.3	21.4	56.4	30.0	9.2
17-Dec-03 14:22:00	173.0	1115.3	21.3	56.3	30.0	9.2
17-Dec-03 14:23:00	173.0	1115.3	21.3	56.3	30.0	9.2
17-Dec-03 14:24:00	173.0	1115.3	21.3	56.2	30.0	9.2
17-Dec-03 14:25:00	173.0	1115.2	21.3	56.2	30.0	9.2
17-Dec-03 14:26:00	173.0	1115.2	21.3	56.1	30.0	9.2
17-Dec-03 14:27:00	173.0	1115.1	21.3	56.1	30.0	9.2
17-Dec-03 14:28:00	173.1	1115.1	21.3	56.0	30.0	9.2
17-Dec-03 14:29:00	173.1	1115.1	21.3	56.0	30.0	9.2
17-Dec-03 14:30:00	173.1	1115.0	21.3	55.9	30.0	9.2
17-Dec-03 14:31:00	173.2	1115.0	21.3	55.8	30.0	9.2
17-Dec-03 14:32:00	173.2	1114.9	21.3	55.8	30.0	9.1
17-Dec-03 14:33:00	173.3	1114.9	21.3	55.7	30.0	9.1
17-Dec-03 14:34:00	173.3	1114.9	21.3	55.7	30.0	9.1
17-Dec-03 14:35:00	173.3	1114.8	21.3	55.6	30.0	9.1
17-Dec-03 14:36:00	173.4	1114.8	21.3	55.6	30.0	9.1
17-Dec-03 14:37:00	173.4	1114.7	21.3	55.5	30.0	9.1
17-Dec-03 14:38:00	173.5	1114.7	21.3	55.5	30.0	9.1
17-Dec-03 14:39:00	173.5	1114.7	21.3	55.4	30.0	9.1
17-Dec-03 14:40:00	173.5	1114.6	21.3	55.4	30.0	9.1
17-Dec-03 14:41:00	173.6	1114.6	21.3	55.3	30.0	9.1
17-Dec-03 14:42:00	173.6	1114.5	21.3	55.3	30.0	9.1
17-Dec-03 14:43:00	173.7	1114.5	21.3	55.2	30.0	9.1

17-Dec-03 14:44:00	173.7	1114.5	21.3	55.2	30.0	9.1
17-Dec-03 14:45:00	173.7	1114.4	21.3	55.2	30.0	9.1
17-Dec-03 14:46:00	173.8	1114.4	21.3	55.1	30.0	9.1
17-Dec-03 14:47:00	173.8	1114.3	21.3	55.1	30.0	9.1
17-Dec-03 14:48:00	173.8	1114.3	21.3	55.1	30.0	9.1
17-Dec-03 14:49:00	173.8	1114.2	21.3	55.0	30.0	9.1
17-Dec-03 14:50:00	173.8	1114.1	21.3	55.0	30.0	9.1
17-Dec-03 14:51:00	173.7	1114.1	21.3	54.9	30.0	9.1
17-Dec-03 14:52:00	173.7	1114.0	21.3	54.9	30.0	9.1
17-Dec-03 14:53:00	173.7	1113.9	21.3	54.9	30.0	9.1
17-Dec-03 14:54:00	173.7	1113.9	21.3	54.8	30.0	9.1
17-Dec-03 14:55:00	173.7	1113.8	21.3	54.8	30.0	9.1
17-Dec-03 14:56:00	173.7	1113.7	21.4	54.8	30.0	9.1
17-Dec-03 14:57:00	173.7	1113.7	21.4	54.7	30.0	9.1
17-Dec-03 14:58:00	173.7	1113.6	21.4	54.7	30.0	9.1
17-Dec-03 14:59:00	173.7	1113.5	21.4	54.6	30.0	9.1
17-Dec-03 15:00:00	173.7	1113.4	21.4	54.6	30.0	9.1
17-Dec-03 15:01:00	173.7	1113.4	21.4	54.6	30.0	9.1
17-Dec-03 15:02:00	173.7	1113.3	21.4	54.5	30.0	9.1
17-Dec-03 15:03:00	173.7	1113.2	21.4	54.5	30.0	9.1
17-Dec-03 15:04:00	173.7	1113.2	21.4	54.5	30.0	9.1
17-Dec-03 15:05:00	173.7	1113.1	21.4	54.4	30.0	9.1
17-Dec-03 15:06:00	173.7	1113.0	21.4	54.4	30.0	9.1
17-Dec-03 15:07:00	173.8	1113.0	21.4	54.5	30.0	9.1
17-Dec-03 15:08:00	173.8	1112.9	21.4	54.5	30.0	9.1
	172.639	1116.594	21.326			

FUEL ANALYSIS

DECEMBER 17, 2003





### Natural Gas and Heating Value Calculations

Customer: Tampa Electric Company  
 Facility: Bayside Power Station  
 Source: CT-2D

Sample ID: FGT 8030/1217  
 Analysis Date: 12/17/2003

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

Component	% Volume	Molecular Wt.	Density * (lb/ft <sup>3</sup> )	% volume		Component		Gross * Heating Value (Btu/SCF)	Volume Fract. Btu
				x Density	weight %	Gross Btu/lb	Weight Fract. Btu		
Hydrogen		2.016	0.0053	0.00000	0.0000	61100	0.00	325.0	0
Oxygen		32.000	0.0846	0.00000	0.0000	0	0.00	0.0	0
Nitrogen	0.3150	28.016	0.0744	0.00023	0.5181	0	0.00	0.0	0
CO2	0.9250	44.010	0.1170	0.00108	2.3926	0	0.00	0.0	0
CO		28.010	0.0740	0.00000	0.0000	4347	0.00	322.0	0
Methane	95.133	16.041	0.0424	0.04034	89.1741	23879	21293.88	1013.0	963.6973
Ethane	2.540	30.067	0.0803	0.00204	4.5091	22320	1006.43	1792.0	45.5168
Ethylene		28.051	0.0746	0.00000	0.0000	21644	0.00	1614.0	0
Propane	0.654	44.092	0.1196	0.00078	1.7292	21661	374.57	2590.0	16.9386
propylene		42.077	0.1110	0.00000	0.0000	21041	0.00	2336.0	0
Isobutane	0.148	58.118	0.1582	0.00023	0.5176	21257	110.03	3363.0	4.97724
n-butane	0.136	58.118	0.1582	0.00022	0.4756	21308	101.35	3370.0	4.5832
Isobutene		56.102	0.1480	0.00000	0.0000	20730	0.00	3068.0	0
Isopentane	0.049	72.144	0.1904	0.00009	0.2063	21052	43.42	4008.0	1.96392
n-pentane	0.031	72.144	0.1904	0.00006	0.1305	21091	27.52	4016.0	1.24496
n-hexane	0.069	86.169	0.2274	0.00016	0.3469	20940	72.64	4762.0	3.28578
H2S		34.076	0.0911	0.00000	0.0000	7100	0.00	647.0	0

Total: 100.00

Average Density	0.04523	100.0000
Specific Gravity	0.59129	

Gross Heating Value			
Btu/lb	23030	Btu/SCF	1042.21
Net Heating Values			
Btu/lb	20838	Btu/SCF	943

\* Density (lb/ft<sup>3</sup>) and Gross Heating Value (Btu/scf) data from Perry's Chemical Engineering Handbook.

Net Heating Value (Lower Heating Value), Btu/lb, calculated as Gross Heating Value (Higher Heating Value) - 10.30 (%H<sub>2</sub> x 8.94), from Steam, §9-9, Principles of Combustion, equation 9.

Heat from water vaporization is assumed to be un-available.



### Natural Gas and Heating Value Calculations

Customer: Tampa Electric Company  
 Facility: Bayside Power Station  
 Source: CT-2D

Sample ID: FGT 8030/1217  
 Analysis Date: 12/17/2003

#### CALCULATION OF F FACTORS

Component	Mol. Wt.	C Factor	H Factor	% volume	Fract. Wt.	Weight Percents			
						Carbon	Hydrogen	Nitrogen	Oxygen
Hydrogen	2.016	0	1	0.000	0.0000		0		
Oxygen	32.000	0	0	0.000	0.0000				0
Nitrogen	28.016	0	0	0.315	8.8250			0.516388673	
CO2	44.010	0.272273	0	0.925	40.7093	0.64857126			1.7317593
CO	28.010	0.42587	0	0.000	0.0000	0			0
Methane	16.041	0.75	0.25	95.133	1526.0285	66.9705583	22.323519		
Ethane	30.067	0.8	0.2	2.540	76.3702	3.57498173	0.8937454		
Ethylene	28.051	0.85714	0.14286	0.000	0.0000	0	0		
Propane	44.092	0.81818	0.181818	0.654	28.8362	1.38053185	0.3067852		
Propene	42.077	0.85714	0.14286	0.000	0.0000	0	0		
Isobutane	58.118	0.82759	0.17247	0.148	8.6015	0.41653129	0.0868052		
n-butane	58.118	0.82759	0.17247	0.136	7.9040	0.38275849	0.079767		
Isobutene	56.102	0.85714	0.14286	0.000	0.0000	0	0		
Isopentane	72.144	0.83333	0.16667	0.049	3.5351	0.17237463	0.0344758		
n-pentane	72.144	0.83333	0.16667	0.031	2.2365	0.10905334	0.0218112		
n-hexane	86.169	0.83721	0.16279	0.069	5.9457	0.29126921	0.0566354		
H2S	34.076	0	0.0586923	0.000	0.0000	0	0		
Totals				100.00000	1708.9918	73.9466301	23.80	0.516388673	1.7317593

CALCULATED VALUES		
<b>O2 F Factor (dry), Fd</b>	<b>8644</b>	DSCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
<b>O2 F Factor (wet), Fw</b>	<b>10638</b>	SCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
<b>Moisture F Factor</b>	<b>1995</b>	SCF of Water/MM Btu of Fuel Burned @ 0% excess air
<b>Combust. Moisture</b>	<b>18.75</b>	volume % water in flue gas @ 0% excess air
<b>CO2 F Factor, Fc</b>	<b>1031</b>	DSCF of CO2/MM Btu of Fuel Burned @ 0% excess air
<b>Carbon Dioxide</b>	<b>11.92</b>	volume % CO2 in flue gas @ 0% O2
<b>Predicted Fo Factor</b>	<b>1.75</b>	EPA Method 3a Fo value

Florida Gas Transmission-8030 Jan 09 2004 6:40 AM

Date	BTU	CO2	N2	Grav	Methan	Ethane	Propan	Ibutan	Nbutan	Ipenta	Npenta	C6	C7	H2	Helium	Oxygen
12/20/2003	1045	0.905	0.293	0.592	95.121	2.488	0.707	0.158	0.159	0.054	0.036	0.079	0	0	0	0
12/19/2003	1046	0.851	0.304	0.592	95.093	2.541	0.722	0.163	0.162	0.054	0.035	0.075	0	0	0	0
12/18/2003	1046	0.859	0.305	0.592	95.023	2.618	0.719	0.163	0.152	0.053	0.034	0.075	0	0	0	0
12/17/2003	1043	0.925	0.315	0.591	95.133	2.54	0.654	0.148	0.136	0.049	0.031	0.069	0	0	0	0
12/16/2003	1041	0.892	0.295	0.59	95.344	2.45	0.626	0.135	0.13	0.043	0.027	0.058	0	0	0	0
12/15/2003	1043	0.941	0.336	0.592	94.99	2.639	0.667	0.149	0.136	0.048	0.029	0.066	0	0	0	0
12/14/2003	1042	0.934	0.328	0.591	95.126	2.583	0.617	0.142	0.127	0.047	0.029	0.069	0	0	0	0
12/13/2003	1042	0.91	0.311	0.59	95.22	2.535	0.616	0.141	0.128	0.046	0.028	0.065	0	0	0	0
12/12/2003	1043	0.897	0.299	0.591	95.148	2.599	0.642	0.142	0.133	0.046	0.03	0.065	0	0	0	0
12/11/2003	1043	0.933	0.324	0.592	95.009	2.656	0.653	0.144	0.135	0.048	0.03	0.068	0	0	0	0
12/10/2003	1043	0.946	0.293	0.591	95.118	2.585	0.638	0.139	0.134	0.047	0.031	0.07	0	0	0	0
12/09/2003	1043	0.955	0.304	0.592	94.996	2.677	0.645	0.142	0.133	0.048	0.03	0.069	0	0	0	0
12/08/2003	1043	0.924	0.315	0.592	95.024	2.688	0.64	0.139	0.13	0.045	0.029	0.064	0	0	0	0
12/07/2003	1042	0.91	0.318	0.591	95.111	2.67	0.597	0.134	0.122	0.044	0.028	0.066	0	0	0	0
12/06/2003	1035	0.925	1.145	0.595	94.157	2.782	0.595	0.141	0.119	0.044	0.026	0.066	0	0	0	0
12/05/2003	1040	0.905	0.353	0.59	95.254	2.574	0.534	0.132	0.113	0.043	0.026	0.065	0	0	0	0
12/04/2003	1035	0.911	0.348	0.586	95.568	2.436	0.44	0.105	0.087	0.034	0.02	0.052	0	0	0	0
12/03/2003	1034	0.872	0.342	0.585	95.803	2.261	0.414	0.101	0.091	0.035	0.023	0.056	0	0	0	0
12/02/2003	1033	0.803	0.354	0.584	95.964	2.199	0.396	0.094	0.086	0.032	0.021	0.051	0	0	0	0
11/29/2003	1032	0.811	0.323	0.583	96.082	2.17	0.353	0.087	0.075	0.03	0.019	0.05	0	0	0	0
11/28/2003	1033	0.781	0.304	0.582	96.175	2.106	0.358	0.09	0.077	0.032	0.02	0.055	0	0	0	0
11/27/2003	1033	0.81	0.32	0.583	96.089	2.112	0.378	0.097	0.082	0.034	0.021	0.057	0	0	0	0
11/26/2003	1033	0.803	0.297	0.583	96.154	2.086	0.37	0.097	0.081	0.034	0.021	0.058	0	0	0	0
11/25/2003	1032	0.832	0.297	0.583	96.191	2.036	0.363	0.098	0.078	0.032	0.019	0.053	0	0	0	0
11/24/2003	1032	0.792	0.324	0.582	96.245	1.978	0.37	0.097	0.081	0.034	0.021	0.058	0	0	0	0
11/23/2003	1032	0.866	0.32	0.584	96.011	2.145	0.37	0.095	0.081	0.034	0.021	0.057	0	0	0	0
11/22/2003	1033	0.871	0.319	0.584	95.923	2.251	0.373	0.09	0.076	0.031	0.019	0.049	0	0	0	0
11/21/2003	1031	0.848	0.315	0.583	96.087	2.138	0.358	0.087	0.073	0.03	0.018	0.047	0	0	0	0
11/20/2003	1033	0.846	0.303	0.584	95.99	2.199	0.386	0.093	0.081	0.032	0.02	0.05	0	0	0	0
11/19/2003	1034	0.823	0.301	0.584	95.977	2.217	0.404	0.096	0.083	0.031	0.019	0.049	0	0	0	0
11/18/2003	1033	0.819	0.305	0.583	96.011	2.204	0.39	0.093	0.077	0.031	0.019	0.051	0	0	0	0
11/17/2003	1031	0.798	0.316	0.582	96.156	2.142	0.352	0.083	0.069	0.027	0.016	0.041	0	0	0	0
11/16/2003	1031	0.829	0.304	0.582	96.145	2.132	0.347	0.085	0.07	0.028	0.016	0.044	0	0	0	0
11/15/2003	1031	0.873	0.294	0.583	96.184	2.034	0.351	0.09	0.072	0.031	0.018	0.053	0	0	0	0
11/14/2003	1034	0.884	0.289	0.585	95.959	2.153	0.401	0.106	0.085	0.037	0.023	0.065	0	0	0	0

**APPENDIX E – PROJECT PARTICIPANTS**

**TEST PARTICIPANTS**

**ENVIRONMENTAL SERVICES**

**AIR SERVICES GROUP**

Jorge Varino	Technician
Charles Dufeny	Environmental Technician
Juan Ramirez	Environmental Technician
Robert Barthelette	Environmental Technician
Ray McDarby	Senior Environmental Technician
David A. Smith	Coordinator – Air Services Group
Ted Wenning	Coordinator – CEM Program

**BAYSIDE POWER STATION**

Drupatie Latchman	Engineer
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