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Title/Desc:

GTS DURATEK PHASE 1 HANFORD LLW MELTER TESTS 1000 KG MELTER OFFGAS REPORT[SEC 3 OF 3]

Pages: 119

This document was too large to scan as a whole document, therefore it required breaking into smaller sections.

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SECTION 3 OF 3

TITLE: GTS DURATEK PHASE I HANFORD LLW MELTER TESTS 1000 kg MELTER OFFGAS REPORT

DATE: 11/30/95

ORIGINATOR: EATON WC

CO: WHC

RECIPIENT:

CO:

REFERENCES: EDT-611885

APPENDIX C

COMPUTER SUMMARIES AND CALCULATIONS

CEM DRIFT CALCULATION

WORKSHEETS

O2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: HEPA EXHAUST, Run #1
TEST DATE: 1/19/95

		Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	25.00				
AVERAGE % =	20.51				
ZERO GAS		0.00	0.03	0.0	0.1
MID RANGE GAS		11.51	11.61	0.1	0.4
HIGH RANGE GAS		17.72	17.67	−0.0	−0.2

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.0	0.61	2.3	0.79	3.0	0.7
MID RANGE GAS	11.61	11.77	0.6	11.66	0.2	−0.4
HIGH RANGE GAS						

Cgas= 20.70

O2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: HEPA EXHAUST, Run #2
TEST DATE: 1/19/95

		Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	25.00				
AVERAGE % =	21.37				
ZERO GAS		0.00	0.02	0.0	0.1
MID RANGE GAS		11.51	11.58	0.1	0.3
HIGH RANGE GAS		17.72	17.73	0.0	0.0

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.0	0.84	3.3	0.85	3.3	0.0
MID RANGE GAS	11.58	12.17	2.4	12.34	3.0	0.7
HIGH RANGE GAS						

Cgas= 20.70

O2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: HEPA EXHAUST, Run #3
TEST DATE: 1/19/95

		Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	25.00				
AVERAGE % =	20.05				
ZERO GAS		0.00	0.02	0.0	0.1
MID RANGE GAS		11.51	11.66	0.1	0.6
HIGH RANGE GAS		17.72	17.77	0.1	0.2

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.0	0.51	2.0	−1.12	−4.6	−6.5
MID RANGE GAS	11.7	11.61	−0.2	10.37	−5.2	−5.0
HIGH RANGE GAS						

Cgas= 20.74

O2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: HEPA EXHAUST, Run #4
TEST DATE: 1/20/95

		Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	25.00				
AVERAGE % =	20.33				
ZERO GAS		0.00	0.33	0.3	1.3
MID RANGE GAS		11.51	11.80	0.3	1.2
HIGH RANGE GAS		17.72	17.77	0.1	0.2

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.3	0.68	1.4	0.57	1.0	−0.4
MID RANGE GAS	11.80	11.70	−0.4	11.55	−1.0	−0.6
HIGH RANGE GAS						

Cgas= 20.62

CO ANALYZER DRIFT CORRECTION CALCULATION
SAMPLING RUN: HEPA EXHAUST, Run #1
TEST DATE: 1/19/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ANALYZER SPAN:	500.00				
AVERAGE PPM =	36.4				
ZERO GAS		0.00	0.40	0.4	0.1
LOW RANGE GAS		90.70	93.00	2.3	0.5
MID RANGE GAS		281.00	288.00	7.0	1.4
HIGH RANGE GAS		461.00	459.00	−2.0	−0.4

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.4	0.40	0.0	0.30	−0.0	−0.0
LOW RANGE GAS	93.00	90.70	−0.5	95.20	0.4	0.9
MID RANGE GAS						
HIGH RANGE GAS						

Cgas = 35.3

CO ANALYZER DRIFT CORRECTION CALCULATION
SAMPLING RUN: HEPA EXHAUST, Run #2
TEST DATE: 1/19/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ANALYZER SPAN:	500.00				
AVERAGE PPM =	89.6				
ZERO GAS		0.00	0.40	0.4	0.1
LOW RANGE GAS		90.70	93.00	2.3	0.5
MID RANGE GAS		281.00	288.00	7.0	1.4
HIGH RANGE GAS		461.00	459.00	−2.0	−0.4

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.4	0.30	−0.0	0.90	0.1	0.1
LOW RANGE GAS	93.00	93.70	0.1	95.80	0.6	0.4
MID RANGE GAS						
HIGH RANGE GAS						

Cgas = 85.7

CO ANALYZER DRIFT CORRECTION CALCULATION
SAMPLING RUN: HEPA EXHAUST, Run #3
TEST DATE: 1/19/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ANALYZER SPAN:	500.00				
AVERAGE PPM =	38.5				
ZERO GAS		0.00	0.40	0.4	0.1
LOW RANGE GAS		90.70	93.00	2.3	0.5
MID RANGE GAS		281.00	288.00	7.0	1.4
HIGH RANGE GAS		461.00	459.00	−2.0	−0.4

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.4	0.90	0.1	0.40	0.0	−0.1
LOW RANGE GAS	93.00	95.80	0.6	92.30	−0.1	−0.7
MID RANGE GAS						
HIGH RANGE GAS						

Cgas = 36.8

CO ANALYZER DRIFT CORRECTION CALCULATION
SAMPLING RUN: HEPA EXHAUST, Run #4
TEST DATE: 1/20/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ANALYZER SPAN:	500.00				
AVERAGE PPM =	36.8				
ZERO GAS		0.00	0.37	0.4	0.1
LOW RANGE GAS		90.70	93.30	2.6	0.5
MID RANGE GAS		281.00	281.00	0.0	0.0
HIGH RANGE GAS		461.00	470.00	9.0	1.8

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.4	0.40	0.0	0.40	0.0	0.0
LOW RANGE GAS	93.30	90.30	−0.6	90.30	−0.6	0.0
MID RANGE GAS						
HIGH RANGE GAS						

Cgas= 36.7

CO2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: HEPA EXHAUST, Run #1
TEST DATE: 1/19/95

		Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	20.00				
AVERAGE % =	0.84				
ZERO GAS		0.00	0.05	0.1	0.3
MID RANGE GAS		11.05	11.09	0.0	0.2
HIGH RANGE GAS		17.09	17.00	−0.1	−0.5

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.1	0.06	0.0	0.06	0.0	0.0
MID RANGE GAS	11.09	10.63	−2.3	10.15	−4.7	−2.4
HIGH RANGE GAS						

Cgas = 0.83

CO2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: HEPA EXHAUST, Run #2
TEST DATE: 1/19/95

		Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	20.00				
AVERAGE % =	1.08				
ZERO GAS		0.00	0.08	0.1	0.4
MID RANGE GAS		11.19	12.58	1.4	7.0
HIGH RANGE GAS		17.02	16.71	−0.3	−1.6

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.1	0.06	−0.1	0.10	0.1	0.2
MID RANGE GAS	12.58	10.82	−8.8	11.05	−7.6	1.2
HIGH RANGE GAS						

Cgas = 1.03

CO2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: HEPA EXHAUST, Run #3
TEST DATE: 1/19/95

		Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	20.00				
AVERAGE % =	0.67				
ZERO GAS		0.00	0.08	0.1	0.4
MID RANGE GAS		11.19	12.58	1.4	7.0
HIGH RANGE GAS		17.02	16.71	−0.3	−1.6

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.1	0.11	0.2	0.13	0.3	0.1
MID RANGE GAS	12.6	11.05	−7.6	10.90	−8.4	−0.8
HIGH RANGE GAS						

Cgas = 0.57

CO2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: HEPA EXHAUST, Run #4
TEST DATE: 1/20/95

		Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	20.00				
AVERAGE % =	0.78				
ZERO GAS		0.00	0.08	0.1	0.4
MID RANGE GAS		11.19	12.58	1.4	7.0
HIGH RANGE GAS		17.02	16.71	−0.3	−1.6

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.1	0.06	−0.1	0.08	0.0	0.1
MID RANGE GAS	12.58	10.44	−10.7	10.50	−10.4	0.3
HIGH RANGE GAS						

Cgas = 0.76

NOx ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: HEPA EXHAUST, Run #1
TEST DATE: 1/19/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ANALYZER SPAN:	1000.00				
AVERAGE % =	656.0				
ZERO GAS		0.0	4.0	4.0	0.4
MID RANGE GAS		442.0	459.0	17.0	1.7
HIGH RANGE GAS		857.0	857.0	0.0	0.0

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	4.0	4.00	0.0	20.00	1.6	1.6
MID RANGE GAS	459.00	439.00	−2.0	464.00	0.5	2.5
HIGH RANGE GAS						

Cgas= 647.7

NOx ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: HEPA EXHAUST, Run #2
TEST DATE: 1/19/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ANALYZER SPAN:	1000.00				
AVERAGE % =	1180.6				
ZERO GAS		0.0	4.0	4.0	0.4
MID RANGE GAS		442.0	459.0	17.0	1.7
HIGH RANGE GAS		857.0	857.0	0.0	0.0

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	4.0	46.00	4.2	175.00	17.1	12.9
MID RANGE GAS	459.00	479.00	2.0	597.00	13.8	11.8
HIGH RANGE GAS						

Cgas= 1106.4

NOx ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: HEPA EXHAUST, Run #3
TEST DATE: 1/19/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ANALYZER SPAN:	1000.00				
AVERAGE % =	595.0				
ZERO GAS		0.0	4.0	4.0	0.4
MID RANGE GAS		442.0	459.0	17.0	1.7
HIGH RANGE GAS		857.0	857.0	0.0	0.0

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	4.0	175.00	17.1	54.00	5.0	−12.1
MID RANGE GAS	459.0	597.00	13.8	489.00	3.0	−10.8
HIGH RANGE GAS						

Cgas= 495.6

NOx ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: HEPA EXHAUST, Run #4
TEST DATE: 1/20/95

ANALYZER SPAN: 1000.00 / AVERAGE % = 587.0	Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ZERO GAS	0.0	8.0	8.0	0.8
MID RANGE GAS	442.0	460.0	18.0	1.8
HIGH RANGE GAS	857.0	863.0	6.0	0.6

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	8.0	17.00	0.9	6.00	−0.2	−1.1
MID RANGE GAS	460.00	451.00	−0.9	450.00	−1.0	−0.1
HIGH RANGE GAS						

Cgas = 579.4

SO2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: HEPA EXHAUST, Run #1
TEST DATE: 1/19/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	200.00				
AVERAGE PPM =	201.00				
ZERO GAS		0.00	2.60	2.6	1.3
MID RANGE GAS		86.80	86.10	−0.7	−0.4
HIGH RANGE GAS		163.20	163.20	0.0	0.0

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	2.6	−0.10	−1.4	−2.00	−2.3	−1.0
MID RANGE GAS	86.10	67.40	−9.3	75.00	−5.5	3.8
HIGH RANGE GAS						

Cgas= 242.7

SO2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: HEPA EXHAUST, Run #2
TEST DATE: 1/19/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	200.00				
AVERAGE PPM =	215.60				
ZERO GAS		0.00	2.60	2.6	1.3
MID RANGE GAS		86.80	86.10	−0.7	−0.4
HIGH RANGE GAS		163.20	163.20	0.0	0.0

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	2.6	−2.00	−2.3	−2.00	−2.3	0.0
MID RANGE GAS	86.10	75.00	−5.5	75.00	−5.5	0.0
HIGH RANGE GAS						

Cgas= 245.3

SO2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: HEPA EXHAUST, Run #3
TEST DATE: 1/19/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	200.00				
AVERAGE PPM =	0.00				
ZERO GAS		0.00	0.30	0.3	0.2
MID RANGE GAS		86.80	88.50	1.7	0.8
HIGH RANGE GAS		159.30	160.60	1.3	0.7

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.3	2.80	1.3	1.20	0.5	−0.8
MID RANGE GAS	88.50	141.30	26.4	143.00	27.3	0.8
HIGH RANGE GAS						

Cgas= −1.2

O2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: POST DEMISTER, Run #1
TEST DATE: 1/19/95

		Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	25.00				
AVERAGE % =	19.72				
ZERO GAS		0.00	0.03	0.0	0.1
MID RANGE GAS		11.51	11.61	0.1	0.4
HIGH RANGE GAS		17.72	17.67	−0.0	−0.2

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.0	0.84	3.2	0.85	3.3	0.0
MID RANGE GAS	11.61	12.17	2.2	12.22	2.4	0.2
HIGH RANGE GAS						

Cgas= 19.14

O2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: POST DEMISTER, Run #2
TEST DATE: 1/19/95

		Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	25.00				
AVERAGE % =	21.44				
ZERO GAS		0.00	0.02	0.0	0.1
MID RANGE GAS		11.51	11.58	0.1	0.3
HIGH RANGE GAS		17.72	17.73	0.0	0.0

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.0	0.85	3.3	0.84	3.3	−0.0
MID RANGE GAS	11.6	12.34	3.0	12.22	2.6	−0.5
HIGH RANGE GAS						

Cgas= 20.73

O2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: POST DEMISTER, Run #3
TEST DATE: 1/19/95

		Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	25.00				
AVERAGE % =	19.33				
ZERO GAS		0.00	0.02	0.0	0.1
MID RANGE GAS		11.51	11.66	0.1	0.6
HIGH RANGE GAS		17.72	17.77	0.1	0.2

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.0	0.51	2.0	−1.12	−4.6	−6.5
MID RANGE GAS	11.66	11.61	−0.2	10.37	−5.2	−5.0
HIGH RANGE GAS						

Cgas= 20.01

O2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: POST DEMISTER, Run #4
TEST DATE: 1/20/95

		Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	25.00				
AVERAGE % =	19.82				
ZERO GAS		0.00	0.33	0.3	1.3
MID RANGE GAS		11.51	11.80	0.3	1.2
HIGH RANGE GAS		17.72	17.77	0.1	0.2

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.3	0.68	1.4	0.57	1.0	−0.4
MID RANGE GAS	11.80	11.70	−0.4	11.55	−1.0	−0.6
HIGH RANGE GAS						

Cgas= 20.08

CO ANALYZER DRIFT CORRECTION CALCULATION
SAMPLING RUN: POST DEMISTER, Run #1
TEST DATE: 1/19/95

ANALYZER SPAN: 500.00 / AVERAGE PPM = 233.6	Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ZERO GAS	0.00	0.40	0.4	0.1
LOW RANGE GAS	90.70	93.00	2.3	0.5
MID RANGE GAS	281.00	288.00	7.0	1.4
HIGH RANGE GAS	461.00	459.00	−2.0	−0.4

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.4	0.40	0.0	0.30	−0.0	−0.0
LOW RANGE GAS	93.00	90.70	−0.5	95.20	0.4	0.9
MID RANGE GAS						
HIGH RANGE GAS						

Cgas= 228.5

CO ANALYZER DRIFT CORRECTION CALCULATION
SAMPLING RUN: POST DEMISTER, Run #2
TEST DATE: 1/19/95

ANALYZER SPAN: 500.00 / AVERAGE PPM = 218.4	Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ZERO GAS	0.00	0.40	0.4	0.1
LOW RANGE GAS	90.70	93.00	2.3	0.5
MID RANGE GAS	281.00	288.00	7.0	1.4
HIGH RANGE GAS	461.00	459.00	−2.0	−0.4

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.4	0.30	−0.0	0.90	0.1	0.1
LOW RANGE GAS	93.00	93.70	0.1	95.80	0.6	0.4
MID RANGE GAS						
HIGH RANGE GAS						

Cgas= 209.8

CO ANALYZER DRIFT CORRECTION CALCULATION
SAMPLING RUN: POST DEMISTER, Run #3
TEST DATE: 1/19/95

ANALYZER SPAN: 500.00 / AVERAGE PPM = 174.0	Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ZERO GAS	0.00	0.40	0.4	0.1
LOW RANGE GAS	90.70	93.00	2.3	0.5
MID RANGE GAS	281.00	288.00	7.0	1.4
HIGH RANGE GAS	461.00	459.00	−2.0	−0.4

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.4	0.90	0.1	0.40	0.0	−0.1
LOW RANGE GAS	93.00	95.80	0.6	92.30	−0.1	−0.7
MID RANGE GAS						
HIGH RANGE GAS						

Cgas= 168.3

CO ANALYZER DRIFT CORRECTION CALCULATION
SAMPLING RUN: POST DEMISTER, Run #4
TEST DATE: 1/20/95

ANALYZER SPAN: 500.00 AVERAGE PPM = 177.9	Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ZERO GAS	0.00	0.37	0.4	0.1
LOW RANGE GAS	90.70	93.30	2.6	0.5
MID RANGE GAS	281.00	281.00	0.0	0.0
HIGH RANGE GAS	461.00	470.00	9.0	1.8

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.4	0.40	0.0	0.40	0.0	0.0
LOW RANGE GAS	93.30	90.30	−0.6	90.30	−0.6	0.0
MID RANGE GAS						
HIGH RANGE GAS						

Cgas = 179.1

CO2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: POST DEMISTER, Run #1
TEST DATE: 1/19/95

		Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	20.00				
AVERAGE % =	3.04				
ZERO GAS		0.00	0.05	0.1	0.3
MID RANGE GAS		11.05	11.09	0.0	0.2
HIGH RANGE GAS		17.09	17.00	−0.1	−0.5

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.1	0.06	0.0	0.06	0.0	0.0
MID RANGE GAS	11.09	10.63	−2.3	10.15	−4.7	−2.4
HIGH RANGE GAS						

Cgas=	3.19

CO2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: POST DEMISTER, Run #2
TEST DATE: 1/19/95

		Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	20.00				
AVERAGE % =	3.60				
ZERO GAS		0.00	0.04	0.0	0.2
MID RANGE GAS		11.05	11.02	−0.0	−0.1
HIGH RANGE GAS		17.09	16.99	−0.1	−0.5

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.0	0.06	0.1	0.10	0.3	0.2
MID RANGE GAS	11.0	10.82	−1.0	11.05	0.1	1.2
HIGH RANGE GAS						

Cgas=	3.58

CO2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: POST DEMISTER, Run #3
TEST DATE: 1/19/95

		Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	20.00				
AVERAGE % =	2.35				
ZERO GAS		0.00	0.04	0.0	0.2
MID RANGE GAS		11.05	11.02	−0.0	−0.1
HIGH RANGE GAS		17.09	16.99	−0.1	−0.5

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.0	0.10	0.3	0.10	0.3	0.0
MID RANGE GAS	11.02	11.05	0.1	10.90	−0.6	−0.8
HIGH RANGE GAS						

Cgas=	2.29

CO2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: POST DEMISTER, Run #4
TEST DATE: 1/20/95

		Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	20.00				
AVERAGE % =	2.52				
ZERO GAS		0.00	0.06	0.1	0.3
MID RANGE GAS		11.05	11.02	−0.0	−0.1
HIGH RANGE GAS		17.09	17.15	0.1	0.3

	Analyzer Calibration Response	*Initial* System Response	*Initial* System Bias (% of span)	*Final* System Response	*Final* System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.1	0.06	0.0	0.08	0.1	0.1
MID RANGE GAS	11.02	10.44	−2.9	10.50	−2.6	0.3
HIGH RANGE GAS						

Cgas= 2.60

NOx ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: POST DEMISTER, Run #1
TEST DATE: 1/19/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ANALYZER SPAN:	1000.00				
AVERAGE % =	2116.0				
ZERO GAS		0.0	4.0	4.0	0.4
MID RANGE GAS		442.0	459.0	17.0	1.7
HIGH RANGE GAS		857.0	857.0	0.0	0.0

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	4.0	4.00	0.0	20.00	1.6	1.6
MID RANGE GAS	459.00	439.00	−2.0	464.00	0.5	2.5
HIGH RANGE GAS						

Cgas = 2116.0

NOx ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: POST DEMISTER, Run #2
TEST DATE: 1/19/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ANALYZER SPAN:	1000.00				
AVERAGE % =	3748.2				
ZERO GAS		0.0	4.0	4.0	0.4
MID RANGE GAS		442.0	459.0	17.0	1.7
HIGH RANGE GAS		857.0	857.0	0.0	0.0

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	4.0	46.00	4.2	175.00	17.1	12.9
MID RANGE GAS	459.0	479.00	2.0	597.00	13.8	11.8
HIGH RANGE GAS						

Cgas = 3761.1

NOx ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: POST DEMISTER, Run #3
TEST DATE: 1/19/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ANALYZER SPAN:	1000.00				
AVERAGE % =	2128.0				
ZERO GAS		0.0	4.0	4.0	0.4
MID RANGE GAS		442.0	459.0	17.0	1.7
HIGH RANGE GAS		857.0	857.0	0.0	0.0

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	4.0	175.00	17.1	54.00	5.0	−12.1
MID RANGE GAS	459.00	597.00	13.8	489.00	3.0	−10.8
HIGH RANGE GAS						

NOx ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: POST DEMISTER, Run #4
TEST DATE: 1/20/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ANALYZER SPAN:	1000.00				
AVERAGE % =	1952.2				
ZERO GAS		0.0	8.0	8.0	0.8
MID RANGE GAS		442.0	460.0	18.0	1.8
HIGH RANGE GAS		857.0	863.0	6.0	0.6

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	8.0	17.00	0.9	6.00	−0.2	−1.1
MID RANGE GAS	460.00	451.00	−0.9	451.00	−0.9	0.0
HIGH RANGE GAS						

Cgas= 1951.7

SO2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: POST DEMISTER, Run #1
TEST DATE: 1/19/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	200.00				
AVERAGE PPM =	563.00				
ZERO GAS		0.00	2.60	2.6	1.3
MID RANGE GAS		86.80	86.10	−0.7	−0.4
HIGH RANGE GAS		163.20	163.20	0.0	0.0

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	2.6	−0.10	−1.4	−2.00	−2.3	−1.0
MID RANGE GAS	86.10	67.40	−9.3	75.00	−5.5	3.8
HIGH RANGE GAS						

Cgas= 677.6

SO2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: POST DEMISTER, Run #2
TEST DATE: 1/19/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	200.00				
AVERAGE PPM =	179.00				
ZERO GAS		0.00	2.60	2.6	1.3
MID RANGE GAS		86.80	86.10	−0.7	−0.4
HIGH RANGE GAS		163.20	163.20	0.0	0.0

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	2.6	−2.00	−2.3	−2.00	−2.3	0.0
MID RANGE GAS	86.10	75.00	−5.5	75.00	−5.5	0.0
HIGH RANGE GAS						

Cgas= 204.0

SO2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: POST DEMISTER, Run #3
TEST DATE: 1/19/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	200.00				
AVERAGE PPM =	0.00				
ZERO GAS		0.00	3.90	3.9	2.0
MID RANGE GAS		86.80	89.30	2.5	1.3
HIGH RANGE GAS		159.30	159.40	0.1	0.0

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	3.9	6.20	1.1	5.90	1.0	−0.1
MID RANGE GAS	89.30	84.60	−2.4	91.50	1.1	3.5
HIGH RANGE GAS						

Cgas= −6.4

O2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: MELTER EXHAUST, Run #1
TEST DATE: 1/19/95

		Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	25.00				
AVERAGE % =	18.74				
ZERO GAS		0.00	0.03	0.0	0.1
MID RANGE GAS		11.51	11.61	0.1	0.4
HIGH RANGE GAS		17.72	17.67	−0.0	−0.2

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.0	0.61	2.3	0.79	3.0	0.7
MID RANGE GAS	11.6	11.77	0.6	11.66	0.2	−0.4
HIGH RANGE GAS						

Cgas = 18.85

O2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: MELTER EXHAUST, Run #2
TEST DATE: 1/19/95

		Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	25.00				
AVERAGE % =	18.79				
ZERO GAS		0.00	0.02	0.0	0.1
MID RANGE GAS		11.51	11.58	0.1	0.3
HIGH RANGE GAS		17.72	17.73	0.0	0.0

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.0	0.80	3.1	−3.16	−12.7	−15.8
MID RANGE GAS	11.58	11.58	0.0	8.40	−12.7	−12.7
HIGH RANGE GAS						

Cgas = 20.58

O2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: MELTER EXHAUST, Run #3
TEST DATE: 1/19/95

		Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	25.00				
AVERAGE % =	19.32				
ZERO GAS		0.00	0.02	0.0,	0.1
MID RANGE GAS		11.51	11.66	0.1	0.6
HIGH RANGE GAS		17.72	17.77	0.1	0.2

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.0	0.09	0.3	0.39	1.5	1.2
MID RANGE GAS	11.66	11.79	0.5	11.81	0.6	0.1
HIGH RANGE GAS						

Cgas = 19.00

O2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: MELTER EXHAUST, Run #4
TEST DATE: 1/20/95

	Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN: 25.00				
AVERAGE % = 18.89				
ZERO GAS	0.00	0.33	0.3	1.3
MID RANGE GAS	11.51	11.80	0.3	1.2
HIGH RANGE GAS	17.72	17.77	0.1	0.2

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.3	0.68	1.4	0.57	1.0	−0.4
MID RANGE GAS	11.8	11.70	−0.4	11.55	−1.0	−0.6
HIGH RANGE GAS						

Cgas= 19.11

CO ANALYZER DRIFT CORRECTION CALCULATION
SAMPLING RUN: MELTER EXHAUST, Run #1
TEST DATE: /19/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ANALYZER SPAN:	500.00				
AVERAGE PPM =	422.8				
ZERO GAS		0.00	0.40	0.4	0.1
LOW RANGE GAS		90.70	93.00	2.3	0.5
MID RANGE GAS		281.00	288.00	7.0	1.4
HIGH RANGE GAS		461.00	459.00	−2.0	−0.4

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.4	0.40	0.0	0.30	−0.0	−0.0
LOW RANGE GAS	93.00	90.70	−0.5	95.20	0.4	0.9
MID RANGE GAS						
HIGH RANGE GAS						

Cgas= 413.8

CO ANALYZER DRIFT CORRECTION CALCULATION
SAMPLING RUN: MELTER EXHAUST, Run #2
TEST DATE: 1/19/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ANALYZER SPAN:	500.00				
AVERAGE PPM =	157.4				
ZERO GAS		0.00	0.40	0.4	0.1
LOW RANGE GAS		90.70	93.00	2.3	0.5
MID RANGE GAS		281.00	288.00	7.0	1.4
HIGH RANGE GAS		461.00	459.00	−2.0	−0.4

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.4	0.30	−0.0	0.90	0.1	0.1
LOW RANGE GAS	93.00	93.70	0.1	95.80	0.6	0.4
MID RANGE GAS						
HIGH RANGE GAS						

Cgas= 151.1

CO ANALYZER DRIFT CORRECTION CALCULATION
SAMPLING RUN: MELTER EXHAUST, Run #3
TEST DATE: 1/19/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ANALYZER SPAN:	500.00				
AVERAGE PPM =	24.1				
ZERO GAS		0.00	0.40	0.4	0.1
LOW RANGE GAS		90.70	93.00	2.3	0.5
MID RANGE GAS		281.00	288.00	7.0	1.4
HIGH RANGE GAS		461.00	459.00	−2.0	−0.4

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.4	0.90	0.1	0.40	0.0	−0.1
LOW RANGE GAS	93.00	95.80	0.6	92.30	−0.1	−0.7
MID RANGE GAS						
HIGH RANGE GAS						

Cgas= 22.8

CO ANALYZER DRIFT CORRECTION CALCULATION
SAMPLING RUN: MELTER EXHAUST, Run #4
TEST DATE: 1/20/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ANALYZER SPAN:	500.00				
AVERAGE PPM =	246.0				
ZERO GAS		0.00	0.37	0.4	0.1
LOW RANGE GAS		90.70	93.30	2.6	0.5
MID RANGE GAS		281.00	281.00	0.0	0.0
HIGH RANGE GAS		461.00	470.00	9.0	1.8

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.4	0.40	0.0	0.40	0.0	0.0
LOW RANGE GAS	93.30	90.30	−0.6	90.30	−0.6	0.0
MID RANGE GAS						
HIGH RANGE GAS						

Cgas= 247.8

CO2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: MELTER EXHAUST, Run #1
TEST DATE: 1/19/95

		Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	20.00				
AVERAGE % =	6.51				
ZERO GAS		0.00	0.05	0.1	0.3
MID RANGE GAS		11.05	11.09	0.0	0.2
HIGH RANGE GAS		17.09	17.00	−0.1	−0.5

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.1	0.06	0.0	0.06	0.0	0.0
MID RANGE GAS	11.1	10.63	−2.3	10.15	−4.7	−2.4
HIGH RANGE GAS						

Cgas=	6.90

CO2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: MELTER EXHAUST, Run #2
TEST DATE: 1/19/95

		Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	20.00				
AVERAGE % =	2.55				
ZERO GAS		0.00	0.04	0.0	0.2
MID RANGE GAS		11.05	11.02	−0.0	−0.1
HIGH RANGE GAS		17.09	16.99	−0.1	−0.5

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.0	0.06	0.1	0.10	0.3	0.2
MID RANGE GAS	11.02	10.82	−1.0	11.05	0.1	1.2
HIGH RANGE GAS						

Cgas=	2.51

CO2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: MELTER EXHAUST, Run #3
TEST DATE: 1/19/95

		Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	20.00				
AVERAGE % =	0.70				
ZERO GAS		0.00	0.04	0.0	0.2
MID RANGE GAS		11.05	11.02	−0.0	−0.1
HIGH RANGE GAS		17.09	16.99	−0.1	−0.5

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.0	0.10	0.3	0.10	0.3	0.0
MID RANGE GAS	11.02	11.05	0.1	10.90	−0.6	−0.8
HIGH RANGE GAS						

Cgas=	0.61

CO2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: MELTER EXHAUST, Run #4
TEST DATE: 1/20/95

		Cylinder Value (%)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN:	20.00				
AVERAGE % =	4.80				
ZERO GAS		0.00	0.06	0.1	0.3
MID RANGE GAS		11.05	11.02	−0.0	−0.1
HIGH RANGE GAS		17.09	17.15	0.1	0.3

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.1	0.06	0.0	0.08	0.1	0.1
MID RANGE GAS	11.0	10.44	−2.9	10.50	−2.6	0.3
HIGH RANGE GAS						

Cgas=	5.03

NOx ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: MELTER EXHAUST, Run #1
TEST DATE: 1/19/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ANALYZER SPAN:	1000.00				
AVERAGE % =	6420.0				
ZERO GAS		0.0	4.0	4.0	0.4
MID RANGE GAS		442.0	459.0	17.0	1.7
HIGH RANGE GAS		857.0	857.0	0.0	0.0

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	4.0	4.00	0.0	20.00	1.6	1.6
MID RANGE GAS	459.0	439.00	−2.0	464.00	0.5	2.5
HIGH RANGE GAS						

Cgas= 6444.5

NOx ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: MELTER EXHAUST, Run #2
TEST DATE: 1/19/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ANALYZER SPAN:	1000.00				
AVERAGE % =	4075.0				
ZERO GAS		0.0	4.0	4.0	0.4
MID RANGE GAS		442.0	459.0	17.0	1.7
HIGH RANGE GAS		857.0	857.0	0.0	0.0

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	4.0	46.00	4.2	175.00	17.1	12.9
MID RANGE GAS	459.00	479.00	2.0	597.00	13.8	11.8
HIGH RANGE GAS						

Cgas= 4099.0

NOx ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: MELTER EXHAUST, Run #3
TEST DATE: 1/19/95

		Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ANALYZER SPAN:	1000.00				
AVERAGE % =	565.0				
ZERO GAS		0.0	4.0	4.0	0.4
MID RANGE GAS		442.0	459.0	17.0	1.7
HIGH RANGE GAS		857.0	857.0	0.0	0.0

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	4.0	175.00	17.1	54.00	5.0	−12.1
MID RANGE GAS	459.00	597.00	13.8	489.00	3.0	−10.8
HIGH RANGE GAS						

Cgas= 464.7

NOx ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: MELTER EXHAUST, Run #4
TEST DATE: 1/20/95

ANALYZER SPAN: 1000.00 / AVERAGE % = 2903.0	Cylinder Value (PPM)	Analyzer Calibration Response	Difference (PPM)	Calibration Error (% of span)
ZERO GAS	0.0	8.0	8.0	0.8
MID RANGE GAS	442.0	460.0	18.0	1.8
HIGH RANGE GAS	857.0	863.0	6.0	0.6

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	8.0	17.00	0.9	6.00	−0.2	−1.1
MID RANGE GAS	460.0	451.00	−0.9	450.00	−1.0	−0.1
HIGH RANGE GAS						

Cgas = 2911.3

SO2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: MELTER EXHAUST, Run #1
TEST DATE: 1/19/95

	Cylinder Value (PPM)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN: 200.00				
AVERAGE PPM = 3.42				
ZERO GAS	0.00	2.60	2.6	1.3
MID RANGE GAS	86.80	86.10	−0.7	−0.4
HIGH RANGE GAS	163.20	163.20	0.0	0.0

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	2.6	−0.10	−1.4	−2.00	−2.3	−1.0
MID RANGE GAS	86.10	67.40	−9.3	75.00	−5.5	3.8
HIGH RANGE GAS						

Cgas= 5.4

SO2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: MELTER EXHAUST, Run #2
TEST DATE: 1/19/95

	Cylinder Value (PPM)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN: 200.00				
AVERAGE PPM = 66.00				
ZERO GAS	0.00	2.60	2.6	1.3
MID RANGE GAS	86.80	86.10	−0.7	−0.4
HIGH RANGE GAS	163.20	163.20	0.0	0.0

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	2.6	−2.00	−2.3	−2.00	−2.3	0.0
MID RANGE GAS	86.10	75.00	−5.5	75.00	−5.5	0.0
HIGH RANGE GAS						

Cgas= 76.7

SO2 ANALYZER DRIFT CORRECTION CALCULATION

SAMPLING RUN: MELTER EXHAUST, Run #3
TEST DATE: 1/19/95

	Cylinder Value (PPM)	Analyzer Calibration Response	Difference (%)	Calibration Error (% of span)
ANALYZER SPAN: 200.00				
AVERAGE PPM = 0.00				
ZERO GAS	0.00	0.30	0.3	0.2
MID RANGE GAS	86.80	88.50	1.7	0.8
HIGH RANGE GAS	159.30	160.60	1.3	0.7

	Analyzer Calibration Response	Initial System Response	Initial System Bias (% of span)	Final System Response	Final System Bias (% of span)	Observed System Drift (% of span)
ZERO GAS	0.3	2.80	1.3	2.80	1.3	0.0
MID RANGE GAS	88.50	85.00	−1.8	82.70	−2.9	−1.2
HIGH RANGE GAS						

Cgas= −3.0

METALS AND PARTICLES CALCULATION WORKSHEETS

VITREOUS STATE LAB
CATHOLIC UNIVERSITY

PLANT	SAMPLE NUMBER	SAMPLE WEIGHT (GRAMS)	SAMPLE VOLUME CORR. (ML)	RINSE VOLUME (ML)	TOTAL VOLUME (ML)	BEAKER #	BEAKER TARE (GRAMS)	BEAKER FINAL (GRAMS)	DIFF. (GRAMS)	FILTER#	FILTER TARE (GRAMS)	FILTER FINAL (GRAMS)	DIFF. (GRAMS)	BLANK ACETONE (GRAMS)	TOTAL GA (GRAMS)
CATH.U	ACETONE BLANK	0	0.0	75	75.0	25	101.0898	101.0898	0.0000	------	------	------	------	------	------
CATH.U	FIELD BLANK									M006/95	70.2493	70.2357	−0.0136	0.0000	−0.0136
CATH.U	HNO3 RINSE			100	100.0					M008/95	66.1796	66.1799	0.0003	−0.0016	−0.0013
CATH.U	HEPA-MMT-FHA-01	16.1	20.5	75	95.5	26	108.0494	108.0494	0.0000	M001/95	77.0614	77.0470	−0.0144	−0.0015	−0.0159
CATH.U	HEPA-MMT-FHA-02	15.4	19.6	75	94.6	27	102.4046	102.4051	0.0005	M007/95	74.0637	74.0617	−0.0020	−0.0015	−0.0035
CATH.U	HEPA-MMT-FHA-03	37.3	47.5	75	122.5	28	104.7385	104.7421	0.0036	M002/95	72.3948	72.3942	−0.0006	−0.0019	−0.0025
CATH.U	MELTER-MMT-02									M009/95	71.6160	72.5402	0.9242	0.0000	0.9242
CATH.U	MELTER-MMT-03									M005/95	69.1244	69.8654	0.7410	0.0000	0.7410
CATH.U	MELTER-MMT-04									M010/95	77.5967	78.2955	0.6988	0.0000	0.6988
CATH.U	MELTER-MMT-FHN-02									M012/91	61.9591	62.1443	0.1852	0.0000	0.1852
CATH.U	MELTER-MMT-FHN-03									M011/91	67.1730	67.2519	0.0789	0.0000	0.0789
CATH.U	MELTER-MMT-FHN-04									M020/92	65.0601	65.0632	0.0231	0.0000	0.0231

CATHOLIC UNIVERSITY 1000 kg MELTER

MELTER-MMT-02

Metal	Sample Volume Std (CuFt)	Front Half (ug)	Back Half (ug)	Front-Half Blank (ug)	Back Half Blank Nitric Filter (ug)	Back Half Blank Solution (ug)	Blank-Adjusted µg/sample	Total (ug/sample	Conc'n (ug/dscf)	Stack Gas Flow Rate (dscfm)	Emission Rate (g/hr)	Emission Rate (lb/hr)
Na	43.343	101160	245	405	72.1	99.7	100828.2	101405.0	2326.3	99	13.8	3.05E-02
K	43.343	36350	109	894	47.2	39.3	35478.5	36459.0	818.6	99	4.9	1.07E-02
Sr	43.343	642	0.24 <	1.74	1.42	0.24 <	638.84	642.2	14.7	99	0.1	1.93E-04
B	43.343	37291	2800	36.8	8.29	5.07 <	40040.84	40091.0	923.8	99	5.5	1.21E-02
Mo	43.343	2527	4.9 <	19.2	18.4	4.9 <	2489.4	2531.9	57.4	99	0.3	7.52E-04
Cr	43.343	2737	2.07	4.55	0.8 <	0.8 <	2732.92	2739.1	63.1	99	0.4	8.26E-04
Cs	43.343	42600	10 <	39	10 <	10 <	42551	42610.0	981.7	99	5.8	1.29E-02

METLER-MMT-03

Metal	Sample Volume Std (CuFt)	Front Half (ug)	Back Half (ug)	Front-Half Blank (ug)	Back Half Blank Nitric Filter (ug)	Back Half Blank Solution (ug)	Blank-Adjusted µg/sample	Total (ug/sample	Conc'n (ug/dscf)	Stack Gas Flow Rate (dscfm)	Emission Rate (g/hr)	Emission Rate (lb/hr)
Na	42.946	61200	287	405	72.1	99.7	60910.2	61487.0	1418.3	99	8.4	1.86E-02
K	42.946	3.8 <	144	894	47.2	39.3	-832.7	147.8	-19.4	99	-0.1	-2.54E-04
Sr	42.946	527	0.24 <	1.74	1.42	0.24 <	523.84	527.2	12.2	99	0.1	1.60E-04
B	42.946	25388	4264	36.8	8.29	5.07 <	29601.84	29652.0	689.3	99	4.1	9.03E-03
Mo	42.946	2183	4.9 <	19.2	18.4	4.9 <	2145.4	2187.9	50.0	99	0.3	6.54E-04
Cr	42.946	2316	2.53	4.55	0.8 <	0.8 <	2312.38	2318.5	53.8	99	0.3	7.05E-04
Cs	42.946	33500	28	39	10 <	10 <	33469	33528.0	779.3	99	4.6	1.02E-02

MELTER-MMT-04

Metal	Sample Volume Std (CuFt)	Front Half (ug)	Back Half (ug)	Front-Half Blank (ug)	Back Half Blank Nitric Filter (ug)	Back Half Blank Solution (ug)	Blank-Adjusted µg/sample	Total (ug/sample	Conc'n (ug/dscf)	Stack Gas Flow Rate (dscfm)	Emission Rate (g/hr)	Emission Rate (lb/hr)
Na	37.966	59080	46.3	405	72.1	99.7	58549.5	59126.3	1542.2	99	9.2	2.02E-02
K	37.966	3.8 <	38.5	894	47.2	39.3	-938.2	42.3	-24.7	99	-0.1	-3.24E-04
Sr	37.966	353	0.24 <	1.74	1.42	0.24 <	349.84	353.2	9.2	99	0.1	1.21E-04
B	37.966	14220	6726	36.8	8.29	5.07 <	20895.84	20946.0	550.4	99	3.3	7.21E-03
Mo	37.966	2242	4.9 <	19.2	18.4	4.9 <	2204.4	2246.9	58.1	99	0.3	7.60E-04
Cr	37.966	2281	0.8 <	4.55	0.8 <	0.8 <	2275.65	2281.8	59.9	99	0.4	7.85E-04
Cs	37.966	39700	10 <	39	10 <	10 <	39651	39710.0	1044.4	99	6.2	1.37E-02

For non-detect situations, the analyte detection limit has been reported with "<" to the right of the corresponding value.

All results calculated on a non-blank adjusted basis.

Catholic Univerity VSL - 1000 Kg Melter Metals Sampling

	MELTER-MMT-02	MELTER-MMT-03	MELTER-MMT-04
Date	1/19/95	1/19/95	1/20/95
Time	17:25	21:10	9:50
Moisture (%)	10.10	21.7	17.1
Stack Temp (F)	752	752	752
Isokinetic (%)			

Metals Emission Rate(grams/hr)

	Na	K	Sr	B	Mo	Cr	Cs
Run 2	13.82	4.86	0.09	5.49	0.34	0.37	5.83
Run 3	8.42	-0.12	0.07	4.09	0.30	0.32	4.63
Run 4	9.16	-0.15	0.05	3.27	0.34	0.36	6.20
Avg	10.47	1.53	0.07	4.28	0.33	0.35	5.55

Metals Emission Rate (lbs/hr)

	Na	K	Sr	B	Mo	Cr	Cs
Run 2	3.05E-02	1.07E-02	1.93E-04	1.21E-02	7.52E-04	8.26E-04	1.29E-02
Run 3	1.86E-02	-2.54E-04	1.60E-04	9.03E-03	6.54E-04	7.05E-04	1.02E-02
Run 4	2.02E-02	-3.24E-04	1.21E-04	7.21E-03	7.60E-04	7.85E-04	1.37E-02
Avg	2.3E-02	3.4E-03	1.6E-04	9.4E-03	7.2E-04	7.7E-04	1.2E-02

Metals Concentration Dry(ug/dscf)

	Na	K	Sr	B	Mo	Cr	Cs
Run 2	2326.29	818.55	14.74	923.81	57.43	63.05	981.73
Run 3	1418.30	-19.39	12.20	689.28	49.96	53.84	779.33
Run 4	1542.16	-24.71	9.21	550.38	58.06	59.94	1044.38
Avg	1762.25	258.15	12.05	721.16	55.15	58.95	935.15

NOTE: All results are shown without blank correction

CATHOLIC UNIVERSITY HEPA FILTER EXHAUST

HEPA-MMT-01

Metal	Sample Volume Std (CuFt)	Reported Front Half (ug/sample)	Reported Back Half (ug/sample)	Blank Front Half (µg)	Back Half Blank Nitric Filter (µg)	Back Half Blank Solution (µg)	Blank-Adjusted µg/sample	Conc'n (ug/dscf)	Stack Gas Flow Rate (dscfm)	Emission Rate (g/hr)	Emission Rate (lb/hr)
Na	85.332	189.0	168.0	405.0	72.1	99.7	-219.8	4.2E+00	655	1.6E-01	3.6E-04
K	85.332	75.0	90.4	894.0	47.2	39.3	-815.1	1.9E+00	655	7.6E-02	1.7E-04
Sr	85.332	1.6	0.2 <	1.7	1.4	0.2 <	-1.6	2.1E-02	655	8.3E-04	1.8E-06
B	85.332	30.5	23.0	36.8	8.3	5.1 <	3.3	6.3E-01	655	2.5E-02	5.4E-05
Mo	85.332	14.4	4.9 <	19.2	18.4	4.9 <	-23.2	2.3E-01	655	8.9E-03	2.0E-05
Cr	85.332	1.7	0.8 <	4.6	0.8 <	0.8 <	-3.7	2.9E-02	655	1.1E-03	2.5E-06
Cs	85.332	10.00 <	10.00 <	39.00	10.00 <	10 <	-39.0	2.3E-01	655	9.2E-03	2.0E-05

HEPA-MMT-02

Metal	Sample Volume Std (CuFt)	Reported (ug/sample)	Reported Back Half (ug/sample)	Blank Front Half (µg)	Back Half Blank Nitric Filter (µg)	Back Half Blank Solution (µg)	Blank-Adjusted µg/sample	Conc'n (ug/dscf)	Stack Gas Flow Rate (dscfm)	Emission Rate (g/hr)	Emission Rate (lb/hr)
Na	78.965	249.0	168.0	405.0	72.1	99.7	-159.8	5.3E+00	627	2.0E-01	4.4E-04
K	78.965	111.0	90.4	894.0	47.2	39.3	-779.1	2.6E+00	627	9.6E-02	2.1E-04
Sr	78.965	1.7	0.2 <	1.7	1.4	0.2 <	-1.4	2.5E-02	627	9.3E-04	2.1E-06
B	78.965	26.9	23.0	36.8	8.3	5.1 <	-0.3	6.3E-01	627	2.4E-02	5.2E-05
Mo	78.965	15.8	4.9 <	19.2	18.4	4.9 <	-21.8	2.6E-01	627	9.9E-03	2.2E-05
Cr	78.965	2.8	0.8 <	4.6	0.8 <	0.8 <	-2.6	4.5E-02	627	1.7E-03	3.8E-06
Cs	78.965	10.00	10.00 <	39.00	10.00 <	10 <	-39.0	2.5E-01	627	9.5E-03	2.1E-05

HEPA-MMT-03

Metal	Sample Volume Std (CuFt)	Reported (ug/sample)	Reported Back Half (ug/sample)	Blank Front Half (µg)	Back Half Blank Nitric Filter (µg)	Back Half Blank Solution (µg)	Blank-Adjusted µg/sample	Conc'n (ug/dscf)	Stack Gas Flow Rate (dscfm)	Emission Rate (g/hr)	Emission Rate (lb/hr)
Na	85.924	270.0	168.0	405.0	72.1	99.7	-138.8	5.1E+00	672	2.1E-01	4.5E-04
K	85.924	129.0	90.4	894.0	47.2	39.3	-761.1	2.6E+00	672	1.0E-01	2.3E-04
Sr	85.924	2.3	0.2 <	1.7	1.4	0.2 <	-0.9	3.0E-02	672	1.2E-03	2.6E-06
B	85.924	45.1	23.0	36.8	8.3	5.1 <	17.9	7.9E-01	672	3.2E-02	7.0E-05
Mo	85.924	15.4	4.9 <	19.2	18.4	4.9 <	-22.2	2.4E-01	672	9.5E-03	2.1E-05
Cr	85.924	4.3	0.8 <	4.6	0.8 <	0.8 <	-1.1	5.9E-02	672	2.4E-03	5.3E-06
Cs	85.924	13.0	10.0 <	39.0	10.0 <	10.0 <	-36.0	2.7E-01	672	1.1E-02	2.4E-05

For non-detect situations, the analyte detection limit has been reported with "<" to the right of the corresponding value.

Catholic University HEPA Filter Metals Sampling

	HEPA-MMT-01	HEPA-MMT-02	HEPA-MMT-03
Date	1/19/95	1/19/95	1/19/95
Time	12:25	17:25	21:09
Moisture (%)	1.00	1.45	1.27
Stack Temp (F)	106.8	107.6	108.3
Isokinetic (%)	92.9	99.1	98.4

Metals Emission Rate(grams/hr)

	Na	K	Sr	B	Mo	Cr	Cs
Run1	1.6E-01	7.6E-02	8.3E-04	2.5E-02	8.9E-03	1.1E-03	9.2E-03
Run2	2.0E-01	9.6E-02	9.3E-04	2.4E-02	9.9E-03	1.7E-03	9.5E-03
Run3	2.1E-01	1.0E-01	1.2E-03	3.2E-02	9.5E-03	2.4E-03	1.1E-02
Avg	1.9E-01	9.2E-02	9.8E-04	2.7E-02	9.4E-03	1.7E-03	9.8E-03

Metals Emission Rate (lbs/hr)

	Na	K	Sr	B	Mo	Cr	Cs
Run1	3.63E-04	1.68E-04	1.83E-06	5.43E-05	1.96E-05	2.49E-06	2.03E-05
Run2	4.38E-04	2.12E-04	2.06E-06	5.24E-05	2.17E-05	3.75E-06	2.10E-05
Run3	4.53E-04	2.27E-04	2.63E-06	7.05E-05	2.10E-05	5.27E-06	2.38E-05
Avg	4.18E-04	2.02E-04	2.17E-06	5.91E-05	2.08E-05	3.83E-06	2.17E-05

Metals Concentration Dry(ug/dscf)

	Na	K	Sr	B	Mo	Cr	Cs
Run1	4.18	1.94	0.02	0.63	0.23	0.03	0.23
Run2	5.28	2.55	0.02	0.63	0.26	0.05	0.25
Run3	5.10	2.55	0.03	0.79	0.24	0.06	0.27
Avg	4.85	2.35	0.03	0.68	0.24	0.04	0.25

PARTICULATE MATTER WORKSHEETS

NO. OF TEST RUNS: 4
PLANT: VSL
SAMPLING LOCATION: Melter Exhaust
OPERATIONAL CONDITIONS: ********

RUN NO. :	1	2	3	4
DATE :	1-19-95	1-19-95	1-19-95	1-20-95
NO. OF TEST POINTS:	1	1	1	1
SAMPLE TIME (MIN.):	80	80	80	70
Pb ("Hg):	29.97	29.97	29.97	30.11
Ps ("Hg):	29.5585294	29.4185294	29.4185294	29.5585294
NOZZLE DIA. (IN.):	0.361	0.361	0.361	0.361
STACK/DUCT AREA (Ft2):	0.54541539	0.54541539	0.54541539	0.54541539
Y :	1.04	1.04	1.04	1.04
HEAT INPUT (MM Btu/H):	***	***	***	***

GENERAL TEST DATA
PAGE 2

|1. {Alt}A after checking data for 1st run.|
|2. Check/edit data for other runs (both |
| pages). |
|3. {Alt} B. {Alt}M for help. |

RUN NO. :	1	2	3	4
F-FACTOR (dscf/MM Btu):	9780	9780	9780	9780
Cp :	0.99	0.99	0.99	0.99
CO2(%):	6.9	2.5	0.6	5.0
O2(%):	18.85	20.6	19.0	19.1
CO(%):	0.0	0.0	0.0	0.0
N2(%):	74.25	76.91	80.39	75.86

FIELD DATA FORM

RUN #
1

data. Turn off to
move cursor.
2. {Ctrl}{Break} after
data entry.
3.{Alt}M for next run.

I. INPUT DATA

NET METER VOLUME (CU.FT.):	42.687
CONDENSATE VOLUME (ml):	104
LAB ANALYSIS (g):	1.1094

II. FIELD DATA

POINT NO.	delta P	delta H	STACK TEMP. (F)	Tm Inlet (F)	Tm Outlet (F)	SQ.RT. dP
1		0.90	752	73	74	0.000
2		0.90	752	74	74	0.000
3		0.90	752	76	75	0.000
4		0.85	752	80	76	0.000
5		0.90	752	81	76	0.000
6		0.95	752	82	77	0.000
7		0.90	752	84	79	0.000
8		0.94	752	85	79	0.000
9		0.90	752	86	80	0.000
10		0.90	752	88	82	0.000
11		0.90	752	89	83	0.000
12		0.90	752	90	84	0.000
13		0.90	752	90	84	0.000
14		0.90	752	91	85	0.000
15		0.90	752	92	85	0.000
16		0.95	752	92	86	0.000
17		0.95	752	93	87	0.000
18						0.000
19						0.000
20						0.000
21						0.000
22						0.000
23						0.000
24						0.000
25						0.000
26						0.000
27						0.000
28						0.000
29						0.000
30						0.000
31						0.000
32						0.000
33						0.000
34						0.000
35						0.000
36						0.000
37						0.000
38						0.000
39						0.000
40						0.000
41						0.000
42						0.000
43						0.000
44						0.000
45						0.000
46						0.000
47						0.000
48						0.000
49						0.000
50						0.000
51						0.000
52						0.000
53						0.000
54						0.000
55						0.000
56						0.000
57						0.000
58						0.000
59						0.000
60						0.000
		d H	Ts (F)	Tm (F)	sq.rt. dP	
		0.908	752.0	82.7		0.000

FIELD DATA FORM RUN # 2

| 1. {NumLock} to enter data. Turn off to move cursor. |
| 2. {Ctrl}{Break} after data entry. |
| 3. {Alt}M for next run. |

I. INPUT DATA

NET METER VOLUME (CU.FT.):	42.634
CONDENSATE VOLUME (ml):	252.8
LAB ANALYSIS (g):	0.8199

II. FIELD DATA

POINT NO.	delta P	delta H	STACK TEMP. (F)	Tm Inlet (F)	Tm Outlet (F)	SQ.RT. dP
1		0.90	752	85	85	0.000
2		0.90	752	84	84	0.000
3		0.90	752	85	84	0.000
4		0.90	752	86	85	0.000
5		0.90	752	88	85	0.000
6		0.90	752	90	86	0.000
7		0.90	752	90	87	0.000
8		0.90	752	92	87	0.000
9		0.90	752	93	88	0.000
10		0.90	752	94	89	0.000
11		0.90	752	95	90	0.000
12		0.90	752	96	91	0.000
13		0.90	752	96	91	0.000
14		0.90	752	96	92	0.000
15		0.90	752	97	92	0.000
16		0.90	752	97	92	0.000
17						0.000
18						0.000
19						0.000
20						0.000
21						0.000
22						0.000
23						0.000
24						0.000
25						0.000
26						0.000
27						0.000
28						0.000
29						0.000
30						0.000
31						0.000
32						0.000
33						0.000
34						0.000
35						0.000
36						0.000
37						0.000
38						0.000
39						0.000
40						0.000
41						0.000
42						0.000
43						0.000
44						0.000
45						0.000
46						0.000
47						0.000
48						0.000
49						0.000
50						0.000
51						0.000
52						0.000
53						0.000
54						0.000
55						0.000
56						0.000
57						0.000
58						0.000
59						0.000
60						0.000
		d H	Ts (F)	Tm (F)	sq.rt. dP	
		0.900	752.0	87.0		0.000

FIELD DATA FORM — RUN # 3

| 1. {NumLock} to enter data. Turn off to move cursor. |
| 2. {Ctrl}{Break} after data entry. |
| 3. {Alt}M for next run. |

I. INPUT DATA

NET METER VOLUME (CU.FT.): 42.89
CONDENSATE VOLUME (ml): 185.9
LAB ANALYSIS (g): 0.7219

II. FIELD DATA

POINT NO.	delta P	delta H	STACK TEMP. (F)	Tm Inlet (F)	Tm Outlet (F)	SQ.RT. dP
1		0.90	752	95	94	0.000
2		0.75	752	95	94	0.000
3		0.90	752	96	94	0.000
4		0.80	752	97	94	0.000
5		0.90	752	97	94	0.000
6		0.90	752	99	94	0.000
7		0.90	752	99	94	0.000
8		0.90	752	99	95	0.000
9		0.90	752	99	95	0.000
10		0.90	752	99	95	0.000
11		0.90	752	99	95	0.000
12		0.85	752	99	95	0.000
13		0.90	752	99	94	0.000
14		0.90	752	98	95	0.000
15		0.90	752	98	95	0.000
16		0.90	752	98	96	0.000
17						0.000
18						0.000
19						0.000
20						0.000
21						0.000
22						0.000
23						0.000
24						0.000
25						0.000
26						0.000
27						0.000
28						0.000
29						0.000
30						0.000
31						0.000
32						0.000
33						0.000
34						0.000
35						0.000
36						0.000
37						0.000
38						0.000
39						0.000
40						0.000
41						0.000
42						0.000
43						0.000
44						0.000
45						0.000
46						0.000
47						0.000
48						0.000
49						0.000
50						0.000
51						0.000
52						0.000
53						0.000
54						0.000
55						0.000
56						0.000
57						0.000
58						0.000
59						0.000
60						0.000
		d H	Ts (F)	Tm (F)	sq.rt. dP	
		0.881	752.0	96.2		0.000

FIELD DATA FORM

RUN # 4

| 1. {NumLock} to enter data. Turn off to move cursor. |
| 2. {Ctrl}{Break} after data entry. |
| 3. {Alt}M. |

I. INPUT DATA

NET METER VOLUME (CU.FT.): 37.401

CONDENSATE VOLUME (ml): 211.1

LAB ANALYSIS (g): *******

II. FIELD DATA

POINT NO.	delta P	delta H	STACK TEMP. (F)	Tm Inlet (F)	Tm Outlet (F)	SQ.RT. dP
1		0.90	752	81	81	0.000
2		0.70	752	84	82	0.000
3		0.90	752	86	82	0.000
4		0.90	752	88	83	0.000
5		0.90	752	90	84	0.000
6		0.90	752	90	85	0.000
7		0.90	752	91	85	0.000
8		0.90	752	93	87	0.000
9		0.90	752	93	87	0.000
10		0.90	752	94	88	0.000
11		0.80	752	94	89	0.000
12		0.87	752	95	90	0.000
13		0.85	752	95	88	0.000
14		0.85	752	95	90	0.000
15						0.000
16						0.000
17						0.000
18						0.000
19						0.000
20						0.000
21						0.000
22						0.000
23						0.000
24						0.000
25						0.000
26						0.000
27						0.000
28						0.000
29						0.000
30						0.000
31						0.000
32						0.000
33						0.000
34						0.000
35						0.000
36						0.000
37						0.000
38						0.000
39						0.000
40						0.000
41						0.000
42						0.000
43						0.000
44						0.000
45						0.000
46						0.000
47						0.000
48						0.000
49						0.000
50						0.000
51						0.000
52						0.000
53						0.000
54						0.000
55						0.000
56						0.000
57						0.000
58						0.000
59						0.000
60						0.000

d H	Ts (F)	Tm (F)	sq.rt. dP
0.761	752.0	85.2	0.000

U.S. EPA
PARTICULATE CALCULATIONS
RUN NO. 1

PLANT : VSL
DATE : 1-19-95
SAMP. LOCATION : Melter Exhaust
OPERATING COND.: ********

SAMPLE TIME =	80.0	min.	NOZZLE DIA. =	0.361	in.
BAR. PRESSURE =	29.97	in.Hg	NOZZLE AREA =	0.000711	Sq.Ft.
STK. PRESSURE =	29.56	in.Hg	METER ORIFICE =	0.908	in. H2O
EFF. STACK AREA =	0.55	Sq.Ft.	METER VOLUME =	42.687	Cu.Ft.
Cp =	0.99		METER TEMP. =	543	DEG. R
GAS ANALYSIS =	6.9	% CO2	STACK TEMP. =	1212	DEG. R
	18.9	% O2	SQ.RT. dP =	0.000	in. H2O
	0.0	% CO	COND.(Vlc) =	104.0	ml
	74.3	% N2	METER Y =	1.040	
LAB ANALYSIS =	1.1094	grams	HEAT INPUT =	***	MM Btu/hr
			F-FACTOR =	9780	dscf/MM Btu

********* ********* ****************************** ********* ********* *********

Vw(std) = 0.04707 x Vlc	=	4.895	scf
Vm(std) = 17.64 x Vm x Y x (Pb + (dH / 13.6)) / (Tm)	=	43.343	scf
Bws = Vw(std) / (Vm(std) + Vw(std))	=	0.101	
%EA =(%O2 - 0.5%CO) / (0.264%N2 - (%O2 - 0.5%CO)) =		25.066	
Md =(.44 x %CO2)+(.32 x %O2)+[.28 x (%N2 + %CO)] =		29.86	
Ms = (Md x (1-Bws)) + (18.0 x Bws)	=	28.65	
vs = 85.49 x CP x (Sq.Rt.dP) x [Sq.Rt.(Ts) / (Ms x Ps)]	=	NA ~~[illegible]~~	ft/sec
Qs = vs x As x 60	=	NA ~~[illegible]~~	acf/min
Qs(std)=Qs x (1-Bws)x(528/(Ts)) x (Ps/29.92)=		100	dscf/min
I = (Ts) x [(0.00267 x Vlc) + (Vm(std) / 17.64)] x 100 / (Time x Ps x An x vs x 60)	=	NA ~~[illegible]~~	%

********* ********* ****************************** ********* ********* *********

cs = 15.432 x grams / Vm(std)	=	0.3950	grains/dscf
grains/acf = cs x 17.64xPs x (1-Bws) / (Ts)	=	0.1527	grains/acf
C = cs / 7000	=	5.64E-05	lbs/dscf
EM = C x Qs(std) x 60	=	0.338	lbs/hr

E = EM / (MM Btu/hr) Heat Input method	=	ERR	lbs/MM Btu
E = C x F x (20.9 / 20.9 - %O2) F-Factor method	=	5.627	lbs/MM Btu
E = EM / (MM Btu/hr) Heat Input method	=	ERR	lbs/MM Btu

U.S. EPA
PARTICULATE CALCULATIONS
RUN NO. 2

PLANT : VSL
DATE : 1-19-95
SAMP. LOCATION : Melter Exhaust
OPERATING COND.: ********

SAMPLE TIME =	80.0	min.	NOZZLE DIA. =	0.361	in.
BAR. PRESSURE =	29.97	in.Hg	NOZZLE AREA =	0.000711	Sq.Ft.
STK. PRESSURE =	29.42	in.Hg	METER ORIFICE =	0.900	in. H2O
EFF. STACK AREA =	0.55	Sq.Ft.	METER VOLUME =	42.634	Cu.Ft.
Cp =	0.99		METER TEMP. =	547	DEG. R
GAS ANALYSIS =	2.5	% CO2	STACK TEMP. =	1212	DEG. R
	20.6	% O2	SQ.RT. dP =	0.000	in. H2O
	0.0	% CO	COND.(Vlc) =	252.8	ml
	76.9	% N2	METER Y =	1.040	
LAB ANALYSIS =	0.8199	grams	HEAT INPUT =	***	MM Btu/hr
			F-FACTOR =	9780	dscf/MM Btu

********* ********* ****************************** ********* ********* *********

Vw(std) = 0.04707 x Vlc = 11.899 scf

Vm(std) = 17.64 x Vm x Y x (Pb + (dH / 13.6))
/ (Tm) = 42.946 scf

Bws = Vw(std) / (Vm(std) + Vw(std)) = 0.217

%EA =(%O2 - 0.5%CO) / (0.264%N2 - (%O2 - 0.5%CO)) = -74.630

Md =(.44 x %CO2)+(.32 x %O2)+[.28 x (%N2 + %CO)] = 29.22

Ms = (Md x (1-Bws)) + (18.0 x Bws) = 26.79

vs = 85.49 x CP x (Sq.Rt.dP) x [Sq.Rt.(Ts)
/ (Ms x Ps)] = 8.8 ft/sec

Qs = vs x As x 60 = 104 acf/min

Qs(std)=Qs x (1-Bws)x(528/(Ts)) x (Ps/29.92)= 100 dscf/min

I = (Ts) x [(0.00267 x Vic) + (Vm(std) / 17.64)]
x 100 / (Time x Ps x An x vs x 60) = 426.7 %

********* ********* ****************************** ********* ********* *********

cs = 15.432 x grams / Vm(std) = 0.2946 grains/dscf

grains/acf = cs x 17.64xPs x (1-Bws) / (Ts) = 0.0988 grains/acf

C = cs / 7000 = 4.21E-05 lbs/dscf

EM = C x Qs(std) x 60 = 0.252 lbs/hr

E = EM / (MM Btu/hr) Heat Input method = ERR lbs/MM Btu

E = C x F x (20.9 / 20.9 - %O2) F-Factor method = 26.885 lbs/MM Btu

E = EM / (MM Btu/hr) Heat Input method = ERR lbs/MM Btu

U.S. EPA
PARTICULATE CALCULATIONS
RUN NO. 3

PLANT : VSL
DATE : 1-19-95
SAMP. LOCATION : Melter Exhaust
OPERATING COND.: ********

SAMPLE TIME =	80.0	min.	NOZZLE DIA. =		0.361	in.
BAR. PRESSURE =	29.97	in.Hg	NOZZLE AREA =		0.000711	Sq.Ft.
STK. PRESSURE =	29.42	in.Hg	METER ORIFICE =		0.881	in. H2O
EFF. STACK AREA =	0.55	Sq.Ft.	METER VOLUME =		42.890	Cu.Ft.
Cp =	0.99		METER TEMP. =		556	DEG. R
GAS ANALYSIS =	0.6	% CO2	STACK TEMP. =		1212	DEG. R
	19.0	% O2	SQ.RT. dP =		0.000	in. H2O
	0.0	% CO	COND.(Vlc) =		185.9	ml
	80.4	% N2	METER Y =		1.040	
LAB ANALYSIS =	0.7219	grams	HEAT INPUT =	***		MM Btu/hr
			F-FACTOR =		9780	dscf/MM Btu

********* ********* ****************************** ********* ********* *********

Vw(std) = 0.04707 x Vlc = 8.750 scf

Vm(std) = 17.64 x Vm x Y x (Pb + (dH / 13.6))
/ (Tm) = 42.488 scf

Bws = Vw(std) / (Vm(std) + Vw(std)) = 0.171

%EA =(%O2 - 0.5%CO) / (0.264%N2 - (%O2 - 0.5%CO)) = 8.547

Md =(.44 x %CO2)+(.32 x %O2)+[.28 x (%N2 + %CO)] = 28.86

Ms = (Md x (1-Bws)) + (18.0 x Bws) = 27.00

vs = 85.49 x CP x (Sq.Rt.dP) x [Sq.Rt.(Ts)
/ (Ms x Ps)] = 8.8 ft/sec

Qs = vs x As x 60 = 104 acf/min

Qs(std)=Qs x (1-Bws)x(528/(Ts)) x (Ps/29.92)= 100 dscf/min

I = (Ts) x [(0.00267 x Vlc) + (Vm(std) / 17.64)]
x 100 / (Time x Ps x An x vs x 60) = 398.6 %

********* ********* ****************************** ********* ********* *********

cs = 15.432 x grams / Vm(std) = 0.2622 grains/dscf

grains/acf = cs x 17.64xPs x (1-Bws) / (Ts) = 0.0931 grains/acf

C = cs / 7000 = 3.75E-05 lbs/dscf

EM = C x Qs(std) x 60 = 0.224 lbs/hr

E = EM / (MM Btu/hr) Heat Input method = ERR lbs/MM Btu

E = C x F x (20.9 / 20.9 - %O2) F-Factor method = 4.030 lbs/MM Btu

E = EM / (MM Btu/hr) Heat Input method = ERR lbs/MM Btu

U.S. EPA
PARTICULATE CALCULATIONS
RUN NO. 4

PLANT : VSL
DATE : 1-19-95
SAMP. LOCATION : Melter ExExhaust
OPERATING COND.: ********

SAMPLE TIME =	70.0	min.	NOZZLE DIA. =	0.361	in.
BAR. PRESSURE =	30.11	in.Hg	NOZZLE AREA =	0.000711	Sq.Ft.
STK. PRESSURE =	29.56	in.Hg	METER ORIFICE =	0.761	in. H2O
EFF. STACK AREA =	0.55	Sq.Ft.	METER VOLUME =	37.401	Cu.Ft.
Cp =	0.99		METER TEMP. =	545	DEG. R
GAS ANALYSIS =	5.0	% CO2	STACK TEMP. =	1212	DEG. R
	19.1	% O2	SQ.RT. dP =	0.000	in. H2O
	0.0	% CO	COND.(Vlc) =	211.1	ml
	75.9	% N2	METER Y =	1.040	
LAB ANALYSIS =	*******	grams	HEAT INPUT =	***	MM Btu/hr
			F-FACTOR =	9780	dscf/MM Btu

********** ********** ********************************** ********** ********** **********

Vw(std) = 0.04707 x Vlc = 9.936 scf

Vm(std) = 17.64 x Vm x Y x (Pb + (dH / 13.6))
/ (Tm) = 37.966 scf

Bws = Vw(std) / (Vm(std) + Vw(std)) = 0.207

%EA = (%O2 - 0.5%CO) / (0.264%N2 - (%O2 - 0.5%CO)) = 20.839

Md = (.44 x %CO2) + (.32 x %O2) + [.28 x (%N2 + %CO)] = 29.57

Ms = (Md x (1 - Bws)) + (18.0 x Bws) = 27.17

vs = 85.49 x CP x (Sq.Rt.dP) x [Sq.Rt.(Ts)
/ (Ms x Ps)] = 8.8 ft/sec

Qs = vs x As x 60 = 104 acf/min

Qs(std) = Qs x (1 - Bws)x(528/(Ts)) x (Ps/29.92) = 100 dscf/min

I = (Ts) x [(0.00267 x Vlc) + (Vm(std) / 17.64)]
x 100 / (Time x Ps x An x vs x 60) = 423.9 %

********** ********** ********************************** ********** ********** **********

cs = 15.432 x grams / Vm(std) = 0.0000 grains/dscf

grains/acf = cs x 17.64xPs x (1 - Bws) / (Ts) = 0.0000 grains/acf

C = cs / 7000 = 0.00E+00 lbs/dscf

EM = C x Qs(std) x 60 = 0.000 lbs/hr

E = EM / (MM Btu/hr) Heat Input method = ERR lbs/MM Btu

E = C x F x (20.9 / 20.9 - %O2) F-Factor method = 0.000 lbs/MM Btu

E = EM / (MM Btu/hr) Heat Input method = ERR lbs/MM Btu

TEST SUMMARY
PARTICULATE EMISSIONS TEST RESULTS

PLANT : VSL
DATE : 1-19-95
SAMPLING LOCATION :Melter Exhaust
OPERATING COND. : ********
****

	RUN NO. 1	RUN NO. 2	RUN NO. 3	RUN NO. 4	TEST AVERAGE
GAS FLOW RATE					
(dscf/min)	100	100	100	100	100
(acf/min)	104	104	104	104	104
STACK TEMP. (DEG. R)	1212	1212	1212	1212	1212
ISOKINETIC (%)	373.5	426.7	398.6	423.9	405.7
MOISTURE (% H2O)	10.15	21.70	17.08	20.74	17.42
SAMPLE VOLUME (dscf)	43.343	42.946	42.488	37.966	41.686
CONDENSATE VOL. (ml)	104	252.8	185.9	211.1	188.4
METER TEMP. (DEG. R)	543	547	556	545	548

NO. OF TEST RUNS:	3		
PLANT:	VSL		
SAMPLING LOCATION:	HEPA Exhaust		
OPERATIONAL CONDITIONS:	********		
RUN NO. :	1	2	3
DATE :	1-19-95	1-19-95	1-19-95
NO. OF TEST POINTS:	24	24	24
SAMPLE TIME (MIN.):	72	94	96
Pb ("Hg):	29.97	29.97	29.97
Ps ("Hg):	29.41	29.41	29.41
NOZZLE DIA. (IN.):	0.371	0.31	0.31
STACK/DUCT AREA (Ft2):	0.349	0.349	0.349
Y :	0.996	0.996	0.996
HEAT INPUT (MM Btu/H):	***	***	***

GENERAL TEST DATA
PAGE 2

AD3

|1. {Alt}A after checking data for 1st run.|
|2. Check/edit data for other runs (both |
| pages). |
|3. {Alt} B. {Alt}M for help. |

RUN NO. :	1	2	3
F-FACTOR (dscf/MM Btu):	9780	9780	9780
Cp :	0.99	0.99	0.99
CO2(%):	0.83	1.0	0.6
O2(%):	20.7	20.7	20.7
CO(%):	0.0	0.0	0.0
N2(%):	78.47	78.27	78.68

FIELD DATA FORM

RUN #
1

| data. Turn off to |
| move cursor. |
| 2. {Ctrl}{Break} after |
| data entry. |
| 3.{Alt}M for next run.|

I. INPUT DATA

NET METER VOLUME (CU.FT.): 85.213
CONDENSATE VOLUME (ml): 18.4
LAB ANALYSIS (g): 0

II. FIELD DATA

POINT NO.	delta P	delta H	STACK TEMP. (F)	Tm Inlet (F)	Tm Outlet (F)	SQ.RT. dP
1	0.17	4.15	106	58	58	0.412
2	0.22	4.90	106	72	59	0.469
3	0.23	4.90	106	71	60	0.480
4	0.25	4.90	106	71	62	0.500
5	0.23	4.90	108	71	63	0.480
6	0.23	4.90	107	71	63	0.480
7	0.2	4.90	109	72	65	0.447
8	0.17	4.15	107	74	66	0.412
9	0.17	4.15	108	75	67	0.412
10	0.14	3.40	109	76	67	0.374
11	0.2	4.90	109	79	68	0.447
12	0.2	4.90	109	78	69	0.447
13	0.31	5.00	106	79	70	0.557
14	0.25	5.00	105	80	70	0.500
15	0.24	5.00	105	79	71	0.490
16	0.22	5.00	105	78	71	0.469
17	0.18	4.20	107	77	72	0.424
18	0.2	4.90	107	79	72	0.447
19	0.18	4.20	106	78	72	0.424
20	0.18	4.20	106	79	72	0.424
21	0.19	4.60	107	80	72	0.436
22	0.19	4.60	108	80	72	0.436
23	0.16	3.90	106	80	73	0.400
24	0.23	5.00	106	81	73	0.480
25						0.000
26						0.000
27						0.000
28						0.000
29						0.000
30						0.000
31						0.000
32						0.000
33						0.000
34						0.000
35						0.000
36						0.000
37						0.000
38						0.000
39						0.000
40						0.000
41						0.000
42						0.000
43						0.000
44						0.000
45						0.000
46						0.000
47						0.000
48						0.000
49						0.000
50						0.000
51						0.000
52						0.000
53						0.000
54						0.000
55						0.000
56						0.000
57						0.000
58						0.000
59						0.000
60						0.000
		d H	Ts (F)	Tm (F)	sq.rt. dP	
		4.610	106.8	71.8		0.452

FIELD DATA FORM

RUN # 2

| 1. {NumLock} to enter data. Turn off to move cursor. |
| 2. {Ctrl}{Break} after data entry. |
| 3. {Alt}M for next run. |

I. INPUT DATA

NET METER VOLUME (CU.FT.): 80.086
CONDENSATE VOLUME (ml): 24.6
LAB ANALYSIS (g): 0

II. FIELD DATA

POINT NO.	delta P	delta H	STACK TEMP. (F)	Tm Inlet (F)	Tm Outlet (F)	SQ.RT. dP
1	0.16	1.97	104	71	67	0.400
2	0.15	1.70	107	76	67	0.387
3	0.17	2.10	106	77	67	0.412
4	0.16	1.95	108	77	67	0.400
5	0.18	2.20	106	77	67	0.424
6	0.18	2.20	105	78	67	0.424
7	0.18	2.20	107	80	68	0.424
8	0.18	2.20	106	82	69	0.424
9	0.18	2.20	106	82	70	0.424
10	0.16	1.95	108	83	71	0.400
11	0.12	1.45	106	83	72	0.346
12	0.1	1.30	107	83	72	0.316
13	0.25	3.05	108	79	72	0.500
14	0.23	2.80	108	85	73	0.480
15	0.24	2.95	108	86	74	0.490
16	0.24	2.95	108	83	74	0.490
17	0.22	2.70	108	79	74	0.469
18	0.25	3.05	110	87	74	0.500
19	0.21	2.55	109	87	75	0.458
20	0.22	2.20	109	87	76	0.469
21	0.18	2.20	108	87	76	0.424
22	0.18	2.20	110	87	77	0.424
23	0.2	2.45	110	87	85	0.447
24	0.19	2.30	110	88	72	0.436
25						0.000
26						0.000
27						0.000
28						0.000
29						0.000
30						0.000
31						0.000
32						0.000
33						0.000
34						0.000
35						0.000
36						0.000
37						0.000
38						0.000
39						0.000
40						0.000
41						0.000
42						0.000
43						0.000
44						0.000
45						0.000
46						0.000
47						0.000
48						0.000
49						0.000
50						0.000
51						0.000
52						0.000
53						0.000
54						0.000
55						0.000
56						0.000
57						0.000
58						0.000
59						0.000
60						0.000
		d H	Ts (F)	Tm (F)	sq.rt. dP	
		2.284	107.6	77.0		0.432

FIELD DATA FORM ---------------

RUN #
3

| 1. {NumLock} to enter data. Turn off to move cursor. |
| 2. {Ctrl}{Break} after data entry. |
| 3. {Alt}M for next run. |

I. INPUT DATA

NET METER VOLUME (CU.FT.): 87.665
CONDENSATE VOLUME (ml): 23.4
LAB ANALYSIS (g): 0

II. FIELD DATA

POINT NO.	delta P	delta H	STACK TEMP. (F)	Tm Inlet (F)	Tm Outlet (F)	SQ.RT. dP
1	0.19	2.30	108	83	74	0.436
2	0.17	2.10	108	85	74	0.412
3	0.19	2.30	108	85	75	0.436
4	0.19	2.30	108	86	75	0.436
5	0.19	2.30	108	85	75	0.436
6	0.18	2.20	110	86	76	0.424
7	0.17	2.10	111	86	76	0.412
8	0.18	2.20	110	85	76	0.424
9	0.18	2.20	120	86	76	0.424
10	0.16	1.95	109	86	77	0.400
11	0.17	2.10	109	85	77	0.412
12	0.17	2.10	108	85	76	0.412
13	0.3	3.60	107	80	76	0.548
14	0.3	3.60	107	86	76	0.548
15	0.24	2.90	107	85	77	0.490
16	0.29	3.50	107	86	77	0.539
17	0.29	3.50	107	86	77	0.539
18	0.26	3.10	107	85	77	0.510
19	0.2	2.45	107	85	77	0.447
20	0.22	2.70	107	85	77	0.469
21	0.24	2.90	104	86	77	0.490
22	0.25	3.00	106	86	77	0.500
23	0.23	2.80	108	85	77	0.480
24	0.23	2.80	108	86	77	0.480
25						0.000
26						0.000
27						0.000
28						0.000
29						0.000
30						0.000
31						0.000
32						0.000
33						0.000
34						0.000
35						0.000
36						0.000
37						0.000
38						0.000
39						0.000
40						0.000
41						0.000
42						0.000
43						0.000
44						0.000
45						0.000
46						0.000
47						0.000
48						0.000
49						0.000
50						0.000
51						0.000
52						0.000
53						0.000
54						0.000
55						0.000
56						0.000
57						0.000
58						0.000
59						0.000
60						0.000
		d H	Ts (F)	Tm (F)	sq.rt. dP	
		2.625	108.3	80.7		0.463

U.S. EPA
PARTICULATE CALCULATIONS
RUN NO. 1

PLANT : VSL
DATE : 1-19-95
SAMP. LOCATION : HEPA Exhaust
OPERATING COND.: ********

SAMPLE TIME =	72.0	min.	NOZZLE DIA. =	0.371 in.
BAR. PRESSURE =	29.97	In.Hg	NOZZLE AREA =	0.000751 Sq.Ft.
STK. PRESSURE =	29.41	In.Hg	METER ORIFICE =	4.610 In. H2O
EFF. STACK AREA =	0.35	Sq.Ft.	METER VOLUME =	85.213 Cu.Ft.
Cp =	0.99		METER TEMP. =	532 DEG. R
GAS ANALYSIS =	0.8	% CO2	STACK TEMP. =	567 DEG. R
	20.7	% O2	SQ.RT. dP =	0.452 In. H2O
	0.0	% CO	COND.(Vlc) =	18.4 ml
	78.5	% N2	METER Y =	0.996
LAB ANALYSIS =		grams	HEAT INPUT =	*** MM Btu/hr
			F-FACTOR =	9780 dscf/MM Btu

********* ********* ****************************** ********* ********* *********

Vw(std) = 0.04707 x Vlc = 0.866 scf

Vm(std) = 17.64 x Vm x Y x (Pb + (dH / 13.6))
/ (Tm) = 85.332 scf

Bws = Vw(std) / (Vm(std) + Vw(std)) = 0.010

%EA =(%O2 - 0.5%CO) / (0.264%N2 - (%O2 - 0.5%CO)) = 1287.313

Md =(.44 x %CO2)+(.32 x %O2)+[.28 x (%N2 + %CO)] = 28.96

Ms = (Md x (1-Bws)) + (18.0 x Bws) = 28.85

vs = 85.49 x CP x (Sq.Rt.dP) x [Sq.Rt.(Ts)
/ (Ms x Ps)] = 31.3 ft/sec

Qs = vs x As x 60 = 655 acf/min

Qs(std)=Qs x (1-Bws)x(528/(Ts)) x (Ps/29.92)= 593 dscf/min

I = (Ts) x [(0.00267 x Vlc) + (Vm(std) / 17.64)]
x 100 / (Time x Ps x An x vs x 60) = 92.9 %

********* ********* ****************************** ********* ********* *********

cs = 15.432 x grams / Vm(std) = 0.0000 grains/dscf

grains/acf = cs x 17.64xPs x (1-Bws) / (Ts) = 0.0000 grains/acf

C = cs / 7000 = 0.00E+00 lbs/dscf

EM = C x Qs(std) x 60 = 0.000 lbs/hr

E = EM / (MM Btu/hr) Heat Input method = ERR lbs/MM Btu

E = C x F x (20.9 / 20.9 - %O2) F-Factor method = 0.000 lbs/MM Btu

E = EM / (MM Btu/hr) Heat Input method = ERR lbs/MM Btu

U.S. EPA
PARTICULATE CALCULATIONS
RUN NO. 2

PLANT : VSL
DATE : 1-19-95
SAMP. LOCATION : HEPA Exhaust
OPERATING COND.: ********

SAMPLE TIME =	94.0	min.	NOZZLE DIA. =	0.310	in.
BAR. PRESSURE =	29.97	in.Hg	NOZZLE AREA =	0.000524	Sq.Ft.
STK. PRESSURE =	29.41	in.Hg	METER ORIFICE =	2.284	in. H2O
EFF. STACK AREA =	0.35	Sq.Ft.	METER VOLUME =	80.086	Cu.Ft.
Cp =	0.99		METER TEMP. =	537	DEG. R
GAS ANALYSIS =	1.0	% CO2	STACK TEMP. =	568	DEG. R
	20.7	% O2	SQ.RT. dP =	0.432	in. H2O
	0.0	% CO	COND.(Vlc) =	24.6	ml
	78.3	% N2	METER Y =	0.996	
LAB ANALYSIS =	*******	grams	HEAT INPUT =	***	MM Btu/hr
			F-FACTOR =	9780	dscf/MM Btu

********* ********* ****************************** ********* ********* *********

Vw(std) = 0.04707 x Vlc	=	1.158	scf
Vm(std) = 17.64 x Vm x Y x (Pb + (dH / 13.6)) / (Tm)	=	78.965	scf
Bws = Vw(std) / (Vm(std) + Vw(std))	=	0.014	
%EA =(%O2 - 0.5%CO) / (0.264%N2 - (%O2 - 0.5%CO)) =		-443.279	
Md =(.44 x %CO2)+(.32 x %O2)+[.28 x (%N2 + %CO)] =		28.99	
Ms = (Md x (1-Bws)) + (18.0 x Bws)	=	28.83	
vs = 85.49 x CP x (Sq.Rt.dP) x [Sq.Rt.(Ts) / (Ms x Ps)]	=	29.9	ft/sec
Qs = vs x As x 60	=	627	acf/min
Qs(std)=Qs x (1-Bws)x(528/(Ts)) x (Ps/29.92)=		565	dscf/min
I = (Ts) x [(0.00267 x Vlc) + (Vm(std) / 17.64)] x 100 / (Time x Ps x An x vs x 60)	=	99.1	%

********* ********* ****************************** ********* ********* *********

cs = 15.432 x grams / Vm(std)	=	0.0000	grains/dscf
grains/acf = cs x 17.64xPs x (1-Bws) / (Ts) =		0.0000	grains/acf
C = cs / 7000	=	0.00E+00	lbs/dscf
EM = C x Qs(std) x 60	=	0.000	lbs/hr

E = EM / (MM Btu/hr) Heat Input method	=	ERR	lbs/MM Btu
E = C x F x (20.9 / 20.9 - %O2) F-Factor method =		0.000	lbs/MM Btu
E = EM / (MM Btu/hr) Heat Input method	=	ERR	lbs/MM Btu

U.S. EPA
PARTICULATE CALCULATIONS
RUN NO. 3

PLANT : VSL
DATE : 1-19-95
SAMP. LOCATION : HEPA Exhaust
OPERATING COND.: ********

SAMPLE TIME =	96.0	min.	NOZZLE DIA. =	0.310	in.
BAR. PRESSURE =	29.97	in.Hg	NOZZLE AREA =	0.000524	Sq.Ft.
STK. PRESSURE =	29.41	in.Hg	METER ORIFICE =	2.625	in. H2O
EFF. STACK AREA =	0.35	Sq.Ft.	METER VOLUME =	87.665	Cu.Ft.
Cp =	0.99		METER TEMP. =	541	DEG. R
GAS ANALYSIS =	0.6	% CO2	STACK TEMP. =	568	DEG. R
	20.7	% O2	SQ.RT. dP =	0.463	in. H2O
	0.0	% CO	COND.(Vlc) =	23.4	ml
	78.7	% N2	METER Y =	0.996	
LAB ANALYSIS =	*******	grams	HEAT INPUT =	***	MM Btu/hr
			F-FACTOR =	9780	dscf/MM Btu

********* ********* ****************************** ********* ********* *********

Vw(std) = 0.04707 x Vlc	=	1.101	scf
Vm(std) = 17.64 x Vm x Y x (Pb + (dH / 13.6)) / (Tm)	=	85.924	scf
Bws = Vw(std) / (Vm(std) + Vw(std))	=	0.013	
%EA =(%O2 - 0.5%CO) / (0.264%N2 - (%O2 - 0.5%CO)) =		657.995	
Md =(.44 x %CO2)+(.32 x %O2)+[.28 x (%N2 + %CO)] =		28.92	
Ms = (Md x (1-Bws)) + (18.0 x Bws)	=	28.78	
vs = 85.49 x CP x (Sq.Rt.dP) x [Sq.Rt.(Ts) / (Ms x Ps)]	=	32.1	ft/sec
Qs = vs x As x 60	=	672	acf/min
Qs(std)=Qs x (1-Bws)x(528/(Ts)) x (Ps/29.92)=		606	dscf/min
I = (Ts) x [(0.00267 x Vlc) + (Vm(std) / 17.64)] x 100 / (Time x Ps x An x vs x 60)	=	98.4	%

********* ********* ****************************** ********* ********* *********

cs = 15.432 x grams / Vm(std)	=	0.0000	grains/dscf
grains/acf = cs x 17.64xPs x (1-Bws) / (Ts) =		0.0000	grains/acf
C = cs / 7000	=	0.00E+00	lbs/dscf
EM = C x Qs(std) x 60	=	0.000	lbs/hr

E = EM / (MM Btu/hr) Heat Input method	=	ERR	lbs/MM Btu
E = C x F x (20.9 / 20.9 - %O2) F-Factor method =		0.000	lbs/MM Btu
E = EM / (MM Btu/hr) Heat Input method	=	ERR	lbs/MM Btu

TEST SUMMARY
PARTICULATE EMISSIONS TEST RESULTS

PLANT : VSL
DATE : 1-19-95
SAMPLING LOCATION :HEPA Exhaust
OPERATING COND. : ********
****

	RUN NO. 1	RUN NO. 2	RUN NO. 3	TEST AVERAGE
GAS FLOW RATE				
(dscf/min)	593	565	606	588
(acf/min)	655	627	672	651
STACK TEMP.				
(DEG. R)	567	568	568	568
ISOKINETIC				
(%)	92.9	99.1	98.4	96.8
MOISTURE				
(% H2O)	1.00	1.45	1.27	1.24
SAMPLE VOLUME				
(dscf)	85.332	78.965	85.924	83.407
CONDENSATE VOL.				
(ml)	18.4	24.6	23.4	22.1
METER TEMP.				
(DEG. R)	532	537	541	536
PART. EMISSIONS				
(lbs / MM Btu)				
By Heat Input	ERR	ERR	ERR	ERR
By F-Factor	ERR	ERR	ERR	ERR

DRY GAS METER AND ORIFICE CALIBRATION
(POST TEST)

CALIBRATOR
RP

SITE
Catholic University

DATE	1-24-94	ORIG. GAMMA	1.040
BAROMETRIC PRESSURE:	29.80	AVG. DELTA H	0.90
BOX NUMBER:	ES-1	HIGH VACUUM	20.0
DRY GAS METER NUMBER	6846743	JOB NUMBER	727107.00

RUN #	GAS VOL WET TEST METER VW CUBIC FT.	GAS VOL DRY GAS METER VD CUBIC FT.	WET TEST METER TW DEGREES F	TEMPERATURE DRY GAS METER INLET	OUTLET	AVERAGE	TIME MIN.	SEC.	GAMMA Y	DELTA H@
	5.000	973.202		76.000	70.000					
1	0.000	968.198	66.0	73.000	69.000	72.00	9	45	1.008	0.00
	5.000	5.004								
	5.000	978.210		79.000	73.000					
2	0.000	973.202	66.0	77.000	71.000	75.00	9	45	1.013	0.00
	5.000	5.008								
	5.000	983.264		80.000	74.000					
3	0.000	978.210	66.0	79.000	73.000	76.50	9	45	1.007	0.00
	5.000	5.054								
								AVG.	1.009	0.00

DELTA H@ CALCULATIONS

DELTA H									H@
								2	
0.90	0.0317	x	0.90	X	526.00	x			0.00
	29.80	x	532.00				5.00		
								2	
0.90	0.0317	x	0.90	X	526.00	x			0.00
	29.80	x	535.00				5.00		
								2	
0.90	0.0317	x	0.90	X	526.00	x			0.00
	29.80	x	526.00				5.00		
								AVG.	0.00

GAMMA CALCULATIONS

DELTA H								Y FACTOR
0.90	5.00	x	29.80	x	532.00		=	1.008
	5.00	x	29.87	x	526.00			
0.90	5.00	x	29.80	x	535.00		=	1.013
	5.01	x	29.87	x	526.00			
0.90	5.00	x	29.80	x	536.50		=	1.007
	5.05	x	29.87	x	526.00			
							AVG.	1.009

PRE TEST CAL DATE 12-5-94
% GAMMA CHANGE -3.02

CATHOLIC UNIVERSITY CEM RESULTS

RUN # 1 HEPA	O_2	CO	CO_2	NO_X	NO	SO_2	THC
Average (¢)	20.51	36.45	0.84	655.94	665.70	201.19	4.55
Initial Zero Bias	0.61	0.4	0.06	4		-0.1	0.1
Final Zero Bias	0.79	0.3	0.06	20		-2	0.8
Average Zero Bias (C_o)	0.7	0.35	0.06	12	#DIV/0!	-1.05	0.45
Initial Upscale Bias	11.77	90.7	10.63	439		67.4	29.7
Final Upscale Bias	11.66	95.2	10.15	464		75	28.3
Average Upscale Bias (C_m)	11.715	92.95	10.39	451.5	#DIV/0!	71.2	29
Actual Upscale Conc. (C_{ma})	11.51	90.7	11.05	442		86.8	28.3
Drift Corrected Value (C_{gas})	**20.70**	**35.36**	**0.83**	**647.60**	**#DIV/0!**	**242.97**	**4.06**

RUN # 1 DEMISTER	O_2	CO	CO_2	NO_X	NO	SO_2	THC
Average (¢)	19.72	233.58	3.04	2116.21	1928.94	562.96	9.96
Initial Zero Bias	0.61	0.4	0.06	4		-0.1	0.1
Final Zero Bias	0.79	0.3	0.06	20		-2	0.8
Average Zero Bias (C_o)	0.7	0.35	0.06	12	#DIV/0!	-1.05	0.45
Initial Upscale Bias	11.77	90.7	10.63	439		67.4	29.7
Final Upscale Bias	11.66	95.2	10.15	464		75	28.3
Average Upscale Bias (C_m)	11.715	92.95	10.39	451.5	#DIV/0!	71.2	29
Actual Upscale Conc. (C_{ma})	11.51	90.7	11.05	442		86.8	28.3
Drift Corrected Value (C_{gas})	**19.87**	**228.45**	**3.18**	**2116.18**	**#DIV/0!**	**677.59**	**9.43**

RUN # 1 MELTER	O_2	CO	CO_2	NO_X	NO	SO_2	THC
Average (¢)	18.74	422.84	6.51	6420.18	5060.38	3.42	1.09
Initial Zero Bias	0.61	0.4	0.06	4		-0.1	0.1
Final Zero Bias	0.79	0.3	0.06	20		-2	0.8
Average Zero Bias (C_o)	0.7	0.35	0.06	12	#DIV/0!	-1.05	0.45
Initial Upscale Bias	11.77	90.7	10.63	439		67.4	29.7
Final Upscale Bias	11.66	95.2	10.15	464		75	28.3
Average Upscale Bias (C_m)	11.715	92.95	10.39	451.5	#DIV/0!	71.2	29
Actual Upscale Conc. (C_{ma})	11.51	90.7	11.05	442		86.8	28.3
Drift Corrected Value (C_{gas})	**18.85**	**413.82**	**6.90**	**6444.63**	**#DIV/0!**	**5.36**	**0.63**

CATHOLIC UNIVERSITY CEM RESULTS

RUN # 2 HEPA	O_2	CO	CO_2	NO_X	NO	SO_2	THC	NO_X ML
Average (¢)	21.37	89.62	1.08	1180.58	830.54	215.63	8.49	1337.14
Initial Zero Bias	0.84	0.3	0.06	46		-2	0.8	
Final Zero Bias	0.85	0.9	0.1	175		-2	1.7	
Average Zero Bias (C_o)	0.845	0.6	0.08	110.5		-2	1.25	
Initial Upscale Bias	12.17	93.7	10.82	479		75	28.3	
Final Upscale Bias	12.34	95.8	11.05	597		75	32	
Average Upscale Bias (C_m)	12.255	94.75	10.935	538		75	30.15	
Actual Upscale Conc. (C_{ma})	11.51	90.7	11.05	442		86.8	28.3	
Drift Corrected Value (C_{gas})	**20.71**	**85.75**	**1.02**	**1106.38**	**#DIV/0!**	**245.33**	**7.09**	**#DIV/0!**

RUN # 2 DEMISTER	O_2	CO	CO_2	NO_X	NO	SO_2	THC	NO_X ML
Average (¢)	21.44	218.44	3.60	3748.21	3116.73	179.20	8.18	4269.00
Initial Zero Bias	0.85	0.3	0.06	46		-2	0.8	
Final Zero Bias	0.84	0.9	0.1	175		-2	1.7	
Average Zero Bias (C_o)	0.845	0.6	0.08	110.5		-2	1.25	
Initial Upscale Bias	12.34	93.7	10.82	479		75	28.3	
Final Upscale Bias	12.22	95.8	11.05	597		75	32	
Average Upscale Bias (C_m)	12.28	94.75	10.935	538		75	30.15	
Actual Upscale Conc. (C_{ma})	11.51	90.7	11.05	442		86.8	28.3	
Drift Corrected Value (C_{gas})	**20.73**	**209.86**	**3.59**	**3761.09**	**#DIV/0!**	**204.27**	**6.78**	**#DIV/0!**

RUN # 2 MELTER	O_2	CO	CO_2	NO_X	NO	SO_2	THC	NO_X ML
Average (¢)	18.79	157.38	2.55	4075.25	2673.72	66.16	3.68	4198.89
Initial Zero Bias	0.8	0.3	0.06	46		-2	0.8	
Final Zero Bias	-3.16	0.9	0.1	175		-2	1.7	
Average Zero Bias (C_o)	-1.18	0.6	0.08	110.5		-2	1.25	
Initial Upscale Bias	11.58	93.7	10.82	479		75	28.3	
Final Upscale Bias	8.4	95.8	11.05	597		75	32	
Average Upscale Bias (C_m)	9.99	94.75	10.935	538		75	30.15	
Actual Upscale Conc. (C_{ma})	11.51	90.7	11.05	442		86.8	28.3	
Drift Corrected Value (C_{gas})	**20.58**	**151.03**	**2.52**	**4099.22**	**#DIV/0!**	**76.84**	**2.38**	**#DIV/0!**

CATHOLIC UNIVERSITY CEM RESULTS

RUN # 3 HEPA	O_2	CO	CO_2	NO_X	NO	SO_2	THC	NO_X ML
Average (¢)	20.05	38.52	0.67	595.27	316.54	-2.69	3.46	548.24
Initial Zero Bias	0.51	0.9	0.1	175		-2	1.7	
Final Zero Bias	-1.12	0.4	0.1	54		N/A	3.5	
Average Zero Bias (C_o)	-0.305	0.65	0.1	114.5		-1	2.6	
Initial Upscale Bias	11.61	95.8	11.05	597		75	32	
Final Upscale Bias	10.37	92.3	10.9	489		N/A	29.4	
Average Upscale Bias (C_m)	10.99	94.05	10.975	543		37.5	30.7	
Actual Upscale Conc. (C_{ma})	11.51	90.7	11.05	442		86.8	28.3	
Drift Corrected Value (C_{gas})	**20.74**	**36.77**	**0.58**	**495.92**	**#DIV/0!**	**-3.81**	**0.87**	**#DIV/0!**

RUN # 3 DEMISTER	O_2	CO	CO_2	NO_X	NO	SO_2	THC	NO_X ML
Average (¢)	19.33	174.14	2.35	2128.18	1856.08	0.96	8.03	2040.77
Initial Zero Bias	0.51	0.9	0.1	175		-2	1.7	
Final Zero Bias	-1.12	0.4	0.1	54		N/A	3.5	
Average Zero Bias (C_o)	-0.305	0.65	0.1	114.5		-1	2.6	
Initial Upscale Bias	11.61	95.8	11.05	597		75	32	
Final Upscale Bias	10.37	92.3	10.9	489		N/A	29.4	
Average Upscale Bias (C_m)	10.99	94.05	10.975	543		37.5	30.7	
Actual Upscale Conc. (C_{ma})	11.51	90.7	11.05	442		86.8	28.3	
Drift Corrected Value (C_{gas})	**20.01**	**168.48**	**2.29**	**2077.12**	**#DIV/0!**	**4.41**	**5.47**	**#DIV/0!**

RUN # 3 MELTER	O_2	CO	CO_2	NO_X	NO	SO_2	THC	NO_X ML
Average (¢)	19.32	24.13	0.70	564.87	196.52	0.00	5.87	478.77
Initial Zero Bias	0.51	0.9	0.1	175		-2	1.7	
Final Zero Bias	-1.12	0.4	0.1	54		N/A	3.5	
Average Zero Bias (C_o)	-0.305	0.65	0.1	114.5		-1	2.6	
Initial Upscale Bias	11.61	95.8	11.05	597		75	32	
Final Upscale Bias	10.37	92.3	10.9	489		N/A	29.4	
Average Upscale Bias (C_m)	10.99	94.05	10.975	543		37.5	30.7	
Actual Upscale Conc. (C_{ma})	11.51	90.7	11.05	442		86.8	28.3	
Drift Corrected Value (C_{gas})	**20.00**	**22.80**	**0.61**	**464.56**	**#DIV/0!**	**2.25**	**3.29**	**#DIV/0!**

CATHOLIC UNIVERSITY CEM RESULTS

RUN # 4 HEPA	O_2	CO	CO_2	NO_X	NO	NO_X ML
Average (¢)	20.33	36.84	0.78	586.95	444.93	428.09
Initial Zero Bias	0.68	0.4	0.06	17		22
Final Zero Bias	0.57	0.4	0.08	6		0
Average Zero Bias (C_o)	0.625	0.4	0.07	11.5		11
Initial Upscale Bias	11.7	90.3	10.44	451		427
Final Upscale Bias	11.55	90.3	10.5	450		446
Average Upscale Bias (C_m)	11.625	90.3	10.47	450.5		436.5
Actual Upscale Conc. (C_{ma})	11.51	90.7	11.05	442		442
Drift Corrected Value (C_{gas})	**20.62**	**36.76**	**0.75**	**579.38**	**#DIV/0!**	**433.27**

RUN # 4 DEMISTER	O_2	CO	CO_2	NO_X	NO	NO_X ML
Average (¢)	19.82	177.90	2.52	1952.26	1137.59	1718.45
Initial Zero Bias	0.68	0.4	0.06	17		22
Final Zero Bias	0.57	0.4	0.08	6		0
Average Zero Bias (C_o)	0.625	0.4	0.07	11.5		11
Initial Upscale Bias	11.7	90.3	10.44	451		427
Final Upscale Bias	11.55	90.3	10.5	450		446
Average Upscale Bias (C_m)	11.625	90.3	10.47	450.5		436.5
Actual Upscale Conc. (C_{ma})	11.51	90.7	11.05	442		442
Drift Corrected Value (C_{gas})	**20.09**	**179.08**	**2.60**	**1954.02**	**#DIV/0!**	**1773.66**

RUN # 4 MELTER	O_2	CO	CO_2	NO_X	NO	NO_X ML
Average (¢)	18.89	246.20	4.80	2903.25	1737.37	1780.74
Initial Zero Bias	0.68	0.4	0.06	17		22
Final Zero Bias	0.57	0.4	0.08	6		0
Average Zero Bias (C_o)	0.625	0.4	0.07	11.5		11
Initial Upscale Bias	11.7	90.3	10.44	451		427
Final Upscale Bias	11.55	90.3	10.5	450		446
Average Upscale Bias (C_m)	11.625	90.3	10.47	450.5		436.5
Actual Upscale Conc. (C_{ma})	11.51	90.7	11.05	442		442
Drift Corrected Value (C_{gas})	**19.11**	**247.99**	**5.03**	**2911.52**	**#DIV/0!**	**1838.37**

ON LINE RUN # 1 HEPA FILTER EXHAUST

	TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC
NO_X MODE	12:16:43	20.52	33.7	0.77	476	325	3.8
	12:16:58	20.52	33.7	0.75	505	321	3.7
	12:17:13	20.52	30.2	0.73	623	318	3.8
	12:17:28	20.54	25.2	0.75	626	317	3.8
	12:17:43	20.54	22.2	0.74	573	315	3.8
	12:17:58	20.56	20.7	0.71	551	312	3.8
	12:18:14	20.55	18.3	0.70	543	308	3.8
	12:18:29	20.56	18.8	0.71	572	302	3.8
	12:18:44	20.54	17.7	0.71	593	296	3.8
	12:18:59	20.56	17.2	0.71	624	294	3.8
	12:19:14	20.55	15.7	0.72	590	292	3.8
	12:19:29	20.57	16.3	0.70	620	290	3.8
	12:19:44	20.57	14.8	0.69	598	288	3.9
	12:19:59	20.58	14.8	0.68	613	285	3.8
	12:20:14	20.57	14.3	0.67	628	287	3.8
	12:20:29	20.57	14.8	0.69	623	285	3.8
	12:20:44	20.58	15.2	0.68	624	281	3.8
	12:20:59	20.57	14.3	0.69	600	276	3.9
	12:21:14	20.58	13.7	0.68	642	272	3.9
	12:21:29	20.57	13.2	0.68	628	267	3.9
	12:21:44	20.58	15.2	0.70	590	265	3.8
	12:21:59	20.57	14.8	0.69	640	263	3.9
	12:22:14	20.57	14.8	0.71	621	259	3.9
	12:22:29	20.55	20.7	0.70	597	255	3.8
	12:22:44	20.57	15.2	0.69	627	247	3.9
	12:22:59	20.56	20.2	0.68	597	240	3.8
	12:23:14	20.58	14.8	0.67	577	235	3.7
	12:23:30	20.56	14.3	0.65	591	230	3.7
	12:23:45	20.58	15.7	0.67	613	225	3.8
	12:24:00	20.56	15.7	0.69	587	219	3.8
	12:24:15	20.56	16.8	0.69	589	213	3.7
	12:24:30	20.55	16.8	0.69	619	209	3.8
	12:24:45	20.56	17.2	0.69	597	204	3.7
	12:25:00	20.55	17.2	0.68	600	200	3.7
	12:25:15	20.57	17.7	0.68	628	198	3.7
	12:25:30	20.56	17.7	0.68	620	195	3.7
	12:25:45	20.57	17.7	0.67	642	190	3.7
	12:26:00	20.57	16.8	0.67	650	185	3.7
	12:26:15	20.57	15.7	0.69	937	181	5.3
	12:26:30	20.55	30.7	0.85	1024	177	13.5

ON LINE RUN # 1 HEPA FILTER EXHAUST

	TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC
	12:26:45	20.38	68.7	1.48	1024	178	16.5
	12:27:00	20.18	185.3	1.94	1024	187	13.5
	12:27:15	20.12	228.2	1.92	1024	191	9.7
	12:27:30	20.20	250.4	1.65	862	183	7.1
	12:27:45	20.26	215.7	1.45	643	165	5.5
	12:28:00	20.30	137.3	1.32	706	150	5.1
	12:28:15	20.35	104.2	1.22	748	142	4.8
NO MODE	12:28:31	20.38	59.7	1.11	713	137	4.6
	12:28:46	20.43	48.2	1.02	937	134	4.5
	12:29:01	20.45	36.2	0.97	640	129	4.4
	12:29:16	20.47	32.7	0.93	639	126	4.2
	12:29:31	20.47	30.2	0.90	627	120	4.2
	12:29:46	20.49	26.7	0.87	590	115	4.1
	12:30:01	20.50	24.7	0.85	638	110	4.0
	12:30:16	20.50	24.2	0.85	643	106	4.0
	12:30:31	20.50	21.7	0.84	634	103	3.9
	12:30:46	20.51	19.2	0.84	549	99	3.8
	12:31:01	20.49	19.2	0.84	546	94	3.8
	12:31:16	20.49	22.2	0.87	636	88	3.8
	12:31:31	20.47	21.7	0.85	616	85	3.8
	12:31:46	20.50	20.2	0.83	680	82	3.8
	12:32:01	20.51	22.2	0.82	718	79	3.9
	12:32:16	20.52	21.2	0.79	703	78	3.8
	12:32:31	20.54	18.8	0.76	710	74	3.8
	12:32:46	20.55	18.8	0.73	690	71	3.8
	12:33:01	20.56	17.2	0.72	713	68	3.8
	12:33:16	20.56	16.8	0.71	692	65	3.8

	O_2	CO	CO_2	NO_X	NO	SO_2	THC
AVERAGE	20.51	36.45	0.84	655.94	665.70	201.19	4.55
MAX.	20.58	250.40	1.94	1024.00	937.00	325.00	16.50
MIN.	20.12	13.20	0.65	476.00	546.00	65.00	3.70
VARIANCE	0.01	2596.63	0.08	18207.15	6728.54	6680.07	5.57
STD. DEV.	0.10	50.96	0.28	134.93	82.03	81.73	2.36
MEDIAN	20.55	18.80	0.71	620.00	641.50	200.00	3.80

ON LINE RUN # 1 POST DEMISTER

	TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC
NO_X MODE	12:59:37	19.93	173.7	2.51	2038	389	7.8
	12:59:52	19.95	170.7	2.51	2207	405	7.9
	13:00:07	19.94	164.7	2.54	2293	430	8.0
	13:00:22	19.95	170.7	2.56	2348	461	8.1
	13:00:37	19.94	161.7	2.57	2499	485	8.4
	13:00:52	19.96	162.3	2.58	2500	514	8.3
	13:01:07	19.96	162.3	2.57	2499	538	8.4
	13:01:22	19.97	160.8	2.55	652	569	8.5
	13:01:37	19.99	155.3	2.54	679	587	8.7
	13:01:52	19.98	150.3	2.54	644	593	8.6
	13:02:07	19.99	159.3	2.52	2475	595	8.4
	13:02:22	19.98	149.7	2.46	2574	600	8.9
	13:02:37	19.99	161.8	2.52	2493	600	9.7
	13:02:52	19.92	174.7	2.69	2526	599	10.0
	13:03:07	19.86	206.3	2.86	2461	601	10.0
	13:03:22	19.81	219.7	2.97	2224	600	9.7
	13:03:38	19.78	232.7	3.02	2431	593	9.8
	13:03:53	19.76	229.6	3.06	2233	599	9.9
	13:04:08	19.73	233.2	3.13	2097	599	10.0
	13:04:23	19.70	246.4	3.22	2032	591	9.6
	13:04:38	19.66	236.7	3.29	2295	587	9.7
	13:04:53	19.65	287.3	3.36	2149	590	9.8
	13:05:08	19.65	257.9	3.32	2001	587	10.3
	13:05:23	19.64	264.3	3.37	2207	583	10.3
	13:05:38	19.60	266.3	3.42	2095	603	9.6
	13:05:53	19.62	254.9	3.36	2103	624	9.9
	13:06:08	19.63	262.8	3.33	2082	638	10.7
	13:06:23	19.62	258.4	3.40	2330	633	10.3
	13:06:38	19.60	279.3	3.43	2174	642	10.6
	13:06:53	19.61	283.7	3.42	2031	644	10.4
	13:07:08	19.61	277.3	3.40	2132	648	10.3
	13:07:23	19.60	282.3	3.47	2017	653	10.0
	13:07:38	19.56	282.3	3.52	2126	656	9.9
	13:07:53	19.58	277.8	3.49	2299	672	10.6
	13:08:08	19.58	261.3	3.53	2309	675	10.3
	13:08:39	19.63	264.8	3.35	2017	655	9.6
	13:08:54	19.64	235.7	3.29	1714	644	10.0
	13:09:09	19.65	235.2	3.26	1827	634	9.5
	13:09:24	19.63	229.2	3.30	1837	640	10.5
	13:09:39	19.61	256.4	3.36	1944	645	10.2

ON LINE RUN # 1 POST DEMISTER

	TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC
	13:09:54	19.59	281.3	3.42	2198	641	10.7
	13:10:09	19.57	270.4	3.49	2074	636	10.6
	13:10:24	19.60	252.4	3.42	2152	617	11.9
	13:10:39	19.60	248.9	3.42	1957	622	10.1
	13:10:54	19.59	277.3	3.39	1924	615	10.5
	13:11:09	19.59	259.9	3.41	2030	614	10.2
	13:11:24	19.60	251.9	3.30	2108	607	11.0
	13:11:39	19.64	253.9	3.28	2080	608	10.6
	13:11:54	19.60	258.4	3.33	2075	606	10.8
	13:12:09	19.64	269.8	3.21	2302	602	12.2
	13:12:24	19.63	283.3	3.24	2224	592	12.4
	13:12:39	19.60	286.8	3.25	2160	588	10.9
	13:12:54	19.63	284.8	3.17	1963	580	11.1
	13:13:09	19.64	279.3	3.13	2041	570	11.0
	13:13:24	19.64	266.8	3.12	1714	565	10.2
	13:13:40	19.68	269.3	3.01	1739	562	9.9
	13:13:55	19.69	234.2	2.94	2225	558	10.2
	13:14:10	19.72	235.2	2.94	2071	557	10.0
	13:14:25	19.78	207.3	2.82	2251	553	10.1
	13:14:40	19.83	196.8	2.69	2266	549	10.1
	13:14:55	19.86	183.8	2.62	2263	545	9.8
	13:15:10	19.86	189.8	2.59	2258	550	9.6
	13:15:25	19.88	192.4	2.56	2358	556	9.8
	13:15:40	19.88	170.3	2.58	2232	560	9.4
	13:15:55	19.90	172.3	2.58	2317	562	9.9
	13:16:10	19.89	174.7	2.58	2133	560	9.7
	13:16:25	19.88	177.7	2.54	2183	561	9.6
	13:16:40	19.89	176.8	2.55	2236	561	9.7
	13:16:55	19.87	180.4	2.59	2248	561	9.8
	13:17:10	19.86	196.8	2.62	2377	563	10.1
	13:17:25	19.86	187.3	2.67	2498	574	10.3
NO MODE	13:17:40	19.84	195.3	2.71	1879	579	10.6
	13:17:55	19.85	199.3	2.70	1784	575	10.1
	13:18:10	19.81	198.3	2.72	1920	567	10.0
	13:18:25	19.81	206.3	2.71	1971	566	10.4
	13:18:41	19.81	202.3	2.77	1902	571	10.0
	13:18:56	19.83	197.3	2.72	1792	561	9.9
	13:19:11	19.83	190.9	2.71	7278	544	10.6
	13:19:26	19.82	202.8	2.71	6923	535	9.9
	13:19:41	19.82	206.3	2.75	1641	525	10.0

ON LINE RUN # 1 POST DEMISTER

TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC
13:19:56	19.79	204.3	2.79	1583	515	10.0
13:20:11	19.77	218.8	2.82	1628	511	10.5
13:20:26	19.73	224.8	2.91	1539	513	10.4
13:20:41	19.68	249.9	3.04	1442	511	10.5
13:20:56	19.65	251.9	3.11	1510	512	10.7
13:21:11	19.59	331.8	3.17	1549	508	9.7
13:21:26	19.60	249.4	3.17	1590	503	10.0
13:21:41	19.61	267.8	3.14	1651	501	9.6
13:21:56	19.64	250.9	3.05	1545	506	9.4
13:22:11	19.69	239.2	2.99	1510	504	9.3
13:22:27	19.69	237.2	2.95	1353	499	10.0
13:22:42	19.67	236.7	3.04	1427	487	10.0
13:22:57	19.61	249.9	3.16	1469	485	10.1
13:23:12	19.58	264.4	3.25	1383	489	10.1
13:23:27	19.54	272.9	3.36	1492	487	9.9
13:23:42	19.50	285.8	3.45	1477	486	10.4
13:23:57	19.48	298.3	3.54	1334	489	10.2
13:24:12	19.45	313.8	3.55	1739	481	11.1
13:24:27	19.47	338.8	3.59	1652	490	10.6
13:24:42	19.45	312.9	3.61	1551	492	9.9
13:24:57	19.46	307.7	3.60	1385	473	9.1
13:25:12	19.45	299.7	3.51	1397	461	9.6
13:25:27	19.48	283.3	3.50	1430	463	10.1

	O_2	CO	CO_2	NO_X	NO	SO_2	THC
AVERAGE	19.72	233.58	3.04	2116.21	1928.94	562.96	9.96
MAX.	19.99	338.80	3.61	2574.00	7278.00	675.00	12.40
MIN.	19.45	149.70	2.46	644.00	1334.00	389.00	7.80
VARIANCE	0.02	2142.26	0.13	132773.23	1872286.64	3615.29	0.64
STD. DEV.	0.15	46.28	0.36	364.38	1368.32	60.13	0.80
MEDIAN	19.67	237.20	3.11	2174.00	1550.00	567.00	10.00

ON LINE RUN # 1 MELTER EXHAUST

	TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC
NO MODE	14:20:23	18.89	357.2	6.52	4877	6	1.1
	14:20:38	18.88	363.2	6.49	4850	6	1.1
	14:20:53	18.88	383.0	6.49	4925	6	1.1
	14:21:08	18.84	408.4	6.62	4811	6	1.1
	14:21:23	18.80	429.3	6.62	4798	6	1.1
	14:21:38	18.80	432.8	6.63	4933	6	1.1
	14:21:53	18.80	435.8	6.63	4987	6	1.1
	14:22:08	18.78	439.9	6.64	4982	6	1.1
	14:22:23	18.77	448.4	6.61	4970	6	1.1
	14:22:38	18.75	439.4	6.68	5067	5	1.2
	14:22:53	18.73	435.8	6.62	5029	5	1.1
	14:23:09	18.76	431.3	6.55	5096	5	1.1
	14:23:24	18.72	424.8	6.67	5034	5	1.1
	14:23:39	18.70	438.4	6.70	4980	5	1.1
	14:23:54	18.70	449.9	6.64	5061	5	1.1
	14:24:09	18.62	470.8	6.90	5082	5	1.1
	14:24:24	18.57	480.8	7.02	5068	4	1.1
	14:24:39	18.54	493.3	6.98	4974	4	1.1
	14:24:54	18.56	488.8	6.90	4927	4	1.1
	14:25:09	18.59	474.3	6.76	4987	4	1.1
	14:25:24	18.63	461.8	6.71	5019	4	1.1
	14:25:39	18.63	451.9	6.64	5076	4	1.1
	14:25:54	18.69	442.9	6.64	5037	4	1.1
	14:26:09	18.74	450.9	6.55	5027	4	1.1
	14:26:24	18.81	404.3	6.40	5105	4	1.1
	14:26:39	18.85	407.8	6.40	5176	4	1.2
	14:26:54	18.86	401.9	6.58	5192	4	1.2
	14:27:09	18.81	409.8	6.74	5142	4	1.2
	14:27:24	18.80	413.3	6.72	5064	4	1.2
	14:27:39	18.81	420.8	6.60	5075	4	1.2
	14:27:54	18.82	423.3	6.67	5047	4	1.2
	14:28:10	18.81	419.3	6.57	4942	4	1.2
	14:28:25	18.85	402.4	6.37	4929	5	1.2
	14:28:40	18.85	403.4	6.37	4979	5	1.2
	14:28:55	18.82	420.3	6.45	4979	5	1.2
	14:29:10	18.81	402.4	6.42	5160	5	1.2
	14:29:25	18.84	403.4	6.40	5238	5	1.2
	14:29:40	18.87	410.8	6.32	5301	5	1.2
	14:29:55	18.90	417.3	6.26	5185	5	1.2
	14:30:10	18.95	420.8	6.04	5221	5	1.2

ON LINE RUN # 1 MELTER EXHAUST

	TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC
	14:30:25	18.96	414.4	5.98	5264	5	1.1
	14:30:40	18.97	438.9	5.93	5301	5	1.2
	14:30:55	18.96	433.8	5.94	5342	5	1.2
	14:31:10	18.95	431.8	6.01	5337	5	1.2
	14:31:25	18.96	444.9	5.95	5222	5	1.2
	14:31:40	18.97	435.3	5.88	5268	5	1.2
	14:31:55	18.96	462.9	5.82	5245	5	1.2
	14:32:10	18.95	440.4	5.94	5135	5	1.2
	14:32:25	18.86	497.8	6.21	5008	5	1.2
	14:32:40	18.75	499.8	6.48	5076	4	1.2
	14:32:55	18.69	499.8	6.57	4977	4	1.2
	14:33:11	18.74	485.3	6.42	5033	4	1.2
	14:33:26	18.77	473.8	6.33	5049	4	1.1
	14:33:41	18.81	445.9	6.27	4986	4	1.1
	14:33:56	18.83	433.3	6.16	4990	4	1.2
	14:34:11	18.86	418.4	6.13	5032	4	1.1
	14:34:26	18.84	422.3	6.23	5031	4	1.2
	14:34:41	18.82	425.8	6.26	5044	4	1.1
	14:34:56	18.81	414.4	6.32	5006	4	1.1
	14:35:11	18.77	438.4	6.39	5016	4	1.2
	14:35:26	18.79	434.8	6.42	5089	4	1.2
	14:35:41	18.74	470.3	6.56	5040	3	1.1
	14:35:56	18.74	454.4	6.63	5113	3	1.1
	14:36:11	18.69	490.8	6.70	5004	3	1.1
	14:36:26	18.70	499.3	6.61	5007	3	1.1
	14:36:41	18.73	477.3	6.47	5049	3	1.1
	14:36:56	18.78	451.9	6.37	5076	3	1.1
	14:37:11	18.80	416.9	6.37	5034	3	1.1
NO_X MODE	14:37:26	18.81	414.4	6.31	5660	3	1.1
	14:37:41	18.84	410.4	6.28	6681	3	1.1
	14:37:56	18.84	392.9	6.29	6666	3	1.1
	14:38:12	18.81	400.4	6.46	6666	2	1.1
	14:38:27	18.80	404.8	6.42	6576	2	1.1
	14:38:42	18.82	391.9	6.30	6666	2	1.1
	14:38:57	18.87	387.0	6.33	6562	2	1.1
	14:39:12	18.84	398.4	6.30	6515	2	1.1
	14:39:27	18.86	391.9	6.25	6504	2	1.1
	14:39:42	18.86	387.4	6.26	6523	2	1.1
	14:39:57	18.84	401.4	6.29	6462	2	1.0
	14:40:12	18.83	398.4	6.35	6534	2	1.0

ON LINE RUN # 1 MELTER EXHAUST

TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC
14:40:27	18.76	406.9	6.49	6482	2	1.1
14:40:42	18.75	413.8	6.52	6502	2	1.0
14:40:57	18.76	420.8	6.51	6460	2	1.0
14:41:12	18.73	415.8	6.49	6439	1	1.0
14:41:27	18.74	412.4	6.49	6374	1	1.0
14:41:42	18.74	405.8	6.54	6473	1	1.0
14:41:57	18.69	412.9	6.60	6342	1	1.0
14:42:12	18.70	404.8	6.52	6373	1	1.0
14:42:27	18.68	407.8	6.45	6378	1	1.0
14:42:42	18.70	400.4	6.38	6338	1	1.0
14:42:57	18.74	379.9	6.25	6297	1	1.0
14:43:12	18.74	385.0	6.28	6274	1	1.0
14:43:28	18.73	387.4	6.31	6243	2	1.0
14:43:43	18.72	381.4	6.31	6272	2	1.0
14:43:58	18.71	408.9	6.39	6349	2	1.0
14:44:13	18.73	393.4	6.26	6192	2	1.0
14:44:28	18.72	385.4	6.26	6242	2	1.0
14:44:43	18.71	376.5	6.30	6244	3	1.0
14:44:58	18.71	387.9	6.25	6290	2	1.0
14:45:13	18.72	376.5	6.23	6295	2	1.0
14:45:28	18.72	373.9	6.26	6293	3	1.0
14:45:43	18.72	358.7	6.16	6204	3	1.0
14:45:58	18.73	364.2	6.11	6250	3	1.0
14:46:13	18.74	359.2	6.10	6202	3	1.0
14:46:28	18.74	367.2	6.10	6253	3	1.0
14:46:43	18.72	369.2	6.11	6224	3	1.0
14:46:58	18.71	360.2	6.12	6163	3	1.0
14:47:13	18.70	385.5	6.11	6238	3	1.0
14:47:28	18.70	367.7	6.12	6312	3	1.0
14:47:43	18.70	383.9	6.10	6203	3	1.0
14:47:58	18.73	377.9	6.08	6322	3	1.1
14:48:13	18.71	374.5	6.10	6202	3	1.0
14:48:29	18.73	386.5	6.11	6310	3	1.0
14:48:44	18.69	390.9	6.21	6344	3	1.0
14:48:59	18.68	405.8	6.30	6446	3	1.0
14:49:14	18.66	436.5	6.68	6922	3	1.0
14:49:29	18.13	499.8	8.71	7090	3	1.0
14:49:44	17.44	499.8	10.56	6798	3	1.0
14:49:59	17.41	499.8	9.91	6831	3	1.1
14:50:14	17.82	499.8	8.90	6723	2	1.0

ON LINE RUN # 1 MELTER EXHAUST

TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC
14:50:29	18.21	499.8	7.93	6746	2	1.1
14:50:44	18.50	499.8	7.30	6576	2	1.1
14:50:59	18.64	477.8	6.83	6533	2	1.1
14:51:14	18.73	445.9	6.56	6469	2	1.0
14:51:29	18.77	414.9	6.44	6544	2	1.0
14:51:44	18.77	419.4	6.37	6454	2	1.0
14:51:59	18.79	402.9	6.36	6464	2	1.1
14:52:14	18.80	402.4	6.26	6340	2	1.0
14:52:29	18.83	402.4	6.24	6441	2	1.0
14:52:44	18.81	431.8	6.27	6280	1	1.0

	O_2	CO	CO_2	NO_X	NO	SO_2	THC
AVERAGE	18.74	422.84	6.51	6420.18	5060.38	3.42	1.09
MAX.	18.97	499.80	10.56	7090.00	5342.00	6.00	1.20
MIN.	17.41	357.20	5.82	5660.00	4798.00	1.00	1.00
VARIANCE	0.05	1427.18	0.39	47929.00	13965.85	1.95	0.01
STD. DEV.	0.22	37.78	0.62	218.93	118.18	1.40	0.08
MEDIAN	18.76	415.35	6.40	6376.00	5038.50	3.00	1.10

ON LINE RUN # 2 HEPA FILTER EXHAUST

	TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC	NO_X ML
NO_X MODE	17:12:12	21.35	90.2	1.09	1064	210	8.7	
	17:12:27	21.35	88.7	1.08	1057	212	8.5	
	17:12:42	21.36	88.2	1.08	1061	212	8.5	
	17:12:57	21.36	87.2	1.08	1065	212	8.4	
	17:13:12	21.36	87.6	1.09	1092	212	8.3	
	17:13:27	21.35	88.7	1.09	1120	212	8.3	
	17:13:42	21.36	94.7	1.14	1123	211	8.5	
	17:13:57	21.34	98.7	1.16	1127	208	9.0	
	17:14:12	21.35	101.1	1.16	1107	209	8.8	
	17:14:27	21.36	103.6	1.14	1090	212	8.6	
	17:14:42	21.37	100.6	1.12	1104	212	8.5	
	17:14:57	21.37	94.7	1.12	1111	211	8.3	
	17:15:13	21.36	93.7	1.14	1109	211	8.3	
	17:15:28	21.36	94.2	1.13	1118	211	8.3	
	17:15:43	21.37	92.7	1.11	1127	211	8.1	
	17:15:58	21.38	91.7	1.08	1127	211	8.1	
	17:16:13	21.38	89.2	1.06	1147	211	8.1	
	17:16:28	21.39	87.7	1.06	1134	212	8.1	
	17:16:43	21.39	85.6	1.03	1126	212	8.0	
	17:16:58	21.40	84.7	1.01	1126	212	8.0	
	17:17:13	21.39	83.7	1.02	1110	213	8.0	
	17:17:28	21.41	82.7	0.99	1101	213	8.0	
	17:17:43	21.40	82.3	1.00	1072	213	8.1	
	17:17:58	21.40	83.7	0.99	1083	213	8.0	
	17:18:13	21.40	82.2	1.01	1080	213	8.0	
	17:18:28	21.40	82.7	1.03	1088	212	8.0	
	17:18:43	21.39	85.2	1.06	1095	211	8.0	
	17:18:58	21.37	83.7	1.09	1105	212	8.3	
	17:19:13	21.37	89.7	1.10	1125	212	8.3	
	17:19:28	21.38	92.7	1.11	1096	212	8.2	
	17:19:43	21.37	94.2	1.11	1071	211	8.4	
	17:19:58	21.38	90.2	1.06	1077	211	7.9	
	17:20:14	21.40	79.7	1.02	1071	211	7.5	
	17:20:29	21.40	78.2	1.03	1073	212	7.6	
	17:20:44	21.39	77.7	1.04	1072	211	7.7	
	17:20:59	21.38	78.3	1.07	1071	211	7.7	
	17:21:14	21.39	81.2	1.06	1063	212	7.7	
	17:21:29	21.38	82.7	1.04	1074	211	7.7	
	17:21:44	21.40	84.2	1.04	1086	210	7.5	

ON LINE RUN # 2 HEPA FILTER EXHAUST

TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC	NO_X ML
17:21:59	21.39	78.7	1.06	1079	210	7.6	
17:22:14	21.39	82.7	1.06	1084	211	7.8	
17:22:29	21.39	81.2	1.06	1089	212	7.7	
17:22:44	21.38	79.7	1.06	1093	212	7.5	
17:22:59	21.39	78.7	1.06	1093	211	7.5	
17:23:14	21.39	77.7	1.05	1067	211	7.4	
17:23:29	21.40	76.7	1.05	1084	212	7.4	
17:23:44	21.39	75.2	1.04	1076	211	7.2	
17:23:59	21.41	72.7	1.02	1086	212	7.2	
17:24:14	21.40	74.2	1.02	1079	211	7.1	
17:24:29	21.41	74.2	1.01	1084	209	7.2	
17:24:44	21.40	74.7	1.01	1086	209	7.2	
17:24:59	21.40	76.7	1.00	1108	212	7.4	1096
17:25:15	21.39	77.2	1.01	1111	214	7.3	1072
17:25:30	21.40	78.7	0.99	1109	214	7.5	1076
17:25:45	21.40	78.2	0.97	1111	214	7.5	1092
17:26:00	21.40	77.7	0.98	1125	215	7.8	1102
17:26:15	21.40	77.2	0.97	1131	215	8.1	1104
17:26:30	21.41	76.2	0.98	1128	215	8.1	1110
17:26:45	21.41	74.7	0.98	1128	214	8.2	1120
17:27:00	21.41	74.2	0.99	1792	214	8.3	1125
17:27:15	21.34	103.6	1.44	2560	215	9.5	1119
17:27:30	21.06	165.7	2.49	2405	218	20.9	1112
17:27:45	20.87	289.8	2.51	1896	228	25.2	1776
17:28:00	20.98	327.8	2.11	1757	240	20.5	2824
17:28:15	21.00	320.4	2.07	1609	241	18.6	2616
17:28:30	21.03	287.3	1.98	1513	236	15.8	1978
17:28:45	21.08	217.2	1.87	1434	232	13.9	1825
17:29:00	21.14	190.9	1.75	1447	229	12.8	1656
17:29:15	21.18	150.3	1.68	1416	227	12.1	1559
17:29:30	21.20	139.8	1.61	1401	227	11.8	1448
17:29:45	21.23	118.4	1.51	1370	226	11.1	1468
17:30:00	21.27	110.7	1.42	1342	225	10.8	1432
17:30:16	21.29	99.2	1.35	1271	224	10.7	1419
17:30:31	21.32	97.2	1.26	1147	224	10.4	1395
17:30:46	21.34	89.2	1.15	1093	223	10.0	1360
17:31:01	21.36	86.2	1.11	1088	222	9.6	1297
17:31:16	21.36	86.2	1.13	1079	221	9.4	1169
17:31:31	21.35	88.2	1.14	1069	221	9.3	1098

ON LINE RUN # 2 HEPA FILTER EXHAUST

	TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC	NO_X ML
	17:31:46	21.34	90.2	1.15	1050	221	9.1	1083
	17:32:01	21.34	93.2	1.13	1026	220	9.0	1076
	17:32:16	21.35	90.7	1.09	1020	219	8.4	1073
	17:32:31	21.36	83.7	1.04	1021	218	8.1	1048
	17:32:46	21.37	80.7	1.05	1022	217	8.1	1018
	17:33:01	21.37	77.2	1.03	1029	216	8.0	1019
	17:33:16	21.37	77.2	1.06	1002	216	8.2	1021
	17:33:31	21.35	78.7	1.08	972	215	8.3	1014
NO MODE	17:33:46	21.36	79.7	1.06	835	216	7.9	
	17:34:01	21.36	75.7	1.04	817	219	7.7	
	17:34:16	21.38	71.7	1.01	817	219	7.3	
	17:34:31	21.40	64.8	0.96	815	218	7.1	
	17:34:46	21.40	61.7	0.94	810	216	7.0	
	17:35:01	21.41	56.8	0.93	815	217	6.8	
	17:35:17	21.41	55.7	0.91	824	221	7.0	
	17:35:32	21.42	54.7	0.90	842	222	7.4	
	17:35:47	21.42	58.8	0.93	859	221	7.5	
	17:36:02	21.41	66.3	0.95	855	220	7.5	
	17:36:17	21.40	75.2	0.98	856	220	7.4	
	17:36:32	21.39	77.2	0.98	869	218	7.4	
	17:36:47	21.36	82.7	0.98	866	218	7.4	
	17:37:02	21.39	85.2	0.99	867	218	7.2	
	17:37:17	21.41	81.7	0.97	855	218	7.2	
	17:37:32	21.40	81.2	0.95	861	216	7.3	
	17:37:47	21.43	80.2	0.93	876	215	7.3	
	17:38:02	21.42	80.2	0.94	874	216	7.2	
	17:38:17	21.43	82.2	0.93	869	216	7.0	
	17:38:32	21.43	81.2	0.90	852	215	6.6	
	17:38:47	21.45	73.7	0.86	831	213	6.3	
	17:39:02	21.46	70.7	0.81	824	213	6.1	
	17:39:17	21.48	58.8	0.77	820	213	6.1	
	17:39:32	21.50	54.3	0.72	810	213	6.4	
	17:39:47	21.50	49.1	0.68	822	214	6.5	
	17:40:02	21.52	44.2	0.66	820	214	6.6	
	17:40:18	21.52	40.6	0.64	822	213	6.6	
	17:40:33	21.53	40.2	0.63	825	213	6.6	
	17:40:48	21.53	39.6	0.61	817	214	6.5	
	17:41:03	21.53	38.1	0.61	814	214	6.4	
	17:41:18	21.53	38.1	0.59	805	213	6.4	

ON LINE RUN # 2 HEPA FILTER EXHAUST

TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC	NO_X ML
17:41:33	21.54	37.6	0.60	786	214	6.3	
17:41:48	21.53	37.1	0.60	783	215	6.2	
17:42:03	21.53	36.6	0.59	778	215	6.1	
17:42:18	21.54	36.6	0.59	778	214	6.1	

	O_2	CO	CO_2	NO_X	NO	SO_2	THC	NO_X ML
AVERAGE	21.37	89.62	1.08	1180.58	830.54	215.63	8.49	1337.14
MAX.	21.54	327.80	2.51	2560.00	876.00	241.00	25.20	2824.00
MIN.	20.87	36.60	0.59	972.00	778.00	208.00	6.10	1014.00
VARIANCE	0.01	2275.81	0.10	69715.26	786.67	36.22	8.03	184602.07
STD. DEV.	0.11	47.71	0.32	264.04	28.05	6.02	2.83	429.65
MEDIAN	21.39	81.70	1.04	1094.00	824.00	214.00	8.00	1119.00

ONLINE RUN # 2 POST DEMISTER

	TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC	NO_X ML
NO_X MODE	18:05:08	21.00	187.8	3.42	3820	138	8.8	4137
	18:05:23	21.01	185.3	3.42	3852	144	8.8	4184
	18:05:38	21.02	186.8	3.41	3897	149	8.9	4252
	18:05:53	21.01	186.8	3.43	3896	154	8.7	4293
	18:06:08	21.03	183.3	3.42	3867	157	12.2	4262
	18:06:23	21.03	183.3	3.36	3941	160	9.8	4330
	18:06:38	21.04	186.3	3.41	3869	165	9.7	4307
	18:06:53	21.06	181.8	3.33	3836	173	8.9	4311
	18:07:08	21.06	180.8	3.30	3742	177	8.0	4411
	18:07:23	21.08	177.7	3.24	3689	181	8.7	4324
	18:07:38	21.08	172.2	3.22	3666	182	8.6	4251
	18:07:53	21.09	173.2	3.25	3649	175	8.6	4153
	18:08:08	21.10	180.3	3.29	3654	173	8.3	4089
	18:08:23	21.08	173.7	3.36	3595	175	8.3	4072
	18:08:38	21.10	182.8	3.28	3614	179	8.5	4063
	18:08:53	21.12	183.3	3.24	3600	177	8.0	4083
	18:09:08	21.11	185.3	3.26	3613	180	9.1	4008
	18:09:23	21.14	185.8	3.23	3643	187	10.0	3987
	18:09:38	21.14	190.3	3.29	3635	197	9.4	4009
	18:09:53	21.17	187.8	3.30	3653	197	8.4	3987
	18:10:09	21.18	191.8	3.28	3625	187	8.6	4044
	18:10:24	21.21	187.3	3.24	3643	183	8.1	4044
	18:10:39	21.25	191.8	3.22	3650	182	8.7	4039
	18:10:54	21.27	193.8	3.21	3693	180	8.4	4007
	18:11:09	21.29	192.4	3.19	3790	178	8.2	4043
	18:11:24	21.34	189.3	3.21	3790	176	8.6	4069
	18:11:39	21.36	186.8	3.18	3802	179	8.3	4129
	18:11:54	21.39	182.8	3.16	3827	180	7.9	4221
	18:12:09	21.42	181.3	3.14	3869	178	8.0	4258
	18:12:24	21.45	180.8	3.18	3874	179	7.9	4307
	18:12:39	21.48	180.3	3.17	3845	179	7.3	4324
	18:12:54	21.50	181.3	3.14	3901	177	7.1	4362
	18:13:09	21.53	179.7	3.18	3874	175	6.6	4367
	18:13:24	21.55	182.3	3.16	3904	173	7.1	4336
	18:13:39	21.57	184.3	3.17	3855	173	7.4	4392
	18:13:54	21.60	182.8	3.21	3761	173	7.5	4370
	18:14:09	21.61	182.3	3.20	3758	174	7.2	4436
	18:14:24	21.64	180.3	3.27	3678	172	7.3	4373
	18:14:39	21.66	177.2	3.26	3715	172	7.9	4262
	18:14:54	21.66	177.7	3.29	3661	178	8.3	4211

ONLINE RUN # 2 POST DEMISTER

	TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC	NO_X ML
	18:15:10	21.70	175.7	3.27	3676	183	8.1	4161
	18:15:25	21.71	174.7	3.31	3655	180	7.5	4161
	18:15:40	21.74	175.2	3.33	3643	176	6.6	4109
	18:15:55	21.75	173.2	3.33	3665	170	7.6	4116
	18:16:10	21.77	181.8	3.39	3657	176	9.0	4092
	18:16:25	21.78	177.2	3.41	3651	188	8.6	4075
	18:16:40	21.79	179.7	3.40	3690	185	7.2	4129
	18:16:55	21.82	182.8	3.45	3640	177	7.8	4120
	18:17:10	21.83	183.8	3.41	3682	176	7.7	4115
	18:17:25	21.86	184.8	3.43	3684	176	7.4	4145
	18:17:40	21.87	184.3	3.51	3690	176	6.4	4106
	18:17:55	21.84	189.8	3.64	3752	174	6.9	4118
	18:18:10	21.82	192.8	3.72	3799	176	8.3	4120
	18:18:25	21.86	199.3	3.64	3845	182	9.0	4173
	18:18:40	21.91	198.8	3.61	3868	187	9.4	4245
	18:18:55	21.92	207.3	3.65	3899	191	9.0	4329
	18:19:10	21.90	216.7	3.73	3906	190	7.8	4368
NO MODE	18:19:25	21.85	239.7	3.87	3095	185	6.8	4385
	18:19:40	21.80	252.4	4.07	3124	179	7.9	4486
	18:19:55	21.77	265.8	4.12	3122	181	8.4	4453
	18:20:10	21.82	267.8	3.98	3138	183	8.1	4544
	18:20:26	21.84	267.8	3.97	3124	184	8.1	4622
	18:20:41	21.83	270.4	3.96	3095	181	8.5	4670
	18:20:56	21.82	271.3	3.96	3088	182	9.2	4675
	18:21:11	21.79	277.8	4.03	3049	184	9.0	4623
	18:21:26	21.75	286.8	4.07	3056	185	8.8	4536
	18:21:41	21.71	286.3	4.13	3043	184	8.0	4438
	18:21:56	21.68	279.8	4.13	3045	180	8.5	4407
	18:22:11	21.66	282.8	4.03	3009	187	7.6	4378
	18:22:26	21.66	268.8	3.95	3017	198	7.7	4372
	18:22:41	21.66	255.9	3.86	2993	195	6.5	4335
	18:22:56	21.63	252.9	3.79	3017	189	8.2	4319
	18:23:11	21.59	246.9	3.82	3017	191	6.8	4262
	18:23:26	21.51	246.4	3.88	3040	189	8.2	4250
	18:23:41	21.46	253.4	4.02	3068	193	6.8	4277
	18:23:56	21.26	267.8	4.38	3032	188	7.6	4282
	18:24:11	21.13	298.3	4.47	3120	184	6.4	4146
	18:24:26	21.06	313.3	4.51	3163	180	6.4	4357
	18:24:41	21.06	333.3	4.56	3229	180	7.2	4321
	18:24:56	20.97	352.3	4.73	3271	182	6.5	4456

ONLINE RUN # 2 POST DEMISTER

TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC	NO_X ML
18:25:11	20.86	396.4	4.92	3303	181	10.2	4531
18:25:27	20.75	421.3	5.06	3367	194	10.8	4650
18:25:42	20.69	456.4	5.09	3410	204	10.2	4763

	O_2	CO	CO_2	NO_X	NO	SO_2	THC	NO_X ML
AVERAGE	21.44	218.44	3.60	3748.21	3116.73	179.20	8.18	4269.00
MAX.	21.92	456.40	5.09	3941.00	3410.00	204.00	12.20	4763.00
MIN.	20.69	172.20	3.14	3595.00	2993.00	138.00	6.40	3987.00
VARIANCE	0.11	3540.85	0.23	10854.49	12612.04	117.92	1.10	32595.63
STD. DEV.	0.34	59.51	0.48	104.18	112.30	10.86	1.05	180.54
MEDIAN	21.51	186.80	3.41	3715.00	3091.50	180.00	8.20	4262.00

ONLINE RUN # 2 MELTER EXHAUST

	TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC	NO_X ML
NO_X MODE	19:22:23	19.54	135.9	2.56	3875	114	4.0	4432
	19:22:38	19.52	134.9	2.53	3928	112	3.7	4241
	19:22:53	19.49	139.4	2.60	3910	112	4.3	4496
	19:23:08	19.50	138.4	2.54	3632	114	3.9	4481
	19:23:23	19.55	134.9	2.41	3567	114	3.8	4572
	19:23:38	19.56	131.4	2.35	3448	113	3.8	4409
	19:23:53	19.56	126.5	2.28	3611	112	3.7	4275
	19:24:08	19.60	117.4	2.28	3609	113	3.8	4048
	19:24:23	19.61	114.7	2.24	3716	113	3.6	3954
	19:24:38	19.64	119.9	2.33	2962	113	3.6	3995
	19:24:53	19.42	137.4	2.99	3512	114	3.6	4094
	19:25:08	19.30	168.8	3.17	3717	115	3.6	4140
	19:25:23	19.36	179.8	3.14	3802	114	3.6	3404
	19:25:38	19.44	181.4	2.83	3920	114	3.6	3853
	19:25:53	19.58	162.9	2.53	3821	114	3.5	4091
	19:26:09	19.71	129.0	2.22	3689	115	3.6	4449
	19:26:24	19.76	113.7	2.11	3616	115	3.6	4402
	19:26:39	19.80	97.3	2.06	3526	115	3.5	4473
	19:26:54	19.82	89.2	2.02	3566	115	3.6	4292
	19:27:09	19.83	88.3	2.00	3513	115	3.6	4100
	19:27:24	19.84	91.7	2.11	5082	115	3.8	4044
	19:27:39	19.55	217.3	3.61	5972	116	4.1	4073
	19:27:54	18.94	338.5	5.40	6052	120	9.3	4016
	19:28:09	18.57	500.0	5.87	4448	133	4.5	5120
	19:28:24	18.72	500.0	4.99	3598	126	3.8	5120
	19:28:39	19.10	500.0	3.85	3523	119	3.6	5120
	19:28:54	19.40	421.0	3.08	3508	117	3.6	5120
	19:29:09	19.61	323.0	2.54	3583	118	3.6	4392
	19:29:24	19.73	186.9	2.27	3520	118	3.5	4110
	19:29:39	19.78	146.4	2.15	3638	117	3.6	4023
	19:29:54	19.80	118.5	2.08	3558	115	3.6	4048
	19:30:09	19.82	111.2	2.01	3700	114	3.6	4069
	19:30:24	19.83	103.2	2.02	3664	114	3.5	4217
	19:30:39	19.87	101.7	2.00	3796	113	3.6	4110
	19:30:54	19.85	101.7	2.24	4110	110	3.5	4302
	19:31:10	19.76	105.7	2.65	4221	108	3.6	4214
	19:31:25	19.72	111.2	2.81	4375	106	3.6	4371
	19:31:40	19.72	115.7	2.90	4440	105	3.6	4755
	19:31:55	19.71	117.9	2.88	4402	103	3.5	5029
	19:32:10	19.76	118.5	2.81	4454	103	3.5	5120
	19:32:25	19.75	114.7	2.77	4473	102	3.5	5120
	19:32:40	19.78	113.7	2.75	4450	102	3.5	5120

ONLINE RUN # 2 MELTER EXHAUST

	TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC	NO_X ML
	19:32:55	19.78	112.7	2.77	4431	101	3.6	5120
	19:33:10	19.79	112.3	2.74	4560	100	3.6	5120
	19:33:25	19.79	113.7	2.75	4519	100	3.5	5120
	19:33:40	19.80	113.7	2.71	4599	99	3.6	5120
	19:33:55	19.76	113.7	2.74	4453	97	3.6	5120
	19:34:10	19.72	113.7	2.68	4409	96	3.6	5120
	19:34:25	19.62	111.7	2.65	4371	97	3.6	5120
	19:34:40	19.61	108.3	2.56	4172	97	3.9	5120
	19:34:55	19.61	105.2	2.50	4383	98	3.7	5120
	19:35:10	19.59	109.2	2.56	4861	98	3.6	5120
	19:35:25	19.27	165.8	4.20	5088	99	4.5	5043
	19:35:40	18.46	401.1	5.42	5267	103	3.7	5120
	19:35:55	18.53	463.1	4.89	5717	101	3.6	5120
	19:36:11	18.56	500.0	5.00	5577	100	3.5	5120
	19:36:26	18.56	500.0	4.91	5355	101	3.6	5120
	19:36:41	18.59	500.0	4.48	4560	101	3.6	5120
	19:36:56	18.78	500.0	3.69	4034	101	3.6	5120
	19:37:11	18.93	436.6	3.17	3432	102	3.5	5120
	19:37:26	18.93	380.7	2.98	3624	102	3.5	5120
	19:37:41	18.90	342.5	2.85	3458	103	3.5	5010
	19:37:56	18.92	272.5	2.72	3518	103	3.5	4217
	19:38:11	18.90	240.8	2.65	3358	104	3.5	4253
	19:38:26	18.87	221.4	2.62	3369	106	3.6	4005
	19:38:41	18.84	218.9	2.58	3466	106	3.5	4012
	19:38:56	18.79	211.4	2.60	3802	107	3.5	3850
	19:39:11	18.73	212.9	2.69	3791	108	3.5	3927
	19:39:26	18.65	223.4	2.72	3511	108	3.5	3964
NO MODE	19:41:42	18.36	128.5	2.01	2647	-5	3.5	3674
	19:41:57	18.35	120.5	1.99	2688	-1	3.5	3524
	19:42:12	18.34	110.7	1.96	2697	-2	3.7	3547
	19:42:27	18.35	109.7	1.95	2734	-2	3.6	3585
	19:42:42	18.32	101.7	1.92	2708	-3	3.6	3684
	19:42:57	18.30	100.7	1.92	2722	-3	3.7	3752
	19:43:12	18.25	103.2	1.94	2761	-3	3.7	3735
	19:43:27	18.21	95.3	1.93	2765	-3	3.7	3827
	19:43:42	18.18	91.3	1.91	2805	-3	3.8	3765
	19:43:57	18.15	88.3	1.90	2796	-3	3.8	3835
	19:44:12	18.13	83.8	1.86	2809	-3	3.7	3883
	19:44:27	18.09	83.3	1.83	2808	-3	3.7	3920
	19:44:42	18.07	81.3	1.83	2596	-3	3.7	3937
	19:44:57	17.96	94.8	2.19	2408	-5	3.7	3946
	19:45:12	17.69	125.5	2.77	2485	-3	3.7	3955

ONLINE RUN # 2 MELTER EXHAUST

TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC	NO_X ML
19:45:27	17.54	131.0	3.05	2328	-3	3.7	3670
19:45:42	17.52	145.9	2.80	2535	-2	3.7	3206
19:45:57	17.66	135.4	2.50	2657	-2	3.7	3227
19:46:13	17.70	126.5	2.41	2504	-2	3.7	3035
19:46:28	17.69	106.2	2.37	2759	-2	3.6	3230
19:46:43	17.67	93.8	2.42	2798	-2	3.7	3607
19:46:58	17.66	86.8	2.32	2608	-2	3.7	3403
19:47:13	17.71	80.8	2.11	2694	-1	3.6	3560
19:47:28	17.71	76.3	2.10	2578	-1	3.6	3827
19:47:43	17.71	71.3	1.95	2652	-1	3.6	3460
19:47:58	17.71	64.4	1.93	2596	-1	3.6	3646
19:48:13	17.69	59.8	1.84	2695	-1	3.6	3504
19:48:28	17.70	54.3	1.81	2774	-1	3.5	3418
19:48:43	17.71	54.3	1.75	2791	-1	3.5	3386
19:48:58	17.70	52.3	1.73	2645	-1	3.5	3644
19:49:13	17.69	50.3	1.65	2714	-1	3.5	3673
19:49:28	17.70	47.2	1.60	2684	-1	3.6	3828
19:49:43	17.65	42.7	1.58	2707	-1	3.5	3680
19:49:58	17.66	43.2	1.57	2747	-1	3.5	3633
19:50:13	17.64	44.3	1.60	2742	-2	3.5	3634
19:50:28	17.62	46.7	1.60	2679	-3	3.4	3666
19:50:43	17.58	46.7	1.58	2627	-3	3.4	3794
19:50:58	17.57	50.3	1.59	2619	-3	3.5	3724
19:51:13	17.55	52.4	1.59	2657	-3	3.4	3679
19:51:29	17.51	54.4	1.64	2678	-3	3.4	3573
19:51:44	17.48	58.4	1.67	2684	-3	3.4	3553
19:51:59	17.45	61.8	1.70	2721	-3	3.4	3590
19:52:14	17.43	65.3	1.67	2668	-3	3.4	3602

	O_2	CO	CO_2	NO_X	NO	SO_2	THC	NO_X ML
AVERAGE	18.79	157.38	2.55	4075.25	2673.72	66.16	3.68	4198.89
MAX.	19.87	500.00	5.87	6052.00	2809.00	133.00	9.30	5120.00
MIN.	17.43	42.70	1.57	2962.00	2328.00	-5.00	3.40	3035.00
VARIANCE	0.74	15040.21	0.79	450330.84	11003.25	2982.68	0.32	373397.83
STD. DEV.	0.86	122.64	0.89	671.07	104.90	54.61	0.57	611.06
MEDIAN	18.89	113.70	2.41	3802.00	2688.00	101.00	3.60	4048.00

ONLINE RUN # 3 HEPA FILTER EXHAUST

	TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC	NO_X ML
NO_X MODE	21:32:49	19.97	41.2	0.84	927	-3	3.5	901
	21:33:04	19.97	36.8	0.84	939	-3	3.5	931
	21:33:19	19.96	42.3	0.87	954	-3	3.8	948
	21:33:34	19.95	39.7	0.91	961	-3	3.8	936
	21:33:49	19.94	49.8	0.94	1024	-3	3.9	949
	21:34:04	19.92	58.4	0.97	1013	-3	4.1	973
	21:34:19	19.93	54.4	0.95	981	-3	4.1	977
	21:34:34	19.93	56.4	0.94	874	-3	4.0	1032
	21:34:49	19.92	57.4	0.90	865	-3	3.9	1051
	21:35:04	19.93	52.9	0.88	978	-3	3.9	1019
	21:35:19	19.95	51.3	0.83	990	-3	3.9	908
	21:35:34	19.97	48.8	0.78	1040	-3	3.9	882
	21:35:49	20.00	54.9	0.76	954	-3	3.9	972
	21:36:04	20.01	38.3	0.73	903	-3	3.8	1019
	21:36:19	20.00	40.3	0.71	896	-3	3.7	1078
	21:36:34	20.01	39.7	0.71	856	-3	3.8	985
	21:36:49	20.00	39.7	0.74	834	-3	3.8	942
	21:37:04	19.99	40.3	0.77	768	-3	3.8	927
	21:37:19	20.00	41.7	0.77	735	-3	3.7	871
	21:37:35	19.99	41.7	0.75	694	-3	3.6	853
	21:37:50	19.99	39.7	0.75	645	-3	3.5	787
	21:38:05	19.99	40.3	0.75	598	-3	3.5	749
	21:38:20	19.99	41.7	0.77	546	-3	3.6	717
	21:38:35	19.97	43.7	0.78	582	-3	3.6	654
	21:38:50	19.98	45.7	0.79	580	-3	3.7	600
	21:39:05	19.99	45.3	0.76	541	-3	3.6	547
	21:39:20	19.98	45.3	0.74	509	-3	3.6	580
	21:39:35	20.00	44.3	0.73	500	-3	3.6	575
	21:39:50	20.00	44.3	0.72	491	-3	3.6	552
	21:40:05	20.00	42.8	0.73	505	-3	3.7	512
	21:40:20	20.00	44.3	0.75	506	-3	3.6	501
	21:40:35	20.00	43.2	0.73	497	-3	3.5	490
	21:40:50	20.00	41.2	0.72	465	-3	3.4	491
	21:41:05	20.01	39.7	0.73	547	-3	3.4	499
	21:41:20	20.01	41.7	0.73	568	-3	3.6	490
	21:41:35	20.00	40.3	0.73	527	-3	3.6	459
	21:41:50	20.02	41.7	0.73	477	-3	3.4	531
	21:42:05	20.02	41.7	0.72	473	-3	3.3	577
	21:42:20	20.01	39.2	0.71	515	-3	3.3	527
	21:42:36	20.03	38.8	0.69	549	-3	3.4	477

ONLINE RUN # 3 HEPA FILTER EXHAUST

NO MODE

TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC	NO_X ML
21:42:51	20.03	38.8	0.68	509	-3	3.4	466
21:43:06	20.04	36.8	0.66	460	-3	3.3	509
21:43:21	20.04	37.2	0.66	433	-3	3.4	540
21:43:36	20.04	36.3	0.65	391	-3	3.3	508
21:43:51	20.06	35.8	0.63	425	-3	3.3	461
21:44:06	20.06	36.8	0.59	440	-3	3.2	430
21:44:21	20.07	32.8	0.55	483	-3	3.2	371
21:44:36	20.08	30.8	0.53	516	-3	3.2	411
21:44:51	20.10	27.3	0.53	458	-3	3.3	430
21:45:06	20.10	27.3	0.53	438	-3	3.2	472
21:45:21	20.10	26.3	0.53	397	-3	3.2	501
21:45:36	20.10	27.3	0.56	363	-3	3.1	454
21:45:51	20.07	28.8	0.58	339	-3	3.1	436
21:46:06	20.07	28.8	0.61	337	-3	3.1	386
21:46:21	20.07	30.8	0.62	434	-3	3.1	363
21:46:36	20.06	31.3	0.62	394	-3	3.1	321
21:46:51	20.08	29.8	0.60	366	-3	3.0	318
21:47:06	20.09	29.8	0.58	389	-3	3.0	414
21:47:21	20.07	31.8	0.62	368	-3	3.1	383
21:47:37	20.07	31.3	0.62	405	-3	3.1	360
21:47:52	20.08	31.8	0.61	409	-3	3.1	376
21:48:07	20.08	30.8	0.60	374	-3	3.1	343
21:48:22	20.10	30.8	0.56	361	-3	3.1	391
21:48:37	20.12	28.8	0.54	371	-3	3.1	394
21:48:52	20.11	28.8	0.55	324	-3	3.1	374
21:49:07	20.11	29.8	0.54	297	-3	3.1	349
21:49:22	20.13	27.8	0.54	310	-3	3.1	344
21:49:37	20.13	27.3	0.52	321	-3	3.2	365
21:49:52	20.11	28.8	0.52	326	-3	3.1	329
21:50:07	20.13	25.8	0.49	301	-3	3.1	336
21:50:22	20.15	25.8	0.48	315	-3	3.0	355
21:50:37	20.16	24.8	0.47	354	-3	3.1	361
21:50:52	20.15	23.8	0.47	334	-3	3.1	323
21:51:07	20.15	24.3	0.48	316	-3	3.1	324
21:51:22	20.16	27.3	0.48	291	-3	3.1	362
21:51:37	20.15	26.3	0.50	299	-3	3.1	360
21:51:52	20.15	29.3	0.51	308	-3	3.2	337
21:52:07	20.15	28.8	0.53	291	-3	3.2	318
21:52:22	20.13	30.8	0.54	273	-3	3.2	311
21:52:37	20.12	32.8	0.57	268	-3	3.3	325

ONLINE RUN # 3 HEPA FILTER EXHAUST

TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC	NO_X ML
21:52:53	20.13	34.8	0.60	297	-3	3.5	306
21:53:08	20.11	37.2	0.64	332	-3	3.6	296
21:53:23	20.08	45.3	0.68	359	-3	3.9	281
21:53:38	20.08	50.3	0.71	372	1	4.1	298
21:53:53	20.07	59.4	0.76	388	1	4.4	360
21:54:08	20.05	59.4	0.78	360	1	4.3	355
21:54:23	20.05	59.8	0.79	150	1	4.0	397
21:54:38	20.11	62.4	0.49	305	1	2.9	410
21:54:53	20.21	42.8	0.52	357	1	3.6	419
21:55:08	20.09	43.7	0.77	370	1	4.0	240

	O_2	CO	CO_2	NO_X	NO	SO_2	THC	NO_X ML
AVERAGE	20.05	38.52	0.67	595.27	316.54	-2.69	3.46	548.24
MAX.	20.21	62.40	0.97	1040.00	388.00	1.00	4.40	1078.00
MIN.	19.92	23.80	0.47	297.00	150.00	-3.00	2.90	240.00
VARIANCE	0.00	92.03	0.02	50856.82	2300.00	1.16	0.12	59052.16
STD. DEV.	0.07	9.59	0.13	225.51	47.96	1.08	0.35	243.01
MEDIAN	20.05	39.00	0.69	509.00	315.50	-3.00	3.40	463.50

ONLINE RUN # 3 POST DEMISTER

	TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC	NO_X ML
NO_X MODE	22:04:40	19.82	149.4	2.31	1746	1	9.2	1808
	22:04:55	19.60	168.9	2.53	1818	1	8.6	1919
	22:05:10	19.67	187.0	2.31	1768	1	7.8	1710
	22:05:25	19.81	175.4	2.03	1689	1	7.5	1758
	22:05:40	19.89	150.4	1.80	1989	1	7.2	1738
	22:05:55	19.94	132.0	1.75	1707	1	7.3	1790
	22:06:10	19.96	123.0	1.70	1694	1	7.1	1684
	22:06:25	19.94	119.5	1.69	1856	1	6.7	2012
	22:06:40	19.94	128.0	1.73	1666	1	6.8	1826
	22:06:55	19.94	123.9	1.69	1587	1	6.7	1664
	22:07:10	19.93	132.4	1.70	1683	1	6.6	1839
	22:07:25	19.92	131.5	1.75	1744	1	6.5	1733
	22:07:40	19.91	132.4	1.80	1777	1	6.6	1581
	22:07:56	19.89	135.4	1.96	1650	1	6.5	1576
	22:08:11	19.80	164.4	2.19	1774	1	7.5	1736
	22:08:26	19.73	177.8	2.29	1852	1	7.9	1813
	22:08:41	19.73	191.5	2.38	1878	1	7.9	1720
	22:08:56	19.70	221.9	2.55	1901	1	7.9	1708
	22:09:11	19.63	222.9	2.60	1962	1	8.6	1911
	22:09:26	19.60	241.8	2.61	1846	1	8.7	1954
	22:09:41	19.58	247.0	2.65	1835	1	8.6	1830
	22:09:56	19.54	261.0	2.67	2022	1	10.1	1984
	22:10:11	19.55	277.5	2.66	2115	1	8.9	1825
	22:10:26	19.58	235.3	2.59	2049	1	9.1	1948
	22:10:41	19.61	253.5	2.52	2017	1	8.9	2035
	22:10:56	19.64	235.8	2.42	2125	1	8.7	2115
	22:11:11	19.69	231.3	2.25	2175	1	8.5	2096
	22:11:26	19.74	190.5	2.12	2224	1	7.7	2058
	22:11:41	19.78	173.3	2.08	1971	1	7.3	2136
	22:11:56	19.73	159.9	2.15	2103	1	7.3	2209
	22:12:11	19.69	161.4	2.19	2291	1	7.4	2256
	22:12:26	19.67	157.9	2.21	2301	1	7.7	2007
	22:12:41	19.65	158.4	2.19	2386	1	7.6	2107
	22:12:57	19.64	158.4	2.18	2560	1	7.6	2318
	22:13:12	19.61	144.9	2.19	2518	1	7.6	2425
	22:13:27	19.62	153.4	2.18	2462	1	7.5	2365
	22:13:42	19.58	147.4	2.22	2493	1	7.2	2654
	22:13:57	19.49	152.4	2.36	2171	1	7.5	2685
	22:14:12	19.42	157.4	2.42	2277	1	7.7	2607
	22:14:27	19.33	181.4	2.53	2079	1	8.0	2599

ONLINE RUN # 3 POST DEMISTER

	TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC	NO_X ML
	22:14:42	19.27	190.5	2.56	1920	1	8.1	2334
	22:14:57	19.21	207.4	2.63	8033	1	8.3	2253
	22:15:12	19.16	212.4	2.66	6592	1	8.1	2107
	22:15:27	19.12	217.4	2.74	1642	1	8.1	1945
	22:15:42	19.03	220.4	2.74	2049	1	8.3	2028
	22:15:57	19.11	210.9	2.55	1966	1	8.4	1923
	22:16:12	19.20	183.0	2.37	1811	1	7.6	1572
	22:16:27	19.24	170.4	2.25	1843	1	7.3	2044
	22:16:42	19.25	151.8	2.22	1929	1	7.1	2031
	22:16:57	19.23	140.9	2.18	1769	1	7.0	1870
	22:17:12	19.23	137.4	2.15	1606	1	7.0	1873
	22:17:27	19.11	155.4	2.50	1910	1	6.9	1974
	22:17:42	19.00	161.4	2.64	1954	1	6.9	1825
	22:17:58	19.03	172.9	2.52	1906	1	7.9	1677
	22:18:13	19.11	171.8	2.36	2011	1	7.9	1831
	22:18:28	19.14	167.3	2.30	2034	1	7.6	1963
	22:18:43	19.14	160.9	2.38	1741	1	7.6	2007
	22:18:58	19.03	174.9	2.67	1832	1	7.6	1907
	22:19:13	18.93	177.3	2.86	2024	1	7.7	2126
	22:19:28	18.92	189.9	2.86	2465	1	7.9	1854
	22:19:43	18.95	189.0	2.87	1936	1	8.0	1786
	22:19:58	18.99	177.8	2.74	1594	1	8.1	1919
	22:20:13	18.96	178.4	2.78	1964	1	8.1	2543
	22:20:28	18.91	195.0	2.87	1855	1	7.4	2097
	22:20:43	18.89	195.5	2.87	2184	1	8.3	1545
	22:20:58	18.88	187.9	2.92	2129	1	8.6	1860
NO MODE	22:21:15	18.89	215.8	2.96	1971	1	8.2	1925
	22:21:28	18.86	201.9	2.93	1688	1	8.5	2212
	22:21:43	18.83	214.9	3.04	1613	1	8.5	2244
	22:21:58	18.78	202.9	3.07	1872	1	8.3	2069
	22:22:13	18.78	217.4	3.01	1778	1	8.9	2081
	22:22:28	18.81	214.9	2.91	1523	1	8.5	1905
	22:22:43	18.79	218.4	2.91	1691	1	8.5	2213
	22:22:58	18.78	199.9	2.88	1564	1	8.7	2168
	22:23:14	18.81	193.0	2.86	1703	1	8.6	1935
	22:23:29	18.80	207.4	2.82	1953	1	8.8	1956
	22:23:44	18.85	179.4	2.64	1990	1	8.4	2055
	22:23:59	18.99	173.8	2.29	2104	1	8.6	1947
	22:24:14	19.08	153.4	2.04	1837	1	9.2	2278
	22:24:29	19.15	149.9	1.86	1766	1	8.9	2514

ONLINE RUN # 3 POST DEMISTER

TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC	NO_X ML
22:24:44	19.17	131.5	1.78	2064	1	9.0	2588
22:24:59	19.16	130.0	1.87	1995	1	8.7	2365
22:25:14	19.16	124.5	1.89	2018	1	8.9	2222
22:25:29	19.15	125.5	1.90	1408	1	9.1	2406
22:25:44	19.18	115.7	1.56	1783	1	9.1	2508
22:25:59	19.27	115.2	1.61	2099	0	8.9	2418
22:26:14	19.13	116.5	1.99	1952	1	8.0	2240
22:26:29	19.12	121.5	1.94	1998	1	9.2	1320
22:26:44	19.15	114.8	1.91	1949	0	9.3	2593
22:26:59	19.13	128.5	1.94	2043	0	8.9	2420
22:27:14	19.13	134.9	1.93	2040	0	8.9	2495

	O_2	CO	CO_2	NO_X	NO	SO_2	THC	NO_X ML
AVERAGE	19.33	174.14	2.35	2128.18	1856.08	0.96	8.03	2040.77
MAX.	19.96	277.50	3.07	8033.00	2104.00	1.00	10.10	2685.00
MIN.	18.78	114.80	1.56	1587.00	1408.00	0.00	6.50	1320.00
VARIANCE	0.14	1451.71	0.16	926209.01	37988.33	0.04	0.60	84184.20
STD. DEV.	0.37	38.10	0.40	962.40	194.91	0.21	0.77	290.15
MEDIAN	19.23	172.90	2.36	1945.00	1949.00	1.00	8.00	2007.00

ONLINE RUN # 3 MELTER EXHAUST

	TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC	NO_X ML
NO_X MODE	23:06:22	19.12	48.3	1.35	1079	0	7.7	1285
	23:06:37	19.13	44.3	1.32	1107	0	7.6	1263
	23:06:52	19.13	43.7	1.30	1099	0	7.1	1139
	23:07:07	19.13	42.7	1.27	1070	0	7.2	1051
	23:07:22	19.16	41.7	1.23	1004	0	7.2	1068
	23:07:37	19.16	39.2	1.20	975	0	7.9	1073
	23:07:52	19.18	39.2	1.16	988	0	8.6	1043
	23:08:07	19.19	39.2	1.13	928	0	7.3	970
	23:08:22	19.15	36.2	1.13	895	0	6.7	931
	23:08:38	19.19	36.7	1.14	859	0	7.1	973
	23:08:53	19.17	38.2	1.14	786	0	6.6	900
	23:09:08	19.18	39.7	1.11	814	0	6.5	851
	23:09:23	19.19	40.7	1.05	808	0	6.4	836
	23:09:38	19.22	34.8	1.02	729	0	6.2	748
	23:09:53	19.21	36.7	0.98	660	0	6.1	773
	23:10:08	19.23	34.3	0.97	668	0	6.1	767
	23:10:23	19.22	33.3	0.97	636	0	6.1	699
	23:10:38	19.23	33.3	0.93	648	0	6.4	618
	23:10:53	19.25	33.3	0.88	652	0	6.0	632
	23:11:08	19.24	31.8	0.87	631	0	5.9	593
	23:11:23	19.26	30.3	0.84	623	0	5.9	600
	23:11:38	19.24	26.8	0.84	580	0	7.9	604
	23:11:53	19.25	31.3	0.83	619	0	8.4	595
	23:12:08	19.26	30.8	0.83	591	0	7.6	584
	23:12:23	19.27	27.8	0.82	602	0	6.7	537
	23:12:38	19.27	25.3	0.82	588	0	6.4	570
	23:12:53	19.28	27.3	0.81	614	0	6.3	552
	23:13:08	19.29	29.3	0.80	553	0	6.3	558
	23:13:23	19.28	29.3	0.78	490	0	6.5	539
	23:13:39	19.30	27.7	0.79	463	0	6.0	574
	23:13:54	19.29	24.8	0.78	526	0	5.4	516
	23:14:09	19.28	32.8	0.81	564	0	5.1	453
	23:14:24	19.28	27.3	0.80	547	0	4.9	410
	23:14:39	19.28	29.8	0.76	554	0	4.9	467
	23:14:54	19.30	29.3	0.74	568	0	4.7	514
	23:15:09	19.32	24.3	0.71	565	0	4.6	502
	23:15:24	19.31	24.3	0.71	542	0	4.5	498
	23:15:39	19.32	22.3	0.70	536	0	4.4	520
	23:15:54	19.32	23.3	0.70	547	0	4.3	514
	23:16:09	19.31	24.3	0.69	532	0	4.2	495

ONLINE RUN # 3 MELTER EXHAUST

	TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC	NO_X ML
	23:16:24	19.32	28.8	0.67	487	0	4.3	481
	23:16:39	19.33	22.8	0.66	486	0	4.2	496
	23:16:54	19.32	24.3	0.65	486	0	4.1	483
	23:17:09	19.33	21.7	0.66	473	0	4.0	442
	23:17:24	19.34	21.3	0.65	463	0	4.1	431
	23:17:39	19.33	21.7	0.62	482	0	4.0	438
	23:17:54	19.33	20.8	0.62	496	0	4.9	423
	23:18:09	19.36	23.3	0.62	477	0	7.4	412
	23:18:24	19.36	18.8	0.59	456	0	6.7	425
	23:18:40	19.35	19.8	0.61	462	0	8.3	446
	23:18:55	19.35	21.7	0.62	455	0	6.2	430
	23:19:10	19.35	22.8	0.63	446	0	4.8	409
	23:19:25	19.35	22.3	0.63	439	0	4.3	406
	23:19:40	19.35	19.3	0.67	435	0	4.2	408
	23:19:55	19.34	19.8	0.66	406	0	4.1	397
	23:20:10	19.34	20.8	0.63	380	0	4.0	382
	23:20:25	19.35	19.3	0.61	399	0	5.0	390
	23:20:40	19.36	20.8	0.61	409	0	4.7	360
	23:20:55	19.36	22.8	0.61	412	0	6.4	336
	23:21:10	19.37	19.3	0.60	423	0	4.5	347
	23:21:25	19.38	19.3	0.60	438	0	4.1	359
	23:21:40	19.36	17.8	0.61	434	0	4.7	364
	23:21:55	19.37	18.4	0.61	422	0	4.0	372
	23:22:10	19.36	17.8	0.61	405	0	4.1	388
	23:22:25	19.37	18.3	0.59	393	0	5.5	385
	23:22:40	19.37	22.8	0.58	373	0	6.0	381
	23:22:55	19.36	16.8	0.57	362	0	6.1	356
	23:23:10	19.38	17.3	0.57	353	0	6.0	349
	23:23:25	19.38	15.8	0.56	341	0	5.9	327
	23:23:40	19.39	18.3	0.54	332	0	6.2	318
	23:23:56	19.39	19.8	0.54	328	0	6.7	305
	23:24:11	19.38	13.8	0.52	345	0	6.4	294
	23:24:26	19.40	16.8	0.53	356	0	6.2	283
	23:24:41	19.38	17.8	0.55	373	0	6.1	279
	23:24:56	19.36	20.8	0.56	359	0	6.3	293
	23:25:11	19.39	19.8	0.54	351	0	5.1	304
	23:25:26	19.39	19.8	0.53	318	0	5.4	324
NO MODE	23:25:41	19.40	17.3	0.49	233	0	5.5	313
	23:25:56	19.41	17.8	0.50	204	0	5.7	305
	23:26:11	19.40	16.3	0.45	208	0	5.8	278

ONLINE RUN # 3 MELTER EXHAUST

TIME	O_2	CO	CO_2	NO_X/NO	SO_2	THC	NO_X ML
23:26:26	19.41	15.8	0.44	223	0	4.9	260
23:26:41	19.41	15.3	0.44	232	0	4.6	224
23:26:56	19.40	15.8	0.49	227	0	4.5	219
23:27:11	19.40	16.3	0.51	206	0	5.5	231
23:27:26	19.40	16.3	0.49	197	0	5.8	246
23:27:41	19.39	16.8	0.46	190	0	5.3	244
23:27:56	19.42	16.3	0.43	188	0	8.5	224
23:28:11	19.41	15.8	0.42	172	0	7.8	209
23:28:26	19.41	14.8	0.42	155	0	7.7	205
23:28:41	19.42	14.8	0.42	158	0	7.6	198
23:28:57	19.40	14.3	0.40	175	0	7.0	188
23:29:12	19.43	14.3	0.41	187	0	6.3	168
23:29:27	19.42	14.8	0.41	183	0	5.4	168
23:29:42	19.42	14.8	0.40	185	0	4.7	176
23:29:57	19.43	14.8	0.39	192	0	4.4	195
23:30:12	19.42	14.3	0.38	194	0	5.7	190
23:30:27	19.42	14.3	0.38	205	0	6.7	192
23:30:42	19.44	14.3	0.39	209	0	7.2	198
23:30:57	19.44	14.3	0.40	201	0	7.6	201
23:31:12	19.43	14.3	0.39	196	0	5.6	207

	O_2	CO	CO_2	NO_X	NO	SO_2	THC	NO_X ML
AVERAGE	19.32	24.13	0.70	564.87	196.52	0.00	5.87	478.77
MAX.	19.44	48.30	1.35	1107.00	233.00	0.00	8.60	1285.00
MIN.	19.12	13.80	0.38	318.00	155.00	0.00	4.00	168.00
VARIANCE	0.01	75.23	0.06	42128.54	434.81	0.00	1.53	67723.94
STD. DEV.	0.09	8.67	0.25	205.25	20.85	0.00	1.24	260.24
MEDIAN	19.35	21.70	0.63	496.00	196.00	0.00	6.00	411.00

ON LINE RUN # 4 HEPA FILTER EXHAUST

	TIME	O2	CO	CO2	NOx/NO	NOx ML
NO MODE	11:16:44	20.10	87.7	1.08	566	607
	11:16:59	20.12	76.8	1.01	517	562
	11:17:14	20.14	74.3	0.94	370	434
	11:17:29	20.15	68.8	0.90	406	395
	11:17:44	20.17	67.3	0.89	410	409
	11:17:59	20.18	61.8	0.87	417	417
	11:18:14	20.19	54.8	0.86	458	468
	11:18:29	20.19	54.4	0.84	476	452
	11:18:44	20.21	52.8	0.83	403	436
	11:18:59	20.20	51.2	0.84	344	360
	11:19:14	20.22	48.7	0.80	335	324
	11:19:29	20.22	46.3	0.80	420	388
	11:19:44	20.22	48.7	0.80	451	461
	11:19:59	20.22	53.3	0.81	449	454
	11:20:14	20.23	43.7	0.82	444	451
	11:20:29	20.24	44.7	0.80	450	443
	11:20:44	20.24	44.3	0.81	437	453
	11:20:59	20.26	41.2	0.81	455	439
	11:21:14	20.24	41.2	0.80	537	534
	11:21:29	20.27	40.2	0.79	536	538
	11:21:45	20.26	38.7	0.78	476	506
	11:22:00	20.28	36.7	0.77	458	476
	11:22:15	20.27	38.7	0.76	507	500
	11:22:30	20.28	38.7	0.78	387	441
	11:22:45	20.28	37.2	0.76	306	323
	11:23:00	20.29	35.8	0.69	292	289
	11:23:15	20.32	31.7	0.62	350	329
	11:23:30	20.32	28.3	0.62	397	393
	11:23:45	20.33	23.2	0.67	420	417
	11:24:00	20.30	22.3	0.71	441	452
	11:24:15	20.30	19.3	0.76	468	484
	11:24:30	20.29	18.8	0.80	466	487
	11:24:45	20.29	19.8	0.79	448	470
	11:25:00	20.30	17.3	0.80	450	473
	11:25:15	20.29	19.3	0.80	446	457
	11:25:30	20.31	20.3	0.82	474	497
	11:25:45	20.29	24.3	0.84	453	477
	11:26:00	20.29	27.7	0.89	498	519
	11:26:15	20.28	33.3	0.94	479	422

ON LINE RUN # 4 HEPA FILTER EXHAUST

NOx MODE

TIME	O2	CO	CO2	NOx/NO	NOx ML
11:26:30	20.26	34.3	0.95	720	549
11:26:46	20.26	46.3	1.06	425	546
11:28:46	20.31	45.7	0.89	634	667
11:29:01	20.28	40.7	0.98	589	625
11:29:16	20.28	41.2	0.98	559	573
11:29:31	20.28	40.7	0.94	426	589
11:29:46	20.30	40.2	0.89	612	589
11:30:01	20.30	38.2	0.86	568	553
11:30:16	20.32	35.3	0.82	540	487
11:30:31	20.35	32.3	0.77	549	497
11:30:46	20.34	31.7	0.77	547	486
11:31:01	20.35	30.3	0.79	538	469
11:31:16	20.33	29.3	0.83	568	493
11:31:31	20.33	33.3	0.86	530	476
11:31:47	20.32	32.3	0.88	511	435
11:32:02	20.31	37.7	0.88	483	397
11:32:17	20.32	36.7	0.89	516	423
11:32:32	20.31	35.8	0.88	510	415
11:32:47	20.32	35.3	0.87	521	422
11:33:02	20.31	32.3	0.87	532	430
11:33:17	20.32	31.3	0.87	514	408
11:33:32	20.31	29.3	0.87	518	405
11:33:47	20.32	30.8	0.88	496	379
11:34:02	20.31	30.3	0.89	580	436
11:34:17	20.31	31.3	0.93	621	495
11:34:32	20.30	32.8	0.97	552	433
11:34:47	20.28	34.8	0.96	510	372
11:35:02	20.30	34.8	0.95	527	373
11:35:17	20.30	31.7	0.94	555	410
11:35:32	20.31	38.7	0.92	549	383
11:35:47	20.31	34.3	0.90	524	364
11:36:02	20.32	35.8	0.88	503	340
11:36:17	20.33	35.8	0.87	532	348
11:36:32	20.32	34.3	0.86	589	411
11:36:48	20.33	33.8	0.86	560	394
11:37:03	20.32	31.3	0.83	566	369
11:37:18	20.34	29.7	0.81	565	385
11:37:33	20.33	30.3	0.81	543	354
11:37:48	20.34	30.8	0.79	445	257

ON LINE RUN # 4 HEPA FILTER EXHAUST

TIME	O2	CO	CO2	NOx/NO	NOx ML
11:38:03	20.35	34.3	0.79	456	247
11:38:18	20.33	34.8	0.83	514	288
11:38:33	20.34	37.7	0.82	517	303
11:38:48	20.33	40.2	0.82	510	291
11:39:03	20.33	45.2	0.83	453	226
11:39:18	20.33	43.2	0.85	491	238
11:39:33	20.31	47.2	0.86	547	302
11:39:48	20.31	48.3	0.86	511	279
11:40:03	20.30	52.8	0.88	558	316
11:40:18	20.30	46.7	0.88	575	323
11:40:33	20.31	55.3	0.86	557	329
11:40:48	20.31	44.7	0.85	524	263
11:41:03	20.32	46.7	0.85	578	307
11:41:18	20.32	43.7	0.82	586	322
11:41:33	20.35	44.7	0.80	580	310
11:41:49	20.35	47.7	0.80	574	310
11:42:04	20.36	43.2	0.79	596	321
11:42:19	20.35	50.3	0.83	602	351
11:42:34	20.32	55.3	0.88	493	239
11:42:49	20.31	62.4	0.90	560	263
11:43:04	20.29	60.4	0.89	558	286
11:43:19	20.31	58.9	0.87	573	281
11:43:34	20.32	53.8	0.79	605	313
11:43:49	20.35	49.2	0.74	615	321
11:44:04	20.37	35.8	0.71	687	369
11:44:19	20.38	35.8	0.68	711	408
11:44:34	20.39	33.3	0.68	689	406
11:44:49	20.40	29.3	0.66	676	398
11:45:04	20.40	29.8	0.64	667	406
11:45:19	20.41	31.8	0.63	700	448
11:45:34	20.42	28.8	0.62	687	445
11:45:49	20.41	26.8	0.61	681	433
11:46:04	20.43	28.3	0.59	672	445
11:46:19	20.43	24.8	0.59	684	459
11:46:34	20.44	23.7	0.59	714	494
11:46:50	20.43	22.3	0.59	660	461
11:47:05	20.44	22.8	0.59	612	393
11:47:20	20.43	24.8	0.59	576	384
11:47:35	20.43	24.8	0.59	573	368

ON LINE RUN # 4 HEPA FILTER EXHAUST

TIME	O2	CO	CO2	NOx/NO	NOx ML
11:47:50	20.42	24.8	0.60	589	367
11:48:05	20.42	26.3	0.61	671	467
11:48:20	20.41	27.3	0.63	634	451
11:48:35	20.41	27.3	0.64	639	429
11:48:50	20.41	27.2	0.64	655	476
11:49:05	20.41	27.3	0.64	580	409
11:49:20	20.41	28.8	0.63	614	423
11:49:35	20.40	27.7	0.63	575	414
11:49:50	20.41	28.8	0.64	535	358
11:50:05	20.40	27.7	0.64	552	375
11:50:20	20.40	28.8	0.64	616	430
11:50:35	20.38	28.3	0.65	621	448
11:50:50	20.39	27.7	0.67	650	499
11:51:05	20.39	26.8	0.66	576	420
11:51:20	20.40	29.3	0.65	600	424
11:51:35	20.39	26.3	0.66	610	433
11:51:50	20.39	28.8	0.65	644	479
11:52:06	20.39	28.8	0.65	585	456
11:52:21	20.39	29.8	0.64	569	419
11:52:36	20.40	29.8	0.63	637	466
11:52:51	20.39	27.7	0.64	628	487
11:53:06	20.40	28.8	0.64	564	431
11:53:21	20.40	28.3	0.65	579	427
11:53:36	20.39	30.3	0.66	578	457
11:53:51	20.39	29.3	0.68	589	455
11:54:06	20.37	34.8	0.70	531	409
11:54:21	20.37	36.2	0.72	586	432
11:54:36	20.35	40.7	0.74	620	493
11:54:51	20.35	46.8	0.73	631	505
11:55:06	20.36	38.2	0.72	681	532
11:55:21	20.38	35.8	0.70	657	537
11:55:36	20.37	31.8	0.68	666	527
11:55:51	20.38	28.8	0.69	698	588
11:56:06	20.38	28.8	0.68	654	540
11:56:21	20.39	28.8	0.69	676	545
11:56:36	20.38	30.3	0.70	697	571
11:56:51	20.38	30.3	0.71	652	528
11:57:07	20.38	31.3	0.71	643	522
11:57:22	20.37	34.3	0.72	585	469

ON LINE RUN # 4 HEPA FILTER EXHAUST

TIME	O2	CO	CO2	NOx/NO	NOx ML
11:57:37	20.37	36.2	0.73	628	492
11:57:52	20.35	37.7	0.73	658	532
11:58:07	20.36	38.2	0.74	657	517
11:58:22	20.35	39.7	0.75	637	524
11:58:37	20.36	41.2	0.73	639	483
11:58:52	20.36	41.2	0.72	631	485

	O_2	CO	CO_2	NO_X	NO	NO_X ML
AVERAGE	20.33	36.84	0.78	586.95	444.93	428.09
MAX.	20.44	87.70	1.08	714.00	720.00	667.00
MIN.	20.10	17.30	0.59	426.00	292.00	226.00
VARIANCE	0.00	134.50	0.01	3993.83	5418.12	7322.99
STD. DEV.	0.07	11.60	0.11	63.20	73.61	85.57
MEDIAN	20.33	34.30	0.80	580.00	449.00	433.00

ON LINE RUN # 4 POST DEMISTER

	TIME	O2	CO	CO2	NOx/NO	NOx ML
NO$_X$ MODE	12:19:26	19.41	327.0	3.65	2169	1909
	12:19:41	19.44	315.1	3.51	2032	1606
	12:19:56	19.50	397.2	3.26	2089	1632
	12:20:11	19.59	229.4	3.00	2217	1879
	12:20:26	19.67	205.9	2.88	2099	1672
	12:20:41	19.75	154.9	2.63	2160	1749
	12:20:56	19.83	141.9	2.50	2243	1815
	12:21:11	19.89	107.2	2.44	2246	1936
	12:21:26	19.90	105.2	2.44	2256	1934
	12:21:41	19.91	99.8	2.44	2279	1919
	12:21:56	19.92	97.8	2.39	2068	1756
	12:22:11	19.93	94.8	2.29	2049	1674
	12:22:27	19.99	86.8	2.11	2183	1886
	12:22:42	20.01	80.8	2.03	2216	1934
	12:22:57	20.02	83.8	2.05	2155	1896
	12:23:12	20.03	82.4	2.01	2175	1937
	12:23:27	20.05	76.4	1.93	2157	1920
	12:23:42	20.08	82.9	1.90	2148	1897
	12:23:57	20.08	78.9	1.89	2148	1887
	12:24:12	20.09	78.4	1.89	2272	2024
	12:24:27	20.09	79.8	1.89	2186	1989
	12:24:42	20.09	82.9	1.89	2184	1955
	12:24:57	20.10	85.3	1.89	2163	1936
	12:25:12	20.09	87.8	1.85	2150	1913
	12:25:27	20.11	79.3	1.84	2115	1899
	12:25:42	20.10	77.3	1.84	2150	1924
	12:25:57	20.09	80.8	1.84	2107	1858
	12:26:12	20.10	81.8	1.87	1840	1842
	12:26:27	20.08	97.8	1.89	1638	1336
	12:26:42	19.97	188.0	2.48	1343	1312
	12:26:57	19.61	267.5	3.39	1281	896
	12:27:12	19.29	365.0	3.53	1331	1007
	12:27:28	19.40	319.6	3.10	1633	1338
	12:27:43	19.52	287.5	2.91	1887	1583
	12:27:58	19.62	243.9	2.81	1974	1730
	12:28:13	19.66	167.4	2.76	2063	1926
	12:28:28	19.74	167.4	2.70	1962	1820
	12:28:43	19.78	145.9	2.65	1810	1645
	12:28:58	19.77	154.4	2.61	1855	1614
	12:29:13	19.79	145.0	2.50	1890	1710
	12:29:28	19.81	145.9	2.41	1836	1630

ON LINE RUN # 4 POST DEMISTER

NO MODE

TIME	O2	CO	CO2	NOx/NO	NOx ML
12:29:43	19.85	147.4	2.35	1853	1593
12:29:58	19.89	126.5	2.29	1772	1583
12:30:13	19.90	150.9	2.22	1773	1655
12:30:28	19.91	132.0	2.26	1890	1740
12:30:43	19.86	134.9	2.41	1909	1558
12:30:58	19.81	141.9	2.49	1650	1426
12:31:13	19.81	149.9	2.52	1614	1387
12:31:28	19.74	184.0	2.70	1612	1536
12:31:43	19.63	215.9	2.97	1797	1650
12:31:58	19.55	212.9	3.05	1803	1576
12:32:13	19.60	204.5	2.98	1675	1565
12:32:29	19.64	168.4	2.90	1700	1503
12:32:44	19.68	212.4	2.89	1615	1527
12:33:29	19.59	272.0	3.27	2478	2107
12:33:44	19.49	351.0	3.91	1822	2560
12:33:59	19.17	468.6	4.60	773	2416
12:34:14	19.10	494.6	4.35	723	1541
12:34:29	19.22	488.6	3.89	833	1026
12:34:44	19.37	407.6	3.48	1107	1266
12:34:59	19.48	373.7	3.20	1387	1522
12:35:14	19.65	224.5	2.93	1469	1857
12:35:29	19.76	185.5	2.70	1630	2015
12:35:44	19.86	125.5	2.56	1453	2060
12:35:59	19.89	113.8	2.54	1599	1978
12:36:14	19.90	97.8	2.55	1608	2047
12:36:29	19.91	98.8	2.50	1436	2039
12:36:44	19.93	98.3	2.46	1431	1914
12:36:59	19.94	102.3	2.44	1498	1911
12:37:14	19.92	106.3	2.44	1788	1968
12:37:30	19.94	119.5	2.37	2560	1785
12:37:45	19.90	297.0	3.09	1811	3028
12:38:00	19.43	368.5	4.07	1068	1898
12:38:15	19.23	486.0	4.47	349	1780
12:38:30	19.10	466.7	4.29	281	674
12:38:45	19.21	460.1	3.79	299	750
12:39:00	19.38	360.5	3.38	468	851
12:39:15	19.48	295.0	3.07	453	998
12:39:30	19.61	213.4	2.76	322	1132
12:39:45	19.70	196.5	2.58	356	1063
12:40:00	19.75	175.4	2.51	464	1006
12:40:15	19.76	163.9	2.48	738	1154

ON LINE RUN # 4 POST DEMISTER

TIME	O2	CO	CO2	NOx/NO	NOx ML
12:40:30	19.81	147.5	2.36	723	1432
12:40:45	19.88	139.4	2.23	665	1516
12:41:00	19.95	123.0	2.08	655	1487
12:41:15	19.98	125.5	1.95	823	1512
12:41:30	20.03	113.8	1.84	716	1529
12:41:45	20.06	110.3	1.78	1041	1678
12:42:00	20.09	106.8	1.74	1117	1783
12:42:15	20.11	100.3	1.69	1287	1919
12:42:31	20.15	98.3	1.66	1089	2004
12:42:46	20.16	99.8	1.60	1116	1846
12:43:01	20.16	95.3	1.59	1148	1948
12:43:16	20.19	92.8	1.57	1448	1857
12:43:31	20.19	90.3	1.59	1314	2091
12:43:46	20.19	89.8	1.65	1543	2091
12:44:01	20.18	98.8	1.66	1452	2085
12:44:16	20.18	98.8	1.68	1253	2168
12:44:31	20.18	108.3	1.68	1222	1931
12:44:46	20.17	111.3	1.71	1263	1875
12:45:01	20.16	108.3	1.70	1369	1936
12:45:16	20.16	96.8	1.68	1142	2066
12:45:31	20.16	98.8	1.65	1152	1876

	O_2	CO	CO_2	NO_X	NO	NO_X ML
AVERAGE	19.82	177.90	2.52	1952.26	1137.59	1718.45
MAX.	20.19	494.60	4.60	2279.00	2560.00	3028.00
MIN.	19.10	76.40	1.57	1281.00	281.00	674.00
VARIANCE	0.08	12724.54	0.51	66088.91	273067.87	135351.62
STD. DEV.	0.28	112.80	0.72	78.42	522.56	367.90
MEDIAN	19.89	134.90	2.44	2040.50	1148.00	1815.00

ON LINE RUN # 4 MELTER EXHAUST

	TIME	O2	CO	CO2	NOx/NO	NOx ML
NO_X MODE	13:07:20	18.81	331.0	5.44	3082	2304
	13:07:35	18.81	332.0	5.42	3075	2366
	13:07:51	18.82	320.6	5.41	3205	2336
	13:08:06	18.81	314.0	5.45	3418	2217
	13:08:21	18.81	309.1	5.52	3274	2527
	13:08:36	18.77	327.0	5.55	3755	2364
	13:08:51	18.77	314.0	5.53	3837	2494
	13:09:06	18.77	338.6	5.52	4031	2428
	13:09:21	18.77	373.7	5.48	3562	2306
	13:09:36	18.80	387.7	5.51	3399	2573
	13:09:51	18.79	399.2	5.59	3204	3161
	13:10:06	18.79	396.7	5.81	3464	2668
	13:10:21	18.75	403.6	6.02	3294	2341
	13:10:36	18.67	401.2	6.09	3865	2083
	13:10:51	18.64	401.2	6.00	3660	2132
	13:11:06	18.62	401.6	5.93	3673	2168
	13:11:21	18.64	385.7	5.91	4289	2161
	13:11:36	18.65	374.1	5.90	5679	2005
	13:11:51	18.64	421.5	5.90	5678	1979
	13:12:06	18.64	445.7	5.81	4906	2095
	13:12:21	18.65	463.2	5.77	4651	2263
	13:12:36	18.68	486.6	5.78	4583	2997
	13:12:52	18.67	479.1	5.97	4529	3530
	13:13:07	18.65	465.2	6.07	4431	2298
	13:13:22	18.59	498.6	6.09	4302	1547
	13:13:37	18.56	488.0	5.98	3925	1631
	13:13:52	18.58	462.7	5.83	3612	1958
	13:14:07	18.63	360.5	5.63	3396	2245
	13:14:22	18.72	286.5	5.27	3383	2532
	13:14:37	18.82	264.5	4.75	3340	2702
	13:14:52	19.03	244.6	4.07	3194	2774
	13:15:07	19.23	209.9	3.55	3187	2822
	13:15:22	19.42	166.4	3.04	3309	2814
	13:15:37	19.59	133.4	2.65	3343	2848
	13:15:52	19.69	115.3	2.33	3489	2886
	13:16:07	19.81	88.3	2.04	3642	2998
	13:16:22	19.87	80.8	1.89	3527	3067
	13:16:37	19.93	62.9	1.71	3569	3168
	13:16:52	19.99	55.3	1.52	3429	3283
	13:39:57	18.40	223.0	5.78	909	503
	13:40:12	18.46	209.5	5.64	1148	771

ON LINE RUN # 4 MELTER EXHAUST

	TIME	O2	CO	CO2	NOx/NO	NOx ML
	13:40:27	18.49	200.5	5.58	1215	684
	13:40:42	18.53	184.0	5.56	1177	658
	13:40:57	18.53	190.0	5.51	952	925
	13:41:12	18.57	176.5	5.48	1322	944
	13:41:27	18.56	174.9	5.61	1006	1065
	13:41:42	18.50	189.5	5.78	1627	673
	13:41:57	18.45	181.0	5.81	992	1046
	13:42:12	18.44	186.6	5.88	1126	1007
	13:42:27	18.41	194.6	5.97	788	869
	13:44:58	18.77	140.0	4.98	1641	1627
	13:45:13	18.84	144.5	4.82	2079	1279
	13:45:28	18.87	133.5	4.71	1860	1444
	13:45:43	18.89	144.5	4.62	1749	1237
	13:45:58	18.91	155.9	4.70	1287	1225
	13:50:44	19.31	185.5	3.64	1172	1692
	13:50:59	19.21	225.0	3.88	2560	1264
	13:51:14	19.10	239.9	4.11	2491	1361
	13:51:29	19.04	247.1	4.10	2400	1280
	13:51:44	19.07	295.0	4.04	1953	1471
	13:51:59	19.07	266.1	4.01	1585	1423
	13:52:14	19.07	252.7	3.93	1394	1179
	13:52:29	19.12	242.5	3.66	1281	1094
NO MODE	13:42:42	18.40	202.5	6.06	1012	1107
	13:42:57	18.34	208.5	6.17	1075	648
	13:43:13	18.29	199.0	6.31	1582	912
	13:43:28	18.26	200.0	6.33	1681	626
	13:43:43	18.27	187.0	6.34	1900	801
	13:43:58	18.34	183.5	6.18	1804	1440
	13:44:13	18.42	164.9	5.91	1812	1382
	13:44:28	18.54	148.5	5.53	2068	1538
	13:44:43	18.67	143.5	5.22	2056	1439
	13:46:13	18.86	148.9	4.69	768	1250
	13:46:28	18.86	166.9	4.73	1902	1007
	13:46:43	18.84	175.9	4.70	1910	952
	13:46:58	18.87	166.9	4.52	2560	885
	13:47:13	18.95	172.9	4.36	2560	1097
	13:47:28	19.05	184.0	4.28	611	1431
	13:47:43	19.10	178.9	4.15	2037	1890
	13:47:58	19.18	172.9	3.90	1286	2393
	13:48:14	19.27	177.4	3.61	1365	2340
	13:48:29	19.34	170.4	3.31	1276	1949

ON LINE RUN # 4 MELTER EXHAUST

TIME	O2	CO	CO2	NOx/NO	NOx ML
13:48:44	19.44	175.9	3.03	1463	1216
13:48:59	19.49	157.4	2.93	2306	1037
13:49:14	19.52	148.5	2.95	2324	1157
13:49:29	19.52	143.0	2.94	2352	1255
13:49:44	19.53	148.5	2.97	1964	1483
13:49:59	19.51	144.5	3.08	1762	1665
13:50:14	19.48	155.4	3.15	1416	1813
13:50:29	19.42	159.9	3.37	2057	1762

	O_2	CO	CO_2	NO_X	NO	NO_X ML
AVERAGE	18.89	246.20	4.80	2903.25	1737.37	1780.74
MAX.	19.99	498.60	6.34	5679.00	2560.00	3530.00
MIN.	18.26	55.30	1.52	788.00	611.00	503.00
VARIANCE	0.17	12881.93	1.56	1608570.58	264662.01	569821.68
STD. DEV.	0.41	113.50	1.25	1268.29	514.45	754.87
MEDIAN	18.81	199.50	5.43	3294.00	1812.00	1648.00

APPENDIX D

SAMPLING METHODS

VOLUMETRIC FLOW RATE BY METHOD 2

Summary of Method

Method 2 is a procedure for measurement of the average velocity head and temperature of a gas stream at discrete locations within the duct that are representative of the total gas flow. The density of the gas must be known before the data collected can be used to calculate the volumetric flow rate of the gas. The density of the exhaust gases of combustion sources may be determined by measuring the oxygen and carbon dioxide (by Method 3 or 3A) and moisture (by Method 4) concentrations of the gas.

The velocity head, the difference between the impact pressure and the static pressure of the gas, can be measured with either a standard Pitot tube or an S-type Pitot tube. Either of these devices may be used without calibration if their construction conforms to certain geometric criteria. A properly constructed standard Pitot tube will overestimate the total velocity head by 1 percent, and a properly constructed S-type Pitot tube will overestimate the total velocity head by 19 percent. When the velocity of the stack gas is calculated, a correction appropriate to the type of Pitot tube used is made. In both cases, the error is due to static pressure decrease in the turbulent wake behind the impact pressure tap.

Description of Sampling Equipment

The velocity head is measured by the Pitot tube and an oil-filled manometer. The stack gas temperature is measured by a type-K thermocouple. The temperature is displayed by a digital temperature readout that is electronically compensated for ambient temperature. Figure 1, which shows an entire Method 5 sampling train, also shows the Pitot tube and manometer system.

Description of Operation

Prior to recording velocity and temperature data, the gas in the duct must be checked to ensure straight (non-cyclonic) flow with respect to the duct centerline. The Pitot tube is inserted into the duct with the faces perpendicular to the duct cross-section. A reading of zero pressure differential at each of the sampling points indicates non-cyclonic flow.

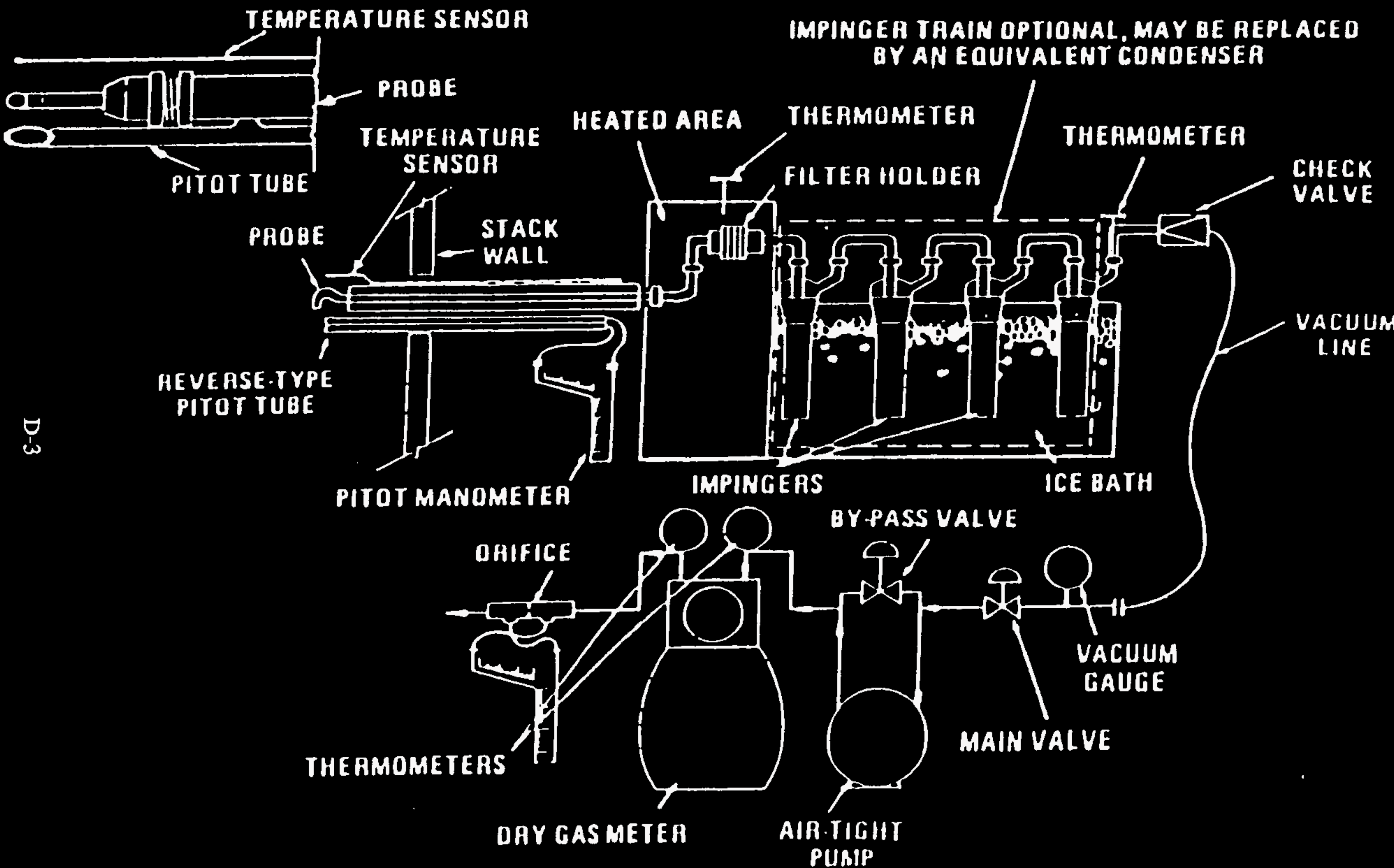

FIGURE 1

METHOD 5 SAMPLING TRAIN

During testing, the velocity head and temperature at each sample point, the static pressure of the duct, and the absolute barometric pressure are recorded.

Description of Leak Check Procedures

Before reading of the gas velocity pressure one made, the pitot-manometer system is leak checked. A short length of flexible tubing is attached to the impact side of the pitot tube, and a pressure of five to seven inches of water is put on the system by month. The tubing is crimped and the manometer is observed. The leak check is considered successful if the pressure holds steady for fifteen seconds. The process is then repeated on the static side of the system, however in this instance five to seven inches of water vacuum is placed on the system.

Description of Detection Limits

The minimum differential pressure that can be accurately measured with the standard 0" to 10" inclined manometer is 0.01" water. If more than 10 percent of the velocity head values are, or if the average value is, less than 0.10" then a more precise manometer must be used. The minimum velocity that can be measured with a Pitot tube is approximately 10 ft/sec. Below this value the assumptions about turbulent flow upon which the Bernoulli equation is based fail and the calculation becomes inaccurate.

Temperature is measured with a type-K thermocouple. These devices are accurate to ±3°F over a range from 0°F to 1500°F.

Calibration Procedures

Pretest calibration of the S-type Pitot tube consists of measuring the angles and dimensions of the measuring tip and making adjustments as required to ensure that it conforms to standards specified in Method 2.

The thermocouple is calibrated at the ice point and boiling point of water and at an upscale, hot oil, temperature against a mercury-in-glass thermometer.

CO_2 AND O_2 CONCENTRATION BY METHOD 3A

Summary of Method

This method uses an electronic continuous emission monitor (CEM) to measure both CO_2 and O_2 concentrations. Analysis of carbon dioxide is based upon the absorption of infrared radiation by the carbon dioxide molecule. The intensity of the absorption depends on the concentration of CO_2 compound present. The infrared light beam is split after the light source, with one part passing through the sample cell, and the other part passing through the reference cell, which is filled with a non-absorbing gas. Each beam then passes through a narrow band pass filter which passes the wavelength of light corresponding to the most intensely absorbing vibration into a photomultiplier tube which amplifies the signal. The amount of absorbed light (found by difference in signal intensity) is proportional to the amount of absorbing species present.

The method of analysis for O_2 is based upon the electrochemical reaction of oxygen in a fuel cell which occurs at a rate proportional to the concentration of oxygen. Oxygen in the sample gas diffuses through an oxygen specific membrane and is reduced at the cathode. A corresponding oxidation occurs at the anode and an electrical current is produced which is amplified and transmitted to an LCD readout.

Description of Sampling Equipment

The analyzer and sampling system used for this analysis meets the following specifications.

- o Analyzer calibration error - Less than ± 2 percent of the span for zero and calibration gases.
- o Sampling system bias - Less than ± 5 percent of the span for the zero and calibration gases.
- o Zero drift - Less than ± 3 percent of span over the period of each run.
- o Calibration drift - Less than ± 3 percent of span over the period of each run.

The CO_2 and O_2 analyzer used by Parsons Engineering Science is an Anarad Model AR-205 Combustion Efficiency Monitor, which measures CO_2 concentration by the IR absorbtion technique and O_2 concentration using an electrolytic fuel cell. The AR-205 has full-scale range 0-20% CO_2. The CO_2 calibration standards are typically 10-12% and 16-18% CO_2 in N_2

The O_2 analyzer has a range of 0-20.9% and calibration gases of 10-12% and 16-18% O_2 in$N_2$are typically used. Pure nitrogen, or another cylinder gas which contains no CO_2 or O_2 is used to zero the instrument.

The sample is extracted from the duct, conditioned and transported from the sample location into a vented manifold. The sample is then extracted from the manifold by a pump contained inside the analyzer cabinet.

Description of Operation

After the analyzer is calibrated and system bias and leak checks are performed, sample gas is introduced into the instrument. Sampling runs may last from 15 minutes for turbine tests to 60 minutes or longer when done in conjunction with Method 5.

Analyzer responses are determined from a digital data acquisition system which uses an analog to digital signal converter, a personal computer and a hard copy printer. Spread sheet files of all measurements and calibration results are also saved onto a hard disk.

Description of Detection Limits

The flow rate of the AR-205 is 0.5 liters per minute. The analyzer has detection limits of 0.1 percent for both CO_2 and O_2.

Calibration Procedures

After the measurement system is prepared for use, calibration gases are introduced directly into the instrument. The analyzer is calibrated to ± 2 percent of the instrument span for each standard introduced. A gas standard is then introduced into the sample system at the probe to conduct a system bias check. The system bias must not be greater than five percent of the instrument range.

After the sampling run a zero and calibration drift check is performed by introducing a zero and a mid-range calibration gas into the analyzer. If either the zero or upscale value has drifted by more than 3 percent of the span, the run is considered invalid.

In the event that the analyzer fails any of the above tests, the system is diagnosed to determine the source of the problem, corrective maintenance is performed, and the procedure is repeated. All measurements are corrected for bias and drift using equation 3A-1 found in USEPA Method 3A.

SO_2 CONCENTRATION BY USEPA METHOD 6C

Summary of Method

The method of analysis of sulfur dioxide is based upon the absorption of infra-red (IR) radiation by the sulfur dioxide molecule. The intensity of the absorption depends on the concentration of SO_2 present. The IR light beam is split after the light source, with one part passing through the sample cell, and the other part passing through the reference cell, which is filled with a non-absorbing gas. Each beam then passes through a narrow band pass filter (which passes the wavelength of light corresponding to the most intensely absorbing vibration) into photomultiplier tubes for creation and amplification of the signals. The amount of absorbed light (found by difference in signal intensity) is proportional to the amount of SO_2 present.

Description of Sampling Equipment

The analyzer used for this analysis meets the following specifications.

- Analyzer calibration error - Less than ± 2 percent of the span for zero, mid-range, and high-range calibration gases.
- Sampling system bias - Less than ± 5 percent of the span for the zero, and mid- or high-range calibration gases.
- Zero drift - Less than 3 percent of span over the period of each run.

The SO_2 analyzer used by Engineering-Science is a Horiba Model AIA 24 Sulfur Dioxide Analyzer, which operates on the principle of IR absorbtion. The analyzer has full-scale ranges of 0-500, 1,000, 1,500 and 2,000 ppm. SO_2 standards are selected to correspond to approximately 55 and 85 percent of the instrument span range. Gas standards are certified as Protocol-1 by the gas manufacturer. The detection limit of the analyzer is 5 percent of the operating range or 1 ppm when operated on the 0-500 ppm range.

Description of Operation

The full scale range of the analyzer is chosen such that the sample gas concentration corresponding to the applicable emission standard is on-scale, but not less than 30 percent of the analyzer response.

After the analyzer is calibrated and system bias and leak checks are performed, sample gas is introduced into the instrument. Sampling runs may last from 15 minutes for turbine tests to 60 minutes or longer when done in conjunction with Method 5.

Analyzer responses are recorded by a data acquisition system (DAS) which consists of an analog to digital signal converter, a personal computer and a hard copy printer. Analyzer responses are also recorded in a hard disk for subsequent importation into Lotus 1-2-3 for data reduction.

Calibration Procedures

All calibration gases are chosen to conform to USEPA Protocol-1 and are chosen as follows. A cylinder of zero grade air or pure nitrogen is be used as the zero standard. The high- and mid-range gases are SO_2 in air, with concentrations of corresponding to approximately 80-90 percent and 50-60 percent of the full-scale range of the analyzer.

After the measurement system has been prepared for use, the zero and calibration standards are introduced one at a time. The analyzer calibration error check is considered invalid if the response from a single gas differs by more than two percent of the analyzer span.

Immediately before and after each sampling run, a zero and calibration system bias check is performed by introducing zero and mid-range gas into the sampling system at the probe. If either the zero or upscale value exceeds the system bias specification, the run is considered invalid.

In the event that the analyzer fails any of the above tests, the system is diagnosed to locate the source of the problem, corrective maintenance is performed, and the mesurement system is recalibrated according to the procedures outlined previously.

If all checks are satisfactory, the results of the calibration and system bias checks are used to correct the average observed SO_2 concentrations for system drift. The drift correction is performed using equation 6C-1 from Method 6C.

NO_X CONCENTRATION BY USEPA METHOD 7E

Summary of Method

The method of analysis of total oxides of nitrogen (NO_x) is based upon the chemiluminescent reaction between nitric oxide (NO) and ozone (O_3). When these two compounds react, a characteristic wavelength of light is emitted. The light is passed through a photomultiplier tube which amplifies the light beam. The intensity of the amplified light beam is measured by a detector, which converts the light energy into an electronic signal. The magnitude of the signal is proportional to the amount of NO present in the gas sample. The instrument contains an internal source of ozone and a catalytic reduction chamber wherein NO_2 in the sample is reduced to NO prior to its introduction into the reaction chamber. The reduction catalyst may be by-passed, thus allowing for sequential analysis of total NO_X and then NO. The concentration of NO_2 may then be determined by difference.

Description of Sampling Equipment

The analyzer and sampling system used for this analysis meets the following specifications:

- Analyzer calibration error - Less than ± 2 percent of the span for zero, mid-range, and high-range calibration gases.
- Sampling system bias - Less than ± 5 percent of the span for the zero, and mid- or high-range calibration gases.
- Zero drift - Less than 3 percent of span over the period of each run.

The NO_X analyzer used by Engineering-Science is a Thermo Electron Model 10 Oxides of Nitrogen Analyzer, with ranges of 0-2.5, 10, 25, 100, 250, 1,000, 2,500, and 10,000 ppm. Calibration standards are chosen to conform to approximately fifty to sixty percent of span for the mid-range gas, and eighty to ninety percent for the high-range gas. Pre-purified air or nitrogen is used as a zero gas.

Description of Operation

The analyzer is prepared for use according to the manufacturers written instructions and calibrated using the appropriate gas standards. Sample gas is conditioned to remove moisture and allowed to flow into the instrument for the duration of the pre-determined sampling period.

Analyzer responses are recorded by a digital data acquisition System (DAS) which consists of an analog to digital signal converter, a personal computer and a hard copy printer. Responses are also recorded on the computer's hard disk drive for subsequent importation into Lotus 1-2-3 for data reduction.

Description of Detection Limits

The detection limit of the measurement system is typically two percent of the instrument span range. For an operating range of 250 ppm, the instrument detection limit is approximately 5 ppm.

Calibration Procedures

All calibration gases certified by the supplier to conform to USEPA Protocol 1. After the measurement system is prepared for use, the calibration gases are directly introduced into the instrument one at a time beginning with the zero gas. The high- and mid-range calibration gas are then introduced into the instrument. If the analyzer response to any of the gases differs by more than two percent of the instrument from the predicted response, the calibration error check is considered invalid, the instrument is repaired and the calibration repeated.

Immediately before the sampling run, a zero and calibration system bias check is performed by introducing the zero and mid-range calibration gases into the measurement system. If either the zero or upscale value exceeds the system bias specification, the run is considered invalid.

In the event that the analyzer fails any of the above tests, the system is diagnosed to determine the source of the problem, corrective maintenance is performed, and the entire procedure is repeated.

If all checks are satisfactory, the averages of the zero and span responses to the calibration error and bias checks at the beginning and end of the test are used to calculate the sample concentration for the run the calculation is done using equation 6C-1 of EPA Method 6C.

CARBON MONOXIDE CONCENTRATION BY METHOD 10

Summary of Method

The method of analysis of carbon monoxide is based upon the absorption of infrared radiation by the carbon monoxide molecule, which causes the C-O bond to vibrate in such a manner as to change the dipole moment of the molecule. The wavelength of the absorbed light is dependent upon the difficulty of causing the vibration in question and the intensity of the absorption depends on the concentration of carbon monoxide present. The infrared light beam is split after the light source, with one part passing through a sample cell, and the other part passing through a reference cell, which is filled with a non-absorbing gas. Each beam then passes through a narrow band pass filter which passes the wavelength of light corresponding to the most intensely absorbing vibration into a photomultiplier tube which amplifies the signal. The amount of absorbed light (found by difference in signal intensity) is proportional to the amount of absorbing species present.

Description of Sampling Equipment

The analyzer used for this analysis meets the following specifications:

- Analyzer calibration error - Less than ± 2 percent of the span for zero, mid-range, and high-range calibration gases.
- Sampling system bias - Less than ± 5 percent of the span for the zero, and mid- or high-range calibration gases.
- Zero drift - Less than ± 3 percent of span over the period of each run.
- Calibration drift - Less than ± 3 percent of span over the period of each run.

The CO analyzer used by Engineering-Science is the Bendix Model 8501-SCA Carbon Monoxide Analyzer, which has full-scale ranges 0-50, 0-250, 0-500, and 0-1,000 ppm CO. It is typically operated in the 0-1000 ppm range with standard gases that are 300 ppm, 600 ppm and 900 ppm CO in N_2.

The sample is extracted from the stack, conditioned to remove moisture, and transported to the sample manifold by in inert sample line. The sample conditioning system removes moisture to a dew point of 30°F. Method 10 specifies the use of ascarite to remove CO_2 from the sample, however ES does not typically use ascarite. During calibration, the introduction of twelve to eighteen percent CO_2 into the analyzer demonstrates the absence of CO_2 interference.

Description of Operation

The full-scale range of the analyzer is chosen such that the high range span gas concentration does not exceed 1.5 times the applicable source performance standard at stack conditions.

Analyzer response is measured by a digital acquisition system (DAS), which converts the analog output of the analyzer to digital data which is displayed on the screen of a personal computer. Data is also written to a hard disk file and to a printer.

Description of Detection Limits

The flow rate of the sample gas to the analyzer is self regulated at one liter per minute by a on board pump. The detection limit of the analyzer is two percent of the instrument span, or 20 ppm when operated at the 1000 ppm range.

Calibration Procedures

Zero grade air or pure nitrogen used is used for zero gas. Calibration gases are chosen to be approximately 30, 60, and 90 percent of the instrument's operating range. After the measurement system is prepared for use, calibration gases are directly introduced into the instrument. The analyzer is calibrated and checked to insure that the output differs by no more than two percent of span for each cylinder introduced.

Immediately before each sampling run a bias check is performed on the measurement system by introducing a zero and mid-range calibration gas into the probe. If the system bias check exceeds five percent of the instrument span the system is not used until the problem is repaired. Immediately after each sampling run a bias and calibration drift check is performed to insure that the analyzer drift has not exceeded three percent.

TOTAL HYDROCARBON CONCENTRATION BY USEPA METHOD 25A

Summary of Method

The method of analysis of hydrocarbons is based on the principle that the electrical conductivity of a gas is directly proportional to the number of charged particles present. When hydrocarbons are burned in a hydrogen flame, ionized carbon atoms are produced which decrease the resistance (voltage) across an electrode gap. The resulting voltage decrease is then measured by an amplifier electrometer and recorded on a potentiometric chart recorder.

Description of Sampling Equipment

The sample extraction and analysis for hydrocarbons differs from that of SO_2, CO and NO_x in that no condenser is used to remove moisture from the gas stream. The sample is introduced through a probe, glass fiber filter, a 3-way calibration gas valve, and Teflon® line into a pump within the analyzer. All surfaces that contact the sample gas stream are of stainless steel, glass, or Teflon®, and are heated to prevent condensation of water or organic vapors.

The analyzer to be used for this analysis must meet the following specifications:

- Zero drift - Less than ± 3 percent of the span over the period of each run.
- Calibration drift - Less than ± 3 percent of the span over the period of each run.
- Calibration error - Less than ± 5 percent of the span over the period of each run.

The hydrocarbon analyzer used by Engineering-Science is the J.U.M. Total Hydrocarbon Gas Analyzer which uses a heated Flame Ionization Detector (FID). The J.U.M. has ranges that vary from 0-50 ppm to 10,000 ppm total hydrocarbons, measured as propane ppm total hydrocarbons.

Description of Operation

The span gas concentration is chosen such that it is 1.5 to 2.5 times the expected concentration of the sample or emission limit. The mid-range standard is 45-55 percent of the concentration of the span gas, and the low-range standard is 25-35 percent of the span value. The zeros gas is high purity air with less than 0.1 parts per million by volume of organic material.

After the system is calibrated and all performance checks are completed (see below) the sample gas is introduced into the instrument.

Description of Leak-Check Procedure

Prior to initiation of sampling a three-point calibration is performed on each instrument with the calibration gases injected directly into the instrument. These calibrations are compared to the five-point calibrations that were done in the laboratory to ensure proper instrument calibration. Following these three point calibrations a system bias check is performed for each instrument. This consists of injecting a zero and span gas into the sample conditioning system at the 3-way valve that is mounted at the end of the probe. The response to the span gas injected ahead of the conditioning system must agree within two percent to the response to the same gas injected directly into the analyzer. If this test is passed, the system is proven to be free of leaks and interferences. If the test is failed, then a diagnosis of the system if performed. This diagnosis includes looking for leaks, pools of condensate, accumulations of dirt in the lines or on the filter and checking for instrument malfunctions.

Description of Sample Volumes and Detection Limits

Sample volume does not apply to a continuous monitoring system. The analyzer flow rate is specific to the instrument and may be found in the operator's manual. Where the concentration of organic vapors in the sample gas stream exceeds the capacity of the detector, a heated capillary or critical orifice may be used downstream of the pump to restrict the flow to the analyzer.

Since the span value is chosen to be 1.5 to 2.5 times the expected sample concentration, the detection limit of the method does not apply.

Calibration Procedures

All calibration gases are chosen to conform to USEPA Protocol 1, so verification of the calibration gases is not required. Gas concentrations are chosen as follows. The span gas is 80-90% of the full-scale range, and the midrange standard is 45-55% of the concentration of the span gas.

After the measurement system is prepared for use, the calibration gases are directly introduced into the instrument. The analyzer calibration error check shall be considered invalid if the result for any of the gases is more than ± 2 percent different from the results obtained when compared with the five-point calibration performed at the laboratory.

Immediately after the sampling run, a zero and calibration drift check is performed in the same manner as the system bias check described above. If either the zero or upscale value exceeds the system bias specification, the run is considered invalid.

In the event that the analyzer fails any of the above tests, the system is diagnosed to determine the source of the problem, corrective maintenance is performed, and the entire procedure is repeated.

If all checks are satisfactory, the averages of the zero and span responses from the recorder at the beginning and end of the test are used to calculate the sample concentration for the run.

After a run is successfully completed, the data is transcribed from the strip chart onto the Continuous Analyzer Daily Data form (Figure 2) and the information at the top is completed. The data is then reduced.

A Data Acquisition System may be incorporated in order to obtain the detector output response which provides a hard copy of the results and, the data is also stored on computer.

FIGURE 2

CONTINUOUS ANALYZER DAILY DATA

Plant: ______________________ Run: ______________________
Date: ______________________ Pollutant: ______________________
Operator: ______________________ Sample Size: ______________________
Strip Chart ______________________ Analyzer Serial No.: ______________________
Recorder Type: ______________________ Analyze Model: ______________________
Inst. Span Range: ______________________ Output Signal Format: ______________________
_____Span Gas Conc.: ________ ________ ________ ________ ________
Meter/Recorder Reading: ________ ________ ________ ________ ________

CALIBRATION (SCALE FACTOR/LINEAR REGRESSION, ETC.)

Time HR:MIN	Chart Reading	Scale Factor	ppm	Time HR:MIN	Chart Reading	Scale Factor	ppm

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GTS DURATEK PHASE 1 HANFORD LLW MELTER TESTS 1000 KG MELTER OFFGAS REPORT [SEC 2 OF 3]

Pages: 124

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DOCUMENT NUMBER: SD-WM-VI-029 REV 0

SECTION 2 OF 3

TITLE: GTS DURATEK PHASE I HANFORD LLW MELTER TESTS 1000 kg MELTER OFFGAS REPORT

DATE: 11/30/95

ORIGINATOR: EATON WC

CO: WHC

RECIPIENT:

CO:

REFERENCES: EDT-611885

APPENDIX B

LABORATORY DATA

WASH BOTTLES

ANALYSIS ______ SOLVENT ______ DATE STARTED ______ DATE FINISHED ______

PROJECT NUMBER ______ PROJECT NAME ______ PROJECT MANAGER ______ ANALYST ______

BEAKER NUMBER	SAMPLE NUMBER/SOLVENT	INITIAL BOTTLE WT. (g)	FINAL BOTTLE WT. (g)	DIFFERENCE (g)	1/DENSITY OF SOLVENT	FIELD SAMPLE VOL. (ml)	LAB WASH VOL. (ml)	TOTAL WASH VOL. (L)
94/021	Anchor FHA Run #2	332.5	217.7	114.8	1.2728	146.12	100ml	0.2461
94/022	Anchor FHA Run #3	311.8	217.7	94.1	1.2728	119.77	75ml	0.1948
94/023								
94/024								
94/025	Catholic U. Acetone Blank	—	—	—	—	—	75ml	0.0075
94/026	Catholic U. HEPA-MMT-FHA-#1	236.1	220.0	16.1	1.2728	20.49	75ml	0.0955
94/027	Catholic U. HEPA-MMT-FHA-#2	228.0	212.6	15.4	1.2728	19.60	75ml	0.0946
94/028	Catholic U HEPA-MMT-FHA-#3	254.5	217.2	37.3	1.2728	47.48	75ml	0.1225

SAMPLE RESIDUE WEIGHT, CALCULATIONS

RUN NUMBER	AG-FHA-#2	AG-FHA-#3						

	BEAKER NUMBER	94/021	94/022	94/023	94/024	94/025	94/026	94/027	94/028
A	BLANK WASH VOLUME, L	0.1955	0.1955			0.0075	0.0075	0.0075	0.0075
B	BLANK RESIDUE, g	0.0003	0.0003			-0.0001→0	-0.0001→0	-0.0001→0	-0.0001→0
C	BLANK CONC., g/l (B÷A)	0.00153	0.00153			0.0000	0.0000	0.0000	0.0000
D	SAMPLE WASH VOLUME, L	0.2461	0.1948				0.0955	0.0946	0.1225
E	SAMPLE RESIDUE WEIGHT, g	0.0268	0.0339				0.0000	0.0005	0.0036
F	BLANK CORRECTION, g (C•D)	0.000377	.000298				0.0000	0.0000	0.0000
G	NET RESIDUE WEIGHT, g (E−F)	0.0264	0.0336				0.0955	0.0946	0.1225

METHOD 5 BEAKER WEIGHTS

TARE WEIGHTS

BEAKER NUMBER												TARE WEIGHT (g)
	DATE	9/29/94	9/30/94	9/30/94	11/23/94	11/23/94						
	STANDARD WT.	100.0000	100.0050	100.0000	100.0000	100.0000						
	R.H. (%)	38	40	40	26	24						
	TEMP. (°F)	72	75	74	69	67						
	ANALYST	DAH	GDB	GDB	RP	RP						
94/021		98.2973	98.2964	98.2966								98.2965
94/022		106.4761	106.4757	106.4754								106.4753
94/023		103.7320	103.7309	103.7309								103.7309
94/024		102.5035	102.5024	102.5028								102.5026
94/025					101.0898	101.0899						101.0898
94/026					108.0492	108.0496						108.0494
94/027					102.4045	102.4046						102.4046
94/028					104.7385	104.7385						104.7385

FINAL WEIGHTS

BEAKER NUMBER / FIELD SAMPLE NUMBER											FINAL WEIGHT (g)	TARE WEIGHT (g)	RESIDUE WEIGHT (g)
		PROJECT NO.	726307	726307	726307								
		PROJECT NAME	Anchor	Anchor	Anchor	Cath U	Cath U	Cath U					
		DATE	11-22-94	11-23-94	11-23-94	1/26/95	1/27/95	1/28/95					
		STANDARD WT.	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000					
		R.H. (%)	30%	26%	26%	22	21	21					
		TEMP. (°F)	71	71	71	68	68	67					
		ANALYST	RRP	RRP	RRP	RP	RP	RP					
94/021		Run #2	98.3234	98.3231							98.3233	98.2965	0.0268
94/022		Run #3	106.5096	106.5090	106.5093						106.5092	106.4753	0.0339
94/023													
94/024													
94/025		Blank				101.0905	101.0895	101.0899			101.0898	101.0898	-0.0001 (~0.0000 DAH)
94/026		HEPA MMT FHA 1				108.0500	108.0494	108.0493			108.0494	108.0494	0.0000
94/027		HEPA FHA 2				102.4053	102.4049				102.4051	102.4046	0.0005
94/028		HEPA FHA 3				104.7422	104.7419				104.7421	104.7385	0.0036

METHOD 5 FILTER WEIGHTS

TARE WEIGHTS

FILTER NUMBER	DATE	1/17/95	1/18/95	1/19/95	1/20/95							TARE WEIGHT (g)
	STANDARD WT.	70.0000	70.0000	70.0000	100.0000							
	R.H. (%)	35			34							
	TEMP. (°F)	72			68							
	ANALYST	RP	DH	DAH	RP							
M001/95		72.0612	72.0616									72.0614
M002/95		72.3949	[illegible]									72.3948
M003/95		69.5988	69.5992									69.5990
M004/95		70.7837	70.7842									70.7840
M005/95		69.1239	69.1246	69.1242								69.1244
M006/95		70.2490	[illegible]									70.2495
M007/95		74.0638	74.0636									74.0637
M008/95		70.2510	70.2493	70.2452	70.2481							70.2482

FINAL WEIGHTS

FILTER NUMBER	FIELD SAMPLE NUMBER											FINAL WEIGHT (g)
	PROJECT NO.	~~[illegible]~~	727107	727107	727107	727107	727107					
	PROJECT NAME	Cath U.	Cath U	Cath U	Cath U	Cath U	Cath U					
	DATE	1/25/95	1/26/95	1/26/95	1/27/95	1/27/95	1/27/95					
	STANDARD WT.	80.0000	80.0000	80.0000		80.00	70.0000					
	R.H. (%)	24	21	22	21	21	22					
	TEMP. (°F)	67	67	68	68	67	69					
	ANALYST	RP	RP	RP	RP	RP	RP					
M001/95	HEPA-MMT 01	72.0460	72.0470	72.0469								72.0470
M002/95	HEPA-MMT-03	72.3925	72.3955	72.3941	72.3942							72.3942
M004/95	Melter-MMT-01	73.8305	73.5039	73.3469	73.1800	73.0750	72.9701	72.7751				
M005/95	Melter MMT 03	69.8657	69.8652									69.8654
M006/95	Field Blank	70.2360	70.2386	70.2355	70.2359							70.2357
M00[illegible]/95	Melter MMT-02	72.5402	72.5402									72.5402
M0[illegible]/95	Melter MMT 04	78.2936	78.2954	78.2956								78.2955
M007/95	HEPA MMT 02					74.0615	74.0619					74.0617

CALCULATION SHEET

DATE ______

ANALYST ______

CHECKED BY ______

DATE CHECKED ______

SAMPLE WEIGHT, FILTER

PROJECT NUMBER	727107	727107		727107	727107	727107	727107	727107
RUN NUMBER	HEPA-01	HEPA 03		Melter 01	Melter 03	Field Blank	HEPA 02	100 mL HNO_3
FILTER NUMBER	M001/95	M002/95	M003/95	M004/95	M005/95	M006/95	M007/95	M008/95
FILTER, FINAL WT., g	[illegible]	72.3942			69.8654	70.2357	74.0617	66.1799
FILTER TARE WT., g	[illegible]	72.3948	69.5940	70.7840	69.1244	70.2493	74.0637	66.1796
FILTER WEIGHT, g	-0.0144	-0.0006			0.7410	-0.0136	-0.0020	0.0003

RESIDUE WEIGHT, FRONT HALF ACETONE WASH

BEAKER NUMBER								
NET RESIDUE WT., g								

TOTAL WEIGHT, grams

TOTAL WEIGHT, g								

METHOD 5 FILTER WEIGHTS

* Refer back to 1991 Method 5 Filter wts (Needed re-weighing.)

TARE WEIGHTS

FILTER NUMBER												TARE WEIGHT (g)
	DATE	1/17/95	1/18/95	1/19/95	1/20/95	1/20/95	1/25/95	1/25/95	1/26/95			
	STANDARD WT.	70.0000	70.0000	70.0000	80.0000	80.0000	70.0000	70.0000	70.0000			
	R.H. (%)	35		34		36	24	24	21			
	TEMP. (°F)	72		68		69	67	67	67			
	ANALYST	RP	DAH	GH	RP	RP	RP	RP	RP			
M009/95		71.6158	71.6161									71.6160
M010/95		77.5958	77.5957	77.5954	77.5966	77.5968						77.5967
* M010/91				~~[illegible]~~			60.5514	60.5507	60.5507			60.5508
M011/91							67.1732	67.1728				67.1730
M012/91							61.9593	61.9589	[illegible]			61.9571
M008/91							66.1788	66.1784	66.1788			66.1786
M020/92							65.0599	65.0602				65.0601
M021/92							63.8113	63.8125	63.8133	63.8136		63.8135

FINAL WEIGHTS

FILTER NUMBER	FIELD SAMPLE NUMBER												FINAL WEIGHT (g)
		PROJECT NO.	~~1/26/95~~	727107	727107	727107	727107	727107	727107	727107	727107	727107	
		PROJECT NAME	Cath U	Cath U	Cath U	Cath U	Cath U	Cath U	Cath U	Cath U	C.U.	CU	
		DATE	1/26/95	1/27/95	1/27/95	1/27/95	1/28/95	1/28/95	1/29/95	1/29/95	1/30/95	1/31/95	
		STANDARD WT.	80.0000	100.0000	80.0000	80.0000	70.0000	70.0000	80.0000	70.0000	70.0000	70.0000	
		R.H. (%)	22	21	21	21	22	22	23	22	23	23	
		TEMP. (°F)	68	68	67	67	69	68	68	67	67	67	
		ANALYST	RP	RP	RP	RP	RP	RP	GDH	RP	RP	DAH	
M008/95		100 mL Nitric Acid				71.8915	66.1798	66.1800					66.1799
M													
M011/91	FHN	MELTER MMT #3	69.1480	68.9799	68.9319	68.8639	68.7451	68.6650	68.5019	68.3035	68.1513	67.9566	cont'd p.37
M012/91	FHN	MELTER-MMT- #2	64.2565	64.0554	63.9943	63.9060	63.7726	63.6726	63.4669	63.2625	63.1032	62.8903	cont'd p.37
M020/92	FHN	MELTER-MMT #4	67.1832	67.0049	66.9566	66.8889	66.7636	66.6758	66.4922	66.3431	66.1906	66.0159	cont'd p.37

CALCULATION SHEET

DATE ______

ANALYST ______

CHECKED BY ______

DATE CHECKED ______

SAMPLE WEIGHT, FILTER

PROJECT NUMBER	727107	727107		727107	727107		727107	

RUN NUMBER	Melter 02	Melter 04		FHN 03	FHN 03		FHN 04	

FILTER NUMBER	M009/95	M010/95		M011/91	M012/91	M008/91	M020/92	M021/92
FILTER, FINAL WT., g	72.5402	78.2955		67.2519	62.1443	~~[illegible]~~	65.0832	
FILTER TARE WT., g	71.6160	77.5967		67.1730	61.9591	66.1746	65.0601	63.8135
FILTER WEIGHT, g	0.9242	0.6988		0.078~~6~~ 9	0.1852		0.0231	

DAH

RESIDUE WEIGHT, FRONT HALF ACETONE WASH

BEAKER NUMBER								

NET RESIDUE WT., g								

TOTAL WEIGHT, grams

TOTAL WEIGHT, g								

METHOD 5 FILTER WEIGHTS

TARE WEIGHTS

FILTER NUMBER												TARE WEIGHT (g)
	DATE											
	STANDARD WT.											
	R.H. (%)											
	TEMP. (°F)											
	ANALYST											

* continued from page 035

FINAL WEIGHTS

FILTER NUMBER	FIELD SAMPLE NUMBER												FINAL WEIGHT (g)
		PROJECT NO.	727107	727107	927107	727107							
		PROJECT NAME	Cath U.	Cath U.	Cath U	Cath U							
		DATE	2/1/95	2/2/95	2/6/95	2/6/95							
		STANDARD WT.	70.0000	70.0000	70.0000	70.0000							
		R.H. (%)	23	23	13	17							
		TEMP. (°F)	68	68	65	65							
		ANALYST	DAH	DAH	RRP	RP							
* M011/91			67.7132	67.4785	67.2519	67.2519							67.2519
* M012/91			62.6146	62.3589	62.1444	62.1441							62.1443
* M020/92			65.7570	65.5146	65.0833	65.0831							65.0832

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LABORATORY REPORT

T J Gee
Triangle Lab of RTP, Inc
801 Capitola Drive
Durham NC 27713

Sample Received: 02/23/95
Report Date: 03/01/95
Purchase Order #: 12927

SAMPLE ID	LAB ID	ANALYSIS	RESULTS	
HEPA-MMT-1 Front Half	K-1687	Cesium	<0.1	mg/Liter
HEPA-MMT-1 Back Half	K-1688	Cesium	<0.1	mg/Liter
HEPA-MMT-2 Front Half	K-1689	Cesium	0.1	mg/Liter
HEPA-MMT-1 Back Half	K-1690	Cesium	<0.1	mg/Liter
HEPA-MMT-3 Front Half	K-1691	Cesium	0.13	mg/Liter
HEPA-MMT-3 Back Half	K-1692	Cesium	<0.1	mg/Liter
HEPA-MMT-Blank Front Half	K-1693	Cesium	0.39	mg/Liter

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Fax: (615) 546-7209

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LABORATORY REPORT

T. J. Gee

SAMPLE ID	LAB ID	ANALYSIS	RESULTS	
HEPA-MMT- Blank Back Half	K-1694	Cesium	<0.1	mg/Liter
Blank HNO_3 filter #M008/95	K-1695	Cesium	<0.1	mg/Liter
Metler-MMT- 2 Front Half	K-1696	Cesium	426	mg/Liter
Metler-MMT- 2 Back Half	K-1697	Cesium	<0.1	mg/Liter
Metler-MMT- 3 Front Half	K-1698	Cesium	335	mg/Liter
Metler-MMT- 3 Back Half	K-1699	Cesium	0.28	mg/Liter
Metler-MMT- 4 Front Half	K-1700	Cesium	397	mg/Liter
Metler-MMT- 4 Back Half	K-1701	Cesium	<0.1	mg/Liter
MB	K-1702	Cesium	<0.1	mg/Liter

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FEB 23 1995

K-1687-170
page 1 of 2

B-11

CHAIN OF CUSTODY SAMPLER'S SIGNATURE

CO.Name: Triangle Labs
Contact Name: V.G. Dee
Address: 801 Capitola Dr.
Durham, NC 27713
Project Name: 31527B
PO#: 12927
Phone #: 919/544/8354

Total No. of Containers: 11 (this page)

Analysis Wanted: Cs

SIA No.	Date	Time	Comp	Grab	Sample I.D.#	#of Cont.	Cs						Remarks
					Hepa - MMT-1 Front Half	1	✓						7-10 working day
					Hepa - MMT-1 Back Half	1	✓						TAT
					Hepa - MMT-2 Front Half	1	✓						
					Hepa - MMT-2 Back Half	1	✓						Each sample ID
					Hepa - MMT-3 Front Half	1	✓						is a separate
					Hepa - MMT-3 Back Half	1	✓						sample for Cs.
					Hepa - MMT-Blank Front Half	1	✓						
					Hepa - MMT-Blank Back Half	1	✓						
					Blank HNO3 Filter	1	✓						
					Melter - MMT-2 Front Half	1	✓						
					Melter - MMT-2 Back Half	1	✓						

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
		[signature]			
Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.

Received for Laboratory By/Signature	Date/Time	Send Samples To:
		Triangle Laboratories of RTP, Inc. 801 Capitola Drive Durham, North Carolina 27713

COC/DLH REVISION 5/23/94

WHC-SD-WM-VI-029, Rev. 0

page 2 of 2

CHAIN OF CUSTODY SAMPLER'S SIGNATURE ______

C0.Name: Triangle Labs Contact Name: V.G. Dee

Address: 801 Capitola Dr. Project Name: 31527B

Durham, NC 27713 PO#: 12927

Phone #: 919/544/8354

Total No. of Containers

Analysis Wanted

Cs

SIA No.	Date	Time	Comp	Grab	Sample I.D.#	#of Cont.	Cs						Remarks
					Melter - MMT-3 Front Half	1	✓						
					Melter - MMT-3 Back Half	1	✓						
					Melter - MMT-4 Front Half	1	✓						
					Melter - MMT-4 Back Half	1	✓						
					Method Blank	1	✓						

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
		[signature]			
Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.

Received for Laboratory By/Signature	Date/Time	Send Samples To: Triangle Laboratories of RTP, Inc. 801 Capitola Drive Durham, North Carolina 27713

COC/DLH REVISION 5/23/94

LABORATORY REPORT

T J Gee
Triangle Lab of RTP, Inc
801 Capitola Drive
Durham NC 27713

Sample Received: 02/23/95
Report Date: 03/01/95
Purchase Order #: 12927

SAMPLE ID	LAB ID	ANALYSIS	RESULTS	
HEPA-MMT-1 Front Half	K-1687	Cesium	<0.1	mg/Liter
HEPA-MMT-1 Back Half	K-1688	Cesium	<0.1	mg/Liter
HEPA-MMT-2 Front Half	K-1689	Cesium	0.1	mg/Liter
HEPA-MMT-1 Back Half	K-1690	Cesium	<0.1	mg/Liter
HEPA-MMT-3 Front Half	K-1691	Cesium	0.13	mg/Liter
HEPA-MMT-3 Back Half	K-1692	Cesium	<0.1	mg/Liter
HEPA-MMT- Blank Front Half	K-1693	Cesium	0.39	mg/Liter

Page 1 of 2

LABORATORY REPORT

T. J. Gee

SAMPLE ID	LAB ID	ANALYSIS	RESULTS	
HEPA-MMT-Blank Back Half	K-1694	Cesium	<0.1	mg/Liter
Blank HNO_3 filter #M008/95	K-1695	Cesium	<0.1	mg/Liter
Metler-MMT-2 Front Half	K-1696	Cesium	426	mg/Liter
Metler-MMT-2 Back Half	K-1697	Cesium	<0.1	mg/Liter
Metler-MMT-3 Front Half	K-1698	Cesium	335	mg/Liter
Metler-MMT-3 Back Half	K-1699	Cesium	0.28	mg/Liter
Metler-MMT-4 Front Half	K-1700	Cesium	397	mg/Liter
Metler-MMT-4 Back Half	K-1701	Cesium	<0.1	mg/Liter
MB	K-1702	Cesium	<0.1	mg/Liter

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Page 2 of 2

TRIANGLE LABORATORIES of RTP, INC.

801 Capitola Drive
Durham, NC 27713
919-544-5729

P.O. Box 13485
Research Triangle Park, NC 27709
Fax # 919-544-5491

CASE NARRATIVE

Analysis of Samples for the Presence of Trace Metals

Client: Engineering-Science, Inc.

TLI Project #: 31527A

Date: March 1, 1995

1

Overview

Six multi-metal train samples, a blank multi-metal train sample and a blank HNO3 filter sample were analyzed for boron (B), chromium (Cr), potassium (K), molybdenum (Mo), sodium (Na) and strontium (Sr). For all analyses, the samples were prepared following the guidelines of Method 29. The samples were analyzed according to the protocols described in SW 846 Methods 6010A and 7000A series. Results reported relate only to the items tested.

QC Remarks

The release of this set of data by Triangle Laboratories, Inc. was authorized by the Quality Control Chemist who has reviewed each sample data package individually following a series of inspections/reviews. When applicable, general deviations from acceptable QC requirements are identified below and comments are made on the effects of these deviations upon the validity and reliability of the results. Specific QC issues associated with this particular project are:

Sample Receipt:

Six multi-metal train samples, a blank multi-metal train sample and a blank HNO3 filter sample were received on January 31, 1995 and February 08, 1995 without coolant and in good condition. All components except filters were received on January 31, 1995 and all filters of all trains were received on February 08, 1995.

The sample IDs on the sample containers did not match the sample IDs on the client's chain of custody. The sample IDs on TLI's chain of custody corresponds to the IDs on the sample containers.

The Sample container for the filter M007/95, the filter from the HEPA-MMT-2 train was received broken.

Sample Preparation:

Laboratory documentation of the sample preparation is included in the data package.

Instrumentation:

Boron (B), chromium (Cr), molybdenum (Mo), and strontium (Sr) concentrations were determined by Inductively Coupled Plasma Emission Spectroscopy (ICP).

Potassium (K) and sodium (Na) concentrations were analyzed by Flame Atomic Absorption (FLAA).

Data Review:

The recoveries for the post-digestion spike (PDS) for B for the samples HEPA-MMT-1 and FH MELTER-MMT-2 BH cannot be considered valid qualifiers due to the fact that the respective spike concentrations added were insignificant in comparison to the levels of this analyte present in the native samples.

The recoveries for the post-digestion spike (PDS) for Sr for the sample HEPA-MMT-1 FH cannot be considered a valid qualifier due to the fact that the respective spike concentrations added were insignificant in comparison to the levels of this analyte present in the native sample.

The recoveries for all post-digestion spikes (PDS) for Na and K cannot be considered valid qualifiers due to the fact that the respective spike concentrations added were insignificant in comparison to the levels of these analytes present in the native sample.

Post-digestion spikes were not performed for B, Cr, Mo, and Sr for the sample MELTER-MMT-2 FH due to the high levels of these analytes in the native sample.

The serial dilution results for Cr for the sample MELTER-MMT-2 FH, K for the samples HEPA-MMT-1 BH and MELTER-MMT-2 BH, and Na for the sample MELTER-MMT-2 FH demonstrated RPDs outside the QC control criteria of 10.0 percent, which indicates the presence of a significant amount of interferents specific to these analytes in the native sample matrix.

QC requirements:

All analytes found in the method blank (MB) are detected at a level equal to or less than the respective Instrument Detection Limit (IDL) with the exception of Na. The concentration of Na in the Method Blank was slightly greater than the respective IDL and should not significantly affect appropriate the sample results.

The analytical duplicates/duplicate analyses for analytes analyzed by FLAA cannot be considered valid qualifiers if the concentrations of the analytes in the original and/or duplicate sample are not at least five times the respective IDLs. The RPDs for these analyses are indicated by "<IDL" in the Analyte Summary Reports.

The analytical duplicates/duplicate analyses for analytes analyzed by ICP cannot be considered valid qualifiers if the concentrations of the analytes in the original and/or duplicate sample are not at least ten times the respective IDLs. The RPDs for these analyses are indicated by "<IDL" in the Analyte Summary Reports.

For analytical duplicates/duplicate analyses which are valid qualifiers, the quality control RPD is +/- 20.0 percent. If RPDs are outside this range, interferences are suspected.

The serial dilution analyses for analytes analyzed by FLAA cannot be considered valid qualifiers if the concentrations of the analytes in the serial dilution sample are not at least five times the respective IDLs. The serial dilution RPDs for these analyses are indicated by "<IDL" in the Analyte Summary Reports.

The serial dilution analyses for analytes analyzed by ICP cannot be considered valid qualifiers if the concentrations of the analytes in the serial dilution sample are less than ten times the respective IDLs. The serial dilution RPDs for these analyses are indicated by "<IDL" in the Analyte Summary Reports.

For serial dilution analyses which are valid qualifiers, the quality control RPD is ten percent. If RPDs are outside this range, interferences are suspected.

The quality control range for percent recoveries of pre-digestion spiked samples is 80-120 percent. If recoveries are outside this range, a matrix effect is suspected.

The quality control range for percent recoveries of post-digestion spiked samples analyzed by ICP is 75-125 percent. If recoveries are outside this range, a matrix effect is suspected.

By our interpretation, the analytical data in this project are valid based on the guidelines of EPA Methods 6010A and 7000A series. Any specific QC concerns or problems have been discussed in the QC REMARKS section with emphasis on their effect on the data. Should Engineering-Science, Inc. have any questions or comments regarding this data package, please feel free to contact Hani Karam, Air Quality Client Services Manager, at (919) 544-8351.

For Triangle Laboratories of RTP, Inc.,

Report Preparation

Jerry P. Roach 03/01/95
Report Preparation Chemist

Quality Control

Show-Jon Hsieh 03/01/95
Report Preparation Chemist

The number of pages in this data package is: 109

ABBREVIATIONS

BH = Back Half
CCB = Continuing Calibration Blank
CCV = Continuing Calibration Verification
CHECK HS = Check High Standard
D = Analytical Duplicate (Prepared Duplicate)
DA = Duplicate Analysis
FH = Front Half
FV = Final Digestate Volume
ICB = Initial Calibration Blank
ICV = Initial Calibration Verification
ICSA = Interference Check Solution (Solution A)
- I = Initial
- F = Final
- Solution A contains common interferents

ICSAB = Interference Check Solution (Solution AB)
- I = Initial
- F = Final
- Solution AB contains common interferents in addition to the analyte of interest.

IDL = Instrument Detection Limit
L = Serial Dilution
LCS = Laboratory Control Spike Sample
LCSD = Laboratory Control Spike Sample Duplicate
MB = Method Blank
MBD = Method Blank Duplicate
MPV = Mercury Preparation Volume
MS = Pre-digestion Spike
MSD = Pre-digestion Spike Duplicate
N/A = Not Applicable
N/Av = Not Available
N/V = Not Valid
PDS = Post-digestion Spike
%REC = Percent Recovery
RPD = Relative Percent Difference
T = Analytical Triplicate (Prepared Triplicate; for Hg analysis by Method 7471 only)
TV = Total Sample Volume
< = Analyte concentration in the sample is less than the respective IDL

CALCULATIONS FOR MULTI-METALS TRAIN SAMPLES

RESULTS FOR TRACE METALS (except mercury):

$$\text{RESULT in } \mu g \text{ (Front Half)} = \frac{\mu g/L * \text{ml FV} * DF}{1000}$$

ml FV = final volume in ml
DF = Dilution Factor

$$\text{RESULT in } \mu g \text{ (Back Half \& Impingers)} = \frac{\mu g/L * (\text{ml TV/ml used}) * \text{ml FV} * DF}{1000}$$

ml FV = final volume in ml
ml TV = total volume in ml
DF = Dilution Factor

RESULTS FOR MERCURY (Hg):

$$\text{RESULT in } \mu g \text{ (Front Half)} = \mu g/L * (\text{ml FV/ml aliquot}) * MPV * DF$$

MPV (mercury preparation volume) = 0.1 L
ml FV = final volume in ml
DF = Dilution Factor

$$\text{RESULT in } \mu g \text{ (Back Half \& Impingers)} = \mu g/L * (\text{ml TV/ml aliquot}) * MPV * DF$$

MPV (mercury preparation volume) = 0.1 L
ml TV = total volume in ml
DF = Dilution Factor

%REC (Percent Recovery) for MS/MSD and Hg spikes:

$$\%REC = \frac{\text{Spike sample results - original sample results}}{\text{true spike sample results}} * 100$$

%REC (Percent Recovery) for LCS/LCSD and PDS:

$$\%REC = \frac{\text{Spike sample } \mu g/L \text{ conc. - original sample } \mu g/L \text{ conc.}}{\text{spike conc. } (\mu g/L)} * 100$$

RPDs:

$$RPD = \frac{|\text{Result 2 - Result 1}|}{(\text{Result 2 + Result 1})/2} * 100$$

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ICP MMTL ANALYTE SUMMARY REPORT

CLIENT:	Engineering-Science, Inc.	ANALYTE:	B
DATE(S) RECEIVED:	01/31/95 & 02/08/95	ug/L IDL:	50.7
DATE(S) ANALYZED:	02/27/95	Analysis Method:	6010A
DATE REPORTED:	02/28/95	Instrument: P E Plasma 1000	
TLI PROJECT #:	31527A	Pre-digestion	
DATA FILE(S):	BB855	Spike Conc. (ug/L):	1050
		Post-digestion	
		Spike Conc. (ug/L):	1050

Client Sample ID	TLI Sample ID	Peak Int.	ug/L CONC	ml TV	ml FV	ml Used	DIL FACTOR	Total ug RESULT	RPD	% REC.
HEPA-MMT-1 FH	95-84-4	125.697	304.67	N/A	100	N/A	1	30.5	–	–
HEPA-MMT-1 BH	95-84-3	97.2124	229.97	300	100	300	1	23.0	–	–
HEPA-MMT-2 FH	95-84-5	112.086	268.98	N/A	100	N/A	1	26.9	–	–
HEPA-MMT-2 BH	95-84-6	117.208	282.41	310	100	310	1	28.2	–	–
HEPA-MMT-3 FH	95-84-10	181.583	451.23	N/A	100	N/A	1	45.1	–	–
HEPA-MMT-3 BH	95-84-11	308.255	783.41	300	100	300	1	78.3	–	–
HEPA-MMT-BLANK FH	95-84-2	150.017	368.45	N/A	100	N/A	1	36.8	–	–
HEPA-MMT-BLANK BH	95-84-1	9.134	-1.01	102	100	102	1	< 5.07	–	–
BLANK HNO3 FILTER #M008/95	95-204-8	41.1197	82.87	N/A	100	N/A	1	8.29	–	–
MELTER-MMT-2 FH	95-84-8 X200	720.521	1864.54	N/A	100	N/A	200	37291	–	–
MELTER-MMT-2 BH	95-84-9 X5	2144.86	5599.72	530	100	530	5	2800	–	–
MELTER-MMT-3 FH	95-84-12 X200	493.57	1269.38	N/A	100	N/A	200	25388	–	–
MELTER-MMT-3 BH	95-84-13 X5	3261.65	8528.42	500	100	500	5	4264	–	–
MELTER-MMT-4 FH	95-84-14 X100	551.76	1421.98	N/A	100	N/A	100	14220	–	–
MELTER-MMT-4 BH	95-84-15 X100	266.003	672.61	570	100	570	100	6726	–	–
HEPA-MMT-2 FH DA	95-84-5 DA	119.161	287.53	N/A	100	N/A	1	28.8	<IDL	–
HEPA-MMT-2 BH DA	95-84-6 DA	119.961	289.63	310	100	310	1	29.0	<IDL	–
MELTER-MMT-3 FH DA	95-84-12 X200 DA	486.382	1250.53	N/A	100	N/A	200	25011	1.50%	–
MELTER-MMT-3 BH DA	95-84-13 X5 DA	3230.15	8445.79	500	100	500	5	4223	0.974%	–
HEPA-MMT-1 FH L	95-84-4 L	33.5113	62.92	N/A	100	N/A	5	31.5	<IDL	–
HEPA-MMT-1 BH L	95-84-3 L	24.9578	40.49	300	100	300	5	< 25.4	<IDL	–
MELTER-MMT-2 FH L	95-84-8 L X200	145.984	357.87	N/A	100	N/A	1000	35787	<IDL	–
MELTER-MMT-2 BH L	95-84-9 L X5	455.321	1169.08	530	100	530	25	2923	4.29%	–
HEPA-MMT-1 FH PDS	95-84-4 PDS	606.744	1566.17	–	–	–	–	–	–	120%
HEPA-MMT-1 BH PDS	95-84-3 PDS	469.141	1205.32	–	–	–	–	–	–	92.9%
MELTER-MMT-2 BH PDS	95-84-9 PDS	9814.40	25712.40	–	–	–	–	–	–	-218%
Method Blank	31527A-MB	4.5322	-13.08	–	–	–	–	–	–	–
LCS	31527A-LCS	415.471	1064.57	–	–	–	–	–	–	101%
	blank	5.2253	0.0							
	#2 standard	88.9426	200.0							
	#3 standard	203.715	500.0							
	#4 standard	388.45	1000.0				Corr. Coeff.=	0.99972		
	CHECK HS	384.866	984.31							
	ICV	198.743	496.22	(500ug/L)						
	ICB	6.0636	-9.01							
	ICSABI	428.981	1100.00	(1000ug/L)						
	CCV1	194.168	484.23	(500ug/L)						
	CCB1	3.6298	-15.44							
	CCV2	217.139	544.47	(500ug/L)						
	CCB2	20.622	29.12							
	ICSABF	423.867	1086.59	(1000ug/L)						
	CCV3	211.116	528.68	(500ug/L)						
	CCB3	16.3166	17.83							

ICP MMTL ANALYTE SUMMARY REPORT

:LIENT:	Engineering-Science, Inc.	ANALYTE:	Cr
ATE(S) RECEIVED:	01/31/95 & 02/08/95	ug/L IDL:	8.0
DATE(S) ANALYZED:	02/27/95	Analysis Method:	6010A
ATE REPORTED:	02/28/95	Instrument: P E Plasma 1000	
LI PROJECT #:	31527A	Pre-digestion	
DATA FILE(S):	BB856	Spike Conc. (ug/L):	160
		Post-digestion	
		Spike Conc. (ug/L):	160

Client Sample ID	TLI Sample ID	Peak Int.	ug/L CONC	ml TV	ml FV	ml Used	DIL FACTOR	Total ug RESULT	RPD	% REC.
IEPA-MMT-1 FH	95-84-4	225.218	18.52	N/A	100	N/A	1	1.85	–	–
HEPA-MMT-1 BH	95-84-3	161.381	7.20	300	100	300	1	< 0.800	–	–
HEPA-MMT-2 FH	95-84-5	301.592	27.68	N/A	100	N/A	1	2.77	–	–
IEPA-MMT-2 BH	95-84-6	115.342	0.47	310	100	310	1	< 0.800	–	–
HEPA-MMT-3 FH	95-84-10	405.57	42.87	N/A	100	N/A	1	4.29	–	–
HEPA-MMT-3 BH	95-84-11	141.691	4.32	300	100	300	1	< 0.800	–	–
IEPA-MMT-BLANK FH	95-84-2	423.738	45.53	N/A	100	N/A	1	4.55	–	–
IEPA-MMT-BLANK BH	95-84-1	65.7759	-6.77	102	100	102	1	< 0.800	–	–
BLANK HNO3 FILTER #M008/95	95-204-6	131.696	2.86	N/A	100	N/A	1	< 0.800	–	–
IELTER-MMT-2 FH	95-84-8 X50	3858.49	547.34	N/A	100	N/A	50	2737	–	–
IELTER-MMT-2 BH	95-84-9	253.622	20.67	530	100	530	1	2.07	–	–
MELTER-MMT-3 FH	95-84-12 X50	3282.63	463.20	N/A	100	N/A	50	2316	–	–
IELTER-MMT-3 BH	95-84-13	285.565	25.34	500	100	500	1	2.53	–	–
IELTER-MMT-4 FH	95-84-14 X100	1673.60	228.13	N/A	100	N/A	100	2281	–	–
MELTER-MMT-4 BH	95-84-15	92.4048	-2.88	570	100	570	1	< 0.800	–	–
IEPA-MMT-2 FH DA	95-84-5 DA	289.474	25.91	N/A	100	N/A	1	2.59	<IDL	–
IEPA-MMT-2 BH DA	95-84-6 DA	130.289	2.66	310	100	310	1	< 0.800	<IDL	–
MELTER-MMT-3 FH DA	95-84-12 X50 DA	3305.36	466.52	N/A	100	N/A	50	2333	0.714%	–
'IELTER-MMT-3 BH DA	95-84-13 DA	338.918	33.14	500	100	500	1	3.31	<IDL	–
IEPA-MMT-1 FH L	95-84-4 L	72.8925	-5.73	N/A	100	N/A	5	< 4.00	<IDL	–
HEPA-MMT-1 BH L	95-84-3 L	96.9625	-2.21	300	100	300	5	< 4.00	<IDL	–
MELTER-MMT-2 FH L	95-84-8 X50 L	769.97	96.11	N/A	100	N/A	250	2403	13.0%	–
IELTER-MMT-2 BH L	95-84-9 L	81.244	-4.51	530	100	530	5	< 4.00	<IDL	–
HEPA-MMT-1 FH PDS	95-84-4 PDS	1382.68	185.63	–	–	–	–	–	–	106%
HEPA-MMT-1 BH PDS	95-84-3 PDS	1191.56	157.70	–	–	–	–	–	–	98.6%
IELTER-MMT-2 BH PDS	95-84-9 PDS	1193.66	158.01	–	–	–	–	–	–	85.8%
Method Blank	31527A-MB	74.0465	-5.56	–	–	–	–	–	–	–
LCS	31527A-LCS	1174.34	155.19	–	–	–	–	–	–	97.0%

	Peak Int.	CONC		
blank	111.166	0.0		
#2 standard	773.237	100.0		
#3 standard	3604.88	500.0		
#4 standard	6924.15	1000.0		Corr. Coeff.= 0.99989
CHECK HS	7167.24	1030.73		
ICV	3365.46	475.30	(500ug/L)	
ICB	65.241	-6.85		
ICSABI	6297.76	903.71	(1000ug/L)	
CCV1	3357.74	474.18	(500ug/L)	
CCB1	89.6051	-3.29		
CCV2	3253.49	458.95	(500ug/L)	
CCB2	68.4439	-6.38		
ICSABF	6490.91	931.92	(1000ug/L)	
CCV3	3451.18	487.83	(500ug/L)	
CCB3	82.6962	-4.27		

ICP MMTL ANALYTE SUMMARY REPORT

'LIENT:	Engineering-Science, Inc.	ANALYTE:	Mo
DATE(S) RECEIVED:	01/31/95 & 02/08/95	ug/L IDL:	49
DATE(S) ANALYZED:	02/27/95	Analysis Method:	6010A
ATE REPORTED:	02/28/95	Instrument: P E Plasma 1000	
LI PROJECT #:	31527A	Pre-digestion Spike Conc. (ug/L):	1000
DATA FILE(S):	BB855	Post-digestion Spike Conc. (ug/L):	1000

'lient Sample ID	TLI Sample ID	Peak Int.	ug/L CONC	ml TV	ml FV	ml Used	DIL FACTOR	Total ug RESULT	RPD	% REC.
EPA-MMT-1 FH	95-84-4	134.57	144.19	N/A	100	N/A	1	14.4	–	–
HEPA-MMT-1 BH	95-84-3	36.1083	5.87	300	100	300	1	< 4.90	–	–
'EPA-MMT-2 FH	95-84-5	144.673	158.38	N/A	100	N/A	1	15.8	–	–
EPA-MMT-2 BH	95-84-6	30.3541	-2.22	310	100	310	1	< 4.90	–	–
HEPA-MMT-3 FH	95-84-10	141.628	154.11	N/A	100	N/A	1	15.4	–	–
'EPA-MMT-3 BH	95-84-11	26.1281	-8.15	300	100	300	1	< 4.90	–	–
EPA-MMT-BLANK FH	95-84-2	168.636	192.05	N/A	100	N/A	1	19.2	–	–
HEPA-MMT-BLANK BH	95-84-1	37.2906	7.53	102	100	102	1	< 4.90	–	–
LANK HNO3 FILTER #M008/95	95-204-8	162.827	183.89	N/A	100	N/A	1	18.4	–	–
IELTER-MMT-2 FH	95-84-8	18020.40	25271.00	N/A	100	N/A	1	2527	–	–
MELTER-MMT-2 BH	95-84-9	30.2727	-2.33	530	100	530	1	< 4.90	–	–
IELTER-MMT-3 FH	95-84-12	15571.60	21830.80	N/A	100	N/A	1	2183	–	–
IELTER-MMT-3 BH	95-84-13	34.5402	3.66	500	100	500	1	< 4.90	–	–
MELTER-MMT-4 FH	95-84-14	15994.20	22424.50	N/A	100	N/A	1	2242	–	–
'IELTER-MMT-4 BH	95-84-15	49.2251	24.29	570	100	570	1	< 4.90	–	–
EPA-MMT-2 FH DA	95-84-5 DA	152.641	169.58	N/A	100	N/A	1	17.0	<IDL	–
HEPA-MMT-2 BH DA	95-84-6 DA	25.4275	-9.14	310	100	310	1	< 4.90	<IDL	–
'IELTER-MMT-3 FH DA	95-84-12 DA	15438.40	21643.60	N/A	100	N/A	1	2164	0.861%	–
IELTER-MMT-3 BH DA	95-84-13 DA	40.8231	12.49	500	100	500	1	< 4.90	<IDL	–
HEPA-MMT-1 FH L	95-84-4 L	52.3585	28.70	N/A	100	N/A	5	< 24.5	<IDL	–
HEPA-MMT-1 BH L	95-84-3 L	38.6101	9.38	300	100	300	5	< 24.5	<IDL	–
IELTER-MMT-2 FH L	95-84-8 L	3854.55	5370.18	N/A	100	N/A	5	2685	6.06%	–
.IELTER-MMT-2 BH L	95-84-9 L	25.9486	-8.41	530	100	530	5	< 24.5	<IDL	–
HEPA-MMT-1 FH PDS	95-84-4 PDS	837.194	1131.27	–	–	–	–	–	–	98.7%
IEPA-MMT-1 BH PDS	95-84-3 PDS	707.968	949.75	–	–	–	–	–	–	95.0%
IELTER-MMT-2 BH PDS	95-84-9 PDS	650.981	869.67	–	–	–	–	–	–	87.0%
Method Blank	31527A-MB	30.5099	-2.00	–	–	–	–	–	–	–
CS	31527A-LCS	705.859	946.76	–	–	–	–	–	–	94.7%

	Peak Int.	ug/L CONC	
blank	29.2196	0.0	
#2 standard	176.799	200.0	
#3 standard	389.267	500.0	
#4 standard	742.543	1000.0	
CHECK HS	739.322	993.77	
ICV	376.734	484.39	(500ug/L)
ICB	33.6009	2.34	
ICSABI	697.246	934.66	(1000ug/L)
CCV1	380.747	490.03	(500ug/L)
CCB1	20.7677	-15.66	
CCV2	359.749	460.53	(500ug/L)
CCB2	30.4329	-2.11	
ICSABF	658.01	879.54	(1000ug/L)
CCV3	364.618	467.37	(500ug/L)
CCB3	18.1737	-19.33	

Corr. Coeff.= 0.99997

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ICP MMTL ANALYTE SUMMARY REPORT

CLIENT:	Engineering-Science, Inc.	ANALYTE:	Sr
DATE(S) RECEIVED:	01/31/95 & 02/08/95	ug/L IDL:	2.4
DATE(S) ANALYZED:	02/27/95	Analysis Method:	6010A
DATE REPORTED:	02/28/95	Instrument: P E Plasma 1000	
TLI PROJECT #:	31527A	Pre-digestion	
DATA FILE(S):	BB856	Spike Conc. (ug/L):	500
		Post-digestion	
		Spike Conc. (ug/L):	50

Client Sample ID	TLI Sample ID	Peak Int.	ug/L CONC	ml TV	ml FV	ml Used	DIL FACTOR	Total ug RESULT	RPD	% REC.
HEPA-MMT-1 FH	95-84-4	3699.88	15.63	N/A	100	N/A	1	1.56	–	–
HEPA-MMT-1 BH	95-84-3	688.929	0.67	300	100	300	1	< 0.240	–	–
HEPA-MMT-2 FH	95-84-5	4024.93	17.25	N/A	100	N/A	1	1.72	–	–
HEPA-MMT-2 BH	95-84-6	735.859	0.90	310	100	310	1	< 0.240	–	–
HEPA-MMT-3 FH	95-84-10	5183.00	23.01	N/A	100	N/A	1	2.30	–	–
HEPA-MMT-3 BH	95-84-11	363.32	-0.95	300	100	300	1	< 0.240	–	–
HEPA-MMT-BLANK FH	95-84-2	4054.90	17.40	N/A	100	N/A	1	1.74	–	–
HEPA-MMT-BLANK BH	95-84-1	227.008	-1.63	102	100	102	1	< 0.240	–	–
BLANK HNO3 FILTER #M008/95	95-204-8	3419.99	14.24	N/A	100	N/A	1	1.42	–	–
MELTER-MMT-2 FH	95-84-8 X50	28374.30	128.32	N/A	100	N/A	50	642	–	–
MELTER-MMT-2 BH	95-84-9	769.947	1.07	530	100	530	1	< 0.240	–	–
MELTER-MMT-3 FH	95-84-12 X50	21762.10	105.40	N/A	100	N/A	50	527	–	–
MELTER-MMT-3 BH	95-84-13	1004.35	2.24	500	100	500	1	< 0.240	–	–
MELTER-MMT-4 FH	95-84-14 X100	7647.32	35.25	N/A	100	N/A	100	353	–	–
MELTER-MMT-4 BH	95-84-15	373.889	-0.90	570	100	570	1	< 0.240	–	–
HEPA-MMT-2 FH DA	95-84-5 DA	4057.24	17.41	N/A	100	N/A	1	1.74	<IDL	–
HEPA-MMT-2 BH DA	95-84-6 DA	725.228	0.85	310	100	310	1	< 0.240	<IDL	–
MELTER-MMT-3 FH DA	95-84-12 X50 DA	21443.40	103.62	N/A	100	N/A	50	519	1.51%	–
MELTER-MMT-3 BH DA	95-84-13 DA	1001.13	2.22	500	100	500	1	< 0.240	<IDL	–
HEPA-MMT-1 FH L	95-84-4 L	930.913	1.87	N/A	100	N/A	5	< 1.20	<IDL	–
HEPA-MMT-1 BH L	95-84-3 L	332.055	-1.10	300	100	300	5	< 1.20	<IDL	–
MELTER-MMT-2 FH L	95-84-8 X50 L	5325.13	23.71	N/A	100	N/A	250	593	<IDL	–
MELTER-MMT-2 BH L	95-84-9 L	214.434	-1.69	530	100	530	5	< 1.20	<IDL	–
HEPA-MMT-1 FH PDS	95-84-4 PDS	13510.00	64.39	–	–	–	–	–	–	97.5%
HEPA-MMT-1 BH PDS	95-84-3 PDS	9446.33	44.19	–	–	–	–	–	–	88.4%
MELTER-MMT-2 BH PDS	95-84-9 PDS	9884.96	46.37	–	–	–	–	–	–	92.7%
Method Blank	31527A-MB	159.844	-1.98	–	–	–	–	–	–	–
LCS	31527A-LCS	98860.00	488.56	–	–	–	–	–	–	97.7%

blank	1088.81	0.0	
#2 standard	19769.80	100.0	
#3 standard	101657.00	500.0	
#4 standard	201612.00	1000.0	Corr. Coeff. = 0.99997
CHECK HS	202938.00	1005.81	
ICV	93159.50	460.23	(500ug/L)
ICB	137.949	-2.07	
ICSABI	177753.00	880.64	(1000ug/L)
CCV1	97068.00	479.66	(500ug/L)
CCB1	3.00	-1.93	
CCV2	98694.20	487.74	(500ug/L)
CCB2	102.867	-2.24	
ICSABF	191948.00	951.19	(1000ug/L)
CCV3	97213.90	480.38	(500ug/L)
CCB3	131.901	-2.10	

FLAA MMTL ANALYTE SUMMARY REPORT

:LIENT:	Engineering-Science, Inc.	ANALYTE:	K	
DATE(S) RECEIVED:	01/31/95 & 02/08/95	ug/L IDL:	38	
ᐧATE(S) ANALYZED:	02/17/95 & 02/20/95	Analysis Method:		7610A
ATE REPORTED:	02/28/95	Instrument: P E Zeeman		5100
TLI PROJECT #:	31527A	Pre-digestion		
DATA FILE(S):	AB037 & AB039	Spike Conc.:	1000	ug/L
		Post-digestion		
		Spike Conc.:	1000	ug/L

:lient Sample ID	TLI Sample ID	Mean ABSORB	ug/L CONC	ml TV	ml FV	ml Used	DIL FACTOR	Total ug RESULT	RPD	% REC.
HEPA-MMT-1 FH	95-84-4	0.2895	750.00	N/A	100	N/A	1	75.0	--	--
IEPA-MMT-1 BH	95-84-3	0.3459	904.00	300	100	300	1	90.4	--	--
HEPA-MMT-2 FH	95-84-5	0.4192	1109.00	N/A	100	N/A	1	111	--	--
HEPA-MMT-2 BH	95-84-6	0.3522	921.00	310	100	310	1	92.1	--	--
HEPA-MMT-3 FH	95-84-10	0.4825	1289.00	N/A	100	N/A	1	129	--	--
HEPA-MMT-3 BH	95-84-11	0.2242	575.00	300	100	300	1	57.5	--	--
IEPA-MMT-BLANK FH	95-84-2 X20	0.1385	447.00	N/A	100	N/A	20	894	--	--
HEPA-MMT-BLANK BH	95-84-1	0.1223	393.00	102	100	102	1	39.3	--	--
LANK HNO3 FILTER #M008/95	95-204-8	0.1854	472.00	N/A	100	N/A	1	47.2	--	--
MELTER-MMT-2 FH	95-84-8 X500	0.2811	727.00	N/A	100	N/A	500	36350	--	--
IELTER-MMT-2 BH	95-84-9	0.4117	1088.00	530	100	530	1	109	--	--
MELTER-MMT-3 FH	95-84-12	0.0023	6.00	N/A	100	N/A	1	< 3.80	--	--
IELTER-MMT-3 BH	95-84-13	0.5351	1442.00	500	100	500	1	144	--	--
MELTER-MMT-4 FH	95-84-14	-0.0001	0.00	N/A	100	N/A	1	< 3.80	--	--
MELTER-MMT-4 BH	95-84-15	0.1520	385.00	570	100	570	1	38.5	--	--
HEPA-MMT-1 FH DA	95-84-4 DA	0.2926	758.00	N/A	100	N/A	1	75.8	1.06%	--
IEPA-MMT-2 FH DA	95-84-5 DA	0.4173	1103.00	N/A	100	N/A	1	110	0.542%	--
IEPA-MMT-2 BH DA	95-84-6 DA	0.3530	924.00	310	100	310	1	92.4	0.325%	--
MELTER-MMT-3 FH DA	95-84-12 DA	-0.0003	-1.00	N/A	100	N/A	1	< 3.80	<IDL	--
IELTER-MMT-3 BH DA	95-84-13 DA	0.5391	1453.00	500	100	500	1	145	0.760%	--
HEPA-MMT-1 FH L	95-84-4 L	0.0674	169.00	N/A	100	N/A	5	84.5	<IDL	--
HEPA-MMT-1 BH L	95-84-3 L	0.0834	209.00	300	100	300	5	105	14.5%	--
IELTER-MMT-2 FH L	95-84-8 L	1.3022	0.00	N/A	100	N/A	5	< 19.0	<IDL	--
MELTER-MMT-2 BH L	95-84-9 L	0.1014	255.00	530	100	530	5	128	15.6%	--
IEPA-MMT-1 FH PDS	95-84-4 PDS	0.6421	1760.00	--	--	--	--	--	--	101%
IEPA-MMT-1 BH PDS	95-84-3 PDS	0.6874	1897.00	--	--	--	--	--	--	99.3%
Iethod Blank	31527A-MB	0.0021	7.00	--	--	--	--	--	--	--
.CS	31527A-LCS	0.3032	1024.00	--	--	--	--	--	--	102%

FLAA MMTL ANALYTE SUMMARY REPORT

CLIENT:	Engineering-Science, Inc.	ANALYTE:	K
DATE(S) RECEIVED:	01/31/95 & 02/08/95	ug/L IDL:	38
DATE(S) ANALYZED:	02/17/95 & 02/20/95	Analysis Method:	7610A
DATE REPORTED:	02/28/95	Instrument: P E Zeeman	5100
TLI PROJECT #:	31527A	Pre-digestion Spike Conc.:	1000 ug/L
DATA FILE(S):	AB037 & AB039	Post-digestion Spike Conc.:	1000 ug/L

Client Sample ID	TLI Sample ID	Mean ABSORB	ug/L CONC	ml TV	ml FV	ml Used	DIL FACTOR	Total ug RESULT	RPD	% REC.

The following calibration data was used for the analysis of all samples with the exception of 31527A-MB, 31527A-LCS, HEPA-MMT-BLANK BH and HEPA-MMT-BLANK FH.

STD 1=100ug/L	0.0403	100.0	
STD 2=500ug/L	0.1954	500.0	
STD 3=1000ug/L	0.3786	1000.0	Corr. Coeff.= 0.99997
STD 4=1500ug/L	0.5586	1500.0	
STD 5=2000ug/L	0.7195	2000.0	
ICV-800	0.3083	801.00	
ICB	0.0006	1.00	
CCV-1500	0.5562	1503.00	
CCB	0.0049	12.00	
CCV-1500	0.5385	1451.00	
CCB	0.0055	14.00	
CCV-1500	0.5429	1464.00	
CCB	0.0051	13.00	
CCV-1500	0.5541	1497.00	
CCB	0.0059	15.00	
CCV-1500	0.5561	1503.00	
CCB	0.0058	14.00	

The following calibration data was used for the analysis of 31527A-MB, 31527A-LCS, HEPA-MMT-BLANK FH and HEPA-MMT-BLANK BH.

STD 1=100ug/L	0.0319	100.0	
STD 2=500ug/L	0.1542	500.0	
STD 3=1000ug/L	0.2963	1000.0	
STD 4=1500ug/L	0.4287	1500.0	
STD 5=2000ug/L	0.5488	2000.0	Corr. Coeff.= 1.00000
ICV-800	0.2388	792.00	
ICB	-0.0001	0.00	
CCV-1500	0.4339	1524.00	
CCB	0.0009	3.00	

FLAA MMTL ANALYTE SUMMARY REPORT

LIENT:	Engineering-Science, Inc.	ANALYTE:	Na
ATE(S) RECEIVED:	01/31/95 & 02/08/95	ug/L IDL:	11
DATE(S) ANALYZED:	02/17/95	Analysis Method:	7770A
DATE REPORTED:	02/28/95	Instrument: P E Zeema	5100
_J PROJECT #:	31527A	Pre-digestion	
ATA FILE(S):	AB038	Spike Conc.:	1000 ug/L
		Post-digestion	
		Spike Conc.:	1000 ug/L

Client Sample ID	TLI Sample ID	Mean ABSORB	ug/L CONC	ml TV	ml FV	ml Used	DIL FACTOR	Total ug RESULT	RPD	% REC.
EPA-MMT-1 FH	95-84-4	0.4397	1885.10	N/A	100	N/A	1	189	--	--
EPA-MMT-1 BH	95-84-3	0.3931	1682.30	300	100	300	1	168	--	--
HEPA-MMT-2 FH	95-84-5 X10	0.0590	249.20	N/A	100	N/A	10	249	--	--
"EPA-MMT-2 BH	95-84-6	0.3864	1652.90	310	100	310	1	165	--	--
EPA-MMT-3 FH	95-84-10 X5	0.1275	539.90	N/A	100	N/A	5	270	--	--
HEPA-MMT-3 BH	95-84-11	0.2381	1012.40	300	100	300	1	101	--	--
HEPA-MMT-BLANK FH	95-84-2 X20	0.0480	202.50	N/A	100	N/A	20	405	--	--
EPA-MMT-BLANK BH	95-84-1	0.2344	996.70	102	100	102	1	99.7	--	--
BLANK HNO3 FILTER #M008/95	95-204-8	0.1700	720.90	N/A	100	N/A	1	72.1	--	--
MELTER-MMT-2 FH	95-84-8 X1000	0.2379	1011.60	N/A	100	N/A	1000	101160	--	--
ELTER-MMT-2 BH	95-84-9 X5	0.1158	490.30	530	100	530	5	245	--	--
MELTER-MMT-3 FH	95-84-12 X1000	0.1444	612.00	N/A	100	N/A	1000	61200	--	--
MELTER-MMT-3 BH	95-84-13 X5	0.1356	574.10	500	100	500	5	287	--	--
ELTER-MMT-4 FH	95-84-14 X1000	0.1395	590.80	N/A	100	N/A	1000	59080	--	--
ELTER-MMT-4 BH	95-84-15	0.1094	463.00	570	100	570	1	46.3	--	--
HEPA-MMT-1 FH DA	95-84-4 DA	0.4373	1874.40	N/A	100	N/A	1	187	0.569%	--
EPA-MMT-2 FH DA	95-84-5 DA X10	0.0597	252.00	N/A	100	N/A	10	252	1.12%	--
EPA-MMT-2 BH DA	95-84-6 DA	0.3879	1659.60	310	100	310	1	166	0.405%	--
MELTER-MMT-3 FH DA	95-84-12X1000DA	0.1453	615.70	N/A	100	N/A	1000	61570	0.603%	--
MELTER-MMT-3 BH DA	95-84-13 X5 DA	0.1361	576.60	500	100	500	5	288	0.435%	--
EPA-MMT-1 FH L	95-84-4 L	0.0959	405.50	N/A	100	N/A	5	203	7.28%	--
.EPA-MMT-1 BH L	95-84-3 L	0.0867	366.40	300	100	300	5	183	8.52%	--
MELTER-MMT-2 FH L	95-84-8 X1000 L	0.0401	169.00	N/A	100	N/A	5000	84500	17.9%	--
'IELTER-MMT-2 BH L	95-84-9 X5 L	0.0230	97.10	530	100	530	25	243	0.984%	--
EPA-MMT-1 FH PDS	95-84-4 PDS X2	0.3738	1598.20	--	--	--	--	--	--	131%
HEPA-MMT-1 BH PDS	95-84-3 PDS X2	0.3317	1415.90	--	--	--	--	--	--	115%
MELTER-MMT-2 BH PDS	95-84-9 PDS X5	0.1700	721.00	--	--	--	--	--	--	115%
ethod Blank	31527A-MB	0.0033	13.70	--	--	--	--	--	--	--
CS	31527A-LCS	0.2450	1042.20	--	--	--	--	--	--	103%

BLANK	0.0005	0.0		
STD1=50ug/L	0.0116	50.0		
STD2=200ug/L	0.0479	200.0		
STD3=500ug/L	0.1183	500.0	Corr. Coeff.	0.99991
STD4=1000ug/L	0.2363	1000.0		
STD5=2000ug/L	0.4623	2000.0		
ICV-800	0.1947	828.70		
ICB	-0.0014	-5.80		
CCV-1500	0.3562	1521.70		
CCB	-0.0011	-4.50		
CCV-1500	0.3527	1506.90		
CCB	-0.0009	-4.00		
CCV-1500	0.3554	1518.40		
CCB	0.0006	2.30		
CCV-1500	0.3569	1525.10		
CCB	0.0010	4.10		
CCV-1500	0.3597	1536.90		
CCB	0.0006	2.50		

COC# ______________

page 1 of 1

ES ENGINEERING-SCIENCE

CHAIN - OF - CUSTODY RECORD

2 FLINT HILL
10521 ROSEHAVEN STREET
FAIRFAX, VIRGINIA 22030
PHONE: (703)591-7575 OR FAX: (703)591-1305

PROJECT NUMBER	PROJECT NAME
AU-401-----:02	[illegible] TINKER/AIR

SAMPLER(S) NAME (Please Print) and SIGNATURE(S): [illegible]

PRESERVATIVES

ANALYSES REQUESTED

STATION NUMBER	DATE MM/DD/YY	MILITARY TIME	SAMPLE IDENTIFICATION	MATRIX	RETAINED ON: TUBE	PUFF	FILTER	VOC-TO14	SVOC-8270	HCHO-TO-	PHENOL-TO8	MERCAPTANS	METALS	REMARKS/SAMPLE NO.
	1/19		[illegible]	AIR			X	[illegible]	[illegible]	[illegible]			X	[illegible]
	1/19		[illegible]	AIR			X	[illegible]	[illegible]	[illegible]			X	[illegible]
	1/19		[illegible]	AIR			X	[illegible]	[illegible]	[illegible]			X	[illegible]
	1/19		[illegible]	AIR			X	[illegible]	[illegible]	[illegible]			X	[illegible]
	1/19		[illegible]	AIR			X	[illegible]	[illegible]	[illegible]			X	[illegible]
	1/20		[illegible]	AIR			X	[illegible]	[illegible]	[illegible]			X	[illegible]
	1/20		[illegible]	AIR			X	[illegible]	[illegible]	[illegible]			X	[illegible]
				AIR										
	1/20		[illegible]	AIR			X	[illegible]	[illegible]	[illegible]	[illegible]		X	[illegible]
	1/20		[illegible]	AIR			X	[illegible]	[illegible]	[illegible]			X	[illegible]
	1/20		[illegible]	AIR			X	[illegible]	[illegible]	[illegible]			X	[illegible]
	1/20		[illegible]	AIR			X	[illegible]	[illegible]	[illegible]			X	[illegible]

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[illegible]	2/7/95				

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time
			[illegible]		

AIRBILL#: ______________ COOLER#: ______________

LABORATORY: [illegible] Phone: ______________

ATTN: [illegible]

PLEASE SEND REPORT AND ORIGINAL COC TO: [illegible]
Jon Bolstad - ES/Fairfax

TAT EXPECTED:

Distribution Original Accompanies Shipment. White Copy returned with Report. Yellow retained by laboratory. Pink retained by sender.

COC# ________

page 2 of 2

ES ENGINEERING-SCIENCE
CHAIN - OF - CUSTODY RECORD

2 FLINT HILL
10521 ROSEHAVEN STREET
FAIRFAX, VIRGINIA 22030
PHONE: (703)591-7575 OR FAX: (703)591-1305

PROJECT NUMBER	PROJECT NAME	PRESERVATIVES
AU-401-------.02	[illegible] TINKER/AIR	

SAMPLER(S) NAME (Please Print) and SIGNATURE(S): [illegible]

ANALYSES REQUESTED

STATION NUMBER	DATE MMDDYY	MILITARY TIME	SAMPLE IDENTIFICATION	MATRIX	RETAINED ON: TUBE	PUFF	FILTER	VOC-TO11	SVOC-8270	HCHO-TO	PHENOL-TO8	MERCAPTANS	METALS	REMARKS/SAMPLE NO.
[illegible]	1/19		[illegible] #3	AIR		X		[illegible]	[illegible]				X	[illegible]
[illegible]	1/19		[illegible]	AIR	X			[illegible]	[illegible]	[illegible]	[illegible]		X	[illegible]
				AIR										[illegible]
[illegible]	1/20		[illegible] #4	AIR		X		[illegible]	[illegible]	[illegible]	[illegible]		X	[illegible]
[illegible]	1/20		[illegible]	AIR	X			[illegible]	[illegible]	[illegible]	[illegible]		X	[illegible]
				AIR										[illegible]
	1/24		[illegible]	AIR				[illegible]					X	[illegible] # [illegible]
	1/24		[illegible]	AIR				[illegible]					X	[illegible] # [illegible]
	1/24		[illegible]	AIR				[illegible]					X	[illegible] # [illegible]
	1/24		[illegible] Blank	AIR				[illegible]					X	[illegible] # [illegible]
				AIR										
				AIR										

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[illegible]	1/30/93	16:00			

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time
[illegible]			[illegible]	[illegible]	

AIRBILL#: ________ COOLER#: ________

LABORATORY: [illegible] Phone: ________

ATTN: [illegible]

PLEASE SEND REPORT AND ORIGINAL COC TO: [illegible]
~~Jon Belstad - ES/Fairfax~~

TAT EXPECTED: [illegible]

Distribution Original Accompanies Shipment. White Copy returned with Report. Yellow retained by laboratory. Pink retained by sender.

COC# ______

page 1 of 2

ES ENGINEERING-SCIENCE

CHAIN - OF - CUSTODY RECORD

2 FLINT HILL
10521 ROSEHAVEN STREET
FAIRFAX, VIRGINIA 22030
PHONE: (703)591-7575 OR FAX: (703)591-1305

PROJECT NUMBER ~~AU-401.~~ 02

PROJECT NAME Catholic University 727107 ~~TINKER/AIR~~

SAMPLER(S) NAME (Please Print) and SIGNATURE(S): Rills, Henry, Savia, Patrick, Hanley

Container #

PRESERVATIVES

ANALYSES REQUESTED

HNO_3/H_2O_2 HNO_3

STATION NUMBER	DATE MMDDYY	MILITARY TIME	SAMPLE IDENTIFICATION	MATRIX	RETAINED ON: TUBE	RETAINED ON: POFF	RETAINED ON: FILTER	VOC-TO14	SVOC-8270	HCHO-TO	PHENOL-TO8	MERCAPTANS	METALS	REMARKS/SAMPLE NO.
1	1/18		HNO_3/H_2O_2 Reagent Blk	AIR	X								X	Blank
2	1/18		0.1 N HNO_3 Reagent	AIR		X							X	Blank
4	1/19		HEPA MNT-BH #1	AIR	X			Back Half (Impingers)					X	HEPA Run #1
6	1/19		HEPA MNT-FHN #1	AIR		X		Front Half Filter/Rinse					X	"
~~10~~ 11	1/19		HEPA MNT-FHN #2	AIR		X		Front Half Filter/Rinse					X	HEPA Run #2
12	1/19		HEPA MNT-BH #2	AIR	X			Back Half (Impingers)					X	"
14	1/19		MELTER MNT FH #2	AIR		X		Front Half Filter Rinse					X	[illegible] AMPLE
14A	1/19		" (cont'd)	AIR		X		"					X	[illegible]
15	1/19		MELTER-MNT-BH #2	AIR	X			Back Half (Impingers)					X	CAUTION: PRESSURE BUILD UP
				AIR				(Melter Run #2)						RELEASE
17	1/19		HEPA-MNT-FHN #3	AIR		X		Front Half Filter/Rinse					X	HEPA Run #3
19	1/19		HEPA-MNT-BH #3	AIR	X			Back Half (Impingers)					X	"

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
DAHanley	1/30/95	1600			
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[illegible]					
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time
			[illegible]	[illegible]	

AIRBILL#: ______ COOLER#: ______

LABORATORY: [illegible] 501 Capitola Drive Durham, NC Phone: ______

ATTN: D. Hoge

PLEASE SEND REPORT AND ORIGINAL COC TO: Dave Rills

~~Jon Bolstad - ES/Fairfax~~

TAT EXPECTED: 21 Days, will call on 1/31 PM

Distribution: Original Accompanies Shipment. White Copy returned with Report. Yellow retained by laboratory. Pink retained by sender.

Custody Seal	: Present/Intact
Chain of Custody	: Present
Sample Tags	: Present
Sample Tag Numbers	: Listed
SMO Forms	: N/A
Box	NO COOLANT

TLI Project Number	31404		Book
Client: ESI02	ENGINEERING-SCIENCE, INC.		95
Date Received	01/31/95	By	Page
Carrier and Number	FedEx/		84

TLI Number nR/H:CPM	Client ID	Matrix Location	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init
95-84-1	HNO3/H2O2 REAGENT BLK C1	HNO3/H2O2 METALS LAB								
95-84-2	0.1N HNO3 REAGENT BLK C2	HNO3 METALS LAB								
95-84-3	HEPA-MMT-BH-#1 C4	HNO3/H2O2 METALS LAB								
95-84-4	HEPA-MMT-FHN-#1 C6	HNO3 METALS LAB								
95-84-5	HEPA-MMT-FHN-#2 C11	HNO3 METALS LAB								
95-84-6	HEPA-MMT-BH-#2 C12	HNO3/H2O2 METALS LAB								
95-84-7	MELTER-MMT-FH-#2 C14	HNO3 METALS LAB								
95-84-8	MELTER-MMT-FH-#2 C14A	HNO3 METALS LAB								
95-84-9	MELTER-MMT-BH-#2 C15	HNO3/H2O2 METALS LAB								
95-84-10	HEPA-MMT-FHN-#3 C17	HNO3 METALS LAB								

Receiving Remarks: Client's Chain of Custody differs from what the Sample IDs read: used the IDs on sample to log in.

18

Archive Remarks:

Custody Seal : Present/Intact	TLI Project Number	31404		Book
Chain of Custody : Present				
Sample Tags : Present	Client: ESI02	ENGINEERING-SCIENCE, INC.		95
Sample Tag Numbers : Listed				
SHO Forms : N/A	Date Received	01/31/95	By [signature]	Page
Box NO COOLANT	Carrier and Number	FedEx/		84

TLI Number mR/H:CPM	Client ID	Matrix Location	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init
95-84-11	HEPA-MMT-BH-#3	HNO3/H202 C19 METALS LAB								
95-84-12	MELTER-MMT-FH-#3	HNO3 C21 METALS LAB								
95-84-13	MELTER-MMT-BH-#3	HNO3/H202 C22 METALS LAB								
95-84-14	MELTER-MMT-FH-#4	HNO3 C24 METALS LAB								
95-84-15	MELTER-MMT-BH-#4	HNO3/H202 C25 METALS LAB								
95-84-16	#94/026	BEAKER METALS LAB								
95-84-17	#94/027	BEAKER METALS LAB								
95-84-18	#94/028	BEAKER METALS LAB								
95-84-19	#94/025	BEAKER METALS LAB								

Receiving Remarks: Client's Chain of Custody differs from what the Sample IDs read; used the IDs on sample to log in.

19

Archive Remarks:

Custody Seal : Absent	TLI Project Number	31527		Book
Chain of Custody : Present				
Sample Tags : Present	Client: ESI02	ENGINEERING-SCIENCE, INC.		95
Sample Tag Numbers : Listed				
SMD Forms : N/A	Date Received	02/08/95	By	Page
Box NO COOLANT	Carrier and Number	FedEx/3120986131		204

TLI Number mR/H:CPM	Client ID	Matrix Location	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init
95-204-1	M001/95	FILTER								
		METALS LAB								
95-204-2	M007/95	FILTER								
		METALS LAB								
95-204-3	M009/95	FILTER								
		METALS LAB								
95-204-4	M002/95	FILTER								
		METALS LAB								
95-204-5	M005/95	FILTER								
		METALS LAB								
95-204-6	M010/95	FILTER								
		METALS LAB								
95-204-7	M006/95	FILTER								
		METALS LAB								
95-204-8	M008/95	FILTER								
		METALS LAB								
95-204-9	M012/91	FILTER								
		METALS LAB								
95-204-10	M011/91	FILTER								
		METALS LAB								

Receiving Remarks: Client's Chain of Custody differs from what the Sample IDs read; used the IDs on sample to log in. Sample container for M007/95 was received broken.

Archive Remarks: 20

TRIANGLE LABORATORIES OF RTP, INC.--CHAIN OF CUSTODY--REVISED 11/15/94

Custody Seal : Absent		TLI Project Number	31527	Book
Chain of Custody : Present				
Sample Tags : Present		Client: ESI02	ENGINEERING-SCIENCE, INC.	95
Sample Tag Numbers : Listed				
SMO Forms : N/A		Date Received	02/08/95 By	Page
Box	NO COOLANT	Carrier and Number	FedEx/3120986131	204

TLI Number mR/H:CPM	Client ID	Matrix Location	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init	To LAB Date/Init	To STORAGE Date/Init
95-204-11	M020/95	FILTER METALS LAB								

Receiving Remarks: Client's Chain of Custody differs from what the Sample IDs read: used the IDs on sample to log in. Sample container for M007/95 was received broken.

Archive Remarks:

TRIANGLE LABORATORIES OF RTP, INC.--CHAIN OF CUSTODY--REVISED 11/15/94

Project # 31E41A
Client: ENGINEERING-SCIENCE, INC.
Date/Int.: FEBRUARY 13, 1995 SRB
Client Run# HEPA-MMT-1

Triangle Laboratories of RTP

(919) 544-5729

Spike Log#

	Analytes		
ICP	GrAA	HAA	CVAA
Cr, B Mo, Sr	—	Na, K	—

CONT # 1 — Filter Type: G or Q — label 95-804-1

CONT # 2 — Acetone Rinse — label 95-84-16 — Volume — dry

CONT # 3 — HNO3 Rinse — label 95-84-4 — Volume 30

CONT # 4 — Back Half Impinger — label 95-84-3 — Volume 300

Hg Impingers

CONT # ~~5A~~ HNO3 — label ____ Volume ____ ml Aliquot A ____ Aliquot B ____ Int ____ Date ____

CONT # ~~5B~~ KMNO4 — label ____ Volume ____ ml Aliquot A ____ Aliquot B ____ Int ____ Date ____

CONT # ~~5C~~ HCl — label ____ Volume ____ ml Aliquot A ____ Aliquot B ____ Int ____ Date ____

(Duplicate Analysis of Each)

Dessicate to dryness and redissolve in 10ml con HNO3 — Int V.P. Date 2-13-95

Reduce volume to 20 ml on hotplate — Int V.P. Date 2-13-95

Microwave dig with conc. HF and conc. HNO3 — Int V.P. Date 2-15-95

Microwave dig with conc. HF and conc. HNO3 — Int V.P. Date 2-15-95

label 95-84-4

Combine digestates

Front Half Digestate

Add 500 uL Sc

Dilute to 100 mls — Int V.P. Date 2-15-95

label 95-84-4
Volume 100 ML

For Metal — label ____ Int ____ Volume ____ Date ____

~~For Hg~~ — label ____ Int ____ Volume ____ ml Date ____

(1 post digest spike on FH for GFAA))

FH & BH Post dig. spk.
____ ppb (instrument spiked)

Aliquot A: ____ mL
(No spike required)
Aliquot B: ____ mL

For Metals — label 95-84-3 — Volume 300

~~For Hg~~ — label ____ Volume ____

Reduce Volume to 20 mL on Hotplate — Int. V.P. Date 2-13-95

Hotplate dig with HNO3 and H2O2 — Int. V.P. Date 2-15-95

~~Add 500 uL Sc~~ — Int. ____ Date ____

Dilute to 100 mls — Int. V.P. Date 2-15-95

label ____ Int ____ Volume ____ Date ____

(One post digestion spk on BH for GFAA)

Sample — label ____ Int ____ Volume ____ Date ____ Aliquot A: ____ Aliquot B: ____

Spike (1 BH Hg Spike required) — label ____ Int ____ Volume ____ Date ____ Aliquot A: ____ Aliquot B: ____

spk ____ ml of ____ ppb — Int ____
final spk conc. added ____ ppb — Date ____

FH & BH Serial dilution performed
____ ml to ____ ml FV + ____ uL Sc
Initials: ____

Project #

Client:

Date/Int.:

Client Run# HEPA-MMT-2

Triangle Laboratories of RTP

(919) 544-5729

ICP	GFAA	FLAA	CVAA

CONT # 1 — Filter Type: G or Q — label 95-804-2

CONT # 2 — Acetone Rinse — label 95-84-17 — Volume — dry

Dessicate to dryness and redissolve in 10ml con HNO3 — Int V.P. — Date 2-13-95

Microwave dig with conc. HF and conc. HNO3 — Int V.P — Date 2-15-95

CONT # 3 — HNO3 Rinse — label 95-84-5 — Volume 30

Reduce volume to 20 ml on hotplate — Int V.P. — Date 2-13-95

Microwave dig with conc. HF and conc. HNO3 — Int V.P — Date 2-15-95

label 95-84-5

Combine digestates

Front Half Digestate

Add 500 uL Sc

Dilute to 100 mls — Int V.P. — Date 2-15-95

label 95-84-5 — Volume 100 ML

For Metal — label ___ Int ___ Volume ___ Date ___

~~For Hg~~ — label ___ Int ___ Volume ___ ml Date ___

(post digest spike on FH for GFAA))

FH & BH Post dig. spk. ___ ppb (Instrument spiked)

Aliquot A: ___ mL (No spike required) Aliquot B: ___ mL

CONT # 4 — Back Half Impinger — label 95-84-6 — Volume 310

For Metals — label 95 84 6 — Volume 310

~~For Hg~~ — label ___ Volume ___

Reduce Volume to 20 mL on Hotplate — Int. V.P. — Date 2-13-95

Hotplate dig with HNO3 and H2O2 — Int. V.P. — Date 2-15-95

~~Add 500 uL Sc~~ — Int. ___ Date ___

Dilute to 100 mls — Int. V.P — Date 2-15-95

label ___ Int ___ Volume ___ Date ___

(One post digestion spk on BH for GFAA)

Hg Impingers

CONT # ~~5A~~ HNO3	CONT # ~~5B~~ KMNO4	CONT # ~~5C~~ HCl
label ___	label ___	label ___
Volume ___ ml	Volume ___ ml	Volume ___ ml
Aliquot A ___	Aliquot A ___	Aliquot A ___
Aliquot B ___	Aliquot B ___	Aliquot B ___
Int ___	Int ___	Int ___
Date ___	Date ___	Date ___

(Duplicate Analysis of Each)

Sample — label ___ Int ___ Volume ___ Date ___ Aliquot A: ___ Aliquot B: ___

Spike (1 BH Hg Spike required) — label ___ Int ___ Volume ___ Date ___ Aliquot A: ___ Aliquot B: ___

spk ___ ml of ___ ppb — Int ___ — final spk conc. added ___ ppb — Date ___

FH & BH Serial dilution performed ___ ml to ___ ml FV + ___ uL Sc Initials: ___

Triangle Laboratories of RTP
(919) 544-5729

Project #
Client:
Date/Int.:
Client Run# HEPA-MMT-3

ICP	GFAA	HAA	CVAA

CONT # 1
Filter
Type: G or Q
label 95-204-4

CONT # 2
Acetone Rinse
label 95-84-18
Volume — dry

Dessicate to dryness and redissolve in 10ml con HNO3 — Int V.P. Date 2-15-95

CONT # 3
HNO3 Rinse
label 95-84-10
Volume 75

Reduce volume to 20 ml on hotplate — Int V.P. Date 2-13-95

Microwave dig with conc. HF and conc. HNO3 — Int V.P. Date 2-15-95

Microwave dig with conc. HF and conc. HNO3 — Int V.P. Date 2-15-95
label 95-84-10

Combine digestates

Front Half Digestate

Add 500 uL Sc

Dilute to 100 mls — Int V.P. Date 2-15-95
label 95-84-10
Volume 100 ML

For Metal | ~~For Hg~~

label ___ Int ___
Volume ___ Date ___
(post digest spike on FH for GFAA))

label ___ Int ___
Volume ___ ml Date ___

& BH Post dig. spk.
___ ppb (Instrument spiked)

Aliquot A: ___ mL
(No spike required)
Aliquot B: ___ mL

CONT # 4
Back Half Impinger
label 95-84-11
Volume 500

For Metals | ~~For Hg~~

label 95-84-11 | label ___
Volume 300 | Volume ___

Reduce Volume to 20 mL on Hotplate — Int. V.P. Date 2-13-95

Hotplate dig with HNO3 and H2O2 — Int. V.P. Date 2-15-95

~~Add 500 uL Sc~~ — Int. ___ Date ___

Dilute to 100 mls — Int. V.P. Date 2-15-95

label ___ Int ___
Volume ___ Date ___
(One post digestion spk on BH for GFAA)

Hg Impingers

CONT # 5A (HNO3)	CONT # 5B (KMNO4)	CONT # 5C (HCl)
label ___	label ___	label
Volume ___ ml	Volume ___ ml	Volume ___ ml
Aliquot A ___	Aliquot A ___	Aliquot A ___
Aliquot B ___	Aliquot B ___	Aliquot B ___
Int ___	Int ___	Int ___
Date ___	Date ___	Date

(Duplicate Analysis of Each)

Sample
label ___ Int ___
Volume ___ Date ___
Aliquot A: ___
Aliquot B: ___

Spike
(1 BH Hg Spike required)
label ___ Int ___
Volume ___ Date ___
Aliquot A: ___
Aliquot B: ___

spk ___ ml of ___ ppb — Int ___
final spk conc. added ___ ppb — Date ___

FH & BH Serial dilution performed
___ ml to ___ ml FV + ___ uL Sc
Initials: ___

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Project #

Client:

Date/Int.:

Client Run# HEPA-HMT-BLANK

Triangle Laboratories of RTP

(919) 544-5729

CONT # 1
Filter
Type: G or Q
label 95-204-7

CONT # 2
Acetone Rinse
label 95-84-19
Volume — dry

Dessicate to dryness and redissolve in 10ml con HNO3 — Int V.P. — Date 2-15-95

CONT # 3
HNO3 Rinse
label 95-84-2
Volume 104

Reduce volume to 20 ml on hotplate — Int V.P. — Date 2-13-95

Microwave dig with conc. HF and conc. HNO3 — Int V.P. — Date 2-15-95

Microwave dig with conc. HF and conc. HNO3 — Int ____ — Date ____

label 95-84-2

Combine digestates

Front Half Digestate

Add 500 uL Sc

Dilute to 100 mls — Int V.P. — Date 2-15-95

label 95-84-2
Volume 100 ML

For Metal — ~~For Hg~~

label ____ Int ____
Volume ____ Date ____

label ____ Int ____
Volume ____ ml Date ____

(post digest spike on FH for GFAA))

FH & BH Post dig. spk.
____ ppb (Instrument spiked)

Aliquot A: ____ mL
(No spike required)
Aliquot B: ____ mL

CONT # 4
Back Half Impinger
label 95-84-1
Volume 102

For Metals — ~~For Hg~~

label 95-84-1 — label ____
Volume 102 — Volume ____

Reduce Volume to 20 mL on Hotplate — Int. V.P. — Date 2-13-95

Hotplate dig with HNO3 and H2O2 — Int. V.P. — Date 2-15-95

~~Add 500 uL Sc~~ — Int. ~~V.P.~~ EE OP — Date 2-15-95

Dilute to 100 mls — Int. V.P. — Date 2-15-95

label ____ Int ____
Volume ____ Date ____

(One post digestion spk on BH for GFAA)

Hg Impingers

CONT # ~~5A~~ HNO3	CONT # ~~5B~~ KMNO4	CONT # ~~5C~~ HCl
label ____	label ____	label ____
Volume ____ ml	Volume ____ ml	Volume ____ ml
Aliquot A ____	Aliquot A ____	Aliquot A ____
Aliquot B ____	Aliquot B ____	Aliquot B ____
Int ____	Int ____	Int ____
Date ____	Date ____	Date ____

(Duplicate Analysis of Each)

Sample

label ____ Int ____
Volume ____ Date ____
Aliquot A: ____
Aliquot B: ____

Spike
(1 BH Hg Spike required)

label ____ Int ____
Volume ____ Date ____
Aliquot A: ____
Aliquot B: ____

spk ____ ml of ____ ppb — Int ____
final spk conc. added ____ ppb — Date ____

FH & BH Serial dilution performed
____ ml to ____ ml FV + ____ uL Sc
Initials: ____
Date:

Analytes

ICP	GFAA	HAA	CVAA

Project #

Client:

Date/Int.:

Client Run# BLANK HNO3 FILTER # H008/95

Triangle Laboratories of RTP

(919) 544-5729

CONT # 1 — Filter Type: G or Q — label 95-204-8

CONT # 2 — Acetone Rinse — label ____ Volume ____

CONT # 3 — HNO3 Rinse — label ____ Volume ____

CONT # 4 — Back Half Impinger — label ____ Volume ____

Hg Impingers

CONT # 5A — HNO3 — label ____ Volume ____ ml Aliquot A ____ Aliquot B ____ Int ____ Date ____

CONT # 5B — KMNO4 — label ____ Volume ____ ml Aliquot A ____ Aliquot B ____ Int ____ Date ____

CONT # 5C — HCl — label ____ Volume ____ ml Aliquot A ____ Aliquot B ____ Int ____ Date ____

(Duplicate Analysis of Each)

Dessicate to dryness and redissolve in 10ml con HN03 — Int ____ Date ____

Reduce volume to 20 ml on hotplate — Int ____ Date ____

Microwave dig with conc. HF and conc. HNO3 — Int V.P. Date 2-15-95

Microwave dig with conc. HF and conc. HNO3 — Int ____ Date ____ — label 95-204-8

Combine digestates

Front Half Digestate

Add 500 uL Sc

Dilute to 100 mls — Int V.P. Date 2-15-95

label 95-204-8

Volume 100 ML

For Metal: label ____ Int ____ Volume ____ Date ____

~~For Hg~~: label ____ Int ____ Volume ____ ml Date ____

(One post digest spike on FH for GFAA)

FH & BH Post dig. spk. ____ ppb (instrument spiked)

Aliquot A: ____ mL (No spike required)

Aliquot B: ____ mL

For Metals: label ____ Volume ____

For Hg: label ____ Volume ____

Reduce Volume to 20 mL on Hotplate — Int. ____ Date ____

Hotplate dig with HNO3 and H202 — Int. ____ Date ____

Add 500 uL Sc — Int. ____ Date ____

Dilute to 100 mls — Int. ____ Date ____

label ____ Int ____ Volume ____ Date ____

(One post digestion spk on BH for GFAA)

Sample: label ____ Int ____ Volume ____ Date ____ Aliquot A: ____ Aliquot B: ____

Spike (1 BH Hg Spike required): label ____ Int ____ Volume ____ Date ____ Aliquot A: ____ Aliquot B: ____

spk ____ ml of ____ ppb — Int ____

final spk conc. added ____ ppb — Date ____

FH & BH Serial dilution performed

____ ml to ____ ml FV + ____ uL Sc

Initials: ____

Date:

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Triangle Laboratories of RTP

(919) 544-5729

Project # ______

Client: ______

Date/Int.: ______

Client Run# MELTER-MMT-2

A[illegible]tes			
ICP	GFAA	FLAA	CVAA

CONT # 1
Filter
[illegible]ype: G or Q
label 95-204-3 -9

CONT # ~~2~~
Acetone Rinse
label ______
Volume ______

Dessicate to dryness and redissolve in 10ml con HNO3 — Int ______ Date ______

[Mic]rowave dig [wi]th conc. HF [and] conc. HNO3 — Int V.P. Date 2-15-95

CONT # 3
HNO3 Rinse
label 95-84-7 -8
Volume 285

Reduce volume to 20 ml on hotplate — Int V.P. Date 2-13-95

Microwave dig with conc. HF and conc. HNO3 — Int V.P. Date 2-15-95
label 95-84-8

Combine digestates

Front Half Digestate

Add 500 uL Sc

Dilute to 100 mls — Int V.P. Date 2-15-95
label 95-84-8
Volume 100 ML

2 For Metals — ~~For Hg~~

[la]bel ______ Int ______
[Vo]lume ______ Date ______
([P]ost digest spike on FH for GFAA))

label ______ Int ______
Volume ______ ml Date ______

[FH] & BH Post dig. spk.
______ ppb (Instrument spiked)

Aliquot A: ______ mL
(No spike required)
Aliquot B: ______ mL

CONT # 4
Back Half Impinger
label 95-84-9
Volume 530

For Metals — ~~For Hg~~
label 95-84-9 — label ______
Volume 530 — Volume ______

Reduce Volume to 20 mL on Hotplate — Int. V.P. Date 2-13-95

Hotplate dig with HNO3 and H2O2 — Int. V.P. Date 2-15-95

~~Add 500 uL Sc~~ — Int. ______ Date ______

Dilute to 100 mls — Int. V.P. Date 2-15-95

label ______ Int ______
Volume ______ Date ______
(One post digestion spk on BH for GFAA)

Hg Impingers

CONT # ~~5A~~ HNO3	CONT # ~~5B~~ KMNO4	CONT # ~~5C~~ HCl
label ______	label ______	label ______
Volume ______ ml	Volume ______ ml	Volume ______ ml
Aliquot A ______	Aliquot A ______	Aliquot A ______
Aliquot B ______	Aliquot B ______	Aliquot B ______
Int ______	Int ______	Int ______
Date ______	Date ______	Date ______

(Duplicate Analysis of Each)

Sample
label ______ Int ______
Volume ______ Date ______
Aliquot A: ______
Aliquot B: ______

Spike
(1 BH Hg Spike required)
label ______ Int ______
Volume ______ Date ______
Aliquot A: ______
Aliquot B: ______

spk ______ ml
of ______ ppb
Int ______
final spk conc. added ______ ppb
Date ______

FH & BH Serial dilution performed
______ ml to ______ ml FV + ______ uL Sc
Initials: ______

Project #

Client:

Date/Int.:

Client Run# MELTER-MMT-3

Triangle Laboratories of RTP
(919) 544-5729

ICP	GFAA	FLAA	CVAA

CONT # 1 — Filter Type: G or Q — label 95-204-5 -10

CONT # ~~2~~ — Acetone Rinse — label ____ Volume ____

CONT # 3 — HNO3 Rinse — label 95-84-12 — Volume 220

CONT # 4 — Back Half Impinger — label 95-84-13 — Volume 500

Hg Impingers

CONT # ~~5A~~ HNO3 — label ____ Volume ____ ml — Aliquot A ____ Aliquot B ____ Int ____ Date ____

CONT # ~~5B~~ KMNO4 — label ____ Volume ____ ml — Aliquot A ____ Aliquot B ____ Int ____ Date ____

CONT # ~~5C~~ HCl — label ____ Volume ____ ml — Aliquot A ____ Aliquot B ____ Int ____ Date ____

Dessicate to dryness and redissolve in 10ml con HNO3 — Int ____ Date ____

Reduce volume to 20 ml on hotplate — Int V.P. Date 2-13-95

Microwave dig with conc. HF and conc. HNO3 — Int V.P. Date 2-15-95

Microwave dig with conc. HF and conc. HNO3 — Int V.P. Date 2-15-95 — label 95-84-12

Combine digestates

Front Half Digestate

Add 500 uL Sc

Dilute to 100 mls — Int V.P. Date 2-15-95

label 95-84-12 Volume 100 ML

For Metal — label ____ Int ____ Volume ____ Date ____ (post digest spike on FH for GFAA))

~~For Hg~~ — label ____ Int ____ Volume ____ ml Date ____

FH & BH Post dig. spk. ____ ppb (instrument spiked)

Aliquot A: ____ mL (No spike required) Aliquot B: ____ mL

For Metals — label 95-84-13 Volume 500

~~For Hg~~ — label ____ Volume ____

Reduce Volume to 20 mL on Hotplate — Int. V.P. Date 2-13-95

Hotplate dig with HNO3 and H2O2 — Int. V.P. Date 2-15-95

~~Add 500 uL Sc~~ — Int. ____ Date ____

Dilute to 100 mls — Int. V.P. Date 2-15-95

label ____ Int ____ Volume ____ Date ____

(One post digestion spk on BH for GFAA)

(Duplicate Analysis of Each)

Sample — label ____ Int ____ Volume ____ Date ____ Aliquot A: ____ Aliquot B: ____

Spike (1 BH Hg Spike required) — label ____ Int ____ Volume ____ Date ____ Aliquot A: ____ Aliquot B: ____

spk ____ ml of ____ ppb — Int ____ — final spk conc. added ____ ppb — Date ____

FH & BH Serial dilution performed ____ ml to ____ ml FV + ____ uL Sc Initials: ____ Date:

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Triangle Laboratories of RTP

(919) 544-5729

Project #
Client:
Date/Int.:
Client Run# MELTER -MMT-4

Analyses: ICP | GFAA | FLAA | CVAA

CONT # 1 — Filter Type: G or Q
label 95-204-6 -11

Microwave dig with conc. HF and conc. HNO3 — Int V.P. — Date 2-15-95

CONT # ~~2~~ — Acetone Rinse
label
Volume

Dessicate to dryness and redissolve in 10ml con HNO3 — Int — Date

CONT # 3 — HNO3 Rinse
label 95-84-14
Volume 230

Reduce volume to 20 ml on hotplate — Int V.P. — Date 2-13-95

Microwave dig with conc. HF and conc. HNO3 — Int V.P. — Date 2-15-95
label 2-13-95

Combine digestates

Front Half Digestate

Add 500 uL Sc

Dilute to 100 mls — Int V.P. — Date 2-15-95
label 95-84-14
Volume 100 ML

For Metal
label — Int
Volume — Date
(post digest spike on FH for GFAA))

~~For Hg~~
label — Int
Volume ___ ml — Date

FH & BH Post dig. spk.
___ ppb (instrument spiked)

Aliquot A: ___ mL
(No spike required)
Aliquot B: ___ mL

CONT # 4 — Back Half Impinger
label 95-84-15
Volume 570

For Metals
label 95-84-15
Volume 570

~~For Hg~~
label
Volume

Reduce Volume to 20 mL on Hotplate — Int. V.P. — Date 2-13-95

Hotplate dig with HNO3 and H2O2 — Int. V.P. — Date 2-15-95

~~Add 500 uL Sc~~ — Int. — Date

EE V.P. 2-15-95 ~~Dilute to 100 mls~~ — Int. V.P. — Date 2-15-95

label — Int
Volume — Date

(One post digestion spk on BH for GFAA)

Hg Impingers

CONT # ~~5A~~ — HNO3
label
Volume ___ ml
Aliquot A
Aliquot B
Int
Date

CONT # ~~5B~~ — KMNO4
label
Volume ___ ml
Aliquot A
Aliquot B
Int
Date

CONT # ~~5C~~ — HCl
label
Volume ___ ml
Aliquot A
Aliquot B
Int
Date

(Duplicate Analysis of Each)

Sample
label — Int
Volume — Date
Aliquot A:
Aliquot B:

Spike
(1 BH Hg Spike required)
label — Int
Volume — Date
Aliquot A:
Aliquot B:
spk ___ ml of ___ ppb — Int
final spk conc. added ___ ppb — Date

FH & BH Serial dilution performed
___ ml to ___ ml FV + ___ uL Sc
Initials:

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Date	Sample IDs	Analyte	Std #	Std Conc (ppm)	Sample Vol.	Conc (ppb)	IA's	
1/13/95	31546	Ag	2-23-3	1000	18/100	180	SRB	xc
"	95-223-2 MS	Al	2-45-4	1000	350/100	3500		
	-2 MSD	As	2-58-3	100	50/100	50		
	-LCS	Ba	2-57-8	100	35/100	35		
		Be	2-57-4	100	15/100	15		
		Cd	2-12-7	1000	16/100	160		
		Cr	2-36-6	1000	16/100	160		
		Ni	2-54-3	1000	16/100	160		
		Pb	2-58-6	100	50/100	50		
		Se	2-58-4	100	50/100	50		
1/15/95	31369	* Ag	2-23-3	1000	9/50	180	DKH	xc
DKH	95-48-4	Ba	2-57-8	100	~~7.5/50~~ 8.75/25	35		
	POS	Be	2-57-4	100	~~7.5/50~~ 3.75/25	15		
		Cd	2-12-7	1000	~~8/50~~ 4/25	160		
		Co	2-32-2	1000	~~20/50~~ 10/25	400		
		Cr	2-36-6	1000	~~8/50~~ 4/25	160		
		Cu	2-3-7	1000	~~10/50~~ 5/25	200		
		Mn	2-59-2	100	~~15/50~~ 7.5/25	30		
		Mo	2-36-2	1000	~~50/50~~ 25/25	1000		
		Ni	2-13-3	1000	~~8/50~~ 4/25 EE 2/15/95	160		
1-15-95	31527A	B	2-55-2	1000	105/100	1050	DKH	V.P.
	95-84-LCS	Cr	2-36-6	1000	16/100	160		
		K	2-55-4	1000	100/100	1000		
		Mo	2-36-2	1000	100/100	1000		
		Na	2-55-1	1000	104/100	1000		
		Sr	2-27-1	1000	50/100	500		

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Initials	Witness	Date	Project # + Sample ID's	Analyte	Original Std #	Original St conc. (ppm)	Spike Volume / Sample Volume	Spike Sample (ppb)	Initials	Witness
SRB	V.P.	2/17/95 DKH	31527 A	Cr	2-36-6 2-55-2	1000	~~8~~/50 4/25	160	DKH	x
			95-84-3	B	↓	↓	52.5/50	1050		
			95-84-4	Mo	2-36-2	↓	50/50	1000		
			95-84-8	Sr	~~2-21-1~~ 2-58-5	100	25/50	50		
				Na	2-55-1	1000	50/50	1000		
				K	2-55-4	↓	50/50	1000		
			31527 A	Cr	2-36-6	1000	4/25	160		
			95-84-9	B	2-55-2	↓	26.25/25	1050		
				Mo	2-36-2	↓	25/50 25/25	1000		
				Sr	~~2-27-1~~ 2-58-5	100	12.5/50 12.5/25	50		
				Na	2-55-1	1000	25/50 25/25	1000		
DKH	x			K	2-55-4	↓	25/50 25/25	1000		
		2/20/95	31454 B	As	2-58-3	100	50/100	50	SRB	V.P
			95-134-2MS							
			-2MSD							
			-LCS							
DKH	x	2/20/95	31235							
			94-167-18 PDS	Be	2-57-4	100	7.5ul/50ml	15	x	SRB
				Cd	2-127	1000	8ul/50ml	160		
				Co	2-32-3	1000	20ul/50ml	400		
				Cr	2-36-6	1000	8ul/50ml	160		
				Mn	2-59-2	100	15ul/50ml	30		
				Ni	2-13-3	1000	8ul/50ml	160		
				P	2-325	1000	180ul/50ml	3600		
x	DKH									

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31527A B, Mo

Method Name: BB855

Comment:Analyst: OKH

Read Delay : 30 sec   Replicates : 3   Format name : Database

Analysis Number	AS Posn	Sample ID	Sequence Name	Dilution	Weight / Volume
1	4	wcal standard	BMo		
2	5	blank	BMo		
3	2	#2 standard	BMo		
4	3	#3 standard	BMo		
5	4	#4 standard	BMo		ICV/CCV @ 500 mg/L
6	4	CHECK HS	BMo		AB @ 1000 mg/L
7	6	ICV	BMo		
8	5	ICB	BMo		
9	54	ICSABI	BMo		
10	9	31527A-MB	BMo		
11	10	31527A-LCS	BMo		
12	11	95-84-1	BMo		
13	12	95-84-2	BMo		
14	13	95-204-8	BMo		
15	14	95-84-3	BMo		
16	15	95-84-3 PDS	BMo		
17	16	95-84-3 L	BMo		
18	17	95-84-4	BMo		
19	18	95-84-4 PDS	BMo		
20	7	CCV1	BMo		
21	8	CCB1	BMo		
22	19	95-84-4 L	BMo		
23	20	95-84-5	BMo		
24	21	95-84-5 DA	BMo		
25	22	95-84-6	BMo		
26	23	95-84-6 DA	BMo		
27	24	95-84-8	BMo	X200 D.l. for B.	
28	25	95-84-8 PDS	BMo	PDS Invalid ∴ Not analyzed.	
29	26	95-84-8 L	BMo		
30	27	95-84-9	BMo	9x5 performed for B.	
31	28	95-84-9 PDS	BMo		
32	7	CCV2	BMo		
33	8	CCB2	BMo		
34	29	95-84-9 L	BMo		
35	30	95-84-10	BMo		
36	31	95-84-11	BMo		
37	32	95-84-12	BMo	> X200 D.l for B.	
38	33	95-84-12 DA	BMo		
39	34	95-84-13	BMo	> X5 D.l for B	
40	35	95-84-13 DA	BMo		
41	36	95-84-14	BMo	X100 D.l for B	
42	37	95-84-15	BMo	X100 D.l for B.	
43	54	ICSABF	BMo		
44	7	CCV3	BMo		
45	8	CCB3	BMo		

lement Name: B!

Wavelength	Height	Std Conc		
49.773*	15	#1: 200.00	Source Name :	S1
49.678	6	#2: 200.00	Mono Select :	A
208.959	8	#3: 500.00	Signal Comp :	No
208.893	10	#4: 1000.00	PMT Voltage :	450 Volts
82.589	12	#5:	Survey Window :	0.100 nm
.32.640	14	#6:	Peak Window :	0.030 nm
	16	#7:	Sampling Time :	100 msec
	18	#8:	Bkgd Correction :	Auto
		#9:	Lower Interval:	0.000 nm
		#10:	Upper Interval:	0.000 nm
			Units :	ug/L

lement Name: Mo!

avelength	Height	Std Conc		
02.030* 292.339	15	#1: 100.00	Source Name :	S1
203.844	6	#2: 200.00	Mono Select :	A
04.598	8	#3: 500.00	Signal Comp :	No
31.615	10	#4: 1000.00	PMT Voltage :	600 Volts
201.511	12	#5:	Survey Window :	0.100 nm
284.823	14	#6:	Peak Window :	0.030 nm
77.540	16	#7:	Sampling Time :	200 msec
37.151	18	#8:	Bkgd Correction :	Auto
268.414		#9:	Lower Interval:	0.000 nm
63.876		#10:	Upper Interval:	0.000 nm
			Units :	ug/L

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```
02/27/95 08:16
 cal standard    rep   1  Mo!        em        754.2 conc 100.00
                 rep   1  B!         em        387.3 conc 200.00
                 rep   2  Mo!        em        758.8 conc 100.00
                 rep   2  B!         em        388.0 conc 200.00
                 rep   3  Mo!        em        767.8 conc 100.00
                 rep   3  B!         em        386.6 conc 200.00
 cal standard
 2/27/95 08:17
    Mo!          av    760.28             sd       6.887 %cv    0.91 conc   100.00
    B!           av    387.29             sd       0.733 %cv    0.19 conc   200.00

 2/27/95 08:19
blank            rep   1  Mo!        em         33.8
                 rep   1  B!         em          3.7
                 rep   2  Mo!        em         11.9
                 rep   2  B!         em          7.5
                 rep   3  Mo!        em         42.0
                 rep   3  B!         em          4.5
 lank
02/27/95 08:19
    Mo!          av     29.22             sd      15.564 %cv   53.27
    B!           av      5.23             sd       1.987 %cv   38.03

 2/27/95 08:21
 2 standard      rep   1  Mo!        em        157.4 conc 200.00
                 rep   1  B!         em         88.7 conc 200.00
                 rep   2  Mo!        em        190.9 conc 200.00
                 rep   2  B!         em         88.0 conc 200.00
                 rep   3  Mo!        em        182.1 conc 200.00
                 rep   3  B!         em         90.1 conc 200.00
 2 standard
 2/27/95 08:22
    Mo!          av    176.80             sd      17.396 %cv    9.84 conc   200.00
    B!           av     88.94             sd       1.080 %cv    1.21 conc   200.00

 2/27/95 08:24
#3 standard      rep   1  Mo!        em        388.8 conc 500.00
                 rep   1  B!         em        207.0 conc 500.00
                 rep   2  Mo!        em        393.6 conc 500.00
                 rep   2  B!         em        197.1 conc 500.00
                 rep   3  Mo!        em        385.4 conc 500.00
                 rep   3  B!         em        207.1 conc 500.00
#3 standard
02/27/95 08:25
    Mo!          av    389.27             sd       4.087 %cv    1.05 conc   500.00
    B!           av    203.71             sd       5.762 %cv    2.83 conc   500.00

 2/27/95 08:27
 4 standard      rep   1  Mo!        em        765.1 conc 1000.00
                 rep   1  B!         em        385.4 conc 1000.00
                 rep   2  Mo!        em        719.1 conc 1000.00
                 rep   2  B!         em        386.8 conc 1000.00
                 rep   3  Mo!        em        743.4 conc 1000.00
                 rep   3  B!         em        393.2 conc 1000.00
 4 standard
 2/27/95 08:28
    Mo!          av    742.54             sd      23.045 %cv    3.10 conc   1000.00
    B!           av    388.45             sd       4.170 %cv    1.07 conc   1000.00
```

02/27/95 08:29							
CHECK HS	rep	1	Mo!	conc	960.88 ug/L		
	rep	1	B!	conc	970.30 ug/L		
	rep	2	Mo!	conc	971.47 ug/L		
	rep	2	B!	conc	979.24 ug/L		
	rep	3	Mo!	conc	1048.96 ug/L		
	rep	3	B!	conc	1003.40 ug/L		
CHECK HS							
02/27/95 08:30							
Mo!	av	993.77 ug/L		sd	48.086	%cv	4.84
B!	av	984.31 ug/L		sd	17.121	%cv	1.74
02/27/95 08:32							
ICV	rep	1	Mo!	conc	495.02 ug/L		
	rep	1	B!	conc	498.43 ug/L		
	rep	2	Mo!	conc	448.43 ug/L		
	rep	2	B!	conc	506.47 ug/L		
	rep	3	Mo!	conc	509.73 ug/L		
	rep	3	B!	conc	483.77 ug/L		
ICV							
02/27/95 08:33							
Mo!	av	484.39 ug/L		sd	31.997	%cv	6.61
B!	av	496.22 ug/L		sd	11.510	%cv	2.32
02/27/95 08:35							
ICB	rep	1	Mo!	conc	-14.56 ug/L		
	rep	1	B!	conc	-13.28 ug/L		
	rep	2	Mo!	conc	11.25 ug/L		
	rep	2	B!	conc	-6.77 ug/L		
	rep	3	Mo!	conc	10.35 ug/L		
	rep	3	B!	conc	-6.98 ug/L		
ICB							
02/27/95 08:36							
Mo!	av	2.34 ug/L		sd	14.650	%cv	625.0
B!	av	-9.01 ug/L		sd	3.699	%cv	41.08
02/27/95 08:37							
ICSABI	rep	1	Mo!	conc	469.75 ug/L		
	rep	1	B!	conc	673.14 ug/L		
	rep	2	Mo!	conc	416.34 ug/L		
	rep	2	B!	conc	668.94 ug/L		
	rep	3	Mo!	conc	446.14 ug/L		
	rep	3	B!	conc	660.02 ug/L		
ICSABI							
02/27/95 08:38							
Mo!	av	444.08 ug/L		sd	26.769	%cv	6.03
B!	av	667.37 ug/L		sd	6.700	%cv	1.00
02/27/95 08:48							
ICSABI	rep	1	Mo!	conc	905.47 ug/L		
	rep	1	B!	conc	1102.05 ug/L		
	rep	2	Mo!	conc	956.98 ug/L		
	rep	2	B!	conc	1096.54 ug/L		
	rep	3	Mo!	conc	941.54 ug/L		
	rep	3	B!	conc	1101.42 ug/L		
ICSABI							
02/27/95 08:49							
Mo!	av	934.66 ug/L		sd	26.438	%cv	2.83

Remade @ 1000 ug/L for B & Mo
DKH 2/27/95

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B! av 1100.00 ug/L sd 3.019 %cv 0.27

02/27/95 08:51
31527A-MB rep 1 Mo! conc -0.45 ug/L
rep 1 B! conc -12.95 ug/L
rep 2 Mo! conc 7.50 ug/L
rep 2 B! conc -20.42 ug/L window edge
rep 3 Mo! conc -13.04 ug/L
rep 3 B! conc -5.86 ug/L
31527A-MB
02/27/95 08:52
Mo! av -2.00 ug/L sd 10.360 %cv 518.3
B! av -13.08 ug/L sd 7.278 %cv 55.67

2/27/95 08:54
1527A-LCS rep 1 Mo! conc 946.85 ug/L
rep 1 B! conc 1032.62 ug/L
rep 2 Mo! conc 935.39 ug/L
rep 2 B! conc 1078.53 ug/L
rep 3 Mo! conc 958.04 ug/L
rep 3 B! conc 1082.57 ug/L
1527A-LCS
2/27/95 08:55
Mo! av 946.76 ug/L sd 11.322 %cv 1.20
B! av 1064.57 ug/L sd 27.747 %cv 2.61

02/27/95 08:57
95-84-1 rep 1 Mo! conc -6.08 ug/L
rep 1 B! conc -7.52 ug/L
rep 2 Mo! conc 17.82 ug/L
rep 2 B! conc 2.75 ug/L
rep 3 Mo! conc 10.84 ug/L
rep 3 B! conc 1.74 ug/L
95-84-1
02/27/95 08:57
Mo! av 7.53 ug/L sd 12.286 %cv 163.2
B! av -1.01 ug/L sd 5.660 %cv 561.9

2/27/95 08:59
5-84-2 rep 1 Mo! conc 190.82 ug/L
rep 1 B! conc 373.82 ug/L
rep 2 Mo! conc 197.17 ug/L
rep 2 B! conc 372.24 ug/L
rep 3 Mo! conc 188.15 ug/L
rep 3 B! conc 359.28 ug/L
5-84-2
02/27/95 09:00
Mo! av 192.05 ug/L sd 4.633 %cv 2.41
B! av 368.45 ug/L sd 7.979 %cv 2.17

02/27/95 09:02
95-204-8 rep 1 Mo! conc 165.07 ug/L
rep 1 B! conc 81.76 ug/L
rep 2 Mo! conc 157.09 ug/L
rep 2 B! conc 83.09 ug/L
rep 3 Mo! conc 229.50 ug/L
rep 3 B! conc 83.76 ug/L
95-204-8
02/27/95 09:03
Mo! av 183.89 ug/L sd 39.700 %cv 21.59

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    B!          av      82.87 ug/L          sd      1.016 %cv    1.23

02/27/95 09:05
95-84-3         rep   1  Mo!         conc      15.30 ug/L
                rep   1  B!          conc     222.39 ug/L
                rep   2  Mo!         conc      -2.13 ug/L
                rep   2  B!          conc     237.04 ug/L
                rep   3  Mo!         conc       4.43 ug/L               window edge
                rep   3  B!          conc     230.48 ug/L
95-84-3
02/27/95 09:06
    Mo!         av       5.87 ug/L          sd      8.800 %cv  150.0
    B!          av     229.97 ug/L          sd      7.339 %cv    3.19

 2/27/95 09:08
 5-84-3 PDS     rep   1  Mo!         conc     882.54 ug/L
                rep   1  B!          conc    1196.44 ug/L
                rep   2  Mo!         conc    1033.03 ug/L
                rep   2  B!          conc    1206.73 ug/L
                rep   3  Mo!         conc     933.69 ug/L
                rep   3  B!          conc    1212.79 ug/L
 5-84-3 PDS
 2/27/95 09:09
    Mo!         av     949.75 ug/L          sd     76.521 %cv    8.06
    B!          av    1205.32 ug/L          sd      8.266 %cv    0.69

02/27/95 09:11
95-84-3 L       rep   1  Mo!         conc      24.51 ug/L
                rep   1  B!          conc      40.49 ug/L
                rep   2  Mo!         conc      13.41 ug/L
                rep   2  B!          conc      42.94 ug/L
                rep   3  Mo!         conc      -9.77 ug/L
                rep   3  B!          conc      38.04 ug/L
95-84-3 L
02/27/95 09:12
    Mo!         av       9.38 ug/L          sd     17.490 %cv  186.4
    B!          av      40.49 ug/L          sd      2.447 %cv    6.04

 2/27/95 09:14
 5-84-4         rep   1  Mo!         conc     141.34 ug/L
                rep   1  B!          conc     304.53 ug/L
                rep   2  Mo!         conc     137.30 ug/L
                rep   2  B!          conc     303.31 ug/L
                rep   3  Mo!         conc     153.93 ug/L
                rep   3  B!          conc     306.16 ug/L
 5-84-4
02/27/95 09:15
    Mo!         av     144.19 ug/L          sd      8.676 %cv    6.02
    B!          av     304.67 ug/L          sd      1.433 %cv    0.47

02/27/95 09:17
95-84-4 PDS     rep   1  Mo!         conc    1112.96 ug/L
                rep   1  B!          conc    1548.84 ug/L
                rep   2  Mo!         conc    1106.26 ug/L
                rep   2  B!          conc    1543.41 ug/L
                rep   3  Mo!         conc    1174.59 ug/L
                rep   3  B!          conc    1606.26 ug/L
95-84-4 PDS
02/27/95 09:18
    Mo!         av    1131.27 ug/L          sd     37.664 %cv    3.33
```


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     B!          av    1566.17 ug/L         sd     34.824 %cv    2.22

02/27/95 09:19
CCV1             rep    1  Mo!          conc     485.90 ug/L
                 rep    1  B!           conc     473.83 ug/L
                 rep    2  Mo!          conc     460.12 ug/L
                 rep    2  B!           conc     488.91 ug/L
                 rep    3  Mo!          conc     524.07 ug/L
                 rep    3  B!           conc     489.95 ug/L
CCV1
02/27/95 09:20
     Mo!         av     490.03 ug/L         sd     32.177 %cv    6.57
     B!          av     484.23 ug/L         sd      9.022 %cv    1.86

02/27/95 09:22
CCB1             rep    1  Mo!          conc     -10.35 ug/L
                 rep    1  B!           conc     -24.14 ug/L          window edge
                 rep    2  Mo!          conc      -2.97 ug/L
                 rep    2  B!           conc     -11.67 ug/L
                 rep    3  Mo!          conc     -33.65 ug/L          window edge
                 rep    3  B!           conc     -10.51 ug/L
CCB1
02/27/95 09:23
     Mo!         av     -15.66 ug/L         sd     16.017 %cv  102.3
     B!          av     -15.44 ug/L         sd      7.558 %cv   48.95

02/27/95 09:25
95-84-4 L        rep    1  Mo!          conc      14.56 ug/L
                 rep    1  B!           conc      62.94 ug/L
                 rep    2  Mo!          conc      55.57 ug/L
                 rep    2  B!           conc      59.88 ug/L
                 rep    3  Mo!          conc      15.96 ug/L
                 rep    3  B!           conc      65.94 ug/L
95-84-4 L
02/27/95 09:26
     Mo!         av      28.70 ug/L         sd     23.281 %cv   81.13
     B!          av      62.92 ug/L         sd      3.030 %cv    4.82

02/27/95 09:28
95-84-5          rep    1  Mo!          conc     154.17 ug/L
                 rep    1  B!           conc     268.49 ug/L
                 rep    2  Mo!          conc     176.92 ug/L
                 rep    2  B!           conc     263.27 ug/L
                 rep    3  Mo!          conc     144.06 ug/L
                 rep    3  B!           conc     275.16 ug/L
95-84-5
02/27/95 09:29
     Mo!         av     158.38 ug/L         sd     16.833 %cv   10.63
     B!          av     268.98 ug/L         sd      5.960 %cv    2.22

02/27/95 09:31
95-84-5 DA       rep    1  Mo!          conc     169.21 ug/L
                 rep    1  B!           conc     282.31 ug/L
                 rep    2  Mo!          conc     169.07 ug/L
                 rep    2  B!           conc     275.66 ug/L
                 rep    3  Mo!          conc     170.45 ug/L
                 rep    3  B!           conc     304.62 ug/L
95-84-5 DA                                                          38
02/27/95 09:32
     Mo!         av     169.58 ug/L         sd      0.756 %cv    0.45
```

```
     B!          av     287.53 ug/L          sd     15.169 %cv    5.28

02/27/95 09:34
95-84-6          rep    1  Mo!          conc     -10.32 ug/L
                 rep    1  B!           conc     266.89 ug/L
                 rep    2  Mo!          conc      12.96 ug/L
                 rep    2  B!           conc     291.06 ug/L
                 rep    3  Mo!          conc      -9.30 ug/L
                 rep    3  B!           conc     289.26 ug/L
95-84-6
02/27/95 09:35
     Mo!         av      -2.22 ug/L          sd     13.158 %cv  593.4
     B!          av     282.41 ug/L          sd     13.464 %cv    4.77

2/27/95 09:37
5-84-6 DA        rep    1  Mo!          conc      13.46 ug/L
                 rep    1  B!           conc     295.77 ug/L
                 rep    2  Mo!          conc      -2.70 ug/L
                 rep    2  B!           conc     270.39 ug/L
                 rep    3  Mo!          conc     -38.18 ug/L        window edge
                 rep    3  B!           conc     302.72 ug/L
5-84-6 DA
2/27/95 09:38
     Mo!         av      -9.14 ug/L          sd     26.412 %cv  289.0
     B!          av     289.63 ug/L          sd     17.020 %cv    5.88

02/27/95 09:40
95-84-8          rep    1  Mo!          conc   25197.44 ug/L
                 rep    1  B!           conc  285357.00 ug/L
                 rep    2  Mo!          conc   25516.20 ug/L
                 rep    2  B!           conc  284132.38 ug/L
                 rep    3  Mo!          conc   25099.40 ug/L
                 rep    3  B!           conc  287856.28 ug/L
95-84-8
02/27/95 09:41
     Mo!         av   25271.01 ug/L          sd    217.923 %cv    0.86
     B!          av   285781.9 ug/L          sd   1897.958 %cv    0.66

2/27/95 09:47
5-84-8           rep    1  Mo!          conc     126.17 ug/L
x200 dilution    rep    1  B!           conc    1843.21 ug/L
DKH 2/27/95      rep    2  Mo!          conc     111.93 ug/L
                 rep    2  B!           conc    1870.23 ug/L      POS invalid & not
                 rep    3  Mo!          conc     145.95 ug/L      analyzed.
                 rep    3  B!           conc    1880.17 ug/L      DKH 2/27/95
5-84-8
02/27/95 09:47
     Mo!         av     128.02 ug/L          sd     17.083 %cv   13.34
     B!          av    1864.54 ug/L          sd     19.122 %cv    1.03

02/27/95 09:50
5-84-8 L         rep    1  Mo!          conc    5379.83 ug/L
Use this         rep    1  B!           conc   60565.03 ug/L
"L" for Mo.      rep    2  Mo!          conc    5341.88 ug/L
DKH 2/27/95      rep    2  B!           conc   60049.57 ug/L
                 rep    3  Mo!          conc    5388.82 ug/L
                 rep    3  B!           conc   59657.36 ug/L
95-84-8 L
2/27/95 09:51
     Mo!         av    5370.18 ug/L          sd     24.915 %cv    0.46
```

```
    B!          av   60090.65 ug/L        sd    455.225 %cv    0.76

02/27/95 09:54
95-84-8 L       rep   1  Mo!         conc      35.75 ug/L
                rep   1  B!          conc     557.01 ug/L
                rep   2  Mo!         conc      48.58 ug/L
                rep   2  B!          conc     551.71 ug/L
                rep   3  Mo!         conc      15.85 ug/L
                rep   3  B!          conc     530.41 ug/L
95-84-8 L
02/27/95 09:55
    Mo!         av     33.39 ug/L         sd     16.490 %cv   49.39
    B!          av    579.71 ug/L         sd     67.781 %cv   11.69
```

Rinsed & Reanalyzed DKH 2/27/95

```
02/27/95 10:00
95-84-8 L x200  rep   1  Mo!         conc     -12.51 ug/L             window edge
                rep   1  B!          conc     346.79 ug/L
                rep   2  Mo!         conc      27.05 ug/L
                rep   2  B!          conc     357.38 ug/L
                rep   3  Mo!         conc       2.17 ug/L
                rep   3  B!          conc     369.44 ug/L
95-84-8 L
02/27/95 10:01
    Mo!         av      5.57 ug/L         sd     19.999 %cv  359.1
    B!          av    357.87 ug/L         sd     11.331 %cv    3.17
```

Use this "L" for B. DKH 2/27/95

```
02/27/95 10:03
CCV2            rep   1  Mo!         conc     475.68 ug/L
                rep   1  B!          conc     533.26 ug/L
                rep   2  Mo!         conc     451.00 ug/L
                rep   2  B!          conc     538.06 ug/L
                rep   3  Mo!         conc     454.91 ug/L
                rep   3  B!          conc     562.08 ug/L
CCV2
02/27/95 10:04
    Mo!         av    460.53 ug/L         sd     13.265 %cv    2.88
    B!          av    544.47 ug/L         sd     15.437 %cv    2.84


02/27/95 10:06
CCB2            rep   1  Mo!         conc      13.68 ug/L
                rep   1  B!          conc      27.24 ug/L
                rep   2  Mo!         conc     -14.13 ug/L
                rep   2  B!          conc      30.40 ug/L
                rep   3  Mo!         conc      -5.87 ug/L
                rep   3  B!          conc      29.72 ug/L
CCB2
02/27/95 10:06
    Mo!         av     -2.11 ug/L         sd     14.279 %cv  677.8
    B!          av     29.12 ug/L         sd      1.664 %cv    5.71

02/27/95 10:09
95-84-9         rep   1  Mo!         conc     -13.42 ug/L             window edge
                rep   1  B!          conc   24373.35 ug/L
                rep   2  Mo!         conc       3.81 ug/L
                rep   2  B!          conc   24092.72 ug/L
                rep   3  Mo!         conc       2.62 ug/L
                rep   3  B!          conc   24326.56 ug/L
```

Use "L" value for B. DKH 2/27/95

```
95-84-9
02/27/95 10:10
   Mo!        av      -2.33 ug/L          sd      9.624  %cv   412.7
   B!         av   24264.21 ug/L          sd    150.344  %cv     0.62
```

Overrange. Use 'L' (x5) Dilution for B. DKH 2/27/95

```
02/27/95 10:12
95-84-9 PDS    rep  1  Mo!      conc     852.44 ug/L
               rep  1  B!       conc   25495.13 ug/L
               rep  2  Mo!      conc     865.44 ug/L
               rep  2  B!       conc   25043.03 ug/L
               rep  3  Mo!      conc     891.12 ug/L
               rep  3  B!       conc   26598.93 ug/L
95-84-9 PDS
02/27/95 10:13
   Mo!        av     869.67 ug/L          sd     19.683  %cv     2.26
   B!         av   25712.36 ug/L          sd    800.373  %cv     3.11

02/27/95 10:15
CCV2           rep  1  Mo!      conc     505.39 ug/L
               rep  1  B!       conc     543.52 ug/L
               rep  2  Mo!      conc     546.21 ug/L
02/27/95 10:16
CCV2           rep  2  B!       conc     551.77 ug/L
02/27/95 10:18
95-84-9 L      rep  1  Mo!      conc      12.78 ug/L
               rep  1  B!       conc    5729.76 ug/L
               rep  2  Mo!      conc     -19.24 ug/L
               rep  2  B!       conc    5570.29 ug/L
               rep  3  Mo!      conc     -18.76 ug/L
               rep  3  B!       conc    5499.09 ug/L
95-84-9 L
02/27/95 10:19
   Mo!        av      -8.41 ug/L          sd     18.352  %cv   218.3
   B!         av    5599.72 ug/L          sd    118.116  %cv     2.11

02/27/95 10:24
95-84-9 L      rep  1  Mo!      conc      -5.39 ug/L
               rep  1  B!       conc    1162.44 ug/L
               rep  2  Mo!      conc      35.02 ug/L
               rep  2  B!       conc    1184.55 ug/L
               rep  3  Mo!      conc      14.74 ug/L
               rep  3  B!       conc    1160.23 ug/L
95-84-9 L
02/27/95 10:24
   Mo!        av      14.79 ug/L          sd     20.205  %cv   136.6
   B!         av    1169.08 ug/L          sd     13.450  %cv     1.15

02/27/95 10:27
95-84-10       rep  1  Mo!      conc     166.61 ug/L
               rep  1  B!       conc     459.74 ug/L
               rep  2  Mo!      conc     152.77 ug/L
               rep  2  B!       conc     455.62 ug/L
               rep  3  Mo!      conc     142.94 ug/L
               rep  3  B!       conc     438.31 ug/L
95-84-10
02/27/95 10:28
   Mo!        av     154.11 ug/L          sd     11.895  %cv     7.72
   B!         av     451.22 ug/L          sd     11.370  %cv     2.52

02/27/95 10:30
```

DKH 2/27/95

DKH 2/27/95

```
5-84-11         rep    1   Mo!           conc      26.74 ug/L
                rep    1   B!            conc     777.03 ug/L
                rep    2   Mo!           conc     -20.97 ug/L
                rep    2   B!            conc     780.14 ug/L
                rep    3   Mo!           conc     -30.23 ug/L            window edge
                rep    3   B!            conc     793.05 ug/L
95-84-11
2/27/95  10:31
    Mo!         av      -8.15 ug/L          sd     30.572 %cv   374.9
    B!          av     783.41 ug/L          sd      8.496 %cv    1.08

2/27/95  10:33
95-84-12        rep    1   Mo!           conc   21543.77 ug/L
                rep    1   B!            conc  190849.52 ug/L
                rep    2   Mo!           conc   21526.77 ug/L
                rep    2   B!            conc  190105.89 ug/L
                rep    3   Mo!           conc   22421.85 ug/L
                rep    3   B!            conc  191911.08 ug/L
5-84-12
02/27/95  10:34
    Mo!         av   21830.80 ug/L          sd    511.936 %cv     2.35
    B!          av   190955.5 ug/L          sd    907.243 %cv     0.48

02/27/95  10:37
5-84-12  DA     rep    1   Mo!           conc   21452.64 ug/L
                rep    1   B!            conc  187558.50 ug/L
                rep    2   Mo!           conc   21720.15 ug/L
                rep    2   B!            conc  185928.25 ug/L
                rep    3   Mo!           conc   21758.09 ug/L
                rep    3   B!            conc  191974.23 ug/L
95-84-12  DA
2/27/95  10:38
    Mo!         av   21643.63 ug/L          sd    166.480 %cv     0.77
    B!          av   188486.9 ug/L          sd   3128.112 %cv     1.66

2/27/95  10:44
95-84-12        rep    1   Mo!           conc     127.45 ug/L
                rep    1   B!            conc    1267.83 ug/L
x200            rep    2   Mo!           conc      91.67 ug/L
Dilution        rep    2   B!            conc    1289.38 ug/L
DKH 2/27/95     rep    3   Mo!           conc      98.51 ug/L
                rep    3   B!            conc    1250.93 ug/L
5-84-12
02/27/95  10:45
    Mo!         av     105.88 ug/L          sd     18.994 %cv    17.94
    B!          av    1269.38 ug/L          sd     19.275 %cv     1.52

02/27/95  10:47
5-84-12  DA     rep    1   Mo!           conc     133.54 ug/L
                rep    1   B!            conc    1237.66 ug/L
x200 Dil.       rep    2   Mo!           conc     118.94 ug/L
DKH 2/27/95     rep    2   B!            conc    1260.86 ug/L
                rep    3   Mo!           conc     131.92 ug/L
                rep    3   B!            conc    1253.08 ug/L
5-84-12  DA
2/27/95  10:48
    Mo!         av     128.13 ug/L          sd      8.004 %cv     6.25
    B!          av    1250.53 ug/L          sd     11.808 %cv     0.94

02/27/95  10:51
```

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```
:CV2              rep    1   Mo!          conc      462.76  ug/L
                  rep    1   B!           conc      568.88  ug/L
                  rep    2   Mo!          conc      459.73  ug/L
                  rep    2   B!           conc      599.41  ug/L
)2/27/95  10:52
CCV2              rep    3   Mo!          conc      476.13  ug/L
02/27/95  10:54
:CV2              rep    1   Mo!          conc      471.53  ug/L
                  rep    1   B!           conc      598.20  ug/L
02/27/95  10:54
'CV2              rep    2   Mo!          conc      733.67  ug/L
)2/27/95  10:58
CCV2              rep    1   Mo!          conc      473.30  ug/L
                  rep    1   B!           conc      478.96  ug/L
                  rep    2   Mo!          conc      432.29  ug/L
                  rep    2   B!           conc      492.89  ug/L
                  rep    3   Mo!          conc      512.02  ug/L
                  rep    3   B!           conc      479.56  ug/L
'CV2
02/27/95  10:59
    Mo!           av      472.54  ug/L         sd     39.871  %cv    8.44
    B!            av      483.80  ug/L         sd      7.875  %cv    1.63

02/27/95  11:01
'CB2              rep    1   Mo!          conc      -18.85  ug/L
                  rep    1   B!           conc       23.04  ug/L
                  rep    2   Mo!          conc       12.27  ug/L
                  rep    2   B!           conc        9.47  ug/L
                  rep    3   Mo!          conc        3.05  ug/L
                  rep    3   B!           conc       15.74  ug/L
^CB2
 2/27/95  11:02
    Mo!           av       -1.18  ug/L         sd     15.984  %cv   1359.
    B!            av       16.08  ug/L         sd      6.788  %cv   42.20

 2/27/95  11:09
95-84-13          rep    1   Mo!          conc       18.70  ug/L
                  rep    1   B!           conc    35320.67  ug/L
                  rep    2   Mo!          conc       -1.89  ug/L
                  rep    2   B!           conc    35156.82  ug/L
                  rep    3   Mo!          conc       -5.82  ug/L
                  rep    3   B!           conc    36560.80  ug/L
ʒ5-84-13
02/27/95  11:10
    Mo!           av        3.66  ug/L         sd     13.170  %cv   359.4
    B!            av    35679.43  ug/L         sd    767.675  %cv    2.15

^2/27/95  11:36
 5-84-13  DA      rep    1   Mo!          conc       23.34  ug/L
                  rep    1   B!           conc    35208.22  ug/L
                  rep    2   Mo!          conc       12.67  ug/L
                  rep    2   B!           conc    35963.12  ug/L
                  rep    3   Mo!          conc        1.46  ug/L
                  rep    3   B!           conc    37103.38  ug/L
 5-84-13  DA
 2/27/95  11:37
    Mo!           av       12.49  ug/L         sd     10.943  %cv   87.61
    B!            av    36091.57  ug/L         sd    954.091  %cv    2.64

02/27/95  11:43
```

Rinsed + Reanalyzed
DYH 2/27/95

```
 2/27/95 12:03
.5-84-15        rep   1  Mo!        conc      9.63 ug/L
                rep   1  B!         conc  45642.69 ug/L
                rep   2  Mo!        conc     40.97 ug/L
                rep   2  B!         conc  47375.54 ug/L
                rep   3  Mo!        conc     22.28 ug/L
                rep   3  B!         conc  47565.14 ug/L
 5-84-15
02/27/95 12:04
   Mo!          av     24.29 ug/L        sd    15.764 %cv   64.89
   B!           av  46861.12 ug/L        sd  1059.442 %cv    2.26

02/27/95 12:08
"5-84-15        rep   1  Mo!        conc     -7.19 ug/L
 X100           rep   1  B!         conc    700.73 ug/L
 Dil.           rep   2  Mo!        conc     -6.53 ug/L
 DK 2/27/95     rep   2  B!         conc    662.53 ug/L
                rep   3  Mo!        conc     11.33 ug/L
                rep   3  B!         conc    654.56 ug/L
95-84-15
 2/27/95 12:09
   Mo!          av     -0.80 ug/L        sd    10.511 %cv  1319.
   B!           av    672.61 ug/L        sd    24.680 %cv    3.67

 2/27/95 12:11
1CSABF          rep   1  Mo!        conc    854.20 ug/L
                rep   1  B!         conc   1090.82 ug/L
                rep   2  Mo!        conc    901.50 ug/L
                rep   2  B!         conc   1081.89 ug/L
                rep   3  Mo!        conc    882.93 ug/L
                rep   3  B!         conc   1087.06 ug/L
CSABF
02/27/95 12:12
   Mo!          av    879.54 ug/L        sd    23.834 %cv    2.71
   B!           av   1086.59 ug/L        sd     4.480 %cv    0.41

02/27/95 12:13
 CV3            rep   1  Mo!        conc    453.60 ug/L
                rep   1  B!         conc    537.54 ug/L
                rep   2  Mo!        conc    463.71 ug/L
                rep   2  B!         conc    525.24 ug/L
                rep   3  Mo!        conc    484.80 ug/L
                rep   3  B!         conc    523.25 ug/L
CCV3
 2/27/95 12:14
   Mo!          av    467.37 ug/L        sd    15.922 %cv    3.41
   B!           av    528.68 ug/L        sd     7.739 %cv    1.46

 2/27/95 12:16
CCB3            rep   1  Mo!        conc    -40.86 ug/L          window edge
                rep   1  B!         conc     19.00 ug/L
                rep   2  Mo!        conc    -38.43 ug/L          window edge
                rep   2  B!         conc      9.32 ug/L
                rep   3  Mo!        conc     21.30 ug/L
                rep   3  B!         conc     25.16 ug/L
 CB3
02/27/95 12:17
   Mo!          av    -19.33 ug/L        sd    35.206 %cv   182.1
   B!           av     17.83 ug/L        sd     7.981 %cv   44.77
```

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31527A
SrCr

Method Name: BB856

Comment:Analyst: DKH

Read Delay : 30 sec   Replicates : 3   Format name : Database

Analysis Number	AS Posn	Sample ID	Sequence Name	Dilution	Weight / Volume
1	4	wcal standard	SrCr		
2	5	blank	SrCr		
3	1	#1 standard	SrCr		
4	2	#2 standard	SrCr		
5	3	#3 standard	SrCr		
6	4	#4 standard	SrCr		
7	4	CHECK HS	SrCr		
8	6	ICV	SrCr		
9	5	ICB	SrCr		
10	54	ICSABI	SrCr		
11	9	31527A-MB	SrCr		
12	10	31527A-LCS	SrCr		
13	11	95-84-1	SrCr		
14	12	95-84-2	SrCr		
15	13	95-204-8	SrCr		
16	14	95-84-3	SrCr		
17	15	95-84-3 PDS	SrCr		
18	16	95-84-3 L	SrCr		
19	17	95-84-4	SrCr		
20	18	95-84-4 PDS	SrCr		
21	7	CCV1	SrCr		
22	8	CCB1	SrCr		
23	19	95-84-4 L	SrCr		
24	20	95-84-5	SrCr		
25	21	95-84-5 DA	SrCr		
26	22	95-84-6	SrCr		
27	23	95-84-6 DA	SrCr		
28	24	95-84-8	SrCr	x50 Dilution	
29	25	95-84-8 PDS	SrCr		
30	26	95-84-8 L	SrCr	x50 L	
31	27	95-84-9	SrCr		
32	28	95-84-9 PDS	SrCr		
33	7	CCV2	SrCr		
34	8	CCB2	SrCr		
35	29	95-84-9 L	SrCr		
36	30	95-84-10	SrCr		
37	31	95-84-11	SrCr		
38	32	95-84-12	SrCr	>x50 Dil.	
39	33	95-84-12 DA	SrCr		
40	34	95-84-13	SrCr		
41	35	95-84-13 DA	SrCr		
42	36	95-84-14	SrCr	->x100 Dil.	
43	37	95-84-15	SrCr		
44	54	ICSABF	SrCr		
45	7	CCV3	SrCr		
46	8	CCB3	SrCr		

```
)2/27/95 12:47
.cal standard   rep   1  Cr!       em      7188.5 conc 10.000
                rep   1  Sr!       em    194878.1 conc 10.00
                rep   2  Cr!       em      7225.5 conc 10.000
                rep   2  Sr!       em    195127.9 conc 10.00
                rep   3  Cr!       em      7148.8 conc 10.000
                rep   3  Sr!       em    195841.9 conc 10.00
/cal standard
02/27/95 12:48
    Cr!         av    7187.61           sd     38.346 %cv    0.53 conc   10.000
    Sr!         av  195282.6            sd    500.209 %cv    0.26 conc    10.00

02/27/95 12:50
blank           rep   1  Cr!       em       133.3
                rep   1  Sr!       em      1313.8
                rep   2  Cr!       em        94.2
                rep   2  Sr!       em      1120.3
                rep   3  Cr!       em       105.9
                rep   3  Sr!       em       832.3
blank
 2/27/95 12:51
    Cr!         av     111.17           sd     20.065 %cv   18.05
    Sr!         av    1088.81           sd    242.303 %cv   22.25

 2/27/95 12:52
#1 standard     rep   1  Cr!       em       176.4 conc 10.000
                rep   1  Sr!       em      2764.4 conc 10.00
                rep   2  Cr!       em       161.3 conc 10.000
                rep   2  Sr!       em      2517.6 conc 10.00
                rep   3  Cr!       em       163.9 conc 10.000
                rep   3  Sr!       em      2516.8 conc 10.00
 1 standard
02/27/95 12:53
    Cr!         av    167.203           sd     8.0949 %cv    4.84 conc   10.000
    Sr!         av    2599.61           sd    142.743 %cv    5.49 conc    10.00

02/27/95 12:55
 2 standard     rep   1  Cr!       em       806.8 conc 100.00
                rep   1  Sr!       em     19567.7 conc 100.00
                rep   2  Cr!       em       786.7 conc 100.00
                rep   2  Sr!       em     19769.5 conc 100.00
                rep   3  Cr!       em       726.2 conc 100.00
                rep   3  Sr!       em     19972.2 conc 100.00
#2 standard
 2/27/95 12:56
    Cr!         av     773.24           sd     41.971 %cv    5.43 conc   100.00
    Sr!         av   19769.78           sd    202.258 %cv    1.02 conc   100.00

 2/27/95 12:58
#3 standard     rep   1  Cr!       em      3556.2 conc 500.00
                rep   1  Sr!       em     99880.0 conc 500.00
                rep   2  Cr!       em      3716.8 conc 500.00
                rep   2  Sr!       em    102248.2 conc 500.00
                rep   3  Cr!       em      3541.7 conc 500.00
                rep   3  Sr!       em    102842.7 conc 500.00
 3 standard
02/27/95 12:59
    Cr!         av    3604.88           sd     97.171 %cv    2.70 conc   500.00
    Sr!         av   101656.9           sd   1567.367 %cv    1.54 conc   500.00
```

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```
02/27/95 13:01
#4 standard     rep  1  Cr!     em      6935.1 conc 1000.0
                rep  1  Sr!     em    200594.6 conc 1000.00
                rep  2  Cr!     em      6933.3 conc 1000.0
                rep  2  Sr!     em    198986.9 conc 1000.00
                rep  3  Cr!     em      6904.1 conc 1000.0
                rep  3  Sr!     em    205255.4 conc 1000.00
#4 standard
02/27/95 13:02
    Cr!         av    6924.1          sd     17.39 %cv  0.25 conc  1000.0
    Sr!         av  201612.3          sd  3255.802 %cv  1.61 conc  1000.0

02/27/95 13:04
CHECK HS        rep  1  Cr!     conc    1032.7 ug/L
                rep  1  Sr!     conc    996.40
                rep  2  Cr!     conc    1024.1 ug/L
                rep  2  Sr!     conc   1015.71
                rep  3  Cr!     conc    1035.4 ug/L
                rep  3  Sr!     conc   1005.31
CHECK HS
02/27/95 13:05
    Cr!         av    1030.7 ug/L     sd      5.88 %cv  0.57
    Sr!         av   1005.81          sd     9.663 %cv  0.96


02/27/95 13:06
ICV             rep  1  Cr!     conc     471.3 ug/L
                rep  1  Sr!     conc    462.77
                rep  2  Cr!     conc     474.8 ug/L
                rep  2  Sr!     conc    449.78
                rep  3  Cr!     conc     479.8 ug/L
                rep  3  Sr!     conc    468.14
ICV
02/27/95 13:08
    Cr!         av     475.3 ug/L     sd      4.31 %cv  0.91
    Sr!         av    460.23          sd     9.442 %cv  2.05

02/27/95 13:09
ICB             rep  1  Cr!     conc     -13.0 ug/L        window edge
                rep  1  Sr!     conc     -1.74
                rep  2  Cr!     conc      -5.6 ug/L
                rep  2  Sr!     conc     -2.17
                rep  3  Cr!     conc      -6.9 ug/L
                rep  3  Sr!     conc     -1.95
ICB
02/27/95 13:10
    Cr!         av      -8.5 ug/L     sd      3.98 %cv  46.80
    Sr!         av     -1.96          sd     0.217 %cv  11.08
```

DKH 2/27/95

```
02/27/95 13:13
ICB             rep  1  Cr!     conc     -10.7 ug/L        window edge
                rep  1  Sr!     conc     -1.88             window edge
                rep  2  Cr!     conc      -3.5 ug/L
                rep  2  Sr!     conc     -2.18
                rep  3  Cr!     conc      -6.4 ug/L
                rep  3  Sr!     conc     -2.15
ICB
02/27/95 13:14
    Cr!         av      -6.8 ug/L     sd      3.61 %cv  53.16
```

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```
    Sr!          av      -2.07                sd      0.168 %cv    8.13

 2/27/95 13:16
 CSABI           rep    1   Cr!           conc      895.7 ug/L
                 rep    1   Sr!           conc     884.61
                 rep    2   Cr!           conc      919.2 ug/L
                 rep    2   Sr!           conc     868.34
                 rep    3   Cr!           conc      896.2 ug/L
                 rep    3   Sr!           conc     888.98
 CSABI
 2/27/95 13:17
    Cr!          av      903.7 ug/L           sd      13.43 %cv    1.49
    Sr!          av     880.64                sd     10.874 %cv    1.23

02/27/95 13:19
31527A-MB        rep    1   Cr!           conc       -0.8 ug/L
                 rep    1   Sr!           conc      -2.58                window edge
                 rep    2   Cr!           conc       -7.9 ug/L
                 rep    2   Sr!           conc      -1.74
                 rep    3   Cr!           conc       -8.0 ug/L
                 rep    3   Sr!           conc      -1.56
31527A-MB
02/27/95 13:20
    Cr!          av       -5.6 ug/L           sd       4.13 %cv   74.19
    Sr!          av      -1.96                sd      0.543 %cv   27.71

 2/27/95 13:22
 1527A-LCS       rep    1   Cr!           conc      151.4 ug/L
                 rep    1   Sr!           conc     489.97
                 rep    2   Cr!           conc      149.5 ug/L
                 rep    2   Sr!           conc     490.03
                 rep    3   Cr!           conc      164.7 ug/L
                 rep    3   Sr!           conc     485.68
 1527A-LCS
02/27/95 13:23
    Cr!          av      155.2 ug/L           sd       8.27 %cv    5.33
    Sr!          av     488.56                sd      2.493 %cv    0.51

02/27/95 13:24
 5-84-1          rep    1   Cr!           conc       -4.5 ug/L
                 rep    1   Sr!           conc      -1.45
                 rep    2   Cr!           conc       -9.3 ug/L
                 rep    2   Sr!           conc      -1.73
                 rep    3   Cr!           conc       -6.5 ug/L
                 rep    3   Sr!           conc      -1.70
95-84-1
 2/27/95 13:26
    Cr!          av       -6.8 ug/L           sd       2.44 %cv   35.99
    Sr!          av      -1.63                sd      0.156 %cv    9.60

 2/27/95 13:27
95-84-2          rep    1   Cr!           conc       42.6 ug/L
                 rep    1   Sr!           conc      17.11
                 rep    2   Cr!           conc       53.4 ug/L
                 rep    2   Sr!           conc      17.62
                 rep    3   Cr!           conc       40.5 ug/L
                 rep    3   Sr!           conc      17.47
 5-84-2
02/27/95 13:29
```

49

```
    Cr!         av       45.5 ug/L          sd        6.94 %cv   15.25
    Sr!         av      17.40               sd       0.261 %cv    1.50

 2/27/95 13:30
 5-204-8        rep    1  Cr!         conc        1.4 ug/L
                rep    1  Sr!         conc      14.33
                rep    2  Cr!         conc       -1.0 ug/L
                rep    2  Sr!         conc      13.97
                rep    3  Cr!         conc        8.2 ug/L
                rep    3  Sr!         conc      14.43
 5-204-8
02/27/95 13:32
    Cr!         av        2.9 ug/L          sd        4.73 %cv  165.3
    Sr!         av      14.24               sd       0.243 %cv    1.71

02/27/95 13:33
^5-84-3         rep    1  Cr!         conc       11.7 ug/L
                rep    1  Sr!         conc       0.78
                rep    2  Cr!         conc        2.6 ug/L
                rep    2  Sr!         conc       0.85
                rep    3  Cr!         conc        7.4 ug/L
                rep    3  Sr!         conc       0.38
95-84-3
 2/27/95 13:35
    Cr!         av        7.2 ug/L          sd        4.54 %cv   63.05
    Sr!         av       0.67               sd       0.253 %cv   37.82

 2/27/95 13:36
95-84-3 PDS     rep    1  Cr!         conc      149.1 ug/L
                rep    1  Sr!         conc      43.68
                rep    2  Cr!         conc      165.6 ug/L
                rep    2  Sr!         conc      44.50
                rep    3  Cr!         conc      158.4 ug/L
                rep    3  Sr!         conc      44.40
 5-84-3 PDS
02/27/95 13:38
    Cr!         av      157.7 ug/L          sd        8.27 %cv    5.25
    Sr!         av      44.19               sd       0.445 %cv    1.01

02/27/95 13:39
 5-84-3 L       rep    1  Cr!         conc       -2.5 ug/L
                rep    1  Sr!         conc      -0.97
                rep    2  Cr!         conc        2.5 ug/L
                rep    2  Sr!         conc      -1.38
                rep    3  Cr!         conc       -6.6 ug/L
                rep    3  Sr!         conc      -0.96
95-84-3 L
 2/27/95 13:41
    Cr!         av       -2.2 ug/L          sd        4.57 %cv  206.3
    Sr!         av      -1.10               sd       0.239 %cv   21.63

 2/27/95 13:42
95-84-4         rep    1  Cr!         conc       20.8 ug/L
                rep    1  Sr!         conc      15.08
                rep    2  Cr!         conc       17.0 ug/L
                rep    2  Sr!         conc      16.34
                rep    3  Cr!         conc       11.8 ug/L
                rep    3  Sr!         conc      15.47                       50
 5-84-4
```

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    Cr!         av      16.5 ug/L        sd       4.51 %cv   27.30
    Sr!         av     15.63             sd      0.645 %cv    4.12

 2/27/95 13:46
 5-84-4 PDS     rep   1  Cr!        conc      179.7 ug/L
                rep   1  Sr!        conc      63.76
                rep   2  Cr!        conc      185.7 ug/L
                rep   2  Sr!        conc      64.55
                rep   3  Cr!        conc      191.5 ug/L
                rep   3  Sr!        conc      64.86
 5-84-4 PDS
 2/27/95 13:47
    Cr!         av     185.6 ug/L        sd       5.88 %cv    3.17
    Sr!         av     64.39             sd      0.566 %cv    0.88

02/27/95 13:49
CCV1            rep   1  Cr!        conc      476.4 ug/L
                rep   1  Sr!        conc     473.55
                rep   2  Cr!        conc      472.9 ug/L
                rep   2  Sr!        conc     492.19
                rep   3  Cr!        conc      473.3 ug/L
                rep   3  Sr!        conc     473.22
CCV1
02/27/95 13:50
    Cr!         av     474.2 ug/L        sd       1.90 %cv    0.40
    Sr!         av    479.65             sd     10.857 %cv    2.26

 2/27/95 13:51
CCB1            rep   1  Cr!        conc       -8.9 ug/L
                rep   1  Sr!        conc      -2.23
                rep   2  Cr!        conc       -2.0 ug/L
                rep   2  Sr!        conc      -1.86
                rep   3  Cr!        conc        1.0 ug/L
                rep   3  Sr!        conc      -1.68
CB1
02/27/95 13:53
    Cr!         av      -3.3 ug/L        sd       5.04 %cv   153.2
    Sr!         av     -1.92             sd      0.282 %cv   14.67

02/27/95 13:54
95-84-4 L       rep   1  Cr!        conc      -15.3 ug/L           window edge
                rep   1  Sr!        conc       1.79
                rep   2  Cr!        conc       -1.6 ug/L
                rep   2  Sr!        conc       1.95
                rep   3  Cr!        conc       -0.3 ug/L
                rep   3  Sr!        conc       1.87
95-84-4 L
 2/27/95 13:56
    Cr!         av      -5.7 ug/L        sd       8.31 %cv   144.9
    Sr!         av      1.87             sd      0.080 %cv    4.25

 2/27/95 13:57
95-84-5         rep   1  Cr!        conc       29.7 ug/L
                rep   1  Sr!        conc      16.81
                rep   2  Cr!        conc       28.7 ug/L
                rep   2  Sr!        conc      17.84
                rep   3  Cr!        conc       24.7 ug/L
                rep   3  Sr!        conc      17.10
 5-84-5
02/27/95 13:59
```

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   Cr!        av      27.7 ug/L         sd       2.64 %cv    9.54
   Sr!        av     17.25              sd      0.534 %cv    3.10

 2/27/95 14:01
 5-84-5 DA    rep   1  Cr!          conc      20.6 ug/L
              rep   1  Sr!          conc     17.33
              rep   2  Cr!          conc      20.2 ug/L
              rep   2  Sr!          conc     17.70
              rep   3  Cr!          conc      36.9 ug/L
              rep   3  Sr!          conc     17.20
 5-84-5 DA
02/27/95 14:02
   Cr!        av      25.9 ug/L         sd       9.50 %cv   36.68
   Sr!        av     17.41              sd      0.262 %cv    1.51

02/27/95 14:04
95-84-6       rep   1  Cr!          conc       1.3 ug/L
              rep   1  Sr!          conc      0.77
              rep   2  Cr!          conc       0.5 ug/L
              rep   2  Sr!          conc      1.24
              rep   3  Cr!          conc      -0.4 ug/L
              rep   3  Sr!          conc      0.70
95-84-6
 2/27/95 14:05
   Cr!        av       0.5 ug/L         sd       0.87 %cv   185.4
   Sr!        av      0.90              sd      0.295 %cv   32.68

 2/27/95 14:07
95-84-6 DA    rep   1  Cr!          conc       8.7 ug/L
              rep   1  Sr!          conc      0.90
              rep   2  Cr!          conc      -1.2 ug/L
              rep   2  Sr!          conc      0.94
              rep   3  Cr!          conc       0.5 ug/L
              rep   3  Sr!          conc      0.72
 5-84-6 DA
02/27/95 14:08
   Cr!        av       2.7 ug/L         sd       5.28 %cv   199.0
   Sr!        av      0.85              sd      0.118 %cv   13.90

02/27/95 14:10
 5-84-8       rep   1  Cr!          conc   26526.8 ug/L
              rep   1  Sr!          conc   5107.33                 over range
              rep   2  Cr!          conc   26536.5 ug/L
              rep   2  Sr!          conc   5085.79                 over range
              rep   3  Cr!          conc   26566.4 ug/L
              rep   3  Sr!          conc   5122.90                 over range
95-84-8
 2/27/95 14:11
   Cr!        av   26543.2 ug/L         sd      20.68 %cv    0.08
   Sr!        over range

 2/27/95 14:13
95-84-8 PDS   rep   1  Cr!          conc   25586.5 ug/L
              rep   1  Sr!          conc   5109.74                 over range
              rep   2  Cr!          conc   26090.9 ug/L
              rep   2  Sr!          conc   5101.69                 over range
              rep   3  Cr!          conc   25786.8 ug/L
              rep   3  Sr!          conc   5100.07                 over range
95-84-8 PDS
```

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Cr! av 25821.4 ug/L sd 253.96 %cv 0.98
Sr! over range

2/27/95 14:20
.,5-84-8 rep 1 Cr! conc 120.0 ug/L
rep 1 Sr! conc 31.46
X200 DAA 2/27/95 rep 2 Cr! conc 128.2 ug/L
rep 2 Sr! conc 31.20
rep 3 Cr! conc 137.4 ug/L
rep 3 Sr! conc 31.87
5-84-8
02/27/95 14:21
Cr! av 128.5 ug/L sd 8.72 %cv 6.79
Sr! av 31.51 sd 0.340 %cv 1.08

02/27/95 14:27
5-84-8 rep 1 Cr! conc 549.6 ug/L
rep 1 Sr! conc 127.95
X50 DAA 2/27/95 rep 2 Cr! conc 559.3 ug/L
rep 2 Sr! conc 127.38
rep 3 Cr! conc 533.1 ug/L
rep 3 Sr! conc 129.64
95-84-8
2/27/95 14:28
Cr! av 547.3 ug/L sd 13.20 %cv 2.41
Sr! av 128.32 sd 1.177 %cv 0.92

2/27/95 14:33
95-84-8 L X50 rep 1 Cr! conc 100.0 ug/L
rep 1 Sr! conc 23.44
DAA rep 2 Cr! conc 89.2 ug/L
2/27/95 rep 2 Sr! conc 23.70
rep 3 Cr! conc 99.2 ug/L
rep 3 Sr! conc 23.99
)5-84-8 L
02/27/95 14:34
Cr! av 96.1 ug/L sd 6.01 %cv 6.25
Sr! av 23.71 sd 0.276 %cv 1.16

02/27/95 14:36
:CV2 rep 1 Cr! conc 457.5 ug/L
rep 1 Sr! conc 490.39
rep 2 Cr! conc 459.1 ug/L
rep 2 Sr! conc 489.54
rep 3 Cr! conc 460.2 ug/L
rep 3 Sr! conc 483.27
CCV2
)2/27/95 14:37
Cr! av 458.9 ug/L sd 1.32 %cv 0.29
Sr! av 487.74 sd 3.889 %cv 0.80

)2/27/95 14:39
CCB2 rep 1 Cr! conc -3.7 ug/L
rep 1 Sr! conc -2.59 window edge
rep 2 Cr! conc -5.4 ug/L
rep 2 Sr! conc -2.02
rep 3 Cr! conc -10.0 ug/L
rep 3 Sr! conc -2.11 window edge
:CB2

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```
    Cr!        av      -6.4 ug/L        sd      3.21 %cv  50.37
    Sr!        av     -2.24             sd     0.304 %cv  13.54

‿2/27/95 14:42
95-84-9        rep   1  Cr!        conc      20.9 ug/L
               rep   1  Sr!        conc      0.52
               rep   2  Cr!        conc      23.0 ug/L
               rep   2  Sr!        conc      1.54
               rep   3  Cr!        conc      18.1 ug/L
               rep   3  Sr!        conc      1.15
95-84-9
02/27/95 14:43
    Cr!        av      20.7 ug/L        sd      2.45 %cv  11.85
    Sr!        av      1.07             sd     0.516 %cv  48.08

 2/27/95 14:45
 5-84-9 PDS    rep   1  Cr!        conc     154.5 ug/L
               rep   1  Sr!        conc     46.19
               rep   2  Cr!        conc     164.0 ug/L
               rep   2  Sr!        conc     45.14
               rep   3  Cr!        conc     155.5 ug/L
               rep   3  Sr!        conc     47.78
 5-84-9 PDS
 2/27/95 14:46
    Cr!        av     158.0 ug/L        sd      5.21 %cv   3.30
    Sr!        av     46.37             sd     1.330 %cv   2.87

02/27/95 14:49
95-84-9 L      rep   1  Cr!        conc      -1.8 ug/L
               rep   1  Sr!        conc     -1.20
               rep   2  Cr!        conc      -6.1 ug/L
               rep   2  Sr!        conc     -1.48
               rep   3  Cr!        conc      -5.6 ug/L
               rep   3  Sr!        conc     -2.39              window edge
95-84-9 L
^2/27/95 14:50
    Cr!        av      -4.5 ug/L        sd      2.32 %cv  51.34
    Sr!        av     -1.69             sd     0.620 %cv  36.74

 2/27/95 14:52
‿5-84-10       rep   1  Cr!        conc      47.3 ug/L
               rep   1  Sr!        conc     21.97
               rep   2  Cr!        conc      40.1 ug/L
               rep   2  Sr!        conc     23.22
               rep   3  Cr!        conc      41.2 ug/L
               rep   3  Sr!        conc     23.83
 5-84-10
02/27/95 14:53
    Cr!        av      42.9 ug/L        sd      3.83 %cv   8.94
    Sr!        av     23.00             sd     0.949 %cv   4.13

02/27/95 14:55
^5-84-11       rep   1  Cr!        conc       9.4 ug/L
               rep   1  Sr!        conc     -1.34
               rep   2  Cr!        conc       6.8 ug/L
               rep   2  Sr!        conc     -0.43
               rep   3  Cr!        conc      -3.2 ug/L
               rep   3  Sr!        conc     -1.07
```

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```
 2/27/95 14:56
    Cr!        av      4.3 ug/L        sd     6.65 %cv  153.9
    Sr!        av    -0.95             sd    0.467 %cv  49.24

 2/27/95 14:58
95-84-12       rep   1  Cr!        conc   20037.8 ug/L
               rep   1  Sr!        conc   4921.28
               rep   2  Cr!        conc   20495.8 ug/L
               rep   2  Sr!        conc   4935.05
               rep   3  Cr!        conc   20039.1 ug/L
               rep   3  Sr!        conc   4944.02                over range
95-84-12
02/27/95 14:59
    Cr!        av  20190.9 ug/L        sd   264.05 %cv   1.31
    Sr!        over range

02/27/95 15:06
 5-84-12       rep   1  Cr!        conc     455.5 ug/L
               rep   1  Sr!        conc    105.11
  x50 Dil      rep   2  Cr!        conc     469.4 ug/L
               rep   2  Sr!        conc    104.99
               rep   3  Cr!        conc     464.6 ug/L
               rep   3  Sr!        conc    106.10
 5-84-12
 2/27/95 15:07
    Cr!        av    463.2 ug/L        sd     7.06 %cv   1.52
    Sr!        av   105.40             sd    0.609 %cv   0.58
                DKH 2/27/95
02/27/95 15:09
95-84-12 DA    rep   1  Cr!        conc     459.2 ug/L
               rep   1  Sr!        conc    104.67
  x50 Dil      rep   2  Cr!        conc     471.8 ug/L
               rep   2  Sr!        conc    103.96
               rep   3  Cr!        conc     468.6 ug/L
               rep   3  Sr!        conc    102.82
95-84-12 DA
02/27/95 15:10
    Cr!        av    466.5 ug/L        sd     6.51 %cv   1.39
    Sr!        av   103.32             sd    0.936 %cv   0.90

 2/27/95 15:12
95-84-13       rep   1  Cr!        conc      21.4 ug/L
               rep   1  Sr!        conc      2.32
               rep   2  Cr!        conc      28.5 ug/L
               rep   2  Sr!        conc      2.08
               rep   3  Cr!        conc      26.1 ug/L
               rep   3  Sr!        conc      2.31
95-84-13
02/27/95 15:13
    Cr!        av     25.3 ug/L        sd     3.60 %cv  14.20
    Sr!        av     2.24             sd    0.139 %cv   6.22

02/27/95 15:15
95-84-13 DA    rep   1  Cr!        conc      29.9 ug/L
               rep   1  Sr!        conc      2.33
               rep   2  Cr!        conc      42.1 ug/L
               rep   2  Sr!        conc      2.28
               rep   3  Cr!        conc      27.4 ug/L
               rep   3  Sr!        conc      2.06
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2/27/95 15:16
   Cr!        av       33.1 ug/L       sd       7.85 %cv   23.70
   Sr!        av       2.22            sd      0.144 %cv    6.46

02/27/95 15:18
95-84-14      rep   1  Cr!        conc   22149.3 ug/L
              rep   1  Sr!        conc   4145.42
              rep   2  Cr!        conc   21928.5 ug/L
              rep   2  Sr!        conc   4120.64
              rep   3  Cr!        conc   21944.8 ug/L
              rep   3  Sr!        conc   3993.52
95-84-14
02/27/95 15:19
   Cr!        av    22007.5 ug/L       sd     123.02 %cv    0.56
   Sr!        av    4086.53            sd     81.493 %cv    1.99

2/27/95 15:21
5-84-15       rep   1  Cr!        conc      11.9 ug/L
02/27/95 15:21
95-84-15      rep   1  Sr!        conc      0.16
2/27/95 15:27
CCV2          rep   1  Cr!        conc     478.0 ug/L
              rep   1  Sr!        conc    488.74
              rep   2  Cr!        conc     479.2 ug/L
              rep   2  Sr!        conc    477.63
              rep   3  Cr!        conc     484.0 ug/L
              rep   3  Sr!        conc    481.98
CV2
02/27/95 15:28
   Cr!        av      480.4 ug/L       sd       3.17 %cv    0.66
   Sr!        av     482.78            sd      5.601 %cv    1.16

02/27/95 15:30
CB2           rep   1  Cr!        conc      -7.8 ug/L
              rep   1  Sr!        conc     -1.72
              rep   2  Cr!        conc      -8.1 ug/L
              rep   2  Sr!        conc     -1.68
              rep   3  Cr!        conc      -7.0 ug/L
              rep   3  Sr!        conc     -2.23
CCB2
2/27/95 15:31
   Cr!        av       -7.6 ug/L       sd       0.57 %cv    7.52
   Sr!        av      -1.88            sd      0.305 %cv   16.27

2/27/95 15:33
95-84-9 L     rep   1  Cr!        conc     -10.3 ug/L           window edge
              rep   1  Sr!        conc     -1.78
2/27/95 15:34
95-84-9 L     rep   2  Cr!        conc      -2.3 ug/L
02/27/95 15:35
5-84-14       rep   1  Cr!        conc     232.2 ug/L
              rep   1  Sr!        conc     35.45
              rep   2  Cr!        conc     235.7 ug/L
X100 Dil.
DKH 2/27/95
              rep   2  Sr!        conc     35.40
              rep   3  Cr!        conc     216.5 ug/L
              rep   3  Sr!        conc     34.91
5-84-14
2/27/95 15:37
```

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    Sr!         av      35.25               sd      0.294 %cv    0.83

02/27/95 15:39
_5-84-15        rep    1   Cr!          conc       -1.3 ug/L
                rep    1   Sr!          conc      -0.93
                rep    2   Cr!          conc      -11.9 ug/L          window edge
                rep    2   Sr!          conc      -0.88
                rep    3   Cr!          conc        4.6 ug/L
                rep    3   Sr!          conc      -0.88
05-84-15
2/27/95 15:40
    Cr!         av      -2.9 ug/L           sd       8.38 %cv  291.0
    Sr!         av     -0.90                sd      0.030 %cv    3.34

.2/27/95 15:41
ICSABF          rep    1   Cr!          conc      931.1 ug/L
                rep    1   Sr!          conc     957.23
                rep    2   Cr!          conc      945.5 ug/L
                rep    2   Sr!          conc     960.10
                rep    3   Cr!          conc      919.2 ug/L
                rep    3   Sr!          conc     936.25
ICSABF
02/27/95 15:43
    Cr!         av     931.9 ug/L           sd      13.18 %cv    1.41
    Sr!         av    951.19                sd     13.019 %cv    1.37

02/27/95 15:44
CV3             rep    1   Cr!          conc      499.7 ug/L
                rep    1   Sr!          conc     478.16
                rep    2   Cr!          conc      485.3 ug/L
                rep    2   Sr!          conc     485.83
                rep    3   Cr!          conc      478.5 ug/L
                rep    3   Sr!          conc     477.15
CV3
2/27/95 15:45
    Cr!         av     487.8 ug/L           sd      10.83 %cv    2.22
    Sr!         av    480.38                sd      4.745 %cv    0.99

02/27/95 15:47
CCB3            rep    1   Cr!          conc       -9.4 ug/L
                rep    1   Sr!          conc      -2.47                window edge
                rep    2   Cr!          conc       -1.2 ug/L
                rep    2   Sr!          conc      -2.39                window edge
                rep    3   Cr!          conc       -2.2 ug/L
                rep    3   Sr!          conc      -1.44                window edge
CCB3
02/27/95 15:48
    Cr!         av      -4.3 ug/L           sd       4.48 %cv  105.0
    Sr!         av     -2.10                sd      0.569 %cv   27.14
```

31472A K
31485 K
31527A K

ID/Weight File: AB037.IDWWWWWWW   Analyst: HOLSTE/CROKER
Sample Volume: 100 mL   Nominal Weight: 1.0 g

Loc.	Sample ID	Weight	Dilution
1	ICV-800		
2	ICB		
3	31472A MB		
4	31472A LCS		
5	94-249-1		
6	94-249-2		
7	94-249-2D		
8	94-249-3		
9	94-249-3 L		
10	94-249-3 MS		
11	94-249-3 MSD		
12	94-249-3 PDS		
13	CCV-1500		
14	94-249-4		
15	94-249-5		
16	94-249-11		
17	CCV-1500		
18	31485 MB		
19	31485 LCS		
20	95-165-1C		
21	95-165-1C PDS		
22	95-165-2C		
23	95-165-2C L		
24	95-165-3C		
25	95-165-4C		
26	CCV-1500		
27	95-165-5C		
28	95-165-6C		
29	95-165-7C		
30	95-165-8C		
31	CCV-1500		
32	31527A MB		
33	31527A LCS		
34	95-204-8		
35	95-84-3		
36	95-84-3 PDS		
37	95-84-3 L		
38	95-84-4		
39	95-84-4 DA		
40	95-84-4 PDS		
41	95-84-4 L		
42	CCV-1500		
43	95-84-5		
44	95-84-5 DA		
45	95-84-6		
46	95-84-6 DA		
47	95-84-8 X500		
48	95-84-8 PDS		
49	95-84-8 L		
50	95-84-9		
51	95-84-9 PDS		
52	95-84-9 L		
53	CCV-1500		
54	95-84-10		

31472 A MB is greater IDL re-calibrated and MB still greater than IDL.
JC
2/17/95

31472A 3MS + 3MSD showed no recovery. Possible matrix effects. 3PSD is within limits.
JC
2/17/95

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Loc.	Sample ID	Weight	Dilution
55	95-84-11		
56	95-84-12		
57	95-84-12DA		
58	95-84-13		
59	95-84-13DA		
60	95-84-14		
61	95-84-15		
62	CCV-1500		
63	CCB		

SMT 02/28/95

Element File: K_.FEL
Element: K   Analyst: D HOLSTE
Print Data: Main+Suppl.   Peak Storage: None
Print: Calib. Curve+Elem. Params.
Remarks:
CALIBRATION STD ID:2-39-4
ICV/CCV STD ID:2-25-4
STD PREP LOGBOOK #5 PAGE #9

INSTRUMENT: 5100   Technique: Flame   Version: 7.01
Wavelength: 766.5 Peak   Slit: 1.40 High
Signal Type: Emission   Signal Measurement: Time Average
Read Time: 3.0   Read Delay: 0.0   BOC Time: 2
Sample Replicates: 2
Standard Replicates: 2

FLAME:
Flame Type: AIR   Flame Sensor: On
Oxidant Flow: 9.0 L/min   Fuel Flow: 2.0 L/min

CALIBRATION:

Solutions	ID	Conc
Calib. Blank	STD BLK	----------
Standard 1	STD 1	100.
Standard 2	STD 2	500.
Standard 3	STD 3	1000.
Standard 4	STD 4	1500.
Standard 5	STD 5	2000.

Calibration Units: ug/L   Sample Units: ug/L
Calibration Type: Nonlinear

QC:
Matrix Check Calculations:
% Difference for Dupls: No   Locations:
% Recovery for Spike: No   Locations: Conc:

Element File: K_.FEL   Element: K   Wavelength: 766.5
Date: 02/17/95   Time: 10:16   Slit: 1.40 H
Data File: AB037.DAT   ID/Wt File: AB037.IDW   Lamp Current: 0
Technique: Flame   Calib. Type: Nonlinear   Energy: 81
Remark 1: CALIBRATION STD ID:2-39-4
Remark 2: ICV/CCV STD ID:2-25-4
Remark 3: STD PREP LOGBOOK #5 PAGE #8

K   ID: STD BLK   Seq. No.: 00001   A/S Pos.: --   Date: 02/17/95

Emission: 0.004   Time: 10:16
Concentration (ug/L): 12.

Emission: 0.004   Time: 10:16
Concentration (ug/L): 12.

Mean Conc (ug/L): 12.   SD: 0.1   RSD(%): 1.18

Auto-zero performed.

K   ID: STD BLK   Seq. No.: 00002   A/S Pos.: --   Date: 02/17/95

Emission: 0.002   Time: 10:18
Concentration (ug/L): 6.

Emission: 0.000   Time: 10:19
Concentration (ug/L): 0.

Mean Conc (ug/L): 3.   SD: 4.4   RSD(%): 136.10

Auto-zero performed.

K   ID: STD BLK   Seq. No.: 00003   A/S Pos.: --   Date: 02/17/95

Emission: -0.002   Time: 10:19
Concentration (ug/L): -5.

Emission: -0.001   Time: 10:19
Concentration (ug/L): -4.

Mean Conc (ug/L): -4.   SD: 0.7   RSD(%): 18.31

Auto-zero performed.

K   ID: STD 1   Seq. No.: 00004   A/S Pos.: --   Date: 02/17/95

Emission: 0.042   Time: 10:19
Concentration (ug/L): 124.

Emission: 0.042   Time: 10:20
Concentration (ug/L): 124.

Mean Conc (ug/L): 124.   SD: 0.3   RSD(%): 0.23

```
Element File: K_.FEL          Element: K                  Wavelength: 766.5
Date: 02/17/95                Time: 10:16                 Slit: 1.40 H
Data File: AB037.DAT          ID/Wt File: AB037.IDW       Lamp Current: 0
Technique: Flame              Calib. Type: Nonlinear      Energy: 81
Remark 1: CALIBRATION STD ID:2-39-4
Remark 2: ICV/CCV STD ID:2-25-4
Remark 3: STD PREP LOGBOOK #5 PAGE #8
--------------------------------------------------------------------------------
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
K     ID: STD BLK             Seq. No.: 00001    A/S Pos.: --    Date: 02/17/95

Emission: 0.004                        Time: 10:16
Concentration (ug/L  ): 12.

Emission: 0.004                        Time: 10:16
Concentration (ug/L  ): 12.

Mean Conc  (ug/L  ):        12.        SD: 0.1             RSD(%): 1.18

Auto-zero performed.
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
K     ID: STD BLK             Seq. No.: 00002    A/S Pos.: --    Date: 02/17/95

Emission: 0.002                        Time: 10:18
Concentration (ug/L  ): 6.

Emission: 0.000                        Time: 10:19
Concentration (ug/L  ): 0.

Mean Conc  (ug/L  ):        3.         SD: 4.4             RSD(%): 136.10

Auto-zero performed.
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
K     ID: STD BLK             Seq. No.: 00003    A/S Pos.: --    Date: 02/17/95

Emission: -0.002                       Time: 10:19
Concentration (ug/L  ): -5.

Emission: -0.001                       Time: 10:19
Concentration (ug/L  ): -4.

Mean Conc  (ug/L  ):        -4.        SD: 0.7             RSD(%): 18.31

Auto-zero performed.
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
K     ID: STD 1               Seq. No.: 00004    A/S Pos.: --    Date: 02/17/95

Emission: 0.042                        Time: 10:19
Concentration (ug/L  ): 124.

Emission: 0.043                        Time: 10:20
Concentration (ug/L  ): 124.

Mean Conc  (ug/L  ):        124.       SD: 0.3             RSD(%): 0.23
```

Standard number 1 applied. [100.]
Correlation coefficient: 1.00000 Slope: 0.0004

~~~~~~

K ID: STD 2 Seq. No.: 00005 A/S Pos.: -- Date: 02/17/95

Emission: 0.202 Time: 10:20
Concentration (ug/L): 481.

Emission: 0.202 Time: 10:20
Concentration (ug/L): 481.

Mean Conc (ug/L): 481. SD: 0.0 RSD(%): 0.01

Standard number 2 applied. [500.]
Correlation coefficient: 1.00000 Slope: 0.0004

~~~~~~

K ID: STD 3 Seq. No.: 00006 A/S Pos.: -- Date: 02/17/95

Emission: 0.388 Time: 10:20
Concentration (ug/L): 1010.

Emission: 0.386 Time: 10:21
Concentration (ug/L): 1003.

Mean Conc (ug/L): 1007. SD: 5.1 RSD(%): 0.50

Standard number 3 applied. [1000.]
Correlation coefficient: 1.00000 Slope: 0.0004

~~~~~~

K ID: STD 4 Seq. No.: 00007 A/S Pos.: -- Date: 02/17/95

Emission: 0.563 Time: 10:21
Concentration (ug/L): 1505.

Emission: 0.569 Time: 10:21
Concentration (ug/L): 1524.

Mean Conc (ug/L): 1514. SD: 13.2 RSD(%): 0.87

Standard number 4 applied. [1500.]
Correlation coefficient: 1.00000 Slope: 0.0004

~~~~~~

K ID: STD 5 Seq. No.: 00008 A/S Pos.: -- Date: 02/17/95

Emission: -0.000 Time: 10:21
Concentration (ug/L): -1.

Emission: -0.000 Time: 10:21
Concentration (ug/L): -1.

Mean Conc (ug/L): -1. SD: 0.2 RSD(%): 19.59

Standard abs. & conc. values are not in the same order.

```
Element File: K_.FEL          Element: K                     Wavelength: 766.5
Date: 02/17/95                Time: 10:26                    Slit: 1.40 H
Data File: AB037.DAT          ID/Wt File: AB037.IDWWXXXXX    Lamp Current: 0
Technique: Flame              Calib. Type: Nonlinear         Energy: 81
Remark 1: CALIBRATION STD ID:2-39-4
Remark 2: ICV/CCV STD ID:2-25-4
Remark 3: STD PREP LOGBOOK #5 PAGE #8

K     ID: ICV-800             Seq. No.: 00010    A/S Pos.: --    Date: 02/17/95

Emission: 0.311                       Time: 10:27
Concentration (ug/L  ): 789.

Emission: 0.311                       Time: 10:27
Concentration (ug/L  ): 789.

Mean Conc  (ug/L  ):      789.        SD: 0.4                 RSD(%): 0.05

K     ID: ICB                 Seq. No.: 00011    A/S Pos.: --    Date: 02/17/95

Emission: 0.005                       Time: 10:27
Concentration (ug/L  ): 12.

Emission: 0.005                       Time: 10:27
Concentration (ug/L  ): 12.

Mean Conc  (ug/L  ):      12.         SD: 0.3                 RSD(%): 2.67

K     ID: 31472A MB           Seq. No.: 00012    A/S Pos.: --    Date: 02/17/95

Emission: 0.020                       Time: 10:30
Concentration (ug/L  ): 48.

Emission: 0.021                       Time: 10:30
Concentration (ug/L  ): 49.

Mean Conc  (ug/L  ):      49.         SD: 0.5                 RSD(%): 1.07

K     ID: 31472A LCS          Seq. No.: 00013    A/S Pos.: --    Date: 02/17/95

Emission: 0.308                       Time: 10:31
Concentration (ug/L  ): 780.

Emission: 0.307                       Time: 10:31
Concentration (ug/L  ): 778.

Mean Conc  (ug/L  ):      779.        SD: 1.2                 RSD(%): 0.15

K     ID: 94-249-1            Seq. No.: 00014    A/S Pos.: --    Date: 02/17/95

Emission: 0.321                       Time: 10:32
Concentration (ug/L  ): 817.
```

Re-analyzed 2/17/95 [initials]

Re-analyzed MB to high 2/17/95 [initials]

Emission: 0.322 Time: 10:32
Concentration (ug/L): 819.

Mean Conc (ug/L): 818. SD: 1.6 RSD(%): 0.20

~~~~~~

K ID: 31472A MB Seq. No.: 00015 A/S Pos.: -- Date: 02/17/95

Emission: 0.021 Time: 10:33
Concentration (ug/L): 49.

Emission: 0.020 Time: 10:33
Concentration (ug/L): 48.

Mean Conc (ug/L): 48. SD: 0.7 RSD(%): 1.45

Re-analyzed
2/17/95
~~~~~~

Element File: K_.FEL Element: K Wavelength: 766.5
Date: 02/17/95 Time: 10:37 Slit: 1.40 H
Data File: AB037.DAT ID/Wt File: AB037.IDW Lamp Current: 0
Technique: Flame Calib. Type: Nonlinear Energy: 81
Remark 1: CALIBRATION STD ID:2-39-4
Remark 2: ICV/CCV STD ID:2-25-4
Remark 3: STD PREP LOGBOOK #5 PAGE #8

K ID: STD BLK Seq. No.: 00016 A/S Pos.: -- Date: 02/17/95

Emission: 0.003 Time: 10:38
Concentration (ug/L): 7.

Emission: 0.003 Time: 10:38
Concentration (ug/L): 7.

Mean Conc (ug/L): 7. SD: 0.0 RSD(%): 0.15

Auto-zero performed.

K ID: STD BLK Seq. No.: 00017 A/S Pos.: -- Date: 02/17/95

Emission: -0.000 Time: 10:38
Concentration (ug/L): -1.

Emission: 0.000 Time: 10:38
Concentration (ug/L): 0.

Mean Conc (ug/L): -0. SD: 0.4 RSD(%): 200.16

Auto-zero performed.

K ID: STD 1 Seq. No.: 00018 A/S Pos.: -- Date: 02/17/95

Emission: 0.041 Time: 10:39
Concentration (ug/L): 97.

Emission: 0.040 Time: 10:39
Concentration (ug/L): 96.

Mean Conc (ug/L): 96. SD: 0.7 RSD(%): 0.72

Standard number 1 applied. [100.]
Correlation coefficient: 1.00000 Slope: 0.0004

K ID: STD 2 Seq. No.: 00019 A/S Pos.: -- Date: 02/17/95

Emission: 0.196 Time: 10:39
Concentration (ug/L): 486.

Emission: 0.195 Time: 10:39
Concentration (ug/L): 484.

Mean Conc (ug/L): 485. SD: 1.0 RSD(%): 0.20

Standard number 2 applied. [500.]
Correlation coefficient: 1.00000 Slope: 0.0004

K ID: STD 3 Seq. No.: 00020 A/S Pos.: -- Date: 02/17/95

Emission: 0.379 Time: 10:39
Concentration (ug/L): 1006.

Emission: 0.378 Time: 10:39
Concentration (ug/L): 1006.

Mean Conc (ug/L): 1006. SD: 0.5 RSD(%): 0.05

Standard number 3 applied. [1000.]
Correlation coefficient: 1.00000 Slope: 0.0004

K ID: STD 4 Seq. No.: 00021 A/S Pos.: -- Date: 02/17/95

Emission: 0.562 Time: 10:40
Concentration (ug/L): 1525.

Emission: 0.556 Time: 10:40
Concentration (ug/L): 1507.

Mean Conc (ug/L): 1516. SD: 12.6 RSD(%): 0.83

Standard number 4 applied. [1500.]
Correlation coefficient: 1.00000 Slope: 0.0004

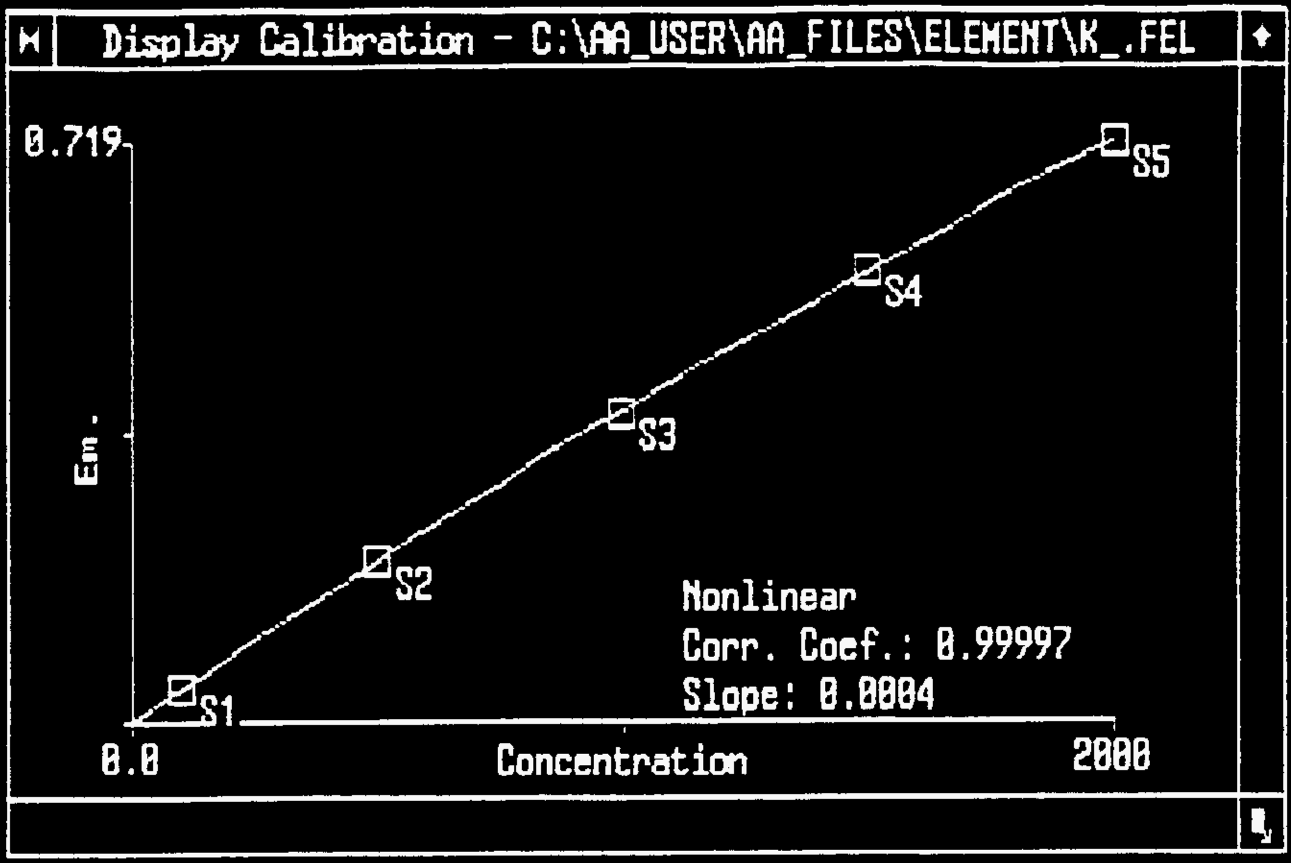
K ID: STD 5 Seq. No.: 00022 A/S Pos.: -- Date: 02/17/95

Emission: 0.719 Time: 10:40
Concentration (ug/L): 1958.

Emission: 0.720 Time: 10:40
Concentration (ug/L): 1962.

Mean Conc (ug/L): 1960. SD: 2.6 RSD(%): 0.13

Standard number 5 applied. [2000.]
Correlation coefficient: 0.99997 Slope: 0.0004


Display Calibration - C:\AA_USER\AA_FILES\ELEMENT\K_.FEL
0.719
Em.
S1
S2
S3
S4
S5
Nonlinear
Corr. Coef.: 0.99997
Slope: 0.0004
0.0
Concentration
2000

```
Element File: K_.FEL          Element: K                    Wavelength: 766.5
Date: 02/17/95                Time: 10:43                   Slit: 1.40 H
Data File: AB037.DAT          ID/Wt File: AB037.IDW         Lamp Current: 0
Technique: Flame              Calib. Type: Nonlinear        Energy: 81
Remark 1: CALIBRATION STD ID:2-39-4
Remark 2: ICV/CCV STD ID:2-25-4
Remark 3: STD PREP LOGBOOK #5 PAGE #8
```

```
K      ID: ICV-800            Seq. No.: 00023    A/S Pos.: --    Date: 02/17/95

Emission: 0.309                        Time: 10:43
Concentration (ug/L  ): 803.

Emission: 0.307                        Time: 10:43
Concentration (ug/L  ): 799.

Mean Conc  (ug/L  ):       801.        SD: 3.3                 RSD(%): 0.41
```

```
K      ID: ICB                Seq. No.: 00024    A/S Pos.: --    Date: 02/17/95

Emission: 0.001                        Time: 10:43
Concentration (ug/L  ): 1.

Emission: 0.001                        Time: 10:43
Concentration (ug/L  ): 1.

Mean Conc  (ug/L  ):         1.        SD: 0.1                 RSD(%): 3.57
```

```
K      ID: 31472A MB          Seq. No.: 00025    A/S Pos.: --    Date: 02/17/95

Emission: 0.017                        Time: 10:44
Concentration (ug/L  ): 42.

Emission: 0.017                        Time: 10:44
Concentration (ug/L  ): 43.

Mean Conc  (ug/L  ):        43.        SD: 0.7                 RSD(%): 1.53
```

```
K      ID: 31472A LCS         Seq. No.: 00026    A/S Pos.: --    Date: 02/17/95

Emission: 0.302                        Time: 10:44
Concentration (ug/L  ): 784.

Emission: 0.302                        Time: 10:44
Concentration (ug/L  ): 784.

Mean Conc  (ug/L  ):       784.        SD: 0.0                 RSD(%): 0.00
```

```
K      ID: 94-249-1           Seq. No.: 00027    A/S Pos.: --    Date: 02/17/95

Emission: 0.318                        Time: 10:45
Concentration (ug/L  ): 828.
```

Concentration (ug/L): 1432.

Emission: 0.534 Time: 11:16
Concentration (ug/L): 1440.

Mean Conc (ug/L): 1436. SD: 5.7 RSD(%): 0.40

~~~~~~

K ID: 95-165-7C Seq. No.: 00055 A/S Pos.: -- Date: 02/17/95

Emission: 0.572 Time: 11:16
Concentration (ug/L): 1550.

Emission: 0.573 Time: 11:16
Concentration (ug/L): 1553.

Mean Conc (ug/L): 1551. SD: 2.6 RSD(%): 0.17

~~~~~~

K ID: 95-165-8C Seq. No.: 00056 A/S Pos.: -- Date: 02/17/95

Emission: 0.117 Time: 11:17
Concentration (ug/L): 296.

Emission: 0.116 Time: 11:17
Concentration (ug/L): 292.

Mean Conc (ug/L): 294. SD: 3.2 RSD(%): 1.07

~~~~~~

K ID: CCV-1500 Seq. No.: 00057 A/S Pos.: -- Date: 02/17/95

Emission: 0.558 Time: 11:18
Concentration (ug/L): 1510.

Emission: 0.554 Time: 11:18
Concentration (ug/L): 1497.

Mean Conc (ug/L): 1503. SD: 8.7 RSD(%): 0.58

~~~~~~

K ID: CCB Seq. No.: 00058 A/S Pos.: -- Date: 02/17/95

Emission: 0.005 Time: 11:19
Concentration (ug/L): 14.

Emission: 0.006 Time: 11:19
Concentration (ug/L): 14.

Mean Conc (ug/L): 14. SD: 0.3 RSD(%): 2.35

~~~~~~

K ID: CCB Seq. No.: 00059 A/S Pos.: -- Date: 02/17/95

Emission: 0.005 Time: 11:19
Concentration (ug/L): 13.

Emission: 0.005 Time: 11:19
Concentration (ug/L): 11.
~~~~~~

Mean Conc (ug/L): 12. SD: 0.8 RSD(%): 7.04

K ID: 31527A MB Seq. No.: 00060 A/S Pos.: -- Date: 02/17/95

Emission: 0.007 Time: 11:23
Concentration (ug/L): 18.

Emission: 0.008 Time: 11:23
Concentration (ug/L): 19.

Mean Conc (ug/L): 18. SD: 0.5 RSD(%): 2.83

K ID: 31527A LCS Seq. No.: 00061 A/S Pos.: -- Date: 02/17/95

Emission: 0.388 Time: 11:25
Concentration (ug/L): 1022.

Emission: 0.388 Time: 11:25
Concentration (ug/L): 1020.

Mean Conc (ug/L): 1021. SD: 1.1 RSD(%): 0.11

K ID: 95-204-8 Seq. No.: 00062 A/S Pos.: -- Date: 02/17/95

Emission: 0.185 Time: 11:25
Concentration (ug/L): 472.

Emission: 0.185 Time: 11:25
Concentration (ug/L): 473.

Mean Conc (ug/L): 472. SD: 0.2 RSD(%): 0.05

K ID: 95-84-3 Seq. No.: 00063 A/S Pos.: -- Date: 02/17/95

Emission: 0.345 Time: 11:28
Concentration (ug/L): 900.

Emission: 0.347 Time: 11:28
Concentration (ug/L): 908.

Mean Conc (ug/L): 904. SD: 5.1 RSD(%): 0.56

K ID: 95-84-3 L Seq. No.: 00064 A/S Pos.: -- Date: 02/17/95

Emission: 0.081 Time: 11:36
Concentration (ug/L): 202.

Emission: 0.081 Time: 11:36
Concentration (ug/L): 204.

Mean Conc (ug/L): 203. SD: 1.2 RSD(%): 0.61

K ID: 95-84-4 Seq. No.: 00065 A/S Pos.: -- Date: 02/17/95

Emission: 0.290 Time: 11:37
Concentration (ug/L): 751.

Emission: 0.288 Time: 11:37
Concentration (ug/L): 746.

Mean Conc (ug/L): 749. SD: 3.7 RSD(%): 0.50

K ID: 95-84-4 DA Seq. No.: 00066 A/S Pos.: -- Date: 02/17/95

Emission: 0.291 Time: 11:38
Concentration (ug/L): 753.

Emission: 0.290 Time: 11:38
Concentration (ug/L): 751.

Mean Conc (ug/L): 752. SD: 1.5 RSD(%): 0.20

K ID: 95-84-4 L Seq. No.: 00067 A/S Pos.: -- Date: 02/17/95

Emission: 0.065 Time: 11:41
Concentration (ug/L): 163.

Emission: 0.067 Time: 11:41
Concentration (ug/L): 166.

Mean Conc (ug/L): 165. SD: 2.4 RSD(%): 1.48

K ID: CCV-1500 Seq. No.: 00068 A/S Pos.: -- Date: 02/17/95

Emission: 0.536 Time: 12:51
Concentration (ug/L): 1445.

Emission: 0.541 Time: 12:51
Concentration (ug/L): 1458.

Mean Conc (ug/L): 1451. SD: 9.4 RSD(%): 0.65

K ID: CCB Seq. No.: 00069 A/S Pos.: -- Date: 02/17/95

Emission: 0.005 Time: 12:53
Concentration (ug/L): 13.

Emission: 0.006 Time: 12:53
Concentration (ug/L): 14.

Mean Conc (ug/L): 14. SD: 0.4 RSD(%): 2.86

K ID: 95-84-3 PDS Seq. No.: 00070 A/S Pos.: -- Date: 02/17/95

Emission: 0.683. Time: 12:54

Concentration (ug/L): 1885.

Emission: 0.691 Time: 12:54
Concentration (ug/L): 1909.

Mean Conc (ug/L): 1897. SD: 17.2 RSD(%): 0.91

~~~~~~

K ID: 95-84-3 L Seq. No.: 00071 A/S Pos.: -- Date: 02/17/95

Emission: 0.084 Time: 12:55
Concentration (ug/L): 210.

Emission: 0.083 Time: 12:55
Concentration (ug/L): 208.

Mean Conc (ug/L): 209. SD: 1.4 RSD(%): 0.65

invalid 2/17/95 gc

~~~~~~

K ID: 95-84-4 Seq. No.: 00072 A/S Pos.: -- Date: 02/17/95

Emission: 0.289 Time: 12:56
Concentration (ug/L): 748.

Emission: 0.290 Time: 12:56
Concentration (ug/L): 753.

Mean Conc (ug/L): 750. SD: 3.5 RSD(%): 0.47

~~~~~~

K ID: 95-84-4 DA Seq. No.: 00073 A/S Pos.: -- Date: 02/17/95

Emission: 0.291 Time: 12:56
Concentration (ug/L): 754.

Emission: 0.294 Time: 12:56
Concentration (ug/L): 763.

Mean Conc (ug/L): 758. SD: 6.8 RSD(%): 0.89

~~~~~~

K ID: 95-84-4 PDS Seq. No.: 00074 A/S Pos.: -- Date: 02/17/95

Emission: 0.642 Time: 12:57
Concentration (ug/L): 1760.

Emission: 0.642 Time: 12:57
Concentration (ug/L): 1759.

Mean Conc (ug/L): 1760. SD: 0.9 RSD(%): 0.05

~~~~~~

K ID: 95-84-4 L Seq. No.: 00075 A/S Pos.: -- Date: 02/17/95

Emission: 0.067 Time: 12:58
Concentration (ug/L): 168.

Emission: 0.068 Time: 12:58
Concentration (ug/L): 169.
~~~~~~

Mean Conc (ug/L): 169. SD: 0.3 RSD(%): 0.18

~~~~~~

K ID: CCV-1500 Seq. No.: 00076 A/S Pos.: -- Date: 02/17/95

Emission: 0.542 Time: 12:58
Concentration (ug/L): 1461.

Emission: 0.544 Time: 12:58
Concentration (ug/L): 1468.

Mean Conc (ug/L): 1464. SD: 5.1 RSD(%): 0.35

~~~~~~

K ID: CCB Seq. No.: 00077 A/S Pos.: -- Date: 02/17/95

Emission: 0.005 Time: 12:59
Concentration (ug/L): 12.

Emission: 0.005 Time: 12:59
Concentration (ug/L): 13.

Mean Conc (ug/L): 13. SD: 1.0 RSD(%): 7.92

~~~~~~

K ID: 95-84-5 Seq. No.: 00078 A/S Pos.: -- Date: 02/17/95

Emission: 0.420 Time: 13:00
Concentration (ug/L): 1111.

Emission: 0.418 Time: 13:00
Concentration (ug/L): 1106.

Mean Conc (ug/L): 1109. SD: 4.0 RSD(%): 0.36

~~~~~~

K ID: 95-84-5 DA Seq. No.: 00079 A/S Pos.: -- Date: 02/17/95

Emission: 0.417 Time: 13:01
Concentration (ug/L): 1102.

Emission: 0.418 Time: 13:01
Concentration (ug/L): 1105.

Mean Conc (ug/L): 1103. SD: 1.9 RSD(%): 0.18

~~~~~~

K ID: 95-84-6 Seq. No.: 00080 A/S Pos.: -- Date: 02/17/95

Emission: 0.351 Time: 13:01
Concentration (ug/L): 919.

Emission: 0.353 Time: 13:01
Concentration (ug/L): 924.

Mean Conc (ug/L): 921. SD: 3.3 RSD(%): 0.36
~~~~~~

K ID: 95-84-6 DA Seq. No.: 00081 A/S Pos.: -- Date: 02/17/95

Emission: 0.352 Time: 13:01
Concentration (ug/L): 921.

Emission: 0.354 Time: 13:02
Concentration (ug/L): 927.

Mean Conc (ug/L): 924. SD: 4. RSD(%): 0.45

K ID: 95-84-8 Seq. No.: 00082 A/S Pos.: -- Date: 02/17/95

The signal is too large for the range of the electronics.
Sample abs. is greater than that of the largest standard.
Emission: 1.301 Time: 13:02
Concentration (ug/L): --------

The signal is too large for the range of the electronics.
Sample abs. is greater than that of the largest standard.
Emission: 1.301 Time: 13:02
Concentration (ug/L): --------

Sample abs. is greater than that of the largest standard.
Mean Conc (ug/L): ---- SD: ---- RSD(%): ----

K ID: 95-84-8 L Seq. No.: 00083 A/S Pos.: -- Date: 02/17/95

The signal is too large for the range of the electronics.
Sample abs. is greater than that of the largest standard.
Emission: 1.302 Time: 13:07
Concentration (ug/L): --------

The signal is too large for the range of the electronics.
Sample abs. is greater than that of the largest standard.
Emission: 1.302 Time: 13:07
Concentration (ug/L): --------

Sample abs. is greater than that of the largest standard.
Mean Conc (ug/L): ---- SD: ---- RSD(%): ----

K ID: 95-84-8 X50 Seq. No.: 00084 A/S Pos.: -- Date: 02/17/95

The signal is too large for the range of the electronics.
Sample abs. is greater than that of the largest standard.
Emission: 1.301 Time: 13:23
Concentration (ug/L): --------

The signal is too large for the range of the electronics.
Sample abs. is greater than that of the largest standard.
Emission: 1.301 Time: 13:23
Concentration (ug/L): --------

Sample abs. is greater than that of the largest standard.
Mean Conc (ug/L): ---- SD: ---- RSD(%): ----

Standard number 1 applied. [100.]
Correlation coefficient: 1.00000 Slope: 0.0004

~~~~~~

K ID: STD 2 Seq. No.: 00005 A/S Pos.: -- Date: 02/17/95

Emission: 0.202 Time: 10:20
Concentration (ug/L): 481.

Emission: 0.202 Time: 10:20
Concentration (ug/L): 481.

Mean Conc (ug/L): 481. SD: 0.0 RSD(%): 0.01

Standard number 2 applied. [500.]
Correlation coefficient: 1.00000 Slope: 0.0004

~~~~~~

K ID: STD 3 Seq. No.: 00006 A/S Pos.: -- Date: 02/17/95

Emission: 0.388 Time: 10:20
Concentration (ug/L): 1010.

Emission: 0.386 Time: 10:21
Concentration (ug/L): 1003.

Mean Conc (ug/L): 1007. SD: 5.1 RSD(%): 0.50

Standard number 3 applied. [1000.]
Correlation coefficient: 1.00000 Slope: 0.0004

~~~~~~

K ID: STD 4 Seq. No.: 00007 A/S Pos.: -- Date: 02/17/95

Emission: 0.563 Time: 10:21
Concentration (ug/L): 1505.

Emission: 0.569 Time: 10:21
Concentration (ug/L): 1524.

Mean Conc (ug/L): 1514. SD: 13.2 RSD(%): 0.87

Standard number 4 applied. [1500.]
Correlation coefficient: 1.00000 Slope: 0.0004

~~~~~~

K ID: STD 5 Seq. No.: 00008 A/S Pos.: -- Date: 02/17/95

Emission: -0.000 Time: 10:21
Concentration (ug/L): -1.

Emission: -0.000 Time: 10:21
Concentration (ug/L): -1.

Mean Conc (ug/L): -1. SD: 0.2 RSD(%): 19.59

Standard abs. & conc. values are not in the same order.

```
K     ID: 95-84-8 X100       Seq. No.: 00085    A/S Pos.: --    Date: 02/17/95

The signal is too large for the range of the electronics.
Sample abs. is greater than that of the largest standard.
Emission: 1.267                       Time: 13:30
Concentration (ug/L  ): --------

The signal is too large for the range of the electronics.
Sample abs. is greater than that of the largest standard.
Emission: 1.275                       Time: 13:30
Concentration (ug/L  ): --------

Sample abs. is greater than that of the largest standard.
Mean Conc  (ug/L  ): ----            SD: ----            RSD(%): ----

K     ID: 95-84-8 X500       Seq. No.: 00086    A/S Pos.: --    Date: 02/17/95

Emission: 0.281                       Time: 13:40
Concentration (ug/L  ): 728.

Emission: 0.281                       Time: 13:40
Concentration (ug/L  ): 727.

Mean Conc  (ug/L  ):      727.        SD: 1.0             RSD(%): 0.14

K     ID: 95-84-9            Seq. No.: 00087    A/S Pos.: --    Date: 02/17/95

Emission: 0.411                       Time: 13:41
Concentration (ug/L  ): 1086.

Emission: 0.412                       Time: 13:41
Concentration (ug/L  ): 1089.

Mean Conc  (ug/L  ):      1088.       SD: 2.1             RSD(%): 0.19

K     ID: 95-84-9 PDS        Seq. No.: 00088    A/S Pos.: --    Date: 02/17/95

Emission: 0.736                       Time: 13:42
Concentration (ug/L  ): 2045.

Emission: 0.738                       Time: 13:42
Concentration (ug/L  ): 2054.

Mean Conc  (ug/L  ):      2050.       SD: 5.9             RSD(%): 0.29

K     ID: 95-84-9 L          Seq. No.: 00089    A/S Pos.: --    Date: 02/17/95

Emission: 0.101                       Time: 13:45
Concentration (ug/L  ): 255.

Emission: 0.101                       Time: 13:45
Concentration (ug/L  ): 255.

Mean Conc  (ug/L  ):      255.        SD: 0.1             RSD(%): 0.06
```

```
K     ID: CCV-1500           Seq. No.: 00090    A/S Pos.: --    Date: 02/17/95

Emission: 0.553                          Time: 13:48
Concentration (ug/L  ): 1494.

Emission: 0.555                          Time: 13:48
Concentration (ug/L  ): 1501.

Mean Conc  (ug/L  ):      1497.       SD: 5.4                 RSD(%): 0.36

K     ID: CCB                Seq. No.: 00091    A/S Pos.: --    Date: 02/17/95

Emission: 0.006                          Time: 13:50
Concentration (ug/L  ): 14.

Emission: 0.006                          Time: 13:50
Concentration (ug/L  ): 15.

Mean Conc  (ug/L  ):        15.       SD: 0.3                 RSD(%): 2.17

K     ID: 95-84-10           Seq. No.: 00092    A/S Pos.: --    Date: 02/17/95

Emission: 0.482                          Time: 13:51
Concentration (ug/L  ): 1287.

Emission: 0.483                          Time: 13:51
Concentration (ug/L  ): 1291.

Mean Conc  (ug/L  ):      1289.       SD: 2.9                 RSD(%): 0.23

K     ID: 95-84-11           Seq. No.: 00093    A/S Pos.: --    Date: 02/17/95

Emission: 0.224                          Time: 13:51
Concentration (ug/L  ): 575.

Emission: 0.224                          Time: 13:51
Concentration (ug/L  ): 574.

Mean Conc  (ug/L  ):       575.       SD: 0.9                 RSD(%): 0.16

K     ID: 95-84-12           Seq. No.: 00094    A/S Pos.: --    Date: 02/17/95

Emission: 0.004                          Time: 13:52
Concentration (ug/L  ): 11.

Emission: 0.000                          Time: 13:52
Concentration (ug/L  ): 1.

Mean Conc  (ug/L  ):         6.       SD: 7.2                 RSD(%): 127.10

K     ID: 95-84-12DA         Seq. No.: 00095    A/S Pos.: --    Date: 02/17/95
                   53H
Emission: -0.000   02/28/95              Time: 13:52
```

```
Concentration (ug/L  ): -1.

Emission: -0.000                   Time: 13:52
Concentration (ug/L  ): -1.

Mean Conc  (ug/L  ):       -1.     SD: 0.1              RSD(%): 7.45

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
K    ID: 95-84-13         Seq. No.: 00096   A/S Pos.: --    Date: 02/17/95

Emission: 0.532                    Time: 13:53
Concentration (ug/L  ): 1432.

Emission: 0.538                    Time: 13:53
Concentration (ug/L  ): 1451.

Mean Conc  (ug/L  ):     1442.     SD: 13.9             RSD(%): 0.96

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
K    ID: 95-84-13D.A      Seq. No.: 00097   A/S Pos.: --    Date: 02/17/95
                2/28/95

Emission: 0.537                    Time: 13:53
Concentration (ug/L  ): 1446.

Emission: 0.542                    Time: 13:53
Concentration (ug/L  ): 1461.

Mean Conc  (ug/L  ):     1453.     SD: 10.4             RSD(%): 0.71

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
K    ID: 95-84-14         Seq. No.: 00098   A/S Pos.: --    Date: 02/17/95

Emission: -0.000                   Time: 13:54
Concentration (ug/L  ): -0.

Emission: -0.000                   Time: 13:54
Concentration (ug/L  ): -1.

Mean Conc  (ug/L  ):       -0.     SD: 0.3              RSD(%): 89.37

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
K    ID: 95-84-15         Seq. No.: 00099   A/S Pos.: --    Date: 02/17/95

Emission: 0.152                    Time: 13:54
Concentration (ug/L  ): 384.

Emission: 0.152                    Time: 13:54
Concentration (ug/L  ): 386.

Mean Conc  (ug/L  ):      385.     SD: 0.9              RSD(%): 0.25

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
K    ID: CCV-1500         Seq. No.: 00100   A/S Pos.: --    Date: 02/17/95

Emission: 0.556                    Time: 13:55
Concentration (ug/L  ): 1503.

Emission: 0.556                    Time: 13:55
Concentration (ug/L  ): 1503.
```

```
Mean Conc  (ug/L  ):       1503.       SD: 0.1                 RSD(%): 0.01

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
K     ID: CCB                  Seq. No.: 00101    A/S Pos.: --    Date: 02/17/95

Emission: 0.006                        Time: 13:56
Concentration (ug/L  ): 14.

Emission: 0.006                        Time: 13:56
Concentration (ug/L  ): 15.

Mean Conc  (ug/L  ):         14.       SD: 0.4                 RSD(%): 3.12
```

31527A K

ID/Weight File: AB039.IDW
Sample Volume: 100 mL

Analyst: CROKER
Nominal Weight: 1.0 g

Loc.	Sample ID	Weight	Dilution
1	ICV-800		
2	ICB		
3	31527A MB		
4	31527A LCS		
5	95-84-1		
6	95-84-2		
7	CCV-1500		
8	CCB		

Element File: K_.FEL
Element: K Analyst: CROKER
Print Data: Main+Suppl. Peak Storage: None
Print: Calib. Curve+Elem. Params.
Remarks:
CALIBRATION STD ID:2-39-4
ICV/CCV STD ID:2-25-4
STD PREP LOGBOOK #5 PAGE #8

INSTRUMENT: 5100 Technique: Flame Version: 7.01
Wavelength: 766.5 Peak Slit: 1.40 High
Signal Type: Emission Signal Measurement: Time Average
Read Time: 3.0 Read Delay: 0.0 BOC Time: 2
Sample Replicates: 2
Standard Replicates: 2

FLAME:
Flame Type: AIR Flame Sensor: On
Oxidant Flow: 9.0 L/min Fuel Flow: 2.0 L/min

CALIBRATION:

Solutions	ID	Conc
Calib. Blank	STD BLK	----------
Standard 1	STD 1	100.
Standard 2	STD 2	500.
Standard 3	STD 3	1000.
Standard 4	STD 4	1500.
Standard 5	STD 5	2000.

Calibration Units: ug/L Sample Units: ug/L
Calibration Type: Nonlinear

QC:
Matrix Check Calculations:
% Difference for Dupls: No Locations:
% Recovery for Spike: No Locations: Conc:

Mean Conc (ug/L): 1000. SD: 7.6 RSD(%): 0.76

Standard number 3 applied. [1000.]
Correlation coefficient: 1.00000 Slope: 0.0003

~~~~~~

K ID: STD 4 Seq. No.: 00005 A/S Pos.: -- Date: 02/20/95

Emission: 0.431 Time: 08:19
Concentration (ug/L): 1512.

Emission: 0.427 Time: 08:19
Concentration (ug/L): 1497.

Mean Conc (ug/L): 1504. SD: 10.4 RSD(%): 0.69

Standard number 4 applied. [1500.]
Correlation coefficient: 1.00000 Slope: 0.0003

~~~~~~

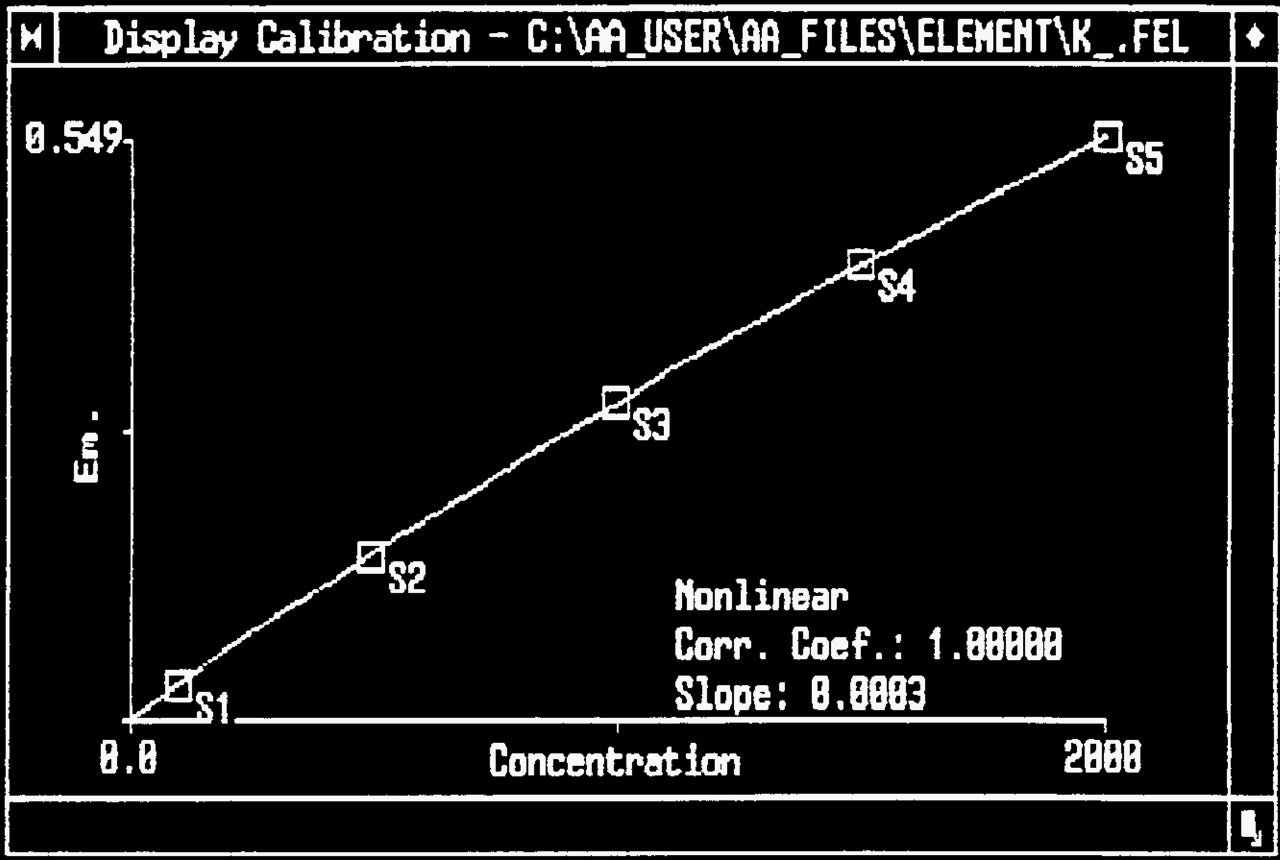
K ID: STD 5 Seq. No.: 00006 A/S Pos.: -- Date: 02/20/95

Emission: 0.549 Time: 08:20
Concentration (ug/L): 1986.

Emission: 0.548 Time: 08:20
Concentration (ug/L): 1983.

Mean Conc (ug/L): 1985. SD: 2.6 RSD(%): 0.13

Standard number 5 applied. [2000.]
Correlation coefficient: 1.00000 Slope: 0.0003


Display Calibration - C:\AA_USER\AA_FILES\ELEMENT\K_.FEL
0.549
Em.
S1
S2
S3
S4
S5
Nonlinear
Corr. Coef.: 1.00000
Slope: 0.0003
0.0
Concentration
2000

```
Element File: K_.FEL          Element: K                      Wavelength: 766.5
Date: 02/20/95                Time: 08:23                     Slit: 1.40 H
Data File: AB039.DAT          ID/Wt File: AB039.IDWWXXXXX     Lamp Current: 0
Technique: Flame              Calib. Type: Nonlinear          Energy: 82
Remark 1: CALIBRATION STD ID:2-39-4
Remark 2: ICV/CCV STD ID:2-25-4
Remark 3: STD PREP LOGBOOK #5 PAGE #8

K     ID: ICV-800             Seq. No.: 00007    A/S Pos.: --     Date: 02/20/95

Emission: 0.238                         Time: 08:24
Concentration (ug/L  ): 789.

Emission: 0.239                         Time: 08:24
Concentration (ug/L  ): 794.

Mean Conc  (ug/L  ):       792.         SD: 3.3                 RSD(%): 0.42

K     ID: ICB                 Seq. No.: 00008    A/S Pos.: --     Date: 02/20/95

Emission: -0.000                        Time: 08:25
Concentration (ug/L  ): -0.

Emission: -0.000                        Time: 08:25
Concentration (ug/L  ): -0.

Mean Conc  (ug/L  ):        -0.         SD: 0.1                 RSD(%): 18.90

K     ID: 31527A MB           Seq. No.: 00009    A/S Pos.: --     Date: 02/20/95

Emission: 0.002                         Time: 08:25
Concentration (ug/L  ): 7.

Emission: 0.002                         Time: 08:25
Concentration (ug/L  ): 7.

Mean Conc  (ug/L  ):         7.         SD: 0.1                 RSD(%): 2.12

K     ID: 31527A LCS          Seq. No.: 00010    A/S Pos.: --     Date: 02/20/95

Emission: 0.304                         Time: 08:26
Concentration (ug/L  ): 1026.

Emission: 0.303                         Time: 08:26
Concentration (ug/L  ): 1023.

Mean Conc  (ug/L  ):      1024.         SD: 2.3                 RSD(%): 0.23

K     ID: 95-84-1             Seq. No.: 00011    A/S Pos.: --     Date: 02/20/95

Emission: 0.122                         Time: 08:27
Concentration (ug/L  ): 393.
```

Emission: 0.122 Time: 08:27
Concentration (ug/L): 393.

Mean Conc (ug/L): 393. SD: 0.5 RSD(%): 0.12

K ID: 95-84-2 Seq. No.: 00012 A/S Pos.: -- Date: 02/20/95

Sample abs. is greater than that of the largest standard.
Emission: 0.616 Time: 08:27
Concentration (ug/L): 2292.

Sample abs. is greater than that of the largest standard.
Emission: 0.615 Time: 08:27
Concentration (ug/L): 2289.

Sample abs. is greater than that of the largest standard.
Mean Conc (ug/L): 2290. SD: 1.7 RSD(%): 0.07

K ID: 95-84-2 X20 Seq. No.: 00013 A/S Pos.: -- Date: 02/20/95

Emission: 0.137 Time: 08:34
Concentration (ug/L): 443.

Emission: 0.140 Time: 08:34
Concentration (ug/L): 451.

Mean Conc (ug/L): 447. SD: 5.5 RSD(%): 1.24

K ID: CCV-1500 Seq. No.: 00014 A/S Pos.: -- Date: 02/20/95

Emission: 0.433 Time: 08:36
Concentration (ug/L): 1520.

Emission: 0.435 Time: 08:36
Concentration (ug/L): 1528.

Mean Conc (ug/L): 1524. SD: 6.1 RSD(%): 0.40

K ID: CCB Seq. No.: 00015 A/S Pos.: -- Date: 02/20/95

Emission: 0.001 Time: 08:37
Concentration (ug/L): 2.

Emission: 0.001 Time: 08:37
Concentration (ug/L): 3.

Mean Conc (ug/L): 3. SD: 1.0 RSD(%): 38.00

ID/Weight File: AB038.IDWWWW
Sample Volume: 100 mL

Analyst: HOLSTE/CROKER
Nominal Weight: 1.0 g

31064
31485 Na
31527A

Loc.	Sample ID	Weight	Dilution
1	ICV-800		
2	ICB		
3	31064 MB		
4	31064 LCS		
5	93-255-1 X50		
6	93-255-1 MS		
7	93-255-1 MSD		
8	93-255-1 PDS		
9	93-255-1X50 L		
10	CCV-1500		
11	CCB		
12	31485 MB		
13	31485 LCS		
14	95-165-1C X20		
15	95-165-1C PDS		
16	95-165-2C X20		
17	95-165-2C X20 L		
18	95-165-3C X10		
19	95-165-4C		
20	CCV-1500		
21	CCB		
22	95-165-5C X20		
23	95-165-6C X20		
24	95-165-7C X20		
25	95-165-8C		
26	CCV-1500		
27	CCB		
28	31527A MB		
29	31527A LCS		
30	95-204-8		
31	95-84-3		
32	95-84-3 PDS X2		
33	95-84-3 L		
34	95-84-4		
35	95-84-4 DA		
36	95-84-4 PDS X2		
37	95-84-4 L		
38	CCV-1500		
39	CCB		
40	95-84-5 X10		
41	95-84-5 DA X10		
42	95-84-6		
43	95-84-6 DA		
44	95-84-8 X1000		
45	95-84-8 PDS		
46	95-84-8 X1000 L		
47	95-84-9 X5		
48	95-84-9 PDS X5		
49	95-84-9 X5 L		
50	CCV-1500		
51	CCB		
52	95-84-10 X5		
53	95-84-11		
54	95-84-12 X1000		

Loc.	Sample ID	Weight	Dilution
55	95-84-12X1000DA		
56	95-84-13 X5		
57	95-84-13 X5 DA		
58	95-84-14 X1000		
59	95-84-15		
60	95-84-1		
61	95-84-2 X20		
62	CCV-1500		
63	CCB		

Element File: NA_.FEL
Element: Na
Analyst: D HOLSTE
Print Data: Main+Suppl.
Peak Storage: None
Print: Calib. Curve
Remarks:
CALIBRATION STD ID#2-39-7
ICV\CCV STD ID#2-55-1

INSTRUMENT: 5100
Technique: Flame
Version: 7.01
Wavelength: 589.0 Peak
Slit: 0.40 High
Signal Type: AA-BG
Signal Measurement: Time Average
Read Time: 5.0
Read Delay: 1.5
BOC Time: 2
Sample Replicates: 2
Standard Replicates: 2

FLAME:
Flame Type: AIR
Flame Sensor: On
Oxidant Flow: 10.0 L/min
Fuel Flow: 2.0 L/min

CALIBRATION:

Solutions	ID	Conc
Calib. Blank	BLANK	----------
Standard 1	STD1	50.0
Standard 2	STD2	200.0
Standard 3	STD3	500.0
Standard 4	STD4	1000.0
Standard 5	STD5	2000.0

Calibration Units: ug/L
Sample Units: ug/L
Calibration Type: Nonlinear

QC:
Matrix Check Calculations:
% Difference for Dupls: No Locations:
% Recovery for Spike: No Locations: Conc:

89

Element File: NA_.FEL   Element: Na   Wavelength: 589.0
Date: 02/17/95   Time: 15:20   Slit: 0.40 H
Data File: AB038.DAT   ID/Wt File: AB038.IDW   Lamp Current: 10
Technique: Flame   Calib. Type: Linear   Energy: 78
Remark 1: CALIBRATION STD ID#2-39-7
Remark 2: ICV\CCV STD ID#2-55-1

Na   ID: BLANK   Seq. No.: 00001   A/S Pos.: --   Date: 02/17/95

Absorbance: -0.063   Time: 15:21

Absorbance: -0.062   Time: 15:21

Mean Absorbance: -0.063   SD: 0.0010   RSD(%): 1.54

Auto-zero performed.

Na   ID: BLANK   Seq. No.: 00002   A/S Pos.: --   Date: 02/17/95

Absorbance: 0.000   Time: 15:22

Absorbance: 0.000   Time: 15:22

Mean Absorbance: 0.000   SD: 0.0000   RSD(%): 16.81

Auto-zero performed.

Na   ID: STD1   Seq. No.: 00003   A/S Pos.: --   Date: 02/17/95

Absorbance: 0.013   Time: 15:22

Absorbance: 0.013   Time: 15:22

Mean Absorbance: 0.013   SD: 0.0000   RSD(%): 0.05

Standard number 1 applied. [50.0]
Correlation coefficient: 1.00000   Slope: 0.0003

Na   ID: STD2   Seq. No.: 00004   A/S Pos.: --   Date: 02/17/95

Absorbance: 0.050   Time: 15:22
Concentration (ug/L): 199.6

Absorbance: 0.050   Time: 15:23
Concentration (ug/L): 198.2

Mean Conc (ug/L):   198.9   SD: 0.97   RSD(%): 0.49

Standard number 2 applied. [200.0]
Correlation coefficient: 1.00000   Slope: 0.0002

Na   ID: STD3   Seq. No.: 00005   A/S Pos.: --   Date: 02/17/95

Absorbance: 0.121 Time: 15:23
Concentration (ug/L): 484.3

Absorbance: 0.121 Time: 15:23
Concentration (ug/L): 486.8

Mean Conc (ug/L): 485.6 SD: 1.72 RSD(%): 0.35

Standard number 3 applied. [500.0]
Correlation coefficient: 0.99985 Slope: 0.0002

~~~~~~

Na ID: STD4 Seq. No.: 00006 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.244 Time: 15:24
Concentration (ug/L): 1004.7

Absorbance: 0.244 Time: 15:24
Concentration (ug/L): 1001.5

Mean Conc (ug/L): 1003.1 SD: 2.23 RSD(%): 0.22

Standard number 4 applied. [1000.0]
Correlation coefficient: 0.99997 Slope: 0.0002

~~~~~~

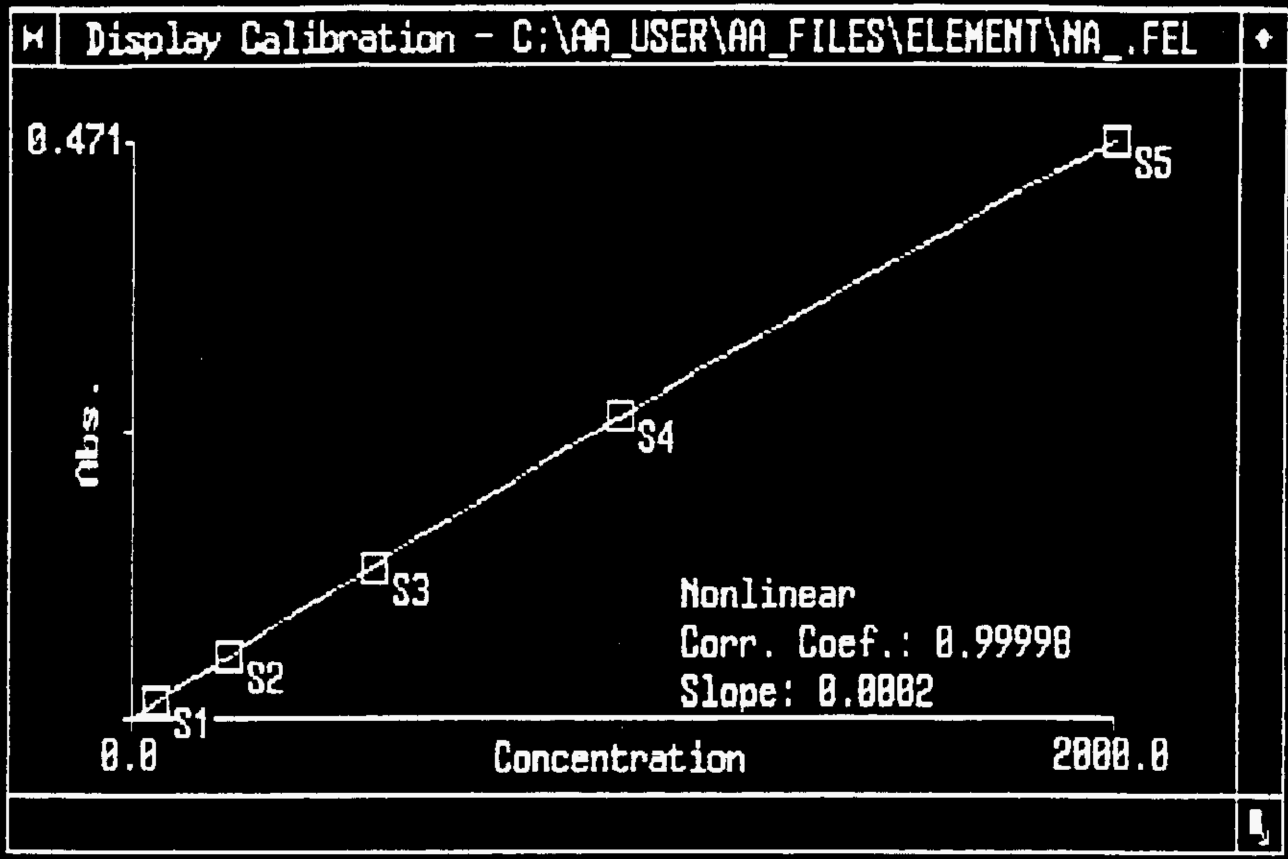
Na ID: STD5 Seq. No.: 00007 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.470 Time: 15:24
Concentration (ug/L): 1929.4

Absorbance: 0.471 Time: 15:24
Concentration (ug/L): 1933.4

Mean Conc (ug/L): 1931.4 SD: 2.87 RSD(%): 0.15

Standard number 5 applied. [2000.0]
Correlation coefficient: 0.99975 Slope: 0.0002


Display Calibration - C:\AA_USER\AA_FILES\ELEMENT\NA_.FEL
0.471
Abs.
S1
S2
S3
S4
S5
Nonlinear
Corr. Coef.: 0.99998
Slope: 0.0002
0.0
Concentration
2000.0

```
Element File: NA_.FEL        Element: Na                 Wavelength: 589.0
Date: 02/17/95               Time: 15:26                 Slit: 0.40 H
Data File: AB038.DAT         ID/Wt File: AB038.IDW       Lamp Current: 10
Technique: Flame             Calib. Type: Nonlinear      Energy: 78
Remark 1: CALIBRATION STD ID#2-39-7
Remark 2: ICV\CCV STD ID#2-55-1
```

```
Na     ID: ICV-800          Seq. No.: 00008    A/S Pos.: --     Date: 02/17/95

Absorbance: 0.197                   Time: 15:26
Concentration (ug/L  ): 808.4

Absorbance: 0.198                   Time: 15:26
Concentration (ug/L  ): 812.3

Mean Conc  (ug/L  ):      810.3     SD: 2.78              RSD(%): 0.34
```

```
Na     ID: ICB              Seq. No.: 00009    A/S Pos.: --     Date: 02/17/95

Absorbance: 0.003                   Time: 15:27
Concentration (ug/L  ): 10.3

Absorbance: 0.003                   Time: 15:27
Concentration (ug/L  ): 10.8

Mean Conc  (ug/L  ):       10.6     SD: 0.35              RSD(%): 3.30
```

```
Na     ID: 31064 MB         Seq. No.: 00010    A/S Pos.: --     Date: 02/17/95

Absorbance: 0.007                   Time: 15:28
Concentration (ug/L  ): 29.0

Absorbance: 0.007                   Time: 15:28
Concentration (ug/L  ): 28.8

Mean Conc  (ug/L  ):       28.9     SD: 0.14              RSD(%): 0.49
```

```
Element File: NA_.FEL        Element: Na                   Wavelength: 589.0
Date: 02/17/95               Time: 15:28                   Slit: 0.40 H
Data File: AB038.DAT         ID/Wt File: AB038.IDW         Lamp Current: 10
Technique: Flame             Calib. Type: Nonlinear        Energy: 78
Remark 1: CALIBRATION STD ID#2-39-7
Remark 2: ICV\CCV STD ID#2-55-1

Na    ID: BLANK              Seq. No.: 00011    A/S Pos.: --    Date: 02/17/95

Absorbance: 0.003                        Time: 15:29
Concentration (ug/L  ): 12.0

Absorbance: 0.003                        Time: 15:29
Concentration (ug/L  ): 12.1

Mean Conc  (ug/L  ):      12.0           SD: 0.06               RSD(%): 0.47

Auto-zero performed.

Na    ID: BLANK              Seq. No.: 00012    A/S Pos.: --    Date: 02/17/95

Absorbance: 0.001                        Time: 15:29
Concentration (ug/L  ): 2.2

Absorbance: 0.000                        Time: 15:29
Concentration (ug/L  ): 1.9

Mean Conc  (ug/L  ):      2.0            SD: 0.26               RSD(%): 12.84

Auto-zero performed.

Na    ID: STD1               Seq. No.: 00013    A/S Pos.: --    Date: 02/17/95

Absorbance: 0.011                        Time: 15:29
Concentration (ug/L  ): 44.6

Absorbance: 0.012                        Time: 15:30
Concentration (ug/L  ): 48.8

Mean Conc  (ug/L  ):      46.7           SD: 2.98               RSD(%): 6.39

Standard number 1 applied.  [50.0]
Correlation coefficient: 1.00000         Slope: 0.0002

Na    ID: STD2               Seq. No.: 00014    A/S Pos.: --    Date: 02/17/95

Absorbance: 0.048                        Time: 15:30
Concentration (ug/L  ): 205.0

Absorbance: 0.048                        Time: 15:30
Concentration (ug/L  ): 207.2

Mean Conc  (ug/L  ):      206.1          SD: 1.58               RSD(%): 0.77
```

```
Standard number 2 applied.  [200.0]
Correlation coefficient: 1.00000       Slope: 0.0002

-----------------------------------------------------------------------------

Na     ID: STD3              Seq. No.: 00015    A/S Pos.: --     Date: 02/17/95

Absorbance: 0.119                      Time: 15:30
Concentration (ug/L  ): 468.2

Absorbance: 0.118                      Time: 15:30
Concentration (ug/L  ): 465.5

Mean Conc  (ug/L  ):      466.9        SD: 1.94                RSD(%): 0.41

S-shaped calibration curve detected. 2-coef. equation used.
Standard number 3 applied.  [500.0]
Correlation coefficient: 0.99992       Slope: 0.0002

-----------------------------------------------------------------------------

Na     ID: STD4              Seq. No.: 00016    A/S Pos.: --     Date: 02/17/95

Absorbance: 0.237                      Time: 15:31
Concentration (ug/L  ): 983.3

Absorbance: 0.240                      Time: 15:31
Concentration (ug/L  ): 994.4

Mean Conc  (ug/L  ):      988.9        SD: 7.92                RSD(%): 0.80

S-shaped calibration curve detected. 2-coef. equation used.
Standard number 4 applied.  [1000.0]
Correlation coefficient: 0.99999       Slope: 0.0002

-----------------------------------------------------------------------------

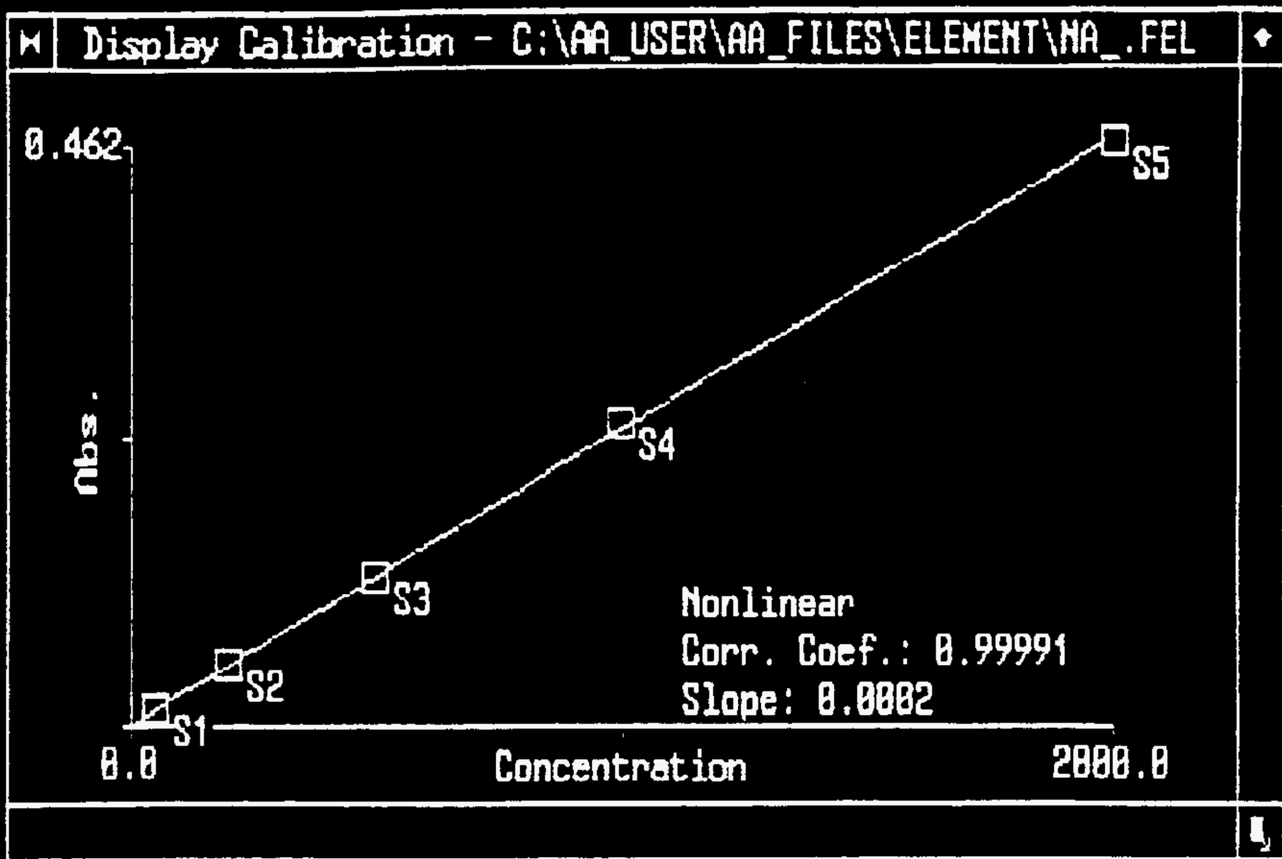
Na     ID: STD5              Seq. No.: 00017    A/S Pos.: --     Date: 02/17/95

Absorbance: 0.461                      Time: 15:31
Concentration (ug/L  ): 1908.6

Absorbance: 0.463                      Time: 15:31
Concentration (ug/L  ): 1915.3

Mean Conc  (ug/L  ):     1912.0        SD: 4.73                RSD(%): 0.25

S-shaped calibration curve detected. 2-coef. equation used.
Standard number 5 applied.  [2000.0]
Correlation coefficient: 0.99991       Slope: 0.0002
```


Display Calibration - C:\AA_USER\AA_FILES\ELEMENT\NA_.FEL
0.462
Abs.
S1
S2
S3
S4
S5
Nonlinear
Corr. Coef.: 0.99991
Slope: 0.0002
0.0
Concentration
2000.0

```
--------------------------------------------------------------------------------
Element File: NA_.FEL        Element: Na                     Wavelength: 589.0
Date: 02/17/95               Time: 15:33                     Slit: 0.40 H
Data File: AB038.DAT         ID/Wt File: AB038.IDWWWWWWW     Lamp Current: 10
Technique: Flame             Calib. Type: Nonlinear          Energy: 78
Remark 1: CALIBRATION STD ID#2-39-7
Remark 2: ICV\CCV STD ID#2-55-1
--------------------------------------------------------------------------------
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Na    ID: ICV-800            Seq. No.: 00018    A/S Pos.: --    Date: 02/17/95

Absorbance: 0.194                   Time: 15:33
Concentration (ug/L  ): 824.7

Absorbance: 0.195                   Time: 15:33
Concentration (ug/L  ): 828.8

Mean Conc  (ug/L  ):      826.7     SD: 2.93               RSD(%): 0.35

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Na    ID: ICB                Seq. No.: 00019    A/S Pos.: --    Date: 02/17/95

Absorbance: -0.001                  Time: 15:34
Concentration (ug/L  ): -5.7

Absorbance: -0.001                  Time: 15:34
Concentration (ug/L  ): -5.9

Mean Conc  (ug/L  ):       -5.8     SD: 0.18               RSD(%): 3.15

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Na    ID: 31064 MB           Seq. No.: 00020    A/S Pos.: --    Date: 02/17/95

Absorbance: 0.001                   Time: 15:34
Concentration (ug/L  ): 5.3

Absorbance: 0.002                   Time: 15:34
Concentration (ug/L  ): 8.3

Mean Conc  (ug/L  ):        6.8     SD: 2.13               RSD(%): 31.24

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Na    ID: 31064 LCS          Seq. No.: 00021    A/S Pos.: --    Date: 02/17/95

Absorbance: 0.240                   Time: 15:35
Concentration (ug/L  ): 1022.5

Absorbance: 0.237                   Time: 15:35
Concentration (ug/L  ): 1009.3

Mean Conc  (ug/L  ):     1015.9     SD: 9.36               RSD(%): 0.92

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Na    ID: 93-255-1           Seq. No.: 00022    A/S Pos.: --    Date: 02/17/95

Sample abs. is greater than that of the largest standard.
Absorbance: 2.083                   Time: 15:35
Concentration (ug/L  ): 9562.6
```

Concentration (ug/L): 190.8

Absorbance: 0.046 Time: 16:14
Concentration (ug/L): 193.6

Mean Conc (ug/L): 192.2 SD: 2.00 RSD(%): 1.04

Na ID: 95-165-7C Seq. No.: 00052 A/S Pos.: -- Date: 02/17/95

Sample abs. is greater than that of the largest standard.
Absorbance: 1.022 Time: 16:14
Concentration (ug/L): 4488.5

Sample abs. is greater than that of the largest standard.
Absorbance: 0.945 Time: 16:14
Concentration (ug/L): 4134.5

Sample abs. is greater than that of the largest standard.
Mean Conc (ug/L): 4311.2 SD: 250.33 RSD(%): 5.81

Na ID: 95-165-7C X20 Seq. No.: 00053 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.061 Time: 16:24
Concentration (ug/L): 259.3

Absorbance: 0.061 Time: 16:24
Concentration (ug/L): 258.8

Mean Conc (ug/L): 259.0 SD: 0.38 RSD(%): 0.15

Na ID: 95-165-8C Seq. No.: 00054 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.219 Time: 16:25
Concentration (ug/L): 929.7

Absorbance: 0.219 Time: 16:25
Concentration (ug/L): 930.4

Mean Conc (ug/L): 930.0 SD: 0.47 RSD(%): 0.05

Na ID: CCV-1500 Seq. No.: 00055 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.357 Time: 16:26
Concentration (ug/L): 1527.1

Absorbance: 0.355 Time: 16:26
Concentration (ug/L): 1516.4

Mean Conc (ug/L): 1521.7 SD: 7.58 RSD(%): 0.50

Na ID: CCB Seq. No.: 00056 A/S Pos.: -- Date: 02/17/95

Absorbance: -0.004 Time: 16:26
Concentration (ug/L): -15.8

Absorbance: -0.003 Time: 16:26
Concentration (ug/L): -14.5

Mean Conc (ug/L): -15.2 SD: 0.90 RSD(%): 5.96

Na ID: CCB Seq. No.: 00057 A/S Pos.: -- Date: 02/17/95

Absorbance: -0.001 Time: 16:28
Concentration (ug/L): -4.6

Absorbance: -0.001 Time: 16:28
Concentration (ug/L): -4.4

Mean Conc (ug/L): -4.5 SD: 0.10 RSD(%): 2.30

Na ID: 31527A MB Seq. No.: 00058 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.003 Time: 16:28
Concentration (ug/L): 12.8

Absorbance: 0.003 Time: 16:28
Concentration (ug/L): 14.6

Mean Conc (ug/L): 13.7 SD: 1.32 RSD(%): 9.65

Na ID: 31527A LCS Seq. No.: 00059 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.245 Time: 16:29
Concentration (ug/L): 1041.3

Absorbance: 0.245 Time: 16:29
Concentration (ug/L): 1043.1

Mean Conc (ug/L): 1042.2 SD: 1.30 RSD(%): 0.12

Na ID: 95-204-8 Seq. No.: 00060 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.171 Time: 16:29
Concentration (ug/L): 724.1

Absorbance: 0.169 Time: 16:30
Concentration (ug/L): 717.7

Mean Conc (ug/L): 720.9 SD: 4.55 RSD(%): 0.63

Na ID: 95-84-3 Seq. No.: 00061 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.392 Time: 16:30
Concentration (ug/L): 1678.7

Absorbance: 0.394 Time: 16:30
Concentration (ug/L): 1685.9

Mean Conc (ug/L): 1682.3 SD: 5.10 RSD(%): 0.30

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Na ID: 95-84-3 PDS X2 Seq. No.: 00062 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.331 Time: 16:33
Concentration (ug/L): 1411.9

Absorbance: 0.333 Time: 16:33
Concentration (ug/L): 1419.9

Mean Conc (ug/L): 1415.9 SD: 5.61 RSD(%): 0.40

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Na ID: 95-84-3 L Seq. No.: 00063 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.087 Time: 16:35
Concentration (ug/L): 366.2

Absorbance: 0.087 Time: 16:36
Concentration (ug/L): 366.6

Mean Conc (ug/L): 366.4 SD: 0.27 RSD(%): 0.07

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Na ID: 95-84-4 Seq. No.: 00064 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.439 Time: 16:37
Concentration (ug/L): 1880.1

Absorbance: 0.441 Time: 16:37
Concentration (ug/L): 1890.0

Mean Conc (ug/L): 1885.1 SD: 6.97 RSD(%): 0.37

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Na ID: 95-84-4 DA Seq. No.: 00065 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.436 Time: 16:37
Concentration (ug/L): 1868.8

Absorbance: 0.439 Time: 16:37
Concentration (ug/L): 1880.0

Mean Conc (ug/L): 1874.4 SD: 7.95 RSD(%): 0.42

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Na ID: 95-~~83~~-4 PDS X2 Seq. No.: 00066 A/S Pos.: -- Date: 02/17/95
95-84-4 PDS X2 02-28-95

Absorbance: 0.371 Time: 16:39
Concentration (ug/L): 1587.1

Absorbance: 0.376 Time: 16:39
Concentration (ug/L): 1609.4

Mean Conc (ug/L): 1598.2 SD: 15.73 RSD(%): 0.98

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Na ID: 95-84-4 L Seq. No.: 00067 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.096 Time: 16:42

Concentration (ug/L): 404.6

Absorbance: 0.096 Time: 16:42
Concentration (ug/L): 406.4

Mean Conc (ug/L): 405.5 SD: 1.22 RSD(%): 0.30

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Na ID: CCV-1500 Seq. No.: 00068 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.353 Time: 16:42
Concentration (ug/L): 1506.6

Absorbance: 0.353 Time: 16:43
Concentration (ug/L): 1507.2

Mean Conc (ug/L): 1506.9 SD: 0.43 RSD(%): 0.03

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Na ID: CCB Seq. No.: 00069 A/S Pos.: -- Date: 02/17/95

Absorbance: -0.001 Time: 16:43
Concentration (ug/L): -4.9

Absorbance: -0.001 Time: 16:43
Concentration (ug/L): -3.0

Mean Conc (ug/L): -4.0 SD: 1.31 RSD(%): 33.07

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Na ID: 95-84-5 Seq. No.: 00070 A/S Pos.: -- Date: 02/17/95

Sample abs. is greater than that of the largest standard.
Absorbance: 0.531 Time: 16:43
Concentration (ug/L): 2284.0

Sample abs. is greater than that of the largest standard.
Absorbance: 0.533 Time: 16:44
Concentration (ug/L): 2295.2

Sample abs. is greater than that of the largest standard.
Mean Conc (ug/L): 2289.6 SD: 7.89 RSD(%): 0.34

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Na ID: 95-84-5 X10 Seq. No.: 00071 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.059 Time: 16:46
Concentration (ug/L): 248.2

Absorbance: 0.059 Time: 16:46
Concentration (ug/L): 250.2

Mean Conc (ug/L): 249.2 SD: 1.41 RSD(%): 0.56

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Na ID: 95-84-5 DA X10 Seq. No.: 00072 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.060 Time: 16:46
Concentration (ug/L): 251.9
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Absorbance: 0.060 Time: 16:46
Concentration (ug/L): 252.1

Mean Conc (ug/L): 252.0 SD: 0.16 RSD(%): 0.06

Na ID: 95-84-6 Seq. No.: 00073 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.386 Time: 16:47
Concentration (ug/L): 1651.1

Absorbance: 0.387 Time: 16:47
Concentration (ug/L): 1654.8

Mean Conc (ug/L): 1652.9 SD: 2.63 RSD(%): 0.16

Na ID: 95-84-6 DA Seq. No.: 00074 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.388 Time: 16:47
Concentration (ug/L): 1660.1

Absorbance: 0.388 Time: 16:47
Concentration (ug/L): 1659.1

Mean Conc (ug/L): 1659.6 SD: 0.74 RSD(%): 0.04

Na ID: 95-84-8 Seq. No.: 00075 A/S Pos.: -- Date: 02/17/95
Sample abs. is greater than that of the largest standard.
Absorbance: 1.949 Time: 16:48
Concentration (ug/L): 8894.8

Sample abs. is greater than that of the largest standard.
Absorbance: 1.922 Time: 16:48
Concentration (ug/L): 8763.6

Sample abs. is greater than that of the largest standard.
Mean Conc (ug/L): 8829.2 SD: 92.74 RSD(%): 1.05

Na ID: 95-84-8 X100 Seq. No.: 00076 A/S Pos.: -- Date: 02/17/95

Sample abs. is greater than that of the largest standard.
Absorbance: 1.682 Time: 16:51
Concentration (ug/L): 7587.6

Sample abs. is greater than that of the largest standard.
Absorbance: 1.707 Time: 16:51
Concentration (ug/L): 7709.4

Sample abs. is greater than that of the largest standard.
Mean Conc (ug/L): 7648.4 SD: 86.12 RSD(%): 1.13

Na ID: 95-84-8 X1000 Seq. No.: 00077 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.237 Time: 16:53

Concentration (ug/L): 1007.2

Absorbance: 0.239 Time: 16:53
Concentration (ug/L): 1015.9

Mean Conc (ug/L): 1011.6 SD: 6.18 RSD(%): 0.61

Na ID: 95-84-8 X1000 L Seq. No.: 00078 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.040 Time: 16:56
Concentration (ug/L): 168.6

Absorbance: 0.040 Time: 16:56
Concentration (ug/L): 169.4

Mean Conc (ug/L): 169.0 SD: 0.57 RSD(%): 0.34

Na ID: CCV-1500 Seq. No.: 00079 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.354 Time: 16:57
Concentration (ug/L): 1512.5

Absorbance: 0.357 Time: 16:57
Concentration (ug/L): 1524.4

Mean Conc (ug/L): 1518.4 SD: 8.37 RSD(%): 0.55

Na ID: CCB Seq. No.: 00080 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.001 Time: 16:57
Concentration (ug/L): 3.4

Absorbance: 0.000 Time: 16:57
Concentration (ug/L): 1.3

Mean Conc (ug/L): 2.3 SD: 1.45 RSD(%): 61.55

Na ID: 95-84-9 Seq. No.: 00081 A/S Pos.: -- Date: 02/17/95

Sample abs. is greater than that of the largest standard.
Absorbance: 0.515 Time: 16:57
Concentration (ug/L): 2216.4

Sample abs. is greater than that of the largest standard.
Absorbance: 0.515 Time: 16:58
Concentration (ug/L): 2213.0

Sample abs. is greater than that of the largest standard.
Mean Conc (ug/L): 2214.7 SD: 2.46 RSD(%): 0.11

Na ID: 95-84-9 X5 Seq. No.: 00082 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.116 Time: 16:59
Concentration (ug/L): 489.6

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Absorbance: 0.116                    Time: 16:59
Concentration (ug/L  ): 490.9

Mean Conc  (ug/L  ):      490.3      SD: 0.95                RSD(%): 0.19

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Na    ID: 95-84-9 PDS X5     Seq. No.: 00083    A/S Pos.: --     Date: 02/17/95

Absorbance: 0.170                    Time: 17:01
Concentration (ug/L  ): 721.7

Absorbance: 0.170                    Time: 17:02
Concentration (ug/L  ): 720.3

Mean Conc  (ug/L  ):      721.0      SD: 1.00                RSD(%): 0.14

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Na    ID: 95-84-9  X5 L      Seq. No.: 00084    A/S Pos.: --     Date: 02/17/95

Absorbance: 0.023                    Time: 17:03
Concentration (ug/L  ): 96.0

Absorbance: 0.023                    Time: 17:03
Concentration (ug/L  ): 98.3

Mean Conc  (ug/L  ):      97.1       SD: 1.60                RSD(%): 1.65

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Na    ID: CCV 1500 (struck through)   Seq. No.: 00085    A/S Pos.: --     Date: 02/17/95

Sample abs. is greater than that of the largest standard.
Absorbance: 0.586                    Time: 17:04
Concentration (ug/L  ): 2528.6

Sample abs. is greater than that of the largest standard.
Absorbance: 0.586                    Time: 17:04
Concentration (ug/L  ): 2527.9

Sample abs. is greater than that of the largest standard.
Mean Conc  (ug/L  ):      2528.2     SD: 0.55                RSD(%): 0.02

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Na    ID: 95-84-10 X5        Seq. No.: 00086    A/S Pos.: --     Date: 02/17/95

Absorbance: 0.128                    Time: 17:06
Concentration (ug/L  ): 540.4

Absorbance: 0.127                    Time: 17:07
Concentration (ug/L  ): 539.5

Mean Conc  (ug/L  ):      539.9      SD: 0.65                RSD(%): 0.12

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Na    ID: 95-84-11           Seq. No.: 00087    A/S Pos.: --     Date: 02/17/95

Absorbance: 0.237                    Time: 17:07
Concentration (ug/L  ): 1009.1

Absorbance: 0.239                    Time: 17:07
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Concentration (ug/L): 1015.7

Mean Conc (ug/L): 1012.4 SD: 4.70 RSD(%): 0.46

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Na ID: 95-84-12 Seq. No.: 00088 A/S Pos.: -- Date: 02/17/95

Sample abs. is greater than that of the largest standard.
Absorbance: 2.040 Time: 17:08
Concentration (ug/L): 9346.5

Sample abs. is greater than that of the largest standard.
Absorbance: 1.998 Time: 17:08
Concentration (ug/L): 9137.1

Sample abs. is greater than that of the largest standard.
Mean Conc (ug/L): 9241.7 SD: 148.04 RSD(%): 1.60

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Na ID: 95-84-12 X100 Seq. No.: 00089 A/S Pos.: -- Date: 02/17/95

Sample abs. is greater than that of the largest standard.
Absorbance: 1.266 Time: 17:11
Concentration (ug/L): 5612.8

Sample abs. is greater than that of the largest standard.
Absorbance: 1.276 Time: 17:12
Concentration (ug/L): 5659.7

Sample abs. is greater than that of the largest standard.
Mean Conc (ug/L): 5636.2 SD: 33.12 RSD(%): 0.59

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Na ID: 95-84-12 X1000 Seq. No.: 00090 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.143 Time: 17:14
Concentration (ug/L): 605.3

Absorbance: 0.146 Time: 17:14
Concentration (ug/L): 618.6

Mean Conc (ug/L): 612.0 SD: 9.43 RSD(%): 1.54

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Na ID: 95-84-12X1000DA Seq. No.: 00091 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.145 Time: 17:15
Concentration (ug/L): 615.1

Absorbance: 0.145 Time: 17:15
Concentration (ug/L): 616.3

Mean Conc (ug/L): 615.7 SD: 0.90 RSD(%): 0.15

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Na ID: ~~95-84-13~~ Seq. No.: 00092 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.356 Time: 17:15
Concentration (ug/L): 1519.8
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Absorbance: 0.358 Time: 17:15
Concentration (ug/L): 1530.5

Mean Conc (ug/L): 1525.1 SD: 7.53 RSD(%): 0.49

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Na ID: CCB Seq. No.: 00093 A/S Pos.: -- Date: 02/17/95
Time: 17:16
Absorbance: 0.001
Concentration (ug/L): 2.6

Absorbance: 0.001 Time: 17:16
Concentration (ug/L): 5.6

Mean Conc (ug/L): 4.1 SD: 2.13 RSD(%): 52.11

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Na ID: 95-84-13 Seq. No.: 00094 A/S Pos.: -- Date: 02/17/95

Sample abs. is greater than that of the largest standard.
Absorbance: 0.581 Time: 17:16
Concentration (ug/L): 2505.8

Sample abs. is greater than that of the largest standard.
Absorbance: 0.579 Time: 17:17
Concentration (ug/L): 2496.9

Sample abs. is greater than that of the largest standard.
Mean Conc (ug/L): 2501.4 SD: 6.26 RSD(%): 0.25

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Na ID: 95-84-13 X5 Seq. No.: 00095 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.135 Time: 17:18
Concentration (ug/L): 571.3

Absorbance: 0.136 Time: 17:18
Concentration (ug/L): 576.9

Mean Conc (ug/L): 574.1 SD: 3.97 RSD(%): 0.69

~~~~~~

Na ID: 95-84-13 X5 DA Seq. No.: 00096 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.136 Time: 17:18
Concentration (ug/L): 576.8

Absorbance: 0.136 Time: 17:19
Concentration (ug/L): 576.4

Mean Conc (ug/L): 576.6 SD: 0.33 RSD(%): 0.06

~~~~~~

Na ID: 95-84-14 Seq. No.: 00097 A/S Pos.: -- Date: 02/17/95

Sample abs. is greater than that of the largest standard.
Absorbance: 2.023 Time: 17:19
Concentration (ug/L): 9260.2
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Sample abs. is greater than that of the largest standard.
Absorbance: 1.963                 Time: 17:19
Concentration (ug/L  ): 8965.2

Sample abs. is greater than that of the largest standard.
Mean Conc  (ug/L  ):     9112.5       SD: 208.64          RSD(%): 2.29

-------------------------------------------------------------------------------
Na    ID: 95-84-14 X1000     Seq. No.: 00098    A/S Pos.: --    Date: 02/17/95

Absorbance: 0.139                 Time: 17:21
Concentration (ug/L  ): 588.5

Absorbance: 0.140                 Time: 17:22
Concentration (ug/L  ): 593.2

Mean Conc  (ug/L  ):      590.8       SD: 3.28            RSD(%): 0.55

-------------------------------------------------------------------------------
Na    ID: 95-84-15           Seq. No.: 00099    A/S Pos.: --    Date: 02/17/95

Absorbance: 0.109                 Time: 17:22
Concentration (ug/L  ): 462.8

Absorbance: 0.109                 Time: 17:22
Concentration (ug/L  ): 463.2

Mean Conc  (ug/L  ):      463.0       SD: 0.31            RSD(%): 0.07

-------------------------------------------------------------------------------
Na    ID: 95-84-1            Seq. No.: 00100    A/S Pos.: --    Date: 02/17/95

Absorbance: 0.234                 Time: 17:24
Concentration (ug/L  ): 993.7

Absorbance: 0.235                 Time: 17:24
Concentration (ug/L  ): 999.8

Mean Conc  (ug/L  ):      996.7       SD: 4.29            RSD(%): 0.43

-------------------------------------------------------------------------------
Na    ID: 95-84-2            Seq. No.: 00101    A/S Pos.: --    Date: 02/17/95

Sample abs. is greater than that of the largest standard.
Absorbance: 0.847                 Time: 17:24
Concentration (ug/L  ): 3692.9

Sample abs. is greater than that of the largest standard.
Absorbance: 0.850                 Time: 17:24
Concentration (ug/L  ): 3704.7

Sample abs. is greater than that of the largest standard.
Mean Conc  (ug/L  ):     3698.8       SD: 8.34            RSD(%): 0.23

-------------------------------------------------------------------------------
Na    ID: 95-84-2 X20        Seq. No.: 00102    A/S Pos.: --    Date: 02/17/95

Absorbance: 0.047                 Time: 17:26
Concentration (ug/L  ): 200.0
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Absorbance: 0.049 Time: 17:27
Concentration (ug/L): 205.0

Mean Conc (ug/L): 202.5 SD: 3.54 RSD(%): 1.75

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Na ID: CCV-1500 Seq. No.: 00103 A/S Pos.: — Date: 02/17/95

Absorbance: 0.360 Time: 17:27
Concentration (ug/L): 1536.7

Absorbance: 0.360 Time: 17:27
Concentration (ug/L): 1537.2

Mean Conc (ug/L): 1536.9 SD: 0.33 RSD(%): 0.02

~~~~~~

Na ID: CCB Seq. No.: 00104 A/S Pos.: -- Date: 02/17/95

Absorbance: 0.000 Time: 17:28
Concentration (ug/L): 1.9

Absorbance: 0.001 Time: 17:28
Concentration (ug/L): 3.1

Mean Conc (ug/L): 2.5 SD: 0.87 RSD(%): 34.60

Accession #: D295183469

Document #: SD-WM-VI-029

Title/Desc:

GTS DURATEK PHASE 1 HANFORD LLW MELTER TESTS 1000 KG MELTER OFFGAS REPORT [SEC 1 OF 3]

Pages: 157

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DOCUMENT NUMBER: SD-WM-VI-029 REV 0

SECTION 1 OF 3

TITLE: GTS DURATEK PHASE I HANFORD LLW MELTER TESTS 1000 kg MELTER OFFGAS REPORT

DATE: 11/30/95

ORIGINATOR: EATON WC

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RECIPIENT:

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1		Cog. Mgr. D. J. Washenfelder [signature] 10/19/95 H5-27			
1		QA D. W. Duncan [signature] 10/19/95 B4-55			
		Safety			
		Env.			

18. W. C. Eaton [signature] 10/19/95 Signature of EDT Originator Date	19. Authorized Representative Date for Receiving Organization	20. D. J. Washenfelder [signature] 10/15/95 Cognizant Manager Date	21. DOE APPROVAL (if required) Ctrl. No. [] Approved [] Approved w/comments [] Disapproved w/comments

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APPROVED FOR PUBLIC RELEASE

WHC Information Release Administration Specialist:

V. L. Birkland 11/29/95

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William C Eaton

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7. Abstract

A multiphase program was initiated in 1994 to test commercially available melter technologies for the vitrification of the low-level waste (LLW) stream from defense wastes stored in underground tanks at the Hanford Site in southeastern Washington State. Phase 1 of the melter demonstration tests using simulated LLW was completed during fiscal year 1995. This document is the 1000 kg melter offgas report on testing performed by GTS Duratek Inc. in Columbia, Maryland. GTS Duratek (one of the seven vendors selected) was chosen to demonstrate Joule heated melter technology under WHC subcontract number MMI-SVV-384215. The document contains the complete offgas report on the 1000 kg melter as prepared by Parsons Engineering Science Inc. A summary of this report is also contained in the "GTS Duratek, Phase 1 Hanford Low-Level Waste Melter Tests: Final Report" (WHC-SD-WM-VI-027).

8. RELEASE STAMP

PERFORMANCE TEST REPORT FOR THE 1000 KG MELTER

PREPARED FOR:

VITREOUS STATE LABORATORY

CATHOLIC UNIVERSITY OF AMERICA

WASHINGTON, D.C. 20064

PREPARED BY:

PARSONS ENGINEERING SCIENCE, INC.

10521 ROSEHAVEN STREET
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727107

MARCH 1995

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LIST OF APPENDICES

EXECUTIVE SUMMARY

Source testing was conducted on the 1000 kg melter operated by Catholic University's Vitreous State Laboratory. The testing was conducted during a pilot-scale study involving the vitrification of sludge. Uncontrolled particulate matter emission rates (melter exhaust) averaged 0.27 lb/hr. After the HEPA filter, the average particulate matter emission rate was below particle detection limits (approximately 2μg/dscf). Metals concentrations and emissions rates were measured at the melter exhaust and at the HEPA filter exhaust. As expected, the highest metals concentrations were observed in the melter exhaust prior to the air pollution control devices. The HEPA filter exhaust was virtually clean with metals reported by the laboratory as non-detectable. Sodium was the most prevalent metal in the melter exhaust (1762 μg/dscf).

Continuous emissions monitoring results for NO_x, SO_2, CO, and THC, identified NO_x as the pollutant most prevalent at all of the sampling locations (melter exhaust, post-demister, and HEPA filter). The highest average NO_x measurement observed was at the melter exhaust and was 6445 ppmv. Sample gas was passed through an ammonia scrubber prior to being analyzed for NO_x. This reduced the bias caused by the ammonia present in the stack gas.

Other pollutants were not present in significant quantities when compared to the NO_x concentrations. THC and SO_2 were generally observed at levels below 100 ppmv and 250 ppmv, respectively. The highest average CO concentration observed was 414 ppmv.

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Teflon is a trademark of E. I. du Pont de Nemours & Company.

SECTION 1

INTRODUCTION

This sampling and analysis report has been prepared by Parsons Engineering Science, Inc. (Parsons ES) for a source assessment program conducted on an experimental glass melter, operated by the Vitreous State Laboratory (VSL) of the Catholic University of America. The Director of the VSL is Dr. Pedro Macedo. This pilot-scale melter (1000 kg) is located in Hannon Hall, Catholic University of America, Washington D.C., 20064. Process sampling results are presented and summarized in this report. Collected data will be used by the VSL as part of the performance evaluation program for the 1000 kg melter.

During this source assessment, Parsons ES monitored the melter at different locations of the process and air pollution control system. Emission rates of sodium (Na), potassium (K), cesium (Cs), strontium (Sr), molybdenum (Mo), boron (B), and chromium (Cr) were measured. Particulate matter emission rates were also measured. Parsons ES periodically monitored several gas streams for nitrogen oxides (NO_x), sulfur dioxide (SO_2), carbon monoxide (CO), oxygen (O_2), and total hydrocarbons (THC).

The physical design and layout of the 1000 kg melter prevents strict adherence to the source test methodologies prescribed by 40 CFR Part 60, Appendix A for compliance monitoring. Therefore, we modified the EPA Reference Methods of 40 CFR Part 60 and utilized other EPA source test methods to allow collection of samples in the most representative manner possible, given the nature of the physical constraints of the system layout.

The 1000 kg melter source assessment was conducted by a Parsons ES field crew of two engineers and two senior technicians with the assistance of VSL operators, on January 19 and 20, 1995. Analysis of samples for metals content was performed by Triangle Laboratories, Inc.

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SECTION 2

SOURCE DESCRIPTION

The 1000 kg melter is an electrically-powered melter designed to vitrify certain types of hazardous materials of varied natures. During this testing, a surrogate sludge was fed to the melter to simulate the low-level radioactive or mixed waste for which this melter is being designed. Once the desired glass composition in the melter was obtained, the melter operated continuously for approximately three days, during which time the surrogate sludge was pumped into the unit. Source testing occured during the first twenty-seven hours of the melter demonstration.

The exhaust from the melter is treated by an air pollution control system. Exhaust air leaves the melter at temperatures between 500 and 800° C and passes through a quench and then to a caustic scrubber. A demister follows the caustic scrubber and after the gas passes through the demister, it is re-heated before being sent to a baghouse for final particle removal. Final gas cleaning is accomplished with a HEPA filter. Ambient air is added to the exhaust air prior to the HEPA filter to control the humidity and maintain HEPA filter performance.

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SECTION 3

SAMPLING LOCATIONS

Three sampling locations were selected by the VSL for the source assessment of the 1000 kg melter. These locations are the melter exhaust, post-demister, and HEPA filter exhaust.

The melter exhaust sampling location is pictured in Figure 3.1. A pipe fitting was modified for use as a sampling port in the ten-inch i.d. pipe that ducts exhaust gas from the melter. The main sampling port is located at an intersection, approximately two and half feet downstream from the melter exhaust stack. Due to the melter equipment arrangement, there are no sampling locations that meet the criteria for isokinetic sampling as described in EPA Reference Method 1 or 1A. Also, the small duct diameter precludes sampling traverses. Instead, a single point nominally in the center of the gas flow, was selected for the sampling nozzle location.

Sampling at the post-demister was performed at a sampling port located just down stream of the demister (Figure 3.2). A small tap suitable for sampling NO_x, SO_2, THC, CO, and O_2 was installed in the four-inch PVC pipe, prior to the baghouse. This location was only used for non-isokinetic, CEM sampling.

There are two identical HEPA filter systems available for the exhaust gas after it passes through the demister. Only one of the systems can be operated at any given time. The No. 1 or 2 HEPA filter exhaust was in operation and was sampled at the exhaust stack after the gas leaves the filter (Figure 3.3). The main sample location was selected as required by EPA Reference Method 1A. The exhaust duct is a 8-inch diameter steel pipe with the two sampling ports for isokinetic sampling located approximately four duct diameters downstream from the nearest flow disturbance and five diameters upstream from the nearest disturbance. Both ports were located in the same stack cross-sectional plane, and were offset 90 ° to each other. Two pitot tube ports were installed downstream of the main sampling port for velocity measurements with a standard pitot tube. The velocity traverse ports were located 59 inches (7.37 duct diameters) downstream of the outlet of the exhaust

FIGURE 3.1
MELTER EXHAUST

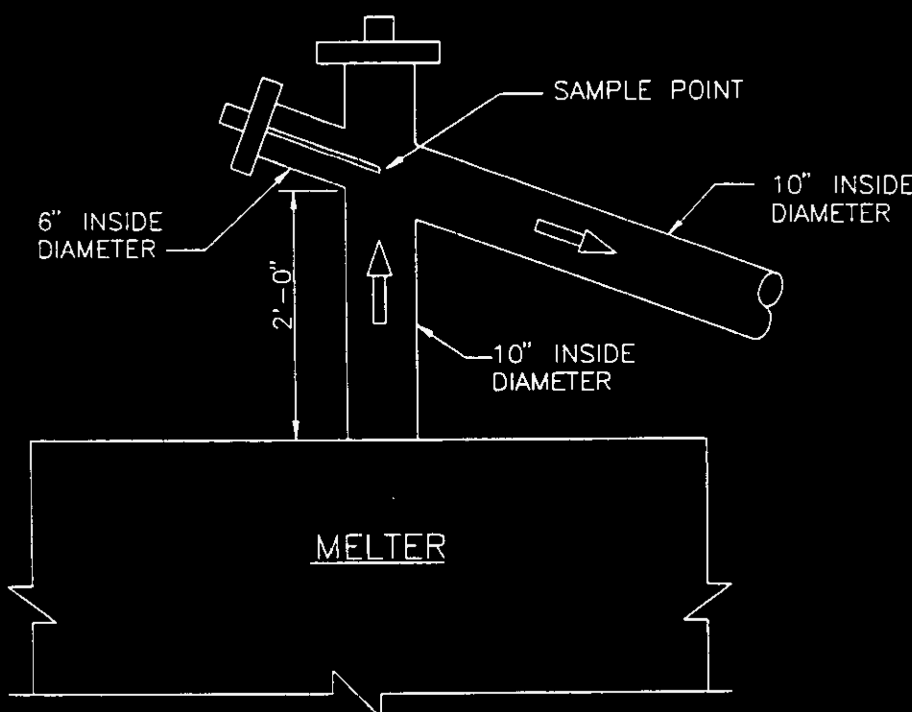

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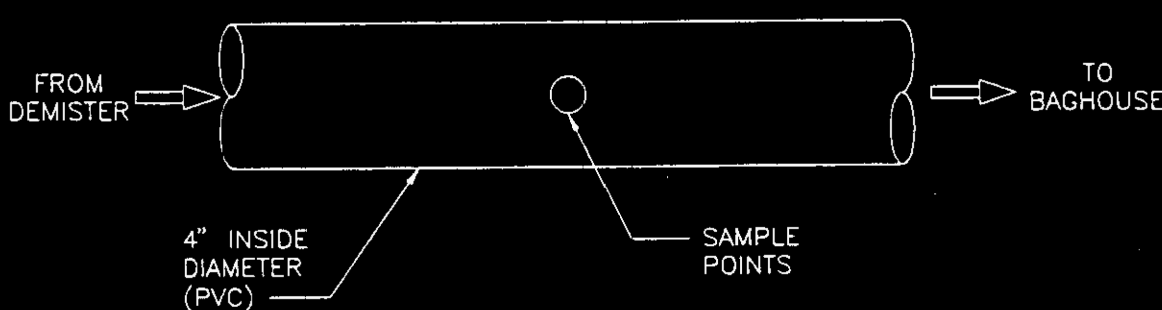
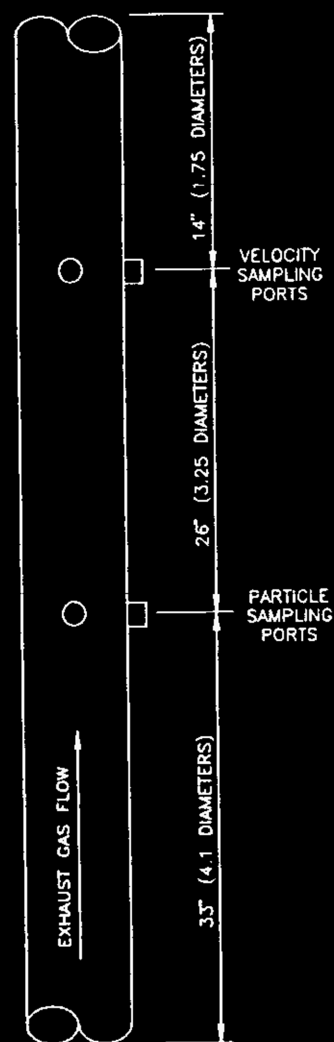
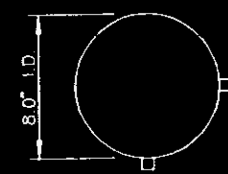
FIGURE 3.2
POST-DEMISTER







12-POINT TRAVERSE

TRAVERSE POINT ID	DISTANCE FROM INSIDE WALL OF STACK (IN.)
1	0.50
2	0.54
3	0.94
4	1.42
5	2.0
6	2.84
7	5.15
8	6.0
9	6.6
10	7.1
11	7.5
12	7.5

FIGURE 3.3
VITREOUS STATE LABORATORY,
CATHOLIC UNIVERSITY OF AMERICA
SAMPLE PORT LOCATIONS AND TRAVERSE POINT LAYOUTS

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fan, and fourteen inches (1.75 duct diameters) upstream of the bend in the duct. The sample and velocity traverses were conducted concurrently using a twenty-four point matrix. Each sample matrix consisted of two twelve-point sample traverses.

An auxiliary sampling port was used for non-isokinetic sampling, immediately downstream of the main sampling location.

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SECTION 4

TEST PROGRAM AND SAMPLING METHODS

As stated previously, the purpose of this source assessment program is to provide emissions data for the VSL's 1000 kg melter. This test program collected emissions data from three sampling locations: the melter exhaust, post-demister, and HEPA filter exhaust. Particulate matter and metals samples were collected from the melter exhaust and HEPA filter exhaust locations. From all three locations, NO_x, SO_2, THC, CO, and O_2 were measured. Table 4-1 is the sampling matrix for the source assessment program.

Particulate Matter and Metals Sampling

Particulate matter and metals were collected at the Melter Exhaust with a modification of the multiple-metals method from the ***Methods Manual for Compliance with the BIF Regulations (EPA/530-SW-91-010)***. The BIF metals methods was used in conjunction with EPA Method 1A at the HEPA Filter Exhaust sampling location.

With the BIF Metals Method, particulate and gaseous emissions are isokinetically withdrawn from the stack and collected on a quartz fiber filter and in an impinger solution. Metals in the particulate phase are captured on the filter and vapor-phase metals are collected in the impinger solution. This source assessment program used two impingers each containing 100 ml of a 5% nitric acid/10% hydrogen peroxide solution. The various fractions of the sampling trains are digested prior to analysis by inductively-coupled argon plasma (ICAP) spectroscopy. Generally, this method is used for the sampling and analysis of trace metals. Except for chromium, the metals targeted in this source assessment program are not usually selected for emissions monitoring. However, the selected analytical methodology, ICAP, provides the sensitivity and precision desired.

Prior to metals analysis of the sample filter, the filter was weighed to measure the mass of particulate matter collected.

TABLE 4-1
SAMPLE MATRIX FOR VSL 1000KG MELTER

Sample Location	Parameter	No. Of Sample Runs	Sample Train ID	Sample Method
Melter Exhaust	Metals (Na, K, Cs, Cr, Mo, B, Sr)	3	1	Modified BIF-MMT
	Particles	3	1	Modified BIF-MMT
	NO/NO_x, SO_2, CO, O_2, THC	Continuous	NA	EPA Methods for CEMS
Post-Demister	NO/NO_x, SO_2, CO, O_2, THC	Continuous	NA	EPA Methods for CEMS
Stack	Metals (Na, K, Cs, Cr, Mo, B, Sr)	3	2	Modified BIF-MMT
	Particles	3	2	Modified BIF-MMT
	NO/NO_x, SO_2, CO, O_2, THC	Continuous	NA	EPA Methods for CEMS

As mentioned previously, the BIF Metals method was modified to accommodate the sample point configuration at the melter exhaust. Since the exhaust gas temperature exceeded the softening temperature of a conventional glass probe, the sampling nozzle and sampling probe were made from Inconel®. An equipment blank was collected from the nozzle/probe assembly to check for the possibility of contamination from the equipment.

A summary of the BIF Metals Method is presented in the appendices. Also included in the appendices are the summaries of EPA Reference Methods 1 and 5. These are the standard methods upon which the BIF Metals Method draws for the isokinetic and particle sampling guidelines. The source test protocol provides greater detail of the sampling methods.

CEM

At each of the three sampling locations, the exhaust gas was sampled and analyzed for NO_x, SO_2, THC, CO, and O_2. Stack gas samples for analysis by continuous emissions monitors were extracted from a single point at each sample location. Monitoring at each location was conducted on a rotating schedule that reflected the requirements of the VSL staff. Generally, monitoring was conducted at each location for 20 minutes of every hour during the testing. Two sample streams were extracted from the stack and transported to the mobile CEM laboratory through the use of self-regulating heated sample lines, which are designed to maintain gas temperature of 250 °F above the ambient temperature. One of the streams was conditioned to remove entrained particles, NH_4 and moisture and then sent to a stainless steel sampling manifold. Continuous samples for the oxygen, carbon monoxide, and nitrogen oxide analyzers were extracted from the manifold, and the excess gases were vented to the atmosphere. The second stack gas stream was not conditioned, and was sent directly to the continuous hydrocarbon analyzer and the sulfur dioxide analyzer.

Instrument responses to calibration standards and sample gases were analyzed and recorded by a PC-driven data acquisition system (DAS). The DAS consists of an analog-to-digital signal converter and a personal computer which analyzed the instrument responses and converted the analog signals to the appropriate engineering units. The analyzer responses were read and recorded at thirty-second intervals on the PC's hard disk drive and on a computer print-out.

*Inconel is a trademark of INCO Alloys International, Inc.

Stack Gas Oxygen Content

The oxygen content in the effluent gas was measured by a Horiba PMA-200 Paramagnetic Oxygen Analyzer in accordance with the procedures in EPA Method 3A. O_2 was analyzed on a dry basis and the instrument responses were recorded by the DAS. The PMA-200 has two operating ranges, 0 - 10, and 0 - 25 percent oxygen. During this test, the instrument was operated on the 0 - 25 percent range and calibrated with oxygen standards containing approximately 17.7 and 11.2 percent oxygen. Prior to each day of testing, the instrument was calibrated by introducing a zero gas and the upscale calibration standards directly to the analyzer. The sample line bias was checked by introducing the zero gas and the mid-range calibration standard into the sampling system immediately downstream of the probe. The oxygen measurement system response and drift was determined at the conclusion of each sampling run by introducing the zero and upscale calibration standard into the measurement system downstream of the probe.

Stack Gas Nitrogen Oxides Content

The nitrogen oxides content in the effluent gas was measured by a Thermo Environmental Model 10 $NO/NO_2/NO_x$ chemiluminescence analyzer in accordance with the procedures in EPA Method 7E. NO_x in the sample gas is converted to NO and detected by the chemiluminescent reaction with ozone. This analytical procedure is subject to interference from NH_3. Elevated concentrations of NH_3 were anticipated in the exhaust from the source tested. The conversion of NH_3 to NO can be 80 - 85%, NH_3 in the exhaust gas was scrubbed using a scrubber with sulfuric acid. NO_x was analyzed on a dry basis and the instrument responses were recorded by the DAS. The Model 10 has eight operating ranges, 0 - 2.5, 10, 25, 100, 250, 1,000, 2,500, and 10,000 ppm nitrogen oxides. During this test, the instrument was operated on the 0 - 1,000 ppm, 0 - 2,500 ppm, and 0 - 10,000 ppm range and calibrated with nitric oxide standards containing 861 and 442 ppm nitrogen oxide. The instrument was calibrated by introducing a zero gas and the upscale calibration standards directly to the analyzer. The sample line bias was checked by introducing the zero gas and the mid-range calibration standard into the sampling system immediately downstream of the probe. The nitrogen oxides measurement system response and drift were subsequently determined at the conclusion of each sampling run by introducing the zero and upscale calibration standard into the measurement system downstream of the probe.

Stack Gas Total Hydrocarbon Content

The THC content in the effluent gas was measured by a J.U.M. VE-7 Total Hydrocarbon Analyzer in accordance with the procedures in EPA Method 25A. Hydrocarbons in the sample stream were measured continuously by a Flame Ionization Detector. THC was analyzed on a wet basis and the instrumentation responses were recorded by the DAS. The VE-7 has five operating ranges, 0 - 10, 100, 1,000, 10,000 and 100,000 ppm hydrocarbons, and is calibrated using propane standards that correspond to approximately 30, 60, and 85 percent of the full-scale response. The VE-7 was operated at the 0-100 ppm range. Prior to testing, the instrument was calibrated by introducing a zero gas and the upscale calibration standards into the sampling system directly downstream of the sample probe. The THC measurement system response and drift were determined at the conclusion of each sampling run by introducing the zero and upscale calibration standard into the measurement system downstream of the probe.

Stack Gas Sulfur Dioxide Content

SO_2 measurements were made using the procedures outlined in EPA Method 6C. Method 6C is based on absorption of ultraviolet radiation by the SO_2 molecule. The amount of light absorbed is dependent upon the concentration of the compound present. The UV light beam is split after the light source, with one part passing through the sample cell, and the other part passing through the reference cell, which is filled with a non-absorbing gas. Each beam then passes through a narrow band pass filter into photomultiplier tubes for creation and amplification of the signals. The amount of absorbed light (found by difference in signal intensity) is proportional to the amount of absorbing species present.

The SO_2 analyzer used is a Horiba AIA 23® that operates on the principle of UV absorption. The analyzer has full-scale ranges of 0 to 100 and 0 to 500 ppm. SO_2 standards are SO_2 in air and were selected to correspond to approximately 55 and 85 percent of the instrument span range.

Summaries of the sampling methods are provide in the appendices.

Sampling Schedule

The source assessment program was conducted over two days, on January 19 and January 20, 1995. Three metals and three particle runs were conducted at both the melter exhaust and at the HEPA filter exhaust. Each metals sampling run lasted for approximately one hour. Metals samples were collected simultaneously at each location.

Exhaust samples at each of the three sampling locations were directed to continuous emissions monitoring instruments at 20 minute intervals. After monitoring for approximately 20 minutes at each location , the exhaust from the next location was sampled. During each run, the first location monitored was the HEPA filter exhaust. The next location from where sample was drawn was the post-demister, and finally the melter exhaust.

SECTION 5

QA/QC PROCEDURES

The main quality assurance and quality control (QA/QC) procedure for the 1000 kg melter source assessment is the adherence to the test protocol. By following the approved source test protocol, complying with the applicable QA procedures for each sampling and analysis method, and documenting changes to the protocol, the quality of resulting performance test data can be evaluated.

Sampling Equipment

Further QA/QC is provided for by the routine calibration and maintenance of the stack testing equipment. All stack sampling equipment to be used in this testing effort is periodically calibrated according to the methodologies and frequencies established in the EPA Quality Assurance Manual. Routine maintenance dictated by the Quality Assurance Manual and good engineering practice ensures quality performance of the sampling equipment. Prior to field use, source test equipment is checked for proper performance and valid calibrations. Upon completion of a source test program, sampling equipment calibrations are re-checked to assess equipment performance during the source test.

Meter Boxes

Meter boxes used for source testing are subjected to multi-point calibrations once each year, or after repairs are made to the dry gas meter, orifice, or thermocouples. Meter boxes are assigned a unique ID number, and a calibration performed on meter boxes are recorded in the notebook. The dry gas meter and orifice are calibrated at five flow settings ranging from an orifice pressure of 0.5" WC to 4.0" WC. The meter box calibration factor (gamma,) is calculated for each flow setting and checked to ensure that no individual gamma differs from the average by more than 0.02. Similarly the ΔH@ value of the orifice is calculated for each flow setting and checked to ensure that no individual value differs from the average by more than 0.15. Dry gas meter thermocouples are checked against a mercury-in-glass thermocouples are considered unacceptable and are repaired or replaced if they do not read within 5.4°F at each of the calibration points.

Pitot Tubes

Parsons ES purchases standard pitot tubes that conform to the design criteria specified in Method 2. Upon receipt, Parsons inspects the pitot tubes for proper construction. The standard pilot tubes are assigned a pitot tube coefficient, C_p, of 0.99.

Thermocouples

Stack temperature thermocouples are permanently attached to the sampling probes and are checked as received for accuracy. The thermocouples are checked against a mercury-in-glass thermometer at three temperatures: ice-point, ambient, and boiling H_2O point. Calibration and maintenance data for each stack thermocouple are recorded in the appropriate sampling probe notebook. Probe liner, filter box, sample gas, and condenser thermocouples are checked for accuracy at three water temperatures: icepoint, ambient, and boiling point. Parsons ES recognizes that the temperature of the probe liner, heated sample box, and sample gas temperature are generally maintained at temperatures of approximately 250°F. Since these temperatures are not used to calculate stack gas parameters or correct sample volumes, the calibration procedure is considered adequate when weighed against the danger of working with boiling oil. Each thermocouple is assigned a unique identification number and a notebook for recording calibration and maintenance data.

Sampling Nozzles

Parsons ES maintains a full range of sampling nozzles to conduct isokinetic sampling at a variety of exhaust gas velocities. Nozzles are stored in padded metal boxes to prevent damage during storage or transport. The internal diameter of the nozzle is measured using a set of dial, electronic, or vernier micrometer. The diameter used to calculate the nozzle area is determined from the average of three measurements of the nozzle in three different diameters. The nozzle is not used if an individual diameter differs from the average by more than 0.004 inch.

Summary (Table)

A summary of sampling equipment with corresponding calibration procedures, frequencies, and acceptance criteria can be found in Table 5-1.

TABLE 5-1

CALIBRATION OF SAMPLING EQUIPMENT

Apparatus	Acceptable Limits	Frequency and Methods of Measurements	Corrective Action
Wet Test Meter (64 ft^3/hr cap.)	$Y=1.00\pm0.01$ for calibration range 7.5 to 65 ft^3/hr	Initially and annually by bell prover	Return to service center for corrective maintenance
Dry Gas Meter	Y tolerance for individual values $\pm$ 0.02 from average Y value	Calibration initially and annually against calibrated wet test meter at 0.50, 0.75, 1.0, 1.5, 2.0, and 4.0 in H_2O	Repair or replace as needed, recalibrate over full range of flow settings
	$Y_f = Y_i \pm 0.05Y_i$	Post-test calibration check after field use	Repair or replace as needed, recalibrate over full range of flow settings
	ΔH@ tolerance for individual values $\pm$ 0.20 from average ΔH@ value	Calibration initially and annually against calibrated wet test meter at 0.50, 0.75, 1.0, 1.5, 2.0 and 4.0 H_2O	Repair or replace as needed, recalibrate over full range of flow settings
Stack Thermocouple	1.5% of absolute temperature as indicated by ASTM mercury-in-glass thermometer	Initially and annually at ice-point, and boiling water point. Temperatures extrapolated to 1500°F	Adjust, determine calibration factor, or reject
Filter Heater Thermocouple	$\pm$ 5.4°F as indicated by ASTM mercury-in-glass thermometer	Initially and annually at ice-point and boiling water point	Adjust, determine calibration factor, or reject
Condenser Outlet Thermocouple	$\pm$ 2°F as indicated by ASTM mercury-in-glass thermometer	Initially and annually at ice-point and boiling water point	Adjust, determine calibration factor, or reject

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TABLE 5-1

CALIBRATION OF SAMPLING EQUIPMENT

(CONTINUED)

Apparatus	Acceptable Limits	Frequency and Methods of Measurements	Corrective Action
Dry Gas Meter Thermocouples	± 5.4°F as indicated by ASTM mercury-in-glass thermometer	Initially and annually at ice-point and boiling water point	Adjust, determine calibration factor, or reject
S-type Pitot Tube Assemblies	$C_p = 0.84$	Initially and after field usage be geometric calibration procedures	Realign or replace
Standard Pitot Tube	$C_p = 0.99$	Initially and after field usage be geometric calibration procedures	Realign or replace
Probe Nozzle	Tolerance 0.004 in. for three measurements, 120° apart	Prior to each field test	Reshape and resharpen, then recalibrate
Analytical Balance	± 0.1 mg with Class S wts.	Annually serviced by field tech.	Adjust and repair as needed
		Adjusted prior to each use with Class S wts. (60.0000 g or 100.0000 g)	Adjust as needed to calibrate weight, call for factory service as needed.

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Analytical Balances

Analytical balances are professionally cleaned and calibrated annually by certified balance technicians provided by the manufacturer. Following this professional calibration, a document is provided by the manufacturer, stating the model number, serial number and date of calibration. Additionally, a sticker noting the technician's name and the date of calibration is attached to the balance.

Each time the balance is used, a calibration check is performed using a set of Class S weights. The results of each calibration are recorded in a notebook which remains with the balance being used.

Continuous Emissions Monitors

The quality of collected CEM data is ensured by the adherence to the calibration and maintenance programs specified by the instrument manufacturers and in the EPA Reference Methods used during the monitoring. Calibration procedures are provided in greater detail in the appendices.

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SECTION 6

RESULTS AND DISCUSSION

This section presents the results of the sampling program and provides discussion of the collected data. Raw field data, laboratory reports and calculations are presented in the appendices.

As expected, the uncontrolled exhaust from the melter and the cleaned exhaust exiting the HEPA filter exhibited widely different characteristics. Melter exhaust samples demonstrated very high particle loading and high metals concentrations, while the HEPA filter exhaust samples usually resulted in analytical data at or near detection limits. Accordingly, different sample recovery and data handling techniques were used for the two locations.

Nitric acid probe washes collected from the melter exhaust sample trains were so laden with particles that these rinsates were filtered and subjected to gravimetric analysis prior to metals digestion. This extra procedure was not necessary for nitric acid rinses taken from the HEPA filter sample trains, since these did not contain particles.

A modification was also made in the choice of rinsate used for melter exhaust sample recovery. In Parsons ES's previous investigation at Catholic University's Vitreous State Laboratory, it was found that probe rinses performed with acetone (as prescribed by EPA Method 5) were ineffectual for particle recovery due to the vast quantity and unusual nature of the particulate matter in the melter exhaust. Therefore, during this sampling program, only nitric acid probe rinses were performed on melter exhaust sample trains. However, the normal procedure (acetone rinse followed by nitric acid rinse) was performed on HEPA filter exhaust sample trains.

As mentioned above, the HEPA filter exhaust samples had such low concentrations of metals and particulate that much of the laboratory results were near or below analytical detection limits. There were many cases in which blank samples actually resulted in higher analyte concentrations than the HEPA filter exhaust samples. To treat these situations as conservatively as possible, the following data handling procedures were implemented: 1)

Whenever a laboratory result was listed as "less than detection limit," the detection limit value was used for calculation purposes; 2) all results (melter and HEPA filter) were blank-corrected by subtracting the blank results from the corresponding sample results; 3) when a blank-corrected result was a negative number, the result was considered to be less than ("<") two times the absolute value of the negative result.

PARTICULATE MATTER CONCENTRATIONS AND EMISSION RATES

Particulate matter sampling results for the melter exhaust and HEPA filter exhaust are given in Tables 6.1 and 6.2 respectively.

The average particulate matter concentration and emission rate measured at the melter exhaust location was 0.31 grains/dscf and 0.27 lb/hr respectively. The particulate matter concentration measured at the HEPA filter exhaust was below detection limits. The maximum emission rate and grain loading (0.34 lb/hr and 0.39 grains/dscf) was measured in the melter exhaust during Run #2.

The melter exhaust sampling location does not meet with EPA Method 1 or EPA Method 1A isokinetic sampling criteria. The melter exhaust sampling point is located at a flow disturbance, as described in Section 3. This situation contributes to unpredictable flow characteristics in the gas stream and can bias the collection of particle samples.

However, a review of the 100 kg Melter performance results (December 1994) by VSL personnel compared the air sampling results to the products found in the scrubber discharges and HEPA filter duct. The review indcated that the air sampling results matched well with the emission rates expected based on a mass balance analysis. This suggests that the bias in particle collection may not be too great. Particles emitted from the melter are probably being exhausted as fume or fine particles and being sampled more as a gas and not as a particle.

TABLE 6.1

SUMMARY OF TEST RESULTS FOR PARTICULATE MATTER AND METALS VITREOUS STATE LABORATORY 1000 KILOGRAM MELTER EXHAUST

Sample Run No.	2	3	4	Average
Date	1/19/95	1/19/95	1/20/95	
Time	17:25	21:10	09:50	
Stack Temperature (°F)	752	752	752	752
Moisture (%)	10.1	21.7	17.1	
O_2 (%)	20.6	19.0	19.1	19.6
Stack Gas Volumetric Flow Rate (acfm)	N/A	N/A	N/A	N/A
Stack Gas Volumetric[1] Flow Rate (dscfm)	99	99	99	99
Isokinetic Ratio (%)	N/A	N/A	N/A	
Sample Volume (dscf)	43.343	42.946	37.966	41.686
Particulate Matter:				
Concentration (grains/dscf)	0.39	0.29	0.26	0.31
Emission Rate (lb/hour)	0.34	0.25	0.22	0.27
Boron				
Concentration (μg /dscf)	924	689	550	721
Emission Rate (lb/hour)	1.2E-02	9.0E-03	7.2E-03	9.4E-03
Chromium				
Concentration (μg /dscf)	63.1	53.8	59.9	58.9
Emission Rate (lb/hour)	8.3E-04	7.1E-04	7.9E-04	7.7E-04
Cesium				
Concentration (μg /dscf)	982	779	1044	935
Emission Rate (lb/hour)	1.3E-02	1.0E-02	1.4E-02	1.2E-02

[1] Based on velocity traverses conducted at the post-scrubber location.

TABLE 6.1
(CONTINUED)

SUMMARY OF TEST RESULTS FOR
PARTICULATE MATTER AND METALS
VITREOUS STATE LABORATORY
1000 KILOGRAM MELTER EXHAUST

Sample Run No.	2	3	4	Average
Molybdenum				
Concentration (μg /dscf)	57.4	50.0	58.1	55.2
Emission Rate (lb/hour)	7.5E-04	6.5E-04	7.6E-04	7.2E-04
Strontium				
Concentration (μg /dscf)	14.7	12.2	9.2	12.1
Emission Rate (lb/hour)	1.9E-04	1.6E-04	1.6E-04	1.6E-04
Potassium				
Concentration (μg/dscf)	819	NA	NA	
Emission Rate (lb/hour)	1.07E-02	NA	NA	
Sodium				
Concentration (μg/dscf)	2326	1418	1542	1762
Emission Rate (lb/hour)	3.0E-02	1.9E-02	2.0E-02	2.3E-02

NA - Not Analyzed: Due to laboratory analytical error, these results are not available

TABLE 6.2

SUMMARY OF TEST RESULTS FOR PARTICULATE MATTER AND METALS VITREOUS STATE LABORATORY HEPA FILTER EXHAUST

Sample Run No.	1	2	3	Average
Date	1/19/95	1/19/95	1/19/95	
Time	12:25	17:25	21:09	
Stack Temperature (°F)	106.8	107.6	108.3	107.6
Moisture (%)	1.00	1.45	1.27	1.24
O_2 (%)	20.7	20.7	20.7	20.7
Stack Gas Volumetric Flow Rate (acfm)	593	565	606	588
Stack Gas Volumetric Flow Rate (dscfm)	655	627	672	651
Isokinetic Ratio (%)	92.9	99.1	98.4	96.8
Sample Volume (dscf)	84.332	78.965	85.924	83.407
Particulate Matter:				
Concentration (grains/dscf)	<0.00002	<0.00002	<0.00002	<0.00002
Emission Rate (lb/hour)	<0.0002	<0.0002	<0.0002	<0.0002
Boron				
Concentration (μg/dscf)	<10.0	<10.0	<10.0	<10.0
Emission Rate (lb/hour)	<8.9E-04	<8.9E-04	<8.9E-04	<8.9E-04
Chromium				
Concentration (μg/dscf)	<2.0	<2.0	<2.0	<2.0
Emission Rate (lb/hour)	<1.8E-04	<1.8E-04	<1.8E-04	<1.8E-04
Cessium				
Concentration (μg/dscf)	<2.0	<2.0	<2.0	<2.0
Emission Rate (lb/hour)	<1.8E-04	<1.8E-04	<1.8E-04	<1.8E-04

TABLE 6.2
(CONTINUED)

SUMMARY OF TEST RESULTS FOR
PARTICULATE MATTER AND METALS
VITREOUS STATE LABORATORY
HEPA FILTER EXHAUST

Sample Run No.	1	2	3	Average
Molybdenum				
Concentration (μg/dscf)	<2.0	<2.0	<2.0	<2.0
Emission Rate (lb/hour)	<1.8E-04	<1.8E-04	<1.8E-04	<1.8E-04
Strontium				
Concentration (μg/dscf)	<2.0	<2.0	<2.0	<2.0
Emission Rate (lb/hour)	<1.8E-04	<1.8E-04	<1.8E-04	<1.8E-04
Potassium				
Concentration (μg/dscf)	<10	<10	<10	<10
Emission Rate (lb/hour)	<8.9E-04	<8.9E-04	<8.9E-04	<8.9E-04
Sodium				
Concentration (μg/dscf)	<10.0	<10.0	<10.0	<10.0
Emission Rate (lb/hour)	<8.9E-04	<8.9E-04	<8.9E-04	<8.9E-04

Metals Concentrations and Emission Rates

Tables 6.1 and 6.2 show the melter and HEPA filters exhaust gas metals concentrations and emission rates. For the melter exhaust Na, K, B, and Cs are present in the highest concentrations and have the greatest emission rates. The average emission rate for these compounds was 2.3E-02 lb/hr, 9.4E-03 lb/hr, and 2.2E-02 lb/hr. Concentrations of Na, K, B, Cs averaged 1,762 ug/dscf, ug/dscf, 721 ug/dscf, and 935 ug/dscf. The Na concentration is 8.5% of the total suspended particle (TSP) concentration; B is 3.57% of the TSP concentration; and Cs is 4.4%. Cr, Mo, and Sr were found in the melter exhaust samples, but at significantly lower concentrations relative to Na, K, B, or Cs.

The metals concentrations measured at the melter exhaust may be biased by the sample location for the same reasons given in the previous section for particulate sampling bias. Metals that are associated with particulate matter may have been overestimated or underestimated due to the physical dimensions of the sampling location, as described previously.

Exhaust gas samples after the HEPA filter all had metals concentrations below the detection levels. Table 6.2 reports these results as either <2 μg/dscf or <10 μg/dscf. These detection levels are those reported by the VSL analysts for their results. The detection levels reported by Triangle Laboratories for these results are slightly lower. However, to remain consistent with the work conducted by VSL, the higher detection level is reported in the summary table, Table 6.2.

Continuous Emissions Monitoring Results

Table 6.3 provides a summary of the CEM measurements made at each sample location. Measured NO_x concentrations ranged from 496 ppmv to 1106 ppmv at the HEPA filter exhaust. NO_x concentrations at the melter exhaust varied from 465 ppmv to 6445 ppmv. THC concentrations varied from 1.1 ppmv at the melter exhaust to a maximum of 8.5 ppmv at the HEPA filter exhaust. Measured CO concentrations were observed as high as 248 ppmv in the melter exhaust. O_2 concentrations did not change significantly from the 20.9% considered representative of ambient concentrations.

TABLE 6.3

CATHOLIC UNIVERSITY
CEM DATA SUMMARY
1000 Kilogram Melter

Run #1					Concentration		
Date	Time	Location	O_2 (%)	CO (ppm)	NO_x (ppm)	SO_2 (ppm)	THC (ppm)
1/19	13:44	Melter	18.9	414	6445	5.4	1.1
1/19	12:59	Post Demister	19.1	229	2116	678	10.0
1/19	12:16	HEPA Filter	20.7	35.3	648	243	4.6

Run #2					Concentration		
Date	Time	Location	O_2 (%)	CO (ppm)	NO_x (ppm)	SO_2 (ppm)	THC (ppm)
1/19	19:22	Melter	20.6	151	4099	76.7	3.7
1/19	18:05	Post Demister	20.7	210	3761	204	8.2
1/19	17:12	HEPA Filter	20.7	85.7	1106	245	8.5

Run #3					Concentration		
Date	Time	Location	O_2 (%)	CO (ppm)	NO_x (ppm)	SO_2 (ppm)	THC (ppm)
1/19	23:06	Melter	19.0	22.8	465	N/A	5.9
1/19	22:04	Post Demister	20.0	168	2077	N/A	8.0
1/19	21:32	HEPA Filter	20.7	36.8	496	N/A	3.5

Run #4					Concentration		
Date	Time	Location	O_2 (%)	CO (ppm)	NO_x (ppm)	SO_2 (ppm)	THC (ppm)
1/20	13:07	Melter	19.1	248	2911	N/A	N/A
1/20	12:19	Post Demister	20.1	179	1952	N/A	N/A
1/20	11:16	HEPA Filter	20.6	36.7	579	N/A	N/A

* N/A denotes no data collected.

Measured SO_2 concentrations varied from location to location. The observed variability can be attributed to process changes but it is probably due to the hysterisis of sulfate compounds in the sampling line. As described in Section 4, the SO_2 analyzer was sampling hot and wet gas. Eventually this biased the SO_2 sampling system.

During previous testing at the Vitreous State Laboratory, NO_x measurements collected at each location were biased upwards because of sample matrix interference with the NO_x analyzer. Parsons ES uses a TECo Model 10 chemiluminescence analyzer with a stainless converter for the NO_2 to NO conversion. The manufacturer states that this converter will also convert NH_3 to NO at 80-85% efficiency up to 2000 ppm by volume NH_3. Further, the relatively high concentration of NH_3 would essentially contaminate the converter for some period of time.

In the report submitted to Catholic University for the previous investigation, Parsons ES recommended several methods for handling ammonia interference in NO_x analysis. These methods were employed in the investigation described herein.

Parsons ES placed a sulfuric acid solution in-line prior to the NO_x analyzer in order to scrub NH_3 from the sample gas. Furthermore the analyzer was periodically operated in the converter bypass mode (NO mode) in order to reduce and evaluate the ammonia bias.

Prior to the source test, Parsons ES constructed an ammonia scrubber and evaluated the systems impact on the sampling system. Calibration gases with known values of NO_x and SO_2 were passed through the ammonia scrubber and analyzed by our instruments. Our test results indicated that the Scrubber had no impact on the NO_x and NO values as measured by our NO_x /NO analyzers. However, SO_2 removal was apparent. Therefore, sample gas for the SO_2 analyzer was not passed through the ammonia scrubber.

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APPENDIX A

FIELD DATA

15:42:41	18.84	1.41	0.0	0.4	8	74	83
15:43:11	18.84	1.40	0.0	0.4	8	70	79
15:43:41	0.00	1.40	0.1	0.3	9	70	79
15:44:11	0.00	1.40	-0.2	0.2	9	100	115
15:44:41	0.00	1.38	-0.1	0.1	9	77	86
15:45:11	0.00	1.36	-0.2	0.2	9	110	119
15:45:41	0.00	1.37	-0.1	0.1	10	171	180
15:46:11	0.00	1.35	-0.1	0.1	9	196	205
15:46:41	0.00	1.34	-0.1	0.2	9	180	190
15:47:11	0.00	1.35	-0.2	0.4	9	166	176

Contains
Data Catholic Univ.
1/19/95

SO_2 Range 1000
CO " 500
O_2 " 25%
CO_2 " 20%
THC " 100
NO_x " Varies

```
Date: 15/31/127
       Time        O2 IN      CO2 IN        METH   NMHC OUT    METH IN     NMHCIN     TOTHCIN
    18:59:33    405.90H    147.76H    2423.8H    2094.3H   4987466H   3989998H   3324249H
  18:59:51   begin zero o2 direct will zero bias check all systems
    19:00:03    401.60H    147.34H    2421.8H    2007.1H   4974977H   3983599H   3320544H
    19:00:33    395.20H    146.72H    2418.7H    1880.5H   4956282H   3974014H   3314993H
    19:01:03    386.76H    145.88H    2414.6H    1719.8H   4931429H   3961258H   3307602H
    19:01:33    376.38H    144.84H    2409.4H    1531.3H   4900478H   3945352H   3298377H
    19:02:03    364.15H   4863509H   3926319H   3287331H
    19:02:33    350.20H   4820613H
    19:03:03    334.66H
    19:03:33    317.70H
    19:04:03    299.47H
    19:04:33    280.17H
    19:05:03    259.99H
    19:05:33    239.12H
    19:06:03    217.78H
    19:06:34    196.17H
    19:07:04    174.52H
    19:07:34    153.05H
    19:08:04    131.96H
    19:08:34    111.46H
    19:09:04     -0.64
    19:09:34     -0.70
    19:10:04     -0.75
    19:10:34     -0.80
    19:11:04     -0.85
    19:11:34     -0.89
    19:12:04      0.03
    19:12:34     -8.60L
    19:13:04    -15.85L
    19:13:34    -21.04L
    19:14:04    -24.09L
    19:14:34    -24.99L
  Run Title:   catholic u
  Date: 15/31/127
        Time       O2 IN

    19:20:02     -0.09
    19:20:32      0.03
    19:21:03     ~0.03
    19:21:33     16.97
  19:21:54   zero o2 direct
    19:22:03     17.69
  19:22:23   span o2 17.o9
    19:22:33     17.72
    19:23:03     17.72
    19:23:33     17.72          17.72
  19:23:38   span o2 17.79
    19:24:03     17.73
    19:24:33     17.71
    19:25:03     17.74
  19:25:24   WILL BEGIN ZERO BIAS OF SYSTEMS
    19:25:33     17.74
    19:26:04     17.74
    19:26:34     17.73
    19:27:04     17.76
    19:27:34     18.73
    19:28:04     20.24
    19:28:34     20.83
```

17:05:26	21.37	82.7	0.86	1469	216	10.8
17:05:41	21.40	69.2	0.85	1455	216	10.8
17:05:56	21.40	65.8	0.84	1541	214	11.0
17:06:11	21.40	65.3	0.85	1517	217	11.0
17:06:26	21.42	65.8	0.83	1503	220	11.0
17:06:41	21.40	65.8	0.83	1538	220	10.9
17:06:56	21.41	67.3	0.86	2012	221	12.6
17:07:11	21.36	75.7	1.13	1625	226	11.7
17:07:26	21.31	92.2	1.09	1124	226	11.3
17:07:41	21.38	94.7	0.87	1018	222	11.3
17:07:56	21.40	89.7	0.83	1046	219	10.5
17:08:11	21.39	83.7	0.89	1053	218	10.0
17:08:26	21.37	74.2	0.94	1076	217	9.7
17:08:41	21.38	74.2	0.98	1088	215	9.6
17:08:56	21.37	75.7	0.99	1062	216	9.5
17:09:11	21.37	78.7	0.99	1060	215	9.4
17:09:26	21.36	79.7	0.98	1052	213	9.3
17:09:42	21.37	79.7	0.99	1046	212	9.2
17:09:57	21.37	77.2	0.98	1031	211	9.0
17:10:12	21.37	76.7	0.98	1043	209	9.0
17:10:27	21.38	75.7	0.98	1059	208	8.8
17:10:42	21.38	72.2	0.99	1062	208	8.7
17:10:57	21.38	78.3	1.01	1047	206	8.7
17:11:12	21.37	78.3	1.02	1041	205	8.8
17:11:27	21.37	80.3	1.01	1057	206	8.8
17:11:42	21.36	83.7	1.04	1066	205	8.5
17:11:57	21.35	86.2	1.09	1062	206	8.8

NOx Range 2500

17:12:05 ON LINE RUN #2 HEPA FILTER EXHAUST 1/19/95

17:12:12	21.35	90.2	1.09	1084	210	8.7
17:12:27	21.35	88.7	1.08	1057	212	8.5
17:12:42	21.36	88.2	1.08	1061	212	8.5
17:12:57	21.36	87.2	1.08	1065	212	8.4
17:13:12	21.36	87.6	1.09	1092	212	8.3
17:13:27	21.35	88.7	1.09	1120	212	8.3
17:13:42	21.36	94.7	1.14	1123	211	8.5
17:13:57	21.34	98.7	1.16	1127	208	9.0
17:14:12	21.35	101.1	1.16	1107	209	8.8
17:14:27	21.36	103.6	1.14	1090	212	8.6
17:14:42	21.37	100.6	1.12	1104	212	8.5
17:14:58	21.37	94.7	1.12	1111	211	8.3
17:15:13	21.36	93.7	1.14	1109	211	8.3
17:15:28	21.36	94.2	1.13	1118	211	8.3
17:15:43	21.37	92.7	1.11	1127	211	8.1
17:15:58	21.38	91.7	1.08	1127	211	8.1
17:16:13	21.38	89.2	1.06	1147	211	8.1
17:16:28	21.39	87.7	1.06	1134	212	8.1
17:16:43	21.39	85.6	1.03	1126	212	8.0
17:16:58	21.40	84.7	1.01	1126	212	8.0
17:17:13	21.39	83.7	1.02	1110	213	8.0
17:17:28	21.41	82.7	0.99	1101	213	8.0
17:17:43	21.40	82.3	1.00	1072	213	8.1
17:17:58	21.40	83.7	0.99	1083	213	8.0
17:18:13	21.40	82.2	1.01	1080	213	8.0
17:18:28	21.40	82.7	1.03	1088	212	8.0
17:18:43	21.39	85.2	1.06	1095	211	8.0
17:18:58	21.37	83.7	1.09	1105	212	8.3
17:19:13	21.37	89.7	1.10	1125	212	8.3
17:19:28	21.38	92.7	1.11	1096	212	8.2

17:19:43	21.37	94.2	1.11	1071		211	8.4
17:19:59	21.38	90.2	1.06	1077		211	7.9
17:20:14	21.40	79.7	1.02	1071		211	7.5
17:20:29	21.40	78.2	1.03	1073		212	7.6
17:20:44	21.39	77.7	1.04	1072		211	7.7
17:20:59	21.38	78.3	1.07	1071		211	7.7
17:21:14	21.39	81.2	1.06	1063		212	7.7
17:21:29	21.38	82.7	1.04	1074		211	7.7
17:21:44	21.40	84.2	1.04	1086		210	7.5
17:21:59	21.39	78.7	1.06	1079		210	7.6
17:22:14	21.39	82.7	1.06	1084		211	7.8
17:22:29	21.39	81.2	1.06	1089		212	7.7
17:22:44	21.38	79.7	1.06	1093		212	7.5
17:22:59	21.39	78.7	1.06	1093		211	7.5
17:23:14	21.39	77.7	1.05	1067		211	7.4
17:23:29	21.40	76.7	1.05	1084		212	7.4
17:23:44	21.39	75.2	1.04	1076		211	7.2
17:23:59	21.41	72.7	1.02	1086		212	7.2
17:24:14	21.40	74.2	1.02	1079		211	7.1
17:24:29	21.41	74.2	1.01	1084		209	7.2
17:24:45	21.40	74.7	1.01	1086		209	7.2
17:25:00	21.40	76.7	1.00	1108		212	7.4
17:25:15	21.39	77.2	1.01	1111		214	7.3
17:25:30	21.40	78.7	0.99	1109		214	7.5
17:25:45	21.40	78.2	0.97	1111		214	7.5
17:26:00	21.40	77.7	0.98	1125		215	7.8
17:26:15	21.40	77.2	0.97	1131		215	8.1
17:26:30	21.41	76.2	0.98	1128		215	8.1
17:26:45	21.41	74.7	0.98	1128		214	8.2
17:27:00	21.41	74.2	0.99	1792		214	8.3
17:27:15	21.34	103.6	1.44	2560	O.K.	215	9.5
17:27:30	21.06	165.7	2.49	2405		218	20.9
17:27:45	20.87	289.8	2.51	1896		228	25.2
17:28:00	20.98	327.8	2.11	1757		240	20.5
17:28:15	21.00	320.4	2.07	1609		241	18.6
17:28:30	21.03	287.3	1.98	1513		236	15.8
17:28:45	21.08	217.2	1.87	1434		232	13.9
17:29:00	21.14	190.9	1.75	1447		229	12.8
17:29:15	21.18	160.3	1.68	1416		227	12.1
17:29:30	21.20	139.8	1.61	1401		227	11.8
17:29:46	21.23	118.4	1.51	1370		226	11.1
17:30:01	21.27	110.7	1.42	1342		225	10.8
17:30:16	21.29	99.2	1.35	1271		224	10.7
17:30:31	21.32	97.2	1.26	1147		224	10.4
17:30:46	21.34	89.2	1.15	1093		223	10.0
17:31:01	21.36	86.2	1.11	1088		222	9.6
17:31:16	21.36	86.2	1.13	1079		221	9.4
17:31:31	21.35	88.2	1.14	1069		221	9.3
17:31:46	21.34	90.2	1.15	1050		221	9.1
17:32:01	21.34	93.2	1.13	1026		220	9.0
17:32:16	21.35	90.7	1.09	1020		219	8.4
17:32:31	21.36	83.7	1.04	1021		218	8.1
17:32:46	21.37	80.7	1.05	1022		217	8.1
17:33:01	21.37	77.2	1.03	1029		216	8.0
17:33:16	21.37	77.2	1.06	1002		216	8.2
17:33:31	21.35	78.7	1.08	972		215	8.3
17:33:43	SWITCH NOX TO NO MODE						
17:33:48	21.36	79.7	1.06	835		216	7.9
17:34:01	21.36	75.7	1.04	817		219	7.7

17:34:16	21.38	71.7	1.01	817	219	7.3
17:34:31	21.40	64.8	0.96	815	218	7.1
17:34:47	21.40	61.7	0.94	810	216	7.0
17:35:02	21.41	56.8	0.93	815	217	6.8
17:35:17	21.41	55.7	0.91	824	221	7.0
17:35:32	21.42	54.7	0.90	842	222	7.4
17:35:47	21.42	58.8	0.93	859	221	7.5
17:36:02	21.41	66.3	0.95	855	220	7.5
17:36:17	21.40	75.2	0.98	856	220	7.4
17:36:32	21.39	77.2	0.98	869	218	7.4
17:36:47	21.36	82.7	0.98	866	218	7.4
17:37:02	21.39	85.2	0.99	867	218	7.2
17:37:17	21.41	81.7	0.97	855	218	7.2
17:37:32	21.40	81.2	0.95	861	216	7.3
17:37:47	21.43	80.2	0.93	876	215	7.3
17:38:02	21.42	80.2	0.94	874	216	7.2
17:38:17	21.43	82.2	0.93	869	216	7.0
17:38:32	21.43	81.2	0.90	852	215	6.6
17:38:47	21.45	73.7	0.86	831	213	6.3
17:39:02	21.46	70.7	0.81	824	213	6.1
17:39:17	21.48	58.8	0.77	820	213	6.1
17:39:32	21.50	54.3	0.72	810	213	6.4
17:39:48	21.50	49.1	0.68	822	214	6.5
17:40:03	21.52	44.2	0.66	820	214	6.6
17:40:18	21.52	40.6	0.64	822	213	6.6
17:40:33	21.53	40.2	0.63	825	213	6.6
17:40:48	21.53	39.6	0.61	817	214	6.5
17:41:03	21.53	38.1	0.61	814	214	6.4
17:41:18	21.53	38.1	0.59	805	213	6.4
17:41:33	21.54	37.6	0.60	786	214	6.3
17:41:48	21.53	37.1	0.60	783	215	6.2
17:42:03	21.53	36.6	0.59	778	215	6.1
17:42:18	21.54	36.6	0.59	778	214	6.1

17:42:18 END HEPA EXHAUST

17:42:33	21.55	35.7	0.59	782	215	6.0
17:42:48	21.55	36.1	0.59	575	216	6.0
17:43:03	21.55	32.7	0.60	358	216	6.1
17:43:18	21.56	29.2	0.56	280	212	6.2
17:43:33	21.57	25.2	0.46	269	212	6.3
17:43:48	21.59	17.7	0.36	234	211	6.8
17:44:03	21.60	13.7	0.31	234	212	7.0
17:44:18	21.61	13.2	0.27	226	213	6.9
17:44:34	21.60	13.2	0.25	228	212	7.0
17:44:49	21.58	13.7	0.23	223	212	6.8
17:45:04	21.58	14.2	0.24	188	212	6.7
17:45:19	21.58	14.2	0.23	356	213	6.9
17:45:34	21.57	15.7	0.24	291	213	7.1
17:45:49	21.55	19.2	0.27	267	213	7.3
17:46:04	21.54	20.2	0.28	248	213	7.2
17:46:19	21.53	19.7	0.28	224	214	7.5
17:46:34	21.52	18.7	0.27	215	214	7.4
17:46:49	21.52	16.3	0.26	214	214	7.4
17:47:04	21.51	15.7	0.24	216	214	7.4
17:47:19	21.52	14.2	0.23	221	213	7.0
17:47:34	21.50	14.2	0.22	221	212	6.3
17:47:49	21.52	13.7	0.22	200	212	6.2
17:48:04	21.50	13.2	0.23	191	212	6.2

17:48:19	21.50	11.7	0.21	130	218	75.2
17:48:34	21.50	10.7	0.21	68	222	77.2
17:48:49	21.50	9.2	0.19	44	208	50.7
17:49:04	21.51	5.7	0.16	38	204	53.3
17:49:19	21.51	4.7	0.14	34	203	36.4
17:49:35	21.52	2.8	0.10	30	203	23.2
17:49:50	21.52	2.3	0.10	29	205	13.6
17:50:05	21.53	1.7	0.09	28	207	21.1
17:50:20	21.53	1.7	0.09	27	209	5.4
17:50:35	21.54	1.3	0.08	27	213	6.0
17:50:50	21.54	1.3	0.08	26	209	13.5
17:51:05	21.55	1.3	0.08	26	193	3.4
17:51:20	21.55	1.3	0.08	26	178	6.8
17:51:35	21.56	1.3	0.07	26	174	5.1
17:51:50	21.56	1.3	0.08	26	172	7.4
17:52:05	21.57	1.3	0.08	25	174	7.1
17:52:20	21.57	1.3	0.06	26	171	6.3
17:52:35	21.57	1.3	0.07	25	171	4.5
17:52:50	21.58	1.3	0.08	25	171	7.4
17:53:05	21.58	1.3	0.08	26	171	7.1
17:53:20	21.58	1.3	0.08	25	171	6.5
17:53:35	21.59	1.3	0.07	25	171	6.4
17:53:50	21.59	1.3	0.07	25	171	7.6
17:54:05	21.59	1.3	0.07	25	171	6.2
17:54:20	21.59	1.7	0.07	25	176	6.6
17:54:35	21.60	1.7	0.07	25	175	6.2
17:54:51	21.60	1.8	0.07	25	171	4.3
17:55:06	21.61	1.3	0.08	25	171	5.7
17:55:21	21.60	1.7	0.07	25	172	6.0
17:55:36	21.61	1.3	0.08	25	166	4.6
17:55:51	21.61	1.3	0.07	25	161	7.5
17:56:06	21.61	1.3	0.07	25	159	4.2
17:56:21	21.61	1.3	0.07	25	154	10.3
17:56:36	21.62	1.7	0.07	25	143	6.0
17:56:51	21.62	1.3	0.07	25	115	7.8
17:57:06	21.62	1.7	0.07	25	108	8.3
17:57:21	21.62	1.3	0.07	24	107	7.7
17:57:36	21.61	1.3	0.07	48	108	3.8
17:57:51	21.62	1.7	0.11	113	106	6.0
17:58:06	21.55	4.2	0.15	107	102	3.6
17:58:21	21.57	4.7	0.10	80	100	3.6
17:58:36	21.59	3.3	0.08	71	101	4.9
17:58:51	21.61	2.3	0.08	71	101	5.0
17:59:06	21.61	1.7	0.07	72	100	5.1
17:59:21	21.62	1.3	0.09	82	101	5.7
17:59:36	21.61	1.7	0.09	70	103	6.3
17:59:52	21.55	3.3	0.18	2560	103	6.5
18:00:07	21.34	55.2	1.68	2560	104	7.2
18:00:22	21.12	88.7	2.62	2560	108	7.2
18:00:37	21.02	166.2	2.93	2560	113	7.5
18:00:52	20.99	180.4	3.03	2560	117	7.6
18:01:07	21.00	193.8	3.01	2560	117	7.4
18:01:22	21.00	194.9	3.03	2560	113	7.4
18:01:37	20.99	193.8	3.06	2560	112	7.6
18:01:52	21.00	189.3	3.04	696	115	7.9

18:02:03 ON LINE POST QUENCH

18:02:07	21.00	188.9	3.07	703	117	7.8
18:02:22	21.00	187.8	3.09	700	117	7.9
18:02:37	21.01	184.8	3.12	2806	118	8.0

18:02:52	21.00	184.4	3.14	2785	118	8.0
18:03:07	21.01	188.4	3.16	2779	120	8.1
18:03:09	CHANGE RANGE NOX ANALYXER FROM 2500 TO 10000					
18:03:22	21.00	189.8	3.17	2599	122	8.4
18:03:37	NOX ON NOX MODE					
18:03:37	21.00	193.3	3.19	3639	125	8.6
18:03:52	20.98	195.8	3.27	3694	129	8.8
18:04:07	20.96	196.3	3.41	3671	133	8.3
18:04:22	20.99	191.3	3.36	3749	132	8.5
18:04:37	20.99	192.9	3.40	3775	132	8.5
18:04:53	21.00	186.8	3.41	3814	135	8.5
18:05:08	21.00	187.8	3.42	3820	138	8.8
18:05:14	BEGIN RUN #2 POST QUENCH 1/19/95					
18:05:23	21.01	185.3	3.42	3852	144	8.8
18:05:38	21.02	186.8	3.41	3897	149	8.9
18:05:53	21.01	186.8	3.43	3896	154	8.7
18:06:08	21.03	183.3	3.42	3867	157	12.2
18:06:23	21.03	183.3	3.36	3941	160	9.8
18:06:38	21.04	186.3	3.41	3869	165	9.7
18:06:53	21.06	181.8	3.33	3836	173	8.9
18:07:08	21.06	180.8	3.30	3742	177	8.0
18:07:23	21.08	177.7	3.24	3689	181	8.7
18:07:38	21.08	172.2	3.22	3666	182	8.6
18:07:53	21.09	173.2	3.25	3649	175	8.6
18:08:08	21.10	180.3	3.29	3654	173	8.3
18:08:23	21.08	173.7	3.36	3595	175	8.3
18:08:38	21.10	182.8	3.28	3614	179	8.5
18:08:53	21.12	183.3	3.24	3600	177	8.0
18:09:08	21.11	185.3	3.26	3613	180	9.1
18:09:23	21.14	185.8	3.23	3643	187	10.0
18:09:38	21.14	190.3	3.29	3635	197	9.4
18:09:54	21.17	187.8	3.30	3653	197	8.4
18:10:09	21.18	191.8	3.28	3625	187	8.6
18:10:24	21.21	187.3	3.24	3643	183	8.1
18:10:39	21.25	191.8	3.22	3650	182	8.7
18:10:54	21.27	193.8	3.21	3693	180	8.4
18:11:09	21.29	192.4	3.19	3790	178	8.2
18:11:24	21.34	189.3	3.21	3790	176	8.6
18:11:39	21.36	186.8	3.18	3802	179	8.3
18:11:54	21.39	182.8	3.16	3827	180	7.9
18:12:09	21.42	181.3	3.14	3869	178	8.0
18:12:24	21.45	180.8	3.18	3874	179	7.9
18:12:39	21.48	180.3	3.17	3845	179	7.3
18:12:54	21.50	181.3	3.14	3901	177	7.1
18:13:09	21.53	179.7	3.18	3874	175	6.6
18:13:24	21.55	182.3	3.16	3904	173	7.1
18:13:39	21.57	184.3	3.17	3855	173	7.4
18:13:54	21.60	182.8	3.21	3761	173	7.5
18:14:09	21.61	182.3	3.20	3758	174	7.2
18:14:24	21.64	180.3	3.27	3878	172	7.3
18:14:39	21.66	177.2	3.26	3715	172	7.9
18:14:55	21.66	177.7	3.29	3661	178	8.3
18:15:10	21.70	175.7	3.27	3676	183	8.1
18:15:25	21.71	174.7	3.31	3855	180	7.5
18:15:40	21.74	175.2	3.33	3643	176	6.6
18:15:55	21.75	173.2	3.33	3865	170	7.6
18:16:10	21.77	181.8	3.39	3657	176	9.0
18:16:25	21.78	177.2	3.41	3651	188	8.6
18:16:40	21.79	179.7	3.40	3690	185	7.2

18:16:55	21.82	182.8	3.45	3640	177	7.8
18:17:10	21.83	183.8	3.41	3682	176	7.7
18:17:25	21.86	184.8	3.43	3684	176	7.4
18:17:40	21.87	184.3	3.51	3690	176	6.4
18:17:55	21.84	189.8	3.64	3752	174	6.9
18:18:10	21.82	192.8	3.72	3799	176	8.3
18:18:25	21.86	199.3	3.64	3846	182	9.0
18:18:40	21.91	198.8	3.81	3868	187	9.4
18:18:55	21.92	207.3	3.65	3899	191	9.0
18:19:10	21.90	216.7	3.73	3906	190	7.8

18:19:18 SWITH TO NO MODE ON NOX

18:19:25	21.85	239.7	3.87	3095	185	6.8
18:19:40	21.80	252.4	4.07	3124	179	7.9
18:19:56	21.77	265.8	4.12	3122	181	8.4
18:20:11	21.82	267.8	3.98	3138	183	8.1
18:20:26	21.84	267.8	3.97	3124	184	8.1
18:20:41	21.83	270.4	3.96	3095	181	8.5
18:20:56	21.82	271.3	3.96	3088	182	9.2
18:21:11	21.79	277.8	4.03	3049	184	9.0
18:21:26	21.75	286.8	4.07	3056	185	8.8
18:21:41	21.71	286.3	4.13	3043	184	8.0
18:21:56	21.68	279.8	4.13	3045	180	8.5
18:22:11	21.66	282.8	4.03	3009	187	7.6
18:22:26	21.66	268.8	3.95	3017	198	7.7
18:22:41	21.66	255.9	3.86	2993	195	6.5
18:22:56	21.63	252.9	3.79	3017	189	8.2
18:23:11	21.59	246.9	3.82	3017	191	6.8
18:23:26	21.51	246.4	3.88	3040	189	8.2
18:23:41	21.46	253.4	4.02	3068	193	6.8
18:23:56	21.26	267.8	4.38	3032	188	7.6
18:24:11	21.13	298.3	4.47	3120	184	6.4
18:24:26	21.06	313.3	4.51	3163	180	6.4
18:24:41	21.06	333.3	4.56	3229	180	7.2
18:24:56	20.97	352.3	4.73	3271	182	6.5
18:25:12	20.86	396.4	4.92	3303	181	10.2
18:25:27	20.75	421.3	5.06	3367	194	10.8
18:25:42	20.69	456.4	5.09	3410	204	10.2

18:25:51 END POST QUENCH

18:25:57	20.67	465.4	5.22	3390	202	10.1
18:26:12	20.63	472.9	5.16	4314	201	9.6
18:26:27	20.52	496.8	5.42	4248	205	12.5
18:26:42	20.45	499.8	5.27	1144	213	10.9
18:26:57	21.00	397.9	1.98	748	208	9.5
18:27:12	21.48	292.6	0.64	648	197	8.9
18:27:27	21.57	141.3	0.32	601	189	10.5
18:27:42	21.61	80.2	0.21	536	191	11.7
18:27:57	21.58	21.6	0.17	495	187	9.4
18:28:12	21.58	10.2	0.16	295	184	7.1
18:28:27	21.57	3.3	0.14	225	183	7.4
18:28:42	21.55	2.8	0.13	186	182	6.9
18:28:57	21.55	2.3	0.12	162	180	5.9
18:29:12	21.53	1.7	0.11	146	179	6.8
18:29:27	21.53	1.7	0.11	132	179	6.9
18:29:42	21.53	1.7	0.10	132	180	6.0
18:29:57	21.51	1.7	0.09	117	178	5.5
18:30:13	21.51	1.7	0.09	111	176	6.1
18:30:28	21.48	1.3	0.09	387	150	6.3

18:30:43	15.73	24.2	0.11	182	122	7.0
18:30:58	18.09	36.6	0.12	177	114	6.6
18:31:13	20.68	35.2	0.08	240	111	5.1
18:31:28	21.28	31.2	0.09	302	108	4.9
18:31:43	21.37	15.7	0.09	301	108	4.8
18:31:58	21.34	10.2	0.09	296	111	4.7
18:32:13	21.39	5.2	0.09	298	111	4.7
18:32:28	21.43	4.7	0.09	297	111	4.5
18:32:43	21.43	3.3	0.08	294	109	4.5
18:32:58	21.42	2.8	0.08	289	109	4.4
18:33:13	21.41	1.7	0.08	287	109	4.3
18:33:28	21.39	1.7	0.08	281	111	4.2
18:33:43	21.38	1.7	0.08	275	112	4.1
18:33:58	21.38	1.7	0.08	271	113	4.0
18:34:13	21.37	1.7	0.07	269	112	3.9
18:34:28	21.39	1.7	0.07	264	111	3.8
18:34:43	21.37	1.7	0.08	262	109	3.8
18:34:58	21.39	1.7	0.07	259	108	3.8
18:35:14	21.38	1.7	0.07	256	107	3.8
18:35:29	21.37	1.7	0.07	255	108	3.7
18:35:44	21.38	1.7	0.07	253	108	3.7
18:35:59	21.36	1.7	0.07	253	108	3.8
18:36:14	21.37	1.7	0.08	252	111	3.6
18:36:29	21.34	1.7	0.08	251	111	3.6
18:36:44	21.35	1.7	0.07	250	111	3.6
18:36:59	21.33	1.7	0.07	251	111	3.5
18:37:14	21.33	1.7	0.07	250	113	3.5
18:37:29	21.33	1.7	0.06	252	114	3.5
18:37:44	21.32	1.7	0.08	252	114	3.4
18:37:59	21.32	1.7	0.07	252	115	3.4
18:38:14	21.31	1.7	0.07	252	118	3.4
18:38:29	21.30	1.8	0.07	253	119	3.4
18:38:44	21.29	1.7	0.07	252	124	3.3
18:38:59	21.29	2.3	0.07	254	128	3.3
18:39:14	21.28	1.8	0.07	252	135	3.3
18:39:29	21.29	1.8	0.07	254	144	3.3
18:39:44	21.27	1.8	0.07	254	152	3.2
18:39:59	21.28	1.7	0.07	255	157	3.3
18:40:15	21.26	1.7	0.07	254	161	3.2
18:40:30	21.27	1.8	0.08	256	163	3.2
18:40:45	21.26	1.8	0.07	254	162	3.2
18:41:00	21.26	1.8	0.08	253	161	3.2
18:41:15	21.26	1.8	0.07	254	162	3.2
18:41:30	21.24	2.3	0.06	253	163	3.1
18:41:45	21.25	1.8	0.07	250	164	3.1
18:42:00	21.22	2.3	0.07	250	161	3.0
18:42:15	21.23	2.3	0.07	249	158	3.1
18:42:30	21.23	2.3	0.08	249	156	3.1
18:42:45	21.21	2.3	0.07	246	154	3.1
18:43:00	21.22	2.3	0.07	245	152	3.1
18:43:15	21.21	2.3	0.07	243	150	3.1
18:43:30	21.21	2.3	0.07	208	151	3.3
18:43:45	21.27	8.2	0.13	162	153	3.5
18:44:00	21.49	36.2	0.12	127	154	4.3
18:44:15	21.21	35.2	0.09	115	153	4.4
18:44:30	21.20	28.7	0.08	111	151	4.8
18:44:45	21.19	19.2	0.07	107	151	5.1
18:45:00	21.20	4.7	0.08	107	151	5.2
18:45:16	21.20	2.3	0.06	105	150	5.4
18:45:31	21.21	1.3	0.08	104	150	5.9

18:45:46	21.21	0.8	0.08	104	150	5.7
18:46:01	21.21	0.8	0.07	103	150	5.6
18:46:16	21.20	0.8	0.07	102	148	5.4
18:46:31	21.20	0.8	0.07	102	147	5.6
18:46:46	21.24	0.8	0.08	102	148	5.5
18:47:01	21.18	0.8	0.07	101	149	5.6
18:47:16 18:47:31	21.17	0.8	0.07	103	148	5.7
18:47:46	21.16	0.8	0.08	101	149	5.7
18:48:01	21.18	0.8	0.08	101	150	5.8
18:48:16	21.18	0.8	0.08	100	151	5.9
18:48:31	21.19	0.8	0.07	100	152	5.8
18:48:46	21.20	0.8	0.07	100	151	5.9
18:49:01	21.21	0.8	0.07	100	152	5.8
18:49:16	21.22	0.8	0.08	99	151	5.9
18:49:31	21.22	0.8	0.07	99	152	5.9
18:49:46	21.24	0.8	0.08	98	151	5.9
18:50:01	21.24	0.8	0.08	97	152	5.9
18:50:17	21.25	0.8	0.07	97	151	5.9
18:50:32	21.24	0.8	0.07	96	150	5.9
18:50:47	21.25	0.8	0.08	96	150	5.9
18:51:02	21.24	0.8	0.07	96	150	5.9
18:51:17	21.24	0.8	0.07	95	151	5.8
18:51:32	21.23	0.8	0.07	94	151	5.8
18:51:47	21.23	0.8	0.07	95	151	5.8
18:52:02	21.22	0.8	0.07	93	151	5.7
18:52:17	21.21	0.8	0.07	94	149	5.7
18:52:32	21.20	0.8	0.08	93	149	5.8
18:52:47	21.19	0.8	0.07	93	148	5.7
18:53:02	21.18	0.8	0.07	92	148	5.8
18:53:17	21.17	0.8	0.08	92	148	5.7
18:53:32	21.16	0.8	0.07	91	148	5.7
18:53:47	21.14	0.8	0.07	90	148	5.8
18:54:02	21.13	0.8	0.06	90	147	5.8
18:54:17	21.12	0.8	0.06	90	147	5.8
18:54:32	21.12	0.8	0.07	90	147	5.8
18:54:47	21.10	0.8	0.06	90	147	5.7
18:55:02	21.10	0.8	0.07	88	147	5.7
18:55:17	21.09	0.8	0.07	89	148	5.7
18:55:33	21.08	0.8	0.07	89	149	5.7
18:55:48	21.06	0.8	0.07	88	148	5.7
18:56:03	21.06	0.8	0.07	88	148	5.7
18:56:18	21.04	0.8	0.07	87	146	5.6
18:56:33	21.04	0.8	0.07	87	144	5.6
18:56:48	21.02	0.8	0.06	87	142	5.7
18:57:03	21.02	0.8	0.08	87	141	5.8
18:57:18	21.00	0.8	0.07	86	140	5.7
18:57:33	21.00	0.8	0.08	87	138	5.6
18:57:48	20.98	0.8	0.07	86	138	5.6
18:58:03	20.96	0.8	0.08	86	138	5.7
18:58:18	20.96	0.8	0.07	86	138	5.6
18:58:33	20.94	0.8	0.07	85	137	5.6
18:58:48	20.93	0.8	0.06	85	137	5.6
18:59:03	20.93	1.3	0.08	84	135	5.6
18:59:18	20.92	0.8	0.06	84	135	5.5
18:59:33	20.91	0.8	0.07	84	134	5.5
18:59:48	20.89	0.8	0.07	84	134	5.6
19:00:03	20.88	0.8	0.07	83	134	5.6
19:00:18	20.87	0.8	0.08	83	135	5.5
19:00:34	20.86	0.3	0.07	82	136	5.5

19:00:49	20.85	0.8	0.06	82	135	5.4
19:01:04	20.84	1.3	0.07	82	134	5.4
19:01:19	20.84	0.8	0.06	82	134	5.4
19:01:34	20.82	0.8	0.07	81	134	5.5
19:01:49	20.82	0.8	0.08	82	134	5.5
19:02:04	20.80	0.8	0.07	69	134	4.9
19:02:19	20.80	0.8	0.07	67	132	4.8
19:02:34	20.79	0.8	0.07	52	131	4.7
19:02:49	20.77	1.3	0.07	49	130	4.7
19:03:04	20.77	0.8	0.07	45	130	4.6
19:03:19	20.75	1.3	0.06	44	131	4.6
19:03:34	20.73	1.3	0.06	42	130	4.6
19:03:49	20.73	0.8	0.06	42	131	4.5
19:04:04	20.70	0.8	0.07	42	132	4.5
19:04:19	20.70	1.8	0.07	41	131	4.5
19:04:34	20.68	1.3	0.08	40	132	4.5
19:04:49	20.66	1.3	0.07	39	132	4.6
19:05:04	20.67	1.3	0.07	39	132	4.6
19:05:19	20.64	1.3	0.08	38	131	4.7
19:05:35	20.63	1.3	0.07	39	131	4.4
19:05:50	20.62	1.3	0.07	38	131	4.4
19:06:05	20.60	1.3	0.08	37	131	4.4
19:06:20	20.60	1.8	0.07	37	131	4.4
19:06:35	20.58	1.3	0.08	37	132	4.4
19:06:50	20.58	0.8	0.08	37	131	4.3
19:07:05	20.57	1.3	0.08	36	131	4.3
19:07:20	20.56	1.8	0.07	36	131	4.3
19:07:35	20.56	1.3	0.08	35	130	4.3
19:07:50	20.54	1.3	0.08	36	129	4.4
19:08:05	20.54	1.3	0.07	35	129	4.2
19:08:20	20.52	2.3	0.08	35	129	4.2
19:08:35	20.51	1.8	0.07	35	129	4.2
19:08:50	20.51	2.8	0.08	35	129	4.2
19:09:05	20.50	2.3	0.08	34	129	4.2
19:09:20	20.50	3.3	0.08	34	130	4.1
19:09:35	20.48	1.8	0.07	34	130	4.1
19:09:50	20.49	2.3	0.07	34	130	4.1
19:10:05	20.49	1.8	0.08	33	129	4.0
19:10:20	20.47	1.8	0.08	35	128	4.0
19:10:36	20.47	1.8	0.08	34	127	4.0
19:10:51	20.45	1.3	0.08	34	127	4.0
19:11:06	20.45	1.8	0.08	33	126	4.0
19:11:21	20.44	1.3	0.08	33	126	4.0
19:11:36	20.43	1.3	0.08	32	127	3.9
19:11:51	20.43	1.3	0.08	32	126	4.0
19:12:06	20.42	1.3	0.07	32	126	4.1
19:12:21	20.43	1.3	0.08	32	126	4.1
19:12:36	20.41	1.3	0.07	32	127	4.0
19:12:51	20.41	1.3	0.07	32	126	4.0
19:13:06	20.41	1.8	0.08	32	126	4.0
19:13:21	20.40	1.3	0.07	31	126	3.9
19:13:36	20.40	1.8	0.08	32	126	3.9
19:13:51	20.39	1.3	0.08	31	125	3.8
19:14:06	20.38	1.3	0.08	32	125	3.8
19:14:21	20.37	0.8	0.08	31	126	3.8
19:14:36	20.38	0.8	0.08	31	127	3.8
19:14:51	20.36	1.3	0.08	31	126	3.8
19:15:06	20.36	2.3	0.07	31	126	3.8
19:15:21	20.35	1.3	0.08	31	125	3.8
19:15:37	20.35	1.3	0.08	31	123	3.7

19:15:52	20.33	0.8	0.07	30	121	3.7
19:16:07	20.33	1.3	0.08	31	119	3.8
19:16:22	20.33	0.8	0.08	30	117	3.8
19:16:37	20.32	1.3	0.08	31	116	3.8
19:16:52	20.32	1.3	0.08	30	115	3.8
19:17:07	20.31	0.8	0.08	30	113	3.7
19:17:22	20.31	1.3	0.08	30	112	3.8
19:17:37	20.31	0.8	0.08	30	112	3.7
19:17:52	20.30	1.3	0.08	30	112	3.7
19:18:07	20.29	1.3	0.08	30	111	3.8
19:18:22	20.28	0.8	0.08	30	110	3.7
19:18:37	20.27	0.8	0.08	30	110	3.7
19:18:52	20.28	1.3	0.07	30	110	3.6
19:19:07	20.27	1.3	0.08	30	110	3.6
19:19:22	20.26	1.3	0.08	30	108	3.6
19:19:37	20.26	1.3	0.08	29	107	3.6
19:19:52	20.24	1.3	0.08	29	107	3.6
19:20:07	20.22	1.3	0.08	164	107	3.6
19:20:22	20.24	1.3	0.09	699	108	4.3
19:20:32 PULLING GAS FROM MELTER EXHAUST						
19:20:38	20.21	10.3	0.40	3639	109	4.6
19:20:53	20.02	23.2	1.56	3859	109	4.3
19:21:08	19.90	37.7	1.89	3702	110	3.8
19:21:23	19.83	66.4	1.98	3850	111	3.7
19:21:38	19.77	80.3	2.10	3861	112	3.8
19:21:53	19.68	109.7	2.38	3668	112	4.6
19:22:08	19.60	118.5	2.44	3906	114	4.4
19:22:23	19.54	135.9	2.56	3875	114	4.0
19:22:38	19.52	134.9	2.53	3928	112	3.7
19:22:53	19.49	139.4	2.60	3910	112	4.3
19:23:08	19.50	138.4	2.54	3632	114	3.9
19:23:23	19.55	134.9	2.41	3567	114	3.8
19:23:38	19.56	131.4	2.35	3448	113	3.8
19:23:53	19.56	126.5	2.28	3611	112	3.7
19:24:08	19.60	117.4	2.28	3609	113	3.8
19:24:23	19.61	114.7	2.24	3716	113	3.6
19:24:38	19.64	119.9	2.33	2962	113	3.6
19:24:53	19.42	137.4	2.99	3512	114	3.6
19:25:08	19.30	168.8	3.17	3717	115	3.6
19:25:23	19.36	179.8	3.14	3802	114	3.6
19:25:38	19.44	181.4	2.83	3920	114	3.6
19:25:54	19.58	162.9	2.53	3821	114	3.5
19:26:09	19.71	129.0	2.22	3689	115	3.6
19:26:24	19.76	113.7	2.11	3616	115	3.6
19:26:38 AFTER LONG BREAK WHILE PLANT MADE ADJUSTMENTS						
19:26:39	19.80	97.3	2.06	3526	115	3.5
19:26:54	19.82	89.2	2.02	3566	115	3.6
19:27:09	19.83	88.3	2.00	3513	115	3.6
19:27:23 NUMBERS ARE NOT CLOSE TO WHAT THEY WERE EVEN AT POST QUENCH						
19:27:24	19.84	91.7	2.11	5082	115	3.8
19:27:39	19.55	217.3	3.61	5972	116	4.1
19:27:54	18.94	338.5	5.40	6052	120	9.3
19:28:09	18.57	500.0	5.87	4448	133	4.5
19:28:20 AND DO NOT APEAR TO BE CLOSE TO WHAT THEY WERE RUN #1						
19:28:24	18.72	500.0	4.99	3598	126	3.8
19:28:39	19.10	500.0	3.85	3523	119	3.8
19:28:54	19.40	421.0	3.08	3508	117	3.6
19:29:09	19.61	323.0	2.54	3583	118	3.6
19:29:24	19.73	186.9	2.27	3520	118	3.5
19:29:39	19.78	146.4	2.15	3638	117	3.6

#2 Exhaust

19:29:54	19.80	118.5	2.08	3558	115	3.6
19:30:09	19.82	111.7	2.01	3700	114	3.6
19:30:24	19.83	103.2	2.02	3664	114	3.5
19:30:39	19.87	101.7	2.00	3796	113	3.6
19:30:55	19.85	101.7	2.24	4110	110	3.5
19:31:10	19.76	105.7	2.65	4221	108	3.6
19:31:25	19.72	111.2	2.81	4375	106	3.6
19:31:40	19.72	115.7	2.90	4440	105	3.6
19:31:55	19.71	117.9	2.88	4402	103	3.5
19:32:10	19.76	118.5	2.81	4454	103	3.5
19:32:25	19.75	114.7	2.77	4473	102	3.5
19:32:40	19.78	113.7	2.75	4450	102	3.5
19:32:55	19.78	112.7	2.77	4431	101	3.6
19:33:10	19.79	112.3	2.74	4560	100	3.6
19:33:25	19.79	113.7	2.75	4519	100	3.5
19:33:40	19.80	113.7	2.71	4599	99	3.6
19:33:55	19.76	113.7	2.74	4453	97	3.6
19:34:10	19.72	113.7	2.68	4409	96	3.6
19:34:25	19.62	111.7	2.65	4371	97	3.6
19:34:40	19.61	108.3	2.56	4172	97	3.9
19:34:55	19.61	105.2	2.50	4383	98	3.7
19:35:10	19.59	109.2	2.56	4861	98	3.6
19:35:25	19.27	165.8	4.70	5088	99	4.5
19:35:40	18.46	401.1	5.42	5267	103	3.7
19:35:56	18.53	463.1	4.89	5717	101	3.6
19:36:11	18.56	500.0	5.00	5577	100	3.5
19:36:26	18.56	500.0	4.91	5355	101	3.6
19:36:41	18.59	500.0	4.48	4560	101	3.6
19:36:56	18.78	500.0	3.69	4034	101	3.6
19:37:11	18.93	436.6	3.17	3432	102	3.5
19:37:26	18.93	380.7	2.98	3624	102	3.5
19:37:41	18.90	342.5	2.85	3458	103	3.5
19:37:56	18.92	272.5	2.72	3518	103	3.5
19:38:11	18.90	240.8	2.65	3358	104	3.5
19:38:26	18.87	221.4	2.62	3369	106	3.6
19:38:41	18.84	218.9	2.58	3466	106	3.5
19:38:56	18.79	211.4	2.60	3802	107	3.5
19:39:11	18.73	212.9	2.69	3791	108	3.5
19:39:26	18.65	223.4	2.72	3511	108	3.5

19:39:38 SWITCH NOX TO NO MODE

19:39:41	18.61	225.9	2.62	2734	107	3.5
19:39:56	18.56	212.4	2.45	2784	108	3.5
19:40:11	18.55	202.4	2.34	2644	108	3.5
19:40:26	18.52	187.0	2.24	2813	116	3.5
19:40:41	18.48	175.8	2.22	2665	127	3.4
19:40:57	18.45	155.4	2.11	2619	120	3.4
19:41:12	18.42	147.9	2.05	2580	50	3.5
19:41:27	18.39	132.4	2.02	2619	-91.	3.4
19:41:42	18.36	128.5	2.01	2647	-51.	3.5
19:41:57	18.35	120.5	1.99	2688	-1	3.5
19:42:12	18.34	110.7	1.96	2697	-21.	3.7
19:42:27	18.35	109.7	1.95	2734	-21.	3.6
19:42:42	18.32	101.7	1.92	2708	-31.	3.6
19:42:57	18.30	100.7	1.92	2722	-31.	3.7
19:43:12	18.25	103.2	1.94	2761	-31.	3.7
19:43:27	18.21	95.3	1.93	2765	-31.	3.7
19:43:42	18.18	91.3	1.91	2805	-31.	3.8
19:43:57	18.15	88.3	1.90	2796	-31.	3.8
19:44:12	18.13	83.8	1.86	2809	-31.	3.7

19:44:27	18.09	83.3	1.83	2808	-31.	3.7
19:44:42	18.07	81.3	1.83	2596	-31.	3.7
19:44:57	17.96	94.8	2.19	2408	-51.	3.7
19:45:12	17.69	125.5	2.77	2485	-31.	3.7
19:45:22	SO2 OFF LINE MOISTURE TO ANALYZER					
19:45:27	17.54	131.0	3.05	2328	-31.	3.7
19:45:42	17.52	145.9	2.80	2535	-21.	3.7
19:45:51	END MELTER EXHAUST					
19:45:58	17.66	135.4	2.50	2657	-21.	3.7
19:46:13	17.70	126.5	2.41	2504	-21.	3.7
19:46:28	17.69	106.2	2.37	2759	-21.	3.6
19:46:43	17.67	93.8	2.42	2798	-21.	3.7
19:46:58	17.66	86.8	2.32	2608	-21.	3.7
19:47:13	17.71	80.8	2.11	2694	-11.	3.6
19:47:28	17.71	76.3	2.10	2578	-11.	3.6
19:47:43	17.71	71.3	1.95	2652	-11.	3.6
19:47:58	17.71	64.4	1.93	2596	-1	3.6
19:48:13	17.69	59.8	1.84	2695	-1	3.6
19:48:28	17.70	54.3	1.81	2774	-1	3.5
19:48:43	17.71	54.3	1.75	2791	-1	3.5
19:48:58	17.70	52.3	1.73	2645	-1	3.5
19:49:13	17.69	50.3	1.65	2714	-1	3.5
19:49:28	17.70	47.2	1.60	2684	-1	3.6
19:49:43	17.65	42.7	1.58	2707	-11.	3.5
19:49:58	17.66	43.2	1.57	2747	-11.	3.5
19:50:13	17.64	44.3	1.60	2742	-21.	3.5
19:50:28	17.62	46.7	1.60	2679	-31.	3.4
19:50:43	17.58	46.7	1.58	2627	-31.	3.4
19:50:59	17.57	50.3	1.59	2619	-31.	3.5
19:51:14	17.55	52.4	1.59	2657	-31.	3.4
19:51:29	17.51	54.4	1.64	2678	-31.	3.4
19:51:44	17.48	58.4	1.67	2684	-31.	3.4
19:51:59	17.45	61.8	1.70	2721	-31.	3.4
19:52:14	17.43	65.3	1.67	2668	-31.	3.4
19:52:29	17.41	61.8	1.66	3052	-31.	3.4
19:52:44	17.35	66.4	1.94	1482	-31.	3.5
19:52:59	17.31	59.8	1.22	685	-31.	3.4
19:53:14	17.43	39.2	0.53	504	-31.	3.4
19:53:29	17.53	28.3	0.28	452	-31.	3.3
19:53:44	17.56	9.8	0.20	412	-31.	3.4
19:53:59	17.56	8.3	0.17	362	-31.	3.3
19:54:14	17.58	2.9	0.14	318	-31.	3.4
19:54:22	MID BIAS O2 11.51 CO2 11.05					
19:54:29	16.66	0.8	2.52	293	-31.	3.3
19:54:40	ZERO NOX AND CO					
19:54:44	11.95	1.3	7.74	282	-31.	3.4
19:54:59	9.22	0.4	9.99	273	-31.	3.4
19:55:14	8.54	1.8	10.59	264	-31.	3.3
19:55:29	8.43	1.3	10.82	257	-31.	3.3
19:55:44	8.40	0.4	10.90	250	-31.	3.4
19:55:59	8.40	1.3	10.97	244	-31.	3.4
19:56:15	8.41	0.4	11.01	238	-31.	3.4
19:56:30	8.39	0.4	11.02	232	-201.	3.2
19:56:45	8.40	0.9	11.05	227	-101.	3.4
19:57:00	8.39	2.4	11.10	223	-51.	3.4
19:57:15	8.40	0.4	11.09	223	-41.	3.3
19:57:30	8.41	0.9	11.11	215	-31.	3.3

19:57:45	8.42	0.9	11.10	218	-31.	3.3
19:57:59 90.7 PPM CO						
19:58:00	8.41	0.9	11.11	215	-31.	3.3
19:58:15	8.46	0.9	10.52	207	-31.	3.3
19:58:30	9.61	3.8	5.24	202	-31.	3.3
19:58:45	1.68	31.3	1.62	199	-31.	3.3
19:59:00	-1.82I.	41.7	0.74	198	-31.	3.3
19:59:15	-2.83I.	68.8	0.41	197	-31.	3.3
19:59:30	-3.06I.	78.3	0.30	194	-31.	3.3
19:59:45	-3.10I.	88.8	0.25	194	-31.	3.3
20:00:00	-3.14I.	97.3	0.21	192	-31.	3.3
20:00:15	-3.14I.	94.3	0.19	190	-31.	3.3
20:00:30	-3.15I.	97.8	0.15	189	-31.	3.3
20:00:45	-3.15I.	95.8	0.14	187	-31.	3.3
20:01:00	-3.16I.	95.8	0.11	186	-31.	3.3
20:01:16	-3.16I.	93.8	0.10	183	-31.	3.3
20:01:31	-3.17I.	95.8	0.10	182	-11.	3.3
20:01:46	-3.18I.	90.8	0.09	180	-21.	3.3
20:02:01 442 PPM NOX						
20:02:01	-3.18I.	98.8	0.09	178	-31.	3.3
20:02:16	-3.20I.	90.3	0.08	176	-31.	3.3
20:02:31	-3.20I.	101.7	0.08	175	-31.	3.2
20:02:46	-3.20I.	94.3	0.07	419	-31.	3.2
20:03:01	-3.13I.	79.8	0.08	593	-31.	3.2
20:03:16	-3.14I.	58.9	0.07	606	-31.	3.2
20:03:31	-3.17I.	28.3	0.06	606	-31.	3.2
20:03:46	-3.17I.	15.8	0.06	605	-31.	3.2
20:04:01	-3.16I.	2.9	0.06	605	-31.	3.2
20:04:16	-3.19I.	1.3	0.06	605	-31.	3.2
20:04:31	-3.18I.	0.4	0.06	604	-31.	3.2
20:04:46	-3.17I.	0.4	0.06	606	-31.	3.2
20:05:01	-3.18I.	0.4	0.06	602	-31.	3.2
20:05:16	-3.17I.	0.4	0.06	603	-31.	3.2
20:05:31	-3.16I.	0.4	0.06	601	-31.	3.2
20:05:46	-3.17I.	-0.2	0.06	599	-31.	3.2
20:06:01	-3.17I.	0.4	0.06	599	-31.	3.2
20:06:17	-3.18I.	0.9	0.06	597	-31.	3.2
20:06:32	-3.18I.	-0.2	0.06	596	-31.	3.2
20:06:47	-3.17I.	0.9	0.06	594	-31.	3.2
20:07:02	-3.18I.	-0.2	0.06	595	-31.	3.2
20:07:17	-3.17I.	-0.2	0.06	595	-31.	3.2
20:07:32	-3.17I.	1.3	0.06	595	-31.	3.2
20:07:47	-3.17I.	0.4	0.05	594	-51.	3.2
20:08:02	-3.16I.	0.4	0.06	593	-31.	3.2
20:08:17	-3.18I.	0.4	0.06	593	-31.	3.2
20:08:32	-3.18I.	-0.2	0.06	592	-31.	3.2
20:08:47	-2.99I.	0.4	0.34	99	-31.	3.2
20:08:50 ZERO O2 DIRECT/ RE-CAL						
20:09:02	-0.13	0.4	0.19	37	-31.	3.2
20:09:17	-1.82I.	0.4	0.07	30	-31.	3.2
20:09:32	-4.49I.	-0.2	0.06	28	-31.	3.2
20:09:47	-4.58I.	0.9	0.05	27	-31.	3.2
20:10:02	-6.45I.	0.4	0.05	26	-31.	3.2
20:10:17	-6.28I.	0.4	0.06	26	-31.	3.2
20:10:32	-4.95I.	0.4	0.05	25	-31.	3.2
20:10:47	-2.73I.	0.4	0.05	25	-31.	3.2
20:11:02	1.13	0.4	0.05	24	-31.	3.1
20:11:18	0.53	0.4	0.05	24	-31.	3.2
20:11:33	0.06	-0.2	0.06	23	-31.	3.2

20:12:03	0.05	0.4	0.05	22	-31.	3.2
20:11:48	0.05	0.2	0.05	22		
20:12:48	0.02	0.4	0.05	22	-31.	3.2
20:13:03	0.02	0.9	0.04	21	-31.	3.2
20:13:18	0.02	1.3	0.05	20	-31.	3.2
20:13:33	0.01	0.4	0.05	20	-31.	3.2
20:13:48	0.01	-0.7	0.05	20	-31.	3.1
20:14:03	0.06	21.2	0.92	23	-31.	3.1
20:14:18	8.89	78.3	11.18	20	-31.	3.1
20:14:33	15.38	244.6	15.80	20	-31.	3.2
20:14:48	17.36	313.1	17.01	19	-31.	3.1
20:15:03	17.78	345.5	17.33	20	-31.	3.2
20:15:18	17.94	406.6	17.47	19	-31.	3.1
20:15:33	17.98	454.1	17.44	19	-31.	3.1
20:15:48	17.98	459.1	17.49	20	-41.	3.1
20:16:03	17.78	456.1	17.51	19	-41.	3.1
20:16:19	17.77	462.7	17.52	19	-41.	3.1
20:16:34	17.77	468.6	17.54	19	-41.	3.1
20:16:39	SPAN O2 17.72 CO2 461 CO NO ADJ TO CO					
20:16:49	17.79	500.1H	17.56	19	-41.	3.1
20:17:04	17.80	462.1	17.52	19	-31.	3.1
20:17:19	17.79	463.6	17.57	18	-31.	3.1
20:17:34	17.80	500.1H	17.54	18	-31.	3.4
20:17:45	MID O1 11.51 CO2 11.05					
20:17:49	17.79	475.1	17.48	19	-31.	3.4
20:18:04	16.42	406.1	14.43	18	-31.	3.2
20:18:19	12.97	278.5	12.08	19	-31.	3.2
20:18:34	11.97	197.4	11.53	18	-31.	3.2
20:18:49	11.77	81.3	11.40	18	-31.	3.1
20:19:04	11.69	42.7	11.35	18	-31.	3.1
20:19:19	11.67	21.2	11.33	18	-31.	3.1
20:19:34	11.68	3.3	11.36	17	-31.	3.1
20:19:49	11.66	0.9	11.33	18	-51.	3.1
20:20:04	11.65	1.3	11.34	18	-51.	3.1
20:20:19	11.66	0.9	~~11.35~~	17	-11.	3.1
20:20:34	11.66	0.9	11.32	18	-21.	3.1
20:20:49	11.66	0.9	11.33	17	-31.	3.1
20:21:04	11.68	0.4	11.31	17	-31.	3.1
20:21:20	11.63	0.9	11.18	609	-31.	3.1
20:21:24	MID BIAS O2 11.51					
20:21:35	7.00	0.4	3.84	554	-31.	3.1
20:21:50	2.42	0.9	1.05	246	-31.	3.1
20:22:05	9.60	0.4	0.40	132	-31.	3.1
20:22:20	14.90	1.3	5.60	119	-31.	3.1
20:22:35	12.89	2.9	9.30	116	-31.	3.1
20:22:50	11.96	0.9	10.51	116	-31.	3.1
20:23:05	11.76	0.9	10.84	117	-31.	3.1
20:23:20	11.70	1.3	10.98	117	-31.	3.1
20:23:35	11.66	0.9	11.04	117	-31.	3.1
20:23:50	11.66	1.8	11.08	116	-31.	3.1

20:24:05	11.65	-0.6	11.[illegible]	1[illegible]7	-31.	3.[illegible]
20:24:11 ZERO BIAS CHECK NCK						
20:24:20	11.63	3.[illegible]	11.12	1[illegible]4	-31.	3.1
20:24:35	11.61	-0.2	11.[illegible]6	[illegible]3	-31.	3.[illegible]
20:24:50	11.61	0.[illegible]	11.[illegible]7	112	-31.	3.1
20:25:05	11.59	0.9	11.[illegible]6	1[illegible]2	-31.	3.[illegible]
20:25:20	11.56	0.[illegible]	11.[illegible]7	88	-31.	3.1
20:25:35	11.54	0.9	11.04	67	-31.	3.[illegible]
20:25:50	12.93	1.4	8.32	47	-31.	3.1
20:26:05	15.02	0.4	5.88	43	-31.	3.1
20:26:20	17.07	0.9	3.71	35	-31.	3.1
20:26:36	18.38	0.9	2.36	32	-31.	3.1
20:26:51	19.08	1.8	1.65	31	-31.	3.1
20:27:06	19.61	0.4	1.08	30	-31.	3.0
20:27:21	19.89	1.5	0.75	29	-31.	3.0
20:27:36	20.09	0.9	0.52	28	-31.	3.3
20:27:51	20.19	0.9	0.39	28	-31.	3.2
20:28:06	20.22	1.3	0.31	27	-31.	3.2
20:28:21	20.25	1.2	0.23	27	-31.	3.1
20:28:36	20.26	0.9	0.19	27	-31.	3.0
20:28:45 30.7 PPM PROPANE THROUGH SYSTEM						
20:28:51	20.25	1.8	0.17	27	-31.	3.0
20:29:06	20.24	0.4	0.14	26	-31.	3.0
20:29:21	20.25	1.3	0.12	26	-31.	3.0
20:29:36	20.24	1.8	0.11	26	-31.	3.0
20:29:51	20.23	1.8	0.11	26	-31.	3.0
20:30:06	20.22	1.8	0.12	25	-31.	3.0
20:30:21	20.21	1.8	0.11	26	-31.	3.0
20:30:36	20.22	0.9	0.11	25	-31.	3.0
20:30:51	20.25	1.3	0.11	26	-31.	3.0
20:31:06	20.25	0.9	0.10	25	-31.	3.0
20:31:21	20.27	2.4	0.10	25	-31.	3.0
20:31:37	20.28	0.4	0.10	25	-31.	3.0
20:31:52	20.27	1.3	0.10	25	-31.	3.0
20:32:07	20.29	0.4	0.10	25	-31.	3.0
20:32:22	20.28	1.8	0.10	25	-31.	3.0
20:32:37	20.28	0.9	0.10	25	-31.	3.0
20:32:52	20.29	0.4	0.09	25	-31.	3.0
20:33:07	20.28	1.4	0.10	25	-31.	3.0
20:33:22	20.28	1.8	0.10	24	-31.	3.0
20:33:37	20.28	0.9	0.09	25	-31.	3.0
20:33:52	20.27	0.9	0.10	24	-31.	3.0
20:34:07	20.27	0.9	0.09	24	-31.	3.6
20:34:22	20.28	0.9	0.09	24	-31.	3.9
20:34:37	20.26	1.8	0.10	24	-31.	3.9
20:34:52	20.27	1.3	0.09	24	-31.	3.9
20:35:07	20.26	1.8	0.09	24	-31.	3.7
20:35:22	20.26	0.9	0.09	24	-31.	3.4
20:35:37	20.26	0.9	0.09	24	-31.	3.3
20:35:52	20.25	1.8	0.10	23	-31.	3.1
20:36:07	20.25	1.8	0.09	24	-31.	3.2
20:36:22	20.24	0.9	0.10	24	-31.	3.1
20:36:38	20.24	1.3	0.09	24	-31.	3.1
20:36:53	20.24	1.8	0.09	24	-31.	3.0
20:37:08	20.23	1.4	0.10	25	-31.	3.0
20:37:23	20.23	4.8	0.09	24	-31.	2.9
20:37:38	20.23	1.4	0.10	24	-31.	2.9
20:37:53	20.21	1.8	0.10	24	[illegible]	[illegible]

20:38:38	[illegible]	1.4	[illegible]	[illegible]	[illegible]	[illegible]
20:38:53	20.16	0.4	0.18	59	-31.	2.9
20:39:08	19.79	2.4	1.67	70	-31.	4.5
20:39:23	18.78	1.4	1.75	65	-31.	9.2
20:39:38	17.69	1.4	2.67	72	-31.	44.1
20:39:53	17.20	0.9	3.35	90	-31.	29.6
20:40:08	16.80	1.8	3.75	101	-31.	24.3
20:40:23	16.49	1.3	3.80	68	-31.	21.3
20:40:38	17.13	-0.2	3.03	51	-31.	17.5

20:40:53	17.89	3.8	2.20	40	-31.	15.1
20:41:08	18.61	1.8	1.50	35	-31.	13.4
20:41:23	19.11	1.8	1.01	31	-31.	11.7
20:41:39	19.44	1.3	0.68	28	-31.	10.7
20:41:54	19.70	1.8	0.46	28	-31.	10.1
20:42:09	19.82	1.8	0.34	27	-31.	9.5
20:42:24	19.92	0.9	0.25	26	-31.	8.9
20:42:39	19.98	1.8	0.20	25	-31.	8.4
20:42:54	20.00	0.9	0.17	26	-31.	8.0
20:43:09	20.03	1.8	0.15	25	-31.	7.7
20:43:24	20.03	0.9	0.13	25	-31.	7.4
20:43:39	20.04	2.4	0.12	25	-31.	7.1
20:43:54	20.04	0.4	0.10	25	-31.	7.0
20:44:09	20.04	1.3	0.09	25	-31.	6.6
20:44:24	20.03	0.4	0.10	25	-31.	6.5
20:44:39	20.03	2.4	0.10	25	-31.	6.5
20:44:54	20.03	0.9	0.09	25	-31.	6.3
20:45:09	20.02	2.4	0.10	25	-31.	6.1
20:45:24	20.01	1.4	0.09	25	-31.	6.9
20:45:39	19.99	1.8	0.20	26	-31.	10.1
20:45:54	19.78	0.4	0.28	26	-31.	21.2
20:46:09	19.81	1.3	0.24	25	-31.	12.8
20:46:24	19.84	0.4	0.21	25	-31.	8.5
20:46:40	19.88	-0.2	0.17	23	-31.	8.4
20:46:55	19.90	1.8	0.15	23	-31.	7.3
20:47:10	19.91	0.9	0.14	22	-31.	6.6
20:47:25	19.93	0.9	0.13	23	-31.	6.1
20:47:40	19.92	1.4	0.11	22	-31.	12.2
20:47:55	19.92	1.8	0.10	22	-31.	9.4
20:48:10	19.93	2.4	0.11	22	-31.	6.2
20:48:25	19.92	1.3	0.10	22	-31.	6.2
20:48:40	19.93	1.4	0.09	22	-31.	6.5
20:48:55	19.94	1.4	0.10	22	-31.	6.1
20:49:10	19.94	1.4	0.10	22	-31.	6.0
20:49:25	19.94	1.3	0.09	22	-31.	5.6
20:49:40	19.93	1.4	0.10	22	-31.	5.5
20:49:55	19.94	0.9	0.10	22	-31.	5.4
20:50:10	19.93	0.4	0.10	21	-31.	5.3
20:50:25	19.93	1.8	0.09	22	-31.	21.6
20:50:40	19.94	1.4	0.10	22	-31.	16.1
20:50:55	19.93	1.8	0.10	22	-31.	22.4
20:51:10	19.94	1.8	0.09	22	-31.	20.8
20:51:25	19.94	0.9	0.10	23	-31.	19.8
20:51:41	19.93	1.8	0.09	22	-31.	16.4
20:51:56	19.92	1.4	0.09	23	-31.	16.1
20:52:11	19.95	1.3	0.10	23	-31.	18.6
20:52:26	19.93	0.9	0.09	23	-31.	4.1
20:52:41	19.94	2.9	0.09	23	-31.	4.2
20:52:56	19.95	0.9	0.08	22	-31.	3.9
[illegible]	[illegible]	[illegible]	[illegible]	24	-31.	3.9

20:53:26	19.93	0.9	0.09	23	-31.	3.9
20:53:41	19.95	1.8	0.09	23	-31.	3.8
20:53:56	19.94	0.4	0.09	24	-31.	3.8
20:54:11	19.95	-0.2	0.09	23	-31.	3.7
20:54:26	19.95	2.9	0.09	23	-31.	3.7
20:54:41	19.94	1.3	0.09	22	-31.	3.7
20:54:56	19.94	1.4	0.09	22	-31.	3.7
20:55:11	19.94	2.4	0.08	22	-31.	3.6
20:55:26	19.94	-0.2	0.09	21	-31.	3.6
20:55:41	19.96	1.8	0.09	21	-31.	3.6

20:55:56	19.95	1.8	0.09	23	-31.	3.6
20:56:11	19.94	1.8	0.09	23	-31.	3.5
20:56:26	19.94	1.3	0.09	23	-31.	3.5
20:56:41	19.94	0.9	0.09	23	-31.	3.0
20:56:57	19.94	1.4	0.08	23	-31.	2.6
20:57:12	19.96	2.4	0.09	24	-31.	2.5
20:57:27	19.95	1.4	0.08	22	-31.	2.4
20:57:42	19.94	0.9	0.07	22	-31.	2.3
20:57:57	19.97	1.8	0.09	22	-31.	2.5
20:58:12	19.96	1.8	0.09	22	-31.	2.7
20:58:27	19.96	-0.2	0.09	22	-31.	2.9
20:58:42	19.97	0.9	0.09	22	-31.	2.9
20:58:57	19.97	1.4	0.08	22	-31.	3.0
20:59:12	19.98	0.9	0.09	22	-31.	3.0
20:59:27	19.98	0.9	0.08	21	-31.	2.9
20:59:42	19.97	1.4	0.08	21	-31.	3.0
20:59:57	19.98	1.4	0.09	21	-31.	3.0
21:00:12	19.99	1.8	0.08	21	-31.	3.0
21:00:27	19.99	1.4	0.08	22	-31.	3.0
21:00:42	19.99	2.9	0.08	21	-31.	3.0
21:00:57	20.00	0.4	0.08	21	-31.	3.1
21:01:12	19.99	1.8	0.08	21	-31.	3.0
21:01:27	19.99	0.4	0.08	21	-31.	3.1
21:01:42	20.00	0.9	0.08	22	-31.	3.0
21:01:58	20.00	1.4	0.08	21	-31.	3.0
21:02:13	20.00	1.4	0.08	21	-31.	3.0
21:02:28	20.01	1.8	0.08	22	-31.	3.1
21:02:43	20.00	1.4	0.09	21	-31.	3.0
21:02:58	20.00	0.9	0.08	21	-31.	3.0
21:03:13	20.00	-0.2	0.09	21	-31.	3.0
21:03:28	19.99	1.8	0.09	21	-31.	2.5
21:03:43	20.00	0.4	0.08	21	-31.	2.3
21:03:58	20.01	1.4	0.08	21	-31.	2.2
21:04:13	19.99	1.4	0.09	22	-31.	2.3
21:04:28	20.00	1.4	0.09	21	-31.	2.4
21:04:43	20.01	1.8	0.07	21	-31.	2.6
21:04:58	20.00	1.4	0.08	20	-31.	2.6
21:05:13	20.01	1.4	0.08	21	-31.	2.7
21:05:28	20.01	0.9	0.08	21	-31.	2.7
21:05:43	20.01	1.4	0.08	20	-31.	2.7
21:05:58	20.01	1.4	0.09	20	-31.	2.7
21:06:13	20.00	1.8	0.09	20	-31.	2.7
21:06:28	20.01	0.9	0.08	21	-31.	2.8
21:06:43	20.00	1.4	0.08	20	-31.	2.7
21:06:59	19.99	1.8	0.08	21	-31.	2.8
21:07:14	20.00	0.9	0.08	20	-31.	2.7
21:07:29	20.02	0.4	0.09	20	-31.	2.6
			[illegible]	20	-31.	2.6

21:08:14	19.99	0.9	0.08	20	-31.	2.6
21:08:29	20.00	1.4	0.08	20	-31.	2.6
21:08:44	20.00	1.4	0.09	20	-31.	2.7
21:08:59	20.00	1.8	0.09	21	-31.	2.6
21:09:14	20.00	1.8	0.08	20	-31.	2.6
21:09:29	20.01	-0.2	0.09	21	-31.	2.7
21:09:44	19.99	-0.2	0.09	21	-31.	2.7
21:09:59	20.00	1.4	0.09	22	-31.	2.6
21:10:14	19.99	0.9	0.10	22	-31.	2.6
21:10:29	19.99	1.8	0.08	24	-31.	2.6
21:10:44	19.99	1.4	0.09	24	-31.	2.6

21:10:59	19.98	0.9	0.08	25	-31.	2.6
21:11:14	19.98	2.4	0.08	25	-31.	2.6
21:11:29	19.97	0.4	0.11	25	-31.	2.6
21:11:44	19.92	1.8	0.12	26	-31.	2.6
21:12:00	19.94	0.9	0.09	25	-31.	2.6
21:12:15	19.92	1.4	0.09	25	-31.	2.6
21:12:30	19.91	1.8	0.08	25	-31.	2.6
21:12:45	19.90	0.9	0.09	25	-31.	2.5
21:13:00	19.90	0.9	0.08	25	-31.	2.5
21:13:15	19.88	0.4	0.09	25	-31.	2.5
21:13:30	19.87	2.4	0.08	25	-31.	2.5
21:13:45	19.85	1.8	0.09	25	-31.	2.5
21:14:00	19.85	0.9	0.09	24	-31.	2.6
21:14:15	19.84	1.4	0.09	24	-31.	2.6
21:14:30	19.84	-0.2	0.09	23	-31.	2.6
21:14:45	19.84	1.4	0.09	23	-31.	2.4
21:15:00	19.84	1.8	0.08	23	-31.	2.4
21:15:15	19.83	1.4	0.09	22	-31.	2.4
21:15:30	19.84	1.8	0.08	22	-31.	2.4
21:15:45	19.83	1.4	0.08	22	-31.	2.4
21:16:00	19.83	1.8	0.09	21	-31.	2.4
21:16:15	19.85	1.4	0.08	22	-31.	2.4
21:16:30	19.85	1.4	0.09	22	-31.	2.3
21:16:45	19.86	1.8	0.09	21	-31.	2.3
21:17:01	19.88	1.4	0.09	21	-31.	2.4
21:17:16	19.88	1.8	0.09	21	-31.	2.4
21:17:31	19.89	1.8	0.09	20	-31.	2.4
21:17:46	19.90	1.4	0.09	21	-31.	2.3
21:18:01	19.91	1.8	0.08	20	-31.	2.3
21:18:16	19.93	0.9	0.09	20	-31.	2.3
21:18:31	19.93	0.9	0.08	20	-31.	2.3
21:18:46	19.95	2.4	0.08	20	-31.	2.3
21:19:01	19.95	0.9	0.08	20	-31.	2.4
21:19:16	19.95	1.4	0.09	20	-31.	2.4
21:19:31	19.97	1.8	0.08	20	-31.	2.3
21:19:46	19.97	-0.2	0.09	20	-31.	2.4
21:20:01	19.98	2.4	0.09	20	-31.	2.4
21:20:16	19.99	1.4	0.08	19	-31.	2.4
21:20:31	19.99	0.9	0.09	20	-31.	2.4
21:20:46	20.01	1.8	0.09	19	-31.	2.4
21:21:01	20.01	0.9	0.09	19	-31.	2.3
21:21:16	20.02	0.4	0.08	19	-31.	7.1
21:21:31	20.03	3.4	0.09	19	-31.	6.7
21:21:46	20.02	1.4	0.09	19	-31.	6.7
21:22:01	20.04	0.9	0.09	19	-31.	33.7

21:22:03 BIAS 30.7 PPM PROPANE

21:22:17	20.05	1.8	0.08	19	-31.	[illegible]
21:22:32	20.04	1.8	0.08	19	-31.	31.9
21:22:47	20.06	1.4	0.08	19	-31.	32.0
21:23:02	20.07	0.9	0.08	19	-31.	32.0

21:23:12 ZERO CHECK THC

21:23:17	20.07	0.9	0.09	18	-31.	32.1
21:23:32	20.08	2.4	0.08	19	-31.	32.1
21:23:47	20.19	1.8	0.08	19	-31.	32.1
21:24:02	20.09	0.9	0.09	19	-31.	4.2
21:24:17	20.11	0.9	0.08	19	-31.	2.0
21:24:32	20.11	2.9	0.08	19	-31.	1.8
21:24:47	20.11	0.4	0.08	19	-31.	1.7
21:25:02	20.10	1.8	0.08	19	-31.	1.6
21:25:17	20.08	0.9	0.09	18	-31.	1.6
21:25:32	20.07	0.9	0.08	19	-31.	1.6
21:25:47	20.06	0.9	0.08	18	-31.	1.6
21:26:02	20.06	1.8	0.08	19	-31.	1.6
21:26:17	20.06	-0.1	0.09	97	-31.	1.5
21:26:32	18.58	3.8	1.75	77	-31.	1.6
21:26:47	19.27	11.3	0.91	94	-31.	1.5
21:27:02	19.70	21.3	0.70	57	-31.	1.6
21:27:18	19.79	22.3	0.65	41	-31.	1.8
21:27:33	19.81	20.8	0.58	130	-31.	2.4
21:27:48	19.79	28.8	0.56	657	-31.	2.4
21:28:03	19.70	40.3	1.22	691	-31.	2.3
21:28:18	19.64	73.3	1.39	714	-31.	2.3
21:28:33	19.65	92.8	1.44	784	-31.	2.3
21:28:48	19.63	121.5	1.47	879	-31.	2.4
21:29:03	19.67	106.8	1.36	781	-31.	2.4
21:29:18	19.72	100.8	1.24	605	-31.	2.6
21:29:33	19.75	95.3	1.17	558	-31.	2.7
21:29:48	19.76	85.8	1.13	608	-31.	2.4
21:30:03	19.79	72.8	1.08	672	-31.	2.4
21:30:18	19.83	60.4	1.03	694	-31.	3.7
21:30:33	19.86	57.4	0.99	810	-31.	3.6
21:30:48	19.87	49.3	0.97	795	-31.	3.6
21:31:03	19.88	50.3	0.93	798	-31.	3.6
21:31:18	19.92	48.8	0.90	3953	-31.	3.6
21:31:33	19.93	52.4	0.90	3630	-31.	3.7
21:31:48	19.93	45.7	0.89	890	-31.	3.5
21:32:03	19.95	45.7	0.86	878	-31.	3.5

21:32:09 RANGE 2500 NOX

21:32:19	19.95	44.3	0.85	922	-31.	3.5
21:32:34	19.95	45.7	0.85	912	-31.	3.5

21:32:46 ON LINE HEPA OUTLET RUN #3

21:32:49	19.97	41.2	0.84	927	-31.	3.5
21:33:04	19.97	36.8	0.84	939	-31.	3.5
21:33:19	19.96	42.3	0.87	954	-31.	3.8
21:33:34	19.95	39.7	0.91	961	-31.	3.8
21:33:49	19.94	49.8	0.94	1024	-31.	3.9
21:34:04	19.92	58.4	0.97	1013	-31.	4.1
21:34:19	19.93	54.4	0.95	981	-31.	4.1
21:34:34	19.93	56.4	0.94	874	-31.	4.0
21:34:49	19.92	57.4	0.90	865	-31.	3.9
21:35:04	19.93	52.9	0.88	978	-31.	3.9
21:35:19	19.95	51.3	0.83	990	[illegible]	[illegible]

21:36:04	20.01	38.3	0.73	902	-31.	3.8
21:36:19	20.00	40.3	0.71	896	-31.	3.7
21:36:34	20.01	39.7	0.71	866	-31.	3.8
21:36:49	20.00	39.7	0.74	834	-31.	3.9
21:37:04	19.99	40.3	0.77	768	-31.	3.8
21:37:20	20.00	41.7	0.77	738	-31.	3.7
21:37:35	19.99	41.7	0.75	694	-31.	3.6
21:37:50	19.99	39.7	0.75	646	-31.	3.5
21:38:05	19.99	40.3	0.75	598	-31.	3.5
21:38:20	19.99	41.7	0.77	546	-31.	3.6
21:38:35	19.97	43.7	0.78	552	-31.	3.6
21:38:50	19.98	45.7	0.79	580	-31.	3.7
21:39:05	19.99	45.3	0.76	541	-31.	3.6
21:39:20	19.98	45.3	0.74	509	-31.	3.6

21:39:35	20.00	44.3	0.73	500	-31.	3.6
21:39:50	20.00	44.3	0.72	491	-31.	3.6
21:40:05	20.00	42.8	0.73	505	-31.	3.7
21:40:20	20.00	44.3	0.75	506	-31.	3.6
21:40:35	20.00	43.2	0.73	497	-31.	3.5
21:40:50	20.00	41.2	0.72	465	-31.	3.4
21:41:05	20.01	39.7	0.73	547	-31.	3.4
21:41:20	20.01	41.7	0.73	568	-31.	3.6
21:41:35	20.00	40.3	0.73	527	-31.	3.6
21:41:50	20.02	41.7	0.73	477	-31.	3.4
21:42:05	20.02	41.7	0.72	473	-31.	3.3
21:42:21	20.01	39.2	0.71	515	-31.	3.3
21:42:36	20.03	38.8	0.69	549	-31.	3.4
21:42:51	20.03	38.8	0.68	509	-31.	3.4
21:43:06	20.04	36.8	0.66	460	-31.	3.3
21:43:21	20.04	37.2	0.66	433	-31.	3.4
21:43:36	20.04	36.3	0.65	391	-31.	3.3
21:43:51	20.06	35.8	0.63	425	-31.	3.3
21:44:06	20.06	36.8	0.59	440	-31.	3.2
21:44:21	20.07	32.8	0.55	483	-31.	3.2
21:44:36	20.08	30.8	0.53	516	-31.	3.2
21:44:51	20.10	27.3	0.53	458	-31.	3.3
21:45:06	20.10	27.3	0.53	438	-31.	3.2
21:45:21	20.10	26.3	0.53	397	-31.	3.2
21:45:36	20.10	27.3	0.56	363	-31.	3.1
21:45:51	20.07	28.8	0.58	339	-31.	3.1
21:46:06	20.07	28.8	0.61	337	-31.	3.1
21:46:21	20.07	30.8	0.62	434	-31.	3.1
21:46:36	20.06	31.3	0.62	394	-31.	3.1
21:46:51	20.08	29.8	0.60	366	-31.	3.0
21:47:06	20.09	29.8	0.58	389	-31.	3.0
21:47:22	20.07	31.8	0.62	368	-31.	3.1
21:47:37	20.07	31.3	0.82	405	-31.	3.1
21:47:52	20.08	31.8	0.61	409	-31.	3.1
21:48:07	20.08	30.8	0.60	374	-31.	3.1
21:48:22	20.10	30.8	0.56	361	-31.	3.1
21:48:37	20.12	28.8	0.54	371	-31.	3.1
21:48:52	20.11	28.8	0.55	324	-31.	3.1
21:49:07	20.11	29.8	0.54	297	-31.	3.1
21:49:17 SWITCH TO NO MODE						
21:49:22	20.13	27.8	0.54	310	-31.	3.1
21:49:37	20.13	27.3	0.52	321	-31.	3.2
21:49:52	20.11	28.8	0.52	326	-31.	3.1
21:50:07	20.13	25.8	0.49	301	-31.	3.1

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21:50:37	20.16	24.8	0.47	364	-31.	3.1
21:50:52	20.16	23.8	0.47	334	-31.	3.1
21:51:07	20.15	24.3	0.48	316	-31.	3.1
21:51:22	20.16	27.3	0.48	291	-31.	3.1
21:51:37	20.15	26.3	0.50	299	-31.	3.1
21:51:52	20.15	29.3	0.51	308	-31.	3.2
21:52:07	20.15	28.8	0.53	291	-31.	3.2
21:52:22	20.13	30.8	0.54	273	-31.	3.2
21:52:38	20.12	32.8	0.57	268	-31.	3.3
21:52:53	20.13	34.8	0.60	297	-31.	3.5
21:53:08	20.11	37.2	0.64	332	-31.	3.6
21:53:23	20.08	45.3	0.68	359	-31.	3.9
21:53:38	20.08	50.3	0.71	372	1	4.1
21:53:53	20.07	59.4	0.76	388	1	4.4
21:54:08	20.05	59.4	0.78	360	1	4.3

21:54:23	20.05	59.8	0.79	150	1	4.0
21:54:38	20.11	62.4	0.49	305	1	2.9
21:54:53	20.21	42.8	0.52	357	1	3.6
21:55:08	20.09	43.7	0.77	370	1	4.0

21:55:18 END HEPA EXHAUST

21:55:23	20.02	52.4	0.94	360	1	4.2
21:55:38	19.99	66.4	1.03	391	1	4.2
21:55:53	19.98	76.4	1.00	377	1	4.0
21:56:08	20.01	69.8	0.97	412	1	3.9
21:56:23	20.01	77.3	0.99	1113	1	4.3
21:56:38	19.95	92.3	1.30	1251	1	10.5
21:56:53	19.87	114.3	1.51	973	1	10.9
21:57:08	19.87	159.9	1.40	697	1	7.7
21:57:23	19.91	159.9	1.29	673	1	6.8
21:57:39	19.90	170.4	1.25	449	1	7.0
21:57:54	19.92	158.9	1.17	267	1	6.2
21:58:09	19.94	130.0	1.11	228	1	4.9
21:58:24	19.99	118.0	0.95	89	1	3.1
21:58:39	20.14	79.8	0.54	107	1	2.7
21:58:54	20.25	55.4	0.34	128	1	2.6
21:59:09	20.26	28.8	0.30	168	1	2.6
21:59:24	20.28	19.3	0.27	188	1	2.6
21:59:39	20.30	13.8	0.26	169	1	2.6
21:59:54	20.30	11.3	0.25	174	1	2.6
22:00:09	20.30	12.3	0.24	122	1	2.6
22:00:24	20.30	9.8	0.24	93	1	2.7
22:00:39	20.31	7.8	0.23	87	1	2.6
22:00:54	20.30	7.8	0.22	19	1	2.5
22:01:09	20.24	8.3	0.18	92	1	2.5
22:01:24	20.27	4.8	0.13	158	1	2.6
22:01:39	20.24	1.8	0.12	112	1	2.6
22:01:54	20.31	1.4	0.09	148	1	2.6
22:02:09	20.35	1.8	0.21	1501	1	2.7
22:02:24	20.14	31.8	1.17	1315	1	7.0
22:02:40	19.92	50.3	1.61	1420	1	7.5
22:02:55	19.86	90.3	1.73	1543	1	7.8
22:03:10	19.87	105.2	1.76	1478	1	7.8
22:03:25	19.88	116.5	1.73	1539	1	7.8

22:03:40	19.8[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
22:03:55	19.9[illegible]	117.0	1.70	1801	1	7.7
22:04:10	19.9[illegible]	122.5	1.7[illegible]	1817	1	7.7
22:04:25	19.92	114.3	1.71	1522	1	7.7
22:04:31 ON LINE RUN #3 POST DEMISTER 1/19/95						
22:04:40	19.82	149.4	2.31	1746	1	9.2
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22:05:10	19.67	187.0	2.31	1768	1	7.8
22:05:25	19.81	176.4	2.03	1689	1	7.5
22:05:40	19.89	150.4	1.80	1989	1	7.2
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7.3
22:06:25	19.94	119.5	1.69	1856	1	6.7
22:06:40	19.94	128.0	1.73	1666	1	6.8
22:06:55	19.94	123.9	1.69	1587	1	6.7
22:07:10	19.93	132.4	1.70	1683	1	6.6
22:07:25	19.92	131.5	1.75	1744	1	6.5
22:07:41	19.91	132.4	1.80	1777	1	6.6
22:07:56	19.89	135.4	1.96	1650	1	6.5
22:08:11	19.80	164.4	2.19	1774	1	7.5
22:08:26	19.73	177.8	2.29	1852	1	7.9
22:08:41	19.73	191.5	2.38	1878	1	7.9
22:08:56	19.70	221.9	2.55	1901	1	7.9
22:09:11	19.63	222.9	2.60	1962	1	8.6
22:09:26	19.60	241.8	2.61	1846	1	8.7
22:09:41	19.58	247.0	2.65	1835	1	8.6
22:09:56	19.54	261.0	2.67	2022	1	10.1
22:10:11	19.55	277.5	2.66	2115	1	8.9
22:10:26	19.58	235.3	2.59	2049	1	9.1
22:10:41	19.61	253.5	2.52	2017	1	8.9
22:10:56	19.64	235.8	2.42	2125	1	8.7
22:11:11	19.69	231.3	2.25	2175	1	8.5
22:11:26	19.74	190.5	2.12	2224	1	7.7
22:11:41	19.78	173.3	2.08	1971	1	7.3
22:11:56	19.73	159.9	2.15	2103	1	7.3
22:12:11	19.69	161.4	2.19	2291	1	7.4
22:12:26	19.67	157.9	2.21	2301	1	7.7
22:12:42	19.65	158.4	2.19	2386	1	7.6
22:12:57	19.64	158.4	2.18	2560	1	7.6
22:13:12	19.61	144.9	2.19	2518	1	7.6
22:13:27	19.62	153.4	2.18	2462	1	7.5
22:13:42	19.58	147.4	2.22	2493	1	7.2
22:13:57	19.49	152.4	2.36	2171	1	7.5
22:13:57 CHANGE RANGE NOX TO 10000						
22:14:12	19.42	157.4	2.42	2277	1	7.7
22:14:27	19.33	181.4	2.53	2079	1	8.0
22:14:42	19.27	190.5	2.56	1920	1	8.1
22:14:57	19.21	207.4	2.63	~~[illegible]~~	1	8.3
22:15:12	19.16	212.4	2.66	~~[illegible]~~	1	8.1
22:15:27	19.12	217.4	2.74	1642	1	8.1
22:15:42	19.03	220.4	2.74	2049	1	8.3
22:15:48 RANGE BACK TO 2500						
22:15:57	19.11	210.9	2.55	1966	1	8.4
22:16:12	19.20	183.0	2.37	1811	1	7.6
22:16:27	19.24	170.4	2.25	1843	1	7.3
22:16:42	19.25	151.8	2.22	1929	1	7.1
22:16:57	19.23	140.9	2.18	1769	1	7.0
[illegible]	[illegible]	[illegible]	2.15	1606	1	7.0

22:17:43	19.0[illegible]	1[illegible]	2.[illegible]	1[illegible]		[illegible]
22:17:58	19.03	172.9	2.5[illegible]	1906	1	7.9
22:18:13	19.11	171.8	2.36	2011	1	7.9
22:18:28	19.14	167.2	2.30	2034	1	7.6
22:18:43	19.14	160.9	2.38	1741	1	7.6
22:18:58	19.03	174.9	2.47	1832	1	7.6
22:19:13	18.93	177.3	2.56	2024	1	7.7
22:19:28	18.97	189.9	2.[illegible]6	2465	1	7.9
22:19:43	18.96	189.0	2.87	1936	1	8.0
22:19:58	18.99	177.8	2.14	1594	1	8.1
22:20:13	18.96	178.4	2.78	1964	1	8.1
22:20:28	18.91	195.0	2.87	1855	1	7.4
22:20:43	18.89	195.5	2.87	2184	1	8.3
22:20:58	18.88	187.9	2.92	2129	1	8.6
22:21:10 SWITCH TO NO MODE						
22:21:13	18.89	215.8	2.96	1971	1	8.2
22:21:28	18.86	201.9	2.93	1688	1	8.5
22:21:43	18.83	214.9	3.04	1613	1	8.5
22:21:58	18.78	202.9	3.07	1872	1	8.3

22:22:13	18.78	217.4	3.01	1778	1	8.9
22:22:28	18.81	214.9	2.91	1523	1	8.5
22:22:43	18.79	218.4	2.91	1691	1	8.5
22:22:59	18.78	199.9	2.88	1564	1	8.7
22:23:14	18.81	193.0	2.86	1703	1	8.6
22:23:29	18.80	207.4	2.82	1953	1	8.8
22:23:44	18.85	179.4	2.64	1990	1	8.4
22:23:59	18.99	173.8	2.29	2104	1	8.6
22:24:14	19.08	153.4	2.04	1837	1	9.2
22:24:29	19.15	149.9	1.86	1766	1	8.9
22:24:44	19.17	131.5	1.78	2064	1	9.0
22:24:59	19.16	130.0	1.87	1995	1	8.7
22:25:14	19.16	124.5	1.89	2018	1	8.9
22:25:29	19.15	125.5	1.90	1408	1	9.1
22:25:44	19.18	115.7	1.56	1783	1	9.1
22:25:59	19.27	115.2	1.61	2099	0	8.9
22:26:14	19.13	116.5	1.99	1952	1	8.0
22:26:29	19.12	121.5	1.94	1998	1	9.2
22:26:44	19.15	114.8	1.91	1949	0	9.3
22:26:59	19.13	128.5	1.94	2043	0	8.9

22:27:03 END POST DEMISTER

22:27:14	19.13	134.9	1.93	2040	0	8.9
22:27:29	19.14	136.9	1.95	1793	0	9.7
22:27:44	19.13	138.9	1.87	1756	0	8.9
22:28:00	19.12	141.4	2.00	1829	0	9.1
22:28:15	19.03	145.0	2.27	1710	0	8.6
22:28:30	18.95	148.9	2.49	1862	0	8.6
22:28:45	18.90	172.9	2.59	661	0	8.9
22:29:00	18.97	141.4	1.78	171	0	9.5
22:29:15	19.44	123.5	0.56	145	0	6.0
22:29:30	19.59	71.3	0.27	127	0	5.3
22:29:45	19.62	48.3	0.17	117	0	5.1
22:30:00	19.65	21.7	0.14	113	0	5.2
22:30:15	19.63	8.8	0.12	90	0	4.8
22:30:30	19.63	5.8	0.13	49	0	4.7
22:30:45	19.62	0.9	0.10	44	0	4.6
22:31:00	19.63	0.9	0.08	39	0	4.4
22:31:15	19.65	1.3	0.07	37	0	4.2
22:31:30	19.65	0.4	0.08	36	0	4.1
22:31:45	19.66	0.9	0.08	33	0	4.0
22:32:00	19.66	0.9	0.08	32	0	4.0
22:32:15	19.66	0.9	0.09	31	0	3.9
22:32:30	19.66	1.8	0.09	31	0	3.8
22:32:45	19.64	0.9	0.09	30	0	3.8
22:33:01	19.65	1.3	0.10	30	0	3.7
22:33:16	19.64	0.9	0.09	30	0	3.6
22:33:31	19.65	1.3	0.08	30	0	3.7
22:33:46	19.66	1.8	0.09	30	0	3.7
22:34:01	19.67	-0.2	0.08	29	0	3.6
22:34:16	19.68	0.4	0.08	29	0	3.5
22:34:31	19.68	0.9	0.08	29	0	3.6
22:34:46	19.68	0.9	0.08	29	0	3.5
22:35:01	19.68	0.9	0.08	29	0	3.5
22:35:16	19.67	0.9	0.08	28	0	3.5
22:35:31	19.68	0.9	0.07	28	0	3.4
22:35:46	19.67	0.4	0.07	28	0	3.4
22:36:01	19.67	0.9	0.07	27	0	3.4

22:36:16	19.67	0.9	0.08	27	0	3.4
22:36:31	19.67	0.9	0.08	27	0	3.4
22:36:46	19.64	0.9	0.10	40	0	3.4
22:37:01	19.65	0.9	0.11	39	0	3.3
22:37:16	19.44	1.3	1.97	62	0	3.4
22:37:31	17.02	1.3	2.48	50	0	3.3
22:37:46	18.78	0.9	0.80	50	0	3.3
22:38:02	19.41	0.4	0.32	50	0	3.2
22:38:17	19.58	1.8	0.21	54	0	3.2
22:38:32	19.61	1.4	0.17	56	0	3.2
22:38:47	19.63	2.9	0.15	74	0	3.1
22:39:02	19.64	2.9	0.13	139	0	3.1
22:39:17	19.64	3.4	0.17	112	0	3.1
22:39:32	19.61	1.8	0.16	101	0	3.1
22:39:47	19.61	2.4	0.14	97	0	3.0
22:40:02	19.60	4.8	0.14	193	0	3.0
22:40:17	19.57	13.8	0.41	2560	0	3.0
22:40:32	19.01	39.7	3.21	2560	0	3.0
22:40:47	18.50	104.3	4.75	2560	0	3.2
22:41:02	18.25	180.5	5.49	2560	0	3.2
22:41:17	18.10	259.6	5.77	2560	0	3.0
22:41:32	18.08	271.5	5.80	2560	0	2.9
22:41:47	18.06	272.6	5.95	2560	0	2.9
22:42:02	18.08	315.6	6.08	2560	0	2.9
22:42:17	18.00	354.5	6.25	2560	0	2.9
22:42:32	18.00	344.5	6.26	2560	0	2.9
22:42:47	17.97	370.5	6.50	2560	0	2.9
22:43:03	17.86	409.1	6.85	2560	0	2.8
22:43:18	17.75	335.5	7.28	2560	0	2.9
22:43:33	17.62	349.0	7.80	2560	0	2.8
22:43:48	17.48	406.1	8.19	2560	0	2.8
22:44:03	17.45	400.1	7.75	2560	0	2.8
22:44:18	18.07	346.0	4.84	2491	0	2.8
22:44:33	18.51	311.1	3.97	2429	0	2.8
22:44:48	18.55	261.0	4.00	2536	0	2.8
22:45:03	18.45	233.8	4.48	2560	0	2.8
22:45:18	18.37	225.4	4.75	2560	0	2.7
22:45:33	18.31	202.5	4.95	2560	0	2.7
22:45:48	18.30	243.8	4.99	2560	0	2.8
22:46:03	18.30	230.4	4.99	2560	0	2.7
22:46:18	18.31	228.9	5.02	2560	0	2.7
22:46:33	18.33	229.3	5.06	2560	0	2.7
22:46:48	18.21	231.3	5.45	2560	0	2.7
22:47:03	18.13	252.6	5.61	2560	0	2.6
22:47:18	18.12	266.5	5.67	2482	0	2.7
22:47:33	18.16	234.4	5.43	2560	0	2.6
22:47:48	18.19	230.9	5.39	2560	0	2.6
22:48:04	18.27	280.0	5.16	2560	0	2.7
22:48:19	18.28	225.4	5.17	2560	0	2.7
22:48:34	18.26	227.4	5.18	2560	0	2.6
22:48:49	18.22	224.4	5.43	2560	0	2.6
22:49:04	18.16	240.4	5.52	2452	0	2.6
22:49:19	18.21	246.0	5.08	2295	0	2.6
22:49:34	18.26	233.8	4.75	2354	0	2.6
22:49:49	18.32	217.9	4.60	2200	0	2.6
22:50:04	18.33	221.4	4.50	1957	0	2.6
22:50:19	18.29	225.9	4.58	2157	0	2.6
22:50:34	18.27	214.4	4.61	2513	0	2.6
22:50:49	18.27	235.3	4.54	2526	0	2.6
22:51:04	18.33	223.4	4.45	2204	0	2.6

22:51:19	18.32	218.4	4.34	2096	0	2.6
22:51:34	18.38	218.9	4.15	2211	0	2.6
22:51:49	18.41	193.0	4.05	2169	0	2.5
22:52:04	18.43	191.5	4.02	2076	0	2.5
22:52:19	18.44	183.0	3.86	1670	0	2.5
22:52:34	18.49	167.8	3.67	1837	0	2.6
22:52:49	18.49	161.4	3.71	2087	0	2.5
22:53:04	18.47	161.9	3.75	1683	0	2.5
22:53:20	18.46	158.4	3.66	1772	0	2.5
22:53:35	18.47	164.4	3.67	1679	0	2.5
22:53:50	18.35	180.5	3.96	1858	0	2.5
22:54:05	18.30	190.5	4.05	1795	0	2.5
22:54:20	18.35	193.0	3.89	1958	0	2.5
22:54:35	18.39	194.0	3.81	2150	0	2.5
22:54:50	18.46	176.9	3.65	1792	0	2.4
22:55:05	18.48	172.4	3.55	1927	0	2.5
22:55:20	18.51	158.9	3.53	1798	0	2.5
22:55:35	18.48	145.0	3.51	1820	0	2.6
22:55:50	18.54	143.4	3.39	1348	0	3.1
22:56:05	18.57	143.0	3.12	1473	0	3.5
22:56:20	18.63	127.0	3.00	1693	0	4.7
22:56:35	18.63	125.5	3.08	1673	0	4.8
22:56:50	18.62	121.5	3.01	1698	0	5.0
22:57:05	18.67	121.5	2.87	1739	0	6.7
22:57:20	18.68	113.3	2.85	1772	0	8.5
22:57:35	18.70	106.8	2.77	1584	0	7.7
22:57:50	18.72	97.8	2.71	1725	0	7.1
22:58:05	18.68	110.3	2.84	1422	0	8.1
22:58:21	18.67	105.2	2.85	1423	0	6.5
22:58:36	18.53	117.5	3.30	1623	0	6.6
22:58:51	18.49	143.4	3.14	1696	0	6.4
22:59:06	18.64	129.0	2.62	1702	0	6.1
22:59:21	18.76	120.5	2.49	1605	0	6.1
22:59:36	18.76	116.5	2.50	1471	0	6.8
22:59:51	18.77	103.7	2.48	1589	0	7.2
23:00:06	18.76	89.8	2.49	1635	0	6.2
23:00:21	18.77	82.4	2.53	1459	0	6.0
23:00:36	18.77	90.3	2.52	1467	0	6.1
23:00:51	18.79	90.3	2.39	1463	0	7.3
23:01:06	18.84	82.8	2.18	1249	0	10.8
23:01:21	18.91	77.3	2.02	1363	0	11.3
23:01:36	18.93	67.9	1.92	1216	0	10.6
23:01:51	18.98	61.8	1.80	1136	0	11.2
23:02:06	19.00	58.9	1.72	1202	0	10.2
23:02:21	18.96	59.3	1.91	1321	0	9.3
23:02:36	18.92	64.4	2.03	1291	0	9.0
23:02:51	18.92	65.8	1.94	1349	0	8.5
23:03:06	18.97	66.9	1.81	1360	0	8.5
23:03:22	18.99	63.8	1.75	1343	0	7.4
23:03:37	19.01	61.8	1.72	1322	0	8.0
23:03:52	19.02	57.8	1.65	1307	0	8.3
23:04:07	19.04	57.3	1.58	1290	0	7.9
23:04:22	19.06	53.8	1.56	1221	0	7.6
23:04:37	19.05	59.8	1.52	1295	0	10.0
23:04:52	19.07	59.3	1.49	1132	0	10.5
23:05:07	19.08	56.4	1.42	1167	0	8.7
23:05:22	19.10	49.2	1.43	1290	0	11.2
23:05:37	19.10	54.9	1.44	1289	0	12.0
23:05:52	19.09	52.9	1.43	1260	0	11.6
23:06:07	19.12	48.8	1.39	1142	0	9.5

23:06:22	19.12	48.3	1.35	1079	0	7.7
23:06:37	19.13	44.3	1.32	1107	0	7.6
23:06:52	19.13	43.7	1.30	1099	0	7.1
23:07:07	19.13	42.7	1.27	1070	0	7.2
23:07:22	19.16	41.7	1.23	1004	0	7.2
23:07:37	19.16	39.2	1.20	975	0	7.9
23:07:52	19.18	39.2	1.16	988	0	8.6
23:08:07	19.19	39.2	1.13	928	-0	7.3
23:08:23	19.15	36.2	1.13	895	0	6.7
23:08:38	19.19	36.7	1.14	859	0	7.1
23:08:53	19.17	38.2	1.14	786	0	6.6
23:09:08	19.18	39.7	1.11	814	0	6.5
23:09:23	19.19	40.7	1.05	808	0	6.4
23:09:38	19.22	34.8	1.02	729	0	6.2
23:09:53	19.21	36.7	0.98	660	-0	6.1
23:10:08	19.23	34.3	0.97	668	-0	6.1
23:10:23	19.22	33.3	0.97	636	0	6.1
23:10:38	19.23	33.3	0.93	648	0	6.4
23:10:53	19.25	33.3	0.88	652	0	6.0
23:11:08	19.24	31.8	0.87	631	0	5.9
23:11:23	19.26	30.3	0.84	623	0	5.9
23:11:38	19.24	26.8	0.84	580	0	7.9
23:11:53	19.25	31.3	0.83	619	0	8.4
23:12:08	19.26	30.8	0.83	591	0	7.6
23:12:23	19.27	27.8	0.82	602	0	6.7
23:12:38	19.27	25.3	0.82	588	0	6.4
23:12:53	19.28	27.3	0.81	614	0	6.3
23:13:08	19.29	29.3	0.80	553	0	6.3
23:13:24	19.28	29.3	0.78	490	0	6.5
23:13:39	19.30	27.7	0.79	463	0	6.0
23:13:54	19.29	24.8	0.78	526	0	5.4
23:14:09	19.28	32.8	0.81	564	0	5.1
23:14:24	19.28	27.3	0.80	547	0	4.9
23:14:39	19.28	29.8	0.76	554	0	4.8
23:14:54	19.30	29.3	0.74	568	0	4.7
23:15:09	19.32	24.3	0.71	565	0	4.6
23:15:24	19.31	24.3	0.71	542	0	4.5
23:15:39	19.32	22.3	0.70	536	0	4.4
23:15:54	19.32	23.3	0.70	547	0	4.3
23:16:09	19.31	24.3	0.69	532	0	4.2
23:16:24	19.32	28.8	0.67	487	0	4.3
23:16:39	19.33	22.8	0.66	486	0	4.2
23:16:54	19.32	24.3	0.65	486	0	4.1
23:17:09	19.33	21.7	0.66	473	0	4.0
23:17:24	19.34	21.3	0.65	463	0	4.1
23:17:39	19.33	21.7	0.62	482	0	4.0
23:17:54	19.33	20.8	0.62	496	0	4.9
23:18:09	19.36	23.3	0.62	477	0	7.4
23:18:25	19.36	18.8	0.59	456	0	6.7
23:18:40	19.35	19.8	0.61	462	0	8.3
23:18:55	19.35	21.7	0.62	455	0	6.2
23:19:10	19.35	22.8	0.63	446	0	4.8
23:19:25	19.35	22.3	0.63	439	0	4.3
23:19:40	19.35	19.3	0.67	435	0	4.2
23:19:55	19.34	19.8	0.66	406	0	4.1
23:20:10	19.34	20.8	0.63	380	0	4.0
23:20:25	19.35	19.3	0.61	399	0	5.0
23:20:40	19.36	20.8	0.61	409	0	4.7
23:20:55	19.36	22.8	0.61	412	0	6.4
23:21:10	19.37	19.3	0.60	423	-0	4.5

23:21:25	19.38	19.3	0.60	438	0	4.1
23:21:40	19.36	17.8	0.61	434	0	4.7
23:21:55	19.37	18.4	0.61	422	0	4.0
23:22:10	19.36	17.8	0.61	405	0	4.1
23:22:25	19.37	18.3	0.59	393	0	5.5
23:22:40	19.37	22.8	0.58	373	0	6.0
23:22:55	19.36	16.8	0.57	362	0	6.1
23:23:10	19.38	17.3	0.57	353	0	6.0
23:23:25	19.38	15.8	0.56	341	0	5.9
23:23:41	19.39	18.3	0.54	332	0	6.2
23:23:56	19.39	19.8	0.54	328	0	6.7
23:24:11	19.38	13.8	0.52	345	0	6.4
23:24:26	19.40	16.8	0.53	356	0	6.2
23:24:41	19.38	17.8	0.55	373	0	6.1
23:24:56	19.36	20.8	0.56	359	0	6.3
23:25:11	19.39	19.8	0.54	351	0	5.1
23:25:26	19.39	19.8	0.53	318	0	5.4
23:25:41	19.40	17.3	0.49	233	0	5.5
23:25:44 SWITCH TO NO MODE						
23:25:56	19.41	17.8	0.50	204	0	5.7
23:26:11	19.40	16.3	0.45	208	0	5.8
23:26:26	19.41	15.8	0.44	223	0	4.9
23:26:41	19.41	15.3	0.44	232	0	4.6
23:26:56	19.40	15.8	0.49	227	0	4.5
23:27:11	19.40	16.3	0.51	206	0	5.5
23:27:23 RANGE NOX IS 1000						
23:27:26	19.40	16.3	0.49	197	0	5.8
23:27:41	19.39	16.8	0.46	190	0	5.3
23:27:56	19.42	16.3	0.43	188	0	8.5
23:28:11	19.41	15.8	0.42	172	0	7.8
23:28:26	19.41	14.8	0.42	155	0	7.7
23:28:42	19.42	14.8	0.42	158	0	7.6
23:28:57	19.40	14.3	0.40	175	0	7.0
23:29:12	19.43	14.3	0.41	187	-0	6.3
23:29:27	19.42	14.8	0.41	183	-0	5.4
23:29:42	19.42	14.8	0.40	185	-0	4.7
23:29:57	19.43	14.8	0.39	192	0	4.4
23:30:12	19.42	14.3	0.38	194	-0	5.7
23:30:27	19.42	14.3	0.38	205	-0	6.7
23:30:42	19.44	14.3	0.39	209	-0	7.2
23:30:57	19.44	14.3	0.40	201	-0	7.6
23:31:12	19.43	14.3	0.39	196	-0	5.6
23:31:21 END RUN #3 MELTER EXHAUST						
23:31:27	19.44	14.3	0.37	202	-0	4.7
23:31:42	19.44	14.3	0.38	201	-0	4.5
23:31:57	19.44	13.8	0.38	206	-0	6.6
23:32:12	19.46	13.8	0.37	195	-0	7.8
23:32:27	19.45	12.8	0.37	185	0	7.5
23:32:42	19.45	12.8	0.35	172	0	7.3
23:32:57	19.46	12.3	0.34	170	0	7.5
23:33:12	19.45	11.8	0.33	168	0	8.1
23:33:27	19.45	11.3	0.33	266	0	8.0
23:33:43	19.44	13.3	0.47	256	0	8.6
23:33:58	19.41	14.3	0.48	235	0	8.5
23:34:13	19.44	14.8	0.43	208	0	9.0
23:34:28	19.45	15.3	0.38	204	0	8.6
23:34:43	19.44	14.3	0.38	79	0	8.8
23:34:58	19.47	12.3	0.26	51	0	9.3
23:35:13	19.49	8.3	0.21	44	0	9.3

23:35:28	19.50	6.3	0.18	48	0	8.7
23:35:43	19.52	3.4	0.15	62	0	7.9
23:35:58	19.51	2.4	0.20	71	0	7.6
23:36:13	19.42	1.4	0.30	74	0	8.0
23:36:28	19.40	1.4	0.28	74	0	8.5
23:36:43	19.44	1.4	0.21	75	0	8.5
23:36:58	19.49	1.4	0.15	69	0	8.6
23:37:13	19.51	1.4	0.14	63	0	8.3
23:37:28	19.44	0.9	0.63	62	0	7.8
23:37:37 MID O2 11.51 CO2 11.05						
23:37:43	16.42	0.9	5.54	61	0	7.6
23:37:58	12.19	0.9	9.22	62	0	6.8
23:38:13	10.84	0.9	10.34	61	0	6.9
23:38:28	10.52	0.9	10.64	62	0	6.6
23:38:44	10.41	0.4	10.78	62	0	6.5
23:38:59	10.37	0.9	10.83	61	0	6.2
23:39:09 ZERO NOX AND CO						
23:39:14	10.37	0.4	10.90	61	0	6.3
23:39:29	10.36	0.4	10.92	61	0	6.4
23:39:44	10.33	0.4	10.94	60	0	6.2
23:39:59	10.33	0.4	10.97	59	0	6.1
23:40:14	10.32	0.9	10.94	60	0	6.1
23:40:29	10.32	0.9	10.98	63	0	6.4
23:40:44	10.35	0.9	11.00	60	0	6.4
23:40:59	10.84	1.8	9.02	57	0	6.6
23:41:14	10.64	8.8	3.62	57	0	6.8
23:41:29	3.60	20.3	1.35	57	-0	6.7
23:41:44	0.03	44.8	0.57	56	-0	6.8
23:41:59	-0.79	56.4	0.37	57	-0	7.0
23:42:14	-1.04L	73.8	0.26	56	-0	6.6
23:42:29	-1.09L	80.4	0.23	56	-0	6.2
23:42:34 90.7 PPM CO						
23:42:44	-1.10L	87.3	0.20	56	-0	6.0
23:42:59	-1.12L	90.3	0.17	55	-0	5.9
23:43:14	-1.11L	92.8	0.15	55	-0	5.6
23:43:29	-1.12L	92.3	0.14	55	-0	5.4
23:43:45	-1.12L	92.8	0.12	55	-0	5.2
23:44:00	-1.12L	92.3	0.12	55	-0	5.1
23:44:15	-1.13L	91.8	0.10	54	-0	5.0
23:44:29 ZERO O2 AND CO2						
23:44:30	-1.12L	93.3	0.10	54	-0	4.9
23:44:45	-1.13L	93.8	0.10	55	-0	4.8
23:45:00	0.14	92.8	0.09	55	0	4.8
23:45:15	0.14	93.5	0.10	54	-0	4.7
23:45:18 ADJ ZERO O2						
23:45:30	0.13	93.3	0.08	53	-0	4.6
23:45:45	0.14	[illegible]	0.08	53	0	4.6
23:46:00	0.13	90.3	0.07	53	0	4.5
23:46:11 442 BIAS NOX						
23:46:15	0.15	91.8	0.07	54	0	4.5
23:46:30	0.15	95.3	0.07	53	0	4.4
23:46:45	0.21	94.8	0.07	299	0	4.5
23:47:00	1.27	79.3	0.09	469	0	4.5
23:47:15	0.67	62.4	0.08	487	0	4.5
23:47:30	0.30	35.3	0.07	488	0	4.5
23:47:45	0.18	23.7	0.06	489	0	4.5
23:48:00	0.16	6.8	0.06	488	0	4.5
23:48:15	0.15	3.4	0.06	487	0	4.5
23:48:30	0.14	0.9	0.07	485	0	4.4
23:48:46	0.17	1.4	0.06	484	0	4.4

23:49:01	0.17	0.9	0.06	192	0	4.7
23:49:16	0.19	0.9	0.06	86	0	4.6
23:49:31	1.56	0.9	0.07	52	0	4.4
23:49:46	7.13	1.3	0.09	36	0	9.7
23:50:01	11.39	1.8	0.10	28	-0	10.2
23:50:16	14.25	1.8	0.10	25	-0	12.1
23:50:31	16.67	2.9	0.10	29	-0	7.8
23:50:46	17.95	4.3	0.12	26	-0	5.5
23:51:01	18.49	4.8	0.10	22	-0	5.7
23:51:16	17.82	4.8	0.10	21	-0	4.5
23:51:31	11.20	5.3	0.09	20	-0	4.3
23:51:46	6.40	3.8	0.08	25	-0	4.1
23:52:01	4.61	3.8	0.08	28	-0	4.1
23:52:16	3.64	2.9	0.08	28	-0	4.0
23:52:31	3.16	2.4	0.07	30	-0	4.2
23:52:46	2.81	1.8	0.08	32	-0	5.1
23:53:01	2.57	1.8	0.08	27	-0	4.7
23:53:16	2.44	1.8	0.08	28	-1	4.4
23:53:31	2.31	1.8	0.09	39	-1	4.3
23:53:46	2.23	1.8	0.09	37	-1	4.6
23:54:02	2.15	1.8	0.09	36	-1	4.7
23:54:17	2.08	1.3	0.08	36	-1	4.5
23:54:32	2.07	1.8	0.10	36	-1	4.3
23:54:47	2.07	1.8	0.10	37	-0	9.4
23:55:02	2.06	3.4	0.09	43	-0	15.8
23:55:17	2.14	2.4	0.10	53	-0	10.7
23:55:32	2.52	4.8	0.10	69	-0	11.1
23:55:47	4.04	7.8	0.10	74	-0	10.2
23:56:02	4.91	7.8	0.10	62	-0	9.7
23:56:17	6.20	7.3	0.10	60	-0	9.0
23:56:32	8.15	6.3	0.10	60	-0	9.5
23:56:47	9.78	5.8	0.10	60	-0	11.1
23:57:02	11.43	3.8	0.10	59	-0	11.7
23:57:17	12.80	2.9	0.10	60	-0	10.0
23:57:32	13.87	2.4	0.10	62	-0	8.8
23:57:47	15.02	2.4	0.09	61	-0	7.9
23:58:02	15.99	2.4	0.10	63	-0	7.4
23:58:17	16.96	2.9	0.10	58	-0	6.9
23:58:32	17.81	1.8	0.10	55	-0	6.7
23:58:47	18.34	2.4	0.10	52	-0	6.5
23:59:03	18.78	2.4	0.10	52	-0	6.4
23:59:18	19.08	1.8	0.10	49	-0	7.9
23:59:33	19.35	2.4	0.10	63	0	8.3
23:59:48	19.59	1.8	0.10	61	0	7.8
00:00:12	19.93	3.8	0.09	61	0	13.0
00:00:27	20.05	2.9	0.10	55	-0	12.8
00:00:43	20.14	3.8	0.09	58	-0	22.5
00:00:58	20.23	2.9	0.09	54	-0	20.7
00:01:13	20.33	5.8	0.10	50	-0	20.8
00:01:28	20.40	4.8	0.10	38	-0	18.9
00:01:43	20.49	3.8	0.09	31	-0	16.5
00:01:58	20.61	2.9	0.09	28	-0	17.4
00:02:13	20.68	2.9	0.09	24	-0	17.7
00:02:28	20.73	2.9	0.09	24	-0	16.5
00:02:43	20.77	1.8	0.09	22	-0	15.8
00:02:58	20.78	1.8	0.09	22	-0	16.9
00:03:13	20.81	1.8	0.08	21	-0	25.5
00:03:28	20.82	1.8	0.09	21	-0	28.3
00:03:43	20.81	2.4	0.09	20	-0	29.4
00:03:58	20.82	0.4	0.08	20	-0	[illegible]

00:04:13	20.82	2.4	0.09	20	0	26.9
00:04:28	20.82	-0.2	0.07	19	0	27.9
00:04:35	30.7 PPM PROPANE					
00:04:43	20.83	0.4	0.08	19	0	28.8
00:04:50	ZERO THC					
00:04:58	20.83	3.4	0.08	19	0	24.5
00:05:13	20.83	1.8	0.09	19	0	27.7
00:05:28	20.84	0.9	0.09	19	0	27.4
00:05:43	20.83	1.4	0.08	19	0	28.5
00:05:59	20.84	0.9	0.08	18	0	27.5
00:06:14	20.84	0.9	0.09	19	0	26.0
00:06:29	20.84	1.8	0.08	18	0	28.9
00:06:44	20.85	0.9	0.09	18	0	6.0
00:06:59	20.85	1.4	0.08	18	0	5.0
00:07:14	20.85	1.8	0.09	18	0	4.1
00:07:29	20.85	0.9	0.07	18	0	3.6
00:07:44	20.84	1.4	0.08	18	0	3.8
00:07:59	20.82	-0.2	0.09	14	0	3.7
00:08:14	20.83	2.9	0.09	11	0	3.2
00:08:29	20.85	1.4	0.08	11	0	3.2
00:08:44	20.87	1.3	0.08	11	0	3.4
00:08:59	20.86	1.3	0.07	11	0	3.4
00:09:14	20.86	0.9	0.08	11	0	4.2
00:09:29	20.86	0.9	0.07	11	0	3.5
00:09:44	20.86	0.4	0.07	11	0	[illegible]
00:09:59	20.86	2.9	0.08	11	0	3.4
00:10:14	20.86	0.9	0.07	11	0	3.3
00:10:29	20.86	0.9	0.08	11	0	2.9
00:10:44	20.87	2.9	0.08	11	0	3.1
00:11:00	20.87	1.4	0.08	11	0	3.2
00:11:15	20.86	0.9	0.08	11	0	2.8
00:11:30	20.86	1.4	0.08	11	0	2.6
00:11:45	20.86	1.4	0.09	11	0	3.3
00:12:00	20.86	1.8	0.07	11	0	3.2
00:12:15	20.87	2.4	0.06	11	0	2.8
00:12:30	20.87	0.4	0.08	11	0	2.8
00:12:45	20.85	0.4	0.07	11	0	2.9
00:13:00	20.86	1.3	0.07	11	0	2.7
00:13:15	20.87	1.4	0.08	11	0	2.7
00:13:30	20.85	1.8	0.08	10	0	2.9
00:13:45	20.87	0.9	0.08	11	0	2.6
00:14:00	20.87	0.4	0.08	11	0	2.5
00:14:15	20.86	0.4	0.08	11	0	2.6
00:14:30	20.86	0.4	0.08	11	0	2.6
00:14:45	20.87	0.9	0.08	11	0	2.4
00:15:00	20.87	0.4	0.08	11	0	3.0
00:15:15	20.86	1.4	0.07	10	0	2.4
00:15:30	20.86	0.9	0.08	10	0	2.4
00:15:45	20.87	0.4	0.08	11	0	2.4
00:16:01	20.87	1.4	0.08	11	0	2.3
00:16:16	20.86	0.4	0.08	10	0	2.6
00:16:31	20.87	0.4	0.08	10	0	2.4
00:16:46	20.88	1.4	0.08	10	0	2.3
00:17:01	20.87	0.4	0.07	10	0	2.3
00:17:16	20.87	0.9	0.08	10	0	2.3
00:17:31	20.87	0.9	0.08	10	0	3.5
00:17:46	20.87	0.9	0.08	10	0	2.3
00:18:01	20.87	1.4	0.08	10	0	2.4
00:18:16	20.88	0.4	0.07	10	0	2.4
00:18:31	20.87	0.4	0.07	10	0	2.2

00:18:46	20.87	0.9	0.08	10	0	2.5
00:19:01	20.88	0.4	0.08	10	0	2.2
00:19:16	20.87	0.9	0.08	10	0	2.1
00:19:31	20.86	0.4	0.07	10	0	2.1
00:19:46	20.87	1.4	0.08	10	0	2.6
00:20:01	20.86	0.9	0.08	10	0	2.1
00:20:16	20.88	0.4	0.08	10	0	2.2
00:20:31	20.88	0.4	0.08	10	0	2.1
00:20:46	20.87	0.9	0.08	10	0	2.1
00:21:02	20.88	0.4	0.06	10	0	2.3
00:21:17	20.86	0.9	0.07	10	0	2.0
00:21:32	20.87	1.8	0.06	10	0	2.5

Run Title: catholic u
Date: 15/31/127

Time
09:46:06
09:46:21
09:46:36
09:46:39 BEGIN CALS 1/20/95
09:46:51
09:47:06
09:47:21
09:47:36
09:47:51
09:48:06
09:48:21
09:48:36
09:48:51
09:49:06
09:49:21
09:49:36
09:49:52
09:50:07
09:50:22
09:50:37
09:50:52

Run Title: catholic u
Date: 15/31/127

Time	O2	CO	CO2	NOX
09:59:28	0.33	-1.8L	0.06	8H
09:59:43	0.35	3.7H	0.06	8H
09:59:58	0.34	3.7	0.06	8H
10:00:13	0.34	-1.8L	0.06	8
10:00:28	0.33	3.7	0.06	8
10:00:43	0.34	3.7	0.06	7
10:00:58	0.34	3.7	0.06	8
10:01:14	0.34	0.37	0.06	8
10:01:29	0.34	0.37	0.06	7
10:01:44	0.33	0.37	0.06	8
10:01:48 ZERO O2 CO CO2 NOX DIRECT				
10:01:59	0.35	0.36	0.05	8
10:02:14	0.34	0.37	0.06	8
10:02:29	0.35	41.69H	0.06	8
10:02:44	1.03	104.24H	2.68	8
10:02:59	7.53	233.81H	9.58	8
10:03:14	12.88	283.93H	13.66	8
10:03:29	15.84	319.05H	15.80	8
10:03:44	16.88	381.64H	16.50	8
10:03:59	17.34	401.6H	16.82	8
10:04:14	17.50	421.5H	16.98	8
10:04:29	17.57	428.0H	17.02	8
10:04:44	17.60	443.1H	17.06	8
10:04:59	17.73	437.1H	17.04	8
10:05:15	17.75	435.0H	17.12	8
10:05:20 SPAN O2 17.72 CO 481 CO2 17.02				
10:05:30	17.74	433.5H	17.15	8
10:05:45	17.75	454.6H	17.11	8
10:06:00	17.75	454.1H	17.12	8
10:06:15	17.75	432.6H	17.16	8
10:06:30	17.76	483.1H	17.11	8
10:06:45	17.76	475.1H	17.10	8
10:07:00	17.77	468.1	17.12	8

10:07:15	17.77	470.0	17.15	8	
10:07:30	17.77	466.6	17.12	8	
10:07:45	17.77	456.1	17.13	8	
10:07:49	MID O2 11.51 11.05				
10:07:59	11.05 CO2				
10:08:00	17.77	441.6	17.17	8	
10:08:15	17.66	426.5	15.90	8	
10:08:30	15.40	242.4	13.09	8	
10:08:45	13.34	218.4	11.86	7	
10:09:00	12.33	95.3	11.33	8	
10:09:15	11.98	70.8	11.16	8	
10:09:30	11.87	23.2	11.07	8	
10:09:45	11.81	8.3	11.05	8	
10:10:00	11.80	4.8	11.02	8	
10:10:16	11.78	7.8	11.01	8	
10:10:31	11.79	-0.7	11.04	8	
10:10:34	MID CO 281				
10:10:46	11.78	35.3	10.96	8	
10:11:01	10.74	92.8	7.16	7	
10:11:16	6.25	135.9	3.22	8	
10:11:31	2.57	231.8	1.15	8	
10:11:46	1.25	225.4	0.52	8	
10:12:01	0.70	245.5	0.26	7	
10:12:16	0.52	267.5	0.16	8	
10:12:31	0.45	278.5	0.13	8	
10:12:46	0.42	293.4	0.11	8	
10:13:01	0.39	288.5	0.10	8	
10:13:16	0.39	300.9	0.09	8	-31.
10:13:31	0.38	299.4	0.09	8	-31.
10:13:46	0.38	289.5	0.08	8	-31.
10:14:01	0.38	291.9	0.08	8	17H
10:14:16	0.36	283.0	0.08	8	11H
10:14:31	0.38	289.5	0.07	7	6H
10:14:46	0.37	294.9	0.07	8	3H
10:15:01	0.38	347.4	0.07	8	3
10:15:17	0.37	328.5	0.07	8	-0
10:15:32	0.37	281.4	0.06	8	-1
10:15:47	0.38	384.1	0.07	8	-0
10:16:02	0.37	277.9	0.06	8	-1
10:16:17	0.37	297.9	0.07	8	-1
10:16:31	LOW CO 90.7				
10:16:32	0.37	309.5	0.07	8	-1
10:16:47	0.43	256.6	0.07	8	-1
10:17:02	0.47	31.3	0.07	8	-1
10:17:02	ZERO NOX				
10:17:17	0.41	158.9	0.06	8	-0
10:17:32	0.39	-11.7L	0.06	8	-0
10:17:47	0.38	93.3	0.05	8	-0
10:18:02	0.38	7.3	0.06	8	-1
10:18:17	0.38	105.7	0.06	8	-1
10:18:32	0.37	109.7	0.06	8	-1
10:18:47	0.38	91.7	0.06	8	-1
10:19:02	0.37	88.8	0.06	11	-1
10:19:07	861 NOX DIRECT				
10:19:17	0.38	78.3	0.06	803	-1
10:19:32	0.45	72.8	0.06	870	-1
10:19:47	0.44	34.3	0.05	872	23
10:20:02	0.38	25.2	0.06	868	784

10:20:18	0.36	8.8	0.06	861	871
10:20:33	0.35	1.8	0.05	862	877
10:20:48	0.35	[illegible]	0.06	866	841
10:21:03	0.34	-0.2	0.06	861	861
10:21:18	0.34	0.9	0.06	862	857
10:21:33	0.35	0.9	0.06	863	858
10:21:48	0.34	1.3	0.06	[illegible]	[illegible]
10:22:03	0.35	-0.2	0.06	682	828
10:22:09	442	NOX			
10:22:18	0.35	2.9	0.06	404	826
10:22:33	0.46	1.3	0.05	452	823
10:22:48	0.46	0.9	0.06	461	666
10:23:03	0.42	0.4	0.05	460	422
10:23:18	0.40	0.9	0.06	461	433
10:23:33	0.39	-0.2	0.06	460	435
10:23:48	0.39	0.4	0.06	462	432
10:24:03	0.38	4.3	0.06	380	417
10:24:18	0.38	-0.2	0.05	187	419
10:24:33	0.42	0.4	0.06	99	418
10:24:48	0.49	0.4	0.06	64	416
10:25:03	1.46	0.4	0.06	38	202
10:25:19	4.87	2.4	0.08	23	109
10:25:34	8.89	1.8	0.09	17	62
10:25:49	12.34	2.4	0.09	15	34
10:26:04	14.30	5.8	0.10	13	20
10:26:19	16.04	3.3	0.10	12	11
10:26:34	17.08	2.4	0.10	11	9
10:26:49	17.76	2.9	0.10	11	7
10:27:04	18.37	1.8	0.10	10	6
10:27:19	18.77	4.3	0.11	11	5
10:27:34	19.16	8.8	0.11	10	4
10:27:49	19.67	7.7	0.11	10	4
10:28:04	20.04	9.3	0.11	10	4
10:28:19	20.36	6.3	0.11	9	4
10:28:34	20.53	6.3	0.11	9	3
10:28:49	20.68	4.3	0.10	9	3
10:29:04	20.74	1.3	0.10	9	3
10:29:19	20.78	4.8	0.10	9	2
10:29:34	20.80	3.8	0.11	9	2
10:29:49	20.80	5.3	0.12	9	2
10:30:04	20.82	2.4	0.11	9	2
10:30:19	20.82	3.8	0.12	9	2
10:30:35	20.82	4.3	0.12	9	2
10:30:50	20.81	2.9	0.12	9	2
10:31:05	20.81	8.8	0.12	9	2
10:31:20	20.81	2.4	0.11	9	2
10:31:35	20.79	3.3	0.12	9	2
10:31:50	20.80	3.3	0.11	9	2
10:32:05	20.79	4.8	0.11	9	1
10:32:20	20.80	1.8	0.12	9	2
10:32:35	20.79	6.3	0.11	9	1
10:32:50	20.78	3.3	0.12	9	1
10:33:05	20.77	4.8	0.12	9	1
10:33:20	20.77	1.8	0.12	9	1
10:33:35	20.76	3.8	0.12	9	1
10:33:50	20.76	-11.71.	0.12	9	1
10:34:05	20.76	3.8	0.12	9	1
10:34:20	20.75	7.8	0.11	9	1

10:35:05	20.74	-0.2	0.12	9	1
10:35:20	20.73	7.3	0.11	9	1
10:35:36	20.74	7.3	0.11	9	1
10:35:51	20.72	2.4	0.10	9	1
10:36:06	20.73	2.4	0.11	9	1
10:36:21	20.71	1.3	0.12	9	1
10:36:36	20.71	3.3	0.11	9	1
10:36:51	20.69	1.8	0.12	9	1
10:37:06	20.68	2.9	0.13	9	1
10:37:21	20.67	2.9	0.13	9	1
10:37:36	20.67	1.8	0.12	9	1
10:37:51	20.67	2.9	0.11	9	1
10:38:06	20.67	1.3	0.12	9	1
10:38:21	20.67	2.4	0.11	8	1
10:38:36	20.67	2.4	0.10	9	1
10:38:51	20.67	1.8	0.11	8	1
10:39:06	20.67	1.8	0.09	8	1
10:39:21	20.68	2.4	0.11	9	1
10:39:36	20.67	3.8	0.10	9	1
10:39:51	20.66	1.8	0.11	9	1
10:40:06	20.66	0.9	0.11	8	1
10:40:21	20.65	1.8	0.10	9	1
10:40:37	20.66	0.4	0.11	8	1
10:40:52	20.66	2.4	0.11	9	1
10:41:07	20.66	1.8	0.10	8	1
10:41:22	20.66	1.3	0.10	8	1
10:41:37	20.65	1.8	0.10	8	1
10:41:52	20.66	1.8	0.10	8	1
10:42:07	20.65	1.3	0.10	9	1
10:42:22	20.65	2.4	0.10	8	1
10:42:37	20.65	0.9	0.10	8	1
10:42:52	20.65	1.3	0.10	8	1
10:43:07	20.65	1.8	0.10	8	1
10:43:22	20.64	1.3	0.10	9	1
10:43:37	20.65	1.8	0.10	8	1
10:43:52	20.65	0.9	0.10	8	1
10:44:07	20.66	1.8	0.10	8	1
10:44:22	20.66	0.9	0.10	8	1
10:44:37	20.66	2.9	0.10	9	1
10:44:52	20.66	1.8	0.10	8	1
10:45:07	20.65	2.4	0.09	8	1
10:45:22	20.65	2.4	0.10	8	1
10:45:38	20.64	1.3	0.10	9	1
10:45:53	20.64	1.3	0.11	9	1
10:46:08	20.64	1.8	0.10	9	1
10:46:23	20.64	1.8	0.10	9	1
10:46:38	20.64	1.3	0.11	8	1
10:46:53	20.63	2.9	0.11	8	1
10:47:08	20.63	1.3	0.11	9	1
10:47:23	20.63	1.8	0.10	8	1
10:47:38	20.64	2.4	0.10	8	1
10:47:53	20.63	0.9	0.10	9	1
10:48:08	20.64	1.8	0.09	8	1
10:48:23	20.64	1.8	0.10	8	1
10:48:38	20.65	0.9	0.09	9	1
10:48:53	20.64	1.8	0.09	8	1
10:49:08	20.64	1.3	0.09	9	1

10:49:38	20.64	1.3	0.10	8	1
10:49:53	20.66	1.3	0.09	28	1
10:50:08	20.65	2.4	0.09	14	1
10:50:15 ZERO BIAS ALL W/N2					
10:50:23	20.64	2.4	0.10	23	1
10:50:39	20.62	2.9	0.12	20	1
10:50:54	18.59	2.4	0.11	20	4
10:51:09	9.57	1.3	0.08	21	19
10:51:24	4.61	1.3	0.07	22	16
10:51:39	2.29	2.9	0.06	21	18
10:51:54	1.35	1.3	0.06	21	20
10:52:09	1.02	1.3	0.06	20	21
10:52:24	0.83	-0.7	0.05	20	22
10:52:39	0.76	1.3	0.06	19	22
10:52:54	0.72	1.3	0.06	18	23
10:53:09	0.70	0.9	0.06	17	23
10:53:24	0.69	0.9	0.06	17	23
10:53:39	0.68	1.3	0.06	17	22
10:53:54	0.68	1.8	0.06	17	22
10:54:09	0.67	0.9	0.06	16	21
10:54:24	0.67	-0.2	0.06	16	21
10:54:32 BIAS NOX 442					
10:54:39	0.67	-0.2	0.06	16	20
10:54:54	0.66	0.9	0.06	437	19
10:55:09	0.71	1.8	0.06	447	18
10:55:24	0.97	-0.2	0.06	449	17
10:55:40	0.83	0.4	0.06	451	382
10:55:55	0.74	2.9	0.06	450	425
10:56:10	0.69	2.4	0.06	450	425
10:56:25	0.69	-0.2	0.06	451	427
10:56:40	0.66	3.8	0.06	452	427
10:56:55	0.67	0.4	0.06	450	425
10:57:10	0.66	0.8	0.06	441	426
10:57:14 MID O2 11.51 CO2 11.05					
10:57:25	0.67	1.8	0.06	25	429
10:57:40	1.31	0.9	0.29	16	427
10:57:55	7.53	2.4	4.92	16	418
10:58:10	10.21	0.9	8.07	15	47
10:58:25	11.19	1.3	9.54	15	14
10:58:40	11.52	1.3	10.07	15	13
10:58:55	11.63	1.3	10.27	15	13
10:59:10	11.68	1.8	10.36	15	13
10:59:25	11.70	2.9	10.42	15	13
10:59:40	11.70	0.9	10.44	15	13
10:59:55	11.71	0.4	10.44	15	12
11:00:10	11.70	0.4	10.44	15	12
11:00:25	11.71	0.4	10.46	14	12
11:00:40 90 PPM CO THROUGH SYS					
11:00:40	11.69	0.4	10.44	15	12
11:00:56	11.70	0.9	10.45	15	11
11:01:11	11.70	11.8	10.33	14	11
11:01:26	11.08	30.8	6.15	14	11
11:01:41	5.61	52.8	2.18	14	11
11:01:56	2.59	67.8	0.90	14	10
11:02:11	1.35	68.8	0.40	14	10
11:02:26	0.93	99.8	0.22	14	9
11:02:41	0.76	83.8	0.14	14	9
11:02:56	0.68	96.8	0.10	14	8
11:03:11	0.65	85.7	0.09	13	8
11:03:26	0.64	99.3	0.08	13	8
11:03:41	0.62	94.3	0.08	13	8

11:04:11	0.61	91.7	0.07	13	7
11:04:26	0.61	91.7	0.08	13	6
11:04:41	0.61	97.3	0.07	15	6
11:04:56	0.61	93.3	0.07	15	7
11:05:11	0.79	78.8	0.07	16	6
11:05:26	7.85	48.7	0.09	16	7
11:05:41	14.97	38.2	0.09	16	7
11:05:57	18.50	20.8	0.09	16	8
11:06:12	19.65	12.3	0.09	16	8
11:06:27	20.18	10.8	0.09	16	8
11:06:42	20.39	4.8	0.08	16	8
11:06:57	20.45	4.3	0.10	16	8
11:07:12	20.49	1.8	0.09	15	8
11:07:27	20.51	0.9	0.09	15	7
11:07:42	20.49	5.8	0.09	15	7
11:07:57	20.51	2.9	0.10	15	8
11:08:12	20.49	0.4	0.09	16	7
11:08:27	20.50	-1.6	0.10	16	7
11:08:42	20.49	2.9	0.08	15	8
11:08:57	20.50	3.8	0.09	14	9
11:09:12	20.50	0.9	0.10	14	9
11:09:27	20.49	1.3	0.10	14	8
11:09:42	20.50	1.3	0.10	13	8
11:09:57	20.49	5.3	0.09	13	9
11:10:12	20.48	1.3	0.09	14	9
11:10:27	20.47	6.3	0.11	16	8

11:10:42	20.39	3.8	0.14	15	9
11:10:58	20.22	4.8	0.17	17	11
11:11:13	20.09	1.8	0.19	18	10
11:11:28	20.00	0.4	0.21	20	11
11:11:43	20.00	5.3	0.19	17	12
11:11:58	20.07	1.8	0.18	17	16
11:12:13	20.14	2.4	0.17	16	16
11:12:28	20.20	1.8	0.15	16	14
11:12:43	20.26	1.8	0.14	33	15
11:12:58	20.30	3.3	0.14	520	14
11:13:13	20.33	10.3	0.30	547	14
11:13:28	20.28	22.3	0.61	479	12
11:13:43	20.25	27.7	0.73	597	497
11:13:58	20.21	43.7	0.79	1024H	541
11:14:13	20.21	59.3	0.90	1024H	487
11:14:28	20.12	80.8	1.24	1024H	541
11:14:43	20.02	129.9	1.51	936	860

11:14:51 ON LINE RUN #4 HEPA FILTER EXHAUST NO SCRUBBER FILTER AND KNOCKOU

11:14:58	19.93	141.4	1.59	954	1024H
11:15:13	19.94	153.9	1.50	879	1024H
11:15:28	19.97	154.4	1.43	899	210
11:15:43	19.99	137.4	1.39	764	204
11:15:59	20.00	126.5	1.34	723	1025H

11:16:11 CHANGE RANGE ML TO 5000

11:16:14	20.04	119.9	1.24	622	948
11:16:29	20.06	113.7	1.14	586	859
11:16:44	20.10	87.7	1.08	566	801
11:16:59	20.12	76.8	1.01	517	685
11:17:14	20.14	74.3	0.94	370	629
11:17:29	20.15	68.8	0.90	406	607

11:17:44	20.17	67.3	0.89	410	562
11:17:59	20.18	61.8	0.87	417	434
11:18:14	20.19	54.8	0.86	458	395
11:18:29	20.19	54.4	0.84	476	409
11:18:44	20.21	52.8	0.83	403	417
11:18:59	20.20	51.2	0.84	344	468
11:19:14	20.22	48.7	0.80	335	452
11:19:29	20.22	46.3	0.80	420	436
11:19:44	20.22	48.7	0.80	451	360
11:19:59	20.22	53.3	0.81	449	324
11:20:14	20.23	43.7	0.82	444	388
11:20:29	20.24	44.7	0.80	450	461
11:20:44	20.24	44.3	0.81	437	454
11:21:00	20.26	41.2	0.81	455	451
11:21:15	20.24	41.2	0.80	537	443
11:21:30	20.27	40.2	0.79	536	453
11:21:45	20.26	38.7	0.78	476	439
11:22:00	20.28	36.7	0.77	458	534
11:22:15	20.27	38.7	0.76	507	538
11:22:30	20.28	38.7	0.78	387	506
11:22:45	20.28	37.2	0.76	306	476
11:23:00	20.29	35.8	0.69	292	500
11:23:15	20.32	31.7	0.62	350	441
11:23:30	20.32	28.3	0.62	397	323
11:23:45	20.33	23.2	0.67	420	289
11:24:00	20.30	22.3	0.71	441	329
11:24:15	20.30	19.3	0.76	468	393
11:24:30	20.29	18.8	0.80	466	417
11:24:45	20.29	19.8	0.79	448	452
11:25:00	20.30	17.3	0.80	450	484
11:25:15	20.29	19.3	0.80	446	487
11:25:30	20.31	20.3	0.82	474	470
11:25:45	20.29	24.3	0.84	453	473
11:26:00	20.29	27.7	0.89	498	457
11:26:16	20.28	33.3	0.94	479	497
11:26:31	20.26	34.3	0.95	720	477
11:26:46	20.26	46.3	1.06	425	519

Delete

11:27:01	20.19	62.4	1.32	1060H	503
11:27:16	20.13	81.8	1.47	779	642
11:27:31	20.09	111.7	1.46	725	1103H
11:27:36	NOX RANGE TO 2500				
11:27:46	20.11	111.2	1.32	510	1221H
11:28:01	20.19	96.3	1.08	414	870
11:28:16	20.27	78.8	0.82	503	855
11:28:31	20.34	51.7	0.79	574	633
11:28:46	20.31	45.7	0.89	634	422
11:29:01	20.28	40.7	0.98	589	549
11:29:16	20.28	41.2	0.98	559	546
11:29:31	20.28	40.7	0.94	426	667
11:29:46	20.30	40.2	0.89	612	625
11:29:54	HAS BEEN IN NO MODE ALL ALONG NOW TO NO				
11:30:01	20.30	38.2	0.86	568	573
11:30:08	NOW TO NOX				
11:30:16	20.32	35.3	0.82	540	589
11:30:31	20.35	32.3	0.77	549	589
11:30:46	20.34	31.7	0.77	547	553
11:31:01	20.35	30.3	0.79	538	487
11:31:17	20.33	29.3	0.83	568	497
11:31:32	20.33	33.3	0.86	530	486
11:31:47	20.32	32.3	0.88	511	469
11:32:02	20.31	37.7	0.88	483	493
11:32:17	20.32	36.7	0.89	516	476
[illegible]	20.31	35.8	0.88	510	435

11:33:17	20.32	31.3	0.87	514	415
11:33:32	20.31	29.3	0.87	518	422
11:33:47	20.32	30.8	0.88	496	430
11:34:02	20.31	30.3	0.89	580	408
11:34:17	20.31	31.3	0.93	621	405
11:34:32	20.30	32.8	0.97	562	379
11:34:47	20.28	34.8	0.96	510	436
11:35:02	20.30	34.8	0.95	527	495
11:35:17	20.30	31.7	0.94	555	433
11:35:32	20.31	38.7	0.92	549	372
11:35:47	20.31	34.3	0.90	524	373
11:36:02	20.32	35.8	0.88	503	410
11:36:18	20.33	35.8	0.87	532	383
11:36:33	20.32	34.3	0.86	589	364
11:36:48	20.33	33.8	0.86	560	340
11:37:03	20.32	31.3	0.83	566	348
11:37:18	20.34	29.7	0.81	565	411
11:37:33	20.33	30.3	0.81	543	394
11:37:48	20.34	30.8	0.79	445	369
11:38:03	20.35	34.3	0.79	456	385
11:38:18	20.33	34.8	0.83	514	354
11:38:33	20.34	37.7	0.82	517	257
11:38:48	20.33	40.2	0.82	510	247
11:39:03	20.33	45.2	0.83	453	288
11:39:18	20.33	43.2	0.85	491	303
11:39:33	20.31	47.2	0.86	547	291
11:39:48	20.31	48.3	0.86	511	226
11:40:03	20.30	52.8	0.88	558	238
11:40:18	20.30	46.7	0.88	575	302
11:40:33	20.31	55.3	0.86	557	279
11:40:48	20.31	44.7	0.85	524	316
11:41:03	20.32	46.7	0.85	578	323
11:41:19	20.32	43.7	0.82	586	329
11:41:34	20.35	44.7	0.80	580	263
11:41:49	20.35	47.7	0.80	574	307
11:42:04	20.36	43.2	0.79	596	322
11:42:19	20.35	50.3	0.83	602	310
11:42:34	20.32	55.3	0.88	493	310
11:42:49	20.31	62.4	0.90	560	321
11:43:04	20.29	60.4	0.89	558	351
11:43:19	20.31	58.9	0.87	573	239
11:43:34	20.32	53.8	0.79	605	263
11:43:49	20.35	49.2	0.74	615	286
11:44:04	20.37	35.8	0.71	687	281
11:44:19	20.38	35.8	0.68	711	313
11:44:34	20.39	33.3	0.68	689	321
11:44:49	20.40	29.3	0.66	676	369
11:45:04	20.40	29.8	0.64	667	408
11:45:19	20.41	31.8	0.63	700	406
11:45:34	20.42	28.8	0.62	687	398
11:45:49	20.41	26.8	0.61	681	406
11:46:04	20.43	28.3	0.59	672	448
11:46:20	20.43	24.8	0.59	684	445
11:46:35	20.44	23.7	0.59	714	433
11:46:50	20.43	22.3	0.59	660	445
11:47:05	20.44	22.8	0.59	612	459
11:47:20	20.43	24.8	0.59	576	494
11:47:35	20.43	24.8	0.59	573	481

11:48:20	20.41	27.3	0.[illegible]3	[illegible]34	[illegible]	
11:48:35	20.41	27.3	0.64	639	36[illegible]	
11:48:50	20.41	27.2	0.64	655	467	
11:49:05	20.41	27.3	0.64	580	4[illegible]	
11:49:20	20.41	28.8	0.63	614	429	
11:49:35	20.40	27.7	0.63	575	476	
11:49:50	20.41	28.8	0.64	535	409	
11:50:05	20.40	27.7	0.64	552	423	
11:50:20	20.40	28.8	0.64	616	414	
11:50:35	20.38	28.3	0.65	621	358	
11:50:50	20.39	27.7	0.67	650	375	
11:51:05	20.39	26.8	0.66	576	430	
11:51:21	20.40	29.3	0.65	600	448	
11:51:36	20.39	26.3	0.66	610	499	
11:51:51	20.39	28.8	0.65	644	420	
11:52:06	20.39	28.8	0.65	585	424	
11:52:21	20.39	29.8	0.64	569	433	
11:52:36	20.40	29.8	0.63	637	479	
11:52:51	20.39	27.7	0.64	628	456	
11:53:06	20.40	28.8	0.64	564	419	
11:53:21	20.40	28.3	0.65	579	466	
11:53:36	20.39	30.3	0.66	578	487	
11:53:51	20.39	29.3	0.68	589	431	
11:54:06	20.37	34.8	0.70	531	427	
11:54:21	20.37	36.2	0.72	586	457	
11:54:36	20.35	40.7	0.74	620	455	
11:54:51	20.35	46.8	0.73	631	409	
11:55:06	20.36	38.2	0.72	681	432	
11:55:21	20.38	35.8	0.70	657	493	
11:55:36	20.37	31.8	0.68	666	505	
11:55:51	20.38	28.8	0.69	698	532	
11:56:06	20.38	28.8	0.68	654	537	
11:56:21	20.39	28.8	0.69	676	527	
11:56:37	20.38	30.3	0.70	697	588	
11:56:52	20.38	30.3	0.71	652	540	
11:57:07	20.38	31.3	0.71	643	545	
11:57:22	20.37	34.3	0.72	585	571	
11:57:37	20.37	36.2	0.73	628	528	
11:57:52	20.35	37.7	0.73	658	522	
11:58:07	20.36	38.2	0.74	657	469	
11:58:22	20.35	39.7	0.75	637	492	
11:58:37	20.36	41.2	0.73	639	532	
11:58:52	20.36	41.2	0.72	631	517	
11:59:07	20.38	41.7	0.71	452	524	End
11:59:22	20.37	36.7	0.70	358	483	
11:59:37	20.39	31.8	0.65	276	485	Hepa Exhaust
11:59:52	20.41	25.3	0.58	235	419	
12:00:07	20.42	19.3	0.52	222	399	
12:00:22	20.45	16.3	0.43	149	361	
12:00:37	20.49	10.8	0.22	117	316	
12:00:52	20.56	4.8	0.12	97	264	
12:01:07	20.56	2.4	0.10	88	241	
12:01:22	20.57	2.4	0.09	79	233	
12:01:38	20.58	2.4	0.09	74	217	
12:01:53	20.58	0.4	0.09	69	193	
12:02:08	20.59	0.4	0.09	66	174	
12:02:23	20.59	0.9	0.09	62	156	

12:03:23	20.61	0.4	0.08	54	106
12:03:38	20.60	0.4	0.09	53	99
12:03:53	20.60	0.9	0.10	51	92
12:04:08	20.58	-0.2	0.09	50	87
12:04:23	20.60	1.3	0.09	48	82
12:04:38	20.60	0.4	0.09	48	79
12:04:53	20.61	0.4	0.08	47	76
12:05:08	20.61	2.4	0.08	47	72
12:05:23	20.61	0.4	0.08	46	69
12:05:38	20.62	0.4	0.08	46	66
12:05:53	20.61	0.9	0.09	45	65
12:06:08	20.62	-1.1	0.09	45	62
12:06:23	20.61	0.4	0.08	44	60
12:06:39	20.62	4.3	0.08	44	58
12:06:54	20.62	-0.2	0.09	43	56
12:07:09	20.63	0.9	0.09	43	54
12:07:24	20.62	0.9	0.08	42	53
12:07:39	20.63	0.9	0.08	42	52
12:07:54	20.62	1.8	0.07	42	50
12:08:09	20.64	-1.6	0.07	42	49
12:08:24	20.63	0.9	0.09	42	48
12:08:39	20.64	-0.2	0.09	42	46
12:08:54	20.63	0.9	0.09	41	45
12:09:09	20.63	0.4	0.09	41	44
12:09:24	20.63	0.4	0.09	41	44

12:09:39	20.64	0.4	0.09	41	42
12:09:54	20.64	0.4	0.08	41	42
12:10:09	20.63	0.4	0.10	41	40
12:10:24	20.63	0.4	0.11	40	39
12:10:39	20.60	0.9	0.10	41	38
12:10:54	20.63	0.9	0.09	41	37
12:11:09	20.62	0.4	0.09	41	36
12:11:24	20.64	0.4	0.08	40	35
12:11:40	20.63	-0.2	0.09	41	34
12:11:55	20.64	0.9	0.08	40	34
12:12:10	20.64	0.9	0.08	40	32
12:12:25	20.64	-1.1	0.08	39	30
12:12:40	20.65	-0.2	0.09	40	30
12:12:55	20.64	-0.2	0.09	39	29
12:13:10	20.66	0.9	0.08	39	28
12:13:25	20.65	1.4	0.09	38	28
12:13:40	20.65	-1.1	0.09	38	27
12:13:55	20.65	-0.6	0.08	37	26
12:14:10	20.64	0.9	0.08	37	26
12:14:25	20.65	-0.2	0.09	37	25
12:14:40	20.64	0.4	0.09	36	25
12:14:55	20.65	-0.2	0.08	36	23
12:15:10	20.64	-0.2	0.07	36	23
12:15:25	20.65	0.9	0.09	36	23
12:15:40	20.65	0.9	0.07	36	22
12:15:55	20.65	0.9	0.09	36	22
12:16:10	20.66	-0.6	0.08	36	22
12:16:25	20.65	-0.2	0.09	36	21
12:16:41	20.67	1.8	0.11	36	21
12:16:56	20.66	-1.1	0.08	36	21
12:17:11	20.66	0.9	0.09	36	21
12:17:26	20.65	-0.6	0.08	36	20
12:17:41	20.66	0.9	0.08	[illegible]	20

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12:18:26	20.17	135.9	2.24	2060	[illegible]
12:18:41	19.60	271.1	[illegible]	2345	1410
12:18:46 ON LINE POST [redacted]H 1/20/96 Bomaster					
12:18:56	19.40	343.5	3.66	2491	1755
12:19:11	19.35	414.7	3.73	2405	1875
12:19:26	19.41	327.0	3.65	2169	2052
12:19:41	19.44	315.1	3.51	2032	2330
12:19:56	19.50	397.2	3.26	2089	2118
12:20:11	19.59	229.4	3.00	2217	1909
12:20:26	19.67	205.9	2.88	2099	1606
12:20:41	19.75	154.9	2.63	2160	1632
12:20:56	19.83	141.9	2.50	2243	1879
12:21:11	19.89	107.2	2.44	2246	1672
12:21:26	19.90	105.2	2.44	2256	1749
12:21:42	19.91	99.8	2.44	2279	1815
12:21:49 TECO NOX IN N O X MODE					
12:21:57	19.92	97.8	2.39	2068	1936
12:22:12	19.93	94.8	2.29	2049	1934
12:22:27	19.99	86.8	2.11	2183	1919
12:22:42	20.01	80.8	2.03	2216	1756
12:22:57	20.02	83.8	2.05	2155	1674
12:23:12	20.03	82.4	2.01	2175	1886
12:23:27	20.05	76.4	1.93	2157	1934
12:23:42	20.08	82.9	1.90	2148	1896
12:23:57	20.08	78.9	1.89	2148	1937
12:24:12	20.09	78.4	1.89	2272	1920
12:24:27	20.09	79.8	1.89	2186	1897
12:24:42	20.09	82.9	1.89	2184	1887
12:24:57	20.10	85.3	1.89	2163	2024
12:25:12	20.09	87.8	1.85	2150	1989
12:25:27	20.11	79.3	1.84	2115	1955
12:25:42	20.10	77.3	1.84	2150	1936
12:25:57	20.09	80.8	1.84	2107	1913
12:26:12	20.10	81.8	1.87	1840	1899
12:26:27	20.08	97.8	1.89	1638	1924
12:26:42	19.97	188.0	2.48	1343	1858
12:26:58	19.61	267.5	3.39	1281	1842
12:27:13	19.29	365.0	3.53	1331	1336
12:27:28	19.40	319.6	3.10	1633	1312
12:27:43	19.52	287.5	2.91	1887	896
12:27:58	19.62	243.9	2.81	1974	1007
12:28:13	19.66	-11.6L	2.76	2063	1338
12:28:28	19.74	167.4	2.70	1962	1583
12:28:43	19.78	145.9	2.65	1810	1730
12:28:58	19.77	154.4	2.61	1855	1926
12:29:13	19.79	145.0	2.50	1890	1820
12:29:28	19.81	145.9	2.41	1836	1645
12:29:43	19.85	147.4	2.35	1853	1614
12:29:58	19.89	126.5	2.29	1772	1626
12:30:13	19.90	150.9	2.22	1773	1710
12:30:28	19.91	132.0	2.26	1890	1630
12:30:43	19.86	134.9	2.41	1909	1593
12:30:58	19.81	141.9	2.49	1650	1583
12:31:13	19.81	149.9	2.52	1614	1655
12:31:28	19.74	184.0	2.70	1612	1740
12:31:43	19.63	215.9	2.97	1797	1558

12:31:59	19.55	212.9	3.05	1803	1426
12:32:14	19.60	204.5	2.98	1675	1387
12:32:29	19.64	168.4	2.90	1700	1536
12:32:44	19.68	212.4	2.89	1615	1650
12:32:46	SWITCH TO NO MODE				
12:32:59	19.65	170.9	2.99	851	1576
12:33:14	19.62	184.0	3.13	1900	1565
12:33:29	19.59	272.0	3.27	2478	1503
12:33:44	19.49	351.0	3.91	1822	1527
12:33:59	19.17	468.6	4.60	773	2107
12:34:14	19.10	494.6	4.35	723	2560
12:34:29	19.22	488.6	3.89	833	2416
12:34:44	19.37	407.6	3.48	1107	1541
12:34:59	19.48	373.7	3.20	1387	1026
12:35:14	19.65	224.5	2.93	1469	1266
12:35:29	19.76	185.5	2.70	1630	1522
12:35:44	19.86	125.5	2.56	1453	1857
12:35:59	19.89	113.8	2.54	1599	2015
12:36:14	19.90	97.8	2.55	1608	2060
12:36:29	19.91	98.8	2.50	1436	1978
12:36:44	19.93	98.3	2.46	1431	2047
12:37:00	19.94	102.3	2.44	1498	2039
12:37:15	19.92	106.3	2.44	1788	1914
12:37:30	19.94	119.5	2.37	2560H	1911
12:37:45	19.90	297.0	3.09	1811	1968
12:38:00	19.43	368.5	4.07	1068	1785
12:38:15	19.23	486.0	4.47	349	3028
12:38:30	19.10	466.7	4.29	281	1898
12:38:45	19.21	460.1	3.79	299	1780
12:39:00	19.38	360.5	3.38	468	674
12:39:15	19.48	295.0	3.07	453	750
12:39:30	19.61	213.4	2.76	322	851
12:39:45	19.70	196.5	2.58	356	998
12:40:00	19.75	175.4	2.51	464	1132
12:40:15	19.76	163.9	2.48	738	1063
12:40:30	19.81	147.5	2.36	723	1006
12:40:45	19.88	139.4	2.23	665	1154
12:41:00	19.95	123.0	2.08	655	1432
12:41:15	19.98	125.5	1.95	823	1516
12:41:30	20.03	113.8	1.84	716	1487
12:41:45	20.06	110.3	1.78	1041	1512
12:42:01	20.09	106.8	1.74	1117	1529
12:42:16	20.11	100.3	1.69	1287	1678
12:42:31	20.15	98.3	1.66	1089	1783
12:42:46	20.16	99.8	1.60	1116	1919
12:43:01	20.16	95.3	1.59	1148	2004
12:43:16	20.19	92.8	1.57	1448	1846
12:43:31	20.19	90.3	1.59	1314	1948
12:43:46	20.19	89.8	1.65	1543	1857
12:44:01	20.18	98.8	1.66	1452	2091
12:44:16	20.18	98.8	1.68	1253	2091
12:44:31	20.18	108.3	1.68	1222	2085
12:44:46	20.17	111.3	1.71	1263	2168
12:45:01	20.16	108.3	1.70	1369	1931
12:45:16	20.16	96.8	1.68	1142	1875
12:45:31	20.16	98.8	1.65	1152	1936

End Post Demister

12:45:46	20.16	114.3	1.65	49	2066
12:46:01	20.16	90.8	1.66	14	1876
12:46:16	20.25	62.4	0.84	12	1881
12:46:31	20.46	40.8	0.35	11	1593
12:46:46	20.54	14.4	0.20	11	1165
12:47:02	20.59	9.8	0.13	11	913

12:48:02	20.61	0.4	0.08	10	420
12:48:17	20.62	0.9	0.09	10	362
12:48:32	20.61	-0.2	0.09	10	324
12:48:47	20.63	0.9	0.07	9	290
12:49:02	20.61	0.4	0.09	9	266
12:49:17	20.62	1.4	0.09	9	248
12:49:32	20.60	-0.2	0.09	9	230
12:49:47	20.62	0.9	0.08	9	216
12:50:02	20.61	0.4	0.09	9	203
12:50:17	20.61	0.4	0.09	9	193
12:50:32	20.62	0.4	0.09	9	182
12:50:47	20.62	-0.2	0.09	9	175
12:51:02	20.63	1.8	0.09	9	167
12:51:17	20.62	-0.2	0.09	9	160
12:51:32	20.63	0.9	0.09	8	155
12:51:47	20.62	0.4	0.09	8	148
12:52:03	20.62	0.4	0.09	8	143
12:52:18	20.63	-0.2	0.08	8	138
12:52:33	20.62	0.4	0.09	8	132
12:52:48	20.63	1.4	0.08	8	130
12:53:03	20.62	0.9	0.09	8	127
12:53:18	20.61	0.4	0.09	8	122
12:53:33	20.61	0.4	0.09	8	119
12:53:48	20.61	0.4	0.09	8	115
12:54:03	20.62	0.4	0.07	8	111
12:54:18	20.61	0.4	0.09	8	109
12:54:33	20.63	0.4	0.09	8	106
12:54:48	20.62	0.4	0.09	8	104
12:55:03	20.61	1.4	0.09	8	101
12:55:18	20.62	0.4	0.09	8	100
12:55:33	20.61	0.4	0.08	8	96
12:55:48	20.62	0.4	0.09	8	96
12:56:03	20.61	-0.2	0.09	8	93
12:56:18	20.61	0.4	0.07	8	90
12:56:33	20.61	0.4	0.09	8	89
12:56:48	20.61	-0.2	0.08	8	88
12:57:03	20.62	-0.2	0.08	8	85
12:57:19	20.60	0.9	0.09	8	83
12:57:34	20.62	-0.1	0.09	8	81
12:57:49	20.61	0.4	0.09	8	79
12:58:04	20.60	-0.6	0.09	8	78
12:58:19	20.63	1.4	0.09	8	77
12:58:34	20.60	0.9	0.09	8	75
12:58:49	20.60	1.8	0.08	8	74
12:59:04	20.60	0.9	0.09	8	72
12:59:19	20.59	0.4	0.08	8	71
12:59:34	20.60	1.4	0.08	8	70
12:59:49	20.60	0.4	0.09	8	69
13:00:04	20.61	0.4	0.08	8	68
13:00:19	20.61	0.9	0.09	8	66
13:00:34	20.60	0.4	0.09	8	64
13:00:49	20.61	1.4	0.09	8	63
13:01:04	20.59	0.4	0.09	8	62
13:01:19	20.60	0.4	0.08	7	61
13:01:34	20.59	0.4	0.08	7	61
13:01:49	20.60	0.4	0.09	8	59
13:02:04	20.59	-0.2	0.10	7	58

13:02:50	20.56	66.9	0.31	2298	54
13:03:05	20.42	128.0	1.57	2412	71
13:03:20	20.08	266.6	2.75	2127	1820
13:03:35	19.67	309.6	3.74	2022	1989
13:03:50	19.36	346.0	4.43	2355	1953
13:04:05	19.16	369.0	4.74	2085	2571
13:04:20	19.04	399.2	4.98	2079	2020
13:04:35	18.96	394.7	5.15	778	1938
13:04:50	18.90	403.2	5.30	843	2066
13:05:05	18.85	427.1	5.47	3674H	2276
13:05:20	18.80	350.5	5.59	3335H	2356
13:05:35	18.76	459.2	5.67	3340H	2521
13:05:50	18.73	360.5	5.65	3246H	2393
13:06:05	18.73	385.7	5.61	3533H	2349
13:06:20	18.74	412.7	5.54	2847	2199
13:06:35	18.78	324.5	5.50	3029	2361
13:06:50	18.79	352.5	5.47	3239	2382
13:07:05	18.81	341.0	5.46	2878	2403

13:07:08 ON LINE AT MELTER EXHAUST 1/20/95 C.U.

13:07:21	18.81	331.0	5.44	3082	2304

13:07:30 TECO IN NOX MODE

13:07:36	18.81	332.0	5.42	3075	2366
13:07:51	18.82	320.6	5.41	3205	2336
13:08:06	18.81	314.0	5.45	3418	2217
13:08:21	18.81	309.1	5.52	3274	2527
13:08:36	18.77	327.0	5.55	3755	2364
13:08:51	18.77	314.0	5.53	3837	2494
13:09:06	18.77	338.6	5.52	4031	2428
13:09:21	18.77	373.7	5.48	3562	2306
13:09:36	18.80	387.7	5.51	3399	2573
13:09:51	18.79	399.2	5.59	3204	3161
13:10:06	18.79	396.7	5.81	3464	2668
13:10:21	18.75	403.6	6.02	3294	2341
13:10:36	18.67	401.2	6.09	3865	2083
13:10:51	18.64	401.2	6.00	3660	2132
13:11:06	18.62	401.6	5.93	3673	2168
13:11:21	18.64	385.7	5.91	4289	2161
13:11:36	18.65	374.1	5.90	5679	2005
13:11:51	18.64	421.5	5.90	5678	1979
13:12:06	18.64	445.7	5.81	4906	2095
13:12:22	18.65	463.2	5.77	4651	2263
13:12:37	18.68	486.6	5.78	4583	2997
13:12:52	18.67	479.1	5.97	4529	3530
13:13:07	18.65	465.2	6.07	4431	2298
13:13:22	18.59	498.6	6.09	4302	1547
13:13:37	18.56	488.0	5.98	3925	1631
13:13:52	18.58	462.7	5.83	3612	1958
13:14:07	18.63	360.5	5.63	3396	2245
13:14:22	18.72	286.5	5.27	3383	2532
13:14:37	18.82	264.5	4.75	3340	2702
13:14:52	19.03	244.6	4.07	3194	2774
13:15:07	19.23	209.9	3.55	3187	2822
13:15:22	19.42	166.4	3.04	3309	2814
13:15:37	19.59	133.4	2.65	3343	2848
13:15:52	19.69	115.3	2.33	3489	2886
13:16:07	19.81	88.3	2.04	3642	2998
13:16:22	19.87	80.8	1.89	3527	3067
13:16:37	19.93	62.9	1.71	3569	3168
13:16:52	19.99	55.3	1.52	3429	3283

13:17:02 SWITCH TO NO MODE

13:17:07	20.02	45.2	1.38	4242	3403
13:17:23	20.07	40.7	1.28	235	3493
13:17:38	20.06	36.7	1.24	244	3607
13:17:53	20.07	35.3	1.24	207	3503
13:18:08	20.04	34.8	1.25	832	3541
13:18:23	20.05	32.8	1.22	768	3495
13:18:38	20.04	32.3	1.22	700	3720
13:18:53	20.03	31.3	1.24	158	3798
13:19:08	20.02	33.3	1.27	147	3810
13:19:23	19.99	31.8	1.29	158	3896
13:19:38	20.01	30.3	1.28	164	3861
13:19:53	20.00	29.8	1.27	178	3946
13:20:08	20.02	29.3	1.26	167	3932
13:20:23	20.01	29.3	1.25	142	4083
13:20:38	20.02	28.8	1.22	156	4038
13:20:53	20.03	27.3	1.21	141	4127
13:21:08	20.02	27.8	1.21	151	4237
13:21:23	20.03	27.8	1.18	135	4402
13:21:38	20.02	26.3	1.17	123	4217
13:21:53	20.03	25.8	1.15	111	4346
13:22:08	20.03	25.8	1.13	80	4290
13:22:24	20.03	22.3	1.12	57	4514

13:22:38 OF LINE MELTER EXHAUST DRAIN CONDENSOR

13:22:39	20.03	20.8	1.12	44	4526
13:22:54	20.04	16.8	0.96	34	4270
13:23:09	20.11	14.8	0.74	27	4019
13:23:24	20.18	12.8	0.53	21	3416
13:23:39	20.25	8.8	0.39	18	2958
13:23:54	20.29	7.8	0.29	16	2459
13:24:09	20.32	4.8	0.22	16	2070
13:24:24	20.33	3.8	0.17	15	1787
13:24:39	20.36	2.4	0.16	13	1535
13:24:54	20.36	2.9	0.14	13	1365
13:25:09	20.35	2.4	0.13	13	1192
13:25:24	20.37	0.9	0.13	11	1062
13:25:39	20.38	1.4	0.11	11	976
13:25:54	20.38	0.9	0.12	10	880
13:26:09	20.38	0.9	0.11	11	811
13:26:24	20.39	1.4	0.11	14	752
13:26:39	20.37	1.9	0.20	17	689
13:26:54	20.35	2.4	0.29	17	636
13:27:09	20.32	2.9	0.36	18	584
13:27:24	20.31	2.9	0.46	17	551
13:27:40	20.27	3.4	0.49	17	543
13:27:55	20.26	4.3	0.50	16	579
13:28:10	20.26	4.3	0.49	16	632
13:28:25	20.26	5.3	0.49	16	664
13:28:40	20.27	4.3	0.46	19	689
13:28:55	20.26	4.8	0.45	19	723
13:29:10	20.26	4.8	0.52	26	724
13:29:25	20.23	6.3	0.57	27	721
13:29:40	20.20	7.3	0.57	20	705
13:29:55	20.21	7.3	0.54	16	733
13:30:10	20.21	7.3	0.48	13	773
13:30:25	20.25	6.8	0.39	11	872
13:30:40	20.28	5.8	0.34	10	814
13:30:55	20.30	5.3	0.28	9	818
13:31:10	20.34	3.4	0.24	9	839

13:31:55	20.38	1.9	0.16	8	951	
13:32:10	20.38	1.4	0.15	8	927	
13:32:25	20.38	1.9	0.14	7	893	
13:32:41	20.38	0.9	0.13	7	858	
13:32:56	20.38	0.9	0.12	7	820	
13:33:11	20.39	0.4	0.12	8	773	
13:33:26	20.39	0.9	0.11	8	732	
13:33:41	20.40	0.9	0.11	8	703	
13:33:56	20.40	0.9	0.12	7	657	
13:34:11	20.39	1.4	0.11	7	632	
13:34:26	20.40	0.9	0.11	8	608	
13:34:41	20.39	0.4	0.11	8	580	
13:34:56	20.39	0.9	0.10	8	554	
13:35:11	20.39	0.9	0.10	8	533	
13:35:26	20.40	0.4	0.10	8	517	
13:35:41	20.40	0.9	0.09	8	503	
13:35:56	20.40	1.4	0.10	6	476	
13:36:11	20.41	0.4	0.11	6	455	
13:36:26	20.41	0.4	0.11	7	433	
13:36:41	20.41	0.4	0.11	19	423	
13:36:56	20.41	0.9	0.10	221	391	
13:37:11	20.40	34.8	0.18	386	395	
13:37:26	20.28	60.4	1.73	550	394	
13:37:42	19.51	82.4	3.88	488	482	
13:37:57	18.96	135.0	4.80	231	523	
13:38:12	18.66	172.9	5.35	175	727	Back ON [illegible]
13:38:27	18.49	225.5	5.59	306	596	[illegible] NO Mode
13:38:42	18.45	225.5	5.69	423	599	
13:38:57	18.39	225.0	5.79	399	503	
13:39:12	18.39	244.7	5.76	567	531	
13:39:27	18.43	233.9	5.79	378	555	
13:39:42	18.39	235.4	5.88	764	677	
13:39:45 SWITCH BACK TO NOX MODE						
13:39:57	18.40	223.0	5.78	909	503	
13:40:12	18.46	209.5	5.64	1148	771	
13:40:27	18.49	200.5	5.58	1215	684	
13:40:42	18.53	184.0	5.56	1177	658	
13:40:57	18.53	190.0	5.51	952	925	
13:41:12	18.57	176.5	5.48	1322	944	
13:41:27	18.56	174.9	5.61	1006	1065	
13:41:42	18.50	189.5	5.78	1627	673	
13:41:57	18.45	181.0	5.81	992	1046	
13:42:12	18.44	186.6	5.88	1126	1007	
13:42:27	18.41	194.6	5.97	788	869	
13:42:43	18.40	202.5	6.06	1012	1107	
13:42:47 SWITCH TO NO MODE						
13:42:58	18.34	208.5	6.17	1075	648	
13:43:13	18.29	199.0	6.31	1582	912	
13:43:28	18.26	200.0	6.33	1681	628	
13:43:43	18.27	187.0	6.34	1900	801	
13:43:58	18.34	183.5	6.18	1804	1440	
13:44:13	18.42	164.9	5.91	1812	1382	
13:44:28	18.54	148.5	5.53	2068	1538	
13:44:33 BACK TO NOX						
13:44:43	18.67	143.5	5.22	2056	1439	
13:44:58	18.77	140.0	4.98	1641	1627	
13:45:13	18.84	144.5	4.82	2079	1279	
13:45:28	18.87	133.5	4.71	1860	1444	
13:45:43	18.89	144.5	4.62	1749	1237	

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1225
13:46:02 SWITCH TO NO					
13:46:13	18.86	145.9	4.83	768	1250
13:46:28	18.86	166.9	4.73	1902	1007
13:46:43	18.84	175.9	4.70	1910	952
13:46:58	18.87	166.9	4.52	2560	885
13:47:13	18.95	172.9	4.36	2560	1097
13:47:18 RANGE TO 10000					
13:47:28	19.05	184.0	4.28	[illegible]	1431
13:47:44	19.10	178.9	4.15	2037	1890
13:47:59	19.18	172.9	3.90	1286	2393
13:48:14	19.27	177.4	3.61	1365	2340
13:48:29	19.34	170.4	3.31	1276	1949
13:48:44	19.44	175.9	3.03	1463	1216
13:48:59	19.49	157.4	2.93	2306	1037
13:49:14	19.52	148.5	2.95	2324	1157
13:49:29	19.52	143.0	2.94	2352	1255
13:49:43 RANGE IS RIGHT AT 2500					
13:49:44	19.53	148.5	2.97	1964	1483
13:49:59	19.51	144.5	3.08	1762	1665
13:50:14	19.48	155.4	3.15	1416	1813
13:50:29	19.42	159.9	3.37	2057	1762
13:50:39 BACK TO NOX					
13:50:44	19.31	185.5	3.64	1172	1692
13:50:59	19.21	225.0	3.88	2560	1264
13:51:14	19.10	239.9	4.11	2491	1361
13:51:29	19.04	247.1	4.10	2400	1280
13:51:44	19.07	295.0	4.04	1953	1471
13:51:59	19.07	266.1	4.01	1585	1423
13:52:14	19.07	252.7	3.93	1394	1179
13:52:29	19.12	242.5	3.66	1281	1094
13:52:39 END TESTING					

13:52:45	19.20	193.1	3.33	1136	938
13:53:00	19.39	202.0	2.88	972	915
13:53:15	19.51	150.5	2.52	927	899
13:53:30	19.61	117.5	2.26	885	885
13:53:45	19.71	91.3	2.05	845	815
13:54:00	19.76	84.8	1.90	783	779
13:54:15	19.84	66.4	1.70	836	759
13:54:30	19.92	54.9	1.54	1147	726
13:54:45	19.98	51.8	1.39	1845	667
13:55:00	20.08	33.3	1.02	1986	655
13:55:15	20.18	30.3	0.61	2376	598
13:55:30	20.29	16.4	0.37	2473	529
13:55:45	20.32	12.9	0.28	2524	914
13:56:00	20.29	10.8	0.23	2532	1341
13:56:15	20.32	4.8	0.19	2481	1754
13:56:30	20.35	2.9	0.18	2411	2019
13:56:45	20.36	1.4	0.13	2326	2126
13:57:00	20.39	0.4	0.14	2252	2184
13:57:15	20.38	0.9	0.14	2016	2180
13:57:30	20.39	-0.1	0.14	1268	2143
13:57:33 INTRODUCE N2 TO SYSTEM					
13:57:45	20.38	1.9	0.14	1033	2072
13:58:01	16.21	-0.1	0.11	914	2009
13:58:16	8.82	0.9	0.11	854	1963
13:58:31	4.09	-0.1	0.10	817	1790
13:58:46	2.10	3.4	0.10	784	1655
13:59:01	1.34	-1.1	0.10	764	1557

13:59:31	0.76	1.4	0.09	738	1416
13:59:46	0.67	0.4	0.09	16	1353
13:59:53	ZERO IN NO MODE				
14:00:01	0.63	1.6	0.08	7	1306
14:00:16	0.61	0.4	0.09	6	1246
14:00:31	0.59	-0.1	0.08	742	1201
14:00:43	ZERO IN NOX MODE TECO				
14:00:46	0.58	2.4	0.08	705	1162
14:01:01	0.59	0.4	0.08	700	1127
14:01:16	0.58	-0.6	0.09	688	1106
14:01:31	0.58	0.9	0.08	683	1068
14:01:46	0.58	-0.1	0.08	674	1034
14:02:01	0.57	0.4	0.08	673	1015
2a 14:02:09	442 PPM NOX TO SYSTEM				
14:02:16	0.57	0.9	0.08	1015	983
14:02:31	0.57	0.4	0.08	1059	955
14:02:46	0.73	0.4	0.09	1047	935
14:03:02	0.84	1.4	0.08	1048	912
14:03:17	0.73	0.4	0.07	468	1240
14:03:19	442 IN NO MODE				
14:03:32	0.65	-0.6	0.08	450	1218
14:03:47	0.62	1.9	0.07	450	1207
14:04:02	0.60	-1.1	0.08	450	1181
14:04:17	0.59	3.4	0.08	450	1166
14:04:32	0.60	0.4	0.08	450	1157
14:04:47	0.59	-0.1	0.07	450	477
14:04:50	ML TO NO MODE				
14:05:02	0.59	0.4	0.08	450	459
14:05:17	0.59	2.4	0.08	451	446
14:05:32	0.58	0.9	0.07	449	[illegible]
14:05:47	0.58	0.4	0.06	451	427
14:06:01	90.7 PPM CO ZERO ML				
14:06:02	0.59	1.9	0.08	450	424
14:06:17	0.58	-0.6	0.06	38	424
14:06:27	ML IN NO MODE				
14:06:32	0.59	13.8	0.07	9	419
14:06:47	0.70	23.8	0.07	8	415
14:07:02	0.68	47.3	0.08	8	16
14:07:17	0.62	62.4	0.07	8	2
14:07:32	0.59	79.6	0.07	7	1
14:07:47	0.57	86.3	0.07	7	-0
14:08:03	0.58	90.3	0.07	7	-0
14:08:18	0.58	[illegible]	0.09	7	-1
14:08:33	0.56	90.8	0.07	7	-101.
14:08:48	0.56	91.3	0.07	654	566
14:08:50	TECO AND ML BACK TO NOX				
14:09:03	0.56	80.4	0.17	579	571
14:09:11	11.51 O2 11.02 CO2				
14:09:18	2.06	58.4	3.17	525	567
14:09:33	6.21	38.3	6.93	479	542
14:09:48	9.33	19.3	8.78	448	381
14:10:03	10.54	14.9	9.49	420	338
14:10:18	11.15	5.8	9.87	398	301
14:10:33	11.38	3.4	10.05	379	275
14:10:48	11.48	3.4	10.17	364	262
14:11:03	11.54	0.9	10.23	348	251
14:11:18	11.55	0.4	10.26	333	245
14:11:33	11.57	1.4	10.32	320	237
14:11:48	11.56	0.4	10.35	310	229
14:12:03	11.57	0.4	10.38	301	220
14:12:18	11.57	0.4	10.42	292	213

14:13:04	11.57	0.4	10.46	274	200
14:13:19	11.57	0.4	10.47	268	198
14:13:34	11.57	-0.1	10.45	263	195
14:13:49	11.57	0.4	10.50	261	194
14:14:04	11.55	0.4	10.50	255	194
14:14:19	11.57	0.4	[illegible]	255	200

14:14:23 END CALS

14:14:34	11.56	0.4	10.51	250	195

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19:29:04	20.79
19:29:34	17.77
19:30:04	16.48
19:30:34	16.39
19:31:05	16.36
19:31:35	16.34
19:32:05	16.35
19:32:35	16.34
19:33:05	14.82
19:33:35	19.39
19:34:05	20.37
19:34:35	20.67
19:35:05	16.71
19:35:35	6.22
19:36:06	3.97
19:36:36	3.36
19:37:06	3.60

19:37:31 ZERO BIAS AT MELTER EXHAUST

19:37:36	3.60
19:38:06	3.30
19:38:36	3.56
19:39:06	0.66
19:39:36	10.83
19:40:06	15.20
19:40:36	16.48
19:41:07	17.61
19:41:37	18.72
19:42:07	18.29
19:42:37	2.48
19:43:07	0.51
19:43:37	0.33
19:44:07	0.32
19:44:22	0.31
19:44:37	0.31
19:44:52	0.31
19:45:07	0.29
19:45:22	3.00
19:45:37	6.46

19:45:50 MOVE TO POST DEMISTER

19:45:53	7.58
19:46:08	7.96
19:46:38	10.99
19:47:08	16.22
19:47:38	18.35
19:48:08	20.43
19:48:38	20.83
19:49:08	20.85
19:49:38	20.84
19:50:08	20.85
19:50:38	20.87
19:51:09	20.90
19:51:39	20.92
19:52:09	20.90
19:52:39	20.89
19:53:09	20.86

19:53:39	20.88
19:54:09	20.87
19:54:39	20.89
19:55:09	20.90
19:55:39	20.81
19:56:09	20.94
19:56:40	20.95
19:57:10	20.91
19:57:40	20.91
19:58:10	20.89
19:58:40	20.86
19:59:10	20.81
19:59:40	20.72
20:00:10	8.15
20:00:40	2.09
20:00:40	2.09
20:00:41	2.09
20:00:41	2.09
20:00:41	2.09
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20:00:51	2.09
20:00:52	2.09
20:00:53	2.09
20:00:56	1.45
20:00:56	1.45
20:00:56	1.45
20:00:57	1.45
20:00:59	1.45
20:01:00	1.45
20:01:01	1.45
20:01:02	1.45
20:01:03	1.45
20:01:04	1.45
20:01:05	1.45
20:01:06	1.45
20:01:07	1.45
20:01:08	1.45
20:01:09	1.45
20:01:12	1.21
20:01:12	1.21
20:01:12	1.21
20:01:13	1.21
20:01:14	1.21
20:01:15	1.21
20:01:16	1.21
20:01:17	1.21
20:01:18	1.21
20:01:20	1.21
20:01:21	1.21
20:01:22	1.21
20:01:52	4.63
20:02:22	1.84
20:02:52	1.21
20:02:59 ZERO BIAS HEPA FILTER EXHAUST •	
20:03:22	1.12
20:03:52	1.12
20:04:22	1.11
20:04:52	1.11
20:05:22	1.12
20:05:52	1.11
20:06:22	1.16
20:06:52	1.24
20:07:22	1.39
20:07:52	2.01
20:08:22	4.99
20:08:52	10.23
20:09:22	15.10
20:09:52	15.26
20:10:22	19.67
20:10:52	20.70
20:11:23	20.86

20:11:53	20.87
20:12:23	20.87
20:12:53	20.89
20:13:23	20.88
20:13:53	21.08
20:14:23	20.34
20:14:53	5.71
20:15:03	ZERO BIAS HEPA FILTER
20:15:23	1.35
20:15:53	1.02
20:16:23	0.95
20:16:53	0.92
20:17:23	14.81
20:17:53	20.54
20:18:23	20.75
20:18:53	20.72
20:19:23	20.74
20:19:53	20.82
20:20:23	20.86
20:20:53	20.91
20:21:23	20.92
20:21:53	20.92
20:22:23	20.93
20:22:54	20.90
20:23:24	20.94
20:23:54	20.94
20:24:24	14.46
20:24:54	5.79
20:25:24	1.70
20:25:54	1.35
20:26:24	1.32
20:26:54	1.31
20:27:24	1.40
20:27:54	1.60
20:28:24	2.14
20:28:54	9.88
20:29:24	20.21
20:29:54	20.89
20:30:24	20.97
20:30:54	20.98
20:31:24	20.95
20:31:54	20.96
20:32:24	20.98
20:32:54	20.98
20:33:24	20.98
20:33:55	21.01
20:34:25	21.02
20:34:55	21.01
20:35:25	21.00
20:35:55	20.98
20:36:25	20.99
20:36:55	21.00
20:37:25	21.01
20:37:55	20.99
20:38:25	21.00
20:38:55	21.01
20:39:25	21.01
20:39:55	21.02
20:40:25	21.02
20:40:55	21.04

20:41:25	20.90
20:41:55	21.04
20:42:25	21.03
20:42:55	21.04
20:43:25	21.05
20:43:55	21.06
20:44:25	21.06
20:44:55	21.06
20:45:26	21.05
20:45:56	21.04
20:46:26	21.06
20:46:56	21.08
20:47:26	21.18
20:47:56	21.09
20:48:26	21.01
20:48:56	20.93
20:49:26	20.79
20:49:56	17.49
20:50:26	7.05
20:50:56	1.69
20:51:26	1.28
20:51:56	1.19
20:52:26	1.12
20:52:56	1.08
20:53:26	1.11
20:53:56	5.18
20:54:26	13.47
20:54:56	16.96
20:55:26	18.35
20:55:56	18.97
20:56:26	19.33
20:56:57	19.52
20:57:27	19.64
20:57:57	19.70
20:58:27	19.74

Date: 15/31/127

Time	O2	CO	CO2	NOX	SO2	TOTAL HC
06:51:49	20.88	0.0	0.11	16H	40.7H	-0.1L
06:52:20	20.89	0.0	0.11	18H	40.6H	-0.1L
06:52:50	20.88	0.0	0.11	16H	4.1H	-0.1L

Date: 15/31/127

Time	O2	CO	CO2	NOX	SO2	THC
06:54:48	20.89	0.0	0.11	16H	4.1H	-0.1L
06:55:18	20.87	0.0	0.11	16H	4.1H	-0.1L
06:55:48	20.89	0.0	0.11	16H	4.0H	-0.1L
06:56:18	20.88	0.0	0.11	15H	4.1H	-0.1L
06:56:28 START CALIBRATION 1/19/96						
06:56:48	20.75	0.0	0.18	15H	4.0H	-0.1L
06:56:57 N2 TO O2,CO2,CO,NOX DIRECT						
06:57:18	12.36	0.0	0.13	15H	3.9H	-0.1L
06:57:48	5.84	0.0	0.09	15H	3.9H	-0.1L
06:58:18	3.23	0.0	0.07	15H	3.8H	-0.1L
06:58:49	2.35	0.0	0.07	15H	3.8H	-0.1L
06:59:19	2.03	0.0	0.07	15H	3.8H	-0.1L
06:59:49	1.93	0.0	0.07	15H	3.8H	-0.1L
07:00:19	1.88	0.0	0.07	15H	3.8H	-0.1L
07:00:49	1.88	0.0	0.07	15H	3.8H	-0.1L
07:01:19	1.78	0.0	0.07	15H	3.8H	-0.1L
07:01:49	1.79	0.0	0.07	15H	3.8H	-0.1L
07:02:19	1.80	0.0	0.07	15H	3.8H	-0.1L
07:02:49	1.80	0.0	0.07	15H	3.8H	-0.1L
07:03:19	1.82	0.0	0.07	15H	3.8H	-0.1L
07:03:49	5.86	0.0	0.06	15H	3.7H	-0.1L
07:04:19	1.68	0.0	0.07	15H	3.8H	-0.1L
07:04:49	1.71	0.0	0.06	15H	3.8H	-0.1L
07:05:19	1.71	0.0	0.07	15H	3.8H	-0.1L
07:05:49	1.71	0.0	0.06	14H	3.7H	-0.1L
07:06:19	1.70	0.0	0.06	14H	3.7H	-0.1L
07:06:49	20.68	0.0	0.11	14H	3.7H	-0.1L
07:07:19	20.66	0.0	0.12	14H	3.8H	-0.1L
07:07:49	20.65	0.0	0.12	14H	3.8H	-0.1L
07:08:19	20.63	0.0	0.12	14H	3.8H	-0.1L
07:08:49	20.63	0.0	0.12	14H	3.8H	-0.1L
07:09:19	20.63	0.0	0.11	14H	3.8H	-0.1L
07:09:49	20.52	0.0	0.11	14H	3.8H	-0.1L
07:10:20	-0.37	0.0	0.05	13H	3.8H	-0.1L
07:10:50	-0.43	0.0	0.06	14H	3.7H	-0.1L
07:11:20	-0.04	0.0	0.06	13H	3.7H	-0.1L
07:11:50	-0.07	0.0	0.06	13H	3.8H	-0.1L
07:12:20	-0.07	0.0	0.06	13H	3.7H	-0.1L
07:12:50	-0.06	0.0	0.06	13H	3.7H	-0.1L
07:13:20	-0.07	0.0	0.06	10H	3.7H	-0.1L
07:13:50	-0.07	0.0	0.06	10H	3.7H	-0.1L
07:14:20	-0.05	0.0	0.06	9H	3.7H	-0.1L
07:14:50	-0.06	0.0	0.06	9H	3.7H	-0.1L
07:15:20	-0.06	0.0	0.06	8H	3.8H	-0.1L
07:15:50	0.03	0.0	0.06	8H	3.7H	-0.1L
07:16:20	0.03	0.0	0.06	7H	3.7H	-0.1L
07:16:50	0.03	0.0	0.06	6H	3.7H	-0.1L
07:17:20	0.02	0.0	0.06	6H	3.7H	-0.1L
07:17:50	0.03	0.0	0.06	4H	3.7H	-0.1L
07:18:20	0.03	0.0	0.05	4H	3.7H	-0.1L
07:18:46 17.72 % O2 -- 17.09% CO2 461 PPM CO DIRECT						
07:18:50	0.01	0.0	0.07	4H	3.8H	-0.1L
07:19:20	0.09	0.0	1.14H	4H	3.7H	-0.1L
07:19:50	15.47	0.0	19.88H	4H	3.6H	-0.1L
07:20:20	17.94	0.0	19.88H	4H	2.8H	-0.1L

07:22:21	0.07	0.0	0.10	4H	3.7H	-0.11.
07:22:51	0.07	-0.0	0.22	4H	3.7H	-0.11.
07:23:21	0.05	0.0	0.06	4H	3.7H	-0.11.
07:23:51	10.87	0.0	19.88H	4H	3.7H	-0.11.
07:24:21	17.68	183.9H	19.88H	4H	3.0H	-0.11.
07:24:51	18.15	228.8H	19.88H	4H	2.6H	-0.11.
07:25:21	18.19	240.3H	19.88H	4H	2.5H	-0.11.
07:25:51	18.20	241.8H	15.95H	4H	2.5H	-0.11.
07:26:21	18.22	243.3	16.97H	4H	2.5H	-0.11.
07:26:51	18.23	241.3	16.98	5	2.5	-0.11.
07:27:21	18.23	240.3	16.99	4	2.5	-0.11.
07:27:51	18.23	243.8	16.97	4	2.4	-0.11.
07:28:21	18.25	243.3	17.02	4	2.5	-0.11.
07:28:51	17.69	487.4	17.02	4	2.5	-0.11.
07:29:21	17.64	486.4	17.01	4	2.4	-0.11.
07:29:51	17.64	476.5	17.00	4	2.4	-0.11.
07:30:21	17.65	480.0	17.02	4	2.5	-0.11.
07:30:51	17.66	477.5	17.03	4	2.5	-0.11.
07:31:21	17.66	465.0	17.04	4	2.5	-0.11.
07:31:51	17.65	459.5	17.04	4	2.4	-0.11.
07:32:21	17.65	463.0	17.04	4	2.4	-0.11.
07:32:52	17.66	463.0	17.02	4	2.5	-0.11.
07:33:22	17.67	462.0	17.00	4	2.4	-0.11.
07:33:31	11.51 %O2 -- 11.05 %CO2 DIRECT					
07:33:52	17.67	476.5	16.93	4	2.5	-0.11.
07:34:22	17.84	409.5	14.73	4	2.9	-0.11.
07:34:52	19.47	233.3	6.52	4	3.6	-0.11.
07:35:22	20.32	90.3	2.47	4	3.8	-0.11.
07:35:52	20.63	27.7	0.99	4	3.9	-0.11.
07:36:22	20.39	21.2	3.83	4	4.0	-0.11.
07:36:52	12.49	13.8	10.48	3	3.3	-0.11.
07:37:22	11.71	5.8	11.04	3	2.9	-0.11.
07:37:52	11.63	3.3	11.08	3	2.8	-0.11.
07:38:22	11.61	2.4	11.09	3	2.8	-0.11.
07:38:27	281.1 PPM CO DIRECT					
07:38:52	11.61	3.4	11.09	4	2.8	-0.11.
07:39:22	4.66	138.9	1.95	3	3.0	-0.11.
07:39:52	0.47	221.8	0.25	3	3.5	-0.11.
07:40:22	0.16	287.0	0.11	3	3.6	-0.11.
07:40:52	0.12	298.4	0.09	3	3.7	-0.11.
07:41:22	0.11	298.9	0.08	3	3.7	-0.11.
07:41:52	0.09	305.9	0.07	2	3.7	-0.11.
07:42:22	0.08	292.9	0.06	2	3.7	-0.11.
07:42:52	0.07	296.9	0.06	2	3.7	-0.11.
07:43:22	0.07	294.4	0.06	2	3.7	-0.11.
07:43:52	0.08	297.4	0.06	2	3.7	-0.11.
07:44:18	RE-ZERO CO ANALYZER					
07:44:23	0.08	292.4	0.06	2	3.7	-0.11.
07:44:53	0.21	282.9	1.28	2	3.7	-0.11.
07:45:23	13.67	330.5	13.79	2	3.4	-0.11.
07:45:53	1.89	170.3	1.03	2	3.1	-0.11.
07:46:23	0.20	35.3	0.15	2	3.5	-0.11.
07:46:53	0.09	4.3	0.07	2	3.6	-0.11.
07:47:23	0.08	2.4	0.06	2	3.6	-0.11.
07:47:53	0.06	1.8	0.06	2	3.6	-0.11.
07:48:23	0.06	2.4	0.06	2	3.7	-0.11.
07:48:53	0.07	1.4	0.06	2	3.6	-0.11.

07:50:53	0.07	0.9	0.06	1	3.6	-0.11.
07:51:23	0.06	0.9	0.06	1	3.6	-0.11.
07:51:53	0.05	1.8	0.06	1	3.7	-0.11.
07:52:23	0.07	0.4	0.05	1	3.6	-0.11.
07:52:53	0.07	0.9	0.05	1	3.6	-0.11.
07:53:23	0.07	0.4	0.06	1	3.6	-0.11.
07:53:53	0.06	0.4	0.06	1	3.7	-0.11.
07:54:23	0.06	-0.2	0.06	1	3.6	-0.11.
07:54:53	0.06	0.9	0.05	1	3.6	-0.11.
07:55:24	0.07	-0.2	0.05	1	3.7	-0.11.
07:55:54	0.07	0.4	0.06	1	3.6	-0.11.
07:56:24	0.06	-0.2	0.06	1	3.6	-0.11.
07:56:54	0.06	0.9	0.06	1	3.6	-0.11.
07:57:24	0.06	0.4	0.05	1	3.7	-0.11.

07:57:30 461 PPM CO DIRECT

07:57:54	0.07	-0.2	0.13	0	3.7	-0.11.
07:58:24	15.05	239.8	15.44	0	3.4	-0.11.
07:58:54	17.45	325.0	16.81	0	2.5	-0.11.
07:59:24	17.65	370.4	16.92	0	2.3	-0.11.
07:59:54	17.67	373.1	16.93	0	2.3	-0.11.
08:00:24	17.67	378.6	16.97	0	2.3	-0.11.
08:00:55	17.68	383.1	16.99	0	2.2	-0.11.
08:01:25	17.68	386.1	16.97	0	2.2	-0.11.
08:01:55	17.68	396.0	16.99	0	2.2	-0.11.
08:02:25	17.69	432.5	16.99	0	2.2	-0.11.
08:02:55	17.70	424.5	16.98	0	2.2	-0.11.
08:03:25	17.70	441.6	17.01	0	2.2	-0.11.
08:03:55	17.71	444.1	16.98	0	2.2	-0.11.
08:04:25	17.71	451.6	16.98	0	2.2	-0.11.
08:04:55	17.71	445.1	16.98	0	2.2	-0.11.
08:05:25	17.71	449.1	17.01	0	2.2	-0.11.
08:05:56	17.72	449.1	16.99	0	2.2	-0.11.
08:06:26	17.72	449.1	17.00	0	2.2	-0.11.
08:06:56	17.72	456.0	16.98	0	2.2	-0.11.
08:07:26	17.72	451.6	16.96	0	2.2	-0.11.
08:07:56	17.72	450.6	17.01	0	2.2	-0.11.
08:08:26	17.72	446.6	17.00	0	2.2	-0.11.
08:08:56	17.72	491.9	17.00	0	2.2	-0.11.
08:09:26	17.72	458.0	16.97	1	2.3	-0.11.
08:09:56	17.72	425.4	16.99	1	2.2	-0.11.
08:10:26	17.71	467.0	16.98	1	2.2	-0.11.
08:10:57	17.71	456.5	17.00	1	2.2	-0.11.
08:11:27	17.72	441.1	16.99	1	2.2	-0.11.
08:11:57	17.72	461.5	16.97	1	2.2	-0.11.
08:12:27	17.71	457.5	16.98	1	2.2	-0.11.
08:12:57	17.72	459.5	17.02	1	2.2	-0.11.
08:13:27	17.73	470.5	16.99	1	2.2	-0.11.
08:13:57	17.73	448.6	16.99	1	2.3	-0.11.
08:14:27	17.73	457.0	16.97	1	2.3	-0.11.
08:14:57	17.73	462.5	16.96	1	2.3	-0.11.
08:15:27	17.73	456.0	16.99	1	2.2	-0.11.

08:15:37 281.1 PPM CO DIRECT

08:15:58	17.73	457.5	16.99	2	2.2	-0.11.

Run Title: catholic u
Date: 15/31/127

Time	O2	CO	CO2	NOX	SO2	THC
08:22:07	0.09	286.4H	0.06	2H	3.7H	-0.11.
08:22:37	0.10	278.4H	0.06	2H	3.6H	-0.11.
08:23:07	0.10	287.4H	0.06	2H	3.6H	-0.11.
08:23:37	0.10	289.4H	0.06	2H	3.6H	-0.11.
08:24:07	0.10	286.4H	0.06	2H	3.6H	-0.11.
08:24:37	0.09	288.9H	0.06	2H	3.6H	-0.11.
[illegible]	[illegible]	[illegible]	0.06	2H	3.6H	-0.11.

[illegible]	[illegible]	[illegible]	[illegible]	3H	3.5H	[illegible]
08:26:38	0.10	[illegible]	0.08	3H	3.4H	-0.11.
[illegible]	0.09	284.1	[illegible]	3H	3.4H	[illegible]
08:27:08 90.7 PPM CO DIRECT						
08:27:38	0.09	282.4H	0.08	3H	3.5H	-0.11.
08:28:08	1.85	196.5H	0.05	3H	3.5H	[illegible]
08:28:38	0.31	122.5H	0.06	3H	3.4H	-0.11.
08:29:08	0.13	96.3H	0.06	3H	3.3H	[illegible]
08:29:38	0.11	$\boxed{93.7H}$	0.06	3H	3.2H	-0.11.
08:30:08	0.10	$\boxed{93.3H}$	0.06	3H	3.1H	-0.11.
08:30:38	0.10	$\boxed{92.8H}$	0.06	3H	3.1H	-0.11.
08:31:09	0.10	$\boxed{91.7H}$	0.06	3H	3.1H	-0.11.
08:31:24 861 PPM NOX DIRECT						
08:31:39	0.10	96.8H	0.06	3H	3.2H	-0.11.
08:32:09	0.11	82.8H	0.06	3H	3.4H	-0.11.
08:32:39	2.84	45.2H	0.06	13H	3.6H	-0.11.
08:33:09	4.18	21.2H	0.07	5H	3.7H	-0.11.
08:33:39	12.43	7.7	0.08	4H	3.7H	-0.11.
08:34:09	17.30	2.9	0.08	7H	3.8H	-0.11.
08:34:39	6.58	0.4	0.06	893H	4.0H	-0.11.
08:35:09	0.65	-0.2	0.06	888H	4.5H	-0.11.
08:35:39	0.20	-0.2	0.06	884H	4.2H	-0.11.
08:36:10	0.16	-0.2	0.06	$\boxed{863H}$	4.7H	-0.11.
08:36:40	0.16	1.3	0.06	$\boxed{868H}$	4.3H	-0.11.
08:37:10	0.15	0.4	0.06	$\boxed{867H}$	4.2H	-0.11.
08:37:18 442 PPM NOX DIRECT						
08:37:40	0.15	0.4	0.06	869H	4.2H	-0.11.
08:38:10	0.16	-0.2	0.06	473H	4.2H	-0.11.
08:38:40	0.92	-0.2	0.06	484H	4.5H	-0.11.
08:39:10	0.21	-0.2	0.06	472H	4.9H	-0.11.
08:39:40	0.14	0.4	0.06	468H	4.2H	-0.11.
08:40:10	0.12	0.4	0.06	467H	4.1H	-0.11.
08:40:40	0.12	-0.7	0.05	467H	4.5H	-0.11.
08:41:11	0.12	0.4	0.06	462H	4.0H	-0.11.
08:41:41	0.12	0.4	0.06	465H	3.9H	-0.11.
08:42:11	0.12	0.4	0.06	463	4.0H	-0.11.
08:42:41	0.11	-0.2	0.06	465	3.9	-0.11.
08:43:11	0.12	-0.2	0.06	464	3.9	-0.1
08:43:41	0.12	-0.2	0.08	465	3.9	-102.41.
08:44:11	0.12	0.4	0.06	464	3.9	-102.41.
08:44:41	0.11	0.4	0.06	462	3.9	-102.41.
08:45:11	0.11	0.9	0.06	463	4.0	-102.41.
08:45:41	0.12	-0.2	0.06	462	3.3	-102.41.
08:46:11	0.10	-0.2	0.05	465	2.8	-102.41.
08:46:42	0.13	-0.2	0.05	870	6.0	-102.41.
08:46:47 RE-SPAN NOX 861						
08:47:12	0.13	-0.2	0.08	867	3.2	-102.41.
08:47:27	0.12	-0.2	0.06	869	2.9	-102.41.
08:47:42	0.13	-0.2	0.08	868	2.8	-102.41.
08:47:57	0.12	-0.2	0.05	869	2.7	-102.41.
08:48:12	0.00	-0.2	0.05	865	2.7	-102.41.
08:48:27	0.14	-0.2	0.05	869	2.7	-102.41.
08:48:42	0.11	-0.2	0.08	863	2.8	-102.41.
08:48:57	0.13	-0.2	0.06	857	2.8	-102.41.
08:49:12	0.12	-0.2	0.05	859	2.9	-102.41.
08:49:27	0.12	-0.2	0.08	854	2.9	-17.61.
08:49:42	0.13	-0.2	0.08	85[illegible]	2.9	32.0
08:49:54 MID NOX 442						

08:50:12	0.12	-0.2	0.06	477	4.0	87.6
08:50:27	0.12	-0.2	0.06	460	4.0	88.1
08:50:42	0.10	-0.2	0.06	460	3.4	80.0
08:50:57	0.10	-0.2	0.06	458	3.2	100.9H
08:51:13	0.11	-0.2	0.06	460	3.0	92.7
08:51:28	0.11	-0.2	0.06	459	3.0	83.5
08:51:43	0.11	-0.2	0.06	~~457~~	3.0	89.3
08:51:58	0.13	-0.2	0.06	265	3.0	102.4H
08:52:13	0.12	0.4	0.05	60	3.7	102.4H
08:52:28	0.13	0.4	0.06	17	4.6	102.4H
08:52:43	0.37	0.4	0.05	11	5.0	102.4H
08:52:58	2.99	0.9	0.06	9	5.2	102.4H
08:53:13	8.40	0.9	0.08	7	5.3	102.4H
08:53:28	12.79	0.9	0.07	7	5.2	102.4H
08:53:43	15.91	0.9	0.08	7	5.2	102.4H
08:53:58	17.47	0.9	0.08	6	5.2	102.4H
08:54:13	18.43	0.9	0.08	6	5.1	102.4H
08:54:28	18.99	0.9	0.08	5	5.1	102.4H
08:54:43	19.43	0.4	0.08	16	5.1	102.4H
08:54:58	18.65	0.9	0.07	6	9.0	102.4H
08:55:13	13.04	1.3	0.07	7	9.3	102.4H
08:55:28	17.88	1.3	0.08	5	10.9	102.4H
08:55:43	20.05	1.3	0.08	12	11.4	102.4H
08:55:59	19.16	1.3	0.07	5	10.0	102.4H
08:56:14	13.61	0.9	0.07	5	9.0	102.4H
08:56:29	9.24	0.4	0.06	5	8.0	102.4H
08:56:44	2.89	0.4	0.06	5	7.5	102.4H
08:56:59	1.13	0.4	0.06	4	7.3	102.4H
08:57:14	0.66	-0.2	0.06	4	7.2	102.4H
08:57:29	0.54	0.4	0.06	4	7.1	102.4H
08:57:44	0.52	-0.2	0.06	4	7.0	102.4H
08:57:59	0.50	1.8	0.06	4	7.0	102.4H
08:58:14	0.49	0.4	0.06	4	6.9	102.4H
08:58:29	0.48	0.4	0.06	4	6.9	102.4H
08:58:44	0.38	0.4	0.06	4	7.0	102.4H
08:58:59	7.02	-0.2	0.07	4	7.1	102.4H
08:59:14	16.37	0.4	0.08	3	6.6	102.4H
08:59:29	19.66	0.4	0.08	3	6.4	102.4H
08:59:44	20.39	0.4	0.08	4	6.3	102.4H
08:59:59	20.61	0.4	0.09	4	6.2	102.4H
09:00:14	20.66	0.4	0.09	4	6.1	102.4H
09:00:29	20.69	0.9	0.09	3	6.0	102.4H
09:00:44	20.68	0.9	0.09	4	5.9	102.4H
09:01:00	20.68	0.4	0.09	3	5.7	102.4H
09:01:15	20.69	0.9	0.08	3	5.4	102.4H
09:01:30	20.66	0.4	0.09	4	5.1	102.4H
09:01:45	20.66	0.4	0.09	3	5.0	-63.2L
09:02:00	19.51	0.4	0.08	4	4.9	-59.9L
09:02:15	7.52	0.4	0.06	4	5.0	-55.0L
09:02:30	6.35	0.4	0.06	4	5.1	-0.38
09:02:45	4.90	0.9	0.06	4	5.2	-9.7
09:03:00	1.98	0.4	0.06	4	5.3	-10.2L
09:03:15	1.34	0.4	0.06	4	5.3	-6.3
09:03:30	1.17	0.4	0.06	4	5.4	-4.1
09:03:45	1.15	-0.2	0.05	4	5.5	-5.4
09:04:00	1.15	0.4	0.06	4	5.6	-5.2
09:04:15	1.16	-0.2	0.06	4	5.6	-2.9
[illegible]	[illegible]	[illegible]	[illegible]	4	5.7	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	4	5.8	-4.2
09:05:16	0.96	0.4	0.08	4	5.9	2.3
09:05:[illegible]	0.94	0.4	0.08	4	5.9	4.9
09:05:46	0.95	0.1	0.08	4	6.0	4.4
09:06:01	0.94	0.4	0.08	4	6.0	3.6
09:06:16	0.94	0.1	0.08	4	6.1	4.4
09:06:31	0.95	0.4	0.08	4	6.1	4.2
09:06:46	0.95	0.1	0.08	4	6.1	3.9
09:07:01	0.92	0.4	0.08	4	6.1	4.6
09:07:16	0.92	0.4	0.08	4	6.2	0.8

09:07:31	0.93	0.4	0.06	4	6.2	0.7
09:07:46	0.93	0.4	0.06	4	6.2	0.7
09:08:01	0.94	0.4	0.06	4	6.2	0.3
09:08:16	0.96	0.4	0.06	4	6.2	-0.0
09:08:31	0.92	0.4	0.06	4	6.2	-0.1
09:08:46	0.90	0.4	0.06	4	6.2	0.6
09:09:01	0.90	0.4	0.06	4	6.2	0.6
09:09:16	0.91	0.4	0.06	4	6.2	0.1
09:09:31 ZERO THC						
09:09:31	0.91	0.4	0.06	4	6.1	-0.1
09:09:46	0.88	0.4	0.06	4	6.1	0.7
09:10:01	0.86	0.4	0.06	4	6.0	2.5
09:10:16	0.87	-0.2	0.06	4	5.9	-0.3
09:10:32	0.87	0.4	0.06	4	5.9	-0.7
09:10:47	0.86	0.4	0.06	4	5.8	-0.7
09:11:02	0.87	0.4	0.06	4	5.6	0.4
09:11:17	0.85	0.4	0.06	4	5.5	0.1
09:11:32	0.85	0.4	0.06	4	5.5	0.1
09:11:47	0.86	0.9	0.05	4	5.4	0.1
09:12:02	0.86	0.4	0.06	4	5.3	0.1
09:12:17	0.85	0.4	0.06	4	5.3	0.1
09:12:32	0.86	0.4	0.06	4	5.5	0.2
09:12:47	9.50	-0.2	0.07	4	5.4	0.1
09:13:02	18.07	0.8	0.08	4	5.1	0.6
09:13:17	19.99	-0.2	0.09	3	5.0	0.7
09:13:32	20.53	0.8	0.09	3	4.9	0.8
09:13:47	19.80	0.8	0.08	4	4.9	1.0
09:13:48 84.2 PPM PROPANE						
09:14:02	19.55	0.4	0.09	4	4.9	10.4H
09:14:17	19.56	1.3	0.08	4	5.1	56.4H
09:14:33	19.49	0.4	0.08	4	5.2	59.8H
09:14:48	19.43	0.4	0.08	4	5.4	63.2
09:15:03	19.33	1.3	0.09	4	5.4	84.2
09:15:18	19.29	0.4	0.08	4	5.5	87.3
09:15:33	19.23	1.3	0.08	4	5.6	76.5
09:15:48	19.20	0.8	0.08	4	5.6	83.4
09:16:03	17.48	0.4	0.07	4	5.5	87.0
09:16:18	6.86	0.4	0.06	4	5.5	81.3
09:16:33	2.42	0.4	0.06	4	5.5	89.0
09:16:48	1.21	0.8	0.06	4	5.6	83.6
09:17:03	0.95	0.4	0.06	4	5.6	84.0
09:17:18	0.87	0.4	0.05	4	5.6	83.1
09:17:33	0.86	-0.2	0.06	4	5.6	82.8
09:17:48	0.85	0.8	0.06	4	5.7	83.4
09:18:03	0.84	0.4	0.06	4	5.7	84.3
09:18:18	0.85	0.8	0.06	4	5.7	84.3
09:18:33	0.85	-0.2	0.06	4	5.6	84.7
09:18:48	0.86	0.4	0.06	4	5.5	85.0
09:19:01 51.7 PPM PROPANE						
09:19:03	0.86	-0.7	0.06	4	5.5	85.4
09:19:18	0.85	1.3	0.06	4	5.4	86.1
09:19:34	0.85	0.8	0.06	4	5.4	86.4
09:19:49	0.86	0.8	0.06	4	5.3	54.1
09:20:04	0.85	-0.2	0.06	4	5.3	54.1
09:20:19	0.86	0.8	0.06	4	5.3	54.1
09:20:34	0.84	0.4	0.06	4	5.3	54.2
09:20:49	0.84	0.4	0.07	4	5.5	54.3
09:21:04	12.25	0.8	0.08	38	5.3	54.4
09:21:19	16.95	0.4	0.08	9	4.9	54.5
09:21:34	5.82	0.4	0.07	4	3.9	54.5

09:21:42	ZERO O2 DIRECT CHECK					
09:21:49	1.77	0.4	0.06	4	3.4	54.5
09:22:04	0.77	0.4	0.06	4	3.1	54.6
09:22:19	0.41	0.4	0.08	4	3.0	54.8
09:22:34	0.27	0.4	0.06	4	2.9	54.5
09:22:49	0.20	0.4	0.06	4	2.8	54.5
09:23:04	0.15	-0.2	0.05	4	2.8	54.6
09:23:19	0.13	-0.2	0.06	4	2.8	54.6
09:23:34	0.10	0.4	0.06	4	2.7	30.2
09:23:35	RE- SPAN THC 84.2 ZERO SO_2					
09:23:47	SPAN 84.2					
09:23:49	0.08	0.4	0.06	4	2.7	30.2
09:24:04	0.08	0.4	0.05	4	2.7	30.2
09:24:19	0.08	-0.2	0.08	4	2.7	48.8
09:24:35	0.08	0.4	0.05	4	2.6	49.0
09:24:50	0.10	-0.2	0.08	4	3.0	49.0
09:25:05	6.55	0.4	0.06	4	4.1	49.0
09:25:08	ZERO BIAS HEPA EXHAUST					
09:25:20	12.29	0.4	0.06	4	4.6	49.1
09:25:30	BIAS USING N2 ZERO O2 IS GOAL					
09:25:35	3.73	0.4	0.06	4	4.8	49.1
09:25:50	1.36	0.8	0.06	4	4.9	83.3
09:26:05	0.73	0.4	0.06	4	4.9	83.1
09:26:20	0.64	0.4	0.06	4	5.0	83.1
09:26:35	0.61	0.4	0.05	4	5.0	83.3
09:26:50	0.61	-0.2	0.08	4	5.0	84.1
09:27:05	0.62	0.4	0.08	4	5.0	84.2
09:27:20	0.61	0.4	0.08	4	4.9	84.4
09:27:35	0.61	0.4	0.06	4	4.9	84.4
09:27:48	MID 51.7 PPM THC					
09:27:50	0.62	0.4	0.08	4	4.9	74.0
09:28:05	0.64	0.4	0.06	4	4.9	52.1
09:28:20	0.63	0.4	0.08	4	4.9	52.0
09:28:35	0.62	0.4	0.06	4	4.9	52.0
09:28:50	0.62	0.4	0.08	4	4.9	51.9
09:29:05	0.62	0.4	0.06	4	4.9	51.9
09:29:20	0.63	-0.2	0.05	4	4.9	51.9
09:29:36	0.47	0.4	0.06	4	4.9	30.3
09:29:51	0.56	0.4	0.06	4	4.8	30.1
09:30:06	0.64	0.4	0.05	4	4.8	30.0
09:30:21	0.62	-0.2	0.08	4	4.8	29.9
09:30:36	0.62	0.4	0.06	4	4.8	29.8
09:30:51	0.64	0.4	0.05	4	4.8	29.7
09:31:06	0.62	0.4	0.05	4	4.8	29.7
09:31:21	0.63	0.4	0.08	4	4.8	29.6
09:31:36	0.63	0.4	0.08	4	4.8	29.5
09:31:51	0.62	-0.2	0.05	4	4.8	29.5
09:32:06	0.61	0.8	0.06	4	4.8	29.4
09:32:21	0.62	0.4	0.08	390	6.6	29.3
09:32:32	442 PPM BIAS AT HEPA					
09:32:36	1.73	0.8	0.08	388	7.7	29.2
09:32:51	3.49	-0.2	0.08	437	6.3	29.0
09:33:06	1.78	0.4	0.05	438	5.5	29.0
09:33:21	0.89	0.4	0.06	437	5.2	[illegible]
09:33:36	0.88	0.4	0.08	438	5.1	[illegible]
09:33:51	0.85	0.4	0.08	439	5.0	28.7
09:34:06	0.64	0.4	0.05	[illegible]	5.0	28.7
09:34:21	0.65	-0.2	0.08	438	5.0	28.7
09:34:37	0.64	0.8	0.06	441	5.0	28.6
09:34:52	0.64	-0.2	0.06	440	5.0	28.6

30.7 PPM THC 10 JUM

09:35:07	0.65	0.4	0.06	441	5.0	28.5
09:35:22	0.63	0.4	0.06	441	5.0	28.5
09:35:31 11.51 11.02 O2/CO2 BIAS						
09:35:37	0.62	0.4	0.06	440	5.0	28.5
09:35:52	0.69	0.4	0.13	13	4.8	28.5
09:36:07	6.38	0.4	5.80	8	4.2	28.5
09:36:22	10.61	0.8	9.29	7	3.8	28.5
09:36:37	11.53	0.4	10.14	7	3.7	28.6
09:36:52	11.69	0.4	10.39	6	3.7	28.5
09:37:07	11.74	0.3	10.51	6	3.7	28.6
09:37:22	11.76	0.4	10.51	6	3.6	28.5
09:37:37	11.75	0.4	10.60	6	3.6	28.4
09:37:52	11.77	0.4	10.62	5	3.6	28.5
09:38:07	11.77	0.4	10.63	5	3.6	28.5
09:38:22	11.7[illegible]	0.8	[illegible]	5	3.6	28.5
09:38:37	11.76	0.4	10.66	5	3.6	28.5
09:38:52	11.76	0.4	10.69	5	3.6	28.5
09:39:07 BIAS CO 90.7						
09:39:07	11.76	0.4	10.68	6	3.6	28.4
09:39:22	12.56	5.7	7.46	6	4.2	28.4
09:39:37	7.65	21.7	2.14	5	4.5	28.4
09:39:53	2.50	54.3	0.82	5	4.6	28.4
09:40:08	1.04	67.3	0.40	5	4.6	28.4
09:40:23	0.72	83.8	0.26	5	4.6	10.8
09:40:38	0.66	88.7	0.20	5	4.6	2.8
09:40:53	0.63	92.3	0.15	5	4.6	2.0
09:41:08	0.61	90.7	0.13	5	4.6	2.2
09:41:23	0.62	91.7	0.10	5	4.6	1.8
09:41:38	0.60	91.7	0.09	5	4.6	1.8
09:41:53	0.58	91.7	0.08	5	4.6	2.1
09:42:08	0.60	92.3	0.08	5	4.6	3.4
09:42:23	0.61	92.3	0.07	5	4.7	3.4
09:42:38	4.50	75.3	0.09	6	5.0	7.0
09:42:53	16.17	38.7	0.09	7	5.1	4.9
09:43:08	19.41	23.7	0.09	6	5.3	8.6
09:43:23	20.34	13.8	0.09	5	5.8	8.7
09:43:38	20.52	3.3	0.10	5	6.0	7.9
09:43:53	20.53	1.8	0.09	5	6.0	7.2
09:44:08	20.44	0.8	0.10	5	5.9	6.4
09:44:23	20.34	1.3	0.10	6	12.4	5.0
09:44:38	19.41	1.8	0.08	5	105.0	4.5
09:44:53 SO2 DIRECT 163 PPM DIRECT						
09:44:54	20.35	1.8	0.08	5	148.1	3.6
09:45:09	20.77	0.8	0.08	5	162.4	3.1
09:45:24	20.88	0.4	0.08	5	164.0	2.6
09:45:39	20.94	0.8	0.08	5	166.6	3.3
09:45:54	20.98	0.4	0.08	5	163.1	3.6
09:46:09	20.99	0.8	0.08	5	162.2	3.4
09:46:24	21.02	0.3	0.08	5	163.2	2.6
09:46:39	21.03	0.4	0.08	5	163.3	2.3
09:46:54	21.02	0.3	0.08	6	161.2	3.4
09:46:55 MID SO2 86.8						
09:47:09	21.00	0.3	0.08	6	106.2	5.8
09:47:24	20.93	-0.2	0.08	5	60.9	6.6
09:47:39	20.89	0.3	0.08	5	30.0	5.5
09:47:54	20.88	0.3	0.08	5	36.3	5.4
09:48:09	20.88	0.8	0.05	5	73.5	5.0
09:48:24	20.89	0.8	0.05	5	84.4	7.0
09:48:39	20.92	-0.2	0.08	5	86.3	8.8
09:48:54	20.91	-0.2	0.07	5	86.1	2.4

09:49:09	20.91	0.3	0.05	5	86.0	4.2
09:49:24	20.91	-0.2	0.06	5	86.3	5.7
09:49:39	20.90	-0.2	0.06	5	86.6	7.9
09:49:55	20.93	-0.2	0.06	5	86.8	7.5
09:50:10	20.92	-0.2	0.06	5	87.1	6.7
09:50:25	20.94	-0.2	0.06	5	78.3	6.6
09:50:40	20.95	-0.2	0.06	5	44.1	6.2
09:50:55	20.94	0.3	0.06	5	24.5	5.3
09:51:10	20.94	0.3	0.06	5	14.6	7.0
09:51:25	20.95	0.8	0.07	5	11.0	3.8
09:51:40	20.93	0.8	0.07	5	9.2	4.4
09:51:55	20.93	1.3	0.07	5	6.2	8.4
09:52:02 ZERO BIAS SO2						
09:52:10	20.94	0.8	0.08	5	5.1	8.6
09:52:25	20.93	1.3	0.08	5	4.7	12.3
09:52:40	20.94	0.8	0.08	5	4.5	10.7
09:52:55	20.93	0.8	0.08	5	4.5	-2.7
09:53:10	20.94	1.3	0.08	5	4.4	-3.0
09:53:25	20.94	0.8	0.07	5	4.3	-3.0
09:53:40	20.97	1.3	0.09	5	4.3	-3.1
09:53:55	20.90	0.8	0.08	6	4.3	-3.2
09:54:10	20.92	0.8	0.09	6	4.3	-3.2
09:54:25	20.89	1.3	0.08	5	0.0	-3.3
09:54:40	20.89	0.8	0.08	6	-0.2	-3.3
09:54:56	20.89	0.8	0.08	6	-0.2	-3.3
09:55:11	20.86	1.3	0.08	5	-0.2	-3.3
09:55:26	20.87	1.3	0.08	6	-0.2	-3.3
09:55:41	20.87	0.8	0.08	6	-0.1	-3.4
09:55:56	20.86	1.3	0.08	5	-0.1	-3.4
09:56:11	20.86	0.8	0.08	6	-0.1	-3.4
09:56:26	20.86	1.3	0.08	6	-0.1	-3.4
09:56:41	20.84	0.8	0.08	6	-0.1	-3.4
09:56:56	20.84	1.8	0.08	6	-0.1	-3.5
09:57:11	20.84	1.3	0.09	6	-0.1	-3.4
09:57:26	20.83	1.3	0.08	6	-0.1	-3.5
09:57:41	20.85	1.3	0.08	6	-0.1	-3.5
09:57:56	20.85	1.3	0.08	6	-0.2	-3.5
09:58:03 MID BIAS SO2 86.8						
09:58:11	20.83	0.8	0.08	6	-0.1	-3.5
09:58:26	20.84	0.8	0.08	6	-0.2	-3.5
09:58:41	20.82	1.3	0.07	6	-0.2	-3.5
09:58:56	20.82	0.8	0.08	6	-0.2	-2.7
09:59:11	20.83	0.8	0.09	6	-0.1	0.9
09:59:26	20.82	1.3	0.08	6	-0.1	0.9
09:59:41	20.84	0.8	0.08	6	-0.0	1.0
09:59:57	20.81	0.8	0.08	6	0.2	1.0
10:00:12	20.81	0.8	0.08	6	0.5	1.0
10:00:27	20.85	1.3	0.08	6	0.9	1.0
10:00:42	20.83	0.8	0.08	6	1.3	1.0
10:00:57	20.84	0.8	0.09	6	1.7	1.0
10:01:12	20.83	1.3	0.08	6	2.1	1.1
10:01:27	20.83	0.8	0.09	6	2.6	1.1
10:01:42	20.84	1.3	0.09	6	3.1	1.0
10:01:57	20.83	0.8	0.09	6	3.6	1.0
10:02:12	20.83	0.8	0.08	6	4.0	1.0
10:02:27	20.83	0.8	0.09	6	4.6	1.1
10:02:42	20.82	0.8	0.09	6	5.1	1.0
10:02:57	20.82	0.8	0.08	6	5.7	1.1
10:03:12	20.82	0.8	0.09	6	6.3	1.0

10:03:27	20.81	0.8	0.09	6	6.8	1.0
10:03:42	20.82	1.3	0.09	7	7.3	1.0
10:03:57	20.82	0.8	0.09	6	7.9	1.0
10:04:12	20.80	0.8	0.09	6	8.6	1.0
10:04:27	20.82	0.8	0.07	6	9.1	1.0
10:04:42	20.81	0.8	0.08	7	9.5	1.0
10:04:58	20.78	0.8	0.08	6	9.8	1.1
10:05:13	20.71	0.8	0.10	7	10.0	10.5
10:05:28	20.67	0.8	0.10	8	10.2	10.2
10:05:43	20.61	0.8	0.11	7	10.3	10.6
10:05:58	20.53	0.8	0.11	7	8.8	14.4
10:06:13	20.67	0.8	0.06	7	6.8	17.5
10:06:28	20.72	0.3	0.06	7	5.3	11.9
10:06:43	20.75	0.3	0.06	7	4.1	16.9
10:06:58	20.74	0.3	0.06	7	3.4	18.1
10:07:13	20.73	0.3	0.05	7	2.8	15.1
10:07:28	20.72	-0.2	0.04	6	2.4	15.3
10:07:43	20.70	0.4	0.06	6	2.1	13.2
10:07:58	20.70	0.8	0.06	6	1.8	11.9
10:08:13	20.71	0.8	0.07	6	1.6	10.5
10:08:28	20.69	0.8	0.07	6	1.3	1.6
10:08:43	20.70	0.8	0.08	6	1.2	1.2
10:08:58	20.70	0.8	0.08	6	1.1	1.1
10:09:13	20.71	0.8	0.08	6	2.0	1.1
10:09:28	20.71	0.8	0.09	6	3.4	1.1
10:09:43	20.71	0.8	0.08	6	5.2	1.1
10:09:58	20.72	1.3	0.08	6	7.0	1.0
10:10:14	20.73	0.8	0.08	6	8.4	1.0
10:10:29	20.72	0.8	0.08	6	8.9	1.0
10:10:44	20.74	1.3	0.09	6	6.1	1.1
10:10:59	20.75	0.8	0.09	6	3.4	1.0
10:11:14	20.75	1.3	0.08	6	1.9	0.9
10:11:29	20.75	0.8	0.09	7	2.1	0.9
10:11:44	20.74	0.8	0.09	6	5.0	0.9
10:11:59	20.75	0.8	0.08	6	7.9	0.9
10:12:14	20.75	0.8	0.09	6	10.2	0.9
10:12:29	20.75	1.3	0.08	7	11.6	0.9
10:12:44	20.77	0.8	0.09	6	12.7	0.9
10:12:59	20.76	0.8	0.09	6	13.5	0.9
10:13:14	20.76	0.8	0.09	6	14.0	0.9
10:13:29	20.77	0.8	0.08	6	14.6	0.8
10:13:44	20.75	0.8	0.09	6	15.0	0.8
10:13:59	20.76	0.8	0.08	6	15.4	0.8
10:14:14	20.76	0.8	0.08	6	15.7	0.9
10:14:29	20.76	0.8	0.08	6	15.9	0.9
10:14:44	20.77	0.8	0.09	7	16.1	0.9
10:14:59	20.77	0.8	0.08	6	16.3	0.9
10:15:15	20.78	0.8	0.09	6	16.5	0.9
10:15:30	20.77	0.8	0.09	6	16.6	1.0
10:15:45	20.77	1.3	0.09	7	16.7	0.9
10:16:00	20.77	1.3	0.09	7	16.8	0.9
10:16:15	20.75	1.3	0.09	7	16.9	0.9
10:16:30	20.74	1.3	0.09	6	17.0	0.9
10:16:45	20.76	1.3	0.09	7	17.1	0.9
10:17:00	20.76	1.3	0.09	7	17.1	0.9
10:17:15	20.77	0.8	0.09	7	17.2	1.0
10:17:30	20.77	0.8	0.09	7	17.3	1.1
10:17:45	20.76	1.3	0.09	6	17.4	1.0
10:18:00	20.77	1.3	0.08	7	17.4	1.0
10:18:15	20.77	0.8	0.07	6	17.4	0.9

10:18:30	20.76	1.3	0.09	7	17.5	1.0
10:18:45	20.77	1.3	0.09	7	17.5	1.0
10:19:00	20.76	1.3	0.09	7	17.6	0.7
10:19:15	20.78	1.3	0.09	7	17.6	0.7
10:19:30	20.78	1.3	0.09	7	17.7	0.7
10:19:45	20.76	0.8	0.09	7	17.8	0.6
10:20:00	20.77	1.3	0.09	7	18.0	0.6
10:20:16	20.76	1.3	0.09	7	18.2	0.6
10:20:31	20.76	1.3	0.08	7	18.3	0.6
10:20:46	20.78	1.3	0.08	7	18.5	0.6
10:21:01	20.76	1.3	0.09	7	18.6	0.6
10:21:16	20.78	1.3	0.09	7	18.7	0.6
10:21:31	20.78	1.3	0.09	7	18.9	0.6
10:21:46	20.76	1.3	0.08	7	19.0	0.6
10:22:01	20.77	1.3	0.09	7	19.2	0.6
10:22:16	20.76	1.3	0.08	7	19.3	0.6
10:22:31	20.76	1.3	0.08	7	19.4	0.6
10:22:46	20.77	1.3	0.08	7	19.6	0.6
10:23:01	20.77	1.3	0.08	7	19.7	0.6
10:23:16	20.77	1.3	0.09	7	19.4	0.6
10:23:31	20.77	1.3	0.09	7	12.3	0.6
10:23:46	20.77	1.3	0.09	7	4.7	0.6
10:24:01	20.78	1.3	0.08	7	28.2	0.6
10:24:16	20.76	1.3	0.09	7	52.8	0.5
10:24:31	20.77	1.3	0.08	7	61.5	0.5
10:24:46	20.76	1.3	0.08	7	63.1	0.5
10:25:01	20.76	1.3	0.09	6	63.5	0.5
10:25:17	20.77	0.8	0.09	7	64.3	0.5
10:25:32	20.77	1.3	0.08	7	65.6	0.6
10:25:47	20.79	1.3	0.08	7	67.1	0.5
10:26:02	20.77	1.3	0.09	7	68.3	0.5
10:26:17	20.77	1.3	0.08	7	69.3	0.5
10:26:32	20.77	0.8	0.08	6	70.5	0.5
10:26:47	20.77	0.8	0.08	6	71.7	0.5
10:27:02	20.77	0.8	0.08	6	38.2	0.5
10:27:17	20.78	0.8	0.08	6	12.2	0.5
10:27:32	20.78	0.8	0.08	6	4.9	0.5
10:27:47	20.78	0.8	0.08	6	2.3	0.5
10:28:02	20.78	0.8	0.08	6	23.2	0.5
10:28:17	20.78	0.8	0.08	6	54.0	0.5
10:28:32	20.77	0.8	0.08	6	61.7	0.5
10:28:47	20.78	0.8	0.07	6	63.1	0.5
10:29:02	20.78	0.8	0.08	6	63.2	0.4
10:29:17	20.79	1.3	0.08	6	63.5	0.5
10:29:32	20.79	0.9	0.08	6	64.0	0.5
10:29:47	20.77	0.8	0.08	6	64.5	0.4
10:30:02	20.77	0.8	0.08	6	65.1	0.4
10:30:18	20.78	0.9	0.08	6	65.5	0.4
10:30:33	20.77	0.9	0.08	6	65.9	0.4
10:30:48	20.78	0.9	0.08	6	66.2	0.4
10:31:03	20.79	1.3	0.08	6	66.5	0.4
10:31:18	20.77	0.8	0.08	6	66.9	0.4
10:31:33	20.78	1.3	0.08	6	67.1	0.4
10:31:48	20.78	0.8	0.08	6	67.3	0.4
10:32:03	20.77	1.3	0.08	6	67.4	0.4
10:32:18	20.79	1.3	0.08	6	67.5	0.4
10:32:33	20.79	0.9	0.07	5	67.6	0.4
10:32:48	20.78	1.3	0.08	6	67.0	0.4
10:33:03	20.78	1.3	0.08	6	67.3	0.4

10:33:08 CHECK ZERO W/AIR

10:33:18	20.78	1.3	0.09	6	67.5	0.8
10:33:33	20.77	1.3	0.08	5	67.2	0.5
10:38:34	20.78	0.8	0.08	5	7.6	0.3

Run Title: catholic u
Date: 15/31/127

Time	O2	CO	CO2	NOX	SO2	THC
10:44:26	20.78	0.8	0.08	5	6.6	0.3

10:44:44 FINISH CALS CATHOLIC U. GO ON LINE STACK GAS

10:44:56	20.79	0.9	0.08	5	5.9	0.3
10:45:26	20.78	0.8	0.08	5	5.7	0.3
10:45:56	20.78	0.9	0.08	5	5.6	0.3
10:46:26	20.78	0.8	0.08	5	5.5	12.3
10:46:56	20.78	1.3	0.08	4	6.2	102.4H
10:47:26	20.77	0.8	0.08	5	5.9	102.4H
10:47:56	20.72	1.3	0.10	158	5.1	88.7
10:48:26	20.50	19.8	0.76	173	5.0	59.0
10:48:56	20.44	35.3	0.92	266	5.4	45.4
10:49:26	20.45	40.7	0.84	124	5.7	36.9
10:49:56	20.42	52.8	0.81	101	5.7	30.2
10:50:26	20.38	52.8	0.89	69	5.8	24.0
10:50:56	20.35	36.7	0.90	152	5.9	20.3
10:51:26	20.32	38.2	0.94	240	5.8	17.8
10:51:57	20.38	42.2	0.85	64	5.8	16.2
10:52:27	20.34	53.3	0.85	66	5.5	14.1
10:52:57	20.35	45.7	0.83	120	5.4	12.7
10:53:27	20.34	38.2	0.90	237	5.2	12.0
10:53:57	20.38	35.7	0.82	146	5.1	11.3
10:54:27	20.40	38.7	0.81	118	4.8	10.7
10:54:57	20.37	38.2	0.85	206	4.6	9.9
10:55:27	20.35	38.2	0.95	205	4.5	9.4
10:55:33 SWITCH TO NO MODE ON NOX						
10:55:57	20.38	34.3	0.85	148	4.4	8.8
10:56:27	20.40	33.3	0.86	197	4.1	8.4
10:56:57	20.38	33.3	0.93	223	4.1	8.1
10:57:12	20.36	34.3	0.97	214	4.1	7.7
10:57:28	20.36	32.3	0.93	186	4.1	7.4
10:57:33 CHANGE TIME TO 15 SECONDS FOR NO/NOX SWITCH						
10:57:43	20.42	29.7	0.89	213	4.0	7.3
10:57:58	20.41	29.7	0.89	194	3.9	7.2
10:58:13	20.39	31.3	0.94	198	3.9	7.1
10:58:28	20.37	30.3	0.96	207	3.8	6.9
10:58:43	20.37	30.8	0.97	250	3.7	6.7
10:58:58	20.38	29.7	0.98	270	3.8	6.6
10:59:13	20.37	28.3	1.00	299	3.9	6.5
10:59:28	20.38	26.3	1.00	342	4.0	6.3
10:59:43	20.38	26.8	1.03	366	4.3	6.4
10:59:58	20.38	27.7	1.03	369	4.6	6.3
11:00:13	20.39	28.8	1.03	324	4.8	6.3
11:00:28	20.40	30.8	1.02	253	4.8	6.3
11:00:43	20.37	32.8	1.05	283	4.4	6.2
11:00:58	20.35	38.7	1.10	300	4.1	6.3
11:01:13	20.34	40.7	1.12	244	4.1	6.2
11:01:28	20.34	43.2	1.13	289	4.0	6.0
11:01:32 BACK TO NOX MODE						
11:01:43	20.33	44.7	1.13	331	3.8	6.1

11:01:58	20.32	47.2	1.14	329	3.9	6.3
11:02:13	20.33	48.3	1.16	262	4.1	6.2
11:02:29	20.33	50.7	1.13	312	3.9	6.2
11:02:44	20.33	51.7	1.13	254	3.9	6.2
11:02:59	20.32	53.8	1.15	207	3.8	6.0
11:03:14	20.32	54.8	1.15	152	3.5	5.9
11:03:29	20.32	55.8	1.18	134	3.2	5.8
11:03:44	20.32	53.8	1.19	149	2.9	5.5
11:03:59	20.32	48.7	1.21	133	2.7	5.3
11:04:14	20.31	45.7	1.21	117	2.7	5.2
11:04:29	20.32	43.2	1.20	90	2.6	5.2
11:04:44	20.33	41.2	1.18	130	2.5	4.9
11:04:59	20.35	39.2	1.11	170	2.4	4.6
11:05:14	20.37	32.3	1.07	142	2.5	4.5
11:05:29	20.40	28.3	1.02	187	2.5	4.4
11:05:44	20.41	22.3	0.99	196	2.6	4.4
11:05:59	20.42	20.7	0.98	197	2.6	4.5
11:06:14	20.44	21.2	0.96	263	2.7	4.4
11:06:29	20.44	21.2	0.95	233	2.7	4.3
11:06:44	20.43	20.7	0.93	283	2.9	4.3
11:06:59	20.44	19.8	0.93	381	2.9	4.2
11:07:14	20.46	16.3	0.93	350	3.3	4.3
11:07:30	20.46	14.8	0.92	361	3.8	4.2
11:07:45	20.48	12.8	0.90	496	3.7	4.3
11:08:00	20.48	11.7	0.93	504	4.2	4.3
11:08:15	20.46	10.8	0.94	493	5.1	4.3
11:08:30	20.47	9.7	0.94	515	5.3	4.2
11:08:45	20.46	9.3	0.98	448	5.5	4.2
11:09:00	20.43	9.7	1.05	450	5.4	4.2
11:09:15	20.41	10.8	1.12	454	5.2	4.3
11:09:30	20.38	18.3	1.19	373	5.0	4.3
11:09:45	20.35	21.2	1.22	472	4.7	4.2
11:10:00	20.36	24.3	1.23	523	4.6	4.3
11:10:15	20.36	24.8	1.24	499	5.2	4.3
11:10:30	20.34	29.2	1.33	413	5.6	4.9
11:10:45	20.29	36.7	1.48	334	5.0	5.0
11:11:00	20.28	48.2	1.42	329	4.5	4.4
11:11:15	20.31	47.7	1.28	404	3.8	4.2
11:11:30	20.35	37.2	1.22	348	3.8	4.3
11:11:45	20.36	31.7	1.18	351	4.0	4.2
11:12:00	20.37	24.3	1.15	331	3.8	4.1
11:12:15	20.39	22.3	1.12	389	3.6	4.1
11:12:31	20.39	20.3	1.11	286	3.7	4.2
11:12:46	20.40	19.8	1.10	341	3.7	4.1
11:13:01	20.41	19.8	1.10	292	3.4	4.2
11:13:16	20.39	20.7	1.08	289	3.3	4.0
11:13:31	20.39	21.2	1.05	296	3.1	4.0
11:13:46	20.41	22.3	1.06	273	3.1	3.9
11:13:58 SWITCH TO NO MODE						
11:14:01	20.41	21.7	1.02	314	3.0	3.9
11:14:16	20.43	21.7	1.00	233	3.0	4.0
11:14:31	20.46	22.3	0.98	215	3.0	3.9
11:14:46	20.46	23.7	0.97	236	2.8	3.9
11:15:01	20.47	23.7	0.97	160	2.5	3.8
11:15:16	20.46	23.2	0.98	213	2.6	3.8
11:15:31	20.46	22.7	0.98	297	2.4	3.8
11:15:46	20.45	23.7	1.00	288	2.8	3.8
11:16:01	20.46	23.2	1.00	306	3.2	3.7
11:16:16	20.47	23.2	0.99	303	3.4	3.8
11:16:31	20.47	23.7	0.99	291	3.5	3.7

11:16:46	20.48	22.3	0.99	314	3.6	3.6
11:17:01	20.47	21.7	0.98	328	3.7	3.6
11:17:17	20.48	21.7	0.99	344	4.0	3.6
11:17:32	20.49	21.2	1.00	379	4.3	3.6
11:17:47	20.47	19.8	1.01	379	4.8	3.6
11:18:02	20.48	21.7	1.02	355	5.4	3.6
11:18:17	20.46	22.7	1.06	372	5.7	3.8
11:18:32	20.45	26.7	1.09	430	5.9	3.6
11:18:47	20.46	27.2	1.10	459	6.8	3.5
11:19:02	20.47	24.7	1.08	534	7.7	3.5
11:19:17	20.49	22.3	1.06	505	9.2	3.5
11:19:32	20.50	19.8	1.05	486	10.5	3.5
11:19:47	20.48	18.8	1.04	467	11.5	3.5
11:20:02	20.51	19.3	0.99	472	12.2	3.5
11:20:17	20.51	19.8	0.96	503	13.2	3.5
11:20:32	20.52	20.2	0.95	506	14.8	3.4
11:20:47	20.54	20.7	0.96	435	16.3	3.4
11:21:02	20.53	23.7	0.96	448	17.1	3.5
11:21:17	20.51	24.7	0.96	475	17.0	3.4
11:21:32	20.52	25.7	0.97	452	17.4	3.4
11:21:47	20.52	27.2	0.96	488	17.5	3.4
11:22:02	20.51	26.7	0.98	948	17.2	3.9
11:22:18	20.48	44.7	1.24	1024H	18.5	12.8
11:22:33	20.28	88.2	2.05	1024H	31.0	17.5
11:22:48	20.15	192.9	2.19	850	47.7	11.8
11:23:03	20.17	224.8	2.00	313	39.9	7.5
11:23:18	20.22	202.4	1.79	224	24.5	5.9
11:23:33	20.27	173.8	1.59	478	14.5	4.8
11:23:48	20.33	100.2	1.49	579	12.8	4.4
11:24:03	20.36	74.3	1.48	613	15.0	4.3
11:24:18	20.37	44.7	1.45	643	17.6	4.2
11:24:33	20.38	36.2	1.42	643	19.2	4.1
11:24:48	20.40	27.2	1.40	659	20.8	4.0
11:25:03	20.40	25.7	1.37	660	21.8	4.0
11:25:18	20.42	22.7	1.38	649	23.3	4.0
11:25:33	20.41	23.7	1.33	611	24.4	3.9
11:25:44 BACK TO NOX						
11:25:48	20.42	21.7	1.34	668	25.3	3.9
11:26:03	20.41	23.7	1.35	699	26.3	3.9
11:26:18	20.41	24.7	1.37	637	27.8	4.0
11:26:33	20.39	29.2	1.41	587	29.1	3.8
11:26:48	20.36	29.2	1.44	582	29.8	3.8
11:27:03	20.36	32.8	1.44	574	31.0	3.8
11:27:18	20.35	33.7	1.42	615	32.8	3.7
11:27:34	20.37	31.2	1.41	639	34.7	3.8

11:27:37 ALL DATA TO THIS POINT ON HEPA FILTER EXHAUST

11:27:49	20.35	30.3	1.43	674	37.3	3.7
11:28:04	20.37	27.2	1.42	716	40.6	3.8
11:28:19	20.37	26.2	1.40	770	42.9	3.8
11:28:34	20.39	23.2	1.38	772	45.8	3.8
11:28:49	20.40	20.7	1.37	763	47.9	3.8
11:29:04	20.40	18.8	1.34	783	49.1	3.8
11:29:19	20.42	18.8	1.32	763	49.8	3.7
11:29:34	20.42	17.7	1.29	748	50.1	3.7
11:29:49	20.44	18.8	1.28	763	50.8	3.7
11:30:04	20.43	18.7	1.27	783	51.8	3.8
11:30:19	20.44	21.7	1.28	817	53.3	3.8
11:30:34	20.43	21.7	1.29	849	54.5	3.8

11:30:49	20.44	21.2	1.30	837	55.6	3.8
11:31:04	20.42	21.7	1.33	807	56.1	3.9
11:31:19	20.42	26.2	1.36	827	55.9	3.9
11:31:34	20.39	29.2	1.42	827	55.9	4.0
11:31:49	20.38	35.7	1.44	752	56.2	3.9
11:32:04	20.38	35.2	1.36	719	55.7	3.7
11:32:19	20.43	33.7	1.22	662	54.6	3.7
11:32:35	20.47	30.3	1.11	671	54.0	3.6
11:32:50	20.51	30.7	1.05	679	54.1	3.8
11:33:05	20.52	31.7	1.03	681	54.8	3.8
11:33:20	20.53	33.7	1.01	659	55.9	3.7
11:33:35	20.54	33.7	0.97	654	56.6	3.6
11:33:50	20.56	32.3	0.94	573	57.9	3.6
11:34:05	20.56	31.2	0.89	601	59.1	3.4
11:34:20	20.57	26.7	0.85	620	60.8	3.4
11:34:35	20.58	20.2	0.85	593	64.1	3.4
11:34:50	20.57	15.7	0.86	579	66.9	3.4
11:35:05	20.58	14.8	0.84	571	69.1	3.4
11:35:20	20.57	13.2	0.83	532	72.3	3.4
11:35:35	20.57	12.8	0.84	480	74.7	3.4
11:35:50	20.56	13.2	0.82	491	77.2	3.3
11:36:05	20.57	13.2	0.81	444	79.7	3.3
11:36:20	20.57	13.2	0.80	437	82.0	3.3
11:36:35	20.57	14.3	0.77	452	84.8	3.4
11:36:50	20.59	13.7	0.76	469	86.4	3.5
11:37:05	20.58	15.2	0.75	449	88.0	3.6
11:37:20	20.60	15.7	0.73	413	88.4	3.6
11:37:36	20.60	16.3	0.72	410	88.2	3.7
11:37:51	20.60	16.3	0.72	413	88.2	3.8
11:38:06	20.61	19.7	0.72	407	89.2	3.9
11:38:21	20.59	19.7	0.72	410	89.1	3.9
11:38:36	20.60	21.7	0.72	480	87.9	4.0
11:38:51	20.60	22.2	0.71	459	88.3	4.1
11:39:06	20.59	22.2	0.71	433	87.8	4.1
11:39:21	20.61	22.7	0.70	385	89.0	4.1
11:39:36	20.60	23.7	0.68	517	91.2	4.1
11:39:51	20.59	25.2	0.82	446	94.4	4.5
11:40:06	20.56	27.2	0.77	452	103.3	4.7
11:40:21	20.59	26.7	0.66	403	108.0	4.7
11:40:36	20.61	27.2	0.59	355	108.3	4.6
11:40:51	20.63	29.2	0.59	315	107.4	4.6
11:41:06	20.60	31.7	0.63	263	104.9	4.6
11:41:21	20.60	34.7	0.65	258	102.8	4.5
11:41:36	20.59	36.2	0.67	253	102.0	4.6
11:41:51	20.58	38.7	0.68	310	101.7	4.6
11:42:06	20.58	39.1	0.67	320	101.8	4.6
11:42:21	20.57	37.1	0.66	337	101.6	4.6
11:42:37	20.58	37.1	0.66	344	102.1	4.5
11:42:52	20.59	34.3	0.65	345	105.1	4.5
11:43:07	20.59	32.7	0.64	374	107.6	4.5
11:43:22	20.59	32.3	0.64	362	111.4	4.5
11:43:37	20.60	31.7	0.64	376	115.6	4.4
11:43:52	20.58	32.4	0.65	503	123.1	4.9
11:44:07	20.53	35.2	0.84	230	135.9	5.0
11:44:22	20.57	33.7	0.85	365	140.1	5.2
11:44:37	20.61	32.7	0.60	415	146.6	5.4
11:44:52	20.62	33.7	0.56	386	155.8	5.2
11:45:07	20.64	35.2	0.53	375	164.9	5.0
11:45:22	20.63	35.7	0.55	334	172.3	4.8
11:45:37	20.61	36.7	0.58	303	179.6	4.7

11:45:52	20.60	37.6	0.60	351	189.8	4.7
11:46:07	20.59	39.6	0.62	381	199.6	4.6
11:46:22	20.60	39.6	0.62	383	204.8H	4.5
11:46:37	20.59	39.1	0.61	417	204.8H	4.3
11:46:52	20.60	37.6	0.60	366	204.8H	4.2
11:47:07	20.60	35.2	0.59	361	204.8H	4.1
11:47:22	20.60	35.7	0.59	366	204.8H	4.1
11:47:38	20.60	35.2	0.59	418	204.8H	4.1
11:47:53	20.61	35.2	0.59	414	204.8H	4.0
11:48:08	20.62	35.2	0.59	364	204.8H	4.0
11:48:23	20.61	34.3	0.58	387	204.8H	4.1
11:48:38	20.61	34.7	0.58	414	204.8H	4.1
11:48:53	20.60	34.7	0.59	423	204.8H	4.1
11:49:08	20.61	35.2	0.58	418	204.8H	4.1
11:49:23	20.61	36.2	0.59	432	204.8H	4.2
11:49:38	20.60	36.7	0.59	429	204.8H	4.3
11:49:53	20.61	40.2	0.59	435	204.8H	4.4
11:50:08	20.61	41.2	0.60	377	204.8H	4.5
11:50:23	20.59	46.7	0.61	361	204.8H	4.5
11:50:38	20.58	45.2	0.63	404	204.8H	4.5
11:50:53	20.57	50.7	0.64	424	204.8H	4.4
11:51:08	20.57	52.3	0.65	457	204.8H	4.3
11:51:23	20.59	50.7	0.64	473	204.8H	4.3
11:51:38	20.59	50.2	0.62	487	204.8H	4.2
11:51:53	20.60	45.6	0.61	497	204.8H	4.3
11:52:08	20.60	43.1	0.60	515	204.8H	4.3
11:52:23	20.60	45.2	0.61	507	204.8H	4.3
11:52:39	20.60	42.2	0.62	485	204.8H	4.3
11:52:54	20.60	42.2	0.60	465	204.8H	4.2
11:53:09	20.60	41.1	0.58	479	204.8H	4.2
11:53:24	20.62	39.6	0.58	481	204.8H	4.2
11:53:39	20.61	39.1	0.59	473	204.8H	4.2
11:53:54	20.61	41.1	0.58	496	204.8H	4.2
11:54:09	20.62	38.2	0.59	514	204.8H	4.3
11:54:24	20.61	40.2	0.58	491	204.8H	4.2
11:54:39	20.60	39.1	0.57	488	204.8H	4.2
11:54:54	20.62	39.1	0.58	444	204.8H	4.1
11:55:09	20.61	39.1	0.57	457	204.8H	4.0
11:55:24	20.62	38.2	0.56	433	204.8H	4.1
11:55:39	20.61	40.7	0.57	451	204.8H	4.2
11:55:54	20.59	43.6	0.58	461	204.8H	4.2
11:56:09	20.59	46.7	0.59	453	204.8H	4.3
11:56:24	20.58	46.2	0.59	464	204.8H	4.2
11:56:39	20.59	49.2	0.59	445	204.8H	4.2
11:56:54	20.60	49.6	0.60	451	204.8H	4.3
11:57:09	20.59	51.2	0.59	462	204.8H	4.3
11:57:24	20.58	53.3	0.60	535	204.8H	4.3
11:57:39	20.57	54.3	0.62	527	204.8H	4.3
11:57:55	20.57	55.7	0.62	511	204.8H	4.2
11:58:10	20.58	53.3	0.61	496	204.8H	4.1
11:58:25	20.59	50.2	0.59	417	204.8H	4.1
11:58:40	20.58	51.7	0.60	484	204.8H	4.3
11:58:55	20.59	51.7	0.61	505	204.8H	4.2
11:59:10	20.57	50.7	0.63	545	204.8H	4.2
11:59:25	20.58	53.3	0.65	609	204.8H	4.2
11:59:40	20.59	54.3	0.65	596	204.8H	4.1
11:59:55	20.58	49.2	0.65	576	204.8H	4.0
12:00:10	20.59	51.7	0.63	597	204.8H	4.0
12:00:25	20.60	44.7	0.62	627	204.8H	4.0
12:00:40	20.61	44.2	0.64	682	204.8H	4.2

12:00:55	20.61	44.2	0.66	641	204.8H	4.2
12:01:10	20.60	46.7	0.66	633	204.8H	4.1
12:01:25	20.60	46.2	0.65	625	204.8H	4.1
12:01:40	20.61	48.2	0.66	622	204.8H	4.2
12:01:55	20.60	47.6	0.67	636	204.8H	4.2
12:02:10	20.59	49.2	0.68	686	204.8H	4.3
12:02:25	20.59	49.2	0.68	658	204.8H	4.2
12:02:40	20.60	49.2	0.68	700	204.8H	4.2
12:02:56	20.60	48.2	0.68	644	204.8H	4.1
12:03:11	20.60	48.7	0.69	650	204.8H	4.0
12:03:26	20.59	45.6	0.68	649	204.8H	4.1
12:03:41	20.61	45.6	0.68	656	204.8H	4.1
12:03:56	20.61	43.6	0.69	704	204.8H	4.1
12:04:11	20.60	46.2	0.70	722	204.8H	4.1
12:04:26	20.60	46.7	0.70	698	204.8H	4.1
12:04:41	20.61	46.2	0.69	683	204.8H	4.0
12:04:56	20.62	44.7	0.67	692	204.8H	3.9
12:05:11	20.61	42.2	0.67	680	204.8H	3.9
12:05:26	20.60	41.1	0.68	668	204.8H	4.0
12:05:41	20.61	41.6	0.69	593	204.8H	3.9
12:05:56	20.60	43.1	0.69	600	204.8H	3.9
12:06:11	20.58	40.7	0.70	573	204.8H	3.8
12:06:26	20.58	43.1	0.69	593	204.8H	3.8
12:06:41	20.60	42.7	0.68	593	204.8H	3.9
12:06:56	20.60	41.6	0.69	607	204.8H	3.8
12:07:11	20.57	40.7	0.68	619	204.8H	3.8
12:07:26	20.58	40.2	0.68	603	68.5	3.8
12:07:41	20.60	40.2	0.68	615	68.4	3.8
12:07:57	20.59	41.6	0.69	646	687H	3.9
12:08:12	20.59	39.6	0.71	657	690H	3.8
12:08:27	20.59	39.1	0.70	690	691H	3.9
12:08:42	20.60	39.6	0.71	649	690	3.9
12:08:57	20.59	40.7	0.70	691	688	4.0
12:09:12	20.60	39.1	0.72	708	688	4.0
12:09:27	20.59	43.1	0.72	694	690	4.1
12:09:42	20.58	43.6	0.73	1005H	680	4.5
12:09:57	20.56	55.7	0.87	981	678	6.4
12:10:12	20.52	70.2	0.97	[illegible]	677	7.8
12:10:27	20.46	93.7	1.12	[illegible]	680	6.1
12:10:42	20.44	113.2	1.11	894	679	4.9
12:10:57	20.50	102.2	1.01	849	688	4.6
12:11:12	20.52	82.8	0.93	832	697	4.3
12:11:27	20.56	70.7	0.88	694	694	4.2
12:11:42	20.56	53.3	0.85	649	684	4.1
12:11:57	20.58	50.7	0.80	594	683	4.1
12:12:12	20.56	49.2	0.78	520	696	4.2
12:12:27	20.56	55.3	0.78	564	705	4.0
12:12:42	20.54	53.3	0.79	464	0.356	3.8
12:12:58	20.55	53.3	0.78	419	714H	4.0
12:13:13	20.52	53.3	0.84	395	710H	4.0
12:13:28	20.49	51.7	0.87	362	710H	3.8
12:13:43	20.50	51.2	0.85	363	354H	3.8
12:13:58	20.50	49.6	0.84	435	354H	3.8
12:14:13	20.50	45.2	0.84	428	356H	3.7
12:14:28	20.50	42.2	0.81	473	356	3.8
12:14:43	20.52	38.7	0.80	463	353	3.8
12:14:58	20.51	37.1	0.78	472	352	3.7
12:15:13	20.54	34.7	0.76	44	351	3.7
12:15:28	20.53	31.7	0.75	50	348	3.8
12:15:43	20.54	30.7	0.77	48	344	3.8

Changed Range

12:15:58	20.52	31.2	0.78	[illegible]	341	3.9
12:16:13	20.52	32.2	0.77	[illegible]	336	3.9
12:16:28	20.51	34.2	0.78	522	331	3.9
12:16:43	20.52	33.7	0.77	476	325	3.8
12:16:58	20.52	33.7	0.75	505	321	3.7
12:17:13	20.52	30.2	0.73	623	318	3.8
12:17:28	20.54	25.2	0.75	626	317	3.8
12:17:43	20.54	22.2	0.74	573	315	3.8
12:17:59	20.56	20.7	0.71	551	312	3.8
12:18:14	20.55	18.3	0.70	543	308	3.8
12:18:29	20.56	18.8	0.71	572	302	3.8
12:18:44	20.54	17.7	0.71	593	296	3.8
12:18:59	20.56	17.2	0.71	624	294	3.8
12:19:14	20.55	15.7	0.72	590	292	3.8
12:19:29	20.57	16.3	0.70	620	290	3.8
12:19:44	20.57	14.8	0.69	598	288	3.9
12:19:59	20.58	14.8	0.68	613	285	3.8
12:20:14	20.57	14.3	0.67	628	287	3.8
12:20:29	20.57	14.8	0.69	623	285	3.8
12:20:44	20.58	15.2	0.68	624	281	3.8
12:20:59	20.57	14.3	0.69	600	276	3.9
12:21:14	20.58	13.7	0.68	642	272	3.9
12:21:29	20.57	13.2	0.68	628	267	3.9
12:21:44	20.58	15.2	0.70	590	265	3.8
12:21:59	20.57	14.8	0.69	640	263	3.9
12:22:14	20.57	14.8	0.71	621	259	3.9
12:22:29	20.55	20.7	0.70	597	255	3.8
12:22:44	20.57	15.2	0.69	627	247	3.9
12:23:00	20.56	20.2	0.68	597	240	3.8
12:23:15	20.58	14.8	0.67	577	235	3.7
12:23:30	20.56	14.3	0.65	591	230	3.7
12:23:45	20.58	15.7	0.67	613	225	3.8
12:24:00	20.56	15.7	0.69	587	219	3.8
12:24:15	20.56	16.8	0.69	589	213	3.7
12:24:30	20.55	16.8	0.69	619	209	3.8
12:24:45	20.56	17.2	0.69	597	204	3.7
12:25:00	20.55	17.2	0.68	600	200	3.7
12:25:15	20.57	17.7	0.68	628	198	3.7
12:25:30	20.56	17.7	0.68	620	195	3.7
12:25:45	20.57	17.7	0.67	642	190	3.7
12:26:00	20.57	16.8	0.67	650	185	3.7
12:26:15	20.57	15.7	0.69	937	181	5.3
12:26:30	20.55	30.7	0.85	1024H	177	13.5
12:26:45	20.38	68.7	1.48	1024H	178	18.5
12:27:00	20.18	185.3	1.94	1024H	187	13.5
12:27:15	20.12	228.2	1.92	1024H	191	9.7
12:27:30	20.20	250.4	1.65	862	183	7.1
12:27:45	20.26	215.7	1.45	643	165	5.5
12:28:00	20.30	137.3	1.32	706	150	5.1
12:28:16	20.35	104.2	1.22	748	142	4.8
12:28:31	20.38	59.7	1.11	713	137	4.6
12:28:43 SWITCH NOX TO NO MODE						
12:28:46	20.43	48.2	1.02	937 DELETE SPIKE	134	4.5
12:29:01	20.45	36.2	0.97	640	129	4.4
12:29:16	20.47	32.7	0.93	639	126	4.2
12:29:31	20.47	30.2	0.90	627	120	4.2
12:29:46	20.49	26.7	0.87	590	115	4.1
12:30:01	20.50	24.7	0.85	638	110	4.0
12:30:16	20.50	24.2	0.85	643	106	4.0
12:30:31	20.50	21.7	0.84	634	103	3.9

12:30:46	20.51	19.2	0.84	549	99	3.8
12:31:01	20.49	19.2	0.84	546	94	3.8
12:31:16	20.49	22.2	0.87	636	88	3.8
12:31:31	20.47	21.7	0.85	616	85	3.8
12:31:46	20.50	20.2	0.83	680	82	3.8
12:32:01	20.51	22.2	0.82	718	79	3.9
12:32:16	20.52	21.2	0.79	703	78	3.8
12:32:31	20.54	18.8	0.76	710	74	3.8
12:32:46	20.55	18.8	0.73	690	71	3.8
12:33:01	20.56	17.2	0.72	713	68	3.8
12:33:17	20.56	16.8	0.71	692	65	3.8

12:33:21 END RUN HEPA OUTLET

12:33:32	20.58	16.8	0.72	707	63	3.8
12:33:47	20.55	15.7	0.71	693	60	3.7
12:34:02	20.58	15.7	0.69	673	57	3.7
12:34:17	20.56	15.7	0.68	657	55	3.7
12:34:32	20.60	15.7	0.64	646	52	3.7
12:34:47	20.58	14.8	0.64	640	49	3.6
12:35:02	20.60	14.8	0.61	640	47	3.6
12:35:17	20.59	14.8	0.61	611	45	3.6
12:35:32	20.60	15.2	0.61	600	43	3.6
12:35:47	20.59	15.7	0.62	600	41	3.6
12:36:02	20.59	16.8	0.64	601	39	3.5
12:36:17	20.56	18.3	0.67	596	38	3.6
12:36:32	20.57	19.7	0.71	640	37	3.6
12:36:47	20.54	22.2	0.73	610	36	3.5
12:37:02	20.56	21.7	0.71	632	36	3.5
12:37:17	20.55	21.7	0.70	628	35	3.6
12:37:32	20.56	21.7	0.71	623	35	3.7
12:37:47	20.54	24.2	0.73	641	35	3.7
12:38:02	20.54	27.7	0.79	621	36	4.1
12:38:18	20.50	37.1	0.86	575	37	3.9
12:38:33	20.48	42.6	0.90	631	38	4.1
12:38:48	20.46	51.2	0.93	589	42	3.9
12:39:03	20.46	51.2	0.92	565	46	3.9
12:39:18	20.46	53.2	0.92	623	48	3.6
12:39:33	20.47	50.7	0.91	599	53	3.5
12:39:48	20.47	46.7	0.90	569	58	2.9
12:40:03	20.48	41.6	0.88	232	61	2.6
12:40:18	20.51	31.2	0.65	194	54	2.4
12:40:33	20.60	26.2	0.41	195	41	2.3
12:40:48	20.63	15.2	0.33	194	31	2.3
12:41:03	20.64	11.2	0.32	198	25	2.3
12:41:18	20.64	8.2	0.31	208	20	2.2
12:41:33	20.66	8.2	0.31	203	16	2.2
12:41:48	20.64	6.2	0.30	204	13	2.2
12:42:03	20.66	7.2	0.28	198	11	2.1
12:42:18	20.64	6.7	0.28	189	10	2.1
12:42:33	20.66	5.2	0.28	110	8	2.1
12:42:48	20.64	4.7	0.27	79	7	2.1
12:43:03	20.67	3.8	0.25	74	6	2.1
12:43:19	20.68	3.3	0.22	59	5	2.0
12:43:34	20.68	2.8	0.19	53	5	2.0
12:43:49	20.68	2.3	0.18	42	4	2.0
12:44:04	20.69	1.8	0.15	32	4	2.0
12:44:19	20.69	1.8	0.13	28	3	2.0
12:44:34	20.69	1.3	0.12	25	3	2.0
12:44:49	20.68	1.3	0.11	24	3	2.0

12:45:04	20.68	1.3	0.10	24	3	1.9
12:45:19	20.67	0.8	0.10	23	2	1.9
12:45:34	20.67	0.3	0.09	22	2	1.9
12:45:49	20.66	2.8	0.09	22	2	1.9
12:46:04	20.65	1.8	0.09	22	2	1.8
12:46:19	20.66	0.8	0.09	22	2	1.9
12:46:34	20.64	0.8	0.08	21	1	1.8
12:46:49	20.66	1.3	0.08	21	1	1.8
12:47:04	20.63	1.3	0.09	21	1	1.8
12:47:19	20.64	1.3	0.09	17	1	1.8
12:47:34	20.61	1.3	0.09	17	1	1.8
12:47:49	20.60	0.3	0.08	17	1	1.8
12:48:04	20.62	0.8	0.08	17	1	1.9
12:48:20	20.64	0.3	0.07	17	1	1.9
12:48:35	20.65	1.3	0.08	17	1	1.9
12:48:50	20.65	0.3	0.07	17	1	1.8
12:49:05	20.67	0.8	0.07	16	1	1.8
12:49:20	20.66	0.3	0.08	16	1	1.9
12:49:35	20.68	0.8	0.07	342	1	2.1
12:49:50	20.68	7.7	0.33	337	7	2.5
12:50:05	20.47	11.7	0.72	31	4	2.0
12:50:20	20.58	11.7	0.30	23	2	1.9
12:50:35	20.66	10.2	0.14	18	1	1.8
12:50:50	20.67	7.2	0.10	17	1	1.8
12:51:05	20.69	2.8	0.09	16	1	1.8
12:51:20	20.69	0.8	0.08	16	1	1.7
12:51:35	20.69	0.3	0.08	16	1	1.7
12:51:50	20.70	1.3	0.08	16	1	1.7
12:52:05	20.69	-0.2	0.08	16	1	1.7
12:52:20	20.70	0.3	0.07	16	1	1.7
12:52:35	20.68	0.8	0.07	16	1	1.7
12:52:50	20.70	0.3	0.08	16	1	1.6
12:53:05	20.65	0.8	0.10	16	1	1.7
12:53:21	20.68	0.8	0.09	97	1	1.8
12:53:36	20.67	21.2	0.20	1024H	12	18.6
12:53:51	20.06	119.8	2.80	1024H	67	14.0
12:54:06	19.45	368.7	3.85	1024H	81	16.9
12:54:21	19.30	448.5	4.02	1024H	116	12.7
12:54:36	19.32	499.8	3.77	1024H	144	12.1
12:54:51	19.45	499.8	3.49	1024H	157	11.7
12:55:06	19.50	457.3	3.42	1024H	169	9.9
12:55:21	19.49	414.4	3.38	1024H	186	9.1
12:55:36	19.51	403.4	3.34	1024H	192	8.6
12:55:51	19.52	348.8	3.35	1024H	201	8.7
12:56:06	19.52	327.3	3.39	1024H	222	8.9
12:56:21	19.52	319.3	3.40	1024H	244	8.8
12:56:36	19.51	306.3	3.43	451	274	8.0
12:56:51	19.52	300.3	3.35	570	293	7.3
12:57:06	19.56	279.3	3.27	1387H	306	7.3
12:57:21	19.60	255.4	3.14	1593H	316	7.4
12:57:36	19.65	246.4	3.09	1527H	323	7.2
12:57:51	19.69	221.7	2.91	1972H	323	7.8
12:58:06	19.77	216.3	2.82	2094	327	8.0
12:58:21	19.81	208.3	2.73	1920	331	7.7
12:58:37	19.87	192.4	2.62	2205	339	7.9
12:58:52	19.88	184.8	2.62	2146	355	7.9
12:59:07	19.91	189.8	2.60	2171	364	7.9

12:59:12 ON LINE RUN #1 POST QUENCH

12:59:22	19.91	179.2	2.66	2079	376	7.7
12:59:37 ON LINE POST QUENCH #1						
12:59:37	19.93	173.7	2.61	2038	389	7.8
12:59:52	19.95	170.7	2.61	2207	405	7.9
13:00:07	19.94	164.7	2.64	2293	430	8.0
13:00:22	19.95	170.7	2.56	2348	461	8.1
13:00:37	19.94	161.7	2.57	2499	485	8.4
13:00:52	19.96	162.3	2.58	2500H	514	8.3
13:01:07	19.96	162.3	2.57	2499	538	8.4
13:01:22	19.97	160.8	2.55	~~6[illegible]2~~	569	8.5
13:01:37	19.99	155.3	2.54	~~67[illegible]~~	587	8.7
13:01:52	19.98	150.3	2.54	~~[illegible]44~~	593	8.6
13:02:07	19.99	159.3	2.52	2475	595	8.4
13:02:22	19.98	149.7	2.46	2574H	600	8.9
13:02:37	19.99	161.8	2.52	2493	600	9.7
13:02:52	19.92	174.7	2.69	2526H	599	10.0
13:03:07	19.86	206.3	2.86	2461	601	10.0
13:03:23	19.81	219.7	2.97	2224	600	9.7
13:03:38	19.78	232.7	3.02	2431	593	9.8
13:03:53	19.76	229.6	3.06	2233	599	9.9
13:04:08	19.73	233.2	3.13	2097	599	10.0
13:04:23	19.70	246.4	3.22	2032	591	9.6
13:04:38	19.66	236.7	3.29	2295	587	9.7
13:04:53	19.65	287.3	3.36	2149	590	9.8
13:05:08	19.65	257.9	3.32	2001	587	10.3
13:05:23	19.64	264.3	3.37	2207	583	10.3
13:05:38	19.60	266.3	3.42	2095	603	9.6
13:05:53	19.62	254.9	3.36	2103	624	9.9
13:06:08	19.63	262.8	3.33	2082	638	10.7
13:06:23	19.62	258.4	3.40	2330	633	10.3
13:06:38	19.60	279.3	3.43	2174	642	10.6
13:06:53	19.61	283.7	3.42	2031	644	10.4
13:07:08	19.61	277.3	3.40	2132	648	10.3
13:07:23	19.60	282.3	3.47	2017	653	10.0
13:07:38	19.56	282.3	3.52	2126	656	9.9
13:07:53	19.58	277.8	3.49	2299	672	10.6
13:08:08	19.58	261.3	3.53	2309	675	10.3
13:08:24	19.59	-11.71 262.0	3.48	2170	662	10.3
13:08:39	19.63	264.8	3.35	2017	655	9.6
13:08:54	19.64	235.7	3.29	1714	644	10.0
13:09:09	19.65	235.2	3.26	1827	634	9.5
13:09:24	19.63	229.2	3.30	1837	640	10.5
13:09:39	19.61	256.4	3.36	1944	645	10.2
13:09:54	19.59	281.3	3.42	2198	641	10.7
13:10:09	19.57	270.4	3.49	2074	636	10.6
13:10:24	19.60	252.4	3.42	2152	617	11.9
13:10:39	19.60	248.9	3.42	1957	622	10.1
13:10:54	19.59	277.3	3.39	1924	615	10.5
13:11:09	19.59	259.9	3.41	2030	614	10.2
13:11:24	19.60	251.9	3.30	2108	607	11.0
13:11:39	19.64	253.9	3.28	2080	608	10.6
13:11:54	19.60	258.4	3.33	2075	606	10.8
13:12:09	19.64	269.8	3.21	2302	602	12.2
13:12:24	19.63	283.3	3.24	2224	592	12.4
13:12:39	19.60	286.8	3.25	2160	588	10.9
13:12:54	19.63	284.8	3.17	1963	580	11.1
13:13:09	19.64	279.3	3.13	2041	570	11.0
13:13:25	19.64	266.8	3.12	1714	565	10.2
13:13:40	19.68	269.3	3.01	1739	562	9.9
13:13:55	19.69	234.2	2.94	2225	558	10.2

13:14:10	19.72	2[illegible]5.2	2.94	2071	557	10.0
13:14:25	19.78	207.3	2.82	2251	553	10.1
13:14:40	19.83	196.8	2.69	2266	549	10.1
13:14:55	19.86	183.8	2.62	2263	545	9.8
13:15:10	19.86	189.8	2.59	2258	550	9.6
13:15:25	19.88	192.4	2.56	2358	556	9.8
13:15:40	19.88	170.3	2.58	2232	560	9.4
13:15:55	19.90	172.3	2.58	2317	562	9.9
13:16:10	19.89	174.7	2.58	2133	560	9.7
13:16:25	19.88	177.7	2.54	2183	561	9.6
13:16:40	19.89	176.8	2.55	2236	561	9.7
13:16:55	19.87	180.4	2.59	2248	561	9.8
13:17:10	19.86	196.8	2.62	2377	563	10.1
13:17:25	19.86	187.3	2.67	2498	574	10.3

13:17:31 SWITCH TO NO MODE

13:17:40	19.84	195.3	2.71	1879	579	10.6
13:17:55	19.85	199.3	2.70	1784	575	10.1
13:18:10	19.81	198.3	2.72	1920	567	10.0
13:18:26	19.81	206.3	2.71	1971	566	10.4
13:18:41	19.81	202.3	2.77	1902	571	10.0
13:18:56	19.83	197.3	2.72	1792	581	9.9

13:18:59 CHANGE RANGE TO 2500 WAS 10000

13:19:11	19.83	190.9	2.71	~~[illegible]~~	544	10.6
13:19:26	19.82	202.8	2.71	~~[illegible]~~	535	9.9
13:19:41	19.82	206.3	2.75	1641	525	10.0
13:19:56	19.79	204.3	2.79	1583	515	10.0
13:20:11	19.77	218.8	2.82	1628	511	10.5
13:20:26	19.73	224.8	2.91	1539	513	10.4
13:20:41	19.68	249.9	3.04	1442	511	10.5
13:20:56	19.65	251.9	3.11	1510	512	10.7
13:21:11	19.59	331.8	3.17	1549	508	9.7
13:21:26	19.60	249.4	3.17	1590	503	10.0
13:21:41	19.61	267.8	3.14	1651	501	9.6
13:21:56	19.64	250.9	3.05	1545	506	9.4
13:22:12	19.69	239.2	2.99	1510	504	9.3
13:22:27	19.69	237.2	2.95	1353	499	10.0
13:22:42	19.67	236.7	3.04	1427	487	10.0
13:22:57	19.61	249.9	3.18	1469	485	10.1
13:23:12	19.58	264.4	3.25	1383	489	10.1
13:23:27	19.54	272.9	3.36	1492	487	9.9
13:23:42	19.50	285.8	3.45	1477	486	10.4
13:23:57	19.48	298.3	3.54	1334	489	10.2
13:24:12	19.45	313.8	3.55	1739	481	11.1
13:24:27	19.47	338.8	3.59	1652	490	10.6
13:24:42	19.45	312.9	3.61	1551	492	9.9
13:24:57	19.46	307.7	3.60	1385	473	9.1
13:25:12	19.45	299.7	3.51	1397	461	9.6
13:25:27	19.48	283.3	3.50	1430	463	10.1

13:25:42 END POST QUENCH

13:25:42	19.44	296.3	3.56	1652	465	10.2
13:25:57	19.43	284.8	3.80	1546	472	10.1
13:26:12	19.44	282.3	3.54	1377	466	9.7
13:26:27	19.46	285.3	3.41	1557	457	9.9
13:26:42	19.50	271.8	3.33	1490	453	9.5
13:26:57	19.53	251.9	3.28	1503	447	9.2

13:27:13	19.53	255.4	3.27	1298	437	8.8
13:27:28	19.54	245.9	3.21	1465	421	9.7
13:27:43	19.52	258.9	3.26	1270	413	8.6
13:27:58	19.51	246.4	3.23	368	473	3.7
13:28:13	19.63	212.8	2.17	74	525	3.2
13:28:28	20.21	154.3	0.76	68	564	2.9
13:28:43	20.47	60.3	0.30	60	618	2.7
13:28:58	20.53	28.7	0.19	58	645	2.7
13:29:13	20.56	5.2	0.14	55	645	2.5
13:29:28	20.57	1.8	0.12	53	639	2.5
13:29:43	20.57	0.8	0.10	53	640	2.4
13:29:58	20.58	0.8	0.09	52	638	2.4
13:30:13	20.57	0.8	0.09	51	637	2.3
13:30:28	20.59	0.3	0.09	51	637	2.3
13:30:43	20.58	1.3	0.09	51	633	2.3
13:30:58	20.59	0.8	0.09	50	628	2.3
13:31:13	20.58	0.3	0.08	50	627	2.3
13:31:28	20.60	0.3	0.09	50	623	2.3
13:31:43	20.58	0.8	0.08	49	623	2.3
13:31:58	20.60	0.8	0.08	48	620	2.3
13:32:14	20.58	0.3	0.08	48	614	2.2
13:32:29	20.60	0.8	0.08	50	609	2.2
13:32:44	20.58	1.8	0.08	35	607	2.2
13:32:59	20.60	0.3	0.08	37	603	2.2
13:33:14	20.58	1.3	0.07	38	600	2.2
13:33:29	20.59	0.8	0.08	37	598	2.2
13:33:44	20.58	1.3	0.08	35	595	2.1
13:33:59	20.59	-0.2	0.08	33	589	2.2
13:34:14	20.56	0.8	0.09	32	579	2.2
13:34:29	20.58	0.8	0.08	31	571	2.1
13:34:44	20.57	0.8	0.08	31	575	2.2
13:34:59	20.58	0.8	0.08	31	568	2.2
13:35:14	20.57	0.8	0.08	31	550	2.1
13:35:29	20.54	0.8	0.10	31	523	2.1
13:35:44	20.55	0.3	0.10	31	485	2.1
13:35:59	20.56	0.8	0.09	30	445	2.1
13:36:14	20.56	0.8	0.08	30	412	2.0
13:36:29	20.58	0.3	0.08	29	385	2.0
13:36:44	20.57	0.8	0.08	29	358	2.0
13:36:59	20.57	0.8	0.08	28	335	2.0
13:37:15	20.56	0.8	0.08	28	310	2.0
13:37:30	20.56	0.8	0.09	31	292	2.0
13:37:45	20.54	0.3	0.10	42	272	1.9
13:38:00	18.03	1.3	0.08	61	254	1.9
13:38:15	18.55	13.7	0.08	93	241	1.9
13:38:30	19.46	38.6	0.39	2560	228	1.9
13:38:45	19.42	156.8	3.37	2560	215	1.9
13:39:00	19.17	214.8	4.45	2560	200	1.9
13:39:15	19.10	283.3	4.79	2560	188	1.9
13:39:30	19.10	304.3	4.77	2560	178	1.9
13:39:45	19.06	323.4	5.21	2560	167	1.8
13:40:00	19.00	315.4	5.35	2560	157	1.8
13:40:15	19.00	330.8	5.29	2560	147	1.8
13:40:30	19.04	339.8	5.20	2560	140	1.8
13:40:45	19.05	327.3	5.16	2560	132	1.8
13:41:00	19.03	348.8	5.17	2560	124	1.8
13:41:15	19.02	377.0	5.32	2560	118	1.8
13:41:30	18.93	361.2	5.93	2560	112	1.7
13:41:45	18.91	394.4	5.87	2560	107	1.7
13:42:00	18.97	364.7	5.65	2560	100	1.7

13:42:16	18.97	368.3	5.66	2560	95	1.7
13:42:31	18.94	362.2	5.77	2560	90	1.7
13:42:46	18.91	385.2	5.83	2560	87	1.7
13:43:01	18.93	371.7	5.96	3747	83	1.7
13:43:16	18.91	384.5	5.93	3937	79	1.7
13:43:31	18.89	388.4	5.98	4000	76	1.7
13:43:46	18.89	375.4	6.05	4074	72	1.7
13:44:01	18.91	369.2	6.02	3986	69	1.6
13:44:16	18.91	378.5	6.01	3994	66	1.7
13:44:31	18.93	370.3	5.92	3779	64	1.7
13:44:46	18.96	365.7	5.82	3866	62	1.7

13:44:50 ON LINE RUN #1 MELTER EXHAUST

13:45:01	18.94	357.2	5.99	4118	59	1.7
13:45:16	18.90	372.5	6.11	4034	57	1.7
13:45:31	18.89	373.4	6.13	3946	56	1.7
13:45:46	18.90	364.2	5.96	4161	54	1.7
13:46:01	18.97	390.9	5.80	4153	52	1.7
13:46:16	19.01	374.5	5.68	3993	51	1.7
13:46:31	19.04	359.2	5.58	4089	49	1.6
13:46:46	19.05	353.8	5.51	3788	48	1.7
13:47:01	19.08	353.3	5.38	3899	46	1.7
13:47:16	19.06	352.3	5.47	4059	45	1.7
13:47:32	19.04	347.3	5.57	3892	44	1.6
13:47:47	19.05	353.8	5.38	3806	43	1.6
13:48:02	19.15	343.3	5.10	4001	42	1.6
13:48:17	19.17	340.8	5.11	3895	41	1.6
13:48:32	19.19	314.9	5.08	3883	40	1.6
13:48:47	19.18	322.9	5.05	3905	39	1.6
13:49:02	19.18	319.8	5.05	4054	38	1.6
13:49:17	19.19	330.3	5.08	3861	37	1.6
13:49:32	19.18	311.3	5.12	3971	36	1.6
13:49:47	19.15	329.3	5.24	4153	35	1.6
13:50:02	19.10	325.3	5.46	4328	34	1.5
13:50:17	19.04	328.8	5.63	3522	34	1.6
13:50:32	19.12	294.7	4.45	652	33	1.5
13:50:47	19.89	236.7	1.47	416	32	1.5
13:51:02	20.27	97.2	0.58	352	31	1.5
13:51:17	20.38	57.7	0.28	304	31	1.5
13:51:32	20.41	12.3	0.20	277	30	1.5
13:51:47	20.42	5.2	0.15	252	29	1.5
13:52:02	20.41	1.3	0.14	232	28	1.5
13:52:17	20.42	0.8	0.12	218	28	1.5
13:52:33	20.41	0.3	0.12	203	27	1.5
13:52:48	20.42	1.3	0.11	192	27	1.5
13:53:03	20.41	0.8	0.11	182	26	1.5
13:53:18	20.41	0.8	0.10	173	26	1.5
13:53:33	20.41	0.8	0.10	167	26	1.5
13:53:48	20.41	0.8	0.10	159	25	1.5
13:54:03	20.41	0.3	0.09	153	25	1.5
13:54:18	20.40	0.8	0.10	146	24	1.4
13:54:33	20.42	0.8	0.09	142	24	1.4
13:54:48	20.40	1.3	0.09	136	24	1.4
13:55:03	20.42	0.8	0.09	132	23	1.5
13:55:18	20.40	0.8	0.09	128	23	1.4
13:55:33	20.41	0.3	0.09	123	23	1.4
13:55:48	20.41	0.8	0.09	120	22	1.4
13:56:03	20.40	0.8	0.08	117	22	1.4
13:56:18	20.41	0.8	0.08	114	22	1.4

13:56:33	20.39	0.8	0.08	111	22	1.4
13:56:48	20.41	0.8	0.09	108	21	1.3
13:57:03	20.39	0.8	0.08	105	21	1.4
13:57:18	20.40	0.3	0.09	103	21	1.4
13:57:34	20.40	1.3	0.08	100	20	1.4
13:57:49	20.40	0.3	0.08	99	20	1.4
13:58:04	20.40	0.3	0.08	97	20	1.3
13:58:19	20.40	0.8	0.08	95	20	1.3
13:58:34	20.41	0.8	0.09	94	19	1.3
13:58:49	20.40	1.2	0.08	92	19	1.3
13:59:04	20.42	0.8	0.08	92	19	1.4
13:59:19	20.41	0.3	0.08	91	18	1.3
13:59:34	20.42	0.3	0.08	88	18	1.3
13:59:49	20.42	0.8	0.08	88	18	1.3
14:00:04	20.41	1.3	0.08	86	17	1.3
14:00:19	20.42	0.3	0.08	86	17	1.3
14:00:34	20.40	0.8	0.08	85	17	1.3
14:00:49	20.42	1.3	0.09	84	17	1.4
14:01:04	20.40	1.3	0.08	82	17	1.2
14:01:19	20.40	0.8	0.08	81	16	1.3
14:01:34	20.40	0.3	0.08	80	16	1.3
14:01:49	20.40	1.3	0.08	80	16	1.3
14:02:04	20.41	0.8	0.08	80	16	1.3
14:02:19	20.41	1.3	0.08	79	16	1.3
14:02:35	20.41	0.8	0.08	79	16	1.3
14:02:50	20.41	1.7	0.08	77	15	1.3
14:03:05	20.40	1.3	0.08	77	14	1.3
14:03:20	20.41	0.3	0.08	76	14	1.3
14:03:35	20.40	1.3	0.08	76	14	1.3
14:03:50	20.40	1.3	0.08	75	14	1.3
14:04:05	20.41	0.8	0.08	75	13	1.2
14:04:20	20.41	-0.3	0.08	74	13	1.2
14:04:35	20.41	1.7	0.07	73	13	1.3
14:04:50	20.42	3.7	0.08	72	13	1.3
14:05:05	20.40	1.3	0.08	72	12	1.2
14:05:20	20.42	2.8	0.08	72	12	1.3
14:05:35	20.39	0.8	0.07	71	12	1.3
14:05:50	20.41	0.3	0.08	71	12	1.2
14:06:05	20.41	0.8	0.08	71	12	1.2
14:06:20	20.40	0.8	0.08	70	12	1.2
14:06:35	20.41	1.3	0.08	68	12	1.2
14:06:50	20.40	0.3	0.07	68	11	1.2
14:07:05	20.42	0.8	0.08	67	11	1.2
14:07:20	20.41	0.8	0.08	66	11	1.2
14:07:36	20.42	0.3	0.08	66	11	1.2
14:07:51	20.42	0.3	0.07	65	11	1.2
14:08:06	20.41	0.3	0.08	64	11	1.2
14:08:21	20.42	0.8	0.08	64	11	1.2
14:08:36	20.41	0.8	0.08	65	11	1.2
14:08:51	20.42	0.8	0.08	64	11	1.2
14:09:06	20.41	0.8	0.07	64	11	1.2
14:09:21	20.41	0.8	0.08	63	10	1.2
14:09:36	20.41	0.8	0.08	63	10	1.2
14:09:51	20.40	0.8	0.08	62	10	1.2
14:10:06	20.40	0.8	0.08	62	10	1.2
14:10:21	20.41	0.8	0.08	61	10	1.1
14:10:36	20.42	1.3	0.07	61	10	1.2
14:10:51	20.41	0.3	0.08	61	10	1.2
14:11:06	20.43	0.8	0.07	61	10	1.2
14:11:21	20.42	0.8	0.08	60	10	1.2

14:11:36	20.42	0.8	0.08	60	10	1.2
14:11:51	20.42	1.3	0.08	60	10	1.2
14:12:06	20.41	0.3	0.08	60	10	1.2
14:12:21	20.42	0.3	0.08	59	9	1.2
14:12:37	20.41	0.8	0.08	59	9	1.2
14:12:52	20.42	0.8	0.08	59	9	1.2
14:13:07	20.41	0.8	0.08	58	9	1.2
14:13:22	20.41	0.8	0.08	58	9	1.1
14:13:37	20.41	0.8	0.08	59	9	1.1
14:13:52	20.41	0.8	0.08	58	9	1.1
14:14:07	20.42	0.8	0.08	57	9	1.2
14:14:22	20.41	0.8	0.07	57	9	1.1
14:14:37	20.42	0.3	0.08	57	8	1.2
14:14:52	20.42	0.8	0.07	57	8	1.2
14:15:07	20.43	0.8	0.07	57	8	1.1
14:15:22	20.42	0.8	0.08	56	8	1.1
14:15:37	20.42	1.3	0.08	3585	8	1.2
14:15:52	20.28	89.1	1.89	4508	8	1.1
14:16:07	19.33	188.4	5.00	4545	8	1.1
14:16:22	18.79	315.8	6.39	4484	8	1.1
14:16:37	18.40	495.8	7.29	4578	8	1.1
14:16:52	18.30	499.8	7.68	4706	8	1.1
14:17:07	18.20	499.8	7.99	4659	7	1.1
14:17:22	18.18	499.8	8.12	4704	7	1.1
14:17:37	18.19	499.8	8.06	4693	7	1.1
14:17:53	18.25	499.8	7.87	4635	7	1.1
14:18:08	18.32	499.8	7.71	4663	7	1.1
14:18:23	18.40	499.8	7.52	4736	7	1.1
14:18:38	18.44	245.3	7.48	4829	7	1.1
14:18:53	18.50	219	7.29	4823	7	1.1
14:19:08	18.56	423	7.12	4943	7	1.1
14:19:23	18.63	403	6.93	4939	6	1.1
14:19:38	18.75	367.7	6.67	4924	6	1.1
14:19:53	18.84	374.4	6.50	4958	6	1.1
14:20:08	18.88	360.2	6.51	4917	6	1.1
14:20:13 BACK ON MELTER EXHAUST				Nox in NO Mode		
14:20:23	18.89	357.2	6.52	4877	6	1.1
14:20:38	18.88	363.2	6.49	4850	6	1.1
14:20:53	18.88	383.0	6.49	4925	6	1.1
14:21:08	18.84	408.4	6.62	4811	6	1.1
14:21:23	18.80	429.3	6.62	4798	6	1.1
14:21:38	18.80	432.8	6.63	4933	6	1.1
14:21:53	18.80	435.8	6.63	4987	6	1.1
14:22:08	18.78	439.9	6.64	4982	6	1.1
14:22:23	18.77	448.4	6.61	4970	6	1.1
14:22:38	18.75	439.4	6.68	5067	5	1.2
14:22:54	18.73	435.8	6.62	5029	5	1.1
14:23:09	18.76	431.3	6.55	5096	5	1.1
14:23:24	18.72	424.8	6.67	5034	5	1.1
14:23:39	18.70	438.4	6.70	4980	5	1.1
14:23:54	18.70	449.9	6.64	5061	5	1.1
14:24:09	18.62	470.8	6.90	5082	5	1.1
14:24:24	18.57	480.8	7.02	5068	4	1.1
14:24:39	18.54	493.3	6.98	4974	4	1.1
14:24:54	18.56	488.8	6.90	4927	4	1.1
14:25:09	18.59	474.3	6.76	4987	4	1.1
14:25:24	18.63	461.8	6.71	5019	4	1.1
14:25:39	18.63	451.9	6.64	5076	4	1.1
14:25:54	18.69	442.9	6.64	5037	4	1.1
14:26:09	18.74	450.9	6.55	5027	4	1.1

14:26:24	18.81	404.3	6.40	5105	4	1.1
14:26:39	18.85	407.8	6.40	5176	4	1.2
14:26:54	18.86	401.9	6.58	5192	4	1.2
14:27:09	18.81	409.8	6.74	5142	4	1.2
14:27:24	18.80	413.3	6.72	5064	4	1.2
14:27:39	18.81	420.8	6.80	5075	4	1.2
14:27:55	18.82	423.3	6.87	5047	4	1.2
14:28:10	18.81	419.3	6.57	4942	4	1.2
14:28:25	18.85	402.4	6.37	4929	5	1.2
14:28:40	18.85	403.4	6.37	4979	5	1.2
14:28:55	18.82	420.3	6.45	4979	5	1.2
14:29:10	18.81	402.4	6.42	5160	5	1.2
14:29:25	18.84	403.4	6.40	5238	5	1.2
14:29:40	18.87	410.8	6.32	5301	5	1.2
14:29:55	18.90	417.3	6.26	5185	5	1.2
14:30:10	18.95	420.8	6.04	5221	5	1.2
14:30:25	18.96	414.4	5.98	5264	5	1.1
14:30:40	18.97	438.9	5.93	5301	5	1.2
14:30:55	18.96	433.8	5.94	5342	5	1.2
14:31:10	18.95	431.8	6.01	5337	5	1.2
14:31:25	18.96	444.9	5.95	5222	5	1.2
14:31:40	18.97	435.3	5.88	5268	5	1.2
14:31:55	18.96	462.9	5.82	5245	5	1.2
14:32:10	18.95	440.4	5.94	5135	5	1.2
14:32:25	18.86	497.8	6.21	5008	5	1.2
14:32:40	18.75	499.8	6.48	5076	4	1.2
14:32:56	18.69	499.8	6.57	4977	4	1.2
14:33:11	18.74	485.3	6.42	5033	4	1.2
14:33:26	18.77	473.8	6.33	5049	4	1.1
14:33:41	18.81	445.9	6.27	4986	4	1.1
14:33:56	18.83	433.3	6.16	4990	4	1.2
14:34:11	18.86	418.4	6.13	5032	4	1.1
14:34:26	18.84	422.3	6.23	5031	4	1.2
14:34:41	18.82	425.8	6.26	5044	4	1.1
14:34:56	18.81	414.4	6.32	5006	4	1.1
14:35:11	18.77	438.4	6.39	5016	4	1.2
14:35:26	18.79	434.8	6.42	5089	4	1.2
14:35:41	18.74	470.3	6.56	5040	3	1.1
14:35:56	18.74	454.4	6.63	5113	3	1.1
14:36:11	18.69	490.8	6.70	5004	3	1.1
14:36:26	18.70	499.3	6.61	5007	3	1.1
14:36:41	18.73	477.3	6.47	5049	3	1.1
14:36:56	18.78	451.9	6.37	5076	3	1.1
14:37:11	18.80	416.9	6.37	5034	3	1.1
14:37:19	SWITCH NOX ANALYZER FROM NO TO NOX YES NO TO NOX					
14:37:26	18.81	414.4	6.31	5660	3	1.1
14:37:41	18.84	410.4	6.28	6681	3	1.1
14:37:57	18.84	392.9	6.29	6666	3	1.1
14:38:12	18.81	400.4	6.46	6666	2	1.1
14:38:27	18.80	404.8	6.42	6576	2	1.1
14:38:42	18.82	391.9	6.30	6666	2	1.1
14:38:57	18.87	387.0	6.33	6562	2	1.1
14:39:12	18.84	398.4	6.30	6515	2	1.1
14:39:27	18.86	391.9	6.25	6504	2	1.1
14:39:42	18.86	387.4	6.26	6523	2	1.1
14:39:57	18.84	401.4	6.29	6462	2	1.0
14:40:12	18.83	398.4	6.35	6534	2	1.0
14:40:27	18.76	406.9	6.49	6482	2	1.1
14:40:42	18.75	413.8	6.52	6502	2	1.0
14:40:57	18.76	420.8	6.51	6460	2	1.0

14:41:12	18.73	415.8	6.49	6439	1	1.0
14:41:27	18.74	412.4	6.49	6374	1	1.0
14:41:42	18.74	405.8	6.54	6473	1	1.0
14:41:57	18.69	412.9	6.60	6342	1	1.0
14:42:12	18.70	404.8	6.52	6373	1	1.0
14:42:27	18.68	407.8	6.45	6378	1	1.0
14:42:42	18.70	400.4	6.38	6338	1	1.0
14:42:58	18.74	379.9	6.25	6297	1	1.0
14:43:13	18.74	385.0	6.28	6274	1	1.0
14:43:28	18.73	387.4	6.31	6243	2	1.0
14:43:43	18.72	381.4	6.31	6272	2	1.0
14:43:58	18.71	408.9	6.39	6349	2	1.0
14:44:13	18.73	393.4	6.26	6192	2	1.0
14:44:28	18.72	385.4	6.26	6242	2	1.0
14:44:43	18.71	376.5	6.30	6244	3	1.0
14:44:58	18.71	387.9	6.25	6290	2	1.0
14:45:13	18.72	376.5	6.23	6295	2	1.0
14:45:28	18.72	373.9	6.26	6293	3	1.0
14:45:43	18.72	358.7	6.16	6204	3	1.0
14:45:58	18.73	364.2	6.11	6250	3	1.0
14:46:13	18.74	359.2	6.10	6202	3	1.0
14:46:28	18.74	367.2	6.10	6253	3	1.0
14:46:43	18.72	369.2	6.11	6224	3	1.0
14:46:58	18.71	360.2	6.12	6163	3	1.0
14:47:13	18.70	385.5	6.11	6238	3	1.0
14:47:28	18.70	367.7	6.12	6312	3	1.0
14:47:43	18.70	383.9	6.10	6203	3	1.0
14:47:58	18.73	377.9	6.08	6322	3	1.1
14:48:14	18.71	374.5	6.10	6202	3	1.0
14:48:29	18.73	386.5	6.11	6310	3	1.0
14:48:44	18.69	390.9	6.21	6344	3	1.0
14:48:59	18.68	405.8	6.30	6446	3	1.0
14:49:14	18.66	436.5	6.68	6922	3	1.0
14:49:29	18.13	499.8	8.71	7090	3	1.0
14:49:44	17.44	499.8	10.56	6798	3	1.0
14:49:59	17.41	499.8	9.91	6831	3	1.1
14:50:14	17.82	499.8	8.90	6723	2	1.0
14:50:29	18.21	499.8	7.93	6746	2	1.1
14:50:44	18.50	499.8	7.30	6576	2	1.1
14:50:59	18.64	477.8	6.83	6533	2	1.1
14:51:14	18.73	445.9	6.56	6469	2	1.0
14:51:29	18.77	414.9	6.44	6544	2	1.0
14:51:44	18.77	419.4	6.37	6454	2	1.0
14:51:59	18.79	402.9	6.36	6464	2	1.1
14:52:14	18.80	402.4	6.26	6340	2	1.0
14:52:29	18.83	402.4	6.24	6441	2	1.0
14:52:44	18.81	431.8	6.27	6280	1	1.0
14:52:59	18.82	399.4	6.26	2026	1	1.0
14:53:15	19.13	380.5	3.18	1140	1	1.0
14:53:30	19.99	294.3	0.95	724	1	1.0
14:53:45	20.24	124.4	0.38	810	1	1.0
14:54:00	20.30	64.3	0.23	568	1	1.0
14:54:15	20.33	12.2	0.17	524	1	1.0
14:54:30	20.34	4.2	0.15	502	1	1.0
14:54:45	20.36	1.7	0.13	479	1	1.0
14:55:00	20.37	1.3	0.12	456	1	1.0
14:55:15	20.41	1.3	0.11	445	1	1.0
14:55:30	20.41	1.3	0.10	428	1	1.0

14:55:30 ZERO O2 CO2 CO NOX W/N2 SO2 THC W/AIR

14:55:45	20.36	0.8	0.10	414	1	1.0
14:56:00	19.31	0.8	0.10	400	1	1.0
14:56:15	18.67	0.8	0.10	385	1	1.0
14:56:30	18.48	0.8	0.08	3566	1	1.0
14:56:45	18.43	0.8	0.09	3464	1	1.0
14:57:00	18.42	1.3	0.09	3382	1	1.0
14:57:15	18.41	0.8	0.09	3296	1	1.0
14:57:30	18.41	0.8	0.09	325	1	1.0
14:57:45	18.39	0.8	0.09	317	1	1.0
14:58:00	18.40	0.8	0.08	310	0	1.0
14:58:16	18.39	0.8	0.08	306	0	1.0
14:58:31	18.40	0.8	0.09	299	0	1.0
14:58:46	18.39	0.8	0.09	298	0	1.0
14:59:01	18.38	0.8	0.08	291	0	0.9
14:59:16	18.38	0.8	0.08	285	0	1.0
14:59:31	18.38	0.8	0.09	281	0	1.0
14:59:46	18.39	0.8	0.08	278	0	1.0
15:00:01	18.37	0.8	0.08	275	0	1.0
15:00:16	18.29	0.8	0.08	272	0	1.0
15:00:31	18.26	0.8	0.08	266	0	1.0
15:00:46	18.16	0.8	0.08	264	0	1.0
15:01:01	18.06	1.3	0.08	260	0	1.0
15:01:16	18.67	0.8	0.07	257	0	1.0
15:01:31	18.69	0.8	0.08	253	-0	1.0
15:01:46	19.58	0.8	0.09	250	-0	1.0
15:02:01	20.22	0.8	0.09	305	-0	1.0
15:02:16	20.44	0.8	0.09	350	-0	0.9
15:02:31	20.50	0.8	0.09	352	-0	1.0
15:02:46	20.50	0.8	0.09	347	-0	1.0
15:03:01	20.52	0.3	0.08	345	-0	0.9
15:03:17	20.51	0.8	0.08	342	-0	1.0
15:03:32	20.51	0.8	0.08	339	-0	0.9
15:03:47	20.51	0.3	0.08	339	-0	1.0
15:04:02	20.50	0.8	0.09	382	-0	1.0
15:04:17	20.49	0.8	0.10	408	-0	1.0
15:04:32	17.12	0.3	0.10	414	-0	1.0
15:04:47	9.96	0.8	0.08	414	-0	1.0
15:05:02	7.81	0.3	0.07	408	-0	0.9
15:05:17	7.19	0.8	0.07	408	-1	0.9
15:05:28 NOW ZERO O2 CO CO2 NOX						
15:05:32	7.02	0.8	0.06	394	-1	0.9
15:05:47	6.97	0.3	0.06	384	-1	0.9
15:06:02	5.52	0.3	0.06	380	-1	0.9
15:06:17	2.38	0.3	0.06	378	-1	0.9
15:06:32	1.17	0.3	0.06	373	-1	0.9
15:06:47	0.89	0.3	0.06	373	-1	0.9
15:07:02	0.84	0.3	0.06	365	-1	0.9
15:07:17	0.80	0.3	0.06	367	-1	0.9
15:07:32	0.81	0.3	0.06	362	-1	0.9
15:07:47	0.80	0.8	0.06	360	-11.	0.9
15:08:02	0.79	0.3	0.06	358	-11.	0.9
15:08:18	0.79	0.3	0.06	353	-11.	0.9
15:08:33	0.78	0.3	0.06	350	-11.	0.9
15:08:48	0.80	0.3	0.06	348	-11.	0.9
15:09:03	0.78	0.3	0.06	346	-11.	0.9
15:09:18	0.79	0.3	0.06	342	-11.	0.9
15:09:33	0.79	0.3	0.06	337	-11.	0.9
15:09:48	0.79	0.3	0.06	335	-11.	0.9
15:10:02 MID O2 CO2 11.51/11.02						
15:10:03	0.78	0.3	0.06	330	-11.	0.9

15:10:18	0.79	0.3	0.06	332	-11.	0.9
15:10:33	0.80	0.3	0.16	323	-11.	0.9
15:10:48	4.98	0.3	5.56	314	-11.	0.9
15:11:03	10.06	0.3	8.79	306	-11.	0.9
15:11:18	11.23	0.8	9.58	303	-1	0.9
15:11:33	11.58	0.8	9.82	298	-1	0.9
15:11:48	11.65	0.8	9.94	296	-1	0.9
15:12:03	11.66	0.8	9.97	292	-1	0.9
15:12:18	11.67	0.8	10.16	291	-0	0.9
15:12:33	11.67	0.8	10.04	287	-0	0.9
15:12:48	11.67	0.8	10.08	285	-0	0.9
15:13:03	11.67	0.8	10.11	282	-0	0.9
15:13:18	11.65	0.8	10.08	280	-0	0.9
15:13:34	11.66	0.8	10.11	276	-0	0.9
15:13:49	11.67	0.8	10.12	277	-0	0.9
15:14:04	11.66	0.8	10.13	129	-1	0.9
15:14:19	11.68	0.8	10.14	128	-1	0.9
15:14:34	11.68	0.8	10.13	127	-1	0.9
15:14:49	11.65	0.8	10.16	126	-1	0.9
15:15:04	11.67	0.8	10.15	125	-1	0.9
15:15:19	11.66	0.3	10.14	125	-1	0.9
15:15:34	11.66	0.8	10.16	124	-1	0.9
15:15:49	11.66	0.8	10.14	124	-1	0.9
15:16:04	11.66	0.8	10.16	122	-1	0.9
15:16:19	11.67	0.8	10.18	123	-1	0.9
15:16:34	11.66	0.8	10.14	121	-11.	0.9
15:16:49	11.67	0.3	10.19	119	-11.	0.9
15:17:04	11.68	0.8	10.16	119	-11.	0.9
15:17:19	11.66	0.8	10.16	119	-11.	0.9
15:17:34	11.67	0.8	10.18	118	-11.	0.9
15:17:49	11.65	0.8	10.16	117	-11.	0.9
15:18:04	11.67	0.8	10.16	116	-11.	0.9
15:18:19	11.66	0.8	10.15	114	-11.	0.9
15:18:35	11.66	0.8	10.16	113	-11.	0.9
15:18:50	11.68	0.8	10.17	113	-11.	0.9
15:19:05	11.66	0.8	10.15	112	-11.	0.9
15:19:20	11.67	0.8	10.16	112	-11.	0.9
15:19:35	11.68	0.3	10.16	111	-11.	0.9
15:19:50	11.66	0.8	10.15	110	-11.	0.9
15:20:05	11.66	0.8	10.18	110	-11.	0.9
15:20:20	11.66	0.8	10.16	235	-11.	0.9
15:20:35	11.67	0.8	10.18	23[illegible]	-11.	0.9
15:20:50	11.66	0.8	10.15	233	-11.	0.9
15:21:02 MID NOX 442						
15:21:05	11.66	0.8	10.16	246	-11.	0.9
15:21:16 MID NOX BIAS						
15:21:20	11.66	0.8	10.19	235	-21.	0.9
15:21:35	12.87	0.8	7.66	532	-11.	0.9
15:21:50	10.54	0.3	2.58	642	-21.	0.9
15:22:05	3.32	0.3	0.89	648	-21.	0.9
15:22:20	1.50	0.3	0.48	645	-21.	0.9
15:22:35	0.97	0.3	0.31	651	-21.	0.9
15:22:50	0.87	0.3	0.25	650	-21.	0.9
15:23:05	0.83	0.3	0.21	649	-21.	0.9
15:23:20	0.82	0.3	0.18	649	-21.	0.9
15:23:36	0.81	0.3	0.16	649	-21.	0.9
15:23:51	0.80	0.3	0.14	647	-21.	0.9
15:24:06	0.80	0.3	0.12	64[illegible]	-21.	0.8
15:24:21	0.78	0.3	0.12	[illegible]	-21.	0.8
15:24:36	0.79	0.3	0.10	64[illegible]	-21.	0.8

15:24:51	0.78	0.3	0.10	661	-21.	0.8
15:25:06	0.79	0.3	0.09	454	-21.	0.8
15:25:21	2.94	0.8	0.10	228	-21.	0.8
15:25:36	8.28	26.7	0.09	212	-21.	0.8
15:25:51	2.86	45.1	0.07	208	-21.	0.8
15:26:06	1.31	78.2	0.07	205	-21.	0.8
15:26:21	0.90	88.2	0.07	203	-21.	0.8
15:26:36	0.81	92.2	0.07	202	-21.	0.8
15:26:51	0.76	95.6	0.06	200	-21.	0.8
15:27:06	0.77	96.2	0.06	199	-21.	0.8
15:27:21	0.76	95.2	0.06	199	-21.	0.8
15:27:36	0.76	96.2	0.06	197	-21.	0.8
15:27:51	0.76	95.6	0.06	196	-21.	0.8
15:28:06	0.75	95.2	0.06	195	-21.	0.8
15:28:21	0.76	95.7	0.06	183	-21.	0.8
15:28:37	0.75	93.2	0.06	101	-21.	0.8
15:28:52	0.81	66.8	0.06	71	-21.	0.8
15:29:07	1.95	49.6	0.06	60	-21.	0.8
15:29:22	7.50	21.6	0.07	60	-21.	0.8
15:29:37	12.44	13.2	0.07	57	-21.	0.8
15:29:52	15.91	5.2	0.07	54	-21.	0.8
15:30:07	17.65	3.7	0.08	51	-21.	0.8
15:30:22	18.47	2.8	0.08	49	-21.	0.8
15:30:37	19.03	1.7	0.08	47	-21.	0.8
15:30:52	19.39	1.7	0.07	48	-11.	0.8
15:31:07	19.68	1.3	0.08	46	-21.	0.9
15:31:22	19.89	1.3	0.08	45	-21.	0.8
15:31:37	20.08	1.2	0.08	44	-21.	0.8
15:31:52	20.21	0.8	0.07	44	-21.	0.8
15:32:07	20.30	0.8	0.07	43	-21.	0.8
15:32:22	20.34	1.2	0.08	43	-21.	0.9
15:32:35 ZERO SO2 AND THC						
15:32:37	20.38	1.3	0.08	42	-21.	0.8
15:32:52	20.39	0.8	0.08	43	-21.	0.8
15:33:07	20.41	1.3	0.07	42	-21.	0.9
15:33:22	20.42	0.8	0.08	42	-21.	0.8
15:33:38	20.42	0.8	0.07	42	-21.	0.8
15:33:44 30.7 PPM PROPANE TO JUM						
15:33:53	20.43	1.2	0.08	42	-21.	0.8
15:34:08	20.42	0.8	0.08	42	-21.	0.8
15:34:23	20.43	0.8	0.07	41	-21.	0.8
15:34:38	17.10	2.3	0.09	29	-21.	0.8
15:34:53	5.24	2.3	0.06	26	-21.	0.8
15:35:08	1.82	1.7	0.05	24	-21.	0.8
15:35:23	1.06	1.3	0.04	23	-21.	0.8
15:35:38	0.80	0.3	0.05	23	-21.	0.8
15:35:53	0.71	0.8	0.05	23	-21.	0.8
15:36:00 ZERO O2 NOX DIRECT						
15:36:08	0.69	0.3	0.05	22	-21.	0.8
15:36:23	0.65	0.3	0.05	22	-21.	0.8
15:36:38	0.63	0.3	0.04	22	-21.	0.8
15:36:53	0.06	0.3	0.05	22	-21.	0.8
15:37:08	-0.00	0.8	0.05	22	-21.	0.8
15:37:23	-0.03	0.3	0.05	1024	-21.	0.8
15:37:38	-0.04	0.3	0.05	1024	-21.	0.8
15:37:53	-0.06	0.3	0.04	85	-21.	0.8
15:38:08	-0.08	0.3	0.05	21	-21.	0.8
15:38:23	-0.08	0.3	0.04	21	-21.	0.8
15:38:39	-0.11	0.3	0.05	21	-21.	0.8
15:38:54	-0.11	0.3	0.04	21	-21.	0.8

15:39:09	-0.13	0.3	0.04	21	-31.	0.8
15:39:24	-0.15	0.3	0.04	21	-31.	0.8
15:39:39	-0.15	0.3	0.04	21	-31.	0.8
15:39:54	-0.17	0.3	0.04	21	-31.	0.8
15:40:09	-0.17	0.3	0.05	21	-21.	0.8
15:40:24	-0.18	0.3	0.04	21	-21.	0.8
15:40:39	-0.18	0.3	0.05	21	-21.	0.8
15:40:54	-0.21	0.3	0.04	21	-21.	0.8
15:41:09	-0.21	0.3	0.05	20	-21.	0.8
15:41:24	-0.23	0.3	0.04	20	-21.	0.8
15:41:39	-0.24	0.8	0.05	20	-21.	0.9
15:41:54	-0.25	0.3	0.05	20	-21.	0.8
15:42:09	-0.27	0.3	0.04	20	-21.	0.8
15:42:24	0.06	0.3	0.04	20	-21.	0.8
15:42:39	0.11	0.3	0.05	20	-21.	0.8
15:42:54	0.02	0.3	0.04	20	-21.	0.8
15:43:09	0.02	0.3	[illegible]	20	-21.	0.8
15:43:24	0.01	0.3	0.05	20	-21.	0.8
15:43:39	0.21	35.2	1.29	20	-21.	0.8
15:43:43 SPAN O2 17.72 CO2 CHECK 17.02						
15:43:55	7.63	114.7	9.10	20	-21.	0.8
15:44:10	14.44	289.3	13.84	20	-21.	0.8
15:44:25	16.12	349.8	14.95	20	-21.	0.8
15:44:40	16.63	392.9	15.35	20	-21.	0.8
15:44:55	16.77	450.0	15.43	20	-21.	0.8
15:45:10	17.76	459.4	15.47	20	-21.	0.8
15:45:24 ADJ CO2 SPAN						
15:45:25	17.78	470.9	15.51	19	-21.	0.8
15:45:40	17.79	473.4	16.44	19	-21.	0.8
15:45:55	17.78	473.4	16.93	20	-21.	0.8
15:46:10	17.79	475.8	17.03	20	-21.	0.8
15:46:25	17.73	473.4	16.99	19	-21.	0.8
15:46:40	17.73	473.4	17.04	19	-21.	0.8
15:46:55	17.72	473.4	17.00	19	-21.	0.8
15:47:10	17.73	470.9	17.04	19	-21.	0.8
15:47:16 MID O2 11.51 CO2 11.05						
15:47:25	16.56	398.9	14.47	19	-21.	0.8
15:47:40	13.40	313.9	12.09	19	-21.	0.8
15:47:55	12.03	144.8	11.34	19	-21.	0.8
15:48:10	11.72	85.6	11.10	19	-21.	0.8
15:48:25	11.62	19.7	11.04	19	-21.	0.8
15:48:40	11.58	7.7	11.04	19	-21.	0.8
15:48:56	11.58	3.3	11.02	19	-21.	0.8
15:49:11	11.56	1.3	11.04	19	-21.	0.8
15:49:26	11.57	1.3	11.01	19	-21.	0.8
15:49:41	11.54	1.3	10.57	431	-21.	0.8
15:49:49 SPAN NOX 861						
15:49:56	5.65	0.8	3.89	821	-21.	0.8
15:50:11	1.45	0.8	0.88	858	-21.	0.8
15:50:26	0.33	0.8	0.30	852	-21.	0.8
15:50:41	0.08	0.3	0.16	852	-21.	0.8
15:50:56	-0.02	0.3	0.10	852	-21.	0.8
15:51:04 NO ADJUSTMENTS MADE TO SPAN						
15:51:11	-0.04	0.3	0.09	855	-21.	0.8
15:51:20 MID NOX 442						
15:51:26	-0.05	0.3	0.07	745	-21.	0.8
15:51:41	-0.05	0.3	0.07	475	-21.	0.8
15:51:56	-0.07	0.3	0.07	468	-21.	0.8
15:52:11	-0.10	0.3	0.06	464	-21.	0.8
15:52:26	-0.11	0.3	0.06	465	-21.	0.8

ZERO Bias O_2+CO_2

15:52:41	-0.12	0.3	0.06	463	-21.	0.8
15:52:56	-0.13	0.3	0.06	465	-21.	0.8
15:53:11	-0.13	0.3	0.06	463	-21.	0.8
15:53:26	-0.14	0.3	0.06	464	-21.	0.8
15:53:41	-0.13	0.3	0.06	573	-21.	0.8
15:53:57	-0.14	0.3	0.06	851	-21.	0.8
15:54:12	-0.12	0.3	0.06	856	-21.	0.8
15:54:27	-0.12	0.3	0.06	858	-21.	0.8
15:54:42	-0.12	-0.2	0.06	858	-21.	0.8
15:54:57	-0.12	0.3	0.06	858	-21.	0.8
15:55:12	-0.12	0.3	0.06	859	-21.	0.8
15:55:27	-0.12	0.3	0.06	860	-21.	0.8
15:55:42	-0.14	0.3	0.06	859	-21.	0.8
15:55:57	-0.13	0.3	0.06	857	-21.	0.8
15:56:12	-0.14	0.3	0.05	584	-21.	0.8
15:56:27	-0.15	0.3	0.05	473	-21.	0.8
15:56:42	-0.16	0.3	0.05	468	-21.	0.8
15:56:57	-0.17	0.3	0.06	468	-21.	0.8
15:57:12	-0.16	0.3	0.06	466	-21.	0.8
15:57:27	-0.17	0.3	0.05	466	-21.	0.8
15:57:42	-0.17	0.3	0.06	466	-21.	0.8
15:57:57	-0.18	0.3	0.05	466	-21.	0.8
15:58:12	-0.18	0.3	0.05	466	-21.	0.8
15:58:27	-0.18	0.3	0.05	466	-21.	0.8
15:58:42	0.01	0.3	0.05	464	-21.	0.8
15:58:58	0.02	0.3	0.05	464	-21.	0.8
15:59:13	-0.04	0.3	0.05	242	-21.	0.8
15:59:25 30.7 PPM PROPANE TO SYSTEM						
15:59:28	0.02	0.3	0.05	86	-21.	0.8
15:59:43	0.08	0.3	0.06	48	-21.	0.8
15:59:58	1.36	0.8	0.06	39	-21.	0.8
16:00:13	5.97	0.8	0.06	37	-21.	0.8
16:00:28	10.60	0.8	0.07	36	-21.	0.8
16:00:43	14.70	1.3	0.07	35	-21.	0.8
16:00:58	17.07	1.3	0.07	34	-21.	1.9
16:01:13	18.20	1.3	0.07	34	-21.	0.9
16:01:28	18.96	1.3	0.07	34	-21.	0.8
16:01:43	19.42	0.8	0.07	34	-21.	3.8
16:01:58	19.78	1.3	0.08	33	-21.	1.0
16:02:13	20.05	1.3	0.08	34	-21.	3.0
16:02:28	20.37	1.3	0.07	34	-21.	2.3
16:02:43	20.61	1.3	0.07	33	-21.	2.1
16:02:58	20.72	1.3	0.08	33	-21.	2.1
16:03:13	20.81	0.8	0.07	33	-21.	2.0
16:03:28	20.85	0.8	0.06	33	-21.	2.0
16:03:43	20.89	0.8	0.08	32	-21.	2.0
16:03:59	20.89	0.8	0.08	32	-21.	2.0
16:04:14	20.92	0.8	0.08	32	-21.	2.0
16:04:29	20.91	0.8	0.07	32	-21.	2.0
16:04:44	20.92	0.8	0.08	32	-21.	1.9
16:04:59	20.91	0.8	0.08	32	-21.	1.9
16:05:14	20.93	1.3	0.07	31	-21.	1.9
16:05:29	20.93	0.8	0.08	32	-21.	1.9
16:05:44	20.94	0.8	0.08	32	-21.	1.9
16:05:59	20.94	0.8	0.07	32	-21.	1.9
16:06:14	20.94	0.8	0.08	31	-21.	1.9
16:06:29	20.95	0.8	0.08	32	-21.	1.9
16:06:44	20.95	0.8	0.08	31	-21.	1.9
16:06:59	20.96	0.8	0.08	32	-21.	1.9
16:07:14	20.96	0.8	0.08	31	-21.	1.9

16:07:29	20.96	0.8	0.08	31	-21.	1.9
16:07:44	20.97	0.8	0.08	31	-21.	1.9
16:07:59	20.98	0.8	0.08	31	-21.	1.9
16:08:14	21.00	0.8	0.08	30	-21.	1.9
16:08:29	21.01	0.8	0.08	31	-21.	1.9
16:08:44	21.03	1.3	0.08	31	-21.	1.9
16:09:00	21.04	0.8	0.08	31	-21.	1.9
16:09:15	21.06	1.3	0.08	31	-21.	1.9
16:09:30	21.07	0.8	0.08	31	-21.	1.9
16:09:45	21.07	0.8	0.07	30	-21.	1.9
16:10:00	21.10	1.3	0.07	30	-21.	1.9
16:10:15	21.10	0.8	0.08	30	-21.	2.7
16:10:30	21.11	0.8	0.08	32	-21.	2.2
16:10:45	21.13	1.3	0.08	31	-21.	2.3
16:11:00	21.13	1.3	0.08	30	-1	2.4
16:11:15	21.15	0.8	0.08	29	4	2.4
16:11:30	21.15	1.3	0.08	28	7	2.5
16:11:45	21.17	1.3	0.07	28	10	33.5
16:12:00	21.17	1.3	0.08	29	5	27.7
16:12:15	21.19	1.3	0.07	28	3	28.1
16:12:30	21.19	1.3	0.09	29	4	27.8
16:12:45	21.22	1.3	0.08	29	5	28.4
16:13:00	21.23	1.3	0.07	29	6	28.0
16:13:15	21.24	1.3	0.06	29	5	28.8
16:13:30	21.26	1.3	0.07	29	4	29.1
16:13:45	21.26	1.3	0.07	28	3	29.4
16:14:00	21.27	0.8	0.07	29	2	29.5
16:14:16	21.26	0.8	0.07	29	1	29.3
16:14:31	21.29	1.3	0.07	29	1	28.6
16:14:46	21.28	1.3	0.07	29	0	28.1
16:15:01	21.29	1.3	0.07	29	-0	27.9
16:15:16	21.29	0.8	0.07	28	-1	28.3
16:15:31	21.30	0.8	0.07	28	-11.	28.1
16:15:46	21.30	0.8	0.07	28	-21.	28.7
16:16:01	21.30	1.3	0.07	28	-21.	28.5
16:16:16	21.31	1.3	0.07	28	-31.	28.4
16:16:31	21.31	0.8	0.06	28	-31.	28.3
16:16:46	21.32	0.8	0.07	28	-31.	28.5
16:17:01	21.32	0.8	0.07	28	-31.	29.1
16:17:16	21.33	0.8	0.07	28	-41.	28.7
16:17:31	21.33	1.3	0.07	28	-41.	27.8
16:17:46	21.33	1.3	0.07	27	-41.	27.7
16:18:01	21.34	1.3	0.07	27	-41.	27.5
16:18:16	21.33	0.8	0.07	27	-41.	27.0
16:18:31	21.35	1.3	0.07	27	-41.	27.1
16:18:46	21.33	0.8	0.08	27	-41.	26.9
16:19:01	21.34	0.8	0.06	27	-41.	27.1
16:19:17	21.34	0.8	0.07	27	-41.	27.6
16:19:32	21.34	1.3	0.07	27	-41.	28.1
16:19:47	21.36	1.3	0.07	27	-41.	28.1
16:20:02	21.35	0.8	0.07	27	-41.	28.6
16:20:17	21.32	0.8	0.06	27	-41.	28.7
16:20:32	21.36	0.8	0.07	27	-41.	28.3
16:20:47	21.36	0.8	0.07	27	-41.	28.3
16:21:02	21.36	1.3	0.06	26	-41.	28.4
16:21:17	21.38	1.3	0.07	26	-41.	28.7
16:21:28	30.7 PPM PROPANE					
16:21:32	21.37	0.8	0.07	26	-41.	27.8
16:21:47	21.35	0.8	0.07	26	-41.	27.8
16:22:02	88.8 PPM SO2					

16:22:02	21.36	0.8	0.07	26	-5I.	27.9
16:22:17	21.36	0.8	0.08	26	-5I.	3.4
16:22:32	21.37	0.8	0.07	26	7	1.2
16:22:47	21.36	1.3	0.07	26	36	1.2
16:23:02	21.36	0.8	0.07	26	57	1.1
16:23:17	21.36	0.8	0.07	26	65	1.1
16:23:32	21.35	1.3	0.07	26	69	1.1
16:23:47	21.35	0.8	0.07	26	71	1.0
16:24:02	21.35	0.8	0.06	26	72	1.0
16:24:18	21.35	0.8	0.06	26	73	1.1
16:24:33	21.35	0.8	0.07	25	74	1.0
16:24:48	21.34	0.8	0.06	26	75	1.0
16:25:03	21.35	0.8	0.07	25	75	1.0
16:25:18	21.34	0.8	0.07	25	76	1.0
16:25:33	21.35	0.8	0.07	25	77	1.0
16:25:48	21.35	0.8	0.08	25	77	1.0
16:26:03	21.37	1.3	0.07	25	77	1.0
16:26:18	21.36	0.8	0.07	25	78	1.0
16:26:33	21.35	0.8	0.07	25	78	1.0
16:26:48	21.36	0.8	0.07	25	78	1.0

16:26:54 ZERO BOTH W/AIR SO2 THC

16:27:03	21.36	1.3	0.07	25	78	1.0
16:27:18	21.35	0.8	0.06	25	75	1.0
16:27:33	21.36	0.8	0.07	25	35	1.0
16:27:48	21.34	1.3	0.07	25	10	1.0
16:28:03	21.34	0.8	0.07	25	2	1.0
16:28:18	21.32	1.3	0.07	25	-0	1.0
16:28:33	21.29	1.3	0.08	25	-1I.	1.0
16:28:48	21.28	0.8	0.07	25	-2I.	1.0
16:29:03	21.26	1.3	0.07	24	-2I.	1.0
16:29:19	21.26	1.3	0.07	24	-3I.	1.0
16:29:34	21.25	1.3	0.07	24	-3I.	0.9
16:29:49	21.25	1.3	0.07	24	-3I.	1.0
16:30:04	21.24	1.3	0.07	24	-3I.	0.9
16:30:19	21.25	0.8	0.08	24	-3I.	1.0
16:30:34	21.24	1.3	0.07	24	-3I.	0.9
16:30:49	21.24	0.8	0.07	24	-3I.	1.0
16:31:04	21.25	1.3	0.07	24	-3I.	1.0
16:31:19	21.23	0.8	0.07	24	-3I.	1.0
16:31:34	21.24	1.3	0.07	24	-3I.	1.0
16:31:49	21.23	0.8	0.07	24	-3I.	1.3
16:32:04	21.23	1.3	0.07	24	-2I.	2.0
16:32:19	21.23	0.8	0.06	23	-0	2.2
16:32:34	21.25	1.3	0.07	23	1	2.3
16:32:49	21.28	1.3	0.07	23	1	2.2
16:33:04	21.30	0.8	0.08	98	1	2.2
16:33:19	18.00	2.8	3.30	150	1	2.7
16:33:34	11.43	9.2	1.55	43	2	2.4
16:33:49	17.60	9.2	0.68	43	2	2.3
16:34:04	16.47	8.7	6.81	44	2	2.3

16:34:14 MID BIAS O2 11.51 CO2 11.05

16:34:20	13.25	3.8	9.61	45	2	2.3
16:34:35	12.52	2.3	10.27	45	2	2.3
16:34:50	12.29	0.8	10.54	46	2	2.4
16:35:05	12.24	0.8	10.64	45	2	2.5
16:35:20	12.23	0.3	10.68	46	2	3.1
16:35:35	12.20	1.3	10.73	46	3	3.1
16:35:50	12.21	0.3	10.77	46	2	2.6
16:36:05	12.20	0.3	10.75	46	2	2.4
16:36:20	12.19	0.3	10.79	46	2	2.2

16:36:35	12.19	0.3	10.79	46	2	2.5
16:36:50	12.18	0.8	10.82	46	2	2.4
16:36:50	ZERO NOX AND CO					
16:37:05	12.17	0.3	10.82	46	2	2.3
16:37:20	~~12.18~~	~~0.8~~	~~10.82~~	~~46~~	2	2.7
16:37:35	12.18	0.3	10.84	46	2	2.5
16:37:39	BIAS CO 90.7					
16:37:50	12.19	0.3	10.85	47	2	2.3
16:38:05	12.20	3.3	10.66	46	2	2.3
16:38:20	8.46	18.3	3.74	46	1	2.2
16:38:35	2.53	51.2	1.11	45	1	2.2
16:38:50	1.28	64.8	0.54	46	1	2.3
16:39:05	0.95	83.7	0.29	46	1	2.2
16:39:21	0.87	87.7	0.22	46	1	2.2
16:39:36	0.85	93.2	0.16	45	1	2.1
16:39:51	0.84	93.7	0.12	46	1	2.1
16:40:06	0.83	93.7	0.11	45	1	2.1
16:40:21	0.84	94.2	0.09	46	1	2.3
16:40:36	0.83	92.7	0.07	45	1	2.2
16:40:37	BIAS NOX 442					
16:40:51	0.84	94.2	0.07	46	1	2.1
16:41:06	0.91	81.2	0.07	469	1	2.2
16:41:21	1.62	61.8	0.07	475	1	2.1
16:41:36	1.03	42.2	0.06	477	1	2.2
16:41:51	0.89	11.7	0.06	476	1	2.1
16:42:06	0.85	4.7	0.06	478	1	2.1
16:42:21	0.85	0.8	0.06	479	1	2.1
16:42:36	0.84	0.3	0.06	477	1	2.2
16:42:51	0.85	0.8	0.06	478	1	2.0
16:43:06	0.85	0.8	0.06	479	1	2.1
16:43:21	0.85	-0.2	0.06	481	1	2.1
16:43:36	0.85	0.3	0.05	479	1	2.1
16:43:51	0.85	0.3	0.05	479	1	2.0
16:44:06	0.85	0.3	0.05	481	1	2.1
16:44:21	0.85	0.3	0.06	427	1	2.1
16:44:37	0.86	0.3	0.06	154	1	2.0
16:44:52	0.86	0.3	0.06	72	1	2.1
16:45:07	1.77	0.8	0.06	48	1	2.2
16:45:22	6.65	0.8	0.06	36	1	2.0
16:45:37	11.68	1.3	0.06	31	1	9.6
16:45:52	15.72	1.3	0.06	29	6	102.4H
16:46:07	18.06	1.3	0.07	32	37	93.3
16:46:22	19.52	1.8	0.08	27	36	52.5
16:46:37	20.24	1.8	0.08	25	43	28.6
16:46:52	20.60	1.3	0.07	25	50	23.7
16:47:07	20.86	1.3	0.08	24	54	28.1
16:47:22	21.04	1.8	0.07	24	104	26.9
16:47:37	21.16	1.3	0.08	24	118	23.7
16:47:52	21.26	1.3	0.08	24	87	20.4
16:48:07	21.31	1.8	0.08	24	69	20.0
16:48:22	21.33	1.3	0.08	23	63	18.5
16:48:37	21.36	1.3	0.08	24	62	15.6
16:48:52	21.36	1.3	0.08	24	65	11.2
16:49:07	21.39	1.3	0.08	44	58	10.9
16:49:22	21.38	1.8	0.08	67	52	9.8
16:49:38	21.39	2.3	0.08	91	49	9.7
16:49:53	21.39	5.2	0.09	103	47	10.3
16:50:08	21.39	6.2	0.10	111	45	9.6
16:50:23	21.39	8.2	0.13	119	44	9.4
16:50:38	21.39	9.2	0.14	126	44	9.5

ZERO BIAS O2 CO2 NOx

16:50:53	21.40	10.2	0.15	136	45	9.0
16:51:08	21.39	10.7	0.15	136	45	9.1
16:51:23	21.40	11.2	0.17	157	49	8.7
16:51:38	21.39	11.7	0.17	162	55	8.5
16:51:53	21.40	12.7	0.19	168	62	8.6
16:52:08	21.39	12.7	0.20	181	70	8.7
16:52:23	21.39	14.7	0.20	183	81	9.2
16:52:38	21.39	14.7	0.21	186	93	8.9
16:52:53	21.38	14.7	0.22	187	101	8.6
16:53:08	21.38	16.3	0.22	189	104	8.5
16:53:23	21.37	15.7	0.23	190	107	8.2
16:53:38	21.36	14.7	0.23	191	111	8.0
16:53:53	21.36	15.2	0.23	201	113	8.0
16:54:08	21.35	14.7	0.23	220	117	8.2
16:54:23	21.35	14.7	0.23	219	126	8.4
16:54:39	21.34	15.2	0.24	212	130	8.4
16:54:54	21.35	14.3	0.23	208	134	8.2
16:55:09	21.33	14.7	0.24	219	140	8.3
16:55:24	21.34	14.3	0.24	223	143	8.4
16:55:39	21.33	13.7	0.23	221	145	8.9
16:55:54	21.32	13.7	0.23	225	148	9.1
16:56:09	21.34	13.7	0.23	235	150	9.2
16:56:24	21.32	13.7	0.23	237	153	9.2
16:56:39	21.33	14.3	0.23	237	153	9.1
16:56:54	21.33	15.7	0.24	237	154	9.1
16:57:09	21.33	15.2	0.24	256	158	9.2
16:57:24	21.32	17.2	0.24	237	157	9.3
16:57:39	21.32	16.3	0.25	248	157	9.5
16:57:54	21.32	17.2	0.25	254	155	10.1
16:58:09	21.31	18.8	0.25	246	154	10.1
16:58:24	21.32	17.7	0.25	238	157	10.0
16:58:39	21.31	17.7	0.25	244	159	10.0
16:58:54	21.31	18.3	0.26	242	160	10.2
16:59:09	21.32	18.3	0.26	240	160	9.7
16:59:24	21.31	19.2	0.26	255	158	10.0
16:59:40	21.32	19.7	0.27	262	157	9.8
16:59:55	21.32	20.2	0.27	259	158	9.7
17:00:10	21.33	20.2	0.28	263	158	10.1
17:00:25	21.33	20.2	0.28	258	160	10.2
17:00:40	21.35	21.2	0.27	248	161	10.0
17:00:51	BEGIN SAMPLING AT HEPA FILTER EXHAUST					
17:00:55	21.33	20.2	0.28	262	163	9.9
17:01:10	21.13	18.3	0.24	587	163	10.3
17:01:25	10.96	28.7	0.42	~~[illegible]~~	162	10.6
17:01:40	17.69	43.6	0.87	~~[illegible]~~	159	10.4
17:01:55	20.38	75.2	1.04	~~[illegible]~~	161	10.7
17:02:10	20.91	89.7	1.18	~~[illegible]~~	164	10.9
17:02:25	21.07	99.2	1.21	1463	166	11.0
17:02:40	21.13	104.2	1.19	1362	167	10.6
17:02:55	21.18	101.6	1.09	1103	165	10.1
17:03:10	21.26	87.7	0.90	969	161	9.8
17:03:25	21.31	81.7	0.82	978	160	9.6
17:03:40	21.31	73.7	0.85	1073	160	9.3
17:03:55	21.31	73.2	0.97	1204	161	9.5
17:04:10	21.27	81.2	1.04	1193	168	9.8
17:04:25	21.28	84.2	1.04	1100	201	9.7
17:04:41	21.29	93.2	1.00	1795	209	10.2
17:04:56	21.23	101.6	1.25	1312	218	10.3
17:05:11	21.32	91.2	0.93	1420	216	10.4

FIELD DATA

Plant	CU A - VSL
Date	1/20/95
Sampling Location	Melter Exhaust
Sample Type	MMT
Run Number	# 4
Operator	RP
Ambient Temperature	80°F
Barometric Pressure	
Static Pressure (P_s)	
Filter Number(s)	M0:0/95
Pretest Leak Rate = 0.013 cfm @ 16 in. Hg	
Pretest Pitot Leak Check	✓
Pretest Orsat Leak Check	N/A
Read and Record all Data Every 5 Minutes	

Schematic of Traverse Point Layout

Probe Length and Type	5' Stainless
Pitot Tube I.D. No.	N/A
Nozzle I.D.	0.361
Assumed Moisture, %	10
Temp. Readout S/N	ES-1
Meter Box Number	ES-1
Meter $H_@$	1.772
C Factor	1.35
Meter Gamma	1.010
Heater Box Setting	250 °F
Reference p	0.22
Post Test Leak Rate = .019 cfm @ 20 in. Hg	
Post Test Pitot Leak Check	✓
Post Test Orsat Leak Check	N/A

Traverse Point Number	Sampling Time, (min)	/Clock Time (24-hour clock)	Gas Meter Reading (V_m) ft^3	Velocity Head (P_s) in. H_2O	Orifice Pres. Differential (H) in. H_2O Desired	Actual	~~Stack~~ Probe Temp. (T_s) °F 2	Dry Gas Meter Temp. Inlet ($T_{m_{in}}$) °F 6	Outlet ($T_{m_{out}}$) °F 7	Pump Vacuum in. Hg	Sample Box Temp. Filter Temp. °F 3	Impinger Temp. °F 1
	0	0950	795.284		0.90	0.90	255	81	81	4	260	60
	5	55	797.940		0.90	0.70	252	84	82	4	265	60
	10	10:00	800.542		0.90	0.90	253	86	82	7	267	59
	15	05	803.180		0.90	0.80	254	88	83	9	269	60
	20	10	805.825		0.90	0.90	253	90	84	10	268	59
	25	15	808.560		0.90	0.90	252	90	85	11	267	60
	30	20	811.280		0.90	0.90	253	91	85	13	264	63
	35	25	813.934		0.90	0.90	252	93	87	14.5	268	61
	40	30	816.680		0.90	0.90	252	93	87	14.5	267	64
	45	35	819.415		0.90	0.90	251	94	88	15	269	62
	50	40	822.135		0.90	0.80	253	94	89	15	267	62
	55	45	824.745		0.90	0.87	252	95	90	17	267	65
	60	50	827.495		0.90	0.85	252	95	88	18	269	66
	65	55	830.150		0.90	0.85	253	95	90	20	268	67
	70	11:00	832.885									

FIELD DATA

Plant CUA - VSL
Date 11/19/95
Sampling Location Melter Exhaust
Sample Type MMT
Run Number #3
Operator RP
Ambient Temperature 74
Barometric Pressure 30.11
Static Pressure (P_s) ______
Filter Number(s) M005/95
Pretest Leak Rate = 0.018 cfm @ 15 in. Hg
Pretest Pitot Leak Check /
Pretest Orsat Leak Check N/A
Read and Record all Data Every 5 Minutes

Schematic of
Traverse Point Layout

Probe Length and Type 3' Stainless
Pitot Tube I.D. No. N/A
Nozzle I.D. 0.369
Assumed Moisture, % 10
Temp. Readout S/N ES-2
Meter Box Number ES-1
Meter $H_@$ ~~0~~ 1.772
C Factor 1.35
Meter Gamma 1.040
Heater Box Setting 250
Reference p .22
Post Test Leak Rate = .03 cfm @ 19.0 in. Hg
Post Test Pitot Leak Check /
Post Test Orsat Leak Check NA

Traverse Point Number	Sampling Time, (min) /	/Clock Time /(24-hour clock)	Gas Meter Reading (V_m) ft^3	Velocity Head (P_s) in. H_2O	Orifice Pres. Differential (H) in. H_2O Desired	Orifice Pres. Differential (H) in. H_2O Actual	(2) Probe ~~Stack~~ Temp. (T_s) °F	(6) Dry Gas Meter Temp. Inlet ($T_{m_{in}}$) °F	(7) Dry Gas Meter Temp. Outlet ($T_{m_{out}}$) °F	Pump Vacuum in. Hg	(3) Sample Box Temp. Filter Temp. °F	(1) Impinger Temp. °F
	0	2110	738.410		0.90	0.90	268	95	94	4	258	71
	5	15	741.980		0.50	0.95	241	95	94	4	269	66
	10	20	744.555		0.50	0.90	251	96	94	5	251	64
	15	25	747.235		0.90	0.80	253	97	94	7	257	62
	20	30	749.925		0.90	0.90	253	97	94	8	253	65
	25	35	752.600		0.50	0.90	253	99	94	9	260	64
	30	40	755.325		.90	0.90	252	98	94	9	263	65
	35	45	758.010		0.90	0.90	252	94	95	10	266	65
	40	50	760.745		0.90	0.90	252	99	95	10.5	269	63
	45	55	763.445		0.90	0.90	252	99	95	11	269	62
	50	2200	766.180		0.90	0.90	252	99	95	11	255	65
	55	2205	768.855		0.90	0.85	253	99	95	13	264	63
	60	10	771.585		0.90	0.90	253	99	94	13	268	65
	65	15	774.300		0.90	0.90	253	98	95	13.5	268	65
	70	20	777.000		0.90	0.90	253	98	95	15	271	65
	75	25	779.675		0.90	0.90	253	98	96	16.5	271	65
	80	30	782.300									
	/											
	/											
	/											
	/											
	/											
	/											
	/											

Plant: Catholic University
Date: 1/19/95
Sampling Location: Miller Exhaust
Sample Type: MMT
Run Number: #2
Operator: RC
Ambient Temperature: 74
Barometric Pressure: 30.11
Static Pressure (P_s):
Filter Number(s): M009/55
Pretest Leak Rate = .019 cfm @ 15 in. Hg
Pretest Pitot Leak Check: ✓
Pretest Orsat Leak Check: N/A
Read and Record all Data Every 5 Minutes

Schematic of Traverse Point Layout

Probe Length and Type: 5 Stainless
Pitot Tube I.D. No.: N/A
Nozzle I.D.: .361
Assumed Moisture, %:
Temp. Readout S/N: ES-1
Meter Box Number: ES-1
Meter $H_@$: 1.771
C Factor: 1.35
Meter Gamma: 1.040
Heater Box Setting: 250
Reference p: .22
Post Test Leak Rate = 0.015 cfm @ 10 in. Hg
Post Test Pitot Leak Check:
Post Test Orsat Leak Check: N/A

Traverse Point Number	Sampling Time, (min) / Clock Time (24-hour clock)	Gas Meter Reading (V_m) ft^3	Velocity Head (P_s) in. H_2O	Orifice Pres. Differential (H) in. H_2O Desired	Orifice Pres. Differential (H) in. H_2O Actual	Probe (2) ~~Stack~~ Temp. (T_s) °F	Dry Gas Meter Temp. (6) Inlet ($T_{m_{in}}$) °F	Dry Gas Meter Temp. (7) Outlet ($T_{m_{out}}$) °F	Pump Vacuum in. Hg	(3) Sample Box Temp. Filter Temp. °F	(1) Impinger Temp. °F
	0 / 1725	691.358									
	5 / 30	693.95	NA	90	.90	250	85	85	2	249	72
	10 / 35	696.31	NA	0.9	0.7	251	84	84	3	266	72
	15 / 40	698.93	NA	0.9	0.9	250	85	84	4	263	72
	20 / 45	701.52	NA	0.9	0.9	249	86	85	4	258	74
	25 / 50	704.12	NA	0.9	0.9	249	88	85	4	259	75
	30 / 55	706.82	NA	0.9	0.9	250	90	86	5	260	76
	35 / 1800 ~~60~~	709.42	NA	0.9	0.9	250	90	87	6	261	70
	40 / 05	712.16	NA	0.9	0.9	250	92	87	6	260	66
	45 / 10	714.79	NA	0.9	0.9	250	93	88	6	260	61
	50 / 15	717.49	NA	0.9	0.9	250	94	89	6	260	57
	55 / 20	720.03	NA	0.9	0.9	250	95	90	6	260	56
	60 / 25	722.76	NA	0.9	0.9	252	96	91	7	261	56
	65 / 30	725.31	NA	0.9	0.9	250	96	91	7	260	57
	70 / 35	727.93	NA	0.9	0.9	250	96	92	8	260	58
	75 / 40	730.69	NA	0.9	0.9	249	97	92	9	261	59
	80 / 45	734.032	NA	0.9	0.9	249	97	92	10	260	60
	/										
	/										
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	/										
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	/										
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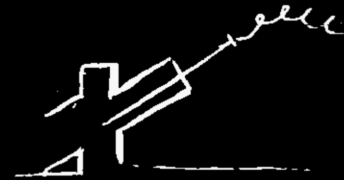
FI... DA.

Plant Catholic University
Date 1/19/95
Sampling Location Melter Exhaust
Sample Type MMT
Run Number 1
Operator RP
Ambient Temperature 75
Barometric Pressure 30.11
Static Pressure (P_s)
Filter Number(s) M004
Pretest Leak Rate = .013 cfm @ 15 in. Hg
Pretest Pitot Leak Check ✓
Pretest Orsat Leak Check N/A
Read and Record all Data Every 5 Minutes



Schematic of Traverse Point Layout

Probe Length and Type 3' Inconel
Pitot Tube I.D. No. N/A
Nozzle I.D. .311
Assumed Moisture, % 10
Temp. Readout S/N ES 1
Meter Box Number ES 1
Meter $H_@$ 1.771
C Factor 1.35
Meter Gamma 1.046
Heater Box Setting 250°
Reference p .22
Post Test Leak Rate = .012 cfm @ 10 in. Hg
Post Test Pitot Leak Check ✓
Post Test Orsat Leak Check N/A

Traverse Point Number	Sampling Time, (min)	Clock Time (24-hour clock)	622.626 Gas Meter Reading (V_m) ft³	Velocity Head (P_s) in. H_2O	Orifice Pres. Differential (H) in. H_2O Desired	Actual	Stack Temp. (T_s) °F	Dry Gas Meter Temp. Inlet ($T_{m_{in}}$) °F (6)	Outlet ($T_{m_{out}}$) °F (7)	Pump Vacuum in. Hg	Sample Box Temp. Filter Temp. °F (3)	Impinger Temp. °F (1)
	0	1220	~~623.5?3~~									
	5	1225	625.210		.90	.90		73	74	2.5	248	69
	10	1230	627.920		.90	.90		74	74	3	241	72
	15	1235	630.550		.90	.90		76	75	3.5	241	71
	20	1240	632.935		.90	.85		80	76	4	238	72
	25	1245	635.590		.90	.90		81	76	10	240	73
	30	1250	638.345		.90	.95		82	77	10	253	73
	35	1255	641.025		.90	.96		84	79	8.5	254	77
	40	13:00	643.195		.98	.94		85	79	8.5	255	73
	45	1305	646.470		.90	.90		86	80	8	252	74
	50	1310	649.180		.90	.90		88	82	7	256	74
	55	1315	651.900		.90	.90		89	83	7	262	56
	60	1320	654.625		.90	.90		90	84	7	258	54
	65	1325	657.305		.90	.90		90	84	7	256	53
	70	1330	660.045		.90	.90		91	85	7	252	52
	75	1335	662.785		.90	.90		92	85	7	258	52
	80	1340	665.313		.90	.95		92	86	7	252	52
					.90	.95		93	87	7	255	53

Bad Thermo Couple Changed out

ENGINEERING-SCIENCE, INC.
Subsidiary of The Parsons Corporation
Two F : Hill, 10521 Rosehaven Street
Fairfax, VA 22030-2899
703 591-7575, Fax 703 591-1305

Sample Train Recovery Data

Plant: Catholic V. Date: 1/19/95
Sampling Location:
Clean-up person: DAH Field Team Leader: GDH
Sample Type: M4 M5 M6 M5/8 M8 M17 M26 MM5 MMT Cr^{+6} Other:
Run Number: MELTER - 01 Impinger Train ID: #2
Job Number:

Comments:

Front-half Data

Filter #: M004/95 Filter Media Type: Quartz
Filter Description:
Filter #: Filter Media Type:
Filter Description:

Back-half Data

Impinger Purge -
Start Time: Flow Rate: Stop Time: Purge Gas:

	Impinger 1	Impinger 2	Impinger 3
Contents:	MT	5% HNO_3/3% H_2O_2	5% HNO_3/3% H_2O_2
Final Volume (ml):	70 ml	116	100
Initial Volume (ml):	ø	100	100
Net Volume (ml):	70	16	0

	Impinger 4	Impinger 5	Final Impinger
Contents:	MT		Silica Gel
Final Volume (ml):	0		(g): 799.5
Initial Volume (ml):	ø		(g): 781.5
Net Volume (ml):			(g): 18.0

Total moisture collected (ml): 104 ml

Description of impinger catch: Red-orange colored

SMPLRECV.WK3

ENGINEERING-SCIENCE, INC.
Subsidiary of The Parsons Corporation
...t Hill, 10521 Rosehaven Street
...irfax, VA 22030-2899
...3 591-7575, Fax 703 591-1305

Sample Train Recovery Data

Plant: Catholic U. Date: 1/19/95
Sampling Location:
Clean-up person: DAH Field Team Leader: GDH
Sample Type: M4 M5 M6 M5/8 M8 M17 M26 MM5 MMT Cr^{+6} Other:
Run Number: MELTER-02 Impinger Train ID: #4
Job Number:

Comments:

Front-half Data

Filter #: M009/95 Filter Media Type: Quartz
Filter Description:
Filter #: Filter Media Type:
Filter Description:

Back-half Data

Impinger Purge –
Start Time: Flow Rate: Stop Time: Purge Gas:

	Impinger 1	Impinger 2	Impinger 3
Contents:	MT	5% HNO_3/3% H_2O_2	5% HNO_3/3% H_2O_2
Final Volume (ml):	120 mL	179 mL	118 mL
Initial Volume (ml):	ø	100 mL	100 mL
Net Volume (ml):	120 mL	79 mL	18 mL

	Impinger 4	Impinger 5		Final Impinger
Contents:	MT			Silica Gel
Final Volume (ml):	3 mL		(g):	848.4
Initial Volume (ml):	ø		(g):	815.6
Net Volume (ml):	3 mL		(g):	32.8

Total moisture collected (ml): 252.8

Description of impinger catch: yellow-colored (light). Visible off-gassing (bubbles, pressure build-up in bottle).

SMPLRECV.WK3

ENGINEERING-SCIENCE, INC.
Subsidiary of The Parsons Corporation

vo F t Hill, 10521 Rosehaven Street
irfax, VA 22030-2899
3 591-7575, Fax 703 591-1305

Sample Train Recovery Data

Plant: Catholic University Date: 1/19/95
Sampling Location: 1000 Kg melter @ Vitreous State Lab.
Clean-up person: DAH Field Team Leader: GDH
Sample Type: M4 M5 M6 M5/8 M8 M17 M26 MM5 MMT Cr+6 Other:
Run Number: M005/95 MELTER #3 Impinger Train ID: #2
Job Number:

Comments:

Front-half Data

Filter #: M005/95 Filter Media Type: Quartz
Filter Description:
Filter #: Filter Media Type:
Filter Description:

Back-half Data

Impinger Purge –
Start Time: Flow Rate: Stop Time: Purge Gas:

	Impinger 1	Impinger 2	Impinger 3
Contents:	Empty	HNO_3/H_2O_2	HNO_3/H_2O_2
Final Volume (ml):	102 ml	158 ml	109 ml
Initial Volume (ml):	0 ml	100 ml	100 ml
Net Volume (ml):	102	58	9

	Impinger 4	Impinger 5		Final Impinger
Contents:	Empty			Silica Gel
Final Volume (ml):	1 ml		(g):	755.2
Initial Volume (ml):	0 ml		(g):	739.3
Net Volume (ml):	1		(g):	15.9

Total moisture collected (ml): 185.9

Description of impinger catch: Amber-colored, some bubbles

SMPLRECV.WK3

FIELD DATA

Plant Catholic University
Date 1/19/95
Sampling Location HEPA Exhaust
Sample Type MMT -
Run Number HEPA - 01
Operator LAC, KM
Ambient Temperature 70°F
Barometric Pressure 29.9
Static Pressure (P_s)
Filter Number(s) M001/95
Pretest Leak Rate = .012 cfm @ 15 in. Hg
Pretest Pitot Leak Check ✓
Pretest Orsat Leak Check
Read and Record all Data Every 5 Minutes

Schematic of Traverse Point Layout

Probe Length and Type 3' GLASS
Pitot Tube I.D. No. APEX
Nozzle I.D. .371
Assumed Moisture, % 4.0
Temp. Readout S/N APEX 1
Meter Box Number APEX 1
Meter $H_@$ 1.838
C Factor 1.4
Meter Gamma 0.996
Heater Box Setting
Reference p 0.075
Post Test Leak Rate = ___ cfm @ ___ in. Hg
Post Test Pitot Leak Check
Post Test Orsat Leak Check

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Traverse Point Number	Sampling Time, (min)	/Clock Time (24-hour clock)	Gas Meter Reading (V_m) ft^3	Velocity Head (P_s) in. H_2O	Orifice Pres. Differential (H) in. H_2O Desired	Orifice Pres. Differential (H) in. H_2O Actual	Stack Temp. (T_s) °F	Dry Gas Meter Temp. Inlet ($T_{m_{in}}$) °F	Dry Gas Meter Temp. Outlet ($T_{m_{out}}$) °F	Pump Vacuum in. Hg	Sample Box Temp. Filter Temp. °F	Impinger Temp. °F
	0	12:20	87.985									
A-1	3	23	91.66	0.17	4.15	4.15	106	58	58	11	235	63
2	6	26	95.21	0.22	5.35	4.9	106	72	59	15	234	45
3	9	29	98.79	0.23	5.6	4.9	106	71	60	15	234	49
4	12	32	102.38	0.25	6.0	4.9	106	71	62	15	235	56
5	15	35	105.91	0.23	5.6	4.9	108	71	63	15	233	58
6	18	38	109.49	0.23	5.6	4.9	107	71	63	15	236	62
7	21	41	113.05	0.20	4.9	4.9	109	72	65	15	236	64
8	24	44	116.39	0.17	4.15	4.15	107	74	66	11	237	67
9	27	47	119.72	0.17	4.15	4.15	108	75	67	11	237	67
10	30	50	122.81	0.14	3.4	3.4	109	76	67	8	237	60
11	33	53	126.36	0.20	4.9	4.9	109	79	68	15	237	58
STOP 12	36	56	130.724	0.20	4.9	4.9	103	78	69	15	237	56
START	0	1302	130.724									
B-1	3	1305	134.20	.31	7.5	5.0	106	79	70	15	236	57
2	6	08	137.84	0.25	6.0	5.0	105	80	70	15	235	51
3	9	11	141.49	0.24	5.8	5.0	105	79	71	15	236	53
4	12	14	145.11	0.22	5.35	5.0	105	78	71	15	236	56
5	15	17	148.53	0.18	4.2	4.2	107	77	72	11	236	57
6	18	20	152.16	0.20	4.9	4.9	107	79	72	15	235	57
7	21	23	155.55	0.18	4.2	4.2	106	78	72	11	236	57
8	24	26	158.91	0.18	4.2	4.2	106	79	72	11	236	58

Plant Name: ____________________ Test Date: ____________________

Run Number: ____________________ Operator: ____________________

Traverse Point Number	Sampling Time, (min) / Clock Time (24-hour clock)	Gas Meter Reading (V_m) ft^3	Velocity Head (P_s) in. H_2O	Orifice Pres. Differential (H) in. H_2O Desired	Orifice Pres. Differential (H) in. H_2O Actual	Stack Temp. (T_s) °F	Dry Gas Meter Temp. Inlet ($T_{m_{in}}$) °F	Dry Gas Meter Temp. Outlet ($T_{m_{out}}$) °F	Pump Vacuum in. Hg	Sample Box Temp. Filter Temp. °F	Impinger Temp. °F
5	27 / 29	162.40	0.19	4.6	4.6	107	80	72	12.5	236	57
10	30 / 32	165.92	0.19	4.6	4.6	108	80	72	12.5	235	56
11	33 / 35	169.24	0.16	3.9	3.9	106	80	73	10	236	57
12	36 / 38	173.18	0.23	5.6	5.0	106	81	73	15	225	57
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FIELD DATA

Plant Catholic University
Date 1/19/95
Sampling Location HEPA Out 3
Sample Type MMT
Run Number HEPA-02
Operator HR
Ambient Temperature 70° F
Barometric Pressure 29.97
Static Pressure (P_s)
Filter Number(s)
Pretest Leak Rate = 0.013 cfm @ 15 in. Hg
Pretest Pitot Leak Check
Pretest Orsat Leak Check
Read and Record all Data Every ___ Minutes

Schematic of Traverse Point Layout

Probe Length and Type 3' Glass
Pitot Tube I.D. No. APEX
Nozzle I.D. 0.510
Assumed Moisture, % 1%
Temp. Readout S/N APEX 1
Meter Box Number APEX 1
Meter $H_@$ 1.838
C Factor
Meter Gamma 0.996
Heater Box Setting
Reference p
Post Test Leak Rate = ___ cfm @ ___ in. Hg
Post Test Pitot Leak Check
Post Test Orsat Leak Check

Traverse Point Number	Sampling Time, (min)	/Clock Time (24-hour clock)	Gas Meter Reading (V_m) ft^3	Velocity Head (P_s) in. H_2O	Orifice Pres. Differential (H) in. H_2O Desired	Actual	Stack Temp. (T_s) °F	Dry Gas Meter Temp. Inlet ($T_{m_{in}}$) °F	Outlet ($T_{m_{out}}$) °F	Pump Vacuum in. Hg	Sample Box Temp. Filter Temp. °F	Impinger Temp. °F
~~8~~	0	17:25	180.878	—	—	—	—	—	—	—	—	
B-1	3	28	183.28	0.16	1.95	1.55	104	71	67	2	248	68
2	6	32	185.52	0.15	1.7	1.7	107	76	67	2	250	49
3	~~9~~ 10	36 ~~35~~	188.72	0.17	2.1	2.1	106	77	67	2	249	47
4	~~12~~ 14	40 ~~38~~	191.88	0.16	1.95	1.95	108	77	67	2	243	48
5	~~15~~ 18	44 ~~41~~	195.23	0.18	2.2	2.2	106	77	67	3	247	48
6	~~18~~ 22	48 ~~44~~	198.60	0.18	2.2	2.2	105	78	67	3	247	48
7	~~21~~ 26	52 ~~47~~	201.96	0.18	2.2	2.2	107	80	68	3	247	48
8	~~24~~ 30	56 ~~50~~	205.28	0.18	2.2	2.2	106	82	69	3	246	49
9	~~27~~ 34	18:00 ~~53~~	208.60	0.18	2.2	2.2	106	82	70	3	247	50
10	~~30~~ 38	04 ~~56~~	211.73	0.16	1.95	1.95	108	83	71	2	247	50
11	~~33~~ 42	08 ~~59~~	214.48	0.12	1.45	1.45	106	83	72	1	248	51
12	~~36~~ 46	18:[illegible]	217.098	0.10	1.25	1.3	107	83	72	1	247	53
	46	18:30	217.098	—	—	—	—	—	—	—	—	—
A-1	50	18:36	220.88	0.25	3.05	3.05	108	79	72	3.5	247	60
2	54	38	224.62	0.23	2.8	2.8	108	85	73	3	248	47
3	58	42	228.46	0.24	2.95	2.95	108	86	74	3	247	48
4	62	46	232.298	0.24	2.95	2.95	108	86	74	3	248	50
5	66	19:[illegible] 50	235.97	0.22	2.70	2.70	108	73	74	3	247	72
6	70	[illegible] 54	239.63	0.25	3.05	3.05	110	87	74	3.5	248	50
7	74	[illegible] 58	243.25	0.21	2.55	2.55	109	87	75	3	249	50
8	78	[illegible]	246.97	0.22	2.70	2.70	109	87	76	3	248	51

Chk [illegible] at 1146

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WHC-SD-WM-VI-029, Revision 0

Page ______ of ______

Plant Name: Catholic University

Run Number: HEPA-02

Test Date: 1/13/95

Operator: HR

Traverse Point Number	Sampling Time, (min)	/Clock Time (24-hour clock)	Gas Meter Reading (V_m) ft^3	Velocity Head (P_s) in. H_2O	Orifice Pres. Differential (H) in. H_2O Desired	Orifice Pres. Differential (H) in. H_2O Actual	Stack Temp. (T_s) °F	Dry Gas Meter Temp. Inlet ($T_{m_{in}}$) °F	Dry Gas Meter Temp. Outlet ($T_{m_{out}}$) °F	Pump Vacuum in. Hg	Sample Box Temp. Filter Temp. °F	Impinger Temp. °F
9	82	/ 19:44	250.39	0.18	2.2	2.2	108	87	76	2.5	251	51
10	86	/ 48	253.88	0.18	2.2	2.2	110	87	77	2.5	248	51
11	90	/ 52	257.24	0.20	2.45	2.45	110	87	85	3	247	50
12	94	/ 56	260.364	0.19	2.33	2.3	110	88	77	3	248	50
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FIELD DATA

Plant Catholic University
Date 1/19/95
Sampling Location HEPA Out
Sample Type MMT
Run Number HEPA-03
Operator HR, KM
Ambient Temperature 70° F
Barometric Pressure 29.97
Static Pressure (P_s)
Filter Number(s) M002/95
Pretest Leak Rate = .018 cfm @ 15 in. Hg
Pretest Pitot Leak Check ✓
Pretest Orsat Leak Check
Read and Record all Data Every 4 Minutes

Schematic of Traverse Point Layout

Probe Length and Type 3' Glass
Pitot Tube I.D. No. APEX
Nozzle I.D. 0.310
Assumed Moisture, % 4%
Temp. Readout S/N APEX 1
Meter Box Number APEX 1
Meter $H_@$ 1.738
C Factor 1.35
Meter Gamma 0.996
Heater Box Setting ≈250°F
Reference p 0.6
Post Test Leak Rate = .015 cfm @ 2 in. Hg
Post Test Pitot Leak Check
Post Test Orsat Leak Check

Traverse Point Number	Sampling Time, (min)	/Clock Time (24-hour clock)	Gas Meter Reading (V_m) ft³	Velocity Head (P_s) in. H_2O	Orifice Pres. Differential (H) in. H_2O Desired	Actual	Stack Temp. (T_s) °F	Dry Gas Meter Temp. Inlet ($T_{m_{in}}$) °F	Outlet ($T_{m_{out}}$) °F	Pump Vacuum in. Hg	Sample Box Temp. Filter Temp. °F	Impinger Temp. °F
	0	21:09	273.438	/	/	/	/	/	/			/
A-1	4	13	277.25	0.19	2.3	2.3	108	83	74	6	249	55
2	8	17	280.34	0.17	2.1	2.1	108	85	74	5	250	50
3	12	21	283.73	0.19	2.3	2.3	108	85	75	6	249	51
4	16	25	287.17	0.19	2.3	2.3	108	86	75	6	249	53
5	20	29	290.59	0.19	2.3	2.3	108	85	75	6	249	54
6	24	33	293.97	0.18	2.2	2.2	110	86	76	6	249	54
7	28	37	297.24	0.17	2.1	2.1	111	86	76	5	250	55
8	32	41	300.59	0.18	2.2	2.2	110	85	76	6	250	55
9	36	45	303.95	0.18	2.2	2.2	110	86	76	6	248	55
10	40	49	307.16	0.16	1.95	1.95	109	86	77	5	251	55
11	44	53	310.44	0.17	2.1	2.1	109	85	77	5	250	55
12	48	57	313.940	0.17	2.1	2.1	108	85	76	5	250	55
		/										
	48	22:03	313.940	/	/	/	/	/	/		/	/
B-1	52	07	317.950	0.3	3.6	3.6	107	80	76	9	250	59
2	56	11	322.01	0.3	3.6	3.6	107	86	76	9	249	52
3	60	15	325.85	0.24	2.9	2.9	107	85	76	6	250	56
4	64	19	329.85	0.29	3.5	3.5	107	86	77	8	250	57
5	68	23	333.91	0.29	3.5	3.5	107	86	77	8	249	58
6	72	27	337.78	0.26	3.1	3.1	107	85	77	7	249	58
7	76	31	341.340	0.20	2.45	2.45	107	85	77	6	250	59
8	80	35	344.930	0.22	2.7	2.7	107	85	77	6.5	249	54
9	84	39	348.740	0.24	2.9	2.9	104	86	77	7.0	250	54

Plant Name: Catholic University

Test Date: 1/19/95

Run Number: HEPA-03

Operator: HR/KM

Traverse Point Number	Sampling Time, (min) / /Clock Time /(24-hour clock)	Gas Meter Reading (V_m) ft^3	Velocity Head (P_s) in. H_2O	Orifice Pres. Differential (H) in. H_2O Desired	Orifice Pres. Differential (H) in. H_2O Actual	Stack Temp. (T_s) °F	Dry Gas Meter Temp. Inlet ($T_{m_{in}}$) °F	Dry Gas Meter Temp. Outlet ($T_{m_{out}}$) °F	Pump Vacuum in. Hg	Sample Box Temp. Filter Temp. °F	Impinger Temp. °F
10	88 / 44	353.550	0.25	3.0	3.0	106	86	77	7.0	249	57
11	92 / 48	357.200	0.23	2.8	2.8	105	85	77	6.0	250	60
12	96 / 52	361.163	0.23	2.8	2.8	108	86	77	6.0	250	60
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ENGINEERING-SCIENCE, INC.
Subsidiary of The Parsons Corporation
Fair Hill, 10521 Rosehaven Street
Fairfax, VA 22030-2899
703 591-7575, Fax 703 591-1305

Sample Train Recovery Data

Plant: Catholic University Date: 1/19/95
Sampling Location:
Clean-up person: DAH Field Team Leader: CDH
Sample Type: M4 M5 M6 M5/8 M8 M17 M26 MM5 MMT Cr+6 Other:
Run Number: HEPA-01 Impinger Train ID: #1
Job Number: 727107

Comments:

Front-half Data

Filter #: M001/95 Filter Media Type: Quartz
Filter Description:
Filter #: Filter Media Type:
Filter Description:

Back-half Data

Impinger Purge - Start Time: Flow Rate: Stop Time: Purge Gas:

	Impinger 1	Impinger 2	Impinger 3
Contents:	MT	5% HNO_3/3% H_2O_2	5% HNO_3/3% H_2O_2
Final Volume (ml):	0	98	92
Initial Volume (ml):	0	100	100
Net Volume (ml):		-2	-8

	Impinger 4	Impinger 5		Final Impinger
Contents:	MT			Silica gel
Final Volume (ml):	1		(g):	774.4
Initial Volume (ml):	0		(g):	747.0
Net Volume (ml):	1		(g):	27.4

Total moisture collected (ml): 18.4

Description of impinger catch: Clear

SMPLRECV.WK3

ENGINEERING-SCIENCE, INC.
Subsidiary of The Parsons Corporation

wo I t Hill, 10521 Rosehaven Street
airfax, VA 22030-2899
03 591-7575, Fax 703 591-1305

Sample Train Recovery Data

Plant: Catholic V. Date: 1/19/95
Sampling Location:
Clean-up person: DAH Field Team Leader: GDH
Sample Type: M4 M5 M6 M5/8 M8 M17 M26 MM5 MMT Cr^{+6} Other:
Run Number: HEPA-02 Impinger Train ID: #3
Job Number:

Comments:

M007/95
~~M006~~/95

Front-half Data

Filter #: ~~M00?~~/95 Filter Media Type: Quartz
Filter Description:
Filter #: Filter Media Type:
Filter Description:

Back-half Data

Impinger Purge -
Start Time: Flow Rate: Stop Time: Purge Gas:

	Impinger 1	Impinger 2	Impinger 3
Contents:	MT	5% HNO_3 / 3% H_2O_2	5% HNO_3 / 3% H_2O_2
Final Volume (ml):	2	106	100
Initial Volume (ml):	0	100	100
Net Volume (ml):	2	6	0

	Impinger 4	Impinger 5		Final Impinger
Contents:	MT			Silica Gel
Final Volume (ml):	0		(g):	799.0
Initial Volume (ml):	0		(g):	782.4
Net Volume (ml):	0		(g):	18.6

Total moisture collected (ml): 24.6

Description of impinger catch: Straw-colored, clear. Slight bubbling.

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Fair Oaks Hill, 10521 Rosehaven Street
Fairfax, VA 22030-2899
703 591-7575, Fax 703 591-1305

Sample Train Recovery Data

Plant: Catholic University　　Date: 1/19/95
Sampling Location: 1000 Kg melter Vitreous State Lab.
Clean-up person: DAH　　Field Team Leader: GDH
Sample Type: M4 M5 M6 M5/8 M8 M17 M26 MM5 MMT Cr+6 Other:
Run Number: HEPA #3　　Impinger Train ID: #1
Job Number:

Comments:

Front-half Data

Filter #: M002/95　　Filter Media Type:
Filter Description:
Filter #:　　Filter Media Type:
Filter Description:

Back-half Data

Impinger Purge –
Start Time:　　Flow Rate:　　Stop Time:　　Purge Gas:

	Impinger 1	Impinger 2	Impinger 3
Contents:	Empty	HNO_3/H_2O_2	HNO_3/H_2O_2
Final Volume (ml):	1 mL	98 mL	98 mL
Initial Volume (ml):	0 mL	100 mL	100 mL
Net Volume (ml):	1	-2	-2

	Impinger 4	Impinger 5		Final Impinger
Contents:	Empty			Silica Gel
Final Volume (ml):	1 mL		(g):	764.1
Initial Volume (ml):	0 mL		(g):	738.7g
Net Volume (ml):	1		(g):	25.4

Total moisture collected (ml): 23.4

Description of impinger catch:

ES

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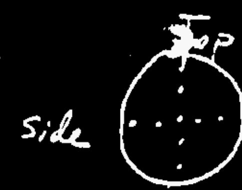
PRELIMINARY VELOCITY TRAVERSE

Plant: 1000 Kg Melter
Date: 1/19/95
Location: VSL – Catholic University
Stack I.D.: 6"
Barometric Pressure, in. Hg:
Stack Gauge Pressure, in. H_2O:
Operators: D R
Pitot Tube I.D. Number: Standard Apex
Temperature Readout I.D.: 15-25° C
Pitot Tube Leak Check: N/A



Sampling Location

Schematic of Traverse Point Layout

Side

Traverse Point Number	Velocity Head (P_s) in. H_2O	Stack Temp. C° (T_s), ~~°F~~	Cyclonic Flow Check ° from Null
1	.015	15°C	
2	.02		
3	.015		
4	.015		
5	.02		
1	.015		
2	.012		
3	.015		
4	.015		
5	.015		
I Average	0.0157		

Top

Traverse Point Number	Velocity Head (P_s) in. H_2O	Stack Temp. (T_s), °F	Cyclonic Flow Check ° from Null
1	.017		
2	.017		
3	.02		
4	.02		
5	.02		
6	.012		
2	.012		
3	.02	.02	
4	[illegible]	.02	
5	[illegible]	.021	
II Average	0.018		

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