Note: This is a reference cited in *AP 42, Compilation of Air Pollutant Emission Factors, Volume I Stationary Point and Area Sources.* AP42 is located on the EPA web site at www.epa.gov/ttn/chief/ap42/

The file name refers to the reference number, the AP42 chapter and section. The file name "ref02_c01s02.pdf" would mean the reference is from AP42 chapter 1 section 2. The reference may be from a previous version of the section and no longer cited. The primary source should always be checked.

AP-42 Section 12.2
Reference
Report Sect. 4
Reference 74

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USS CLAIRTON WORKS
CLAIRTON, PENNSYLVANIA

Report on

COMPLIANCE DEMONSTRATION NO. 1, 2, AND 3 BATTERY PUSHING EMISSIONS CONTROL

APRIL 1994

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Project No.: 3934-45-09

TABLE OF CONTENTS

Page

EXECUTIVE SUMMARY iii

1.0 INTRODUCTION 1

2.0 METHODOLOGIES 2

3.0 RESULTS 4

LIST OF TABLES

Table 1 Particulate Matter Emissions Data Day 1: February 22, 1994 6

Table 2 Particulate Matter Emissions Data Day 2: February 23, 1994 7

Table 3 Particulate Matter Emissions Data Day 3: February 24, 1994 8

Table 4 Particulate Matter Emissions Data Summary of Days 1, 2, and 3 9

Table 5 Visible Emissions Data Summary 10

APPENDICES

APPENDIX A TEST PROTOCOL, FIELD DATA SHEETS, CALIBRATION RESULTS

APPENDIX B PLANT OPERATIONAL DATA

APPENDIX C GRAVIMETRIC RESULTS, EMISSIONS CALCULATIONS

EXECUTIVE SUMMARY

A demonstration of the pushing emissions control system for Batteries 1, 2, and 3 operated at USS Clairton Works was conducted on February 22, 23, and 24, 1994. The purpose of the test program was to determine (1) the particulate matter emissions rate in the exhaust of the baghouse, (2) the opacity of the plumes of the baghouse exhaust, (3) the opacity of the plume which resulted from the pushing of the coke into the hot car, and (4) the opacity of the plume which resulted from the travelling of the hot car to the quenching station. Emissions testing was conducted only when coke was pushed from an oven in Battery 1, 2, or 3.

The results of the testing showed an average particulate matter emissions rate of 0.75 pounds per hour, while the allowable emissions rate is 10.10 pounds per hour. No visible emissions were observed from the baghouse stacks during the three day test program. Over the three day test program, 180 pushing events (each event includes a pushing and travelling operation) were observed. A maximum plume opacity during the pushing operation greater than or equal to 20 percent was observed 85 times. A maximum plume opacity during the travelling operation greater than 10 percent was observed 96 times. Both opacities for the pushing event were greater than their specified reference values 75 times.

1.0 INTRODUCTION

As required by Paragraph V.A. (5)(f) of the amended Mon Valley Consent Decree, a demonstration of the pushing emissions control system for Batteries 1, 2, and 3 operated at USS Clairton Works was conducted on February 22, 23, and 24, 1994. A baghouse controls the emissions which result from the pushing operations from the ovens of Batteries 1, 2, and 3. The purpose of the test program was to determine (1) the particulate matter emissions rate in the exhaust of the baghouse, (2) the opacity of the plumes of the baghouse exhaust, (3) the opacity of the plume which resulted from the pushing of the coke into the hot car, and (4) the opacity of the plume which resulted from the travelling of the hot car to the quenching station. Emissions testing was conducted only when coke was pushed from an oven in Battery 1, 2, or 3.

The field work activities were completed by Chester Environmental. All test procedures were witnessed by a representative from the Allegheny County Health Department - Division of Air Quality (DAQ).

2.0 METHODOLOGIES

A test protocol was prepared by Chester Environmental and submitted to DAQ prior to the execution of the test program. A copy of the test protocol can be found in Appendix A. Specific methodologies employed in the test program are outlined below.

The baghouse exhausts through four stacks; the emissions from each of these 36 inch diameter stacks were sampled simultaneously. A total of three test runs were completed on each of the four baghouse stacks with one series of tests completed on each of the three days of testing. Testing was performed only during periods of normal plant operation.

Each traverse for each stack included 12 traverse points as calculated from EPA Method 1 (40 CFR 60 Appendix A). For each stack, sampling was conducted along a total of five traverses, or 60 traverse points, with each push sampled for the required one minute at one traverse point. Sampling was conducted on each stack through two sampling ports which are separated by 90 degrees in the same horizontal plane. Three traverses were travelled through one port, while the remaining two traverses were travelled through the other port.

In accordance with EPA Method 2, exhaust gas velocities and volumetric flow rates were measured using a calibrated S type pitot tube. Positive and negative pitot lines were leak-checked at the beginning and end of each test run. Gas velocity differential pressures along with stack gas temperatures were recorded at each sampling point.

Gas concentrations of carbon dioxide (CO_2), oxygen (O_2), and nitrogen (N_2, by difference) were measured using Fyrite apparatus as specified by EPA Method 3. Gas concentrations were used to obtain molecular weight of the process gas on a dry basis.

Percent moisture content, by volume, of the exhaust gas was measured from the weight gain of the four sample train impingers in accordance with EPA Method 4.

Particulate matter sampling was performed in accordance with EPA Method 5 and Sections 139.11 and 139.12 of the Pennsylvania Department of Environmental Resources (PA DER) Source Testing Manual (Revision Number 1, January 1983) with the exception that the DER requirement of sampling 50 cubic feet of exhaust gas was replaced with the

requirement of sampling the emissions from 60 pushes. The emissions from each push were sampled for one minute. Thus, a total of 60 minutes of sampling was completed.

Clean up of the sampling trains included separate water and acetone rinses of both the front-half and back-half components of the sample trains, as per Section 139.12 of the PA DER particulate matter test method. The water soluble and water insoluble portions of the front-half of the sampling train were determined as a total; that is, the water rinse was not filtered to determine soluble and insoluble portions. Front-half acetone and water rinses were evaporated to dryness, desiccated, and weighed to a constant weight. The water soluble and water insoluble portions of the back-half were determined separately in accordance with Section 139.12 of the PA DER Source Testing Manual. The back-half water rinses and first three impinger solutions were combined and then filtered under suction through a preweighed 0.22 micrometer membrane filter. The filter used to capture the insoluble material was dried, desiccated, and weighed to a constant weight. The filtrate was then evaporated to dryness, desiccated, and weighed to a constant weight. Back-half acetone rinses were also evaporated to dryness, desiccated, and weighed to a constant weight. Sample train filters were desiccated for 24 hours, and particulate matter weight was determined gravimetrically. Rinse residue weights and filter weights were measured to the nearest 0.1 mg. One acetone blank and one deionized distilled water blank were prepared in the same manner as the test sample rinses. The blank residue weights were subtracted from the test sample residue weights. After blank correction, front-half water and acetone rinse residue weights, sample train filter weights, and back-half water insoluble filter weights were used to determine total particulate matter catch.

All plume opacity measurements were performed in accordance with EPA Method 9 and Section F of Chapter 18 of the DAQ Source Testing Manual. During the pushing operation, the maximum plume opacity and length of time (in seconds) when the plume opacity was greater than or equal to 20 percent were recorded. During the travelling operation, the maximum plume opacity and length of time (in seconds) when the plume opacity was greater than 10 percent were recorded. Visible emissions from the baghouse stacks were recorded continuously each day of the test program.

3.0 RESULTS

The particulate matter emissions test results have been summarized in Tables 1 through 4. The total particulate matter emissions rate for each day of testing was obtained by summing the emissions rates from each stack. The three day average particulate matter emissions rate is 4.64 pounds per hour of pushing (lb/hr pushing). Since emissions do not occur continuously, the mass emission rate has to be adjusted for the number of pushes which occurred during the testing periods. Since there were, on average, 9.7 pushes of coke per hour, and each push was sampled for one minute, the actual emission rate (based on a continuous operation) is equal to the following:

$$\frac{4.64\ \text{lb}}{\text{hr pushing}} \times \frac{1\ \text{hr pushing}}{60\ \text{min pushing}} \times \frac{1\ \text{min pushing}}{1\ \text{push}} \times \frac{9.7\ \text{pushes}}{\text{hr}} = 0.75\ \text{lb/hr}$$

The allowable particulate matter emissions rate is equal to the Best Available Control Technology (BACT) standard defined as the greater of the following two values:

(1) Outlet concentration of 0.020 grains per dry standard cubic foot (gr/dscf)

(2) Outlet mass emission rate determined by the formula

$$A = 0.76 * W^{0.42}$$

where A = allowable mass emissions rate (lb/hr/battery)
W = coke pushing rate (tons/hr/battery)

For this test program, there were on average 10.7 tons of coke per oven and 9.7 ovens were pushed per hour. Substituting these values into the equation listed above yields an allowable particulate matter emissions rate for the pushing emissions control system for Batteries 1, 2, and 3 equal to (3 batteries) * (0.76 lb/hr/battery) * (10.7 tons/oven * 9.7 ovens/hr / 3 batteries)$^{0.42}$, or 10.10 lb/hr. All particulate matter concentrations determined in this test program were less than 0.020 gr/dscf. The average particulate matter emissions rate determined in the test program (0.75 lb/hr) is less than the allowable emissions rate (10.10 lb/hr).

Tables 1 through 3 also list other pertinent stack and sampling parameters including the exhaust gas flow rate in units of actual cubic feet per minute (acfm), standard cubic feet per

minute (scfm), and dry standard cubic feet per minute (dscfm), moisture content of the exhaust gas, exhaust gas temperature, gas volume sampled for each test (dscf), and the isokinetics value for each test. The isokinetics value is equal to the ratio of the average linear gas velocity sampled through the probe nozzle to the average exhaust gas velocity. An isokinetics value between 90 percent and 110 percent is considered acceptable. All sample volumes were greater than 30 dscf per test. All isokinetics values were within the acceptable range.

The plume opacity data has been summarized in Table 5. No visible emissions were observed from the baghouse stacks during the three day test program. Over the three day test program, 180 pushing events (each event includes a pushing and travelling operation) were observed. A maximum plume opacity during the pushing operation greater than or equal to 20 percent was observed 85 times. A maximum plume opacity during the travelling operation greater than 10 percent was observed 96 times. Both opacities for the pushing event were greater than their specified reference values 75 times. During the pushing operation, the plume opacity was greater than or equal to 20 percent for an average of 5.7 seconds. During the travelling operation, the plume opacity was greater than 10 percent for an average of 9.9 seconds.

All testing was performed during periods of normal plant operation. Copies of the field data sheets can be found in Appendix A. Copies of the plant operational data for each day of the test program for Batteries 1, 2, and 3 can be found in Appendix B.

All sampling equipment was calibrated and operated in accordance with EPA Methods 1 through 5. Copies of the pre-test calibration results, post-test calibration results, and results of an audit of the control boxes conducted with a critical orifice provided by DAQ can be found in Appendix A.

The gravimetric results and emissions calculations for each test can be found in Appendix C.

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CLAIRTON, PA

TABLE 1

BATTERIES 1, 2, AND 3
PUSHING EMISSIONS CONTROL SYSTEM
PARTICULATE MATTER EMISSIONS DATA

DAY 1
TEST DATE: FEBRUARY 22, 1994
TEST TIMES: 9:05 TO 15:40

Stack Number Test Number		1-1 CLR-1-1-1	1-2 CLR-1-2-1	1-4 CLR-1-4-1	1-5 CLR-1-5-1	Total
Mass Emission Rate and Concentration						
Particulate Matter	(lb/hr pushing)	2.13	0.59	1.48	0.85	5.05
	(gr/dscf)	0.0104	0.0026	0.0069	0.0038	
Stack Conditions						
Flow Rate	(acfm)	25900	28200	27000	27800	108900
	(scfm)	24200	26300	25300	26600	102400
	(dscfm)	23800	25900	25000	26300	101000
Temperature	(°F)	103	102	102	89	
Moisture Content	(%)	1.6	1.4	1.2	1.3	
Sampling Conditions						
Sampling Time	(minutes)	60	60	60	60	
Sample Volume	(dscf)	39.555	48.936	37.909	42.930	
Isokinetics	(%)	98.4	105.0	97.8	107.8	

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TABLE 2

BATTERIES 1, 2, AND 3
PUSHING EMISSIONS CONTROL SYSTEM
PARTICULATE MATTER EMISSIONS DATA

DAY 2
TEST DATE: FEBRUARY 23, 1994
TEST TIMES: 8:40 TO 15:05

Stack Number Test Number		1-1 CLR-1-1-2	1-2 CLR-1-2-2	1-4 CLR-1-4-2	1-5 CLR-1-5-2	Total
Mass Emission Rate and Concentration						
Particulate Matter	(lb/hr pushing)	2.46	0.46	0.60	1.06	4.58
	(gr/dscf)	0.0122	0.0021	0.0028	0.0048	
Stack Conditions						
Flow Rate	(acfm)	26000	28300	27300	28100	109700
	(scfm)	24100	26300	25100	26500	102000
	(dscfm)	23600	25800	24600	26000	100000
Temperature	(°F)	97	95	102	89	
Moisture Content	(%)	2.0	1.8	1.8	1.7	
Sampling Conditions						
Sampling Time	(minutes)	60	60	60	60	
Sample Volume	(dscf)	40.602	47.244	43.150	42.793	
Isokinetics	(%)	101.7	101.8	100.5	108.3	

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TABLE 3

BATTERIES 1, 2, AND 3
PUSHING EMISSIONS CONTROL SYSTEM
PARTICULATE MATTER EMISSIONS DATA

DAY 3
TEST DATE: FEBRUARY 24, 1994
TEST TIMES: 8:40 TO 14:40

Stack Number		1-1	1-2	1-4	1-5	Total
Test Number		CLR-1-1-3	CLR-1-2-3	CLR-1-4-3	CLR-1-5-3	
Mass Emission Rate and Concentration						
Particulate Matter	(lb/hr pushing)	1.80	0.40	0.86	1.23	4.29
	(gr/dscf)	0.0084	0.0018	0.0040	0.0055	
Stack Conditions						
Flow Rate	(acfm)	27200	27100	27200	28000	109500
	(scfm)	25300	25300	25100	26400	102100
	(dscfm)	24900	25000	24800	26100	100800
Temperature	(°F)	93	90	96	84	
Moisture Content	(%)	1.5	1.3	1.2	1.3	
Sampling Conditions						
Sampling Time	(minutes)	60	60	60	60	
Sample Volume	(dscf)	39.809	48.441	42.827	42.174	
Isokinetics	(%)	94.6	108.0	99.1	106.7	

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TABLE 4

BATTERIES 1, 2, AND 3
PUSHING EMISSIONS CONTROL SYSTEM
PARTICULATE MATTER EMISSIONS DATA

SUMMARY OF DAYS 1, 2, AND 3

Day	Test Date	Particulate Matter Emissions (lb/hr pushing)
1	02-22-94	5.05
2	02-23-94	4.58
3	02-24-94	4.29
Average		4.64

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TABLE 5

1, 2, AND 3 BATTERY PUSHING EMISSIONS CONTROL
VISIBLE EMISSIONS DATA SUMMARY

Baghouse Stacks

Observation Date	Number of Observations	Greatest Opacity (%)
February 22, 1994	1586	0
February 23, 1994	1380	0
February 24, 1994	1284	0

Pushing Operation

Observation Date	Number of Observations	Number of Observations with Opacity >=20%	Average Time with Opacity >= 20% (sec)
February 22, 1994	60	11	1.6
February 23, 1994	60	47	11.5
February 24, 1994	60	27	4.1
Average			5.7

Travelling Operation

Observation Date	Number of Observations	Number of Observations with Opacity >10%	Average Time with Opacity >10% (sec)
February 22, 1994	60	13	5.3
February 23, 1994	60	49	19.9
February 24, 1994	60	34	4.6
Average			9.9

COMPLIANCE DEMONSTRATION
NO. 1, 2, AND 3 BATTERY
PUSHING EMISSIONS CONTROL

USS CLAIRTON WORKS
CLAIRTON, PENNSYLVANIA

APPENDIX A

TEST PROTOCOL, FIELD DATA SHEETS, CALIBRATION RESULTS

CHESTER
ENVIRONMENTAL

TEST PROTOCOL
COMPLIANCE DEMONSTRATION
NOS. 1, 2, 3 BATTERY PEC

USS CLAIRTON WORKS
CLAIRTON, PA

As required by the amended Mon Valley Consent Decree (Paragraph V.A. (5)(f)), a compliance demonstration will be conducted on the baghouse which controls the pushing emissions from Batteries 1, 2, and 3 operated at the USS Clairton Works. The purpose of this testing is to (1) determine the particulate matter emissions rates and concentrations from the exhaust stacks of the baghouse, (2) compare the measured particulate matter emissions rate with the allowable particulate matter emissions rate, (3) determine the presence of visible emissions from the baghouse stacks, and (4) measure the opacity of the plumes which result from the pushing of the coke into the hot car and during the travelling of the hot car to the quenching station. The three day test program will be performed during periods of normal plant production and operation.

Particulate matter sampling will be performed in accordance with EPA Stationary Source Sampling Methods 1 through 5, requirements set forth in Chapter 18, Section F of the Allegheny County Health Department - Bureau of Air Quality (BAQ) Source Testing Manual, and Sections 139.11 and 139.12 of the Pennsylvania Department of Environmental Resources (PA DER) Source Testing Manual (Revision Number 1, January 1983) with the exception that the PA DER requirement of 50 dry standard cubic feet sample volume of exhaust gas will be replaced with the requirement of sampling the emissions from 60 pushes. The emissions from each push will be sampled for 1 minute. Thus, a total of 60 minutes of sampling will be completed. A total of three test runs (one test run per day) will be performed for each of the 4 stacks of the baghouse with all stacks being tested simultaneously.

The baghouse exhausts through four individual stacks. All of the stacks measure 36 inches in inside diameter. Each diametral traverse for the stack will include 12 traverse points as calculated by EPA Stationary Source Sampling Method 1. Sampling will conducted along a total of 5 traverses, or 60 traverse points, with each push sampled for the required 1 minute at one traverse point. Sampling will be conducted through 2 sampling ports which are

separated by 90° in the same horizontal plane. Three traverses will be performed through one port, while the remaining 2 traverses will be performed through the other port. A schematic diagram of the stack and traverse points is presented in Figure 1.

In accordance with EPA Method 2, velocities and volumetric flow rates of the exhaust gas will be determined using a calibrated S type Pitot tube. Positive and negative Pitot lines will be leak-checked at the beginning and end of each test run. Gas velocity differential pressures along with stack gas temperatures will be recorded at each sampling point. Static pressure of the exhaust gas stream will be measured with the same Pitot tube.

During each test, gas concentrations of carbon dioxide (CO_2), oxygen (O_2), and nitrogen (N_2, by difference), will be determined with the use of a Bacharach "Fyrite" apparatus as specified by EPA Method 3. Gas concentrations will be used to obtain molecular weight of the exhaust gas on a dry basis.

Percent moisture content, by volume, of the exhaust gas will determined by measuring the weight gain of the four sample train impingers in accordance with EPA Method 4.

As specified by EPA Method 5, each sample train will be assembled as required by the method, leak-checked on site at the beginning and end of each test run, and operated so that isokinetic conditions are maintained. Clean up of the sampling train will include a water rinse followed by an acetone rinse of both the front-half and back-half components of the sample train, as per PA DER particulate matter test method requirements. The water soluble and water insoluble portions of the front-half of the sampling train will be determined as a total; that is, the water rinse will not be filtered to determine soluble and insoluble portions. However, the water soluble and water insoluble portions of the back-half will be determined separately in accordance with Section 139.12 of the PA DER Source Testing Manual. The back-half water rinses and first three impinger solutions will be filtered under suction through a pre-weighed 0.22 micrometer filter. The filter used to capture the insoluble material will be dried, desiccated, and weighed to a constant weight. Front-half acetone and water rinses and back-half acetone rinses will be evaporated to dryness, desiccated, and weighed to a constant weight. Sample train filters will be desiccated for 24 hours, and particulate matter weight will be determined gravimetrically. Rinse residue weights and filter weights will be measured to the nearest 0.1 mg. One

acetone blank and one deionized distilled water blank will be prepared in the same manner as the test sample rinses. The blank weights will be subtracted from the test sample weights. After blank correction, front-half residue weights, sample filter weights, and back-half water insoluble filter weights and acetone residue weights will added together to determine total particulate matter catch.

All visible emissions determinations from the baghouse exhausts stacks will be performed in accordance with EPA Stationary Source Sampling Method 9 and BAQ Method 18F. Visible emissions will be recorded for the duration of each of the sixty oven pushes. All plume opacity measurements will also be performed in accordance with EPA Method 9 and BAQ Method 18F. During the pushing operation, the maximum plume opacity and length of time (in seconds) when the plume opacity is greater than or equal to 20% will be recorded. During the travelling operation, the maximum plume opacity and length of time (in seconds) when the plume opacity is greater than 10% will be recorded.

A report summarizing the compliance test program will be submitted within 60 days following completion of field work. The report will describe test methodologies utilized and present a textual and tabular summary of the emissions results and related sampling information. Copies of operational data will be included in the report to verify that all testing was performed during periods of normal plant operation. Also incorporated into the report will be copies of the pre-test calibration results, post-test calibration results, the results of an audit conducted with a critical orifice provided by the BAPC, field data sheets for the particulate matter sampling and visible emissions determinations, computer-generated emissions calculations, and analytical results for each test.

2·22·94
P.E.C. TEST

B-3/2	9:05
B-5/2	9:11
A-1/3	9:17
A-3/3	9:25
A-5/3	9:31
B-7/2	9:40
B-9/2	9:45
B-11/2	9:52
A-7/3	10:15
A-9/3	10:21
A-11/3	10:29
B-13/2	10:43
B-15/2	10:50
B-17/2	10:58
A-13/3	11:06
A-15/3	11:14
A-17/3	11:20
A-19/3	11:27
B-19/2	11:32
A-21/3	11:37
B-21/2	11:43
A-23/3	11:48
B-23/2	11:53
A-25/3	11:59
B-25/2	12:05
A-27/3	12:10
B-27/2	12:15
A-29/3	12:22
B-29/2	12:28
A-31/3	12:33
B-31/2	12:36
C-2/2	12:42
B-2/3	12:46
B-4/3	12:55
B-6/3	13:03
A-2/1	13:08
CHANGE PART	
A-6/1	13:19
B-8/3	13:24
B-10/3	13:34
B-12/3	13:46
A-8/1	13:51
A-10/1	13:58
A-12/1	14:03
B-14/3	14:11
A-14/1	14:17
B-16/3	14:22
A-16/1	14:28
B-18/3	14:33
A-18/1	14:38
A-20/3	14:44
B-20/3	14:51
A-22/1	14:58
B-22/3	15:01
A-24/1	15:08
B-24/3	15:12
A-26/1	15:18
B-26/3	15:23
A-28/1	15:29
B-28/3	15:34
B-30/3	15:39

STACK 1-1

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PEC
PROJECT NO. 3934-45-09
TEST CREW
BAROMETRIC PRESSURE 29.74

TEST DATE 2-22-94 (Tues)
TEST NO. C2R-1-1-1
NOZZLE (SIZE,#) 0.191"
STATIC PRESSURE 1.0" H_2O
PORT DIRECTION East

ORIFICE CORRECTION (ΔH@) 1.870
METER CORRECTION (Y) 1.0032
CALIBRATION DATE 2-3-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 5

HOT/COLD BOX NO. 8
PROBE NO. 5-3
FILTER NO. 1157
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		698.260	1.6	2.13	2.13	54	51	5.0	101	~250	68	~250	1 min./point
33.6		698.966	1.4	1.87	1.87	54	50	4.5	106				
31.7		699.694	1.0	1.33	1.33	54	49	2.0	103				
29.6		700.290	0.60	0.80	0.80	53	49	1.0	103				
27.0		700.776	1.4	1.87	1.87	53	49	3.0	103				
23.2		701.495	1.2	1.60	1.60	52	48	3.0	103				
12.8		702.171	1.0	1.33	1.33	52	48	2.0	104				
9.0		702.772	1.1	1.47	1.47	53	49	3.0	104				
6.4		703.422	1.1	1.47	1.47	53	50	3.0	103				
4.3		704.018	1.1	1.47	1.47	55	51	3.0	98				
2.4		704.710	0.9	1.20	1.20	55	51	2.5	98				
1.0		705.281	0.9	1.20	1.20	55	51	2.5	98				
		705.870											
				Σ=17.74		Σ=1239			Σ=1224				Estimates: MW= 28.8 %H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	5.0	<0.02
After	6.0	0.005

PITOT LEAK CHECK 15 sec

	Positive	Negative
Before	OK	OK
After		

GAS	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100 mL D.I. H_2O	537.8	533.3	4.5
2.	100 mL D.I. H_2O	568.6	567.3	1.3
3.	Empty	435.8	434.8	1.0
4.	Silica Gel	636.1	629.2	6.9
5.				
6.				
7.			total=	13.7g
8.				

68g

CHESTER ENVIRONMENTAL

Stack - 1-1

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PEC
PROJECT NO. 3934-45-09
TEST CREW
BAROMETRIC PRESSURE 29.74

TEST DATE 2-22-94 (Tues)
TEST NO. CLR-1-1-1
NOZZLE (SIZE,#) 0.191"
STATIC PRESSURE 1.0" H_2O
PORT DIRECTION East

ORIFICE CORRECTION (ΔH@) 1.870
METER CORRECTION (Y) 1.0032
CALIBRATION DATE 2-3-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 5

HOT/COLD BOX NO. 8
PROBE NO. 5-3
FILTER NO. 1157
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		705.870	0.9	1.20	1.20	56	51	2.0	98	~250	<68	~250	1 min./point
2.4		706.461	0.9	1.20	1.20	56	51	2.0	98				
4.3		707.015	1.1	1.47	1.47	56	51	2.5	99				
6.4		707.653	1.1	1.47	1.47	55	51	2.5	103				
9.0		708.285	1.1	1.47	1.47	57	52	2.5	102				
12.8		708.933	1.1	1.47	1.47	56	52	2.5	102				
23.2		709.565	1.1	1.47	1.47	57	52	2.5	104				
27.0		710.200	1.3	1.73	1.73	57	52	3.0	102				
29.6		710.938	1.5	2.00	2.00	57	52	5.0	102				
31.7		711.683	1.6	2.13	2.13	58	52	5.0	101				
33.6		712.473	1.5	2.02	2.02	58	53	5.0	106				
35.0		713.200	1.3	1.75	1.75	58	52	4.0	104				
		713.921											
				Σ = 14.38		Σ = 1302			Σ = 1224				Estimates:
													MW = 28.8
													%H2O = 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

Sample K 1-1

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PEC
PROJECT NO. 3931-45-09
TEST CREW
BAROMETRIC PRESSURE 29.74

TEST DATE 2-22-94 (Tues)
TEST NO. CLR-1-1-1
NOZZLE (SIZE,#) 0.191"
STATIC PRESSURE 1.0 "H2O
PORT DIRECTION EAST

ORIFICE CORRECTION (ΔH@) 1.870
METER CORRECTION (Y) 1.0032
CALIBRATION DATE 2-3-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 5

HOT/COLD BOX NO. 8
PROBE NO. 5-3
FILTER NO. 1157
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		713.921	1.6	2.15	2.15	58	52	5.5	107	~250	<68	~250	1 min./point
33.6		714.686	1.4	1.88	1.88	58	52	4.5	104				
31.7		715.409	1.4	1.88	1.88	58	53	4.5	105				
29.6		716.110	1.1	1.48	1.48	58	52	3.0	106				
27.0		716.764	1.4	1.88	1.88	57	52	4.5	105				
23.2		717.512	1.2	1.61	1.61	58	52	3.5	104				
12.8		718.200	1.1	1.48	1.48	58	53	3.0	107				
9.0		718.854	1.0	1.34	1.34	58	52	3.0	107				
6.4		719.487	1.1	1.48	1.48	58	53	3.0	105				
4.3		720.150	1.0	1.34	1.34	56	52	3.0	108				
2.4		720.772	1.0	1.34	1.34	57	52	2.5	104				
1.0		721.393	1.1	1.48	1.48	56	51	3.0	103				
		722.049											
				Σ=19.34		Σ=1316			Σ=1265				Estimates:
													MW=28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

-TACK 1-1

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PEC
PROJECT NO. 3934-45-09
TEST CREW
BAROMETRIC PRESSURE 29.74

TEST DATE 2-22-94 (Tues.)
TEST NO. CR-1-1-1
NOZZLE (SIZE,#) 0.191"
STATIC PRESSURE 1.0" H_2O
PORT DIRECTION South

ORIFICE CORRECTION (ΔH@) 1.870
METER CORRECTION (Y) 1.0032
CALIBRATION DATE 2-3-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 5

HOT/COLD BOX NO. 8
PROBE NO. 5-3
FILTER NO. 1157
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		722.049	1.2	1.61	1.61	55	51	3.0	106	~250	<68	~250	1 min./point
33.6		722.740	1.3	1.75	1.75	57	52	4.0	105				
31.7		723.440	1.4	1.88	1.88	56	52	4.5	104				
29.6		724.181	1.3	1.75	1.75	56	52	3.0	105				
27.0		724.870	1.2	1.61	1.61	57	53	3.0	104				
23.2		725.548	1.0	1.34	1.34	58	53	2.5	106				
12.8		726.161	1.1	1.48	1.48	58	53	2.5	104				
9.0		726.802	1.0	1.34	1.34	57	52	2.5	103				
6.4		727.420	0.7	0.94	0.94	56	52	2.0	101				
4.3		727.945	0.6	0.81	0.81	65	52	1.5	100				
2.4		728.397	0.4	0.54	0.54	57	53	1.0	99				
1.0		728.807	0.4	0.54	0.54	56	52	1.0	99				
		729.267											
				Σ=15.59		Σ=1325			Σ=1236				Estimates: MW=28.8 %H2O=1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK 1-1

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PEC
PROJECT NO. 3934-46-07
TEST CREW
BAROMETRIC PRESSURE 29.74

TEST DATE 2-22-94 (Tues)
TEST NO. CLR-1-1-1
NOZZLE (SIZE,#) 0.191"
STATIC PRESSURE 1.0"H2O
PORT DIRECTION South

ORIFICE CORRECTION (ΔH@) 1.870
METER CORRECTION (Y) 1.0032
CALIBRATION DATE 2-3-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 5

HOT/COLD BOX NO. 8
PROBE NO. 5-3
FILTER NO. 1157
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		729.267	0.6	0.81	0.81	56	52	1.5	~99	~250	<68	~250	1 min./point
2.4		729.730	0.7	0.94	0.94	55	51	2.0	99				
4.3		730.254	0.8	1.08	1.08	55	51	2.5	103				
6.4		730.809	1.0	1.34	1.34	57	52	3.0	103				
9.0		731.412	1.0	1.34	1.34	58	53	3.0	104				
12.8		732.025	1.0	1.34	1.34	59	54	3.0	104				
23.2		732.637	1.1	1.48	1.48	60	54	3.5	104				
27.0		733.277	1.3	1.75	1.75	61	55	4.0	104				
29.6		733.975	1.4	1.88	1.88	62	56	4.5	104				
31.7		734.637	1.4	1.88	1.88	61	56	4.5	104				
33.6		735.360	1.2	1.61	1.61	62	56	4.0	104				
35.0		736.040	1.2	1.61	1.61	62	57	4.0	104				
		736.734											
Test Total	Δ=60 min	Δ=38.474 dcf	$(\Delta P)_{avg}$ = 1.1	$(\Delta H)_{avg}$ = 1.49		$(T_{meter})_{avg}$ = 54°F			$(T_{stack})_{avg}$ = 103°F				Estimates: MW= 28.8 %H2O= 1
				Σ=17.06		Σ=1345			Σ=1236				

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK 1-C

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 2-22-94 (Tues.)	ORIFICE CORRECTION (ΔH@) 1.541	HOT/COLD BOX NO. 3, 7
TEST UNIT 1,2,3 Battery REC	TEST NO. [redacted]R-1-2-1	METER CORRECTION (Y) 1.0099	PROBE NO. 5-4
PROJECT NO. 3934-45-09	NOZZLE (SIZE,#) 0.197"	CALIBRATION DATE 2-1-94	FILTER NO. 1155
TEST CREW	STATIC PRESSURE .06" H_2O	PITOT CORRECTION 0.84	STACK DIA. 36"
BAROMETRIC PRESSURE 29.74	PORT DIRECTION [redacted]East	CONTROL BOX NO. 2	PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		039.261	1.8	2.25	2.25	53	51	2.0	100	~250	<68	~250	1 min./point
33.6		040.051	1.6	2.00	2.00	54	51	2.0	100				
31.7		040.835	1.2	1.37	1.37	55	51	2.0	101				
29.6		041.661	1.2	1.37	1.37	55	50	1.8	101				
27.0		042.435	1.4	1.60	1.60	56	50	2.0	101				
23.2		043.269	1.6	2.00	2.00	54	50	2.0	102				
12.8		044.327	1.2	1.37	1.37	55	50	2.0	102				
9.0		045.065	1.4	1.60	1.60	55	50	2.0	102				
6.4		045.938	1.3	1.62	1.62	55	50	2.0	103				
4.3		046.730	1.2	1.49	1.49	56	50	2.0	102				
2.4		047.624	1.2	1.51	1.51	57	51	2.0	100				
1.0		048.457	1.1	1.38	1.38	58	52	2.0	100				
		049.154											
			1.3425			55.3	50.5		101.2				
				1.63		52.9							Estimates:
													MW=28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	5.0	<0.02
After	5.0	<0.02

PITOT LEAK CHECK 15 sec

	Positive	Negative
Before	OK	OK
After		

GAS	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100mL D.I. H_2O	587.8	534.8	53.0
2.	100mL D.I. H_2O	512.9	560.5	-47.6
3.	Empty	444.6	443.7	0.9
4.	Silica Gel	656.2	648.1	8.1
5.				
6.			total =	14.4g
7.				
8.				

6.3g

CHESTER ENVIRONMENTAL

REC'D 6/13

STACK 1-2

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PEC
PROJECT NO. 3934-45-09
TEST CREW
BAROMETRIC PRESSURE 29.74

TEST DATE 2-22-94 (Tues.)
TEST NO. CLR-1-2-1
NOZZLE (SIZE,#) 0.197"
STATIC PRESSURE .06" H2O
PORT DIRECTION EAST

ORIFICE CORRECTION (ΔH@) 1.541
METER CORRECTION (Y) 1.0099
CALIBRATION DATE 2-1-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 2

HOT/COLD BOX NO. 3-7
PROBE NO. 5-4
FILTER NO. 1153
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		049.154	1.1	1.38	1.38	58	52	2.0	101	~250	<68	~250	min./point
2.4		049.858	1.1	1.38	1.38	58	52	2.0	101				
4.3		050.522	1.2	1.51	1.51	59	52	2.0	101				
6.4		051.298	1.4	1.76	1.76	59	53	2.0	102				
9.0		052.209	1.2	1.51	1.51	59	53	2.0	102				
12.8		053.201	1.2	1.51	1.51	59	53	2.0	102				
23.2		053.900	1.3	1.63	1.63	60	53	2.0	103				
27.0		054.749	1.3	1.63	1.63	60	53	2.0	102				
29.6		055.537	1.5	1.88	1.88	60	53	2.0	102				
31.7		056.333	1.6	2.01	2.01	60	53	2.0	101				
33.6		057.204	1.5	1.88	1.88	60	53	2.0	102				
35.0		058.136	1.6	2.01	2.01	59	53	2.0	102				
		059.206											
			1.328										
			1.316	1.67		59.2	52.7		101.7				Estimates:
						55.9							MW= 28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

ck 2

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PEC
PROJECT NO. 3934-45-09
TEST CREW
BAROMETRIC PRESSURE 29.74

TEST DATE 2-22-94 (Tues.)
TEST NO. CLR-1-2-1
NOZZLE (SIZE,#) 0.197"
STATIC PRESSURE .06" H2O
PORT DIRECTION East

ORIFICE CORRECTION (ΔH@) 1.541
METER CORRECTION (Y) 1.0099
CALIBRATION DATE 2-1-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 2

HOT/COLD BOX NO. 3-7
PROBE NO. 5-4
FILTER NO. 1155
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		059.206	1.60	2.01	2.01	60	53	2.0	102	~250	<68	~250	1 min./point
33.6		060.334	1.4	1.76	1.76	61	54	2.0	103				
31.7		061.219	1.5	1.88	1.88	61	54	2.0	102				
29.6		061.929	1.5	1.88	1.88	60	54	2.0	103				
27.0		062.654	1.4	1.76	1.76	60	54	2.0	103				
23.2		063.375	1.4	1.76	1.76	60	54	2.0	103				
12.8		064.069	1.3	1.63	1.63	60	54	2.0	104				
9.0		064.859	1.2	1.51	1.51	61	54	2.0	104				
6.4		065.756	1.2	1.51	1.51	60	54	2.0	104				
4.3		066.432	1.1	1.38	1.38	60	53	2.0	103				
2.4		067.089	1.1	1.38	1.38	60	53	2.0	102				
1.0		067.762	1.1	1.38	1.38	60	53	2.0	102				
		068.520											
			1.311	1.65		60.2	53.6		102.9				
			1.3113				56.9						
													Estimates:
													MW=28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

Fac 6.17

Site V-1-2

STACK SAMPLING DATA SHEET

CLIENT USI Clairton Works
TEST UNIT 1,2,3 Battery PCC
PROJECT NO. 3934-451-09
TEST CREW
BAROMETRIC PRESSURE 29.74

TEST DATE 2-22-94 (Tues.)
TEST NO. CLR-1-2-1
NOZZLE (SIZE,#) 0.197"
STATIC PRESSURE .06" H_2O
PORT DIRECTION South

ORIFICE CORRECTION (ΔH@) 1.541
METER CORRECTION (Y) 1.0099
CALIBRATION DATE 2-7-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 2

HOT/COLD BOX NO. 3-7
PROBE NO. 5-4
FILTER NO. 1155
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
38.0		068.520	1.2	1.51	1.57	60	54	2.0	102	~250	<68	~250	1 min./point
39.4		069.334	1.4	1.76	1.76	60	54	2.0	102				
31.7		070.102	1.4	1.76	1.76	60	54	2.0	103				
29.6		070.835	1.6	2.01	2.01	60	54	2.0	103				
27.0		071.687	1.6	2.01	2.01	60	54	2.0	103				
23.2		072.505	1.5	1.88	1.88	61	54	2.0	104				
12.8		073.224	1.3	1.63	1.63	61	54	2.0	104				
9.0		074.041	1.2	1.51	1.57	61	54	2.0	103				
6.4		074.849	1.2	1.51	1.57	61	54	2.0	103				
4.3		075.578	1.2	1.51	1.57	61	54	2.0	102				
2.4		076.265	1.2	1.38	1.38	61	54	2.0	102				
1.0		076.941	1.1	1.38	1.38	61	54	2.0	102				
		077.725											
			1.311										
			1.3111	1.65		60.6	54.0		102.7				
						57.3							
													Estimates:
													MW= 28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK 1 2

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PEC
PROJECT NO. 3934-45-09
TEST CREW
BAROMETRIC PRESSURE 29.74

TEST DATE 2-22-94 (Tues)
TEST NO. CR-1-2-1
NOZZLE (SIZE,#) 0.197"
STATIC PRESSURE .06" H_2O
PORT DIRECTION South

ORIFICE CORRECTION (ΔH@) 1.541
METER CORRECTION (Y) 1.0099
CALIBRATION DATE 2-1-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 2

HOT/COLD BOX NO. 3-7
PROBE NO. 5-4
FILTER NO. 1155
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		077.725	1.1	1.38	1.38	60	54	2.0	102	~250	<68	~250	1 min./point
2.4		078.379	1.1	1.38	1.38	60	54	2.0	102				
4.3		079.196	1.2	1.51	1.51	59	53	2.0	102				
6.4		079.854	1.2	1.51	1.51	60	53	2.0	102				
9.0		080.594	1.2	1.51	1.51	60	54	2.0	102				
12.8		081.289	1.2	1.51	1.51	61	54	2.0	103				
23.2		081.944	1.4	1.76	1.76	61	55	2.0	103				
27.0		082.662	1.5	1.88	1.88	62	55	2.0	103				
29.6		083.409	1.5	1.89	1.89	63	55	2.0	104				
31.7		084.284	1.6	2.02	2.02	64	56	2.0	104				
33.6		085.069	1.4	1.76	1.76	65	57	2.0	104				
35.0		085.927	1.3	1.64	1.64	65	57	2.0	104				
		086.709											
Test Totals	Δ=60 min	Δ=47.448 dcf	$(\Delta P)_{AG}$ = 1.3	$(\Delta H)_{AG}$ = 1.65		$(T_{meter})_{AG}$ = 56°F			$(T_{stack})_{AG}$ = 102°F				
		057.021	1.303	1.65		61.7	54.8		102.9				Estimates: MW= 28.8 %H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK 1-4

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PEC
PROJECT NO. 3934-45-09
TEST CREW RFC, TM, TD, JAS
BAROMETRIC PRESSURE 29.74

TEST DATE 2-22-94 (TUES)
TEST NO. CLR-1-4-1
NOZZLE (SIZE, in) 0.183"
STATIC PRESSURE +.70 "H2O
PORT DIRECTION EAST

ORIFICE CORRECTION (ΔH@) 1.693
METER CORRECTION (Y) 1.0054
CALIBRATION DATE 02-03-94
PITOT CORRECTION 0.84
CONTROL BOX NO. FOUR

HOT/COLD BOX NO. 1
PROBE NO. 5-1
FILTER NO. 1156
STACK DIA. 32"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		50.980	1.00	1.05	1.05	54	54	1.0	98	~250	<68	~250	1 min./point
33.6		51.515	1.50	1.57	1.57	57	56	2.5	103				
31.7		52.161	1.40	1.31	1.31	57	55	2.5	103				
29.6		52.800	1.10	1.03	1.03	56	55	2.5	103				
27.0		53.383	1.15	1.19	1.19	56	55	2.5	102				
23.2		53.956	1.15	1.19	1.19	55	54	2.5	102				
18.8		54.521	1.00	1.04	1.04	56	54	2.5	102				
9.0		55.065	1.20	1.25	1.25	52	51	2.5	104				
6.4		55.652	1.30	1.35	1.35	52	51	2.5	100				
4.3		56.285	1.20	1.25	1.25	55	54	2.5	99				
2.4		56.865	1.30	1.35	1.35	56	55	2.5	99				
1.0		57.500	1.10	1.14	1.14	57	56	3.0	96				
		58.125											
				Σ=14.72		Σ=1313			Σ=1211				

Estimates:
MW=28.8
%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	5.0	<0.02
After	5.0	<0.02

PITOT LEAK CHECK 15 sec

	Positive	Negative
Before	OK	OK
After		

GAS	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100mL D.I. H2O	548.9	547.9	1.0
2.	100mL D.I. H2O	489.0	486.9	2.1
3.	Empty	463.0	462.5	0.5
4.	Silica Gel	474.3	467.9	6.4
5.				
6.			Total =	10.0g
7.				
8.				

3.6g

CHESTER ENVIRONMENTAL

TAB 1-1

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PEC
PROJECT NO. 3934-45-09
TEST CREW RPC, TM, TD, JCS
BAROMETRIC PRESSURE 29.74

TEST DATE 2-22-94 (TCS)
TEST NO. CR-1-4-1
NOZZLE (SIZE,#) 0.183"
STATIC PRESSURE +.90" H_2O
PORT DIRECTION East

ORIFICE CORRECTION (ΔH@) 1.693
METER CORRECTION (Y) 1.0054
CALIBRATION DATE 02-03-94
PITOT CORRECTION 0.84
CONTROL BOX NO. FOUR

HOT/COLD BOX NO. 1
PROBE NO. 5-1
FILTER NO. 1156
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		58.125	1.20	1.25	1.25	58	58	2.5	96	~250	<68	~250	1 min./point
2.4		58.745	1.25	1.30	1.30	58	58	3.0	97				
4.3		59.350	1.20	1.25	1.25	56	56	3.0	100				
6.4		59.930	1.15	1.19	1.19	57	57	3.0	102				
9.0		60.512	1.00	1.04	1.04	57	56	3.0	101				
12.8		61.051	1.20	1.25	1.25	56	56	3.0	103				
23.2		61.650	1.15	1.19	1.19	58	57	3.0	102				
27.0		62.222	1.25	1.30	1.30	59	59	3.0	100				
29.6		62.810	1.20	1.25	1.25	58	57	3.0	101				
31.7		63.423	1.40	1.45	1.45	58	58	3.5	100				
33.6		64.100	1.50	1.56	1.56	58	58	3.5	101				
35.0		64.760	1.60	1.66	1.66	59	58	3.5	103				
		65.452											
				Σ = 15.64		Σ = 1382			Σ = 1208				

Estimates:
MW= 28.8
%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

- TR 1-4

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery. Pkg
PROJECT NO. 3934-451-09
TEST CREW EPC TD, TM, JPS
BAROMETRIC PRESSURE 29.75

TEST DATE 2-22-94 (Tues)
TEST NO. CLR-1-4-1
NOZZLE (SIZE, in) 0.183"
STATIC PRESSURE +.90" H_2O
PORT DIRECTION EAST

ORIFICE CORRECTION (ΔH@) 1.693
METER CORRECTION (Y) 1.0054
CALIBRATION DATE 02-05-94
PITOT CORRECTION 0.84
CONTROL BOX NO. FONK

HOT/COLD BOX NO. 1
PROBE NO. 5-1
FILTER NO. 1156
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		65.452	1.50	1.56	1.56	59	58	4.0	104	~250	<68	~250	1 min./point
33.6		66.200	1.65	1.71	1.71	59	58	4.0	103				
31.7		66.910	1.65	1.71	1.71	59	58	4.0	104				
29.6		67.625	1.40	1.45	1.45	59	59	3.5	104				
27.0		68.290	1.40	1.45	1.45	60	59	3.5	104				
23.2		68.975	1.10	1.14	1.14	60	59	3.5	103				
12.8		69.575	1.20	1.25	1.25	62	60	3.5	102				
9.0		70.165	1.20	1.25	1.25	61	59	3.5	106				
6.4		70.771	1.20	1.25	1.25	60	59	3.5	106				
4.3		71.371	1.20	1.25	1.25	61	60	3.5	103				
2.4		72.010	1.10	1.14	1.14	60	59	3.5	102				
1.0		72.600	1.10	1.14	1.14	60	59	3.5	96				
		73.169											
				Σ=16.30		Σ=1437			Σ=1237				Estimates:
													MW= 28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STT : / /

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PCC
PROJECT NO. 3934-49-05
TEST CREW CPC, TM, TD, JPS
BAROMETRIC PRESSURE 29.75

TEST DATE 2-22-94 (Tues)
TEST NO. CLR-1-4-1
NOZZLE (SIZE,#) 0.183"
STATIC PRESSURE +.90" H2O
PORT DIRECTION SOUTH

ORIFICE CORRECTION (ΔH@) 1.693
METER CORRECTION (Y) 1.00154
CALIBRATION DATE 02.02.94
PITOT CORRECTION 0.84
CONTROL BOX NO. FOUR

HOT/COLD BOX NO. 1
PROBE NO. 5-1
FILTER NO. 1156
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		73.169	1.15	1.19	1.19	61	60	3.5	105	~250	<68	~250	1 min./point
33.6		73.760	1.20	1.25	1.25	60	59	3.5	104				
31.7		74.349	1.20	1.25	1.25	60	58	3.5	105				
29.6		74.942	1.25	1.30	1.30	60	59	3.5	105				
27.0		75.590	1.40	1.45	1.45	59	58	3.5	102				
23.2		76.235	1.30	1.35	1.35	59	58	3.0	106				
12.8		76.845	1.00	1.04	1.04	61	59	3.0	105				
9.0		77.400	0.95	.99	.99	59	58	3.0	101				
6.4		77.990	1.00	1.04	1.04	60	59	3.0	103				
4.3		78.562	1.00	1.04	1.04	60	59	3.0	100				
2.4		79.159	0.95	.99	.99	60	59	3.0	101				
1.0		79.750	1.00	1.04	1.04	60	59	3.0	97				
		80.335											
				Σ = 13.93		Σ = 1418			Σ = 1232				

Estimates:
MW = 28.8
%H2O = 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

TA" 14"

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1, 2, 3 Battery RR
PROJECT NO. 3934-49-09
TEST CREW LCC, TD, TM, J/S
BAROMETRIC PRESSURE 29.75

TEST DATE 2-22-94 (TUE)
TEST NO. CR-1-4-1
NOZZLE (SIZE,#) 0.183"
STATIC PRESSURE +.90" H2O
PORT DIRECTION SOUTH

ORIFICE CORRECTION (ΔH@) 1.693
METER CORRECTION (Y) 1.0054
CALIBRATION DATE 02-03-94
PITOT CORRECTION 0.84
CONTROL BOX NO. FOUR

HOT/COLD BOX NO. 1
PROBE NO. 5-1
FILTER NO. 1156
STACK DIA. 3'
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		80.335	1.00	1.04	1.04	61	60	3.0	99	~250	<68	~250	1 min./point
2.4		81.950	0.90	.93	.93	60	59	3.0	101				
4.3		81.514	1.10	1.14	1.14	60	59	3.0	99				
6.4		82.133	1.10	1.14	1.14	59	59	3.0	104				
9.0		82.760	1.10	1.14	1.14	58	58	3.0	105				
12.8		83.370	1.20	1.25	1.25	59	59	3.0	105				
23.2		84.022	1.20	1.25	1.25	59	59	3.0	104				
27.0		84.651	1.40	1.45	1.45	61	60	3.5	100				
29.6		85.335	1.40	1.45	1.45	62	60	3.5	104				
31.7		86.009	1.45	1.51	1.51	63	61	3.5	105				
33.6		86.735	1.30	1.35	1.35	61	61	3.5	104				
35.0		87.408	1.30	1.35	1.35	62	61	3.5	104				
		88.080											
Test Totals	Δ=60 min	Δ=37.100 dcf	$(\Delta P)_{avg}$ = 1.20	$(\Delta H)_{avg}$ = 1.26 Σ=15.00		$(T_{meter})_{avg}$ = 58°F Σ=1441			$(T_{stack})_{avg}$ = 102°F Σ=1204				Estimates: MW=28.8 %H2O=1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK 1-3-5

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PEC
PROJECT NO. 3934-45-09
TEST CREW TT, RC, JTD
BAROMETRIC PRESSURE 29.74

TEST DATE 2-22-94 (Tues.)
TEST NO. CLR-1-5-1
NOZZLE (SIZE,#) 0.181"
STATIC PRESSURE 0.60" H_2O
PORT DIRECTION EAST

ORIFICE CORRECTION (ΔH@) 1.587
METER CORRECTION (Y) 1.0179
CALIBRATION DATE 1-24-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 3

HOT/COLD BOX NO. 2
PROBE NO. 5-5
FILTER NO. 1154
STACK DIA. 36"
PORT SIZE 4" Mat.

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		026.460	1.0	.93	.93	44	43	1.0	90	~250	<68	~250	1 min./point
37.6		027.155	1.4	1.30	1.30	45	43	1.0	87				
31.7		027.850	1.6	1.49	1.49	44	42	1.0	85				
29.6		028.605	0.8	0.74	0.74	42	40	1.0	84				
27.0		029.187	1.0	0.92	0.92	40	39	1.0	81				
23.2		029.801	1.2	1.11	1.11	40	38	1.0	80				
12.8		030.469	1.2	1.11	1.11	40	38	1.0	79				
9.0		031.132	1.4	1.29	1.29	39	37	1.0	82				
6.4		031.820	1.4	1.29	1.29	43	35	1.0	82				
4.3		032.481	1.2	1.11	1.11	42	41	1.0	81				
2.4		033.131	1.2	1.11	1.11	42	38	1.0	79				
1.0		033.827	1.2	1.11	1.11	44	42	1.0	79				
		034.165											
				Σ=13.51		Σ=981			Σ=999				Estimates:
													MW= 28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	6.0	0.004
After	6.0	0.006

PITOT LEAK CHECK 15 sec

	Positive	Negative
Before	OK	OK
After	OK	OK

GAS	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100 mL D.I. H_2O	540.6	540.1	0.5
2.	100 mL D.I. H_2O	567.2	564.3	2.9
3.	Empty	447.6	446.7	0.9
4.	Silica Gel	660.7	653.4	7.3
5.				
6.				
7.				
8.			total	= 11.6g

4.3g

CHESTER ENVIRONMENTAL

Stack 35

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery Tec
PROJECT NO. 3934-4/51-09
TEST CREW
BAROMETRIC PRESSURE 29.74

TEST DATE 2-22-94 (Tues)
TEST NO. CLR-1-51
NOZZLE (SIZE,#) 0.181"
STATIC PRESSURE 6.0" H2O
PORT DIRECTION EAST

ORIFICE CORRECTION (ΔH@) 1.587
METER CORRECTION (Y) 1.0172
CALIBRATION DATE 1-24-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 3

HOT/COLD BOX NO. 7
PROBE NO. 5-3
FILTER NO. 1154
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		034.165	1.2	1.11	1.11	44	42	1.0	79	~250	<68	~250	min./point
2.4		034.826	1.2	1.11	1.11	45	37	1.0	77				
4.3		035.476	1.4	1.29	1.29	43	42	1.0	78				
6.4		036.074	1.4	1.29	1.29	46	37	1.0	81				
9.0		036.781	1.3	1.20	1.20	46	38	1.0	80				
12.8		037.451	1.4	1.29	1.29	48	46	1.0	80				
27.2		038.110	1.4	1.29	1.29	46	43	1.0	84				
27.0		038.872	1.6	1.48	1.48	46	44	2.0	81				
29.6		039.570	1.6	1.48	1.48	45	45	3.0	84				
31.7		040.238	1.5	1.39	1.39	45	45	3.0	84				
33.6		040.930	1.9	1.76	1.76	45	40	4.0	84				
35.0		041.584	1.4	1.29	1.29	44	40	2.5	86				
		042.481											
				Σ=15.98		Σ=1042			Σ=977				Estimates:
													MW= 28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

Rck -1-

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery Pac
PROJECT NO. 3934-45-09
TEST CREW
BAROMETRIC PRESSURE 29.74

TEST DATE 2-22-94 (Tues)
TEST NO. CLR-1-051
NOZZLE (SIZE,#) 0.181
STATIC PRESSURE 0.60
PORT DIRECTION East

ORIFICE CORRECTION (ΔH@) 1.587
METER CORRECTION (Y) 1.0179
CALIBRATION DATE 1-27-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 3

HOT/COLD BOX NO. 2
PROBE NO. 5-5
FILTER NO. 1154
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.6		042.481	1.6	1.48	1.48	46	44	3.0	85	~250	68	~250	1 min./point
33.6		043.312	1.2	1.11	1.11	47	41	3.5	88				
31.7		043.897	1.4	1.29	1.29	46	42	3.5	89				
29.6		044.502	1.6	1.48	1.48	45	39	3.0	90				
27.6		045.149	1.6	1.48	1.48	45	41	3.0	89				
23.2		045.878	1.4	1.29	1.29	46	44	3.0	90				
12.6		046.546	1.4	1.29	1.29	47	43	3.0	91				
7.6		047.250	1.4	1.29	1.29	46	45	3.0	88				
6.4		047.964	1.4	1.29	1.29	47	42	3.0	89				
4.3		048.645	1.4	1.29	1.29	47	46	3.0	90				
2.4		049.290	1.2	1.11	1.11	47	39	2.5	89				
1.6		050.002	1.2	1.11	1.11	47	40	2.5	89				
		050.661											
				Σ = 15.42		Σ = 1056			Σ = 1067				Estimated: MW = 28.8 %H2O = 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PCC
PROJECT NO. 3934-45-09
TEST CREW
BAROMETRIC PRESSURE 28.74

TEST DATE 2-22-94 (Tues)
TEST NO. CLR-1-851
NOZZLE (SIZE,#) 0.181
STATIC PRESSURE 0.68
PORT DIRECTION Sw.Ll

ORIFICE CORRECTION (ΔH@) 1.587
METER CORRECTION (Y) 1.019
CALIBRATION DATE 1-24-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 3

HOT/COLD BOX NO. 2
PROBE NO. 5-5
FILTER NO. 1154
STACK DIA. 26"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.6		050.661	1.4	1.39	1.39	47	42	2.5	91	~250	<68	~250	1 min./point
33.6		051.330	1.5	1.39	1.39	46	43	3.0	92				
31.7		052.040	1.3	1.19	1.19	45	40	3.0	95				
29.6		052.730	1.2	1.10	1.10	45	38	2.5	96				
27.0		053.366	1.4	1.28	1.28	46	45	3.0	97				
23.7		054.059	1.6	1.46	1.46	47	45	3.5	98				
19.6		054.765	1.2	1.10	1.10	47	44	2.5	99				
9.0		055.445	1.1	1.01	1.01	46	43	2.5	98				
6.4		056.060	1.0	0.91	0.91	46	39	2.5	98				
4.5		056.723	1.0	0.91	0.91	46	42	2.5	98				
2.4		057.360	1.0	0.91	0.91	46	45	2.5	96				
1.0		057.951	1.2	1.10	1.10	46	41	3.0	95				
		058.602											
				Σ= 13.65		Σ=1060			Σ=1150				Estimates: MW= 28.8 %H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PEC
PROJECT NO. 3934-451-09
TEST CREW
BAROMETRIC PRESSURE 29.74

TEST DATE 2-22-94 (Tues)
TEST NO. CLR-1-[redacted]
NOZZLE (SIZE,#) 0.181
STATIC PRESSURE 0.00
PORT DIRECTION 30-H

ORIFICE CORRECTION (ΔH@) 1.587
METER CORRECTION (Y) 1.0174
CALIBRATION DATE 1-24-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 3

HOT/COLD BOX NO. 2
PROBE NO. 5-5
FILTER NO. 1154
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		058.002	1.0	.91	.91	46	44	2.5	95	~250	<68	~250	1 min./point
2.4		059.230	1.0	.91	.91	45	37	2.5	95				
4.3		059.851	1.0	.91	.91	45	43	2.5	96				
6.4		060.477	1.0	.91	.91	46	43	2.5	98				
9.0		061.110	1.1	1.01	1.01	46	45	3.0	98				
12.8		061.760	1.2	1.10	1.10	49	40	3.0	98				
23.2		062.420	1.5	1.37	1.37	47	42	3.5	98				
27.0		063.170	1.5	1.37	1.37	48	43	3.5	97				
29.6		063.920	1.3	1.19	1.19	47	45	3.0	98				
31.7		064.600	1.2	1.10	1.10	48	44	3.0	97				
33.6		065.312	1.6	1.46	1.46	47	42	3.5	97				
35.0		066.050	1.4	1.28	1.28	46	40	3.0	97				
		066.762											
Tot Totals	Δ=60 min	Δ=40.302 dcf	(ΔP)AVG = 1.3	(ΔH)AVG =	[redacted] 1.20	(Tmeter)AVG =	[redacted] °F 43		(Tstack)AVG =	[redacted] °F 89			Estimates: MW= 28.8 %H2O= 1
				Σ=13.52		Σ=1022			Σ=[redacted]1164				

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

1 TO 3 2-25-94

P.E.C.

OVEN'S TESTED

A-16/1	8:42
B-18/3	8:47
A-18/1	8:53
B-20/3	8:58
A-20/1	9:04
B-22/3	9:09
A-22/1	9:16
B-24/3	9:21
B-26/3	9:38
A-26/1	9:44
B-28/3	9:49
A 28/1	9:55
B-30/3	10:00
C-1/3	10:06
A-34/1	10:12
A-1/2	10:17
B-2/1	10:23
A-3/2	10:28
[redacted]	
B-3/1	10:34
A-5/2	10:39
A-7/2	10:44
B-7/1	10:50
A 9/2	10:56
B-9/1	11:02
A-11/2	11:07
B-11/1	11:13
A-13/2	11:18
B-13/1	11:24
A-15/2	11:29
B-15/1	11:35
A-17/2	11:40
B-17/1	11:45
A 19/2	11:50
B19/1	11:56
A21/2	12:01
B 21/1	12:07
B 23/1	12:48
B 25/1	12:55
B 27/1	13:05
A 29/2	13:09
B 29/1	13:15
A 31/2	13:20
B 31/1	13:26
C 2/1	13.32
A 2/3	13:37
B 2/2	13:44
A 4/3	13:50
B 4/2	13:55
A 6/3	14:01
B 6/2	14:06
A 8/3	14:12
B 8/2	14:17
A 10/3	14:23
B 10/2	14:28
A 12/3	14:34
B 12/2	14:39
A 14/3	14:45
B 14/2	14:50
A 16/3	14:55
B 16/2	15:01

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PEC
PROJECT NO. 3934-45-01
TEST CREW
BAROMETRIC PRESSURE 29.25

TEST DATE 2-23-94 (Wed.)
TEST NO. CLR-1-1-2
NOZZLE (SIZE,#) 0.191"
STATIC PRESSURE 0.6" H_2O
PORT DIRECTION South

ORIFICE CORRECTION (ΔH@) 1.870
METER CORRECTION (Y) 1.0032
CALIBRATION DATE 2-3-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 5

HOT/COLD BOX NO. 8
PROBE NO. 5-3
FILTER NO. 1169
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		736.909	1.0	1.34	1.34	54	52	2.0	92	~250	<68	~250	1 min./point
33.6		737.671	1.5	2.01	2.01	55	52	4.5	92				
31.7		738.449	1.0	1.37	1.37	55	52	2.5	93				
29.6		739.082	1.7	2.33	2.33	55	52	5.0	91				
27.0		739.874	1.3	1.78	1.78	56	52	3.0	91				
23.2		740.528	1.3	1.78	1.78	56	52	3.0	94				
12.8		741.266	0.8	1.09	1.09	56	52	2.0	92				
9.0		741.825	0.9	1.23	1.23	57	52	2.0	92				
6.4		742.419	0.9	1.23	1.23	56	53	2.0	92				
4.3		743.032	0.9	1.23	1.23	56	53	2.0	91				
2.4		743.655	0.9	1.23	1.23	57	53	2.0	90				
1.0		744.260	0.8	1.09	1.09	58	53	2.0	90				
		744.825											
				Σ=17.71		Σ=1299			Σ=1100				Estimates:
													MW=28.8
													%H2O=1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	5.0	<0.02
After	7.0	0.005

PITOT LEAK CHECK 15 sec

	Positive	Negative
Before	OK	OK
After	OK	OK

GAS	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100 ml D.I. H_2O	542.7	537.6	5.1
2.	100 ml D.I. H_2O	567.7	569.3	-1.6
3.	Empty	436.8	436.4	0.4
4.	Silica Gel	648.2	635.9	13.3
5.				
6.			total =	17.2g
7.				
8.				

3.9g

CHESTER ENVIRONMENTAL

..7AC -1

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PEC
PROJECT NO. 3931-45-09
TEST CREW
BAROMETRIC PRESSURE 29.25

TEST DATE 2-23-94 (Wed.)
TEST NO. CLR-1-1-2
NOZZLE (SIZE,#) 0.191"
STATIC PRESSURE 0.6" H_2O
PORT DIRECTION South

ORIFICE CORRECTION (ΔH@) 1.870
METER CORRECTION (Y) 1.0032
CALIBRATION DATE 2-3-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 5

HOT/COLD BOX NO. 8
PROBE NO. 5-3
FILTER NO. 1169
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		744.825	0.8	1.09	1.09	58	54	2.0	90	~250	<68	~250	1 min./point
2.4		745.382	0.8	1.09	1.09	58	54	2.0	90				
4.3		745.957	0.8	1.09	1.09	58	54	2.0	91				
6.4		746.525	1.1	1.50	1.50	59	54	3.0	92				
9.0		747.158	1.1	1.50	1.50	59	54	3.0	94				
12.8		747.810	1.0	1.37	1.37	59	54	3.0	95				
23.2		748.442	1.2	1.64	1.64	59	55	4.0	96				
27.0		749.137	1.4	1.91	1.91	59	54	4.5	97				
29.6		749.885	1.3	1.78	1.78	59	55	4.0	100				
31.7		750.565	1.8	2.46	2.46	59	55	6.5	98				
33.6		751.385	1.5	2.05	2.05	60	55	5.0	103				
35.0		752.147	1.3	1.76	1.76	59	55	4.0	100				
		752.845											
				Σ=19.24		Σ=1119			Σ=1145				Estimates:
													MW=28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STE 1.

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PEC
PROJECT NO. 3734-45-09
TEST CREW
BAROMETRIC PRESSURE 29.25

TEST DATE 2-23-94 (Wed.)
TEST NO. CW2-1-1-2
NOZZLE (SIZE,#) 0.191"
STATIC PRESSURE 0.6" H2O
PORT DIRECTION South

ORIFICE CORRECTION (ΔH@) 1.870
METER CORRECTION (Y) 1.0032
CALIBRATION DATE 2-3-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 5

HOT/COLD BOX NO. 8
PROBE NO. 5-3
FILTER NO. 1169
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		752.845	1.2	1.62	1.62	60	55	4.0	101	~250	<68	~250	1 min./point
33.6		753.527	1.2	1.62	1.62	60	55	4.0	102				
31.7		754.261	1.3	1.76	1.76	60	55	4.5	103				
29.6		754.974	1.6	2.16	2.16	60	55	5.5	100				
27.0		755.730	1.4	1.89	1.89	60	56	4.5	103				
23.2		756.445	1.2	1.62	1.62	61	55	4.0	102				
17.8		757.101	0.9	1.22	1.22	60	56	2.5	103				
9.0		757.675	0.9	1.22	1.22	60	55	3.0	100				
6.4		758.302	1.1	1.49	1.49	60	56	3.0	102				
4.3		758.891	0.8	1.08	1.08	60	56	2.5	96				
2.4		759.448	0.7	0.95	0.95	60	56	2.0	95				
1.0		759.973	0.7	0.95	0.95	60	56	2.0	95				
		760.503											
				Σ=17.58		Σ=1387			Σ=1202				Estimates:
													MW=28.8
													%H2O=1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

Stn 1-1

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery RCC
PROJECT NO. 3931-45-69
TEST CREW
BAROMETRIC PRESSURE 29.25

TEST DATE 2-23-94 (Wed)
TEST NO. CLR-1-1-2
NOZZLE (SIZE,#) 0.191"
STATIC PRESSURE 0.6" H_2O
PORT DIRECTION East

ORIFICE CORRECTION (ΔH@) 1.870
METER CORRECTION (Y) 1.0032
CALIBRATION DATE 2-3-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 5

HOT/COLD BOX NO. 8
PROBE NO. 5-3
FILTER NO. 1169
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		760.503	0.9	1.22	1.22	57	56	2.5	99	~250	<68	~290	1 min./point
33.6		761.150	1.8	2.43	2.43	59	55	7.0	98				
31.7		761.950	1.4	1.89	1.89	59	55	5.0	101				
29.6		762.713	1.4	1.89	1.89	60	55	5.0	99				
27.0		763.415	1.4	1.89	1.89	60	55	5.0	100				
23.2		764.158	1.2	1.62	1.62	60	55	4.0	98				
12.8		764.847	1.0	1.35	1.35	60	56	3.0	101				
9.0		765.477	1.0	1.35	1.35	61	56	3.5	100				
6.4		766.107	1.3	1.76	1.76	61	56	4.5	95				
4.3		766.798	1.0	1.35	1.35	61	56	3.5	97				
2.4		767.426	1.0	1.35	1.35	61	57	3.5	96				
1.0		768.055	0.8	1.08	1.08	61	57	2.5	96				
		768.624											
				Σ=19.18		Σ=1149			Σ=1180				Estimates: MW=28.8 %H2O=1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STAK 1-1

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PEC
PROJECT NO. 3934-457-09
TEST CREW
BAROMETRIC PRESSURE 29.25

TEST DATE 2-23-94 (Wed.)
TEST NO. CLE-1-1-2
NOZZLE (SIZE,#) 0.191"
STATIC PRESSURE 0.6" H_2O
PORT DIRECTION East

ORIFICE CORRECTION (ΔH@) 1.870
METER CORRECTION (Y) 1.0032
CALIBRATION DATE 2-3-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 5

HOT/COLD BOX NO. 8
PROBE NO. 5-3
FILTER NO. 1169
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		768.624	0.9	1.22	1.22	61	57	3.0	97	~250	<68	~250	1 min./point
2.4		769.210	0.9	1.22	1.22	62	57	3.0	97				
4.3		769.814	1.1	1.49	1.49	62	57	3.5	96				
6.4		770.465	1.1	1.49	1.49	62	57	4.0	100				
9.0		771.145	1.2	1.62	1.62	61	57	4.0	98				
12.8		771.827	1.1	1.49	1.49	62	57	4.0	100				
23.2		772.484	1.1	1.49	1.49	62	58	4.0	99				
27.0		773.130	1.3	1.76	1.76	63	58	4.5	100				
29.6		773.795	1.6	2.16	2.16	63	58	5.0	99				
31.7		774.579	1.8	2.43	2.43	64	58	6.5	101				
33.6		775.376	1.7	2.30	2.30	63	59	6.0	100				
35.0		776.146	1.6	2.16	2.16	63	59	5.0	101				
		776.895											
Test Totals	Δ=60 min	Δ = 39.986 dcf	$(\Delta p)_{avg}$ = 1.1	$(\Delta H)_{avg}$ =	1.58	$(T_{meter})_{avg}$ = 52°F			$(T_{stack})_{avg}$ = 97°F				
				Σ=20.88		Σ=1240			Σ=1188				

Estimates:
MW= 28.8
%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

Stack 1-2

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PEC
PROJECT NO. 3934-45-09
TEST CREW
BAROMETRIC PRESSURE 29.25

TEST DATE 2-23-94 (Wed.)
TEST NO. CLR-1-2-2
NOZZLE (SIZE,#) 0.197"
STATIC PRESSURE .06" H_2O
PORT DIRECTION South

ORIFICE CORRECTION (ΔH@) 1.541
METER CORRECTION (Y) 1.0099
CALIBRATION DATE 2-1-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 2

HOT/COLD BOX NO. 2
PROBE NO. 5-4
FILTER NO. 1172
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		087.228	1.4	1.77	1.77	55	54	1.8	90	~250	<68	~250	1 min./point
33.6		088.221	1.6	2.03	2.03	56	54	2.0	90				
31.7		089.102	1.4	1.77	1.77	57	54	1.8	90				
29.6		089.834	1.5	1.90	1.90	57	54	2.0	90				
27.0		090.706	1.5	1.90	1.90	58	54	2.0	90				
23.2		091.536	1.4	1.77	1.77	59	54	1.8	90				
17.8		092.278	1.2	1.52	1.52	59	54	1.6	90				
9.0		093.005	1.2	1.52	1.52	60	54	1.6	90				
6.4		093.713	1.4	1.77	1.77	60	54	1.8	92				
4.3		094.472	1.2	1.53	1.53	60	54	1.6	92				
2.4		095.155	1.2	1.53	1.53	60	54	1.6	92				
1.0		095.857	1.1	1.41	1.41	60	54	1.5	92				
		096.589											
			1.337										
				1.70		58.4	54		90.7				
			1.3374										
						56.2							

Estimates:
MW= 28.8
%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	5	0.02
After	5	0.02

PITOT LEAK CHECK 15sec

	Positive	Negative
Before	OK	OK
After	OK	OK

GAS	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100ml DI. H_2O	548.0	542.7	5.3
2.	100ml DI. H_2O	566.0	566.5	0.5
3.	Empty	447.5	448.1	-0.6
4.	Silica Gel	673.5	660.7	12.8
5.				
6.				
7.				
8.				

5.2g

total = 18.0g

CHESTER ENVIRONMENTAL

PEC 67.1 ~20.06

STA. 1-

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PEC
PROJECT NO. 3934-48-09
TEST CREW
BAROMETRIC PRESSURE 29.25

TEST DATE 2-23-94 (Wed.)
TEST NO. CR-1-2-2
NOZZLE (SIZE,#) 0.197"
STATIC PRESSURE .06" H2O
PORT DIRECTION South

ORIFICE CORRECTION (ΔH@) 1.541
METER CORRECTION (Y) 1.0099
CALIBRATION DATE 2-1-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 2

HOT/COLD BOX NO. 2
PROBE NO. 5-4
FILTER NO. 1172
STACK DIA. 36"
PORT SIZE 34"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		096.589	1.1	1.41	1.41	60	54	1.5	92	~290	<68	~250	1 min./point
2.4		097.179	1.2	1.53	1.53	60	54	1.5	92				
4.3		097.933	1.3	1.66	1.66	61	54	1.8	92				
6.4		098.768	1.3	1.66	1.66	61	55	1.8	92				
9.0		099.500	1.4	1.79	1.79	61	55	2.0	92				
12.8		100.333	1.3	1.66	1.66	62	55	2.0	92				
23.2		101.154	1.4	1.79	1.79	62	55	2.0	92				
27.0		101.944	1.6	2.04	2.04	63	55	2.5	93				
29.6		102.868	1.6	2.04	2.04	63	55	2.5	93				
31.7		103.794	1.5	1.92	1.92	63	55	2.5	93				
33.6		104.548	1.5	1.92	1.92	63	55	2.5	93				
35.0		105.334	1.6	2.04	2.04	63	55	2.5	94				
		106.126											
			1.395	1.79		61.8	54.7						
						58.3			92.5				Estimates:
			1.3154										MW= 28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

-746 -2

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 & Hay Pile
PROJECT NO. 3934-45-09
TEST CREW
BAROMETRIC PRESSURE 29.25

TEST DATE 2-23-94 (Wed.)
TEST NO. CLR-1-2-2
NOZZLE (SIZE,#) 0.197"
STATIC PRESSURE .06" H_2O
PORT DIRECTION SOUTH

ORIFICE CORRECTION (ΔH@) 1.541
METER CORRECTION (Y) 1.0099
CALIBRATION DATE 2-1-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 2

HOT/COLD BOX NO. 2
PROBE NO. 5-4
FILTER NO. 1172
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		106.126	1.6	2.04	2.04	63	55	2.5	94	~250	<68	~250	1 min./point
33.6		106.899	1.5	1.92	1.92	63	56	2.2	95				
31.7		107.645	1.6	2.04	2.04	63	56	2.5	95				
29.6		108.514	1.5	1.92	1.92	63	56	2.2	96				
27.0		109.445	1.4	1.79	1.79	63	56	2.0	96				
23.2		110.408	1.4	1.79	1.79	63	56	2.0	96				
12.8		111.215	1.3	1.66	1.66	63	56	2.0	96				
9.0		111.935	1.2	1.53	1.53	63	56	1.8	96				
6.4		112.689	1.1	1.41	1.41	63	56	1.5	96				
4.3		113.409	1.2	1.53	1.53	63	56	1.8	97				
2.4		114.317	1.1	1.40	1.40	63	56	1.5	97				
1.0		115.139	1.0	1.27	1.27	63	56	1.4	97				
		115.875											
			1.318			63	55.9		95.9				
				1.69		59.4							
			1.3176										

Estimates:
MW= 28.8
%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

Pitot 67.0 ZEO 104.72

STA-11-1-7

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PZ
PROJECT NO. 3934-45-09
TEST CREW
BAROMETRIC PRESSURE 29.25

TEST DATE 2-23-94 (Wed.)
TEST NO. CW-1-2-2
NOZZLE (SIZE,#) 0.197"
STATIC PRESSURE 0.06" H2O
PORT DIRECTION East

ORIFICE CORRECTION (ΔH@) 1.541
METER CORRECTION (Y) 1.0099
CALIBRATION DATE 2-1-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 2

HOT/COLD BOX NO. 2
PROBE NO. 5-4
FILTER NO. 1172
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		115.875	1.4	1.78	1.78	63	56	2.2	97	~250	<60°	~250	1 min./point
33.6		116.654	1.1	1.40	1.40	62	56	1.9	98				
31.7		117.371	1.4	1.78	1.78	62	56	2.2	98				
29.6		118.192	1.6	2.04	2.04	62	56	2.5	98				
27.0		118.969	1.4	1.78	1.78	62	55	2.2	98				
23.2		119.677	1.4	1.78	1.78	61	55	2.2	98				
12.8		120.456	1.2	1.53	1.53	61	55	2.0	98				
9.0		121.089	1.2	1.53	1.53	62	55	2.0	99				
6.4		121.763	1.2	1.53	1.53	62	55	2.0	99				
4.3		122.456	1.2	1.53	1.53	62	56	2.0	99				
2.4		123.140	1.1	1.40	1.40	62	56	1.9	99				
1.0		123.832	1.0	1.27	1.27	63	56	1.5	99				
		124.465											
			1.261										
				1.61		62.1	55.6						
			1.2613			58.8			98.3				
													Estimates:
													MW= 28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

Wed 1650.7 TSC 9459

STK # 1-2

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery FCC
PROJECT NO. 3934-45-09
TEST CREW
BAROMETRIC PRESSURE 29.25

TEST DATE 2-23-94 (Wed.)
TEST NO. CU2-1-2-2
NOZZLE (SIZE,#) 0.197
STATIC PRESSURE .06
PORT DIRECTION East

ORIFICE CORRECTION (ΔH@) 1.5211
METER CORRECTION (Y) 1.0279
CALIBRATION DATE 2-1-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 2

HOT/COLD BOX NO. 2
PROBE NO. 5-4
FILTER NO. 1172
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		124.465	1.0	1.27	1.27	63	56	1.5	99	~250	<68	~250	1 min./point
2.4		125.144	1.2	1.53	1.53	64	56	2.0	99				
4.3		125.899	1.2	1.53	1.53	64	57	2.0	99				
6.4		126.709	1.4	1.78	1.78	64	57	2.5	100				
9.0		127.464	1.4	1.78	1.78	64	57	2.5	100				
12.8		128.216	1.3	1.66	1.66	64	57	2.2	100				
23.2		128.949	1.4	1.78	1.78	64	57	2.5	100				
27.0		129.626	1.5	1.91	1.91	64	57	2.8	100				
29.6		130.515	1.6	2.04	2.04	65	58	3.0	100				
31.7		131.353	1.8	2.29	2.29	65	58	3.5	100				
33.6		132.374	1.7	2.17	2.17	65	58	3.2	100				
35.0		133.198	1.7	2.17	2.17	65	58	3.2	100				
		134.062											
Tot Totals	Δ=60 min	Δ=46.934 dcf	(ΔP)AVG = 1.3	(ΔH)AVG = 1.72		(Tmeter)AVG = 59°F			(Tstack)AVG = 95°F				
			1.424	1.87		64.3	57.2		99.8				

Estimates:
MW= 28.8
%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK 1-4

STACK SAMPLING DATA SHEET

CLIENT USS CLAIRTON WORKS
TEST UNIT 1,2,3 BATTERY PSC
PROJECT NO. 3934-45-09
TEST CREW RPC-TM,TO,JPS
BAROMETRIC PRESSURE 28.25

TEST DATE 02-23-94 (WED)
TEST NO. CLC-1-4-2
NOZZLE (SIZE,#) RS-7830 .194"
STATIC PRESSURE +1.0
PORT DIRECTION SOUTH

ORIFICE CORRECTION (ΔH@) 1.623
METER CORRECTION (Y) 1.0054
CALIBRATION DATE 02-03-94
PITOT CORRECTION 0.84
CONTROL BOX NO. FOUR

HOT/COLD BOX NO. 3
PROBE NO. 5-2
FILTER NO. 1161
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		88.435	1.10	1.46	1.46	59	58	1.0	103	~250	68°F	~250	1 min./point
33.6		88.991	1.40	1.85	1.85	58	58	2.5	101				
31.7		89.815	1.15	1.52	1.52	56	56	2.5	95				
29.6		90.500	1.50	1.99	1.99	55	55	3.0	94				
27.0		91.300	1.20	1.59	1.59	55	55	3.0	97				
23.2		92.021	1.20	1.59	1.59	55	55	3.0	97				
12.8		92.746	1.00	1.32	1.32	55	55	3.0	98				
9.0		93.398	1.00	1.32	1.32	55	55	3.0	99				
6.4		94.040	1.00	1.32	1.32	56	55	3.0	101				
4.3		94.671	1.00	1.32	1.32	57	56	3.0	102				
2.4		95.356	1.10	1.46	1.46	57	56	3.0	103				
1.0		96.026	1.20	1.59	1.59	58	57	3.0	97				
		96.718											
													Estimates:
			(1.149)	(1.527)			(56)		(98.5)				MW= 28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	6.0	<0.02cfm
After	6.0	<0.02cfm

PITOT LEAK CHECK 15 SEC

	Positive	Negative
Before	OK	OK
After	OK	OK

GAS	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100 mL DI H2O	540.1	535.0	5.1g
2.	100 mL DI H2O	554.5	553.3	1.2g
3.	empty	444.4	444.3	0.1
4.	Silica gel	653.8	643.6	10.2
5.				
6.			total =	16.6g
7.				
8.				

6.4g

CHESTER ENVIRONMENTAL

-4

STACK SAMPLING DATA SHEET

CLIENT USS CLAIRTON WORKS
TEST UNIT 1,2,3 BATTERY BC
PROJECT NO. 3934-45-04
TEST CREW LC TM, JD ER
BAROMETRIC PRESSURE 29.25

TEST DATE 02-23-94
TEST NO. CLK-1-4-2
NOZZLE (SIZE,#) 0.830, 194"
STATIC PRESSURE 11.0
PORT DIRECTION South

ORIFICE CORRECTION (ΔH@) 1.693
METER CORRECTION (Y) 1.0054
CALIBRATION DATE 02-03-94
PITOT CORRECTION 0.84
CONTROL BOX NO. Four

HOT/COLD BOX NO. 3
PROBE NO. 5-2
FILTER NO. 1161
STACK DIA. 36.0"
PORT SIZE 4.0"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		96.718	1.00	1.32	1.32	57	56	3.0	102	~250°	<68°	~250°	1 min./point
2.4		97.444	1.10	1.46	1.46	58	57	3.0	101				
4.3		98.150	0.95	1.25	1.25	59	57	3.0	102				
6.4		98.836	.95	1.25	1.25	62	58	3.0	100				
9.0		99.475	1.00	1.32	1.32	60	59	3.0	102				
12.8		100.129	1.25	1.64	1.64	60	59	3.0	97				
23.2		100.890	1.40	1.84	1.84	59	58	3.0	98				
27.0		101.644	1.50	1.97	1.97	59	58	3.0	98				
29.6		102.446	1.50	1.97	1.97	59	58	3.0	101				
31.7		103.233	1.30	1.81	1.81	59	58	3.0	103				
33.6		104.005	1.30	1.81	1.81	59	58	3.0	102				
35.0		104.755	1.25	1.74	1.74	59	58	3.0	101				
		105.475											
													Estimates:
			1.20	1.615			58.5		100.5				MW= 28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

NC: 1-4

STACK SAMPLING DATA SHEET

CLIENT JSS CLARION WORKS
TEST UNIT 123 BATTERY PGC
PROJECT NO. RPC TM 3735 4504
TEST CREW RPC TM, TM, JPS
BAROMETRIC PRESSURE 29.25

TEST DATE 02-23-94 (WED)
TEST NO. CLR-1-4-2
NOZZLE (SIZE,#) PC 18 30.174"
STATIC PRESSURE +1.0
PORT DIRECTION SOUTH

ORIFICE CORRECTION (ΔH@) 1.693
METER CORRECTION (Y) 1.0031
CALIBRATION DATE 02-03-94
PITOT CORRECTION 0.84
CONTROL BOX NO. FOUR

HOT/COLD BOX NO. 3
PROBE NO. 5-2
FILTER NO. 1161
STACK DIA. 36.0"
PORT SIZE 40"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		105.475	1.20	1.57	1.57	60	59	3.0	103	~250°F	<68°F	~250°F	1 min./point
33.6		106.185	1.20	1.57	1.57	60	59	3.0	104				
31.7		106.926	1.25	1.64	1.64	61	59	3.0	103				
29.6		107.670	1.20	1.57	1.57	60	59	3.0	106				
27.0		108.450	1.50	1.97	1.97	61	59	3.0	101				
23.2		109.210	1.30	1.71	1.71	61	60	3.0	104				
12.8		109.965	1.10	1.44	1.44	60	59	3.0	105				
9.0		110.650	1.00	1.31	1.31	60	59	3.0	104				
6.4		111.290	1.00	1.31	1.31	61	59	3.0	103				
4.3		111.951	.90	1.18	1.18	60	59	3.0	104				
2.4		112.590	.90	1.18	1.18	61	60	3.0	102				
1.0		113.200	1.00	1.31	1.31	62	60	3.0	101				
		113.816											
													Estimates:
			(1.12)	(1.48)			(59.2)		(103.3)				MW= 28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

S CR 1-4

STACK SAMPLING DATA SHEET

CLIENT US. CLARKSVILLE WORKS
TEST UNIT 1,2,3 PSC
PROJECT NO. 3134-45-09
TEST CREW RFC, TMTO, JPS
BAROMETRIC PRESSURE 29.25

TEST DATE 02-23-94 (WED)
TEST NO. CLC-1-4-2
NOZZLE (SIZE,#) 0.7830, 194 "
STATIC PRESSURE +1.0
PORT DIRECTION EAST

ORIFICE CORRECTION (ΔH@) 1.623
METER CORRECTION (Y) 1.0054
CALIBRATION DATE 02-03-94
PITOT CORRECTION 0.84
CONTROL BOX NO. FOUR

HOT/COLD BOX NO. 3
PROBE NO. 5-2
FILTER NO. 1161
STACK DIA. 36.0"
PORT SIZE 40"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		113.816	1.50	1.97	1.97	62	60	3.0	104	~250°F	~68°F	~250°F	1 min./point
33.6		114.600	1.10	1.44	1.44	61	60	3.0	104				
31.7		115.330	1.50	1.97	1.97	61	60	3.0	105				
29.6		116.202	1.30	1.71	1.71	61	60	3.0	103				
27.0		116.965	1.20	1.57	1.57	60	59	3.0	105				
23.2		117.765	1.20	1.57	1.57	61	59	3.0	103				
12.8		118.514	1.10	1.44	1.44	60	60	3.0	104				
9.0		119.187	1.10	1.44	1.44	61	59	3.0	106				
6.4		119.870	1.10	1.44	1.44	62	61	3.0	106				
4.3		120.541	1.20	1.57	1.57	60	59	3.0	107				
2.4		121.241	1.30	1.71	1.71	60	60	3.0	101				
1.0		121.990	1.10	1.44	1.44	65	60	3.0	103				
		122.685											
													Estimates:
			1.22	1.60			60.46		104				MW= 28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK SAMPLING DATA SHEET

CLIENT	JJS CLARTON WORKS	TEST DATE	02-23-24 (WED)	ORIFICE CORRECTION (ΔH@)	1.693
TEST UNIT	123 BATTERY PIC	TEST NO.	CLC-1-4-2	METER CORRECTION (Y)	1.0054
PROJECT NO.	3934-45-01	NOZZLE (SIZE,#)	123 0.194"	CALIBRATION DATE	03/03/24
TEST CREW	RFC JMJB, JPS	STATIC PRESSURE	+1.0	PITOT CORRECTION	0.84
BAROMETRIC PRESSURE	29.25	PORT DIRECTION	EAST	CONTROL BOX NO.	FOUR

HOT/COLD BOX NO. 3
PROBE NO. 5-7
FILTER NO. 1161
STACK DIA. 36.0"
PORT SIZE 4.0"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H20)	Orifice ΔH Actual (in. H20)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		122.685	1.20	1.59	1.59	61	60	3.0	100	~250°F	<68°F	~250°F	1 min./point
2.4		123.383	1.20	1.59	1.59	62	60	3.0	105				
4.3		124.125	1.20	1.59	1.59	62	61	3.0	103				
6.4		124.868	1.30	1.71	1.71	62	60	3.0	106				
9.0		125.591	1.10	1.44	1.44	62	61	3.0	103				
12.8		126.282	1.00	1.31	1.31	62	62	3.0	106				
23.2		126.878	1.10	1.44	1.44	63	61	3.0	104				
27.0		127.591	1.10	1.44	1.44	62	60	3.0	105				
29.6		128.265	1.30	1.71	1.71	62	60	3.0	103				
31.7		129.020	1.50	1.97	1.97	63	62	3.0	105				
33.6		129.793	1.40	1.84	1.84	63	62	3.0	104				
35.0		130.555	1.50	1.97	1.97	63	62	3.0	101				
		131.418											
Test Totals	Δ=60 min	Δ=42.983 dcf	(ΔP)AVG = 1.20		(ΔH)AVG = 1.57		(Tmeter)AVG = 59°F		(Tstack)AVG = 102°F				
													Estimates:
			1.24	1.63			61.58		103.75				MW= 28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK SAMPLING DATA SHEET

CLIENT USS-CLAIRTON
TEST UNIT 123 BATTERY
PROJECT NO. 3934-45-09
TEST CREW RFC, TM, TA, JPS
BAROMETRIC PRESSURE 29.25

TEST DATE 02-23-94 (WED)
TEST NO. CLE-1-5-2
NOZZLE (SIZE,#) 0.181"
STATIC PRESSURE 0.60
PORT DIRECTION SOUTH

ORIFICE CORRECTION (ΔH@) 1.587
METER CORRECTION (Y) 1.0199
CALIBRATION DATE 01-24-94
PITOT CORRECTION 0.84
CONTROL BOX NO. THREE

HOT/COLD BOX NO. 1
PROBE NO. 5-5
FILTER NO. 1173
STACK DIA. 36.0'
PORT SIZE 4.0"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		067.521	1.0	.92	.92	43	35	2.0	85	~250°	<68°	~250°	1 min./point
33.6		068.210	1.2	1.11	1.11	44	41	2.0	84				
31.7		068.868	1.2	1.11	1.11	43	37	2.0	87				
29.6		069.544	1.4	1.29	1.29	43	38	2.0	83				
27.0		070.339	1.2	1.11	1.11	43	42	2.0	86				
23.2		071.012	1.6	1.48	1.48	46	44	2.5	84				
12.8		071.770	1.0	.92	.92	44	40	2.0	87				
9.0		072.428	1.2	1.11	1.11	45	44	2.0	84				
6.4		073.091	1.2	1.11	1.11	48	36	2.0	86				
4.3		073.750	1.2	1.11	1.11	46	39	2.0	86				
2.4		074.459	1.1	1.02	1.02	46	45	2.0	89				
1.0		075.136	1.0	.92	.92	46	41	2.0	70				
		075.720											
			(1.19)	(1.10)		(42.45)			(84.75)				Estimates:
													MW= 28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	6.0	0.005
After	6.0	0.004

PITOT LEAK CHECK 15 SEC

	Positive	Negative
Before	OK	OK
After	OK	OK

GAS	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100 ml H2O	552.2	548.0	4.2
2.	100 ml H2O	486.8	485.9	0.9
3.	MT	463.7	463.7	0.0
4.	200g S.L Gel	684.6	674.1	10.5
5.				
6.				
7.				
8.				

5.1g

total = 15.6g

CHESTER ENVIRONMENTAL

STACK SAMPLING DATA SHEET

CLIENT USS-CLAIRTON
TEST UNIT 123 BATTERY PGC
PROJECT NO. 3934-45-09
TEST CREW RPC TA, TM, JPS
BAROMETRIC PRESSURE 29.25

TEST DATE 02-23-94 (WED)
TEST NO. CLR-1-5-2
NOZZLE (SIZE,#) 0.1814
STATIC PRESSURE 0.60
PORT DIRECTION SOUTH

ORIFICE CORRECTION (ΔH@) 1.587
METER CORRECTION (Y) 1.0179
CALIBRATION DATE 01-24-94
PITOT CORRECTION 0.84
CONTROL BOX NO. THREE

HOT/COLD BOX NO. 1
PROBE NO. 5-5
FILTER NO. 1173
STACK DIA. 36.0
PORT SIZE 4.0

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		075.720	1.0	.92	.92	48	42	2.0	71	~250°	<68°	~250	1 min./point
2.4		076.341	1.2	1.11	1.11	46	44	2.0	74				
4.3		076.961	1.2	1.12	1.12	49	39	2.0	83				
6.4		077.610	1.2	1.12	1.12	48	42	2.0	84				
9.0		078.367	1.0	.93	.93	48	41	2.0	85				
12.8		078.914	1.2	1.12	1.12	48	45	2.0	85				
23.2		079.672	1.6	1.49	1.49	48	43	2.5	87				
27.0		080.428	1.6	1.49	1.49	48	44	2.5	88				
28.6		081.170	1.4	1.30	1.30	48	44	2.0	90				
31.7		081.855	1.0	.92	.92	48	45	2.0	90				
33.6		082.524	1.6	1.48	1.48	48	45	2.5	90				
35.0		083.242	1.2	1.11	1.11	48	43	2.0	92				
		083.910											
			(1.26)	(1.175)			(115.5)		(34.7)				Estimates: MW= 28.8 %H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK SAMPLING DATA SHEET

CLIENT USS-CLAIRTON
TEST UNIT 123 BATTERY RGC
PROJECT NO. 3934-45-09
TEST CREW RPC, TMTD, JPS
BAROMETRIC PRESSURE 29.25

TEST DATE 02-03-94 (a.m.)
TEST NO. CLR-1-5-2
NOZZLE (SIZE,#) 0.181"
STATIC PRESSURE 0.60
PORT DIRECTION South

ORIFICE CORRECTION (ΔH@) 1.587
METER CORRECTION (Y) 1.0179
CALIBRATION DATE 01-24-94
PITOT CORRECTION 0.84
CONTROL BOX NO. Mike E

HOT/COLD BOX NO. 1
PROBE NO. 5-5
FILTER NO. 1173
STACK DIA. 36.0"
PORT SIZE 4.0"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.6		083.910	1.4	1.29	1.29	49	46	2.5	90	~250°	<68°F	~250°	
33.6		084.413	1.7	1.57	1.57	49	44	2.5	92				min./point
31.7		085.370	1.5	1.39	1.39	49	43	2.0	91				
29.6		086.090	1.2	1.11	1.11	50	45	2.0	92				
27.0		086.765	1.4	1.29	1.29	50	45	2.0	93				
23.2		087.453	1.3	1.20	1.20	52	43	2.0	93				
18.8		088.118	1.2	1.11	1.11	50	44	2.0	93				
9.0		088.780	1.1	1.02	1.02	50	46	2.0	93				
6.4		089.415	1.1	1.02	1.02	50	44	2.0	91				
4.3		090.059	1.1	1.02	1.02	50	45	2.0	90				
2.4		090.680	1.2	1.11	1.11	50	44	2.0	87				
1.0		091.351	1.0	.92	.92	51	45	2.0	88				
		091.965											
			1.26	1.17		47.25			91.8				Estimates:
													MW=
													%H2O=

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK SAMPLING DATA SHEET

CLIENT USS (Clairton)
TEST UNIT 123 Battery
PROJECT NO. 3934 45.09
TEST CREW
BAROMETRIC PRESSURE 29.25

TEST DATE 02-23-94 (wed)
TEST NO. C2C-1-5-2
NOZZLE (SIZE,#) D.181
STATIC PRESSURE 0.60
PORT DIRECTION EAST

ORIFICE CORRECTION (ΔH@) 1.587
METER CORRECTION (Y) 1.0179
CALIBRATION DATE 01-24-94
PITOT CORRECTION 0.84
CONTROL BOX NO. THREE

HOT/COLD BOX NO. 1
PROBE NO. 5-5
FILTER NO. 1173
STACK DIA. 360"
PORT SIZE 40"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		091.965	2.0	1.85	1.85	50	41	3.0	93	~250	<68°F	~250°F	1 min./point
33.6		092.806	1.2	1.11	1.11	50	48	2.0	91				
31.7		093.467	1.0	.92	.92	50	43	2.0	92				
29.6		094.257	2.0	1.85	1.85	50	45	3.0	92				
27.0		095.008	1.6	1.48	1.48	50	46	2.5	92				
23.2		095.690	1.4	1.29	1.29	50	45	2.0	92				
18.8		096.340	1.4	1.29	1.29	50	44	2.0	94				
9.0		097.008	1.3	1.20	1.20	50	43	2.0	94				
6.4		097.704	1.4	1.29	1.29	50	45	2.0	92				
4.3		098.363	1.2	1.11	1.11	50	44	2.0	94				
2.4		098.997	1.2	1.11	1.11	50	45	2.0	90				
1.0		099.635	1.2	1.11	1.11	51	46	2.0	89				
		100.245											
			1.41	1.30		47.33			92				Estimates: MW= 28.8 %H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK SAMPLING DATA SHEET

CLIENT USS - CLAIRTON
TEST UNIT 1,2,3 BATTERY PLT
PROJECT NO. 3934.46.04
TEST CREW RFC, TD, TM, JB
BAROMETRIC PRESSURE 29.25

TEST DATE 02-23-94 (WED)
TEST NO. CLR-1-5-2
NOZZLE (SIZE,#) 0.181"
STATIC PRESSURE 0.60
PORT DIRECTION EAST

ORIFICE CORRECTION (ΔH@) 1.887
METER CORRECTION (Y) 1.0179
CALIBRATION DATE 01-24-94
PITOT CORRECTION 0.84
CONTROL BOX NO. THREE

HOT/COLD BOX NO. 1
PROBE NO. 5-5
FILTER NO. 1123
STACK DIA. 36.0"
PORT SIZE 4.0"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		100.245	1.2	1.11	1.11	50	45	2.0	90	~250°F	68°F	~250°F	/min./point
2.4		100.586	1.2	1.11	1.11	50	45	2.0	89				
4.3		101.496	1.4	1.29	1.29	52	44	2.0	92				
6.4		102.170	1.2	1.11	1.11	51	45	2.0	94				
9.0		102.816	1.2	1.11	1.11	50	44	2.0	93				
12.8		103.454	1.2	1.11	1.11	51	46	2.0	94				
23.2		104.094	1.4	1.29	1.29	50	43	2.0	94				
27.0		104.787	1.7	1.57	1.57	50	43	2.0	93				
29.6		105.545	1.8	1.66	1.66	51	44	2.5	93				
31.7		106.297	1.8	1.66	1.66	52	45	2.5	94				
33.6		107.080	1.6	1.48	1.48	53	44	2.5	94				
35.0		107.795	2.0	1.85	1.85	52	44	3.0	93				
		108.607											
Test Totals	Δ=60 min	Δ=41.086 dcf	$(\Delta p)_{AVG}$ = 1.3	$(\Delta H)_{AVG}$ = 1.22		$(T_{meter})_{AVG}$ = 46°F			$(T_{stack})_{AVG}$ = 89°F				
			1.46	1.36		47.7			92.8				Estimates: MW= 28.8 %H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

2/24/93 Paul Rosbach Chester Eng.

PEC #1 BAGHOUSE
1-2-3 BATTERY

2/B8 -8:41
3/A10 -845
2/B10 -853
3/A12 8:58
3/B20 -9:04
2/B12 -9:09
3/A-14 -9:16
2/B14 -9:21
3/A-16 -927
2/B-16 -932
3/A-18 -937
2/B-18 -943
3/A20 -948
2/B20 -953
3/A22 -958
2/B22 10:04
3/A24 10:09
2/B24 10:14
3/A26 10:20
2/B26 10:26

3/A28 -10:31
2/B28 -10:34
3/A30 -10:39
2/B30 -10:45
2/C1 -10:50
3/B1 -10:56
1/A1 -11:04
3/B3 -11:09
1/A3 -11:14
3/B5 -11:19
1/A5 -11:21
3/B7 -11:29
1/A7 -11:35
3/B9 -11:39
1/A9 -11:45
3/B11 -11:49
1/A11 - Changed Modules
3/B13 -11:59
TRACK-CLEANUP

3/B15 -12:40
1/A15 1247
3/B17 1251
1/A17 12:57
3/B19 13:01
1/A19 1307
3/B21 1312
1/A21 1317
3/B23 13:22
1/A23 13:27
3/B25 1332
1/A25 13:38
3/B27 13:43
1/A27 13:49
3/B29 13:54
1/A29 13:59
3/B31 1404
1/A31 14:09
3/C2 14:14
2/A2 14:19
1/B2 1425
2/A4 14:29
1/B4 14:35

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 2-24-94 (Thurs.)	ORIFICE CORRECTION (ΔH@) 1.870	HOT/COLD BOX NO. 8
TEST UNIT 1,2,3 Battery Pee	TEST NO. CL2-1-1-3	METER CORRECTION (Y) 1.0032	PROBE NO. 5-3
PROJECT NO. 3934-45 to 49	NOZZLE (SIZE,#) 0.191"	CALIBRATION DATE 2-3-94	FILTER NO. 1158
TEST CREW	STATIC PRESSURE 1.0" H_2O	PITOT CORRECTION 0.84	STACK DIA. 36"
BAROMETRIC PRESSURE 29.04	PORT DIRECTION East	CONTROL BOX NO. 5	PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		777.105	1.4	1.92	1.92	63	61	4.0	94	~250	<68	~250	1 min./point
33.6		777.817	1.4	1.92	1.92	63	60	4.0	93				
31.7		778.553	1.0	1.37	1.37	63	60	2.5	95				
29.6		779.198	1.6	2.21	2.21	64	59	5.0	91				
27.0		779.981	1.5	2.07	2.07	64	59	4.5	91				
23.2		780.715	1.3	1.79	1.79	64	59	3.5	93				
12.8		781.422	1.1	1.52	1.52	65	60	3.0	93				
9.0		782.061	1.2	1.66	1.66	68	61	4.0	96				
6.4		782.766	1.2	1.66	1.66	70	63	4.0	94				
4.3		783.440	1.2	1.66	1.66	71	63	4.0	95				
2.4		784.100	1.0	1.39	1.39	71	64	3.0	94				
1.0		784.717	0.9	1.25	1.25	71	64	3.0	94				
		785.303											
				Σ=20.42		Σ=1530			Σ=1123				Estimates:
													MW=28.8
													%H2O=1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	5.0	<0.02
After	5.0	0.005

PITOT LEAK CHECK 15sec

	Positive	Negative
Before	OK	OK
After		

GAS	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100 ml D.I. H_2O	536.4	532.5	3.9
2.	100 ml D.I. H_2O	567.0	566.8	0.2
3.	Empty	435.5	435.5	0.0
4.	Silica Gel	635.0	626.1	8.9
5.				
6.			total =	13.0g
7.				
8.				

4.1g

CHESTER ENVIRONMENTAL

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery RC
PROJECT NO. 3534-45-09
TEST CREW
BAROMETRIC PRESSURE 29.04

TEST DATE 2-24-94 (Thurs.)
TEST NO. CR-1-1-3
NOZZLE (SIZE,#) 0.191"
STATIC PRESSURE 1.0" H_2O
PORT DIRECTION East

ORIFICE CORRECTION (ΔH@) 1.970
METER CORRECTION (Y) 1.0032
CALIBRATION DATE 2-3-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 5

HOT/COLD BOX NO. 8
PROBE NO. 5-3
FILTER NO. 1158
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		785.303	0.8	1.11	1.11	[redacted]71	65	2.0	94	~250	<68	~250	1 min./point
2.4		785.845	0.8	1.11	1.11	70	64	2.0	95				
4.3		786.408	1.1	1.53	1.53	68	64	3.5	94				
6.4		787.045	1.1	1.53	1.53	67	62	3.5	97				
9.0		787.701	1.1	1.53	1.53	67	62	3.5	95				
12.8		788.369	1.1	1.53	1.53	66	62	3.5	96				
23.2		788.993	1.3	1.81	1.81	65	62	4.5	94				
27.0		789.690	1.4	1.95	1.95	65	61	4.5	95				
29.6		790.423	1.4	1.95	1.95	65	61	4.5	94				
31.7		791.158	1.4	1.95	1.95	65	61	5.0	98				
33.6		791.861	1.7	2.37	2.37	65	61	6.5	95				
35.0		792.653	1.7	2.37	2.37	65	60	6.0	96				
		793.420											
				Σ=20.74		Σ=1544			Σ=1143				Estimates: MW=28.8 %H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

ST - 1

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PEC
PROJECT NO. 3934-45-09
TEST CREW
BAROMETRIC PRESSURE 29.04

TEST DATE 2-24-94 (Thurs.)
TEST NO. CLR-1-1-3
NOZZLE (SIZE,#) 0.191"
STATIC PRESSURE 1.0" H_2O
PORT DIRECTION East

ORIFICE CORRECTION (ΔH@) 1.870
METER CORRECTION (Y) 1.0032
CALIBRATION DATE 2-3-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 5

HOT/COLD BOX NO. 8
PROBE NO. 6-3
FILTER NO. 1158
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		793.420	1.2	1.67	1.67	64	60	4.0	98	~290	<68	~250	1 min./point
33.6		794.064	1.7	2.37	2.37	64	60	6.0	96				
31.7		794.833	1.8	2.51	2.51	63	60	6.5	95				
29.6		795.630	1.6	2.23	2.23	64	60	5.5	94				
27.0		796.378	1.3	1.79	1.79	63	60	4.0	94				
23.2		797.075	1.3	1.79	1.79	63	59	4.0	93				
12.8		797.775	1.1	1.52	1.52	62	59	3.5	94				
9.0		798.440	1.1	1.52	1.52	62	59	3.5	94				
6.4		799.086	1.2	1.66	1.66	62	59	4.0	94				
4.3		799.768	1.2	1.66	1.66	63	58	4.0	91				
2.4		800.431	0.8	1.10	1.10	61	58	2.0	93				
1.0		800.992	0.8	1.10	1.10	62	58	2.0	93				
		801.568											
				Σ=20.92		Σ=1463			Σ=1129				Estimates: MW=28.8 %H2O=1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PEC
PROJECT NO. 3934-45-09
TEST CREW
BAROMETRIC PRESSURE 29.04

TEST DATE 2-24-94 (THUR.)
TEST NO. CLE-1-1-3
NOZZLE (SIZE,#) 0.191"
STATIC PRESSURE 1.0" H2O
PORT DIRECTION South

ORIFICE CORRECTION (ΔH@) 1.870
METER CORRECTION (Y) 1.0032
CALIBRATION DATE 2-3-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 5

HOT/COLD BOX NO. 8
PROBE NO. 5-3
FILTER NO. 1158
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		801.568	1.6	2.21	2.21	62	58	5.0	97	~250	<68	~250	1 min./point
33.6		802.352	1.4	1.92	1.92	57	55	4.5	89				
31.7		803.059	1.3	1.79	1.79	58	55	4.0	90				
29.6		803.754	1.5	2.06	2.06	58	54	5.0	89				
27.0		804.500	1.5	2.06	2.06	57	54	5.0	89				
23.2		805.235	1.3	1.79	1.79	58	53	4.0	88				
12.8		805.919	1.0	1.37	1.37	57	53	3.0	90				
9.0		806.572	1.0	1.37	1.37	57	53	3.0	88				
6.4		807.177	1.0	1.37	1.37	57	53	3.0	91				
4.3		807.815	0.9	1.24	1.24	58	53	3.0	87				
2.4		808.415	0.7	0.96	0.96	57	53	2.0	89				
1.0		808.959	0.8	1.10	1.10	58	53	2.5	89				
		809.529											
				Σ=19.24		Σ=1341			Σ=1076				Estimates:
													MW= 28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

1-1

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery Rec
PROJECT NO. 3934-45-09
TEST CREW
BAROMETRIC PRESSURE 29.04

TEST DATE 2-24-94 (Thurs)
TEST NO. CLR - 1-1-3
NOZZLE (SIZE,#) 0.191"
STATIC PRESSURE 1.0" H2O
PORT DIRECTION South

ORIFICE CORRECTION (ΔH@) 1.870
METER CORRECTION (Y) 1.0032
CALIBRATION DATE 2-3-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 5

HOT/COLD BOX NO. 8
PROBE NO. 5-3
FILTER NO. 1158
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0	~~[illegible]~~	809.529	0.7	0.96	0.96	58	53	2.5	89	~250	<68	~250	1 min./point
2.4	~~[illegible]~~	810.058	0.8	1.10	1.10	57	53	2.5	90				
4.3	~~[illegible]~~	810.627	0.8	1.10	1.10	57	53	2.5	89				
6.4		811.191	0.9	1.24	1.24	57	53	2.5	92				
9.0		811.790	1.0	1.37	1.37	58	53	3.0	91				
12.8		812.404	1.0	1.37	1.37	58	53	3.0	92				
23.2		813.011	1.2	1.65	1.65	57	54	4.0	92				
27.0		813.670	1.4	1.92	1.92	59	53	5.0	93				
29.6		814.412	1.4	1.92	1.92	58	54	5.0	94				
31.7		815.142	1.4	1.92	1.92	59	54	5.0	94				
33.6		815.874	1.2	1.65	1.65	58	54	4.0	94				
35.0		816.548	1.1	1.51	1.51	58	54	3.0	97				
		817.203											
Test Totals	Δ=60 min	Δ=40.098 dcf	$(\Delta P)_{avg}$ = 1.2	$(\Delta H)_{avg}$ = 1.65 Σ=17.71		$(T_{meter})_{avg}$ = 60°F Σ=1335			$(T_{stack})_{avg}$ = 93°F Σ=1107				Estimates: MW=28.8 %H2O=1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

Stack 1-2

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery Pac
PROJECT NO. 3934-4509
TEST CREW
BAROMETRIC PRESSURE 29.04

TEST DATE 2-24-94 (Thurs.)
TEST NO. CLR-1-2-3
NOZZLE (SIZE,#) 0.197"
STATIC PRESSURE +1.0" H_2O
PORT DIRECTION East

ORIFICE CORRECTION (ΔH@) 1.541
METER CORRECTION (Y) 1.0099
CALIBRATION DATE 2-1-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 2

HOT/COLD BOX NO. 347
PROBE NO. 5-4
FILTER NO. 1160
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		135.860	1.5	1.90	1.90	61	57	2.0	95	~250	<68	~250	1 min./point
33.6		136.757	1.8	2.29	2.29	65	57	2.0	84				
31.7		137.695	1.5	1.90	1.90	64	57	2.0	92				
29.6		138.540	1.5	1.90	1.90	65	57	2.0	88				
27.0		139.395	1.6	2.03	2.03	65	57	2.0	88				
23.2		140.323	1.4	1.78	1.78	64	56	2.0	90				
12.8		141.210	1.2	1.52	1.52	64	56	2.0	89				
9.0		142.005	1.2	1.52	1.52	64	56	2.0	91				
6.4		142.810	1.3	1.65	1.65	65	57	2.0	91				
4.3		143.645	1.2	1.52	1.52	65	56	2.0	91				
2.4		144.454	1.1	1.40	1.40	65	56	2.0	89				
1.0		145.215	0.9	1.14	1.14	65	57	2.0	90				
		145.940											
				Σ=20.56		Σ=1451			Σ=1083				Estimates: MW=28.8 %H2O=1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	5.0	<0.02
After	5.0	<0.02

PITOT LEAK CHECK 1530

	Positive	Negative
Before	OK	OK
After	OK	OK

GAS	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100mL D.I. H_2O	543.5	542.8	0.7
2.	100mL D.I. H_2O	560.1	559.5	0.6
3.	Empty	436.2	436.3	-0.1
4.	Silica Gel	666.1	653.6	12.5
5.				
6.				
7.			total=	13.7g
8.				

1.2g

1.27 mot.

CHESTER ENVIRONMENTAL

' 7C16 '-2

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PEC
PROJECT NO. 3734-45-09
TEST CREW
BAROMETRIC PRESSURE 29.04

TEST DATE 2-24-94 (Thurs.)
TEST NO. CR-1-2-3
NOZZLE (SIZE,#) 0.197"
STATIC PRESSURE +1.0
PORT DIRECTION East

ORIFICE CORRECTION (ΔH@) 1.941
METER CORRECTION (Y) 1.0099
CALIBRATION DATE 2-1-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 2

HOT/COLD BOX NO. 3+7
PROBE NO. 5-4
FILTER NO. 1160
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		145.940	0.8	1.02	1.02	65	56	2.0	91	~250	<68	~250	1 min./point
2.4		146.583	1.2	1.52	1.52	65	57	2.0	90				
4.3		147.482	1.2	1.52	1.52	65	56	2.0	91				
6.4		148.208	1.3	1.65	1.65	64	57	2.0	92				
9.0		149.020	1.2	1.52	1.52	65	57	2.0	91				
12.8		149.833	1.0	1.27	1.27	64	56	2.0	93				
23.2		150.597	1.4	1.78	1.78	65	56	2.0	90				
27.0		151.470	1.6	2.03	2.03	65	57	2.0	94				
29.6		152.394	1.5	1.90	1.90	65	56	2.0	91				
31.7		153.315	1.0	1.27	1.27	65	56	2.0	98				
33.6		154.080	1.5	1.90	1.90	65	56	2.0	95				
35.0		155.018	1.0	1.27	1.27	64	56	2.0	94				
		155.797											
				Σ=18.65		Σ=1453			Σ=1110				Estimates:
													MW=28.8
													%H2O=1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works	TEST DATE 2-24-94 (Thurs.)	ORIFICE CORRECTION (ΔH@) 1.841	HOT/COLD BOX NO. 347
TEST UNIT 1,2,3 Battery PEC	TEST NO. CLR-1-2-3	METER CORRECTION (Y) 1.0099	PROBE NO. 5-4
PROJECT NO. 3934-45-09	NOZZLE (SIZE,#) 0.197"	CALIBRATION DATE 2-1-94	FILTER NO. 1160
TEST CREW	STATIC PRESSURE +1.0	PITOT CORRECTION 0.84	STACK DIA. 36"
BAROMETRIC PRESSURE 29.04	PORT DIRECTION East	CONTROL BOX NO. 2	PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		155.797	1.1	1.40	1.40	64	56	2.0	95	~250	<68	~250	1 min./point
33.6		156.635	1.4	1.78	1.78	64	56	2.0	93				
31.7		157.500	1.5	1.90	1.90	65	55	2.0	92				
29.6		158.422	1.6	2.03	2.03	65	56	2.0	91				
27.0		159.339	1.3	1.65	1.65	64	56	2.0	93				
23.2		160.170	1.2	1.52	1.52	63	56	2.0	90				
12.8		160.962	1.1	1.40	1.40	63	55	2.0	91				
9.0		161.737	1.1	1.40	1.40	62	55	2.0	90				
6.4		162.510	1.2	1.52	1.52	63	55	2.0	91				
4.3		163.300	1.1	1.40	1.40	61	55	2.0	90				
2.4		164.087	1.0	1.27	1.27	62	54	2.0	90				
1.0		164.827	0.9	1.14	1.14	62	54	2.0	91				
		165.510											
													Estimates:
													MW= 28.8
				Σ=18.41		Σ=1421			Σ=1097				%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

5th K ?

STACK SAMPLING DATA SHEET

CLIENT USS Clairton Works
TEST UNIT 1,2,3 Battery PEC
PROJECT NO. 3934-45-09
TEST CREW
BAROMETRIC PRESSURE 29.04

TEST DATE 2-24-94 (Thurs.)
TEST NO. CLR-1-2-3
NOZZLE (SIZE,#) 0.197"
STATIC PRESSURE +1.0
PORT DIRECTION South

ORIFICE CORRECTION (ΔH@) 1.541
METER CORRECTION (Y) 1.0099
CALIBRATION DATE 2-1-94
PITOT CORRECTION 0.84
CONTROL BOX NO. 2

HOT/COLD BOX NO. 3+7
PROBE NO. 5-4
FILTER NO. 1160
STACK DIA. 36"
PORT SIZE 4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		165.510	1.0	1.27	1.27	60	54	2.0	90	~250	<68	~250	1 min./point
33.6		166.309	1.4	1.78	1.78	57	52	2.0	85				
31.7		167.135	1.4	1.78	1.78	57	51	2.0	85				
29.6		167.964	1.3	1.65	1.65	58	51	2.0	85				
27.0		168.775	1.5	1.90	1.90	58	51	2.0	87				
23.2		169.698	1.4	1.78	1.78	57	50	2.0	84				
12.8		170.509	1.0	1.27	1.27	57	50	2.0	86				
9.0		171.215	0.9	1.14	1.14	56	49	2.0	84				
6.4		171.950	1.1	1.42	1.42	58	49	2.0	88				
4.3		172.725	1.0	1.24	1.24	58	50	2.0	87				
2.4		173.439	0.9	1.16	1.16	57	50	2.0	89				
1.0		174.120	0.9	1.16	1.16	58	50	2.0	87				
		174.804											
				Σ=1760		Σ=1590			Σ=1039				Estimates:
													MW= 28.8
													%H2O= 1

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STAC 1-2

STACK SAMPLING DATA SHEET

CLIENT	USS Clairton Works	TEST DATE	2-24-94 (Thurs.)	ORIFICE CORRECTION (ΔH@)	1.541
TEST UNIT	1,2,3 Battery Pec	TEST NO.	CU-1-2-3	METER CORRECTION (Y)	1.0099
PROJECT NO.	3934-45-09	NOZZLE (SIZE,#)	0.197"	CALIBRATION DATE	2-1-94
TEST CREW		STATIC PRESSURE	+6.0	*PITOT CORRECTION	0.84
BAROMETRIC PRESSURE	29.04	PORT DIRECTION	South	CONTROL BOX NO.	2

HOT/COLD BOX NO.	3+7
PROBE NO.	5-4
FILTER NO.	1160
STACK DIA.	36"
PORT SIZE	4"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		174.804	1.1	1.42	1.42	58	50	2.0	89	~250	<68	~250	1 min./point
2.4		175.570	1.0	1.29	1.29	58	50	2.0	88				
4.3		176.305	0.9	1.16	1.16	58	50	2.0	88				
6.4		177.010	1.0	1.29	1.29	58	50	2.0	90				
9.0		177.750	1.0	1.29	1.29	58	50	2.0	90				
12.8		178.512	0.9	1.16	1.16	59	50	2.0	90				
23.2		179.185	1.3	1.67	1.67	59	50	2.0	91				
27.0		180.042	1.4	1.80	1.80	60	50	2.0	93				
29.6		180.935	1.6	2.06	2.06	60	50	2.0	92				
31.7		181.835	1.4	1.80	1.80	60	50	2.0	91				
33.6		182.663	1.3	1.67	1.67	59	51	2.0	93				
35.0		183.488	1.5	1.93	1.93	59	51	2.0	94				
		184.339											
Test Value	Δ=60 min	Δ=4.849 dcf	(Δp)avg = 1.2		(ΔH)avg = 1.56		(Tmeter)avg = 60°F		(Tstack)avg = 90°F				Estimates: MW= 28.8 %H2O= 1
				Σ=18.54		Σ=1300			Σ=1089				

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK 1-4

STACK SAMPLING DATA SHEET

CLIENT USS CLAIRTON WORKS
TEST DATE 02-24-94 (THURS)
ORIFICE CORRECTION (ΔH@) 1.693
HOT/COLD BOX NO. 1
TEST UNIT 123 BATTERY
TEST NO. CLR-1-4-3
METER CORRECTION (Y) 1.0054
PROBE NO. 5-2
PROJECT NO. 3934-45-09
NOZZLE (SIZE, in) 0.194" GLASS
CALIBRATION DATE 02-03-94
FILTER NO. 1171
TEST CREW RPC, TM, TD, JPS, PJS
STATIC PRESSURE +0.60
PITOT CORRECTION 0.84
STACK DIA. 36.0"
BAROMETRIC PRESSURE 29.04
PORT DIRECTION EAST
CONTROL BOX NO. FOUR
PORT SIZE 4.0"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		131.590	1.40	1.84	1.84	56	55	2.5	94	~250°F	68°F Ice	~250°F	1 min./point
33.6		132.258	1.40	1.84	1.84	56	55	2.5	96				
31.7		132.975	1.10	1.44	1.44	56	56	2.5	96				
29.6		133.664	1.20	1.57	1.57	55	55	3.0	94				
27.0		134.352	1.20	1.57	1.57	55	54	3.0	99				
23.2		135.058	1.20	1.57	1.57	55	54	3.0	99				
12.8		135.761	1.20	1.57	1.57	54	54	3.0	101				
8.0		136.474	1.10	1.44	1.44	54	53	3.0	102				
6.4		137.115	1.10	1.44	1.44	54	54	3.0	98				
4.3		137.735	1.10	1.44	1.44	54	54	3.0	99				
2.4		138.260	1.10	1.44	1.44	55	54	3.0	98				
1.0		138.900	1.10	1.44	1.44	53	53	3.0	93				
		139.620											
													Estimates:
													MW= 28.80
				1.55			54.5		97.4				%H2O= 1.0

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	6.0	<.02
After	7.0	<0.02cfm

PITOT LEAK CHECK 15 SEC

	Positive	Negative
Before	ok	ok
After	ok	ok

GAS	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100mL DI H2O	539.8	539.8	0.0
2.	100mL DI H2O	490.1	486.4	3.7
3.	~~Silica gel empty~~	463.9	463.2	0.7
4.	Silica gel	690.9	684.5	6.4
5.				
6.			total	= 10.8g
7.				
8.				

4.4g

CHESTER ENVIRONMENTAL

STACK 1-7

STACK SAMPLING DATA SHEET

CLIENT USS. CLAIRTON WORKS	TEST DATE 02-24-94 (THURS)	ORIFICE CORRECTION (ΔH@) 1.693	HOT/COLD BOX NO. 1
TEST UNIT 123 BATTERY PSC.	TEST NO. CLE-1-4-3	METER CORRECTION (Y) 1.0054	PROBE NO. 5-2
PROJECT NO. 3934-45-08	NOZZLE (SIZE,#) 0.194 (grms)	CALIBRATION DATE 02-03-94	FILTER NO. 1171
TEST CREW RAC, JM, TO, JPS, PJS	STATIC PRESSURE +.60	PITOT CORRECTION 0.84	STACK DIA. 36.0"
BAROMETRIC PRESSURE 29.04	PORT DIRECTION EAST	CONTROL BOX NO. FOUR	PORT SIZE 40"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		139.620	1.30	1.71	1.71	53	52	3.0	92	~250°F	68°F Total	~250°F	1 min./point
2.4		140.328	1.10	1.44	1.44	54	53	3.0	101				
4.3		141.010	1.10	1.44	1.44	56	55	3.0	100				
6.4		141.705	1.10	1.44	1.44	54	54	3.0	97				
9.0		142.415	1.20	1.57	1.57	54	53	3.0	98				
12.8		143.131	1.10	1.44	1.44	53	53	3.0	98				
23.2		143.866	1.10	1.44	1.44	53	52	3.0	97				
27.0		144.554	1.20	1.57	1.57	53	52	3.0	98				
29.6		145.281	1.40	1.84	1.84	56	54	3.0	98				
31.7		146.028	1.40	1.84	1.84	54	54	3.0	99				
33.6		146.831	1.30	1.71	1.71	54	54	3.0	99				
35.0		147.615	1.60	2.10	2.10	53	53	4.0	97				
		148.456											
													Estimates:
													MW=28.80
				(1500)			(53.58)		(R-3)				%H2O=1.0

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK 1-7

STACK SAMPLING DATA SHEET

CLIENT USS-CLAIRTON WORKS	TEST DATE 02-24-94 (7 HOURS)	ORIFICE CORRECTION (ΔH@) 1.693	HOT/COLD BOX NO. 1
TEST UNIT 123 BATTERY PSC	TEST NO. CLR-1-4-3	METER CORRECTION (Y) 1.0054	PROBE NO. S-2
PROJECT NO. 3934-45-09	NOZZLE (SIZE, #) 0.194 GLASS	CALIBRATION DATE 02-03-94	FILTER NO. 1171
TEST CREW RPC, TM, TD, JPS, PJS	STATIC PRESSURE +0.60	PITOT CORRECTION 0.84	STACK DIA. 36.0
BAROMETRIC PRESSURE 29.04	PORT DIRECTION EAST	CONTROL BOX NO. FOUR	PORT SIZE 4.0"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		148.456	1.40	1.84	1.84	53	53	3.5	97	~250°F	68°F	~250°F	1 min./point
33.6		149.245	1.50	1.97	1.97	53	53	3.5	99				
31.7		150.050	1.10	1.44	1.44	52	52	3.5	98				
29.6		150.740	1.40	1.84	1.84	54	53	3.5	95				
27.0		151.500	1.30	1.71	1.71	54	53	3.5	95				
23.2		152.236	1.10	1.44	1.44	54	52	3.5	95				
12.8		152.921	1.00	1.31	1.31	53	52	3.5	98				
9.0		153.550	1.20	1.57	1.57	54	53	3.5	95				
6.4		154.256	1.00	1.31	1.31	54	54	3.5	97				
4.3		154.930	1.20	1.57	1.57	54	53	3.5	96				
2.4		155.640	1.20	1.57	1.57	52	52	3.5	96				
1.0		156.382	1.20	1.57	1.57	53	53	3.5	99				
		157.100											
													Estimates:
													MW= 28.80
				(1.57)			(53.4)		(96.6)				%H2O= 1.0

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK SAMPLING DATA SHEET

CLIENT USS-CLAIRTON WORKS
TEST UNIT 123 BATTERY RGC
PROJECT NO. 3931-45-09
TEST CREW RPC TM TD JPS DJS
BAROMETRIC PRESSURE 29.04

TEST DATE 02-24-94 (THURS)
TEST NO. CLR-1-4-3
NOZZLE (SIZE, #) .194 (glass)
STATIC PRESSURE +.60
PORT DIRECTION SOUTH

ORIFICE CORRECTION (ΔH@) 1.693
METER CORRECTION (Y) 1.0054
CALIBRATION DATE 02-03-94
PITOT CORRECTION 0.84
CONTROL BOX NO. FOUR

HOT/COLD BOX NO. 1
PROBE NO. 5-2
FILTER NO. 117
STACK DIA. 36.0"
PORT SIZE 4.0"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		157.100	1.20	1.57	1.57	53	52	3.5	95	~250°F	<68°F Ice	~250°F	1 min./point
33.6		157.841	1.50	1.97	1.97	53	53	4.0	99				
31.7		158.611	1.60	2.10	2.10	53	53	4.0	92				
29.6		159.446	1.40	1.84	1.84	53	52	4.0	93				
27.0		160.243	1.40	1.84	1.84	53	52	4.0	92				
23.2		161.000	1.30	1.71	1.71	53	52	4.0	89				
12.8		161.709	1.00	1.31	1.31	52	51	3.5	93				
9.0		162.344	1.00	1.31	1.31	52	51	3.5	93				
6.4		163.005	0.95	1.25	1.25	52	52	3.5	94				
4.3		163.623	1.00	1.31	1.31	52	51	3.5	90				
2.4		164.284	1.00	1.31	1.31	52	51	3.5	90				
1.0		164.960	0.90	1.18	1.18	53	52	3.5	90				
		165.570											
				(1.55)			(52.16)		(92.5)				Estimates:
													MW= 28.80
													%H2O= 1.0

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK SAMPLING DATA SHEET

CLIENT USS CLAIRTON WORKS	TEST DATE 02-24-94 (THURS)	ORIFICE CORRECTION (ΔH@) 1.623	HOT/COLD BOX NO. 1
TEST UNIT 123 BATTERY PEC	TEST NO. CLR-1-4-3	METER CORRECTION (Y) 1.0054	PROBE NO. 5-2
PROJECT NO. 3934-45-09	NOZZLE (SIZE,#) 0.194 (GLASS)	CALIBRATION DATE 02-03-94	FILTER NO. 1171
TEST CREW RPC, TM, TD, JCS, PJS	STATIC PRESSURE +.60	PITOT CORRECTION 0.84	STACK DIA. 36.0"
BAROMETRIC PRESSURE 29.04	PORT DIRECTION SOUTH	CONTROL BOX NO. FOUR	PORT SIZE 4.0"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		165.570	.90	1.18	1.18	52	52	3.5	89	~250°F	68°F DGS	~250°F	1 min./point
2.4		166.218	1.00	1.31	1.31	52	52	3.5	89				
4.3		166.845	1.00	1.31	1.31	52	51	3.5	96				
6.4		167.481	.90	1.18	1.18	51	50	3.5	97				
9.0		168.105	1.10	1.44	1.44	51	50	3.5	95				
12.8		168.806	1.00	1.31	1.31	51	50	3.5	92				
23.2		169.475	1.20	1.57	1.57	52	51	3.5	96				
27.0		170.211	1.30	1.71	1.71	51	50	3.5	95				
29.6		170.980	1.30	1.71	1.71	51	50	3.5	105				
31.7		171.716	1.40	1.84	1.84	51	50	4.0	99				
33.6		172.478	1.50	1.97	1.97	52	51	4.0	99				
35.0		173.300	1.30	1.71	1.71	52	51	4.0	99				
		174.065											
Test Values	Δ=60 min	Δ=42.475 dcf	$(\Delta P)_{AVG}$ = 1.2	$(\Delta H)_{AVG}$ = 1.54		$(T_{meter})_{AVG}$ = 53°F			$(T_{stack})_{AVG}$ = 96°F				Estimates: MW=28.80 %H2O=1.0
				Σ=18.24		Σ=1226			Σ=1151				

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

Sheet 1-3

STACK SAMPLING DATA SHEET

CLIENT	USS - CLAIRTON WORKS	TEST DATE	02-24-94 (TUES)	ORIFICE CORRECTION (ΔH@)	1.587
TEST UNIT	1,2,3 BATTERY ASC.	TEST NO.	CLR-1-5-3	METER CORRECTION (Y)	1.0179
PROJECT NO.	3934.45-09	NOZZLE (SIZE,IN)	0.181"	CALIBRATION DATE	01-24-94
TEST CREW	RPC, TM, TD, JPS	STATIC PRESSURE	+.60	PITOT CORRECTION	0.84
BAROMETRIC PRESSURE	27.04	PORT DIRECTION	EAST	CONTROL BOX NO.	THREE

HOT/COLD BOX NO.	2
PROBE NO.	5-5
FILTER NO.	1170
STACK DIA.	360"
PORT SIZE	4.0"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		108.940	1.8	1.66	1.66	50	39	3.0	83	~250°F	<68°F	~250°F	1 min./point
33.6		109.702	1.6	1.47	1.47	47	38	3.0	83				
31.7		110.452	2.0	1.84	1.84	46	44	4.0	87				
29.6		111.275	1.6	1.47	1.47	46	39	3.0	84				
27.0		112.028	1.6	1.47	1.47	45	42	3.0	85				
23.2		112.749	1.4	1.29	1.29	44	38	3.0	86				
12.8		113.454	1.2	1.10	1.10	44	38	2.5	86				
9.0		114.112	1.2	1.10	1.10	43	41	2.5	87				
6.4		114.745	1.3	1.20	1.20	43	37	3.0	86				
4.3		115.445	1.3	1.20	1.20	43	39	3.0	87				
2.4		116.130	1.2	1.10	1.10	42	37	2.5	80				
1.0		116.771	1.2	1.10	1.10	42	40	2.5	80				
		117.415											
				(1.33)			(41.7)		(84.5)				Estimates:
													MW= 28.80
													%H2O= 1.0

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	6.0	0.008
After	6.0	0.004

PITOT LEAK CHECK 15 sec

	Positive	Negative
Before	OK	OK
After	OK	OK

GAS	1	2
CO2	0	
O2	20.5	
CO	0	
N2	79.5	

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100 ml DI H2O	552.7	551.9	0.8
2.	100 ml DI H2O	567.7	566.8	0.9
3.	EMPTY	440.7	440.1	0.6
4.	SILICA GEL	683.0	673.3	9.7
5.				
6.			total=	12.0 g
7.				
8.				

2.3 g

CHESTER ENVIRONMENTAL

STACK SAMPLING DATA SHEET

CLIENT USS-CLAIRTON WORKS	TEST DATE 02-24-94 (THURS)	ORIFICE CORRECTION (ΔH@) 1.587	HOT/COLD BOX NO. 2
TEST UNIT 123 BATTERY ASC	TEST NO. CLR-15-3	METER CORRECTION (Y) 1.0179	PROBE NO. 5-5
PROJECT NO. 3934-45-09	NOZZLE (SIZE,#) 0.181	CALIBRATION DATE 01-24-94	FILTER NO. 1120
TEST CREW RPC, TM, TD, JPD	STATIC PRESSURE +0.60	PITOT CORRECTION 0.84	STACK DIA. 36.0"
BAROMETRIC PRESSURE 29.04	PORT DIRECTION EAST	CONTROL BOX NO. THREE	PORT SIZE 4.0"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		117.415	1.2	1.10	1.10	43	37	2.5	80	~250°F	<68°F	~250°F	1 min./point
2.4		118.056	1.2	1.10	1.10	42	40	2.5	79				
4.3		118.710	1.3	1.20	1.20	42	37	3.0	88				
6.4		119.376	1.2	1.10	1.10	42	39	2.5	88				
9.0		120.036	1.3	1.20	1.20	45	38	3.0	89				
12.8		120.687	1.2	1.10	1.10	43	39	3.0	87				
23.2		121.344	1.4	1.29	1.29	43	39	3.0	86				
27.0		122.029	1.6	1.47	1.47	42	38	3.5	85				
29.6		122.792	1.4	1.29	1.29	43	39	3.0	87				
31.7		123.412	1.8	1.66	1.66	45	39	4.0	89				
33.6		124.184	1.0	.92	.92	43	37	2.5	89				
35.0		124.812	1.4	1.29	1.29	45	36	3.5	89				
		125.520											
													Estimates:
													MW=
				1.22			40.4		86.33				%H2O=

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK 1-5

STACK SAMPLING DATA SHEET

CLIENT	USS-CLAIRTON WORKS	TEST DATE	02-24-94 (THUES)	ORIFICE CORRECTION (ΔH@)	1.5587	HOT/COLD BOX NO.	2
TEST UNIT	123 BATTERY RGC	TEST NO.	CLR-1-5-3	METER CORRECTION (Y)	1.0179	PROBE NO.	5-5
PROJECT NO.	3934-45=09	NOZZLE (SIZE,#)	0.181	CALIBRATION DATE	01-24-94	FILTER NO.	1170
TEST CREW	RIC, TM, TD, JPS	STATIC PRESSURE	+0.60	PITOT CORRECTION	0.84	STACK DIA.	36.0"
BAROMETRIC PRESSURE	29.04	PORT DIRECTION	EAST	CONTROL BOX NO.	THREE	PORT SIZE	4.0"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		125.520	1.8	1.66	1.66	43	36	4.0	88	~250°F	<68°F	~250°F	1 min./point
33.6		126.394	1.0	.92	.92	44	34	2.5	90				
31.7		126.949	1.8	1.66	1.66	41	34	4.0	88				
29.4		127.725	1.6	1.47	1.47	42	40	3.5	85				
27.0		128.455	1.6	1.47	1.47	42	36	3.5	89				
23.2		129.179	1.4	1.29	1.29	41	36	3.5	85				
12.8		129.884	1.2	1.10	1.10	41	36	3.0	88				
9.0		130.531	1.2	1.10	1.10	41	37	3.0	87				
6.4		131.174	1.2	1.10	1.10	41	36	3.0	88				
4.3		131.829	1.2	1.10	1.10	41	35	3.0	85				
2.4		132.483	1.0	.92	.92	41	39	2.5	80				
1.0		133.093	1.2	1.10	1.10	41	38	2.5	80				
		133.682											
													Estimates:
													MW=28.80
				1.24			(39)		(86)				%H2O=10

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

CMEK : 5

STACK SAMPLING DATA SHEET

CLIENT USS-CLAIRTON WORKS	TEST DATE 02-24-94 (THURS)	ORIFICE CORRECTION (ΔH@) 1.587	HOT/COLD BOX NO. 2
TEST UNIT 123 BATTERY PEC.	TEST NO. CLR-1-5-3	METER CORRECTION (Y) 1.0179	PROBE NO. 5-5
PROJECT NO. 3934-45-09	NOZZLE (SIZE, in) .181	CALIBRATION DATE 01-24-94	FILTER NO. 1170
TEST CREW RPC-TM-TD-JPS	STATIC PRESSURE + 0.60	PITOT CORRECTION 0.84	STACK DIA. 36.0"
BAROMETRIC PRESSURE 29.04	PORT DIRECTION SOUTH	CONTROL BOX NO. THREE	PORT SIZE 40"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
35.0		133.686	1.0	.92	.92	44	32	2.5	84	~250°F	268°F	~250°F	1 min./point
33.6		134.370	1.0	.92	.92	42	31	2.5	83				
31.7		135.855	1.4	1.29	1.29	41	32	3.5	82				
29.6		135.539	1.5	1.38	1.38	42	33	3.5	80				
27.0		136.330	1.4	1.29	1.29	42	34	3.5	80				
23.2		136.921	1.4	1.29	1.29	41	35	3.5	80				
12.8		137.626	1.1	1.01	1.01	41	32	3.0	80				
9.0		138.287	1.0	.92	.92	42	33	2.5	81				
6.4		138.881	1.0	.92	.92	43	34	2.5	84				
4.3		139.476	1.2	1.10	1.10	42	33	3.5	82				
2.4		140.249	1.0	.92	.92	40	32	3.0	81				
1.0		140.790	1.0	.92	.92	40	31	3.0	80				
		141.371											
													Estimates:
													MW= 28.80
				1.07			37.16		81.4				%H2O= 1.0

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

STACK 1-1

STACK SAMPLING DATA SHEET

CLIENT USS-CLAIRTON WORKS	TEST DATE 02-24-94 (THURS)	ORIFICE CORRECTION (ΔH@) 1.587	HOT/COLD BOX NO. 2
TEST UNIT 123 BATTERY PSC	TEST NO. CLR-1-5-3	METER CORRECTION (Y) 1.0179	PROBE NO. 5-5
PROJECT NO. 3934-45-09	NOZZLE (SIZE,#) 0.181	CALIBRATION DATE 01-24-94	FILTER NO. 1170
TEST CREW RPC, TM, TD, JPS	STATIC PRESSURE + 0.60	PITOT CORRECTION 0.84	STACK DIA. 36.0"
BAROMETRIC PRESSURE 29.04	PORT DIRECTION SOUTH	CONTROL BOX NO. THREE	PORT SIZE 40"

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcf)	Pitot ΔP (in. H2O)	Orifice ΔH Required (in. H2O)	Orifice ΔH Actual (in. H2O)	Meter Temperature In (°F)	Meter Temperature Out (°F)	Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
1.0		141.371	1.0	.92	.92	40	30	3.0	80	~250°F	<68°F	~250°F	1 min./point
2.4		142.000	1.2	1.10	1.10	41	30	3.0	80				
4.3		142.634	1.2	1.10	1.10	40	30	3.0	79				
6.4		143.272	1.0	.92	.92	40	32	3.0	80				
9.0		143.879	1.0	.92	.92	41	32	3.0	84				
12.8		144.516	1.0	.92	.92	41	32	3.0	81				
22.2		145.009	1.4	1.29	1.29	42	33	4.0	82				
27.0		145.798	1.4	1.29	1.29	43	33	4.0	81				
30.6		146.498	1.2	1.10	1.10	45	36	3.5	85				
31.7		147.157	1.2	1.10	1.10	45	37	3.5	86				
33.6		147.764	1.6	1.47	1.47	45	36	4.0	84				
35.0		148.494	1.2	1.10	1.10	45	36	3.5	85				
		149.162											
Test Totals	Δ=60 min	Δ=40.222 dcf	$(\Delta p)_{AVG}$= 1.3	$(\Delta H)_{AVG}$ = 1.19		$(T_{meter})_{AVG}$ = 39°F			$(T_{stack})_{AVG}$ = 84°F				Estimates: MW= 28.70 %H2O= 1.0
				Σ=13.23		Σ=901			Σ=987				

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before		
After		

PITOT LEAK CHECK

	Positive	Negative
Before		
After		

GAS	1	2
CO2		
O2		
CO		
N2		

Impinger No.	Impinger Contents	Final	Initial	Difference
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

CHESTER ENVIRONMENTAL

F.E.C. Test

VISIBLE EMISSIONS OBSERVATIONS FORM

1-3 STACK

OBSERVER: Darren McKee

DATE: 2-22-94

FACILITY: Chaston USA

OBSERVATION: START TIME: 9 05

END TIME: 10 05

OBSERVATION POINT:

W 1-3-7-9 coke yard

SOURCE:

DISTANCE: 400 FT

DIRECTION FROM: S-W

HEIGHT: ft 150 ft

WIND:

SPEED: 5 mph

DIRECTION: North

TEMPERATURE: 30

SKY CONDITION: Cloudy

BACKGROUND: Sky

READING CONDITIONS: fair

COLOR OF EMISSION: none

TOTAL No. OF READINGS: 240

No. READINGS >= 20% 0

No. READINGS >= 60% 0

GREATEST OPACITY: 0%

CREW: C FOREMAN: Hanna

COMMENTS:

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

P.E.C Test

VISIBLE EMISSIONS OBSERVATIONS FORM

1-3 STACK

OBSERVER: Dwen McK

DATE: 2-22-94

FACILITY: Clinton USA

OBSERVATION: START TIME: 10 05

END TIME: 11 05

OBSERVATION POINT:

1-3-7-9 one yard down end wall

SOURCE:

DISTANCE: 400 FT

DIRECTION FROM: S-W

HEIGHT: 150 FT

WIND:

SPEED: 6 mph

DIRECTION: North

TEMPERATURE: 30

SKY CONDITION: Pcloudy

BACKGROUND: Sky

READING CONDITIONS: fair

COLOR OF EMISSION: None

TOTAL No. OF READINGS: 240

No. READINGS >= 20% 0

No. READINGS >= 60% 0

GREATEST OPACITY: 0%

CREW: C FOREMAN: Hanno

COMMENTS:

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

PEC Test

VISIBLE EMISSIONS OBSERVATIONS FORM

1-3 STACK

OBSERVER: Darren McKy

DATE: 2-22-94

FACILITY: Clayton USA

OBSERVATION: START TIME: 1105

END TIME: 1205

OBSERVATION POINT: South end / West

SOURCE:

DISTANCE: 400 Ft

DIRECTION FROM: S.W.

HEIGHT: 150 Ft

WIND:

SPEED: 5 mph

DIRECTION: North

TEMPERATURE: 35 °F

SKY CONDITION: P cloudy

BACKGROUND: Sky

READING CONDITIONS: fair

COLOR OF EMISSION: none

TOTAL No. OF READINGS: 240

No. READINGS >= 20% 0

No. READINGS >= 60% 0

GREATEST OPACITY: 0%

CREW: C FOREMAN: Dave

COMMENTS:

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

VISIBLE EMISSIONS OBSERVATIONS FORM

1-3 STACK

OBSERVER: Naomi McKy
Sam Dunlap

DATE: 2-22-94

FACILITY: Clayton USA

OBSERVATION: START TIME: 12:05
END TIME: 1305

OBSERVATION POINT:
North end 1-3 Stack

SOURCE:

DISTANCE: 400 FT
DIRECTION FROM: S.W.
HEIGHT: 150 FT

WIND:

SPEED: 10 MPH
DIRECTION: N.E.
TEMPERATURE: 33
SKY CONDITION: Cloudy
BACKGROUND: Sky

READING CONDITIONS: fair
COLOR OF EMISSION: -

TOTAL No. OF READINGS: 240
No. READINGS >= 20% 0
No. READINGS >= 60% 0
GREATEST OPACITY: 0
CREW: C FOREMAN: Hassin

COMMENTS:

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

VISIBLE EMISSIONS OBSERVATIONS FORM

1st UNIT

BAGHOUSE STACK's

OBSERVER: Sam Overlis

DATE: 2-22-94

FACILITY: USX - CLAIRTON

OBSERVATION: START TIME: 13:05

END TIME: 14:05

OBSERVATION POINT:

SOUTH END #1 BATTERY

SOURCE:

DISTANCE: 350'

DIRECTION FROM: SOUTH

HEIGHT: 100'

WIND:

SPEED: 9 MPH

DIRECTION: N.G

TEMPERATURE: 34°F

SKY CONDITION: PARTLY CLOUDY

BACKGROUND: SKY

READING CONDITIONS: FAIR

COLOR OF EMISSION: -

TOTAL No. OF READINGS: 240

No. READINGS >= 20% 0

No. READINGS >= 60% 0

GREATEST OPACITY: 0

CREW: C FOREMAN: HARRIS

COMMENTS:

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

VISIBLE EMISSIONS OBSERVATIONS FORM

1ST UNIT

BAGHOUSE STACK'S 1 TO 3 SIDE

OBSERVER: [illegible]

DATE: 2-22-94

FACILITY: USX - CLAIRTON

OBSERVATION: START TIME: 14:05

END TIME: 15:05

OBSERVATION POINT:

SOUTH END #1 BATTERY

SOURCE:

DISTANCE: 350'

DIRECTION FROM: SOUTH

HEIGHT: 100'

WIND:

SPEED: 8 MPH

DIRECTION: N-E

TEMPERATURE: 35°

SKY CONDITION: PARTLY CLOUDY

BACKGROUND: SKY

READING CONDITIONS: FAIR

COLOR OF EMISSION: —

TOTAL No. OF READINGS: 240

No. READINGS >= 20% 0

No. READINGS >= 60% 0

GREATEST OPACITY: 0

CREW: C FOREMAN: HARRIS

COMMENTS:

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

VISIBLE EMISSIONS OBSERVATIONS FORM

1st UNIT

BAGHOUSE STACK 1 To 3 SIDE

OBSERVER: [signature]

DATE: 2-22-93

FACILITY: USX - CLAIRTON

OBSERVATION: START TIME: 15:05

END TIME: 15:42

OBSERVATION POINT:

SOUTH END OF #1 BATTERY

SOURCE:

DISTANCE: 350

DIRECTION FROM: SOUTH

HEIGHT: 100'

WIND:

SPEED: 10 MPH

DIRECTION: N-E

TEMPERATURE: 36°F

SKY CONDITION: CLOUDY

BACKGROUND: SKY

READING CONDITIONS: FAIR

COLOR OF EMISSION: -

TOTAL No. OF READINGS: 146

No. READINGS >= 20% 0

No. READINGS >= 60% 0

GREATEST OPACITY: 0

CREW: C FOREMAN: HARRIS

COMMENTS:

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

Name Lance Dunlap
Date 2·22·94
Foreman HARRIS Crew C

BATTERY 2 AND 3

1-3 "PEC" TEST

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.		II. TRAVEL* Seconds Max. > 10% Opac.		III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
2	B-3	9:05	:05	35%	:21	70%	OUT	VIEW BLOCKED BY HOOD
2	B-5	9:11	:04	40%	:37	60%	OUT	VIEW BLOCKED BY HOOD
3	A-1	9:17	:12	90%	:31	65%	OUT	COKE LINE + FACE AT TOP HOOK
3	A-3	9:25	:14	80%	:13	25%	OUT	COKE LINE + FACE AT TOP LATCH
3	A-5	9:31	:09	60%	:14	25%	OUT	COKE LINE + FACE AT TOP HOOK
2	B-7	9:40	:00	0%	:00	5%	IN	VIEW BLOCKED BY HOOD
2	B-9	9:45	:00	5%	:11	15%	IN/OUT	VIEW BLOCKED BY HOOD
2	B-11	9:52	:00	5%	:00	10%	IN	VIEW BLOCKED BY HOOD + HOT CAR
3	A-7	10:15	:00	5%	:00	5%	IN	COKE UP TO THE ROOF
3	A-9	10:21	:04	40%	:48	85%	OUT	VIEW BLOCKED BY SCREEN STATION
3	A-11	10:29	:03	20%	:00	10%	OUT/IN	VIEW BLOCKED BY SCREEN STATION
2	B-13	10:43	:00	5%	:00	5%	IN	VIEW BLOCKED BY HOOD
2	B-15	10:50	:00	0%	:00	0%	IN	VIEW BLOCKED BY HOOD
2	B-17	10:58	:00	0%	:00	0%	IN	VIEW BLOCKED BY HOOD
3	A-13	11:06	:00	0%	:00	5%	IN	VIEW BLOCKED BY SCREEN STATION
3	A-15	11:14	:00	0%	:00	5%	IN	VIEW BLOCKED BY SCREEN STATION
3	A-17	11:20	:00	0%	:00	0%	IN	VIEW BLOCKED BY SCREEN STATION
3	A-19	11:27	:06	25%	:00	0%	OUT/IN	VIEW BLOCKED BY SCREEN STATION
2	B-19	11:32	:00	0%	:00	0%	IN	COKE LINE + FACE AT TOP LATCH

Note: Column #I represents fugitive emissions from the coke collecting car, coke guide, and area between the coke guide and jamb, and emissions from the by-pass duct during the push.

Column #II represents emissions from the coke collecting car and by-pass duct during travel.

Column #III represents emissions from the gas cleaning car outlet during the push and travel.

* 13-15 Travel > 10% Opacity

Name Lance Drumling
Date 2-22-94
Foreman HARRIS Crew C

BATTERY 2 AND 3

"1-3" P.E.C. TEST

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.		II. TRAVEL* Seconds Max. > 10% Opac.		III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
3	A-21	11:37	:06	45%	:17	45%	OUT	COKE LINE AND FACE AT TOP LATCH
2	B-21	11:43	:00	0%	:00	0%	IN	COKE LINE + FACE AT TOP HOOK
3	A-23	11:48	:00	0%	:18	35%	IN / OUT	COKE LINE + FACE AT TOP LATCH
2	B-23	11:53	:24	100%	:52	100%	OUT	COKE LINE + FACE AT TOP LATCH
3	A-25	11:59	:00	0%	:00	10%	IN	COKE LINE + FACE AT TOP LATCH
2	B-25	12:05	:00	0%	:00	0%	IN	COKE LINE + FACE AT TOP LATCH
3	A-27	12:10	:09	80%	:32	35%	OUT	COKE LINE + FACE AT TOP LATCH
2	B-27	12:15	:00	0%	:00	10%	IN	COKE LINE + FACE AT TOP HOOK
3	A-29	12:22	:00	5%	:00	10%	IN	COKE LINE AND FACE AT TOP LATCH
2	B-29	12:28	:00	10%	:17	35%	IN / OUT	COKE LINE AND FACE AT TOP LATCH
3	A-31	12:33	:00	10%	:00	5%	IN	COKE LINE AND FACE AT TOP LATCH

Note: Column #I represents fugitive emissions from the coke collecting car, coke guide, and area between the coke guide and jamb, and emissions from the by-pass duct during the push.

Column #II represents emissions from the coke collecting car and by-pass duct during travel.

Column #III represents emissions from the gas cleaning car outlet during the push and travel.

* 13-15 Travel > 10% Opacity

Name Jason McKy
Date 2-22-94
Foreman Harris Crew C

BATTERY 1-3

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.		II. TRAVEL* Seconds Max. > 10% Opac.		III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
2	B 31	12:36	00	0%	00	5%		Top latch coke face
2	B-2	12:42	00	0%	00	5%		Coke face top latch
3	B-2	12:46	00	0%	00	0%		Top latch coke side
3	B-4	12:55	00	10%	00	10%		U.B
3	B-6	1:03	00	0%	00	0%		U.B
1	A-7	1:08	00	0%	00	5%		Top latch open face
1	A-6	1:19	00	0%	00	10%		open face top latch
3	B-8	1:24	00	0%	00	5%		Top Lowell
3	B-10	1:34	00	0%	00	0%		U.B
3	B 12	1:46	00	0%	00	5%		U.B
1	A-8	1:51	00	0%	00	5%		Top latch
1	A-10	1:58	00	0%	00	5%		Top latch
1	A-12	2:03	00	0%	00	5%		U.B
3	B 14	2:11	00	0%	00	0%		U.B
1	A-14	2:17	00	0%	00	5%		Top latch
3	B-16	2:22	00	0%	00	0%		U.B
1	A-16	2:28	00	0%	00	10%		Top latch slightly open
3	B-18	2:33	00	0%	00	0%		U.B
1	A-18	2:38	00	0%	00	5%		Coke face [illegible] on door

Note: Column #I represents fugitive emissions from the coke collecting car, coke guide, and area between the coke guide and jamb, and emissions from the by-pass duct during the push.

Column #II represents emissions from the coke collecting car and by-pass duct during travel.

Column #III represents emissions from the gas cleaning car outlet during the push and travel.

* 13-15 Travel > 10% Opacity

Name Darren McK

Date 2-22-94

Foreman Harris Crew C

BATTERY 1-3

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.		II. TRAVEL* Seconds Max. > 10% Opac.		III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
1	A 20	2:44	00	0%	00	0%		Top door
3	[illegible]	2:51	00	0%	00	5%		Top door plate
1	A 22	2:58	00	0%	00	5%		Top door slightly green
3	B 22	3:01	00	0%	00	0%		U.B
1	A 24	3:08	00	0%	00	10%		Top door
3	B 24	3:12	00	0%	00	5%		U.B
1	A 26	3:18	00	0%	04	20%		Top door plate slightly green
3	B 26	3:23	00	0%	00	10%		U B
1	A 28	3:29	00	0%	00	10%		Top door slightly green
3	B 28	3:34	00	0%	00	10%		U.B
3	B 30	3:39	00	0%	00	10%		U.B
1	A 30							Top door plate

Note: Column #I represents fugitive emissions from the coke collecting car, coke guide, and area between the coke guide and jamb, and emissions from the by-pass duct during the push.

Column #II represents emissions from the coke collecting car and by-pass duct during travel.

Column #III represents emissions from the gas cleaning car outlet during the push and travel.

* 13-15 Travel > 10% Opacity

VISIBLE EMISSIONS OBSERVATIONS FORM

1-3 ~~[illegible]~~ Baghouse Stack

OBSERVER: Mark Hughes

DATE: 2-23-94

FACILITY: USX Clairton

OBSERVATION: START TIME: 8:40

END TIME: 9:40

OBSERVATION POINT: West of 7 Batt

SOURCE: 1 Baghouse stack

DISTANCE: 125'

DIRECTION FROM: South

HEIGHT: 70'

WIND:

SPEED: 16 mph

DIRECTION: East

TEMPERATURE: 37°F

SKY CONDITION: Overcast

BACKGROUND: Sky (Rain)

READING CONDITIONS: Good

COLOR OF EMISSION: –

TOTAL No. OF READINGS: 240

No. READINGS >= 20% –

No. READINGS >= 60% –

GREATEST OPACITY: –

CREW: C FOREMAN: Harris

COMMENTS: – = 0%

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

VISIBLE EMISSIONS OBSERVATIONS FORM

1-3 ~~STACK~~ Baghouse Stack

OBSERVER: Mark Huges

DATE: 2-23-94

FACILITY: USX Clairton

OBSERVATION: START TIME: 9:40

END TIME: 10:40

OBSERVATION POINT: ~~Walkway East~~

SOURCE: 1 Baghouse Stack

DISTANCE: 125

DIRECTION FROM: South

HEIGHT: 70'

WIND:

SPEED: 13 MPH

DIRECTION: SE

TEMPERATURE: 39°F

SKY CONDITION: OVERCAST

BACKGROUND: SKY (RAIN)

READING CONDITIONS: Good

COLOR OF EMISSION: —

TOTAL No. OF READINGS: 240

No. READINGS >= 20% —

No. READINGS >= 60% —

GREATEST OPACITY: —

CREW: C FOREMAN: HARRIS

COMMENTS: >20%

9:40	0	-	-	-	-		30	-	-	-	-
	1	-	-	-	-		31	-	-	-	-
	2	-	-	-	-	A30 1	32	-	-	-	-
A36 1	3	-	-	-	-		33	-	-	-	-
	4	-	-	-	-		34	-	-	-	-
	5	-	-	-	-		35	-	-	-	-
	6	-	-	-	-		36	-	-	-	-
	7	-	-	-	-	A1 2	37	-	-	-	-
B28 3	8	-	-	-	-		38	-	-	-	-
	9	-	-	-	-		39	-	-	-	-
	10	-	-	-	-		40	-	-	-	-
	11	-	-	-	-		41	-	-	-	-
	12	-	-	-	-		42	-	-	-	-
	13	-	-	-	-	B1 1	43	-	-	-	-
A28 1	14	-	-	-	-		44	-	-	-	-
	15	-	-	-	-		45	-	-	-	-
	16	-	-	-	-		46	-	-	-	-
	17	-	-	-	-		47	-	-	-	-
	18	-	-	-	-	A3 2	48	-	-	-	-
	19	-	-	-	-		49	-	-	-	-
B30 3	20	-	-	-	-		50	-	-	-	-
	21	-	-	-	-		51	-	-	-	-
	22	-	-	-	-		52	-	-	-	-
	23	-	-	-	-	B3 1	53	-	-	-	-
	24	-	-	-	-		54	-	-	-	-
	25	-	-	-	-		55	-	-	-	-
B1 3	26	-	-	-	-		56	-	-	-	-
	27	-	-	-	-		57	-	-	-	-
	28	-	-	-	-	A5 2	58	-	-	-	-
	29	-	-	-	-		59	-	-	-	-

VISIBLE EMISSIONS OBSERVATIONS FORM

1-3 ~~[illegible]~~ Baghouse Stack

OBSERVER: Mark Hughes

DATE: 7-23-94

FACILITY: USX Clairton

OBSERVATION: START TIME: 10:40

END TIME: 11:40

OBSERVATION POINT: West of 2 Batt

SOURCE: 1 Baghouse Test

DISTANCE: 125'

DIRECTION FROM: South

HEIGHT: 70'

WIND:

SPEED: 14 mph

DIRECTION: East

TEMPERATURE: 39°F

SKY CONDITION: Overcast

BACKGROUND: Sky (Rain)

READING CONDITIONS: Good

COLOR OF EMISSION: —

TOTAL No. OF READINGS: 240

No. READINGS >= 20% —

No. READINGS >= 60% —

GREATEST OPACITY: —

CREW: C FOREMAN: Harris

COMMENTS: — = 0%

10:40	0	—	—	—	—		30	—	—	—	—	
	1	—	—	—	—		31	—	—	—	—	
	2	—	—	—	—		32	—	—	—	—	
	3	—	—	—	—	B11 1	33	—	—	—	—	
A7 2	4	—	—	—	—		34	—	—	—	—	
	5	—	—	—	—		35	—	—	—	—	
	6	—	—	—	—		36	—	—	—	—	
	7	—	—	—	—		37	—	—	—	—	
	8	—	—	—	—	A13 2	38	—	—	—	—	
	9	—	—	—	—		39	—	—	—	—	
B8 1	10	—	—	—	—		40	—	—	—	—	
	11	—	—	—	—		41	—	—	—	—	
	12	—	—	—	—		42	—	—	—	—	
	13	—	—	—	—		43	—	—	—	—	
	14	—	—	—	—	B13 1	44	—	—	—	—	
A9 2	15	—	—	—	—		45	—	—	—	—	
	16	—	—	—	—		46	—	—	—	—	
	17	—	—	—	—		47	—	—	—	—	
	18	—	—	—	—	A15 2	48	—	—	—	—	
	19	—	—	—	—		49	—	—	—	—	
	20	—	—	—	—		50	—	—	—	—	
B9 1	21	—	—	—	—		51	—	—	—	—	
	22	—	—	—	—		52	—	—	—	—	
	23	—	—	—	—		53	—	—	—	—	
	24	—	—	—	—	B15 1	54	—	—	—	—	
	25	—	—	—	—		55	—	—	—	—	
	26	—	—	—	—		56	—	—	—	—	
A11 2	27	—	—	—	—		57	—	—	—	—	
	28	—	—	—	—		58	—	—	—	—	
	29	—	—	—	—	A-17 2	59	—	—	—	—	

VISIBLE EMISSIONS OBSERVATIONS FORM

1 To 3

BAGHOUSE STACK'S

OBSERVER: Mark Hughes

DATE: 2-23-94

FACILITY: USX-CLAIRTON

OBSERVATION: START TIME: 11:40

END TIME: 12:10

OBSERVATION POINT:

South end of #1 Battery

SOURCE:

DISTANCE: 300'

DIRECTION FROM: South

HEIGHT: 100'

WIND:

SPEED: 14 MPH

DIRECTION: EAST

TEMPERATURE: 39°F

SKY CONDITION: OVERCAST

BACKGROUND: SKY

READING CONDITIONS: FAIR

COLOR OF EMISSION: –

TOTAL No. OF READINGS: 120

No. READINGS >= 20% –

No. READINGS >= 60% –

GREATEST OPACITY: –

CREW: C FOREMAN: HARRIS

COMMENTS: – = 0%

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

VISIBLE EMISSIONS OBSERVATIONS FORM

BAGHOUSE "1-3" STACK'S

OBSERVER: [illegible]

DATE: 2-23-94

FACILITY: USX-CLAIRTON

OBSERVATION: START TIME: 12:50

END TIME: 13:50

OBSERVATION POINT:

SOUTH END #1 BATTERY

SOURCE:

DISTANCE: 300'

DIRECTION FROM: SOUTH

HEIGHT: 100'

WIND:

SPEED: 14 MPH

DIRECTION: S-E

TEMPERATURE: 42 °F

SKY CONDITION: OVER CAST

BACKGROUND: SKY

READING CONDITIONS: FAIR

COLOR OF EMISSION: —

TOTAL No. OF READINGS: 240

No. READINGS >= 20% 0

No. READINGS >= 60% 0

GREATEST OPACITY: 0

CREW: C FOREMAN: HARR'S

COMMENTS: — = 0%

B-23 1	0	—	—	—	—
	1	—	—	—	—
	2	—	—	—	—
	3	—	—	—	—
	4	—	—	—	—
	5	—	—	—	—
B-25 1	6	—	—	—	—
	7	—	—	—	—
	8	—	—	—	—
	9	—	—	—	—
	10	—	—	—	—
	11	—	—	—	—
	12	—	—	—	—
	13	—	—	—	—
	14	—	—	—	—
B-27 1	15	—	—	—	—
	16	—	—	—	—
	17	—	—	—	—
	18	—	—	—	—
	19	—	—	—	—
A-29 2	20	—	—	—	—
	21	—	—	—	—
	22	—	—	—	—
	23	—	—	—	—
	24	—	—	—	—
B-29 1	25	—	—	—	—
	26	—	—	—	—
	27	—	—	—	—
	28	—	—	—	—
	29	—	—	—	—

	30	—	—	—	—
A-31 2	31	—	—	—	—
	32	—	—	—	—
	33	—	—	—	—
	34	—	—	—	—
	35	—	—	—	—
	36	—	—	—	—
B-31 1	37	—	—	—	—
	38	—	—	—	—
	39	—	—	—	—
	40	—	—		—
	41	—	—	—	—
	42	—	—	—	—
C-2 1	43	—	—	—	—
	44	—	—	—	—
	45	—	—	—	—
	46	—	—	—	—
	47	—	—	—	—
A-2 3	48	—	—	—	—
	49	—	—	—	—
	50	—	—	—	—
	51	—	—	—	—
	52	—	—	—	—
	53	—	—	—	—
	54	—	—	—	—
B-2 2	55	—	—	—	—
	56	—	—	—	—
	57	—	—	—	—
	58	—	—	—	—
	59	—	—	—	—

VISIBLE EMISSIONS OBSERVATIONS FORM
"1 To 3"

BAG HOUSE STACK'S

OBSERVER: [signature]

DATE: 2-23-94

FACILITY: USX-CLAIRTON

OBSERVATION: START TIME: 13:50
END TIME: 14:50

OBSERVATION POINT:
SOUTH END OF #1 BATTERY

SOURCE:

DISTANCE: 300'
DIRECTION FROM: SOUTH
HEIGHT: 100'

WIND:

SPEED: 15 MPH
DIRECTION: S-E
TEMPERATURE: 94°F
SKY CONDITION: OVERCAST
BACKGROUND: SKY

READING CONDITIONS: FAIR
COLOR OF EMISSION: —

TOTAL No. OF READINGS: 240
No. READINGS >= 20% —
No. READINGS >= 60% —
GREATEST OPACITY: —
CREW: C FOREMAN: HARRIS

COMMENTS: — = 0%

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

VISIBLE EMISSIONS OBSERVATIONS FORM
" 1 TO 3 "
BAGHOUSE STACK'S

OBSERVER: [signature]

DATE: 2-23-94

FACILITY: USX - CLAIRTON

OBSERVATION: START TIME: 14:50
END TIME: 15:05

OBSERVATION POINT:
SOUTH END #1 BATTERY

SOURCE:

DISTANCE: 300'
DIRECTION FROM: SOUTH
HEIGHT: 100'

WIND:

SPEED: 16 MPH
DIRECTION: S-E
TEMPERATURE: 31°F
SKY CONDITION: OVERCAST
BACKGROUND: SKY

READING CONDITIONS: FAIR
COLOR OF EMISSION: —

TOTAL No. OF READINGS: 60
No. READINGS >= 20% —
No. READINGS >= 60% —
GREATEST OPACITY: —
CREW: C FOREMAN: HARRIS

COMMENTS: — = 0%

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

Name [illegible]
Date 2-23-94
Foreman HARRIS Crew C

BATTERY 1, 2, 3

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.		II. TRAVEL* Seconds Max. > 10% Opac.		III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
1	A-16	8:42	:17	75%	:19	60%	OUT	COKE LINE + FACE AT TOP HOOK
3	B-18	8:47	:04	40%	:27	65%	OUT	COKE LINE + FACE AT TOP LATCH
1	A-18	8:53	:27	100%	:22	45%	OUT	COKE LINE + FACE AT TOP HOOK
3	B-20	8:58	:00	0	:00	0	IN	COKE LINE AT PLATE COKE FACE AT BOTTOM HOOK
1	A-20	9:04	:30	45%	:13	30%	OUT	COKE LINE + FACE AT TOP LATCH
3	B-22	9:09	:17	85%	:29	45%	OUT	COKE LINE + FACE AT TOP LATCH
1	A-22	9:16	:25	80%	:21	45%	OUT	COKE LINE + FACE AT TOP LATCH
3	B-24	9:21	:06	30%	:00	10%	OUT / IN	COKE LINE AT TOP LATCH COKE FACE AT TOP HOOK
3	B-26	9:38	:00	15%	:09	30%	IN / OUT	COKE LINE + FACE AT TOP LATCH
1	A-26	9:44	:18	40%	:14	45%	OUT	COKE LINE + FACE AT TOP LATCH
3	B-28	9:49	:09	80%	:11	35%	OUT	VIEW BLOCKED BY SCR. STA. CONVEYER
1	A-28	9:55	:00	15%	:08	25%	IN / OUT	COKE LINE AND FACE AT TOP HOOK
3	B-30	10:00	:13	75%	:18	60%	OUT	VIEW BLOCKED BY SCR. STA. CONVEYER
3	C-1	10:06	:24	80%	:31	70%	OUT	VIEW BLOCKED BY SCR. STA. CONVEYER
1	A-30	10:12	:00	10%	:00	10%	IN	COKE LINE + FACE AT TOP LATCH
2	A-1	10:17	:03	30%	:17	45%	OUT	COKE LINE + FACE AT TOP LATCH
1	B-1	10:23	:03	35%	:00	10%	OUT / IN	COKE LINE + FACE AT TOP LATCH
2	A-3	10:28	:22	100%	:41	90%	OUT	VIEW BLOCKED BY HOOD
1	B-3	10:34	:00	15%	:11	25%	IN / OUT	COKE LINE + FACE AT TOP LATCH

Note: Column #I represents fugitive emissions from the coke collecting car, coke guide, and area between the coke guide and jamb, and emissions from the by-pass duct during the push.

Column #II represents emissions from the coke collecting car and by-pass duct during travel.

Column #III represents emissions from the gas cleaning car outlet during the push and travel.

* 13-15 Travel > 10% Opacity

Name [illegible]
Date 2-23-94
Foreman HARRIS Crew C

BATTERY 1 AND 2

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.	II. TRAVEL* Seconds Max. > 10% Opac.	III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
2	A-5	10:39	:26 100%	:66 100%	OUT	COKE LINE + FACE AT TOP LATCH
2	A-7	10:44	:26 100%	:52 90%	OUT	COKE LINE + FACE AT TOP LATCH
1	B-7	10:50	:00 10%	:00 10%	IN	COKE LINE + FACE AT TOP LATCH
2	A-9	10:56	:09 100%	:37 85%	OUT	VIEW BLOCKED BY HOOD
1	B-9	11:02	:00 15%	:12 40%	IN / OUT	COKE LINE + FACE AT TOP LATCH
2	A-11	11:07	:21 100%	:67 100%	OUT	VIEW BLOCKED BY HOOD
1	B-11	11:13	:00 10%	:00 0	IN	COKE LINE & FACE AT TOP HOOD
2	A-13	11:18	:00 15%	:19 55%	IN / OUT	VIEW BLOCKED BY HOOD
1	B-13	11:24	:11 55%	:20 35%	OUT	COKE LINE AND FACE AT TOP LATCH
2	A-15	11:29	:21 100%	:63 85%	OUT	VIEW BLOCKED BY HOOD
1	B-15	11:35	:05 65%	:18 35%	OUT	COKE LINE + FACE AT TOP LATCH

Note: Column #I represents fugitive emissions from the coke collecting car, coke guide, and area between the coke guide and jamb, and emissions from the by-pass duct during the push.

Column #II represents emissions from the coke collecting car and by-pass duct during travel.

Column #III represents emissions from the gas cleaning car outlet during the push and travel.

* 13-15 Travel > 10% Opacity

Name [signature]
Date 2-23-94
Foreman C. HARRIS Crew C

BATTERY 1-3

Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.	II. TRAVEL* Seconds Max. > 10% Opac.	III. SCRUBBER Seconds Max. ≥ 20% Opac.		Comments:
A-17-2	11:40	17 = 100 %	55 = 25 %	OUT	31	Slight Green Face - Top Latch
B-17-1	11:45	15 = 45 %	20 = 25 %	OUT	32	Green Face - Top Latch
A-19-2	11:50	17 = 70 %	15 = 60 %	OUT	33	Slight Green Face - Top Latch
B-19-1	11:56	3 = 30 %	10 = 25 %	OUT	34	Green Face - Top Hook
A-21-2	12:01	15 = 100 %	60 = 100 %	OUT	35	Green Face - Top Latch
B-21-1	12:07	3 = 70 %	22 = 60 %	OUT	36	Slight Green Face - Top Latch
B-23-1	12:49	8 = 60 %	11 = 30 %	OUT	37	Green Face - Top Latch
B-25-1	12:55	12 = 100 %	15 = 30 %	OUT	38	Green Face - Top Latch
B-27-1	13:05	4 = 60 %	10 = 40 %	OUT	39	Green Face - Top Latch
A-29-2	13:09	15 = 100 %	37 = 30 %	OUT	40	Poor Suction Green Face - Top Latch
B-29-1	13:15	4 = 50 %	4 = 30 %	OUT	41	Green Face - Top Latch
A-31-2	13:20	27 = 100 %	13 = 20 %	OUT	42	Poor Suction Slight Green Face - Top Latch
B-31-1	13:26	18 = 100 %	11 = 30 %	OUT	43	Green Face - Top Latch
C-2-1	13:32	1 = 25 %	9 = 40 %	OUT	44	Green Face - Top Latch
A-2-3	13:37	15 = 55 %	25 = 20 %	OUT	45	Poor Suction Coke Face - Not Visible
B-2-2	13:44	10 = 70 %	25 = 30 %	OUT	46	Poor Suction Slight Green Face - Top Hook
A-4-3	13:50	18 = 100 %	13 = 100 %	OUT	47	Poor Suction Good Face - Top Latch
B-4-2	13:55	2 = 30 %	8 = 30 %	OUT	48	Slight Green Face - Top Latch
A-6-3	14:01	30 = 100 %	27 = 30 %	OUT	49	Slight Green Face - Top Latch

Note: Column #I represents fugitive emissions from the coke collecting car, coke guide, and area between the coke guide and jamb, and emissions from the by-pass duct during the push.

Column #II represents emissions from the coke collecting car and by-pass duct during travel.

Column #III represents emissions from the gas cleaning car outlet during the push and travel.

* 13-15 Travel > 10% Opacity

Fig 1-2 No Suction on Hood

Fig 2 C: Fig = A [illegible] from [illegible]

Name [signature]
Date 2-23-94
Foreman C-Harris Crew C

BATTERY 1-3 Pec Test

Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.	II. TRAVEL* Seconds Max. > 10% Opac.	III. SCRUBBER Seconds Max. ≥ 20% Opac.		Comments:
B-6-2	14:06	7 = 30%	0 - 10%	OUT	50	Poor Suction Slight Green Face Top Hook
A-8-3	14:12	26 = 100%	36 = 30%	OUT	51	Poor Suction Good Face - Top Latch
B-8-2	14:17	12 = 80%	28 = 30%	OUT	52	Poor Suction Slight Green Face - Top Latch
A-10-3	14:23	18 = 100%	39 = 100%	OUT	53	Poor Suction Good Face - Top Latch
★ B-10-2	14:28	0 = 15%	0 = 10%	IN	54	Poor Suction Slight Green Face - Top Latch
★ A-12-3	14:34	0 = 15%	0 - 5%	IN	55	Poor Suction Coke Face not Visible
B-12-2	14:39	7 = 100%	23 = 20%	OUT	56	Poor Suction Good Face - Top Latch
A-14-3	14:45	19 = 100%	10 = 15%	OUT	57	Poor Suction Coke Face Not Visible
★ B-14-2	14:50	0 = 10%	0 = 10%	IN	58	Good Face Top Latch
A-16-3	14:55	29 = 100%	23 = 45%	OUT	59	Poor Suction Coke Face not Visible
★ B-16-2	15:01	0 = 10%	0 = 10%	IN	60	Good Face Top Hook

Poor Suctions = Barely Heard Suction From Hood

Note: Column #I represents fugitive emissions from the coke collecting car, coke guide, and area between the coke guide and jamb, and emissions from the by-pass duct during the push.

Column #II represents emissions from the coke collecting car and by-pass duct during travel.

Column #III represents emissions from the gas cleaning car outlet during the push and travel.

* 13-15 Travel > 10% Opacity

PEC 1-2-3 BATTERY

VISIBLE EMISSIONS OBSERVATIONS FORM

#1 BAGHOUSE

___ STACKS

OBSERVER: [illegible]

DATE: 2/24/94

FACILITY: CLAIRTON USX

OBSERVATION: START TIME: 840

END TIME: 9:40

OBSERVATION POINT:

S.E. BAG HOUSE

SOURCE: #1 BAGHOUSE

DISTANCE: 200'

DIRECTION FROM: SE

HEIGHT: 50'

WIND:

SPEED: 16

DIRECTION: W

TEMPERATURE: 31

SKY CONDITION: OVERCAST

BACKGROUND: SKY

READING CONDITIONS: FAIR

COLOR OF EMISSION: NONE

TOTAL No. OF READINGS: 240

No. READINGS >= 20% 0

No. READINGS >= 60% 0

GREATEST OPACITY: 0

CREW: C FOREMAN: HARRIS

COMMENTS:

0	0	0	0	0
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
8	0	0	0	0
9	0	0	0	0
10	0	0	0	0
11	0	0	0	0
12	0	0	0	0
13	0	0	0	0
14	0	0	0	0
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
18	0	0	0	0
19	0	0	0	0
20	0	0	0	0
21	0	0	0	0
22	0	0	0	0
23	0	0	0	0
24	0	0	0	0
25	0	0	0	0
26	0	0	0	0
27	0	0	0	0
28	0	0	0	0
29	0	0	0	0

30	0	0	0	0
31	0	0	0	0
32	0	0	0	0
33	0	0	0	0
34	0	0	0	0
35	0	0	0	0
36	0	0	0	0
37	0	0	0	0
38	0	0	0	0
39	0	0	0	0
40	0	0	0	0
41	0	0	0	0
42	0	0	0	0
43	0	0	0	0
44	0	0	0	0
45	0	0	0	0
46	0	0	0	0
47	0	0	0	0
48	0	0	0	0
49	0	0	0	0
50	0	0	0	0
51	0	0	0	0
52	0	0	0	0
53	0	0	0	0
54	0	0	0	0
55	0	0	0	0
56	0	0	0	0
57	0	0	0	0
58	0	0	0	0
59	0	0	0	0

PEC 1-2-3 BATTERY

VISIBLE EMISSIONS OBSERVATIONS FORM

#1 BAGHOUSE

____ STACKS

OBSERVER: J. G. McKay

DATE: 2/24/94

FACILITY: CLAIRTON USX

OBSERVATION: START TIME: 9:40

END TIME: 10:40

OBSERVATION POINT:

S. E. BAGHOUSE

SOURCE: #1 BAG HOUSE

DISTANCE: 200'

DIRECTION FROM: SE

HEIGHT: 50'

WIND:

SPEED: 16

DIRECTION: W

TEMPERATURE: 32

SKY CONDITION: OVERCAST

BACKGROUND: SKY

READING CONDITIONS: FAIR

COLOR OF EMISSION: NONE

TOTAL No. OF READINGS: 240

No. READINGS >= 20% 0

No. READINGS >= 60% 0

GREATEST OPACITY: 0%

CREW: C FOREMAN: HARRIS

COMMENTS:

0	0	0	0	0
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
8	0	0	0	0
9	0	0	0	0
10	0	0	0	0
11	0	0	0	0
12	0	0	0	0
13	0	0	0	0
14	0	0	0	0
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
18	0	0	0	0
19	0	0	0	0
20	0	0	0	0
21	0	0	0	0
22	0	0	0	0
23	0	0	0	0
24	0	0	0	0
25	0	0	0	0
26	0	0	0	0
27	0	0	0	0
28	0	0	0	0
29	0	0	0	0

30	0	0	0	0
31	0	0	0	0
32	0	0	0	0
33	0	0	0	0
34	0	0	0	0
35	0	0	0	0
36	0	0	0	0
37	0	0	0	0
38	0	0	0	0
39	0	0	0	0
40	0	0	0	0
41	0	0	0	0
42	0	0	0	0
43	0	0	0	0
44	0	0	0	0
45	0	0	0	0
46	0	0	0	0
47	0	0	0	0
48	0	0	0	0
49	0	0	0	0
50	0	0	0	0
51	0	0	0	0
52	0	0	0	0
53	0	0	0	0
54	0	0	0	0
55	0	0	0	0
56	0	0	0	0
57	0	0	0	0
58	0	0	0	0
59	0	0	0	0

P. E.C TEST 1-2-3 BATTERY

VISIBLE EMISSIONS OBSERVATIONS FORM
#1 BAG HOUSE
____ STACKS

OBSERVER: [signature]

DATE: 2/24/94

FACILITY: CLAIRTON USX

OBSERVATION: START TIME: 10:40
END TIME: 11:40

OBSERVATION POINT:
S E BAGHOUSE

SOURCE: #1 BAG HOUSE

DISTANCE: 200'
DIRECTION FROM: S E
HEIGHT: 50'

WIND:

SPEED: 16
DIRECTION: W.
TEMPERATURE: 30
SKY CONDITION: OVERCAST
BACKGROUND: SKY

READING CONDITIONS: FAIR
COLOR OF EMISSION: NONE

TOTAL No. OF READINGS: 240
No. READINGS >= 20% 0
No. READINGS >= 60% 0
GREATEST OPACITY: 0%
CREW: C FOREMAN: HARRIS

COMMENTS:

0	0	0	0	0
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
8	0	0	0	0
9	0	0	0	0
10	0	0	0	0
11	0	0	0	0
12	0	0	0	0
13	0	0	0	0
14	0	0	0	0
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
18	0	0	0	0
19	0	0	0	0
20	0	0	0	0
21	0	0	0	0
22	0	0	0	0
23	0	0	0	0
24	0	0	0	0
25	0	0	0	0
26	0	0	0	0
27	0	0	0	0
28	0	0	0	0
29	0	0	0	0

30	0	0	0	0
31	0	0	0	0
32	0	0	0	0
33	0	0	0	0
34	0	0	0	0
35	0	0	0	0
36	0	0	0	0
37	0	0	0	0
38	0	0	0	0
39	0	0	0	0
40	0	0	0	0
41	0	0	0	0
42	0	0	0	0
43	0	0	0	0
44	0	0	0	0
45	0	0	0	0
46	0	0	0	0
47	0	0	0	0
48	0	0	0	0
49	0	0	0	0
50	0	0	0	0
51	0	0	0	0
52	0	0	0	0
53	0	0	0	0
54	0	0	0	0
55	0	0	0	0
56	0	0	0	0
57	0	0	0	0
58	0	0	0	0
59	0	0	0	0

PEC 1-2-3 BATTERY

VISIBLE EMISSIONS OBSERVATIONS FORM

1 BAGHOUSE
____ STACKS

OBSERVER: [signature] [signature]

DATE: 2/24/93

FACILITY: CLAIRTON USX

OBSERVATION: START TIME: 11:40

END TIME: 1200

OBSERVATION POINT: S.E. BAGHOUSE

SOURCE: #1 BAGHOUSE

DISTANCE: 200'

DIRECTION FROM: SE

HEIGHT: 50'

WIND:

SPEED: 18 MPH

DIRECTION: W

TEMPERATURE: 27

SKY CONDITION: OVERCAST

BACKGROUND: SKY

______

READING CONDITIONS: FAIR

COLOR OF EMISSION: NONE

TOTAL No. OF READINGS: 240

No. READINGS >= 20% 0

No. READINGS >= 60% 0

GREATEST OPACITY: 0%

CREW: C FOREMAN: HARRIS

COMMENTS: ______

______

______

Time										
40	0	0	0	0	0	30				
	1	0	0	0	0	31				
	2	0	0	0	0	32				
	3	0	0	0	0	33				
	4	0	0	0	0	34				
45	5	0	0	0	0	35				
	6	0	0	0	0	36				
	7	0	0	0	0	37				
	8	0	0	0	0	38				
	9	0	0	0	0	39				
50	10	0	0	0	0	40				
	11	0	0	0	0	41				
	12	0	0	0	0	42				
	13	0	0	0	0	43				
	14	0	0	0	0	44				
55	15	0	0	0	0	45				
	16	0	0	0	0	46				
	17	0	0	0	0	47				
	18	0	0	0	0	48				
	19	0	0	0	0	49				
00	20	0	0	0	0	50				
	21	TRACK				51				
	22	CLEANUP				52				
	23					53				
	24					54				
	25					55				
	26					56				
	27					57				
	28					58				
	29					59				

#1 BAGHOUSE
PEC - 1-2-3 BATTERY

VISIBLE EMISSIONS OBSERVATIONS FORM
#1 BAGHOUSE
____ STACKS

OBSERVER: [signature]

DATE: 2/24/93

FACILITY: CLAIRTON USX

OBSERVATION: START TIME: 12:40
END TIME: 13:40

OBSERVATION POINT:
SE BAGHOUSE

SOURCE: #1 BAGHOUSE

DISTANCE: 200'
DIRECTION FROM: SE
HEIGHT: 50'

WIND:

SPEED: 19
DIRECTION: W
TEMPERATURE: 26
SKY CONDITION: OVERCAST
BACKGROUND: SKY

READING CONDITIONS: FAIR
COLOR OF EMISSION: N/A

TOTAL No. OF READINGS: 240
No. READINGS >= 20% 0
No. READINGS >= 60% 0
GREATEST OPACITY: 0
CREW: C FOREMAN: HARRIS

COMMENTS:

40	0	0	0	0	0	10	30	0	0	0	0
	1	0	0	0	0		31	0	0	0	0
	2	0	0	0	0		32	0	0	0	0
	3	0	0	0	0		33	0	0	0	0
	4	0	0	0	0		34	0	0	0	0
45	5	0	0	0	0	15	35	0	0	0	0
	6	0	0	0	0		36	0	0	0	0
	7	0	0	0	0		37	0	0	0	0
	8	0	0	0	0		38	0	0	0	0
	9	0	0	0	0		39	0	0	0	0
50	10	0	0	0	0	20	40	0	0	0	0
	11	0	0	0	0		41	0	0	0	0
	12	0	0	0	0		42	0	0	0	0
	13	0	0	0	0		43	0	0	0	0
	14	0	0	0	0		44	0	0	0	0
55	15	0	0	0	0	25	45	0	0	0	0
	16	0	0	0	0		46	0	0	0	0
	17	0	0	0	0		47	0	0	0	0
	18	0	0	0	0		48	0	0	0	0
	19	0	0	0	0		49	0	0	0	0
00	20	0	0	0	0	30	50	0	0	0	0
	21	0	0	0	0		51	0	0	0	0
	22	0	0	0	0		52	0	0	0	0
	23	0	0	0	0		53	0	0	0	0
	24	0	0	0	0		54	0	0	0	0
05	25	0	0	0	0	35	55	0	0	0	0
	26	0	0	0	0		56	0	0	0	0
	27	0	0	0	0		57	0	0	0	0
	28	0	0	0	0		58	0	0	0	0
	29	0	0	0	0		59	0	0	0	0

#1 BAGHOUSE
PEC - 1-2-3 BATTERY

VISIBLE EMISSIONS OBSERVATIONS FORM

#1 BAGHOUSE
STACKS

OBSERVER: J. Emrey

DATE: 2/24/93

FACILITY: CLAIRTON USX

OBSERVATION: START TIME: 13:40
END TIME: 14:40

OBSERVATION POINT:
S.E - BAGHOUSE

SOURCE: #1 BAGHOUSE

DISTANCE: 200'
DIRECTION FROM: S.E
HEIGHT: 50'

WIND:

SPEED:
DIRECTION: ↗
TEMPERATURE: 27°
SKY CONDITION: OVERCAST
BACKGROUND: SKY

READING CONDITIONS: FAIR
COLOR OF EMISSION: N/A

TOTAL No. OF READINGS: 240
No. READINGS >= 20% 0
No. READINGS >= 60% 0
GREATEST OPACITY: 0
CREW: C FOREMAN: HARRIS

COMMENTS:

	0	0	0	0	0	:10	30	0	0	0	0
	1	0	0	0	0		31	0	0	0	0
	2	0	0	0	0		32	0	0	0	0
	3	0	0	0	0		33	0	0	0	0
	4	0	0	0	0		34	0	0	0	0
:05	5	0	0	0	0	:15	35	0	0	0	0
	6	0	0	0	0		36	0	0	0	0
	7	0	0	0	0		37	0	0	0	0
	8	0	0	0	0		38	0	0	0	0
	9	0	0	0	0		39	0	0	0	0
:50	10	0	0	0	0	:20	40	0	0	0	0
	11	0	0	0	0		41	0	0	0	0
	12	0	0	0	0		42	0	0	0	0
	13	0	0	0	0		43	0	0	0	0
	14	0	0	0	0		44	0	0	0	0
:55	15	0	0	0	0	:25	45	0	0	0	0
	16	0	0	0	0		46	0	0	0	0
	17	0	0	0	0		47	0	0	0	0
	18	0	0	0	0		48	0	0	0	0
	19	0	0	0	0		49	0	0	0	0
:00	20	0	0	0	0	:30	50	0	0	0	0
	21	0	0	0	0		51	0	0	0	0
	22	0	0	0	0		52	0	0	0	0
	23	0	0	0	0		53	0	0	0	0
	24	0	0	0	0		54	0	0	0	0
:05	25	0	0	0	0	:35	55	0	0	0	0
	26	0	0	0	0		56	0	0	0	0
	27	0	0	0	0		57	0	0	0	0
	28	0	0	0	0		58	0	0	0	0
	29	0	0	0	0		59	0	0	0	0

Name [illegible]
Date 2/24/94

BATTERY 1-2-3

PEC. TEST

Foreman HARRIS Crew C

NOTE- O.O.C Denotes out of Compliance

Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.	II. TRAVEL* Seconds Max. > 10% Opac.	III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
2/B8	8:41	:07 - 25%	:10 30%	OUT OF COMPLIANCE	Coke FC - SLIGHT Green - T.LATCH
3/A10	845	:8 - 25%	10 - 50%	OUT OF COMPLIANCE	
2/B10	853	:0 - 0%	:0 - 0%		Coke FC - SLIGHT Green - Top Hook
3/A12	858	:05 - 50%	:10 - 30%	O.O.C	
3/B20	904	:0 10%	:0 0%		Coke FC LOW - Below N. Side
2/B12	909	:10 25%	:10 20%	O.O.C	
3/A14	916	:07 10%	:0 10%	O.O.C	
2/B14	921	:04 50%	:07 15%	O.O.C	Good COKE FACE
3/A16	927	:05 25%	:0 10%	O.O.C	
2/B16	932	:0 0%	:0 0%		Good Coke face
3/A18	937	:10 50%	:0 10%	O.O.C	
2/B18	943	:0 0%	:0 0%		Good Coke FACE
3/A20	948	:0 0%	:0 0%		
2/B20	953	:0 0%	:0 0%		
3/A22	958	:13 100%	:06 25%	O.O.C	Good Coke face
2/B22	10:04	:0 0%	:0 10%		
3/A24	10:09	0 10%	:0 10%		Good face TOP Latch
2/B24	10:14	:0 0%	:0 10%		
3/A26	10:20	0 10%	:0 0%		Cold face TOP LATCH

Note: Column #I represents fugitive emissions from the coke collecting car, coke guide, and area between the coke guide and jamb, and emissions from the by-pass duct during the push.

Column #II represents emissions from the coke collecting car and by-pass duct during travel.

Column #III represents emissions from the gas cleaning car outlet during the push and travel.

* 13-15 Travel > 10% Opacity

2

Name Paul Pastore

Date 2/24/94

BATTERY 1-2-3

PEC TEST

Foreman HARRIS

Crew C

O.O.C Damper Out of Compliance

Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.		II. TRAVEL* Seconds Max. > 10% Opac.		III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
3/B26	10:26	:0	15%	:07	25%	O.O.C	
3/A28	10:31	:10	75%	:10	50%	O.O.C.	Coke face Good
2/B28	10:34	:02	60%	:00	10%		
3/A30	10:39	:00	15%	:02	20%		
2/B30	10:45	:00	15%	:00	15%		
2/C1	10:50	:00	15%	:10	25%		
3/B1	10:56	:02	45%	:19	30%		
1/A1	11:04	:00	0%	:00	10%		CS Face At Top Hook VERY Good
3/B-3	11:09	:01	20%	:19	40%		CS Face Under Top Latch Good
1/A-3	11:14	:01	30%	:14	45%		CS Face At Top Latch Cook Face
3/B-5	11:19	:11	90%	:17	35%	Cold Spots At #2 + 3 Chamber	CS Face over Top Latch Light Green
1/A5	11:24	:00	15%	:00	15%		CS Face under Top Hook
3/B7	11:29	:21	100%	:00	10%	Cold At Top #2 + 3 Chamber	CS Face At Top Hook Light Green
1/A-7	11:35	:00	15%	:00	10%		CS Face At Plate Bad Face
3/B-9	11:39	:14	90%	:22	50%	Cold Uncs	CS Face At Top Hook Med Green
1/A9	11:45	:00	10%	:00	15%		CS Face At Top Hook Cook CS Face
3/B11	11:49	:04	70%	:02	25%		V: B
1/A-11	Change modules AT BAGHOUSE						
3/B13	11:59	:07	85%	:05	35%		V: B

Note: Column #I represents fugitive emissions from the coke collecting car, coke guide, and area between the coke guide and jamb, and emissions from the by-pass duct during the push.

Column #II represents emissions from the coke collecting car and by-pass duct during travel.

Column #III represents emissions from the gas cleaning car outlet during the push and travel.

* 13-15 Travel > 10% Opacity

3

Name Paul Pasbrub

Date 2/24/94

Foreman HARRIS Crew C

BATTERY 1-2-3

PEC
#1 BAGHOUSE
TEST
1-2-3 BATTERY

OOC DENOTES
OUT OF COMPLIANCE

Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.		II. TRAVEL* Seconds Max. > 10% Opac.		III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
B15/3	12:40	:00	15%	:00	15%		V B
A-15/1	12:47	:00	15%	:00	15%		CS FACE AT TOP HOOK COOL FACE
B-17/3	12:51	:00	15%	:00	10%		V B
A-17/1	12:57	:00	15%	:00	15%		CS FACE AT TOP HOOK
B-19/3	13:01	:00	15%	:00	10%		V B
A-19/1	13:07	:00	10%	:00	15%		CS FACE AT TOP HOOK COOL FACE
B-21/3	13:12	:22	95%	:00	15%	OOC	V:B
A-21/1	13:17	:00	15%	:00	10%		CS FACE under TOP HOOK COOL
B-23/3	13:22	:18	70%	:07	20%	OOC	V.B
A-23/1	13:27	:00	10%	:00	5%		CS FACE under TOP HOOK COOL FACE
B-25/3	13:32	:15	75%	:08	30%	OOC	V:B
A-25/1	13:38	:05	50%	:10	20%	OOC	
B-27/3	13:43	:15	100%	:10	50%	O.O.C	
A27/1	1349	:0	10%	:0	10%		Coke face Good - TOP Patch
B29/3	1354	:0	10%	:0	10%		
A29/1	1359	:0	0%	:0	10%		Good face TOP - Patch
B31/3	14:04	:08	85%	:10	30%	O.O.C	
A31/1	14:09	:0	0%	:0	10%		
C2/3	14:14	:12	100%	:10	70%	O.O.C	

Note: Column #I represents fugitive emissions from the coke collecting car, coke guide, and area between the coke guide and jamb, and emissions from the by-pass duct during the push.

Column #II represents emissions from the coke collecting car and by-pass duct during travel.

Column #III represents emissions from the gas cleaning car outlet during the push and travel.

* 13-15 Travel > 10% Opacity

4

Name [illegible]

Date 2/24/93

Foreman HARRIS Crew C

BATTERY 1-2-3

PEC
#1 BAGHOUSE
TEST

O.O.C = OUT OF COMPLIANCE

Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.	II. TRAVEL* Seconds Max. > 10% Opac.	III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
A-2/2	14:19	:0 15%	:15 -35%	O.O.C	
B-2/1	14:25	:0 10%	:0 10%		Green FACE TOP - [illegible]
A-4/2	14:29	:10 100%	:15 25%	O.O.C	
B4/1	14:35	:0 15%	:30 30%	O O C	Green FACE TOP - HOOK

Note: Column #I represents fugitive emissions from the coke collecting car, coke guide, and area between the coke guide and jamb, and emissions from the by-pass duct during the push.

Column #II represents emissions from the coke collecting car and by-pass duct during travel.

Column #III represents emissions from the gas cleaning car outlet during the push and travel.

* 13-15 Travel > 10% Opacity

CONTROL BOX CALIBRATION

THREE POINT CALIBRATION

BOX # 2 BP 29.05 in. Hg
DATE 02-04-94 OPERATOR RPC

	WET TEST METER				DRY TEST METER					METER COEFFICIENT Y	ORIFICE COEFFICIENT ΔH@
	TIME (min)	TEMP TW	VOLUME VM	PRESSURE PW	TEMP IN TI	TEMP OUT TO	TEMP AVG TA	ORIFICE PD	VOLUME VD		
START			0.000	29.05							
HALF		69.0			95.0	81.0	88.0	0.50	989.300		
STOP	11.30		5.000						994.458		
CALCULATION	11.30	529.0	5.013	29.05			548.0	29.09	5.158	1.0054	1.416
START			0.000	29.05							
HALF		69.0			100.0	81.0	90.5	1.00	994.800		
STOP	8.67		5.000						999.925		
CALCULATION	8.67	529.0	5.013	29.05			550.5	29.12	5.125	1.0152	1.660
START			0.000	29.05							
HALF		69.0			103.0	81.0	92.0	2.00	1000.600		
STOP	5.93		5.000						1005.757		
CALCULATION	5.93	529.0	5.013	29.05			552.0	29.20	5.157	1.0091	1.549
AVERAGE										1.0099	1.541

POST TEST

BOX # 2 BP 28.90 in. Hg
DATE 03-22-94 OPERATOR RPC

	WET TEST METER				DRY TEST METER					METER COEFFICIENT Y	ORIFICE COEFFICIENT ΔH@
	TIME (min)	TEMP TW	VOLUME VM	PRESSURE PW	TEMP IN TI	TEMP OUT TO	TEMP AVG TA	ORIFICE PD	VOLUME VD		
START			0.000	28.90				1.50	627.800		
HALF		74.0			104.0	86.0	95.0				
STOP	7.00		5.000						632.835		
CALCULATION	7.00	534.0	5.013	28.90			555.0	29.01	5.035	1.0307	1.649
START			0.000	28.90				1.50	633.200		
HALF		74.0			105.0	88.0	96.5				
STOP	6.98		5.000						638.265		
CALCULATION	6.98	534.0	5.013	28.90			556.5	29.01	5.065	1.0274	1.635
START			0.000	28.90				1.50	638.700		
HALF		74.0			105.0	89.0	97.0				
STOP	6.98		5.000						643.770		
CALCULATION	6.98	534.0	5.013	28.90			557.0	29.01	5.070	1.0273	1.633
AVERAGE										1.0285	1.639
DIFFERENCE										-1.8%	-6.0%

PRE-TEST MAGNEHELIC CALIBRATION
BOX# 2
DATE 01-03-94
OPERATOR RPC

0 to 10" H2O RANGE

MAGNEHELIC

Δ P	MANOMETER
0.50	0.50
1.00	0.98
2.00	2.00
4.00	4.00
6.00	6.00
8.00	8.00

0 to 0.50" H2O RANGE

MAGNEHELIC

Δ P	MANOMETER
0.50	0.50
0.40	0.40
0.30	0.30
0.20	0.20
0.10	0.10

0 to 5" H2O RANGE

MAGNEHELIC

Δ H	MANOMETER
4.00	4.00
3.00	3.00
2.00	2.00
1.00	1.00
0.50	0.50

PRE-TEST LEAK CHECK
DATE 02-01-94
OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	988.645	988.775	0.130	10.000	0.001
WET	0.000	0.140	0.140		

PYROMETER CALIBRATION
DATE 04-28-88
OPERATOR AGL

VOLTAGE INPUT (mV)	ARGE TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	301.0
8.31	400	400.0
10.57	500	500.0

PRE-TEST PYROMETER CHECK
DATE 01-26-94
OPERATOR TM

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	41.0
0.40	50	51.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	151.0
3.82	200	202.0
6.09	300	303.0
8.31	400	402.0
10.57	500	503.0

POST-TEST MAGNEHELIC CALIBRATION
BOX# 2
DATE 03-22-94
OPERATOR RPC

0 to 10" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
1.00	1.00
2.00	2.00
4.00	4.00
6.00	6.00
8.00	8.00

0 to 0.50" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
0.40	0.40
0.30	0.30
0.20	0.20
0.10	0.10

0 to 5" H2O RANGE

MAGNEHELIC Δ H	MANOMETER
4.00	4.00
3.00	3.00
2.00	2.00
1.00	1.00
0.50	0.50

POST-TEST LEAK CHECK
DATE 03-22-94
OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	627.360	627.550	0.190	10.000	0.0005
WET	0.000	0.195	0.195		

PYROMETER CALIBRATION
DATE 04-28-88
OPERATOR AGL

VOLTAGE INPUT (mV)	ARGE TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	301.0
8.31	400	400.0
10.57	500	500.0

POST-TEST PYROMETER CHECK
DATE 03-22-94
OPERATOR RPC

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	301.0
8.31	400	401.0
10.57	500	501.0

QA ORIFICE AUDIT

ORIFICE	BAPC-3	DATE	02-04-94	B.P.	29.05
OPERATOR	RPC	BOX #	2		

RUN	1		2		3	
INITIAL CF	17.000		24.400		31.900	
FINAL CF	24.160		31.587		39.131	
DIFFERENCE	7.160		7.187		7.231	
	IN	OUT	IN	OUT	IN	OUT
TEMP INITIAL	68	63	81	75	81	76
TEMP 5 MIN	78	71	81	75	82	76
TEMP 10 MIN	79	72	81	75	82	77
TEMP 15 MIN	81	75	81	76	82	77
		TEMP R		TEMP R		TEMP R
TEMP AVG	73.375	533.375	78.125	538.125	79.125	539.125
TIME (MIN.)	15.00		15.00		15.00	
	IN WATE	IN HG	IN WATER	IN HG	IN WATER	IN HG
ORIFICE	0.60	0.04	0.60	0.04	0.60	0.04
METER PRESSURE		29.09		29.09		29.09
	°F	°C	°F	°C	°F	°C
AMBIENT TEMP.	73.0	22.8	73.0	22.8	73.0	22.8
VACUUM IN HG	19.5		19.5		19.5	
DGM CAL Y	1.0099		1.0099		1.0099	
STD CF	6.987		6.951		6.981	
STD CUBIC METERS	0.1979		0.1969		0.1977	

CONTROL BOX CALIBRATION

THREE POINT CALIBRATION

BOX # 3 BP 29 in. Hg
DATE 01-24-94 OPERATOR RPC

	WET TEST METER				DRY TEST METER					METER COEFFICIENT Y	ORIFICE COEFFICIENT ΔH@
	TIME (min)	TEMP TW	VOLUME VM	PRESSURE PW	TEMP IN TI	TEMP OUT TO	TEMP AVG TA	ORIFICE PD	VOLUME VD		
START			0.000	29.00				0.50	590.300		
HALF		70.0			90.0	81.0	85.5				
STOP	11.68		5.000						595.400		
CALCULATION	11.68	530.0	5.013	29.00			545.5	29.04	5.100	1.0103	1.528
START			0.000	29.00				1.00	595.700		
HALF		70.0			99.0	83.0	91.0				
STOP	8.52		5.000						600.795		
CALCULATION	8.52	530.0	5.013	29.00			551.0	29.07	5.095	1.0202	1.610
START			0.000	29.00				2.00	601.200		
HALF		70.0			102.0	85.0	93.5				
STOP	6.06		5.000						606.291		
CALCULATION	6.06	530.0	5.013	29.00			553.5	29.15	5.091	1.0230	1.622
AVERAGE										1.0179	1.587

POST TEST

BOX # 3 BP 28.90 in. Hg
DATE 03-22-94 OPERATOR RPC

	WET TEST METER				DRY TEST METER					METER COEFFICIENT	ORIFICE COEFFICIENT
	TIME (min)	TEMP TW	VOLUME VM	PRESSURE PW	TEMP IN TI	TEMP OUT TO	TEMP AVG TA	ORIFICE PD	VOLUME VD	Y	ΔH@
START			0.000	28.90				1.50	491.100		
HALF		74.0			90.0	83.0	86.5				
STOP	7.00		5.000						496.190		
CALCULATION	7.00	534.0	5.013	28.90			546.5	29.01	5.090	1.0040	1.674
START			0.000	28.90				1.50	496.500		
HALF		74.0			98.0	84.0	91.0				
STOP	7.00		5.000						501.615		
CALCULATION	7.00	534.0	5.013	28.90			551.0	29.01	5.115	1.0073	1.661
START			0.000	28.90				1.50	502.000		
HALF		74.0			98.0	84.0	91.0				
STOP	7.01		5.000						507.121		
CALCULATION	7.01	534.0	5.013	28.90			551.0	29.01	5.121	1.0061	1.665
AVERAGE										1.0058	1.667
DIFFERENCE										1.2%	-4.8%

PRE-TEST MAGNEHELIC CALIBRATION
BOX# 3
DATE 01-24-94
OPERATOR RPC

0 to 10" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.48
1.00	1.00
2.00	2.00
4.00	4.00
6.00	6.00
8.00	8.00

0 to 0.50" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
0.40	0.40
0.30	0.30
0.20	0.20
0.10	0.10

0 to 5" H2O RANGE

MAGNEHELIC Δ H	MANOMETER
4.00	4.00
3.00	3.00
2.00	2.00
1.00	1.00
0.50	0.50

PRE-TEST LEAK CHECK
DATE 01-24-94
OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	558.400	558.595	0.195	10.000	-0.000
WET	0.000	0.195	0.195		

PYROMETER CALIBRATION
DATE 04-28-88
OPERATOR AGL

VOLTAGE INPUT (mV)	ARGE TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	301.0
8.31	400	400.0
10.57	500	500.0

PRE-TEST PYROMETER CHECK
DATE 01-24-94
OPERATOR RPC

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	300.0
8.31	400	402.0
10.57	500	503.0

POST-TEST MAGNEHELIC CALIBRATION
BOX# 3
DATE 03-22-94
OPERATOR RPC

0 to 10" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
1.00	1.00
2.00	2.00
4.00	4.00
6.00	6.00
8.00	8.00

0 to 0.50" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
0.40	0.40
0.30	0.30
0.20	0.20
0.10	0.10

0 to 5" H2O RANGE

MAGNEHELIC Δ H	MANOMETER
4.00	4.00
3.00	3.00
2.00	2.00
1.00	1.00
0.50	0.50

POST-TEST LEAK CHECK
DATE 03-22-94
OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	490.650	490.770	0.120	10.000	0.0005
WET	0.000	0.125	0.125		

PYROMETER CALIBRATION
DATE 04-28-88
OPERATOR AGL

VOLTAGE INPUT (mV)	ARGE TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	301.0
8.31	400	400.0
10.57	500	500.0

POST-TEST PYROMETER CHECK
DATE 03-22-94
OPERATOR RPC

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	300.0
8.31	400	402.0
10.57	500	502.0

QA ORIFICE AUDIT

ORIFICE	BAPC-3	DATE	01-25-94	B.P.	29.05
OPERATOR	RPC	BOX #	3		

RUN	1		2		3	
INITIAL CF	611.400		619.100		626.800	
FINAL CF	618.700		626.400		634.131	
DIFFERENCE	7.300		7.300		7.331	
	IN	OUT	IN	OUT	IN	OUT
TEMP INITIAL	78	76	82	79	84	81
TEMP 5 MIN	80	77	82	80	82	79
TEMP 10 MIN	81	78	83	81	82	80
TEMP 15 MIN	82	79	84	81	82	80
		TEMP R		TEMP R		TEMP R
TEMP AVG	78.875	538.875	81.5	541.5	81.25	541.25
TIME (MIN.)	15.00		15.00		15.00	
	N WATE	IN HG	IN WATER	IN HG	IN WATER	IN HG
ORIFICE	0.65	0.05	0.65	0.05	0.65	0.05
METER PRESSURE		29.10		29.10		29.10
	°F	°C	°F	°C	°F	°C
AMBIENT TEMP.	73.0	22.8	73.0	22.8	73.0	22.8
VACUUM IN HG	20.0		20.0		20.0	
DGM CAL Y	1.0179		1.0179		1.0179	
STD CF	7.107		7.073		7.106	
STD CUBIC METERS	0.2013		0.2003		0.2013	

CONTROL BOX CALIBRATION

THREE POINT CALIBRATION

BOX # 4 BP 28.95 in. Hg
DATE 02-03-94 OPERATOR RPC

	WET TEST METER				DRY TEST METER					METER COEFFICIENT	ORIFICE COEFFICIENT
	TIME (min)	TEMP TW	VOLUME VM	PRESSURE PW	TEMP IN TI	TEMP OUT TO	TEMP AVG TA	ORIFICE PD	VOLUME VD	Y	ΔH@
START			0.000	28.95				0.50	653.400		
HALF		70.0			84.0	83.0	83.5				
STOP	11.82		5.000						658.469		
CALCULATION	11.82	530.0	5.013	28.95			543.5	28.99	5.069	1.0128	1.573
START			0.000	28.95				1.00	658.800		
HALF		70.0			86.0	85.0	85.5				
STOP	8.72		5.000						663.920		
CALCULATION	8.72	530.0	5.013	28.95			545.5	29.02	5.120	1.0051	1.706
START			0.000	28.95				2.00	664.300		
HALF		70.0			86.0	84.0	85.0				
STOP	6.33		5.000						669.436		
CALCULATION	6.33	530.0	5.013	28.95			545.0	29.10	5.136	0.9985	1.800
AVERAGE										1.0054	1.693

POST TEST

BOX # 4 BP 28.90 in. Hg
DATE 03-22-94 OPERATOR RPC

	WET TEST METER				DRY TEST METER					METER COEFFICIENT	ORIFICE COEFFICIENT
	TIME (min)	TEMP TW	VOLUME VM	PRESSURE PW	TEMP IN TI	TEMP OUT TO	TEMP AVG TA	ORIFICE PD	VOLUME VD	Y	ΔH@
START			0.000	28.90				1.50	333.400		
HALF		75.0			94.0	93.0	93.5				
STOP	7.16		5.000						338.610		
CALCULATION	7.16	535.0	5.013	28.90			553.5	29.01	5.210	0.9916	1.736
START			0.000	28.90				1.50	338.900		
HALF		75.0			96.0	94.0	95.0				
STOP	7.18		5.000						344.118		
CALCULATION	7.18	535.0	5.013	28.90			555.0	29.01	5.218	0.9927	1.741
START			0.000	28.90				1.50	344.500		
HALF		75.0			97.0	96.0	96.5				
STOP	7.21		5.000						349.700		
CALCULATION	7.21	535.0	5.013	28.90			556.5	29.01	5.200	0.9989	1.751
AVERAGE										0.9944	1.743
DIFFERENCE										1.1%	-2.8%

PRE-TEST MAGNEHELIC CALIBRATION
BOX# 4
DATE 02-03-94
OPERATOR RPC

0 to 10" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
1.00	1.00
2.00	2.00
4.00	4.00
6.00	6.00
8.00	8.00

0 to 0.50" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
0.40	0.40
0.30	0.30
0.20	0.20
0.10	0.10

0 to 5" H2O RANGE

MAGNEHELIC Δ H	MANOMETER
4.00	4.00
3.00	3.00
2.00	2.00
1.00	1.00
0.50	0.50

PRE-TEST LEAK CHECK
DATE 02-03-94
OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	652.800	653.100	0.300	10.000	0.002
WET	0.000	0.322	0.322		

PYROMETER CALIBRATION
DATE 04-28-88
OPERATOR AGL

VOLTAGE INPUT (mV)	ARGE TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	301.0
8.31	400	400.0
10.57	500	500.0

PRE-TEST PYROMETER CHECK
DATE 01-28-94
OPERATOR TM

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	41.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	201.0
6.09	300	302.0
8.31	400	400.0
10.57	500	501.0

POST-TEST MAGNEHELIC CALIBRATION
BOX# 4
DATE 03-22-94
OPERATOR RPC

0 to 10" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
1.00	1.00
2.00	2.00
4.00	4.00
6.00	6.00
8.00	8.00

0 to 0.50" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
0.40	0.40
0.30	0.30
0.20	0.20
0.10	0.10

0 to 5" H2O RANGE

MAGNEHELIC Δ H	MANOMETER
4.00	4.00
3.00	3.00
2.00	2.00
1.00	1.00
0.50	0.50

POST-TEST LEAK CHECK
DATE 03-22-94
OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	332.700	332.890	0.190	10.000	0.0000
WET	0.000	0.190	0.190		

PYROMETER CALIBRATION
DATE 04-28-88
OPERATOR AGL

VOLTAGE INPUT (mV)	ARGE TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	301.0
8.31	400	400.0
10.57	500	500.0

POST-TEST PYROMETER CHECK
DATE 03-22-94
OPERATOR RPC

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	300.0
8.31	400	400.0
10.57	500	500.0

QA ORIFICE AUDIT

ORIFICE	BAPC-3	DATE	02-03-94	B.P.	28.95
OPERATOR	RPC	BOX #	4		

RUN	1		2		3	
INITIAL CF	628.900		636.700		644.600	
FINAL CF	636.304		644.254		652.298	
DIFFERENCE	7.404		7.554		7.698	
	IN	OUT	IN	OUT	IN	OUT
TEMP INITIAL	81	81	82	81	82	81
TEMP 5 MIN	81	80	82	81	82	82
TEMP 10 MIN	81	80	82	81	83	82
TEMP 15 MIN	82	81	82	81	83	82
		TEMP R		TEMP R		TEMP R
TEMP AVG	80.875	540.875	81.5	541.5	82.125	542.125
TIME (MIN.)	15.00		15.00		15.00	
	IN WATE	IN HG	IN WATER	IN HG	IN WATER	IN HG
ORIFICE	0.70	0.05	0.70	0.05	0.70	0.05
METER PRESSURE		29.00		29.00		29.00
	°F	°C	°F	°C	°F	°C
AMBIENT TEMP.	73.0	22.8	73.0	22.8	73.0	22.8
VACUUM IN HG	18.5		18.5		18.5	
DGM CAL Y	1.0054		1.0054		1.0054	
STD CF	7.070		7.205		7.334	
STD CUBIC METERS	0.2002		0.2041		0.2077	

CONTROL BOX CALIBRATION

THREE POINT CALIBRATION

BOX # 5 BP 28.95 in. Hg
DATE 02-03-94 OPERATOR RPC

	WET TEST METER				DRY TEST METER					METER COEFFICIENT	ORIFICE COEFFICIENT
	TIME (min)	TEMP TW	VOLUME VM	PRESSURE PW	TEMP IN TI	TEMP OUT TO	TEMP AVG TA	ORIFICE PD	VOLUME VD	Y	ΔH@
START			0.000	28.95				0.50	680.400		
HALF		70.0			92.0	81.0	86.5				
STOP	13.08		5.000						685.550		
CALCULATION	13.08	530.0	5.013	28.95			546.5	28.99	5.150	1.0023	1.916
START			0.000	28.95				1.00	686.800		
HALF		70.0			91.0	85.0	88.0				
STOP	9.13		5.000						691.945		
CALCULATION	9.13	530.0	5.013	28.95			548.0	29.02	5.145	1.0048	1.862
START			0.000	28.95				2.00	692.300		
HALF		70.0			93.0	82.0	87.5				
STOP	6.40		5.000						697.439		
CALCULATION	6.40	530.0	5.013	28.95			547.5	29.10	5.139	1.0025	1.832
AVERAGE										1.0032	1.870

POST TEST

BOX # 5 BP 28.90 in. Hg
DATE 03-22-94 OPERATOR RPC

	WET TEST METER				DRY TEST METER					METER COEFFICIENT	ORIFICE COEFFICIENT
	TIME (min)	TEMP TW	VOLUME VM	PRESSURE PW	TEMP IN TI	TEMP OUT TO	TEMP AVG TA	ORIFICE PD	VOLUME VD	Y	ΔH@
START			0.000	28.90				1.50	985.900		
HALF		76.0			97.0	88.0	92.5				
STOP	7.25		5.000						991.009		
CALCULATION	7.25	536.0	5.013	28.90			552.5	29.01	5.109	1.0075	1.790
START			0.000	28.90				1.50	991.400		
HALF		76.0			101.0	88.0	94.5				
STOP	7.27		5.000						996.500		
CALCULATION	7.27	536.0	5.013	28.90			554.5	29.01	5.100	1.0129	1.793
START			0.000	28.90				1.50	996.900		
HALF		76.0			104.0	89.0	96.5				
STOP	7.25		5.000						1002.010		
CALCULATION	7.25	536.0	5.013	28.90			556.5	29.01	5.110	1.0146	1.777
AVERAGE										1.0116	1.787
DIFFERENCE										-0.8%	4.7%

PRE-TEST MAGNEHELIC CALIBRATION
BOX# 5
DATE 02-02-94
OPERATOR RPC

0 to 10.0" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
1.00	1.00
2.00	2.00
4.00	4.00
6.00	6.00
8.00	8.00

0 to 0.50" H2O RANGE
SLANT TUBE
PRIMARY STANDARD

0 to 5" H2O RANGE

MAGNEHELIC Δ H	MANOMETER
4.00	4.00
3.00	3.00
2.00	2.00
1.00	1.00
0.50	0.50

PRE-TEST LEAK CHECK
DATE 02-03-94
OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	680.025	680.175	0.150	10.000	0.001
WET	0.000	0.160	0.160		

PYROMETER CALIBRATION
DATE 04-28-88
OPERATOR AGL

VOLTAGE INPUT (mV)	ARGE TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	301.0
8.31	400	400.0
10.57	500	500.0

PRE-TEST PYROMETER CHECK
DATE 02-03-94
OPERATOR RPC

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	300.0
8.31	400	400.0
10.57	500	500.0

POST-TEST MAGNEHELIC CALIBRATION
BOX# 5
DATE 03-22-94
OPERATOR RPC

0 to 10.0" H2O RANGE

MAGNEHELIC

Δ P	MANOMETER
0.50	0.50
1.00	1.00
2.00	2.00
4.00	4.00
6.00	6.00
8.00	8.00

0 to 0.50" H2O RANGE
SLANT TUBE
PRIMARY STANDARD

0 to 5" H2O RANGE

MAGNEHELIC

Δ H	MANOMETER
4.00	4.00
3.00	3.00
2.00	2.00
1.00	1.00
0.50	0.50

POST-TEST LEAK CHECK
DATE 10-22-93
OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	985.100	985.310	0.210	10.000	0.0001
WET	0.000	0.211	0.211		

PYROMETER CALIBRATION
DATE 04-28-88
OPERATOR AGL

VOLTAGE INPUT (mV)	ARGE TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	301.0
8.31	400	400.0
10.57	500	500.0

POST-TEST PYROMETER CHECK
DATE 03-22-94
OPERATOR RPC

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	90.0
1.74	110	110.0
2.66	150	150.0
3.82	200	200.0
6.09	300	300.0
8.31	400	400.0
10.57	500	500.0

QA ORIFICE AUDIT

ORIFICE	BAPC-3	DATE	02-03-94	B.P.	29.85
OPERATOR	RPC	BOX #	5		

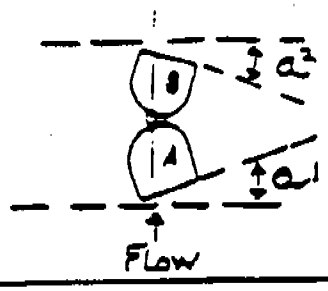
RUN	1		2		3	
INITIAL CF	657.400		664.900		672.400	
FINAL CF	664.620		672.184		679.700	
DIFFERENCE	7.220		7.284		7.300	
	IN	OUT	IN	OUT	IN	OUT
TEMP INITIAL	77	77	79	78	79	78
TEMP 5 MIN	79	77	79	78	80	78
TEMP 10 MIN	79	77	79	78	81	78
TEMP 15 MIN	80	77	79	78	80	79
		TEMP R		TEMP R		TEMP R
TEMP AVG	77.875	537.875	78.5	538.5	79.125	539.125
TIME (MIN.)	15.00		15.00		15.00	
	IN WATE	IN HG	IN WATER	IN HG	IN WATER	IN HG
ORIFICE	0.75	0.06	0.75	0.06	0.75	0.06
METER PRESSURE		29.91		29.91		29.91
	°F	°C	°F	°C	°F	°C
AMBIENT TEMP.	73.0	22.8	73.0	22.8	73.0	22.8
VACUUM IN HG	19.5		19.5		19.5	
DGM CAL Y	1.0032		1.0032		1.0032	
STD CF	7.134		7.188		7.196	
STD CUBIC METERS	0.2020		0.2036		0.2038	

GEOMETRIC PITOT CALIBRATION

Caliper # XEF-59
Precheck
Post Check

Probe #: 5-1
Date: 10-25-93
Initials: EMT

①

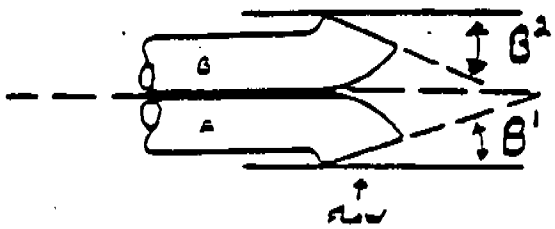


a² = 3.0"
a² = 5.0"
a¹, a² = <10°

B¹ = 4.0"
B² = 3.0
B¹, B², = <5°

F = 1.022"

②



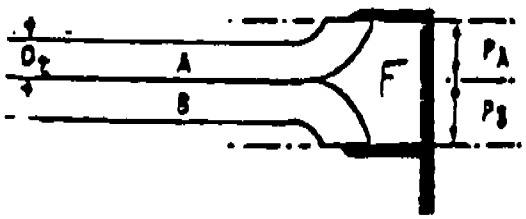
μ = 0.0374 — μ = ≤ 0.1250" (μ = F TAN γ)

V = 0.0202 — V = ≤0.03125" (V = F TAN θ)

W = 0.415 — W ≥ 0"

X = 1.02 — X ≥ 0.750" (3/4" using 1/2" nozzle)

③



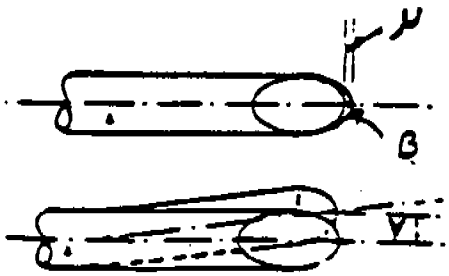
1.05 D_t < A <1.50 D_t
$P_A = P_B$
2.10 D_t <A <3.00 D_t

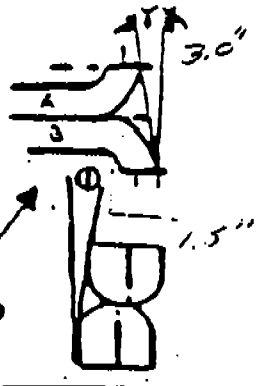
Y = 6.000 — Y ≥ 3.0"

Z = 3.475 — Z > 2.0"

D_t = .2375 — D_t > .1875"

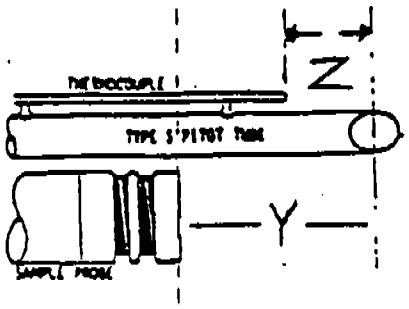
④



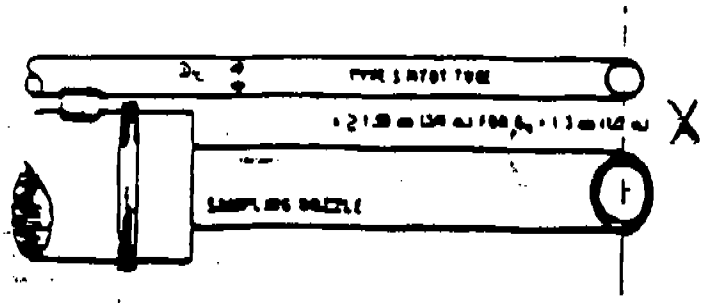


(γ, θ EXPRESSED IN DEGREES)

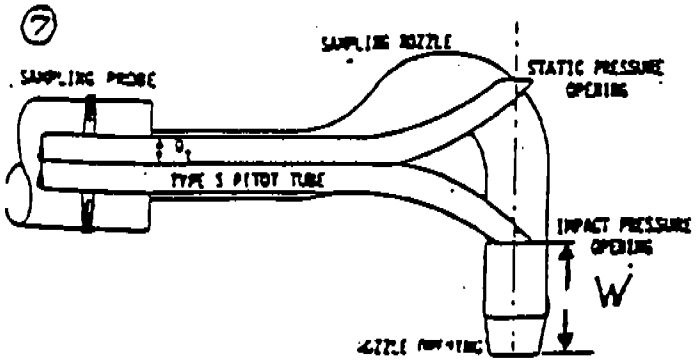
⑥



⑤



⑦

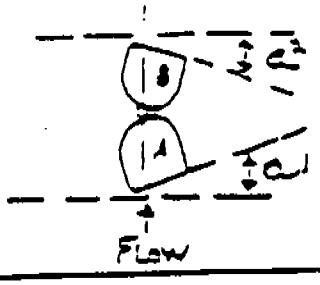


GEOMETRIC PITOT CALIBRATION

Caliper # XGF-59
Precheck:
Post Check: ✓

Probe #: 5-1
Date: 03-22-94
Initials: RPC

①

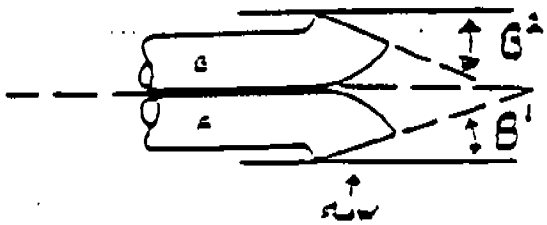


a¹ = 1°
a² = 3°
a¹, a² = <10°

B¹ = 3°
B² = 3°
B¹, B² = <5°

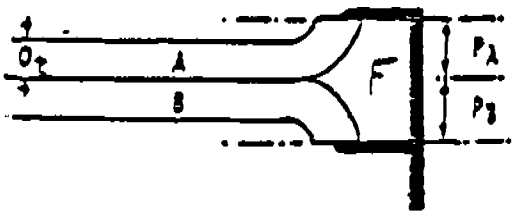
F = 1.03"

②



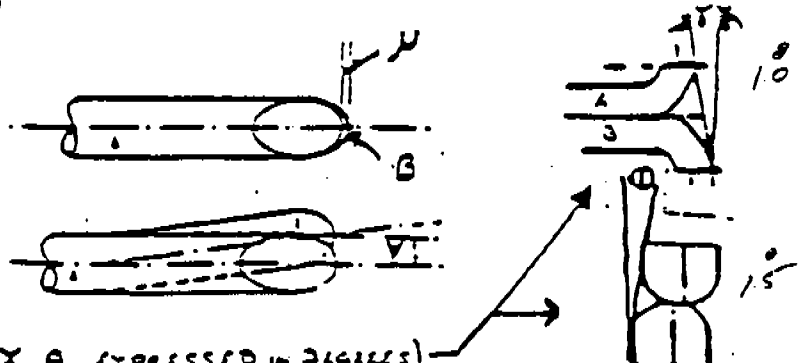
μ = 0.0178 — μ = ≤ 0.1250" (μ = F tan a²)
V = .0269 — V = ≤0.03125" (V = F tan B¹)
W = 1.0" — W ≥ 0"
X = .800 — X ≥ 0.750" (3/4" using 1/2" nozzle)
Y = 6.0 — Y ≥ 3.0"
Z = 3.50 — Z > 2.0"
D_t = 0.375 — D_t > .1875"

③



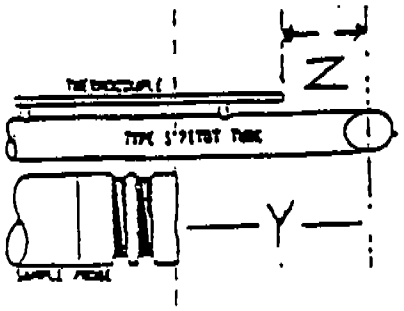
1.05 D_t < A < 1.50 D_t
P_A = P_B
2.10 D_t < A < 3.00 D_t

④

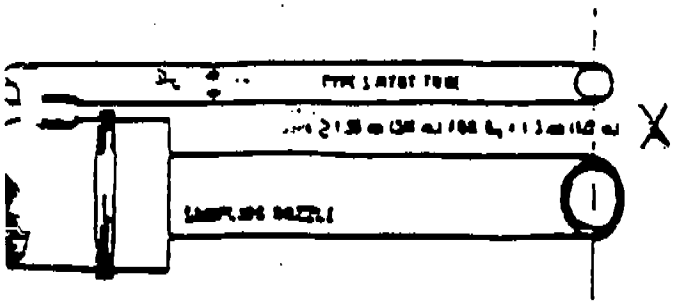


(γ, θ EXPRESSED in DEGREES)

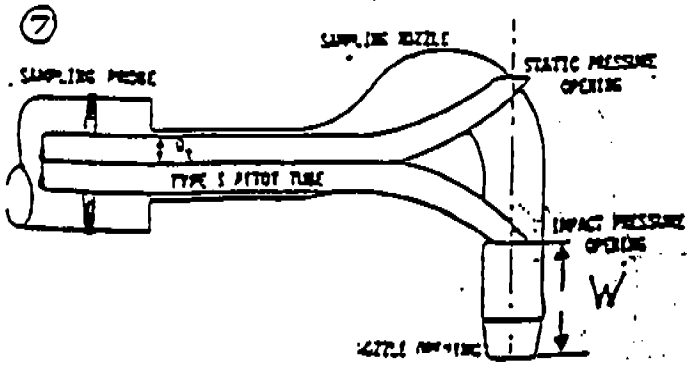
⑥



⑤



⑦

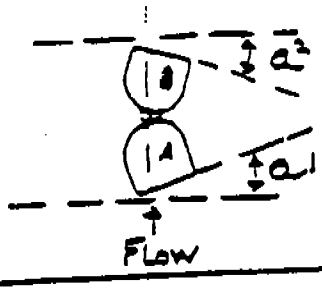


GEOMETRIC PITOT CALIBRATION

Caliper # XEF-59
Precheck ✓
Post Check

Probe #: 5-3
Date: 10-25-93
Initials: [illegible]

①

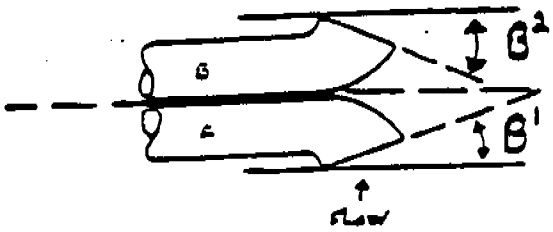


a¹ = 2.0"
a² = 0"
a¹, a² = <10°

B¹ = 1.0"
B² = 1.0"
B¹, B² = <5°

F = 0.876"

②



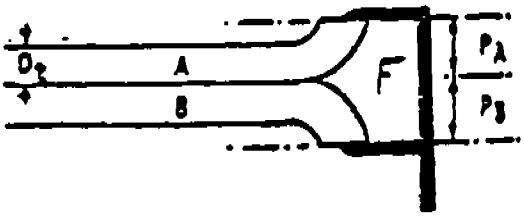
μ = 0.0350 — μ = ≤ 0.1250" (μ = F TAN γ)

V = 0.0261 — V = ≤0.03125" (V = F TAN θ)

W = 0.346 — W ≥ 0"

X = 1.236 — X ≥ 0.750" (3/4" using 1/2" nozzle)

③



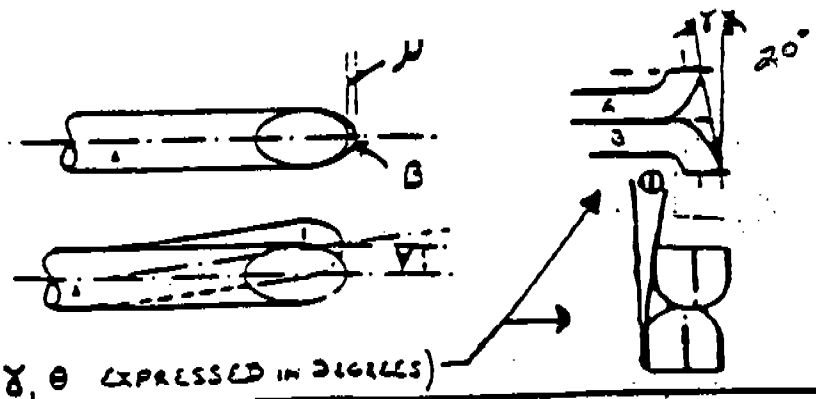
1.05 D_t < A < 1.50 D_t
P_A = P_B
2.10 D_t < A < 3.00 D_t

Y = 6.000 — Y ≥ 3.0"

Z = 2.069 — Z > 2.0"

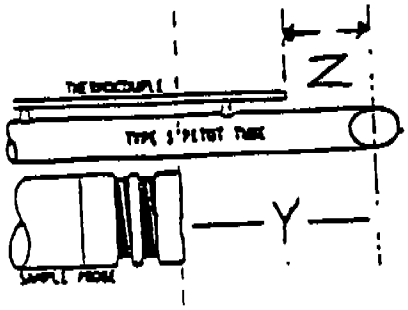
D_t = 0.375 — D_t > .1875"

④

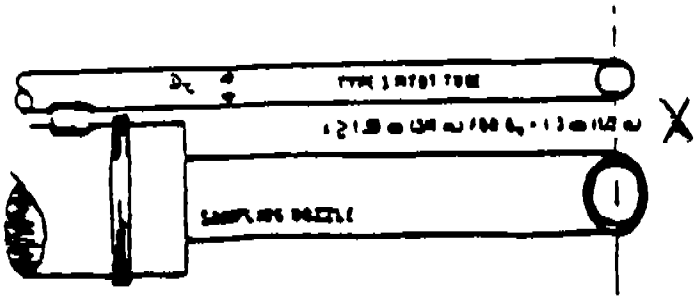


(γ, θ EXPRESSED IN DEGREES)

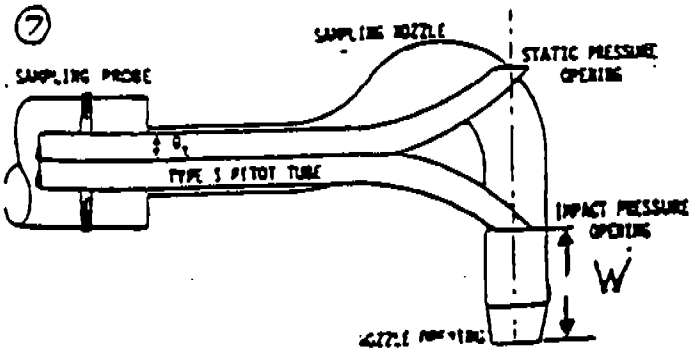
⑥



⑤



⑦

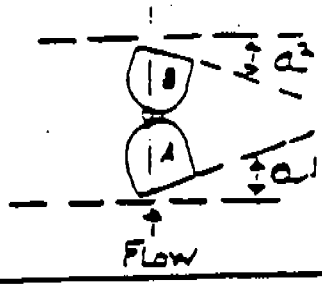


GEOMETRIC PITOT CALIBRATION

Caliper # XEF-59
Precheck
Post Check ✓

Probe #: 5-3
Date: 03-22-94
Initials: RPC

①

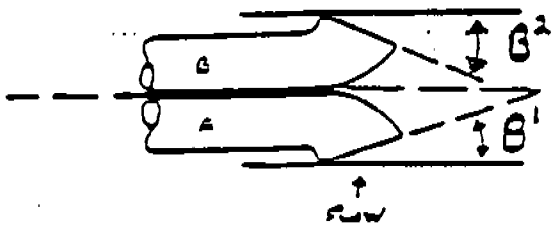


a¹ = 0°
a² = 10°
a¹, a² = <10°

B¹ = 1.0°
B² = 1.0°
B¹, B² = <5°

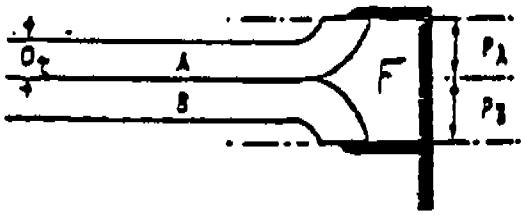
F = .880 "

②



μ = 0.0153 — μ = ≤ 0.1250" (μ = F tan γ)
V = 0.0307 — V = ≤0.03125" (V = F tan θ)
W = .40 — W ≥ 0"
X = .900 — X ≥ 0.750" (3/4" using 1/2" nozzle)

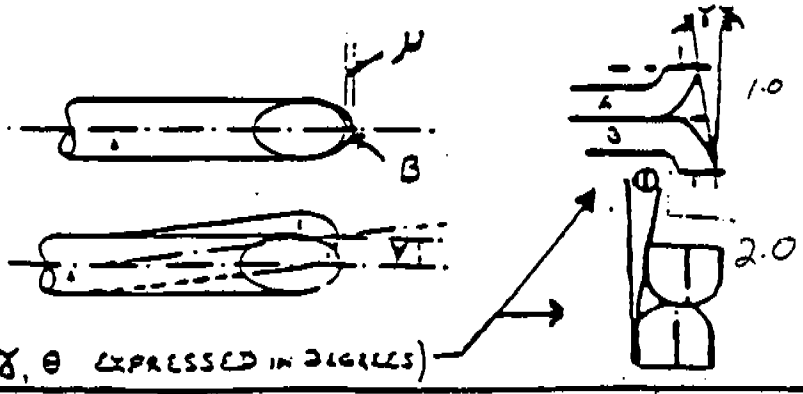
③



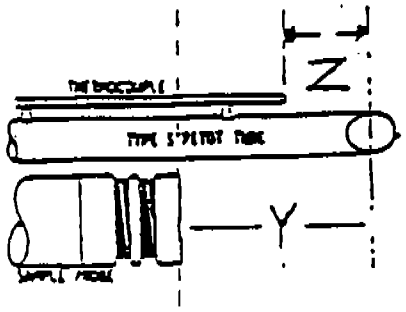
1.05 D_t < d < 1.50 D_t
$P_A = P_B$
2.10 D_t < A < 3.00 D_t

Y = 6.0 — Y ≥ 3.0"
Z = 3.0 — Z > 2.0"
D_t = .374 — D_t > .1875"

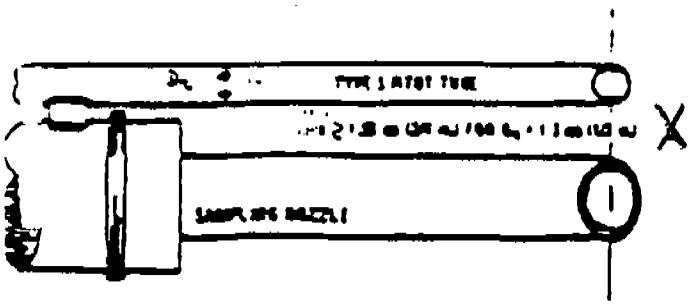
④



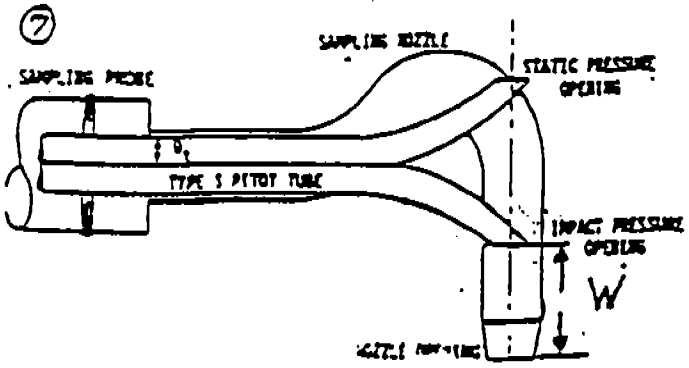
⑥



⑤



⑦

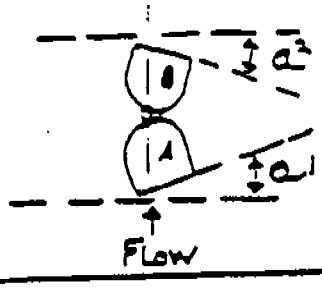


GEOMETRIC PITOT CALIBRATION

Caliper # VCE-59
Precheck ✓
Post Check

Probe #: 5-4
Date: 10-25-97
Initials: TM

①

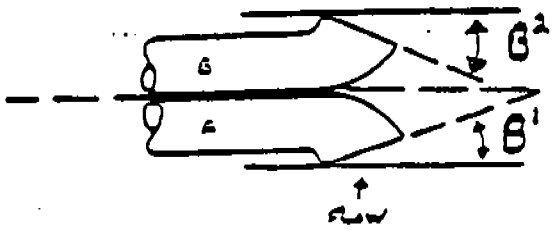


a¹ = 1.0"
a² = 1.0"
a¹, a² = <10°

B¹ = 1.0"
B² = 1.0"
B¹, B² = <5°

F = 0.861"

②



μ = 0 — μ = ≤ 0.1250" (μ = F TAN γ)

V = 0.0175 — V = ≤0.03125" (V = F TAN θ)

W = 0.494 — W ≥ 0"

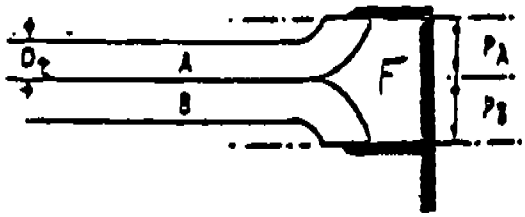
X = 1.297 — X ≥ 0.750" (3/4" using 1/2" nozzle)

Y = 6.000 — Y ≥ 3.0"

Z = 2.700 — Z > 2.0"

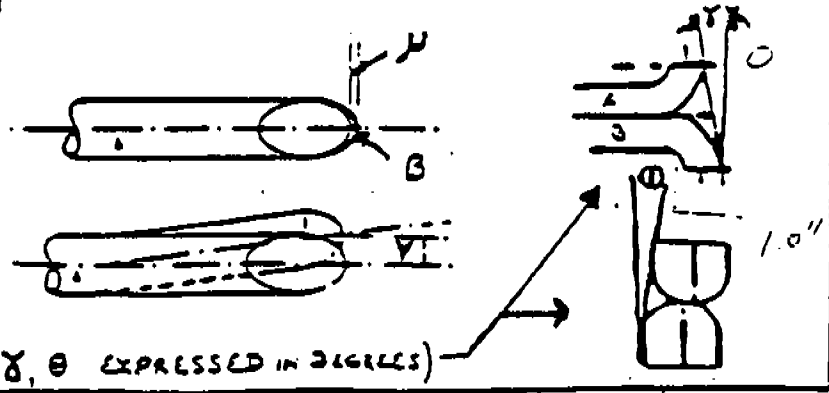
D_t = 0.375 — D_t > .1875"

③



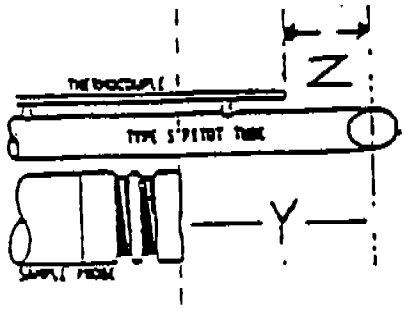
1.05 D_t < A < 1.50 D_t
P_A = P_B
2.10 D_t < A < 3.00 D_t

④

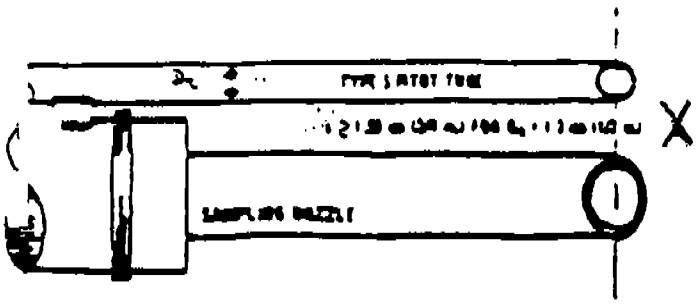


(γ, θ EXPRESSED IN DEGREES)

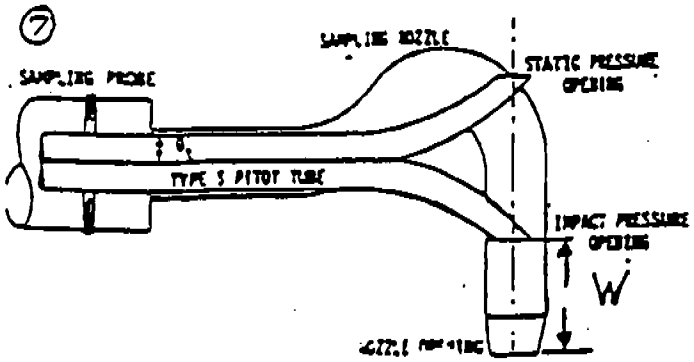
⑥



⑤



⑦

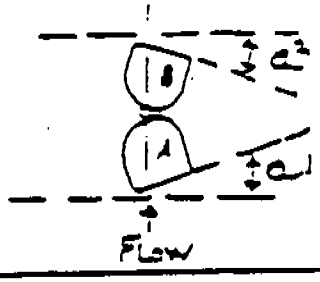


GEOMETRIC PITOT CALIBRATION

Caliper # XEF-59
Precheck: _____
Post Check: ✓

Probe #: 54
Date: 05-22-94
Initials: RPC

①

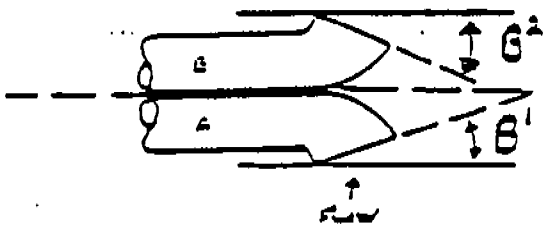


a^1 = 3°
a^2 = 3°
a^1, a^2 = <10°

B^1 = 0°
B^2 = 0°
B^1, B^2 = <5°

F = .862"

②

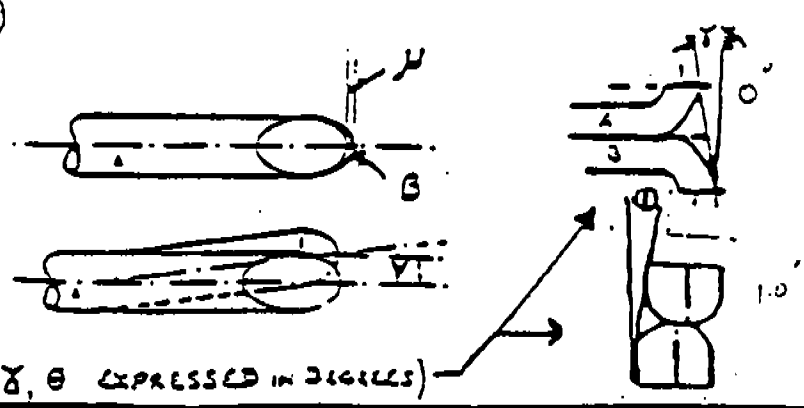


μ = 0.0 — μ = ≤ 0.1250" (μ = F tan 3)
V = 0.0150 — V = ≤0.03125" (V = F tan 3)
W = .800 — W ≥ 0"
X = .800 — X ≥ 0.750" (3/4" using 1/2" nozzle)
Y = 5.80 — Y ≥ 3.0"
Z = 2.30" — Z > 2.0"
D_t = .375 — D_t > .1875"

③

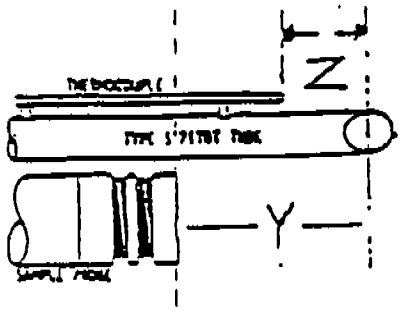
1.05 D_t < A < 1.50 D_t
P_A = P_B
2.10 D_t < A < 3.00 D_t

④

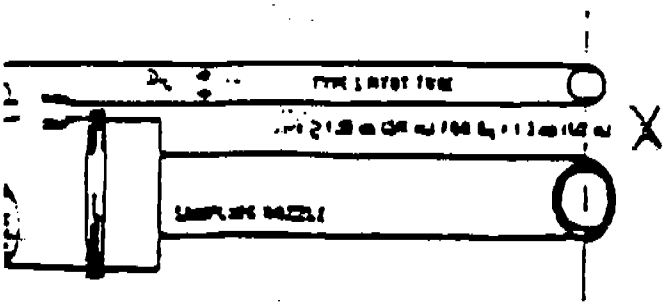


(γ, θ EXPRESSED IN DEGREES)

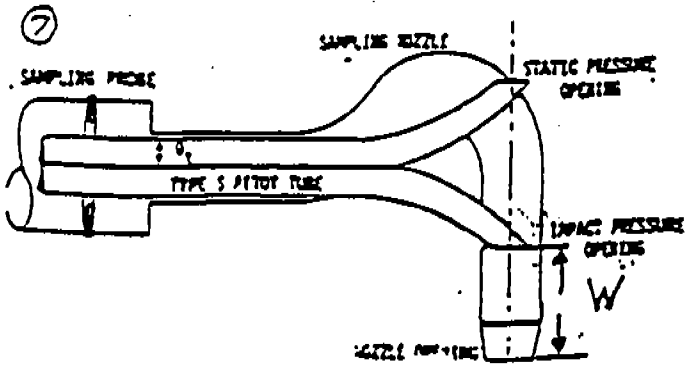
⑤



⑥



⑦

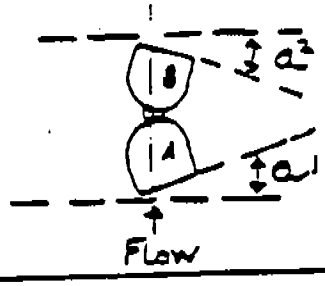


GEOMETRIC PITOT CALIBRATION

Caliper # XEE-59
Precheck ✓
Post Check

Probe #: 5.5
Date: 10.25.99
Initials: [illegible]

①

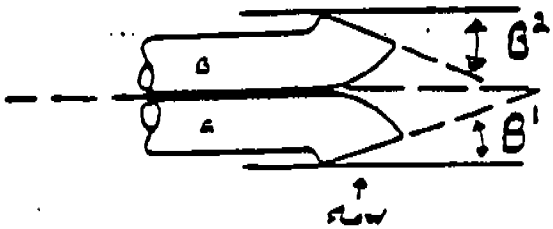


a¹ = 3.0"
a² = 3.0"
a¹, a² = <10°

B¹ = 1.0"
B² = 1.0"
B¹, B² = <5°

F = 0.970"

②



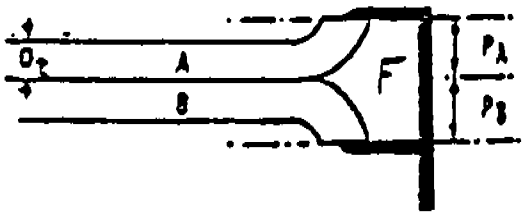
μ = 0.3495 — μ = ≤ 0.1250" (μ = F tan γ)

V = 0.1746 — V = ≤0.03125" (V = F tan θ)

W = 0.130 — W ≥ 0"

X = 1.204 — X ≥ 0.750" (3/4" using 1/2" nozzle)

③



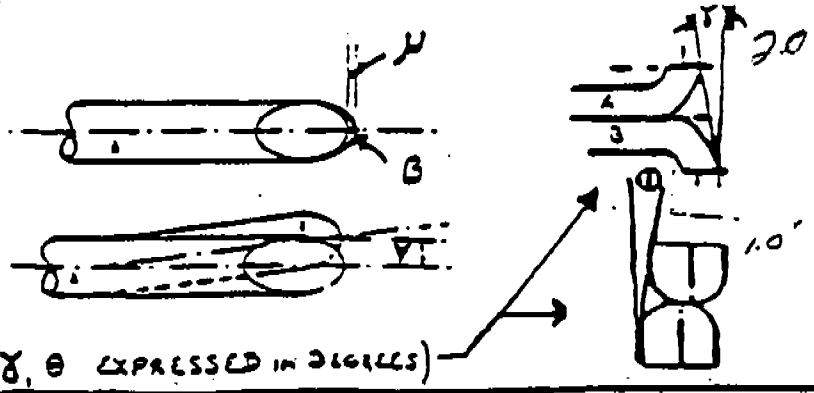
1.05 D_t < B < 1.50 D_t
$P_A = P_B$
2.10 D_t < A < 3.00 D_t

Y = 6.000 — Y ≥ 3.0"

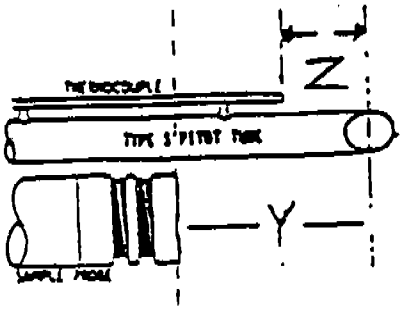
Z = 2.224 — Z > 2.0"

D_t = 0.376 — D_t > .1875"

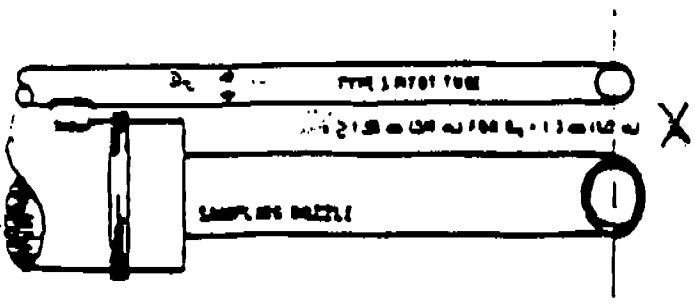
④



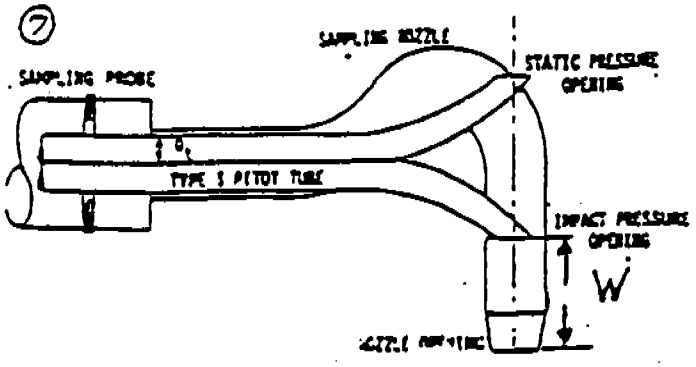
⑥



⑤



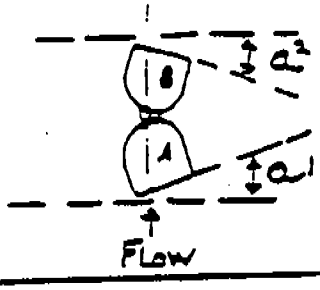
⑦



GEOMETRIC PITOT CALIBRATION

Caliper # XSF-59 Probe #: 5-5
Precheck: Date: 03-22-94
Post Check: ✓ Initials: LPN

①

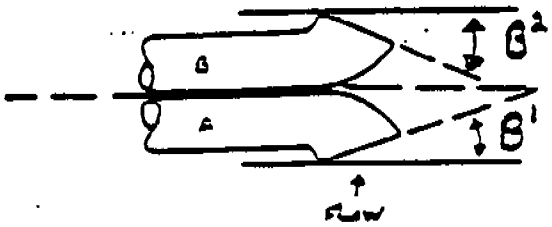


a¹ = 0°
a² = 2°
a¹, a² = <10°

B¹ = 1°
B² = 1°
B¹, B² = <5°

F = 960"

②



μ = 0.0 — μ = ≤ 0.1250" (μ = F TAN γ)

V = 0.0167 — V = ≤0.03125" (V = F TAN θ)

W = .20 — W ≥ 0"

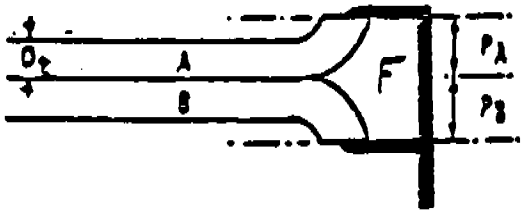
X = .790 — X ≥ 0.750" (3/4" using 1/2" nozzle)

Y = 5.60 — Y ≥ 3.0"

Z = 2.30 — Z > 2.0"

D_t = .375 — D_t > .1875"

③

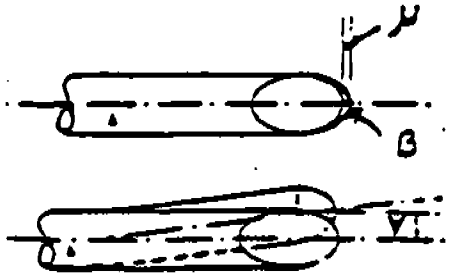


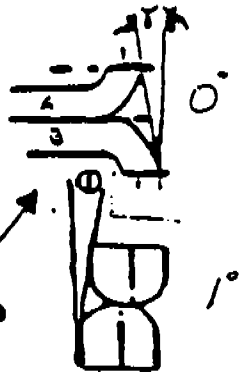
1.05 D_t < d < 1.50 D_t

P_A = P_B

2.10 D_t < A < 3.00 D_t

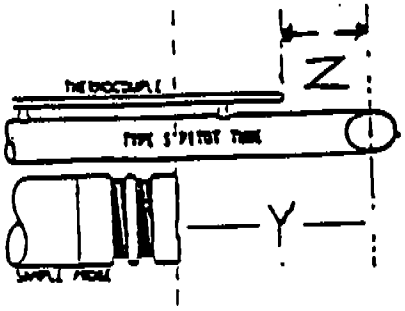
④



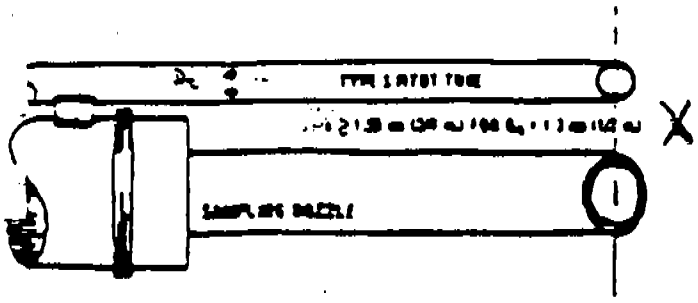


(γ, θ EXPRESSED IN DEGREES)

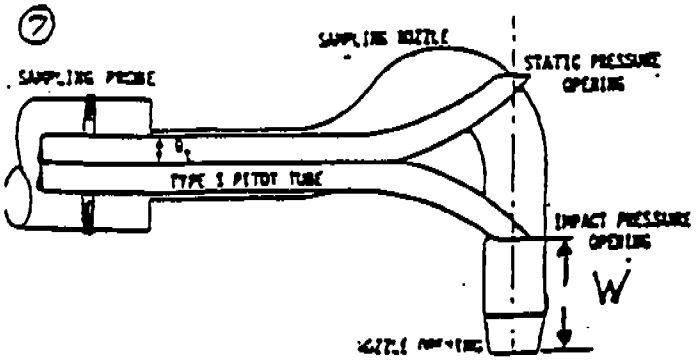
⑥



⑤



⑦



COMPLIANCE DEMONSTRATION
NO. 1, 2, AND 3 BATTERY
PUSHING EMISSIONS CONTROL

USS CLAIRTON WORKS
CLAIRTON, PENNSYLVANIA

APPENDIX B

PLANT OPERATIONAL DATA

CHESTER
ENVIRONMENTAL

CC-10295 REV. 1161
03.001.0020
UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

1-2 Batt Pusher Sheet

PUSHING AND CHARGING REPORT
UNIT NO. 1
12 Hrs. Beginning 12:00 AM
Date 5-22-94 TUES

BATTERY NO. B-2

OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES
1	8 59	9 06	
3	9 04	9 12	
5	9 10	9 41	
7	9 39	9 46	
9	9 44	9 52	
11	9 50	10 44	
13	10 40	11 28	
15	10 45	11 38	
17	10 57	11 48	
19	11 30		
21	11 40		
23	11 50		
25			
27		17	
29		15	
31			
2		12 20	
4	12 02	12 30	
6	12 12	12 40	
8	12 22	12 50	
10	12 32	1 01	
12	12 42	1 11	
14	12 52	1 21	
16	1 03	1 31	
18	1 13	1 41	
20	1 23	1 51	
22	1 33	2 02	
24	1 43	2 12	
26	1 53	2 22	
28	2 04	2 32	
30	2 14	2 42	
1	2 24	2 52	
2			

BATTERY NO. A-1

OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES
1	2 34	3 04	
3	2 44	3 14	
5	2 54	3 24	
7	3 06	3 34	
9	3 16	3 44	
11	3 26	3 54	
13	3 36	4 05	
15	3 46	4 17	PB
17	3 56	4 29	PB
19	4 07	4 41	PB
21	4 19	4 53	
23	4 31	5 03	
25	4 43	5 15	
27	4 55	5 27	
29	5 05	5 39	
31	5 17	5 51	
2			
4			
6			
8			
10		16	
12			
14		16	
16			
18			
20			
22			
24			
26			
28			
30			
1			
2			

BATTERY NO. B-1

OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES
1			
3			
5		3 —	
7			
9			
11			
13			
15			
17			
19			
21		16	
23			59P
25		18	59C
27			
29			
31		12 —	
2	5 41	6 14	
4	5 53	6 26	
6	6 04	6 38	
8	6 16	6 50	
10	6 28	7 01	
12	6 40	7 13	
14	6 52	7 25	
16	7 03	8 -1	
18	7 15	8 14	
20	7 27	8 24	
22	8 03	8 36	
24	8 16	8 48	
26	8 26	8 53	
28	8 38	8 57	
30	8 49	9 02	
1	5 29		
2		12 10	

8 AM → 4PM

17 ovens pushed

REMARKS:

Condition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED	TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
12-1	6	6		6-7	5	4	
1-2	6	6		7-8	3	3	
2-3	6	6		8-9	6	7	
3-4	6	7		9-10	5	6	
4-5	5	5		10-11	3	1	
5-6	5	5		11-12	3	3	
	34	35			25	24	

Total Ovens Pushed 59

Total Ovens Charged 59

Pusherman

Battery Foreman Zac

CC-10205 REV. 1161
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 1
12 Hrs. Beginning 12:00 PM
Date 2-22-94

BATTERY NO. A-3

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	9	15	10	10	
3	9	22	10	18	
5	9	30	10	25	PB
7	10	12	11	03	
9	10	20	11	10	PB
11	10	37	11	16	
13	11	05	11	23	
15	11	12	11	33	
17	11	18	11	44	
19	11	25	11	54	
21	11	35			PB
23	11	46			
25	11	56			
27					
29					
31					
2			12	18	
4			12	28	
6	12	00	12	38	
8	12	00	12	48	
10	12	30	12	58	
12	12	40	1	08	
14	12	50	1	18	
16	1	00	1	28	
18	1	10	1	38	
20	1	20	1	48	
22	1	30	1	58	
24	1	40	2	08	
26	1	50	2	28	
28	2	00	2	38	
30	2	15	2	49	
32					
34					

BATTERY NO. B-3

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	2	30	3	—	
3	2	40	3	08	
5	2	51	3	18	
7	3	02	3	23	
9	3	10	3	43	
11	3	[illegible]	[illegible]	53	
13	3	35	4	08	
15	3	45	4	23	
17	3	55	4	33	
19	—	—	—	—	BANK
21	—	—	—	—	BANK
23	4	10	4	43	
25	4	25	4	53	
27	4	35	5	18	
29	4	45	5	28	
31	4	55	5	38	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
32					
34					

BATTERY NO. A-2

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7					
9					
11					
13					
15					
17					
19					
21					
23					
25					
27					
29					
31			12	08	
2	5	30	5	58	
4	5	40	6	18	
6	5	50	6	33	
8	6	00	6	43	
10	6	20	6	53	
12	6	35	7	08	
14	6	45	7	18	
16	6	55	7	28	
18	7	10	8	02	
20	7	20	8	04	
22	7	30	8	08	
24	8	10	8	40	
26	8	20	8	47	
28	8	30	8	53	
30	8	[illegible]	8	[illegible]	
32					
34					

8AM → 4PM

17 ovens pushed

REMARKS: 26/25 [illegible] 15/16

Condition of Signals OK [illegible] Condition of [illegible] OK

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
12-1	5	6	
1-2	6	6	
2-3	5	4	
3-4	6	6	
4-5	5	5	
	5	5	
	32	32	

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
0-1	4	4	
1-2	3	3	
2-3	4	7	
3-4	3	0	
4-5	3	3	
5-6	7	7	
	24	24	

Total Ovens Pushed [illegible]

Total Ovens Charged [illegible]

Pusherman [illegible]

Battery Foreman [illegible]

CC-10295 REV. 1161
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

1-2 Batt
Pusher S. Hart

PUSHING AND CHARGING REPORT

UNIT NO. 1
12 Hrs. Beginning 12:00 PM
Date 2-22-94 TUES

BATTERY NO. B-2

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7					
9					
11					
13					
15					
17					
19			12	—	
21			12	11	
23			12	24	
25	12	02	12	34	
27	12	13	12	44	
29	12	26	1	07	
31	12	36	1	12	
2	6	58	7	32	
4	7	10	7	42	
6	7	20	7	51	
8	7	33	8	02	
10	7	44	8	12	
12	7	53	8	23	
14	8	04	8	33	
16	8	14	8	43	
18	8	55	8	54	
20	8	35	9	04	
22	8	45	9	15	
24	8	56	9	26	
26	9	06	9	32	
28	9	17	9	44	
30	9	58	10	—	
C1	9	34	10	10	
C2	12	42	1	17	

BATTERY NO. A-1

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	9	46	10	22	
3	10	02	10	33	
5	10	13	10	42	PB
7	10	24	10	53	
9	10	35	11	03	
11	10	44	11	13	
13	10	55	11	23	PB
15	11	05			
17	11	15			
19	11	25			
21					
23					
25					
27					
29					
31					
2	1	09	1	49	
4	1	14	1	59	
6	1	19	2	05	
8	1	51	2	16	
10	1	57	2	26	
12	2	03	2	37	
14	2	18	2	46	
16	2	28	2	55	
18	2	39	3	06	
20	2	44	3	16	
22	2	57	3	27	
24	3	08	3	43	PB
26	3	18	3	53	PB
28	3	09	4	08	PB
30	3	45	4	37	
1					
2					

BATTERY NO. B-1

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	3	55	4	38	
3	4	10	4	48	
5	9	53			
7	4	59	5	—	
9	4	40	5	10	PB
11	4	50	5	30	
13	5	02	5	32	
15	5	18	5	50	
17	5	24	5	54	
19	5	34	6	04	
21	5	45	6	16	
23	5	56	6	26	
25	6	06	6	38	
27	6	18	6	44	
29	6	38	6	54	
31	6	40	7	08	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
C1			5	43	
C2	6	46	7	18	

8 AM → 4pm
21 ovens pushed

REMARKS:

21/24 25/32 1/1/1

Condition of Signals | Condition of Pusher

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED	TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
12-1	5	5		6-7	6	6	
1-2	5	5		7-8	5	5	
2-3	6	6		8-9	6	6	
3-4	5	5		9-10	6	5	
4-5	4	4		10-11	6	6	
5-6	6	7		11-12	3	3	
	31	32			32	31	

Total Ovens Pushed 63
Total Ovens Charged 63
Pusherman
Battery Foreman

CC-10265 REV. 1181
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 1
12 Hrs. Beginning 12:00 PM
Date 2-22-94

BATTERY NO. A-3

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7					
9					
11					
13					
15					
17					
19					
21			12	06	
23			12	18	
25			12	28	
27	12	08	12	44	
29	12	20	12	53	
31	12	30	1	01	
(2)	6	52	7	25	
4	7	03	7	35	
6	7	13	7	45	
8	7	23	7	55	P.B
10	7	33	8	06	P.B
12	7	43	8	16	P.B
14	7	53	8	26	
16	8	08	8	36	
18	8	18	8	46	
20	8	28	8	56	
22	8	38	9	05	
24	8	48	9	19	
26	8	58	9	34	
28	9	10	9	53	
30	9	21	10	06	
1					
2					

BATTERY NO. B-3

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	9	39	10	16	
3	9	57	10	26	
5	10	08	10	36	
7	10	18	10	46	
9	10	28	10	56	
11	10	38	11	08	
13	10	48	11	18	
15	10	58	11	28	
17	11	10			
19	11	20			
(21)	11	30			
23					
25					
27					
29					
31					
2	12	46	1	22	
4	12	55	1	32	
6	1	03	1	42	
8	1	24	2	08	
10	1	34	2	20	
12	1	45	2	30	
14	2	10	2	45	
16	2	22	3	00	
18	2	32	3	10	
20	[illegible]	[illegible]	12	18	
22	2	47	3	22	PB
24	3	02	3	32	PB
26	3	12	3	38	PB
28	3	24	3	48	
30	3	34	4	06	
C1	3	40	4	18	
2					

BATTERY NO. A-2

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
(1)	3	50	4	27	
3	4	04	4	35	
5	4	16	4	45	
7	4	23	4	55	P.B
9	4	33	5	03	
11	4	43	5	13	
13	4	53	5	23	
15	5	05	5	33	
17	5	15	5	43	
19	5	25	5	53	
21	5	35	6	09	
23	5	45	6	19	
25	5	55	6	32	
27	6	11	6	55	
29	6	21	7	06	
31	6	34	7	16	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
1					
2					

8AM → 4pm
20 ovens pushed

REMARKS:

18/21 26/24 16/16

Condition of Signals | Condition of Pusher

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED	TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
12-1	5	6		6-7	4	4	
1-2	4	4		7-8	6	6	
2-3	4	4		8-9	6	6	
3-4	6	6		9-10	4	4	
4-5	6	6		10-11	6	6	
5-6	6	6		11-12	3	3	
	31	32			29	29	

Total Ovens Pushed 60
Total Ovens Charged 61

Pusherman
Battery Foreman

2-22-94
8AM → 4pm 75 ovens pushed total

⇒ 9.4 ovens/hr

CC-10295 REV. 1181
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

1-2 Batt Pusher Sheet

PUSHING AND CHARGING REPORT

UNIT NO. 1
12 Hrs. Beginning 12:00 AM
Date 5-23-94 WED

8AM → 4pm
20 ovens pushed

BATTERY NO. B-2					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	3	58	4	28	
3	4	10	4	38	
5	4	20	4	48	
7	4	30	5	03	
9	4	40	5	08	
11	4	50	5	18	
13	5	—	5	28	
15	5	10	5	38	
17	5	20	6	02	
19	5	30	6	12	
21	5	40	6	22	
23	6	05	6	38	
25	6	15	6	48	
27	6	25	6	50	
29	6	40	7	03	
31	6	50	7	13	
2					
4					
6					
8					
10		17			
12		17			
14					
16					
18					
20					
22					
24					
26					
28					
30					
1					
C 2	6	55	7	23	

BATTERY NO. A-1					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7		21			
9		24			
11					
13					
15			12	03	
17			12	13	
19			12	23	
21	12	05	12	38	
23	12	15	12	48	
25	12	25	1	05	
27	12	40	1	13	
29	12	50	1	23	
31	1	—	1	33	
2	7	05	7	32	
4	7	15	8	06	
6	7	25	8	16	
8	7	35	8	27	
10	8	08	8	38	
12	8	18	8	50	
14	8	29	9	01	
16	8	40	9	13	
18	8	52	9	24	
20	9	03	9	41	
22	9	15	9	52	
24	9	26	10	09	
26	9	43	10	20	
28	9	54	10	31	
30	10	11	10	47	

BATTERY NO. B-1					
OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	10	22	10	59	
3	10	33	11	10	
X			1	02	
7	10	49	11	21	
9	11	01	11	33	
11	11	12	11	42	
13	11	23	11	53	
15	11	34			
17	11	44			
19	11	55			
21					
23		24			
25		12			62
27					63 C
29					
31					
2	1	15	1	48	
4	1	25	2	02	
6	1	35	2	08	
8	1	50	2	18	
10	2	—	2	28	
12	2	10	2	33	
14	2	20	2	48	
16	2	30	3	02	
18	2	40	3	08	
20	2	50	3	18	
22	3	—	3	38	
24	3	10	3	48	
26	3	20	3	56	
28	3	40	4	08	
30	3	50	4	18	
C 1	—	—	—	—	25-04
2					

REMARKS:

[redacted]

Condition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED	TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
12-1	5	5		6-7	6	6	
1-2	5	6		7-8	4	4	
2-3	6	6		8-9	5	5	
3-4	6	6		8-10	5	5	
4-5	5	5		10-11	4	5	
5-6	5	5		11-12	6	5	
	33	33			30	30	

Total Ovens Pushed 62
Total Ovens Charged 63

Pusherman

Battery Foreman Jam

CC-10295 REV. 1161
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 1
12 Hrs. Beginning 12:00 AM
Date 2-23-94

BATTERY NO. A-3

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	3	50	4	12	
3	4	00	4	22	
5	4	10	4	32	
7	4	20	4	47	
9	4	30	4	56	
11	4	45	5	12	
13	4	58	5	22	
15	5	10	5	32	
17	5	20	5	38	
19	5	30	5	[illegible]	
21	5	40	6	12	
23	5	58	6	27	
25	6	10	6	39	
27	6	20	6	[illegible]	
29	6	30	7	10	
31	6	40	7	17	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
1					
2					

BATTERY NO. B-3

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7					
9					
11					
13					
15					
17			12	12	
19			12	22	
21			[illegible]	[illegible]	
23	12	10	[illegible]	47	
25	12	20	12	48	
27	12	30	12	[illegible]	
29	12	40	1	00	
31	12	50	1	12	
2	7	05	7	20	
4	7	15	8	02	
6	7	25	8	10	
8	7	35	8	22	
10	8	00	8	32	
12	8	12	8	42	
14	8	24	8	59	
16	5	34	9	04	
18	8	44	9	15	PB
20	8	55	9	32	
22	9	06	9	44	
24	9	20	9	56	
26	9	34	10	02	
28	9	46	10	13	
30	9	58	10	23	
C1	10	04	10	34	
C2	1	05	1	22	

BATTERY NO. A-2

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	10	15	10	40	
3	10	25	10	52	
5	10	36	11	03	
7	10	42	11	13	
9	10	54	11	25	
11	11	05	11	35	
13	11	15	11	47	
15	11	27	11	57	
17	11	37			
19	11	49			
21	11	59			
23					
25					
27					
29					
31					
2	[illegible]	10	[illegible]	[illegible]	
4	[illegible]	[illegible]	[illegible]	[illegible]	
6	[illegible]	[illegible]	[illegible]	[illegible]	
8	[illegible]	[illegible]	[illegible]	[illegible]	
10	[illegible]	[illegible]	[illegible]	[illegible]	
12	[illegible]	[illegible]	[illegible]	[illegible]	
14	[illegible]	[illegible]	[illegible]	[illegible]	
16	[illegible]	[illegible]	[illegible]	[illegible]	
18	[illegible]	[illegible]	[illegible]	[illegible]	
20	[illegible]	[illegible]	[illegible]	[illegible]	
22	[illegible]	[illegible]	[illegible]	[illegible]	
24	[illegible]	[illegible]	[illegible]	[illegible]	
26	[illegible]	[illegible]	[illegible]	[illegible]	
28	[illegible]	[illegible]			
30	3	40	4	05	
1					
2					

8AM → 4pm
23 ovens pushed

REMARKS:
16/16 22/25 26/23

Condition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED	TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
12-1	5	6		6-7	4	4	
1-2	6	6		7-8	4	3	
2-3	6	6		8-9	6	6	
3-4	5	5		9-10	5	5	
4-5	6	6		10-11	6	6	
5-6	5	5		11-12	6	6	
	33	34			31	30	

Total Ovens Pushed 64
Total Ovens Charged 64

Pusherman

Battery Foreman

CC-10295 REV. 1161
03.001.0020
UNITED STATES STEEL CORPORATION
CLAIRTON CORE AND COAL CHEMICAL WORKS

1-2 Batt
Pusher Sheet

PUSHING AND CHARGING REPORT

UNIT NO. 1
12 Hrs. Beginning 12:00 P.M.
Date 2-23-94 WED

8AM → 4pm
18 ovens pushed

BATTERY NO. B-2

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	10	42	11	13	
3	10	54	11	24	
5	11	05	11	34	
7	11	15			
9	11	26			
11	11	36			
13					
15					
17					
19					
21					
23					
25					
27					
29					
31					
2	1	43	2	15	
4	1	54	2	26	
6	2	06	2	36	
8	2	17	2	48	
10	2	28	2	58	
12	2	38	3	10	
14	2	50	3	21	
16	3	00	3	31	
18	3	12	3	42	
20	3	23	4	03	
22	3	33	4	14	
24	3	44	4	26	
26	4	05	4	33	
28	4	16	4	43	
30	4	28	4	56	
C1	4	35	5	08	
2					

BATTERY NO. A-1

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	4	45	5	21	
3	4	58	5	31	
5	5	10	5	42	
7	5	23	5	53	
9	5	33	6	05	
11	5	44	6	16	
13	5	55	6	18	
15	6	07	6	38	
17	6	18	6	48	
19	6	30	6	57	
21	6	40	7	10	
23	6	50	7	21	
25	6	59	7	32	
27	7	12	7	50	
29	7	23	8	—	
31	7	34	8	12	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
1					
2					

BATTERY NO. B-1

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7					
9					
11					
13					
15			12	04	
17			12	47	
19			12	56	
21	12	36	1	02	
23	12	49	1	13	
25	12	54	1	23	
27	1	04	1	30	
29	1	15	1	47	
31	1	25	1	58	
2	7	52	8	23	
4	8	02	8	34	
6	8	14	8	44	
8	8	35	8	55	
10	8	36	9	08	
12	8	46	9	18	PB
14	8	57	9	25	
16	9	15	9	35	
18	9	30	9	50	
20	9	30	10	—	
22	9	40	10	12	
24	9	[illegible]	10	[illegible]	
26	10	02	10	30	
28	10	14	10	40	
30	10	25	10	52	
1	10	32	11	03	
C-2	1	32	2	10	

REMARKS:

22/19 16/16 23/26

Condition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED	TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
12-1	3	3		6-7	6	6	
1-2	6	6		7-8	4	4	
2-3	5	6		8-9	6	6	
3-4	5	4		9-10	5	5	
4-5	6	6		10-11	6	6	
5-6	5	5		11-12	4	4	
TS	30	30			31	31	

Total Ovens Pushed 61

Total Ovens Charged 61

Pusherman

Battery Foreman

CC-10286 REV. 1181
03.001.0020
UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. _____
12 Hrs. Beginning 12:00 P M
Date 2-23-94

BATTERY NO. A-3

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	10	35	11	07	
3	10	45	11	17	
5	10	55	11	27	
7	11	09	11	37	
9	11	19			P.B
11	11	29			
13	11	39			
15					
17					
19					
21					
23					
25					
27					
29					
31					
2	1	35	2	08	
4	1	50	2	22	
6	1	59	2	32	
8	2	10	2	42	PB
10	2	24	2	53	
12	2	34	3	02	
14	2	44	3	13	
16	2	55	3	24	
18	3	04	3	35	
20	3	15	3	46	
22	3	26	4	09	
24	3	38	4	20	PB
26	3	48	4	34	
28	4	11	4	50	
30	4	22	5	03	Ko-PB
1					
2					

BATTERY NO. B-3

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	4	41	5	15	
3	4	52	5	26	
5	5	05	5	36	
7	5	17	5	46	
9	5	28	5	56	
11	5	38	6	10	
13	5	48	6	20	
15	5	58	6	32	PB
17	6	12	6	47	
19	6	22	6	53	
21	6	34	7	03	
23	6	45	7	13	
25	6	55	7	23	
27	7	05	7	33	
29	7	15	7	43	
31	7	25	7	53	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
1					
2	7	35	8	09	

BATTERY NO. A-2

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7					
9					
11					
13					
15					
17			12	33	
19			12	40	
21			12	57	
23	12	35	1	04	
25	12	42	1	18	
27	12	59	1	33	
29	1	08	1	48	
31	1	20	1	57	
2	7	44	8	19	
4	7	54	8	29	
6	8	07	8	39	
8	8	17	8	49	
10	8	27	8	59	
12	8	37	9	11	
14	8	47	9	21	
16	8	57	9	31	
18	9	13	9	41	
20	9	23	9	51	
22	9	33	10	05	
24	9	43	10	15	
26	9	53	10	38	
28	10	07	10	48	
30	10	17			
1					
2					

8AM → 4PM
18 ovens pushed

REMARKS:

22/19 — Condition of Signals
12/17 — Condition of Pusher
20/22

2-23-94
8AM → 4PM
79 ovens pushed total
⇒ 9.9 ovens/hr

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED	TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
12-1	3	3		6-7	5	5	
1-2	5	5		7-8	6	6	
2-3	5	5		8-9	6	6	
3-4	5	5		9-10	5	5	
4-5	4	4		10-11	5	4	
5-6	6	6		11-12	4	4	
	28	29			31	30	

Total Ovens Pushed 59
Total Ovens Charged 59

Pusherman

Battery Foreman Zaccone

C-10295 REV. 1161
3.001.0020

NITED STATES STEEL CORPORATION
LAIRTON COKE AND COAL CHEMICAL WORKS

1-2 Batt.
Pusher Sheet

PUSHING AND CHARGING REPORT

UNIT NO. 1
12 Hrs. Beginning 12:00 AM
Date 2-24-94

BATTERY NO. B-2

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3		27			
5		30			
7			12	03	
9			12	13	
11			12	28	
13	15	05	12	38	
15	12	15	12	48	
17	12	30	1	02	
19	12	40	1	08	
21	12	50	1	18	
23	1	—	1	28	
25	1	10	1	48	
27	1	20	1	52	
29	1	30	2	23	
31	1	50	2	18	
2	8	07	8	39	
4	8	17	8	49	
6	8	30	9	07	
8	8	41	9	18	
10	8	51	9	30	
12	9	09	9	40	
14	9	20	9	50	
16	9	32	10	02	
18	9	42	10	12	
20	9	52	10	23	
22	10	04	10	34	
24	10	14	10	44	
26	10	25	10	49	
28	10	36	11	04	
30	10	46	11	14	
1	10	51	11	24	
2	1	55	2	28	

BATTERY NO. A-1

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	11	06	11	34	
3	11	16	11	44	
5	11	26	11	54	
7	11	36			
9	11	46			
11	11	56			
13					
15					
17					
19		21			
21		18			
23					
25					
27					
29					
31					
2	2	05	2	38	
4	2	20	2	48	
6	2	30	3	02	PB
8	2	40	3	08	
10	2	50	3	18	PB
12	3	—	3	28	
14	3	10	3	38	PB
16	3	20	3	48	
18	3	30	4	03	
20	3	40	4	13	PB
22	3	50	4	23	PB
24	4	05	4	43	PB
26	4	15	4	53	
28	4	25	5	03	PB
30	4	45	5	13	PB
1					
2					

BATTERY NO. B-1

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	4	55	5	23	
3	5	05	5	32	
5	7	44	10	54	
7	5	15	5	43	
9	5	25	5	53	
11	5	35	6	10	
13	5	45	6	21	
15	5	55	6	32	
17	6	12	6	42	
19	6	23	6	52	
21	6	34	7	03	
23	6	45	7	13	PB
25	6	55	7	23	PB
27	7	05	7	32	PB
29	7	15	8	11	PB
31	7	25	8	21	PB
2					
4					
6			17		PB
8			17		56
10			17		
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
1					
2	7	35	8	34	

8AM → 4pm
22 ovens pushed

EMARKS:

ondition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

IME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED	TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
2-1	5	5		6-7	5	5	
1-2	6	6		7-8	5	4	
2-3	5	5		8-9	5	5	
3-4	6	6		9-10	5	5	
4-5	5	5		10-11	6	7	
5-6	6	6		11-12	6	6	
	33	33			32	32	

Total Ovens Pushed 65
Total Ovens Charged 65

Pusherman

Battery Foreman

C-10285 REV. 1161
3.001.0020

NITED STATES STEEL CORPORATION
LAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 1

12 Hrs. Beginning 12:00 AM

Date 2-24-94

8Am → 4pm
22 ovens pushed

BATTERY NO. A-3

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7					
9			12	12	
11			12	22	
13			12	33	
15	12	10	12	42	
17	12	20	12	56	
19	12	30	1	12	
21	12	40	1	22	
23	12	58	1	32	
25	1	10	1	38	
27	1	20	1	42	
29	1	30	1	56	
31	1	40	2	12	
2	8	00	8	32	
4	8	10	8	43	
6	8	22	8	53	PB
8	8	34	9	12	PB
10	8	45	9	23	PB
12	8	55	9	33	
14	9	14	9	44	
16	9	25	9	54	
18	9	35	10	06	
20	9	46	10	18	
22	9	56	10	28	PB
24	10	08	10	38	
26	10	20	10	53	
28	10	30	11	08	PB
30	10	40	11	18	
1					
2					

BATTERY NO. B-3

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	10	55	11	28	
3	11	10	11	38	
5	11	20	11	48	
7	11	30	11	57	
9	11	40			PB
11	11	50			
13	11	59			
15					
17					
19					
21					
23					
25					
27					
29					
31					
1	1	58	2	22	
4	2	10	2	32	
6	2	20	2	47	
8	2	30	2	56	
10	2	45	3	00	
12	2	58	3	17	
14	3	05	3	23	
16	3	15	3	27	
18	3	25	3	48	
20	9	03	9	32	
22	3	40	4	00	
24	3	50	4	17	
26	4	05	4	27	
28	4	15	4	37	
30	4	25	4	42	
C1	4	30	5	05	
2					

BATTERY NO. A-2

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	4	40	5	05	
3	5	00	5	22	
5	5	10	5	28	
7	5	20	5	32	
9	5	30	5	57	
11	5	40	6	10	
13	5	55	6	17	
15	6	05	6	27	
17	6	15	6	37	
19	6	25	6	47	
21	6	35	7	05	
23	6	45	7	12	
25	7	00	7	22	
27	7	10	8	02	
29	7	20	8	08	
31	7	30	8	21	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30			2	40	
1					
2					

EMARKS:

24/27 23/20 16/17

ondition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

IME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED	TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
2-1	5	5		6-7	5	5	
1-2	5	6		7-8	4	3	
2-3	5	6		8-9	6	6	
3-4	5	5		9-10	6	6	
4-5	5	5		10-11	5	5	
5-6	6	6		11-12	6	6	
	31	33			32	37	

Total Ovens Pushed 63

Total Ovens Charged 64

Pusherman

Battery Foreman

:C-10205 REV. 1161
13.001.0020

NITED STATES STEEL CORPORATION
LAIRTON COKE AND COAL CHEMICAL WORKS

1-2 Batt
Pusher Sheet

PUSHING AND CHARGING REPORT
UNIT NO. 1
12 Hrs. Beginning 12:00 PM
Date 2-24-94 THURS

8AM → 4PM
17 ovens pushed

BATTERY NO. B-2

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	5	35	6	08	
3	5	45	6	18	
5	5	58	6	30	
7	6	10	6	42	
9	6	20	6	54	
11	6	32	7	04	
13	6	44	7	15	
15	6	56	7	28	
17	7	06	7	40	
19	7	17	7	50	
21	7	30	8	02	
23	7	42	8	12	
25	7	52	8	23	
27	8	04	8	38	
29	8	14	8	38	
31	8	25	8	50	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
1					
2	8	30	9	10	

BATTERY NO. A-1

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7			12	35	
9			12	48	
11			12	58	
13	12	37	1	06	
15	12	48	1	16	
17	12	58	1	26	
19	1	08	1	36	PB
21	1	18	1	47	PB
23	1	28	1	57	
25	1	38	2	07	
27	1	49	2	22	PB
29	1	59	2	32	PB
31	2	09	2	42	
2	8	40	9	32	
4	8	52	9	33	
6	9	12	9	43	
8	9	24	9	53	
10	9	35	10	06	
12	9	45	10	18	
14	9	55	10	23	
16	10	06	10	38	
18	10	20	10	48	
20	10	35	11	—	
22	10	40	11	08	
24	10	50	11	28	
26	11	02	11	38	
28	11	10	11	48	
30	11	30			
1					
2					

BATTERY NO. B-1

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	11	40			
3	11	50			
5					
7					
9					
11					
13					
15					
17					
19					
21					
23					
25					
27					
29					
31					
2	2	24	2	52	
4	2	34	3	02	
6	2	44	3	12	
8	2	54	3	22	
10	3	04	4	02	
12	3	14	4	13	
14	3	24	4	23	
16	4	04	4	34	
18	4	15	4	46	
20	4	25	4	56	
22	4	36	5	08	
24	4	48	5	13	
26	4	58	5	18	
28	5	10	5	33	
30	5	15	5	43	
C1	5	20	5	56	
2					

EMARKS:

17/17 — condition of Signals

25/27 — Condition of Pusher

18/16

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED	TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
2-1	3	3		6-7	5	5	
1-2	6	6		7-8	5	5	
2-3	5	5		8-9	6	6	
3-4	3	3		9-10	5	5	
4-5	6	6		10-11	5	5	
5-6	6	6		11-12	5	5	
	29	29			31	31	

Total Ovens Pushed 60
Total Ovens Charged 60

Pusherman

Battery Foreman

:C-10295 REV. 1181
:3,001.0020
NITED STATES STEEL CORPORATION
LAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 1

12 Hrs P Beginning 12:00 M

Date 2-24-94

8AM → 4pm
18 ovens pushed

BATTERY NO. A-3

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	5	29	6	01	
3	5	40	6	11	
5	5	52	6	21	P.B
7	6	03	6	39	
9	6	13	6	51	P.B
11	6	23	7	11	
13	6	37	7	21	
15	6	49	7	31	
17	7	03	7	41	
19	7	13	7	51	
21	7	23	7	58	P.B
23	7	33	8	04	
25	7	43	8	14	
27	7	56	8	33	P.B
28	8	06	8	45	
31	8	16	8	56	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
1					
2					

BATTERY NO. B-3

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1					
3					
5					
7					
9			12	38	
11			12	50	
13			1	00	
15	12	40	1	10	
17	12	52	1	20	
19	1	02	1	30	
21	1	12	1	40	
23	1	24	1	50	
25	1	32	2	00	PB
27	1	42	2	10	
29	1	52	2	15	PB
31	2	02	2	26	PB
2	8	35	9	12	
4	8	47	9	23	
6	8	58	9	37	P.B
8	9	16	9	53	
10	9	28	10	04	
12	9	40	10	11	
14	9	51	10	30	
16	10	02	10	40	
18	10	13	10	50	
20					PASS UP
22	10	32	11	04	
24	10	44	11	15	
26	10	54	11	24	P.B
28	11	06	11	32	P.B
30	11	17	11	42	
C1	11	22			
C2	2	12	2	36	

BATTERY NO. A-2

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	11	34			
3	11	44			
5					
7					
9					
11					
13					
15					
17					
19					
21					
23					
25					
27					
29					
31					
0	2	17	2	46	
4	2	28	2	56	
6	2	38	3	06	
8	2	48	3	16	
10	2	58	3	26	
12	3	08	4	07	
14	3	18	4	18	
16	3	28	4	28	
18	4	09	4	38	
20	4	20	4	48	
22	4	30	5	—	P.B
24	4	40	5	31	
26	4	50	5	43	
28	5	02	5	55	
30	9	05			PASS UP PICK UP
1					
2					

EMARKS:

16/16 — ondition of Signals

25/27 — Condition of Pusher

17/14

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
2-1	2	2	
1-2	6	6	
2-3	7	7	
3-4	3	3	
4-5	5	5	
5-6	4	4	
	27	27	

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
6-7	5	5	
7-8	6	6	
8-9	5	5	
9-10	5	4	
10-11	5	5	
11-12	5	5	
	31	30	

Total Ovens Pushed 58

Total Ovens Charged 57

Pusherman

Battery Foreman

2-24-94
8AM → 4pm

79 ovens pushed total
⇒ 9.9 ovens/hr

PUSHING SCHEDULE

Tuesday, February 22, 1994 Turn 1
Batteries: 1-3_2

Oven	Last Pushed	Earliest	Desired	Latest
B4 /2	18:48	11:52pm	12:00am	12:10am
A6 /3	18:47	11:56pm	12:05am	12:15am
B6 /2	18:48	12:01am	12:11am	12:21am
A8 /3	18:48	12:07am	12:17am	12:27am
B8 /2	18:48	12:13am	12:23am	12:33am
A10/3	18:48	12:19am	12:29am	12:39am
B10/2	18:49	12:25am	12:35am	12:45am
A12/3	18:49	12:31am	12:41am	12:51am
B12/2	18:49	12:37am	12:47am	12:57am
A14/3	18:49	12:43am	12:53am	1:03am
B14/2	18:49	12:49am	12:59am	1:09am
A16/3	18:50	12:55am	1:05am	1:15am
B16/2	18:50	1:01am	1:11am	1:21am
A18/3	18:50	1:07am	1:17am	1:27am
B18/2	18:49	1:12am	1:22am	1:32am
A20/3	18:49	1:18am	1:28am	1:38am
B20/2	18:50	1:24am	1:34am	1:44am
A22/3	18:50	1:30am	1:40am	1:50am
B22/2	18:50	1:36am	1:46am	1:56am
A24/3	18:50	1:42am	1:52am	2:02am
B24/2	18:51	1:48am	1:58am	2:08am
A26/3	18:51	1:54am	2:04am	2:14am
B26/2	18:51	2:00am	2:10am	2:20am
A28/3	18:51	2:06am	2:16am	2:26am
B28/2	18:51	2:12am	2:22am	2:32am
A30/3	18:52	2:18am	2:28am	2:38am
B30/2	18:52	2:24am	2:34am	2:44am
C1 /2	18:51	2:29am	2:39am	2:49am
B1 /3	18:51	2:35am	2:45am	2:55am
A1 /1	18:51	2:41am	2:51am	3:01am
B3 /3	18:51	2:47am	2:57am	3:07am
A3 /1	18:51	2:53am	3:03am	3:13am
B5 /3	18:51	2:59am	3:09am	3:19am
A5 /1	18:51	3:05am	3:15am	3:25am
B7 /3	18:51	3:11am	3:21am	3:31am
A7 /1	18:51	3:17am	3:27am	3:37am
B9 /3	18:51	3:23am	3:33am	3:43am
A9 /1	18:51	3:29am	3:39am	3:49am
B11/3	18:51	3:35am	3:45am	3:55am
A11/1	18:51	3:41am	3:51am	4:01am
B13/3	18:51	3:47am	3:57am	4:07am
A13/1	18:50	3:52am	4:02am	4:12am
B15/3	18:50	3:58am	4:08am	4:18am
A15/1	18:49	4:04am	4:14am	4:24am
B17/3	18:49	4:10am	4:20am	4:30am
A17/1	18:49	4:16am	4:26am	4:36am
B19/3	18:49	4:22am	4:32am	4:42am
A19/1	18:49	4:28am	4:38am	4:48am
B21/3	18:49	4:34am	4:44am	4:54am
A21/1	18:49	4:40am	4:50am	5:00am
B23/3	18:49	4:46am	4:56am	5:06am
A23/1	18:49	4:52am	5:02am	5:12am
B25/3	18:49	4:58am	5:08am	5:18am
A25/1	18:49	5:04am	5:14am	5:24am
B27/3	18:49	5:10am	5:20am	5:30am
A27/1	18:49	5:16am	5:26am	5:36am
B29/3	18:49	5:22am	5:32am	5:42am
A29/1	18:49	5:28am	5:38am	5:48am
C2 /3	18:35	5:33am	5:43am	5:53am
A2 /2	18:35	5:39am	5:49am	5:59am
B2 /1	18:35	5:45am	5:55am	6:05am
A4 /2	18:35	5:51am	6:01am	6:11am
B4 /1	18:35	5:57am	6:07am	6:17am
A6 /2	18:35	6:03am	6:13am	6:23am
B6 /1	18:35	6:09am	6:19am	6:29am
A8 /2	18:35	6:15am	6:25am	6:35am
B8 /1	18:35	6:21am	6:31am	6:41am
A10/2	18:34	6:27am	6:37am	6:47am
B10/1	18:37	6:33am	6:43am	6:53am
A12/2	18:44	6:39am	6:49am	6:59am
B12/1	18:33	6:45am	6:55am	7:05am
A14/2	18:33	6:51am	7:01am	7:11am
B14/1	18:33	6:57am	7:07am	7:17am
A16/2	18:33	7:03am	7:13am	7:23am
B16/1	18:33	7:09am	7:19am	7:29am
A18/2	18:33	7:15am	7:25am	7:35am
B18/1	18:33	7:21am	7:31am	7:41am
A20/2	18:33	7:27am	7:37am	7:47am
B20/1	18:33	7:33am	7:43am	7:53am
A22/2	18:33	7:39am	7:49am	7:59am

-B-19/3 -B-21/3

+C-1/1 B A-22/2

PUSHING SCHEDULE

Tuesday, February 22, 1994 Turn 2
Batteries: 1-3_2

Seq #	Oven	Last Pushed	Earliest	Desired	Latest
1	B22/1	18:38	7:50am	8:00am	8:25am
2	A24/2	18:38	7:56am	8:06am	8:31am
3	B24/1	18:38	8:02am	8:12am	8:37am
4	A26/2	18:38	8:08am	8:18am	8:43am
5	B26/1	18:38	8:14am	8:24am	8:49am
6	A28/2	18:38	8:20am	8:30am	8:55am
7	B28/1	18:38	8:26am	8:36am	9:21am
8	A30/2	18:38	8:32am	8:42am	9:07am
9	B30/1	18:38	8:38am	8:46am	9:13am
10	A1 /3	18:38	8:44am	8:54am	9:19am
11	B1 /2	18:38	8:50am	9:00am	9:25am
12	A3 /3	18:38	8:56am	9:06am	9:31am
13	B3 /2	18:38	9:02am	9:12am	9:37am
14	A5 /3	18:37	9:08am	9:18am	9:43am
15	B5 /2	18:37	9:14am	9:24am	9:49am
16	A7 /3	18:37	9:20am	9:30am	9:55am
17	B7 /2	18:37	9:26am	9:36am	10:01am
18	A9 /3	18:37	9:32am	9:42am	10:07am
19	B9 /2	18:37	9:38am	9:48am	10:13am
20	A11/3	18:37	9:44am	9:54am	10:19am
21	B11/2	18:37	9:50am	10:00am	10:25am
22	A13/3	18:37	9:56am	10:06am	10:31am
23	B13/2	18:37	10:02am	10:12am	10:37am
24	A15/3	18:37	10:08am	10:18am	10:43am
25	B15/2	18:37	10:14am	10:24am	10:49am
26	A17/3	18:37	10:20am	10:30am	10:55am
27	B17/2	18:36	10:26am	10:36am	11:01am
28	A19/3	18:37	10:32am	10:42am	11:07am
29	B19/2	18:37	10:38am	10:48am	11:13am
30	A21/3	18:37	10:44am	10:54am	11:19am
31	B21/2	18:37	10:50am	11:00am	11:25am
32	A23/3	18:38	10:56am	11:06am	11:31am
33	B23/2	18:38	11:02am	11:12am	11:37am
34	A25/3	18:38	11:08am	11:18am	11:43am
35	B25/2	18:38	11:14am	11:24am	11:49am
36	A27/3	18:38	11:20am	11:30am	11:55am
37	B27/2	18:39	11:26am	11:36am	12:01pm
38	A29/3	18:39	11:32am	11:42am	12:07pm
39	B29/2	18:39	11:38am	11:48am	12:13pm
40	A31/3	18:39	11:44am	11:54am	12:19pm
41	B31/2	18:40	11:50am	12:00pm	12:25pm
42	C2 /2	18:40	11:56am	12:06pm	12:31pm
43	B2 /3	18:40	12:02pm	12:12pm	12:37pm
44	A2 /1	18:40	12:08pm	12:18pm	12:43pm
45	B4 /3	18:40	12:14pm	12:24pm	12:49pm
46	A4 /1	18:41	12:20pm	12:30pm	12:55pm
47	B6 /3	18:41	12:26pm	12:36pm	1:01pm
48	A6 /1	18:41	12:32pm	12:42pm	1:07pm
49	B8 /3	18:41	12:38pm	12:48pm	1:13pm
50	A8 /1	18:41	12:44pm	12:54pm	1:19pm
51	B10/3	18:42	12:50pm	1:00pm	1:25pm
52	A10/1	18:42	12:56pm	1:06pm	1:31pm
53	B12/3	18:42	1:02pm	1:12pm	1:37pm
54	A12/1	18:42	1:08pm	1:18pm	1:43pm
55	B14/3	18:43	1:14pm	1:24pm	1:49pm
56	A14/1	18:43	1:20pm	1:30pm	1:55pm
57	B16/3	18:43	1:26pm	1:36pm	2:01pm
58	A16/1	18:43	1:32pm	1:42pm	2:07pm
59	B18/3	18:43	1:38pm	1:48pm	2:13pm
60	A18/1	18:44	1:44pm	1:54pm	2:19pm
61	A20/1	18:38	1:50pm	2:00pm	2:25pm
62	B22/3	18:38	1:56pm	2:06pm	2:31pm
63	A22/1	18:39	2:02pm	2:12pm	2:37pm
64	B24/3	18:39	2:08pm	2:18pm	2:43pm
65	A24/1	18:39	2:14pm	2:24pm	2:49pm
66	B26/3	18:39	2:20pm	2:30pm	2:55pm
67	A26/1	18:39	2:26pm	2:36pm	3:01pm
68	B28/3	18:40	2:32pm	2:42pm	3:07pm
69	A28/1	18:40	2:38pm	2:48pm	3:13pm
70	B30/3	18:40	2:44pm	2:54pm	3:19pm
71	C1 /3	18:40	2:50pm	3:00pm	3:25pm
72	A30/1	18:40	2:56pm	3:06pm	3:31pm
73	A1 /2	18:41	3:02pm	3:12pm	3:37pm
74	B1 /1	18:41	3:08pm	3:18pm	3:43pm
75	A3 /2	18:41	3:14pm	3:24pm	3:49pm
76	B3 /1	18:41	3:20pm	3:30pm	3:55pm
77	A5 /2	18:42	3:26pm	3:36pm	4:01pm
78	B5 /1	37:24	3:32pm	3:42pm	4:07pm
79	A7 /2	37:30	3:38pm	3:48pm	4:13pm
80	B7 /1	37:36	3:44pm	3:54pm	4:19pm

-C1/1 -B20/3. -B5/1

PUSHING SCHEDULE

Tuesday, February 22, 1994 Turn 3
Batteries: 1-3_2

Seq #	Oven	Last Pushed	Earliest	Desired	Latest
1	A3 /2	0:36	3:50pm	4:00pm	4:10pm
2	B3 /1	0:35	3:56pm	4:05pm	4:15pm
3	A5 /2	0:35	4:01pm	4:11pm	4:21pm
4	A7 /2	0:29	4:07pm	4:17pm	4:27pm
5	B7 /1	0:29	4:13pm	4:23pm	4:33pm
6	A9 /2	19:16	4:18pm	4:28pm	4:38pm
7	B9 /1	19:16	4:24pm	4:34pm	4:44pm
8	A11/2	19:17	4:30pm	4:40pm	4:50pm
9	B11/1	19:17	4:36pm	4:46pm	4:56pm
10	A13/2	19:17	4:42pm	4:52pm	5:02pm
11	B13/1	19:16	4:47pm	4:57pm	5:07pm
12	A15/2	19:17	4:53pm	5:03pm	5:13pm
13	B15/1	19:17	4:59pm	5:09pm	5:19pm
14	A17/2	19:17	5:05pm	5:15pm	5:25pm
15	B17/1	19:16	5:10pm	5:20pm	5:30pm
16	A19/2	19:16	5:16pm	5:26pm	5:36pm
17	B19/1	19:17	5:22pm	5:32pm	5:42pm
18	A21/2	19:17	5:28pm	5:38pm	5:48pm
19	B21/1	19:17	5:34pm	5:44pm	5:54pm
20	A23/2	19:10	5:39pm	5:49pm	5:59pm
21	B23/1	19:11	5:45pm	5:55pm	6:05pm
22	A25/2	19:11	5:51pm	6:01pm	6:11pm
23	B25/1	19:11	5:57pm	6:07pm	6:17pm
24	A27/2	19:11	6:03pm	6:13pm	6:23pm
25	B27/1	19:11	6:08pm	6:18pm	6:28pm
26	A29/2	19:11	6:14pm	6:24pm	6:34pm
27	B29/1	19:11	6:20pm	6:30pm	6:40pm
28	A31/2	19:11	6:26pm	6:36pm	6:46pm
29	B31/1	19:10	6:31pm	6:41pm	6:51pm
30	C2 /1	19:11	6:37pm	6:47pm	6:57pm
31	A2 /3	19:11	6:43pm	6:53pm	7:03pm
32	B2 /2	19:11	6:49pm	6:59pm	7:09pm
33	A4 /3	19:11	6:55pm	7:05pm	7:15pm
34	B4 /2	19:10	7:00pm	7:10pm	7:20pm
35	A6 /3	19:11	7:06pm	7:16pm	7:26pm
36	B6 /2	19:11	7:12pm	7:22pm	7:32pm
37	A8 /3	19:11	7:18pm	7:28pm	7:38pm
38	B8 /2	19:10	7:23pm	7:33pm	7:43pm
39	A10/3	19:10	7:29pm	7:39pm	7:49pm
40	B10/2	19:10	7:35pm	7:45pm	7:55pm
41	A12/3	19:10	7:41pm	7:51pm	8:01pm
42	B12/2	19:10	7:47pm	7:57pm	8:07pm
43	A14/3	19:09	7:52pm	8:02pm	8:12pm
44	B14/2	19:09	7:58pm	8:08pm	8:18pm
45	A16/3	19:09	8:04pm	8:14pm	8:24pm
46	B16/2	19:09	8:10pm	8:20pm	8:30pm
47	A18/3	19:09	8:16pm	8:26pm	8:36pm
48	B18/2	19:09	8:21pm	8:31pm	8:41pm
49	A20/3	19:09	8:27pm	8:37pm	8:47pm
50	B20/2	19:09	8:33pm	8:43pm	8:53pm
51	A22/3	19:09	8:39pm	8:49pm	8:59pm
52	B22/2	19:08	8:44pm	8:54pm	9:04pm
53	A24/3	19:08	8:50pm	9:00pm	9:10pm
54	B24/2	19:08	8:56pm	9:06pm	9:16pm
55	A26/3	19:08	9:02pm	9:12pm	9:22pm
56	B26/2	19:08	9:08pm	9:18pm	9:28pm
57	A28/3	19:07	9:13pm	9:23pm	9:33pm
58	B28/2	19:07	9:19pm	9:29pm	9:39pm
59	A30/3	19:07	9:25pm	9:35pm	9:45pm
60	B30/2	19:07	9:31pm	9:41pm	9:51pm
61	C1 /2	19:07	9:36pm	9:46pm	9:56pm
62	A1 /3	19:07	9:42pm	9:52pm	10:02pm
63	A1 /1	19:07	9:48pm	9:58pm	10:08pm
64	B3 /3	19:07	9:54pm	10:04pm	10:14pm
65	A3 /1	19:07	10:00pm	10:10pm	10:20pm
66	B5 /3	19:06	10:05pm	10:15pm	10:25pm
67	A5 /1	19:06	10:11pm	10:21pm	10:31pm
68	B7 /3	19:06	10:17pm	10:27pm	10:37pm
69	A7 /1	19:06	10:23pm	10:33pm	10:43pm
70	B9 /3	19:06	10:29pm	10:39pm	10:49pm
71	A9 /1	19:05	10:34pm	10:44pm	10:54pm
72	B11/3	19:05	10:40pm	10:50pm	11:00pm
73	A11/1	19:05	10:46pm	10:56pm	11:06pm
74	B13/3	19:05	10:52pm	11:02pm	11:12pm
75	A13/1	19:05	10:57pm	11:07pm	11:17pm
76	B15/3	19:05	11:03pm	11:13pm	11:23pm
77	A15/1	19:05	11:09pm	11:19pm	11:29pm
78	B17/3	19:05	11:15pm	11:25pm	11:35pm
79	A17/1	19:05	11:21pm	11:31pm	11:41pm
80	B19/3	37:53	11:26pm	11:36pm	11:46pm

— B 5/1

PUSHING SCHEDULE

Wednesday, February 23, 1994 Turn 1
Batteries: 1-3_2

Seq #	Oven	Last Pushed	Earliest	Desired	Latest
1	A21/1	0:06	11:50am	12:00am	12:10am
2	B23/3	19:21	11:56pm	12:05am	12:15am
3	A23/1	19:21	12:01am	12:11am	12:21am
4	B25/3	19:21	12:07am	12:17am	12:27am
5	A25/1	19:21	12:13am	12:23am	12:33am
6	B27/3	19:20	12:18am	12:28am	12:38am
7	A27/1	19:20	12:24am	12:34am	12:44am
8	B29/3	19:21	12:30am	12:40am	12:50am
9	A29/1	19:21	12:36am	12:46am	12:56am
10	B31/3	19:21	12:42am	12:52am	1:02am
11	A31/1	19:20	12:47am	12:57am	1:07am
12	C2 /3	19:20	12:53am	1:03am	1:13am
13	A2 /2	19:20	12:59am	1:09am	1:19am
14	B2 /1	19:20	1:05am	1:15am	1:25am
15	A4 /2	19:19	1:10am	1:20am	1:30am
16	B4 /1	19:19	1:16am	1:26am	1:36am
17	A6 /2	19:19	1:22am	1:32am	1:42am
18	B6 /1	19:19	1:28am	1:38am	1:48am
19	A8 /2	19:19	1:34am	1:44am	1:54am
20	B8 /1	19:18	1:39am	1:49am	1:59am
21	A10/2	19:18	1:45am	1:55am	2:05am
22	B10/1	19:18	1:51am	2:01am	2:11am
23	A12/2	19:19	1:57am	2:07am	2:17am
24	B12/1	19:19	2:03am	2:13am	2:23am
25	A14/2	19:18	2:08am	2:18am	2:28am
26	B14/1	19:18	2:14am	2:24am	2:34am
27	A16/2	19:18	2:20am	2:30am	2:40am
28	B16/1	19:18	2:26am	2:36am	2:46am
29	A18/2	19:17	2:31am	2:41am	2:51am
30	B18/1	19:17	2:37am	2:47am	2:57am
31	A20/2	19:17	2:43am	2:53am	3:03am
32	B20/1	19:17	2:49am	2:59am	3:09am
33	A22/2	19:11	2:55am	3:05am	3:15am
34	B22/1	19:10	3:00am	3:10am	3:20am
35	A24/2	19:10	3:06am	3:16am	3:26am
36	B24/1	19:10	3:12am	3:22am	3:32am
37	A26/2	19:10	3:18am	3:28am	3:38am
38	B26/1	19:09	3:23am	3:33am	3:43am
39	A28/2	19:09	3:29am	3:39am	3:49am
40	B28/1	19:09	3:35am	3:45am	3:55am
41	A30/2	19:09	3:41am	3:51am	4:01am
42	B30/1	19:09	3:47am	3:57am	4:07am
43	A1 /3	19:08	3:52am	4:02am	4:12am
44	B1 /2	19:08	3:58am	4:08am	4:18am
45	A3 /3	19:08	4:04am	4:14am	4:24am
46	B3 /2	19:08	4:10am	4:20am	4:30am
47	A5 /3	19:08	4:16am	4:26am	4:36am
48	B5 /2	19:07	4:21am	4:31am	4:41am
49	A7 /3	19:07	4:27am	4:37am	4:47am
50	B7 /2	19:07	4:33am	4:43am	4:53am
51	A9 /3	19:07	4:39am	4:49am	4:59am
52	B9 /2	19:06	4:44am	4:54am	5:04am
53	A11/3	19:06	4:50am	5:00am	5:10am
54	B11/2	19:06	4:56am	5:06am	5:16am
55	A13/3	19:06	5:02am	5:12am	5:22am
56	B13/2	19:06	5:08am	5:18am	5:28am
57	A15/3	19:05	5:13am	5:23am	5:33am
58	B15/2	19:05	5:19am	5:29am	5:39am
59	A17/3	19:05	5:25am	5:35am	5:45am
60	B17/2	19:05	5:31am	5:41am	5:51am
61	A19/3	19:04	5:36am	5:46am	5:56am
62	B19/2	19:04	5:42am	5:52am	6:02am
63	A21/3	19:04	5:48am	5:58am	6:08am
64	B21/2	19:04	5:54am	6:04am	6:14am
65	A23/3	19:04	6:00am	6:10am	6:20am
66	B23/2	19:03	6:05am	6:15am	6:25am
67	A25/3	19:03	6:11am	6:21am	6:31am
68	B25/2	19:03	6:17am	6:27am	6:37am
69	A27/3	19:03	6:23am	6:33am	6:43am
70	B27/2	19:03	6:29am	6:39am	6:49am
71	A29/3	19:02	6:34am	6:44am	6:54am
72	B29/2	19:02	6:40am	6:50am	7:00am
73	A31/3	19:02	6:46am	6:56am	7:06am
74	B31/2	19:02	6:52am	7:02am	7:12am
75	C2 /2	19:01	6:57am	7:07am	7:17am
76	B2 /3	19:01	7:03am	7:13am	7:23am
77	A2 /1	19:01	7:09am	7:19am	7:29am
78	B4 /3	19:01	7:15am	7:25am	7:35am
79	A4 /1	19:01	7:21am	7:31am	7:41am
80	B6 /3	19:00	7:26am	7:36am	7:46am

-C-1
/1

PUSHING SCHEDULE

Wednesday, February 23, 1994 Turn 2
Batteries: 1-3_2

Seq #	Oven	Last Pushed	Earliest	Desired	Latest
1	B10/3	19:00	7:50am	8:00am	8:25am
2	A10/1	19:00	7:56am	8:06am	8:31am
3	B12/3	19:00	8:02am	8:12am	8:37am
4	A12/1	19:00	8:09am	8:18am	8:43am
5	B14/3	19:00	8:14am	8:24am	8:49am
6	A14/1	19:00	8:20am	8:30am	8:55am
7	B16/3	19:00	8:26am	8:36am	9:01am
8	A16/1	19:00	8:32am	8:42am	9:07am
9	B18/3	19:00	8:38am	8:48am	9:13am
10	A18/1	19:00	8:44am	8:54am	9:19am
11	B20/3	37:44	8:50am	9:00am	9:25am
12	A20/1	19:06	8:56am	9:06am	9:31am
13	B22/3	19:06	9:02am	9:12am	9:37am
14	A22/1	19:06	9:08am	9:18am	9:43am
15	B24/3	19:06	9:14am	9:24am	9:49am
16	A24/1	19:06	9:20am	9:30am	9:55am
17	B26/3	19:06	9:26am	9:36am	10:01am
18	A26/1	19:06	9:32am	9:42am	10:07am
19	B28/3	19:06	9:38am	9:48am	10:13am
20	A28/1	19:06	9:44am	9:54am	10:19am
21	B30/3	19:06	9:50am	10:00am	10:25am
22	C1 /3	19:06	9:56am	10:06am	10:31am
23	A30/1	19:06	10:02am	10:12am	10:37am
24	B1 /2	19:06	10:08am	10:18am	10:43am
25	B1 /1	19:06	10:14am	10:24am	10:49am
26	A3 /2	18:30	10:20am	10:30am	10:55am
27	A3 /1	18:31	10:26am	10:36am	11:01am
28	A5 /2	18:31	10:32am	10:42am	11:07am
29	A7 /2	18:31	10:38am	10:48am	11:13am
30	B7 /1	18:31	10:44am	10:54am	11:19am
31	A9 /2	18:32	10:50am	11:00am	11:25am
32	B9 /1	18:32	10:56am	11:06am	11:31am
33	A11/2	18:32	11:02am	11:12am	11:37am
34	B11/1	18:32	11:08am	11:18am	11:43am
35	A13/2	18:32	11:14am	11:24am	11:49am
36	B13/1	18:33	11:20am	11:30am	11:55am
37	A15/2	18:33	11:26am	11:36am	12:01pm
38	B15/1	18:33	11:32am	11:42am	12:07pm
39	A17/2	19:33	11:38am	11:48am	12:13pm
40	B17/1	18:34	11:44am	11:54am	12:19pm
41	A19/2	18:34	11:50am	12:00pm	12:25pm
42	B19/1	18:34	11:56am	12:06pm	12:31pm
43	A21/2	18:34	12:02pm	12:12pm	12:37pm
44	B21/1	18:34	12:08pm	12:18pm	12:43pm
45	A23/2	18:35	12:14pm	12:24pm	12:49pm
46	B23/1	18:35	12:20pm	12:30pm	12:55pm
47	A25/2	18:35	12:26pm	12:36pm	1:01pm
48	B25/1	18:35	12:32pm	12:42pm	1:07pm
49	A27/2	18:35	12:38pm	12:48pm	1:13pm
50	B27/1	18:36	12:44pm	12:54pm	1:19pm
51	A29/2	18:36	12:50pm	1:00pm	1:25pm
52	B29/1	18:36	12:56pm	1:06pm	1:31pm
53	A31/2	18:36	1:02pm	1:12pm	1:37pm
54	B31/1	18:37	1:08pm	1:18pm	1:43pm
55	C2 /1	18:37	1:14pm	1:24pm	1:49pm
56	A2 /3	18:37	1:20pm	1:30pm	1:55pm
57	B2 /2	18:37	1:26pm	1:36pm	2:01pm
58	A4 /3	18:37	1:32pm	1:42pm	2:07pm
59	B4 /2	18:38	1:38pm	1:48pm	2:13pm
60	A6 /3	18:38	1:44pm	1:54pm	2:19pm
61	B6 /2	18:38	1:50pm	2:00pm	2:25pm
62	A8 /3	18:38	1:56pm	2:06pm	2:31pm
63	B8 /2	19:39	2:02pm	2:12pm	2:37pm
64	A10/3	18:39	2:08pm	2:18pm	2:43pm
65	B10/2	18:39	2:14pm	2:24pm	2:49pm
66	A12/3	18:39	2:20pm	2:30pm	2:55pm
67	B12/2	18:39	2:26pm	2:36pm	3:01pm
68	A14/3	18:40	2:32pm	2:42pm	3:07pm
69	B14/2	18:40	2:38pm	2:48pm	3:13pm
70	A16/3	18:40	2:44pm	2:54pm	3:19pm
71	B16/2	18:40	2:50pm	3:00pm	3:25pm
72	A18/3	18:40	2:56pm	3:06pm	3:31pm
73	B18/2	18:41	3:02pm	3:12pm	3:37pm
74	A20/3	18:41	3:08pm	3:18pm	3:43pm
75	B20/2	18:41	3:14pm	3:24pm	3:49pm
76	A22/3	18:41	3:20pm	3:30pm	3:55pm
77	B22/2	18:42	3:26pm	3:36pm	4:01pm
78	A24/3	18:42	3:32pm	3:42pm	4:07pm
79	B24/2	18:42	3:38pm	3:46pm	4:11pm
80	A26/3	18:48	3:44pm	3:54pm	4:19pm

-B5/1

PUSHING SCHEDULE

Wednesday, February 23, 1994 Turn 3
Batteries: 1-3_2

Seq #	Oven	Last Pushed	Earliest	Desired	Latest
1	B26/2	18:42	3:50pm	4:00pm	4:10pm
2	A28/3	18:42	3:56pm	4:05pm	4:15pm
3	B28/2	18:42	4:01pm	4:11pm	4:21pm
4	A30/3	18:42	4:07pm	4:17pm	4:27pm
5	B30/2	18:42	4:13pm	4:23pm	4:33pm
6	C1 /2	18:42	4:18pm	4:28pm	4:38pm
7	B1 /3	18:42	4:24pm	4:34pm	4:44pm
8	A1 /1	18:42	4:30pm	4:40pm	4:50pm
9	B3 /3	18:42	4:36pm	4:46pm	4:56pm
10	A3 /1	18:42	4:42pm	4:52pm	5:02pm
11	B5 /3	18:42	4:47pm	4:57pm	5:07pm
12	A5 /1	18:42	4:53pm	5:03pm	5:13pm
13	B7 /3	18:42	4:59pm	5:09pm	5:19pm
14	A7 /1	18:42	5:05pm	5:15pm	5:25pm
15	B9 /3	18:41	5:10pm	5:20pm	5:30pm
16	A9 /1	18:42	5:16pm	5:26pm	5:36pm
17	B11/3	18:42	5:22pm	5:32pm	5:42pm
18	A11/1	18:42	5:28pm	5:38pm	5:48pm
19	B13/3	18:42	5:34pm	5:44pm	5:54pm
20	A13/1	18:42	5:39pm	5:49pm	5:59pm
21	B15/3	18:42	5:45pm	5:55pm	6:05pm
22	A15/1	18:42	5:51pm	6:01pm	6:11pm
23	B17/3	18:42	5:57pm	6:07pm	6:17pm
24	A17/1	18:42	6:03pm	6:13pm	6:23pm
25	B19/3	18:42	6:08pm	6:18pm	6:28pm
26	A19/1	18:42	6:14pm	6:24pm	6:34pm
27	B21/3	18:42	6:20pm	6:30pm	6:40pm
28	A21/1	18:36	6:26pm	6:36pm	6:46pm
29	B23/3	18:36	6:31pm	6:41pm	6:51pm
30	A23/1	18:36	6:37pm	6:47pm	6:57pm
31	B25/3	18:36	6:43pm	6:53pm	7:03pm
32	A25/1	18:36	6:49pm	6:59pm	7:09pm
33	B27/3	18:37	6:55pm	7:05pm	7:15pm
34	A27/1	18:36	7:00pm	7:10pm	7:20pm
35	B29/3	18:36	7:06pm	7:16pm	7:26pm
36	A29/1	18:36	7:12pm	7:22pm	7:32pm
37	B31/3	18:36	7:18pm	7:28pm	7:38pm
38	A31/1	18:36	7:23pm	7:33pm	7:43pm
39	C2 /3	18:36	7:29pm	7:39pm	7:49pm
40	A2 /2	18:36	7:35pm	7:45pm	7:55pm
41	B2 /1	18:36	7:41pm	7:51pm	8:01pm
42	A4 /2	18:37	7:47pm	7:57pm	8:07pm
43	B4 /1	18:36	7:52pm	8:02pm	8:12pm
44	A6 /2	18:36	7:58pm	8:08pm	8:18pm
45	B6 /1	18:36	8:04pm	8:14pm	8:24pm
46	A8 /2	18:36	8:10pm	8:20pm	8:30pm
47	B8 /1	18:37	8:16pm	8:26pm	8:36pm
48	A10/2	18:36	8:21pm	8:31pm	8:41pm
49	B10/1	18:36	8:27pm	8:37pm	8:47pm
50	A12/2	18:36	8:33pm	8:43pm	8:53pm
51	B12/1	18:36	8:39pm	8:49pm	8:59pm
52	A14/2	18:36	8:44pm	8:54pm	9:04pm
53	B14/1	18:36	8:50pm	9:00pm	9:10pm
54	A16/2	18:36	8:56pm	9:06pm	9:16pm
55	B16/1	18:36	9:02pm	9:12pm	9:22pm
56	A18/2	18:37	9:08pm	9:18pm	9:28pm
57	B18/1	18:36	9:13pm	9:23pm	9:33pm
58	A20/2	18:36	9:19pm	9:29pm	9:39pm
59	B20/1	18:36	9:25pm	9:35pm	9:45pm
60	A22/2	18:36	9:31pm	9:41pm	9:51pm
61	B22/1	18:36	9:36pm	9:46pm	9:56pm
62	A24/2	18:36	9:42pm	9:52pm	10:02pm
63	B24/1	18:36	9:48pm	9:58pm	10:08pm
64	A26/2	18:36	9:54pm	10:04pm	10:14pm
65	B26/1	18:37	10:00pm	10:10pm	10:20pm
66	A28/2	18:36	10:05pm	10:15pm	10:25pm
67	B28/1	18:36	10:11pm	10:21pm	10:31pm
68	A30/2	18:36	10:17pm	10:27pm	10:37pm
69	B30/1	18:36	10:23pm	10:33pm	10:43pm
70	C1 /1	38:51	10:29pm	10:39pm	10:49pm
71	A1 /3	18:42	10:34pm	10:44pm	10:54pm
72	B1 /2	18:42	10:40pm	10:50pm	11:00pm
73	A3 /3	18:42	10:46pm	10:56pm	11:06pm
74	B3 /2	18:42	10:52pm	11:02pm	11:12pm
75	A5 /3	18:41	10:57pm	11:07pm	11:17pm
76	B5 /2	18:42	11:03pm	11:13pm	11:23pm
77	A7 /3	18:42	11:09pm	11:19pm	11:29pm
78	B7 /2	18:42	11:15pm	11:25pm	11:35pm
79	A9 /3	18:42	11:21pm	11:31pm	11:41pm
80	B9 /2	18:42	11:26pm	11:36pm	11:46pm

PUSHING SCHEDULE

Thursday, February 24, 1994 Turn 1
Batteries: 1-3_2

Seq #	Oven	Last Pushed	Earliest	Desired	Latest
1	B13/2	18:42	11:50pm	12:00am	12:10am
2	A15/3	18:42	11:56pm	12:05am	12:15am
3	B15/2	18:42	12:01am	12:11am	12:21am
4	A17/3	18:42	12:07am	12:17am	12:27am
5	B17/2	18:42	12:13am	12:23am	12:33am
6	A19/3	18:42	12:18am	12:28am	12:38am
7	B19/2	18:42	12:24am	12:34am	12:44am
8	A21/3	18:42	12:30am	12:40am	12:50am
9	B21/2	18:42	12:36am	12:46am	12:56am
10	A23/3	18:42	12:42am	12:52am	1:02am
11	B23/2	18:42	12:47am	12:57am	1:07am
12	A25/3	18:42	12:53am	1:03am	1:13am
13	B25/2	18:42	12:59am	1:09am	1:19am
14	A27/3	18:42	1:05am	1:15am	1:25am
15	B27/2	18:41	1:10am	1:20am	1:30am
16	A29/3	18:42	1:16am	1:26am	1:36am
17	B29/2	18:42	1:22am	1:32am	1:42am
18	A31/3	18:42	1:28am	1:38am	1:48am
19	B31/2	18:42	1:34am	1:44am	1:54am
20	C2 /2	18:42	1:39am	1:49am	1:59am
21	B2 /3	18:42	1:45am	1:55am	2:05am
22	A2 /1	18:42	1:51am	2:01am	2:11am
23	B4 /3	18:42	1:57am	2:07am	2:17am
24	A4 /1	18:42	2:03am	2:13am	2:23am
25	B6 /3	18:42	2:08am	2:18am	2:28am
26	A6 /1	18:42	2:14am	2:24am	2:34am
27	B8 /3	18:42	2:20am	2:30am	2:40am
28	A8 /1	18:42	2:26am	2:36am	2:46am
29	B10/3	18:41	2:31am	2:41am	2:51am
30	A10/1	18:41	2:37am	2:47am	2:57am
31	B12/3	18:41	2:43am	2:53am	3:03am
32	A12/1	18:41	2:49am	3:00am	3:07am
33	B14/3	18:41	2:55am	3:05am	3:15am
34	A14/1	18:40	3:00am	3:10am	3:20am
35	B16/3	18:40	3:06am	3:16am	3:26am
36	A16/1	18:40	3:12am	3:22am	3:32am
37	B18/3	18:40	3:18am	3:28am	3:38am
38	A18/1	18:39	3:23am	3:33am	3:43am
39	A20/1	18:33	3:29am	3:39am	3:49am
40	B22/3	18:33	3:35am	3:45am	3:55am
41	A22/1	18:33	3:41am	3:51am	4:01am
42	B24/3	18:33	3:47am	3:57am	4:07am
43	A24/1	18:32	3:52am	4:02am	4:12am
44	B26/3	18:32	3:58am	4:08am	4:18am
45	A26/1	18:32	4:04am	4:14am	4:24am
46	B28/3	18:32	4:10am	4:20am	4:30am
47	A28/1	18:32	4:16am	4:26am	4:36am
48	B30/3	18:31	4:21am	4:31am	4:41am
49	C1 /3	18:31	4:27am	4:37am	4:47am
50	A30/1	18:31	4:33am	4:43am	4:53am
51	A1 /2	18:31	4:39am	4:49am	4:59am
52	B1 /1	18:30	4:44am	4:54am	5:04am
53	A3 /2	18:30	4:50am	5:00am	5:10am
54	B3 /1	18:30	4:56am	5:06am	5:16am
55	A5 /2	18:30	5:02am	5:12am	5:22am
56	A7 /2	18:30	5:08am	5:18am	5:28am
57	B7 /1	18:29	5:13am	5:23am	5:33am
58	A9 /2	18:29	5:19am	5:29am	5:39am
59	B9 /1	18:29	5:25am	5:35am	5:45am
60	A11/2	18:29	5:31am	5:41am	5:51am
61	B11/1	18:28	5:36am	5:46am	5:56am
62	A13/2	18:28	5:42am	5:52am	6:02am
63	B13/1	18:28	5:48am	5:58am	6:08am
64	A15/2	18:28	5:54am	6:04am	6:14am
65	B15/1	18:28	6:00am	6:10am	6:20am
66	A17/2	18:27	6:05am	6:15am	6:25am
67	B17/1	18:27	6:11am	6:21am	6:31am
68	A19/2	18:27	6:17am	6:27am	6:37am
69	B19/1	18:27	6:23am	6:33am	6:43am
70	A21/2	18:27	6:27am	6:37am	6:47am
71	B21/1	18:26	6:34am	6:44am	6:54am
72	A23/2	18:26	6:40am	6:50am	7:00am
73	B23/1	18:26	6:46am	6:56am	7:06am
74	A25/2	18:26	6:52am	7:02am	7:12am
75	B25/1	18:25	6:57am	7:07am	7:17am
76	A27/2	18:25	7:03am	7:13am	7:23am
77	B27/1	18:25	7:07am	7:17am	7:27am
78	A29/2	18:25	7:15am	7:25am	7:35am
79	B29/1	18:25	7:21am	7:31am	7:41am
80	A31/2	18:24	7:26am	7:36am	7:46am

3/-B20

1/-B5

B5/ after

P U S H I N G S C H E D U L E

Thursday, February 24, 1994 Turn 7
Batteries: 1-3_2

Seq #	Oven	Last Pushed	Earliest	Desired	Latest
1	A2 /3	18:30	7:50am	8:00am	8:25am
2	B2 /2	18:30	7:56am	8:06am	8:31am
3	A4 /3	18:30	8:02am	8:12am	8:37am
4	B4 /2	18:30	8:08am	8:18am	8:43am
5	A6 /3	18:30	8:14am	8:24am	8:49am
6	B6 /2	18:30	8:20am	8:30am	8:55am
7	A8 /3	18:30	8:26am	8:36am	9:01am
8	B8 /2	18:30	8:32am	8:42am	9:07am
9	A10/3	18:30	8:38am	8:48am	9:13am
10	B10/2	18:30	8:44am	8:54am	9:19am
11	A12/3	18:30	8:50am	9:00am	9:25am
12	B20/3	18:36	8:56am	9:06am	9:31am
13	B12/2	18:36	9:02am	9:12am	9:37am
14	A14/3	18:36	9:08am	9:18am	9:43am
15	B14/2	18:36	9:14am	9:24am	9:49am
16	A16/3	18:36	9:20am	9:30am	9:55am
17	B16/2	18:36	9:26am	9:36am	10:01am
18	A18/3	18:36	9:32am	9:42am	10:07am
19	B18/2	18:36	9:38am	9:48am	10:13am
20	A20/3	18:36	9:44am	9:54am	10:19am
21	B20/2	18:36	9:50am	10:00am	10:25am
22	A22/3	18:36	9:56am	10:06am	10:31am
23	B22/2	18:36	10:02am	10:12am	10:37am
24	A24/3	18:36	10:08am	10:18am	10:43am
25	B24/2	18:36	10:14am	10:24am	10:49am
26	A26/3	18:36	10:20am	10:30am	10:55am
27	B26/2	18:36	10:26am	10:36am	11:01am
28	A28/3	18:37	10:32am	10:42am	11:07am
29	B28/2	18:37	10:38am	10:48am	11:13am
30	A30/3	18:37	10:44am	10:54am	11:19am
31	B30/2	18:37	10:50am	11:00am	11:25am
32	C1 /2	18:38	10:56am	11:06am	11:31am
33	B1 /3	18:38	11:02am	11:12am	11:37am
34	A1 /1	18:38	11:08am	11:18am	11:43am
35	B3 /3	18:38	11:14am	11:24am	11:49am
36	A3 /1	18:38	11:20am	11:30am	11:55am
37	B5 /3	18:39	11:26am	11:36am	12:01pm
38	A5 /1	18:39	11:32am	11:42am	12:07pm
39	B7 /3	18:39	11:38am	11:48am	12:13pm
40	A7 /1	18:39	11:44am	11:54am	12:19pm
41	B9 /3	18:40	11:50am	12:00pm	12:25pm
42	A9 /1	18:40	11:56am	12:06pm	12:31pm
43	B11/3	18:40	12:02pm	12:12pm	12:37pm
44	A11/1	18:40	12:08pm	12:18pm	12:43pm
45	B13/3	18:40	12:14pm	12:24pm	12:49pm
46	A13/1	18:41	12:20pm	12:30pm	12:55pm
47	B15/3	18:41	12:26pm	12:36pm	1:01pm
48	A15/1	18:41	12:32pm	12:42pm	1:07pm
49	B17/3	18:41	12:38pm	12:48pm	1:13pm
50	A17/1	18:41	12:44pm	12:54pm	1:19pm
51	B19/3	18:42	12:50pm	1:00pm	1:25pm
52	A19/1	18:42	12:56pm	1:06pm	1:31pm
53	B21/3	18:42	1:02pm	1:12pm	1:37pm
54	A21/1	18:42	1:08pm	1:18pm	1:43pm
55	B23/3	18:43	1:14pm	1:24pm	1:49pm
56	A23/1	18:43	1:20pm	1:30pm	1:55pm
57	B25/3	18:43	1:26pm	1:36pm	2:01pm
58	A25/1	18:43	1:32pm	1:42pm	2:07pm
59	B27/3	18:43	1:38pm	1:48pm	2:13pm
60	A27/1	18:44	1:44pm	1:54pm	2:19pm
61	B29/3	18:44	1:50pm	2:00pm	2:25pm
62	A29/1	18:44	1:56pm	2:06pm	2:31pm
63	B31/3	18:44	2:02pm	2:12pm	2:37pm
64	A31/1	18:45	2:08pm	2:18pm	2:43pm
65	C2 /3	18:45	2:14pm	2:24pm	2:49pm
66	A2 /2	18:45	2:20pm	2:30pm	2:55pm
67	B2 /1	18:45	2:26pm	2:36pm	3:01pm
68	A4 /2	18:45	2:32pm	2:42pm	3:07pm
69	B4 /1	18:46	2:38pm	2:48pm	3:13pm
70	A6 /2	18:46	2:44pm	2:54pm	3:19pm
71	B6 /1	18:46	2:50pm	3:00pm	3:25pm
72	A8 /2	18:46	2:56pm	3:06pm	3:31pm
73	B8 /1	18:46	3:02pm	3:12pm	3:37pm
74	A10/2	18:47	3:08pm	3:18pm	3:43pm
75	B10/1	18:47	3:14pm	3:24pm	3:49pm
76	A12/2	18:47	3:20pm	3:30pm	3:55pm
77	B12/1	18:47	3:26pm	3:36pm	4:01pm
78	A14/2	18:48	3:32pm	3:42pm	4:07pm
79	B14/1	18:48	3:38pm	3:48pm	4:13pm
80	A16/2	18:48	3:44pm	3:54pm	4:19pm

+B20/3 w A12

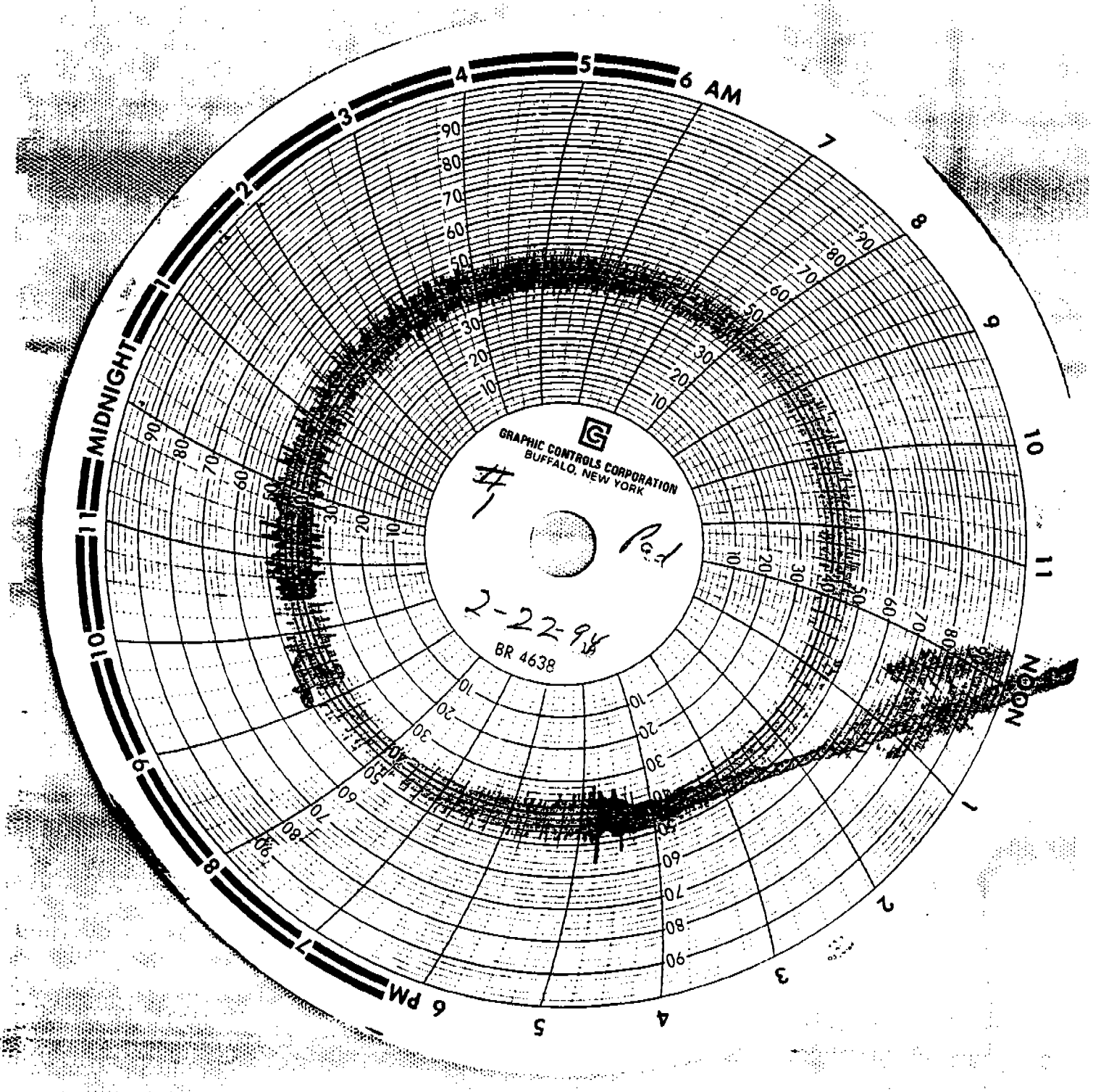
P U S H I N G S C H E D U L E

Thursday, February 24, 1994 Turn 3
Batteries: 1-3_2

Seq #	Oven	Last Pushed	Earliest	Desired	Latest
1	B16/1	18:48	3:50pm	4:00pm	4:10pm
2	A18/2	18:47	3:56pm	4:05pm	4:15pm
3	B18/1	18:48	4:01pm	4:11pm	4:21pm
4	A20/2	18:48	4:07pm	4:17pm	4:27pm
5	B20/1	18:48	4:13pm	4:23pm	4:33pm
6	A22/2	18:47	4:18pm	4:28pm	4:38pm
7	B22/1	18:48	4:24pm	4:34pm	4:44pm
8	A24/2	18:48	4:30pm	4:40pm	4:50pm
9	B24/1	18:48	4:36pm	4:46pm	4:56pm
10	A26/2	18:48	4:42pm	4:52pm	5:02pm
11	B26/1	18:47	4:47pm	4:57pm	5:07pm
12	A28/2	18:48	4:53pm	5:03pm	5:13pm
13	B28/1	18:48	4:59pm	5:09pm	5:19pm
14	B30/1	18:42	5:05pm	5:15pm	5:25pm
15	C1 /1	18:41	5:10pm	5:20pm	5:30pm
16	A1 /3	18:42	5:16pm	5:26pm	5:36pm
17	B1 /2	18:42	5:22pm	5:32pm	5:42pm
18	A3 /3	18:42	5:28pm	5:38pm	5:48pm
19	B3 /2	18:42	5:34pm	5:44pm	5:54pm
20	A5 /3	18:42	5:39pm	5:49pm	5:59pm
21	B5 /2	18:42	5:45pm	5:55pm	6:05pm
22	A7 /3	18:42	5:51pm	6:01pm	6:11pm
23	B7 /2	18:42	5:57pm	6:07pm	6:17pm
24	A9 /3	18:42	6:03pm	6:13pm	6:23pm
25	B9 /2	18:42	6:08pm	6:18pm	6:28pm
26	A11/3	18:42	6:14pm	6:24pm	6:34pm
27	B11/2	18:42	6:20pm	6:30pm	6:40pm
28	A13/3	18:42	6:26pm	6:36pm	6:46pm
29	B13/2	18:41	6:31pm	6:41pm	6:51pm
30	A15/3	18:42	6:37pm	6:47pm	6:57pm
31	B15/2	18:42	6:43pm	6:53pm	7:03pm
32	A17/3	18:42	6:49pm	6:59pm	7:09pm
33	B17/2	18:42	6:55pm	7:05pm	7:15pm
34	A19/3	18:42	7:00pm	7:10pm	7:20pm
35	B19/2	18:42	7:06pm	7:16pm	7:26pm
36	A21/3	18:42	7:12pm	7:22pm	7:32pm
37	B21/2	18:42	7:18pm	7:28pm	7:38pm
38	A23/3	18:41	7:23pm	7:33pm	7:43pm
39	B23/2	18:42	7:29pm	7:39pm	7:49pm
40	A25/3	18:42	7:35pm	7:45pm	7:55pm
41	B25/2	18:42	7:41pm	7:51pm	8:01pm
42	A27/3	18:42	7:47pm	7:57pm	8:07pm
43	B27/2	18:42	7:52pm	8:02pm	8:12pm
44	A29/3	18:42	7:58pm	8:08pm	8:18pm
45	B29/2	18:42	8:04pm	8:14pm	8:24pm
46	A31/3	18:42	8:10pm	8:20pm	8:30pm
47	B31/2	18:42	8:16pm	8:26pm	8:36pm
48	C2 /2	18:42	8:21pm	8:31pm	8:41pm
49	B2 /3	18:42	8:27pm	8:37pm	8:47pm
50	A2 /1	18:42	8:33pm	8:43pm	8:53pm
51	B4 /3	18:42	8:39pm	8:49pm	8:59pm
52	A4 /1	18:41	8:44pm	8:54pm	9:04pm
53	B6 /3	18:42	8:50pm	9:00pm	9:10pm
54	A30/2	37:30	8:56pm	9:06pm	9:16pm
55	A6 /1	18:48	9:02pm	9:12pm	9:22pm
56	B8 /3	18:48	9:08pm	9:18pm	9:28pm
57	A8 /1	18:47	9:13pm	9:23pm	9:33pm
58	B10/3	18:48	9:19pm	9:29pm	9:39pm
59	A10/1	18:48	9:25pm	9:35pm	9:45pm
60	B12/3	18:48	9:31pm	9:41pm	9:51pm
61	A12/1	18:47	9:36pm	9:46pm	9:56pm
62	B14/3	18:47	9:42pm	9:52pm	10:02pm
63	A14/1	18:48	9:48pm	9:58pm	10:08pm
64	B16/3	18:48	9:54pm	10:04pm	10:14pm
65	A16/1	18:48	10:00pm	10:10pm	10:20pm
66	B18/3	18:47	10:05pm	10:15pm	10:25pm
67	A18/1	18:48	10:11pm	10:21pm	10:31pm
68	A20/1	18:48	10:17pm	10:27pm	10:37pm
69	B22/3	18:48	10:23pm	10:33pm	10:43pm
70	A22/1	18:48	10:29pm	10:39pm	10:49pm
71	B24/3	18:47	10:34pm	10:44pm	10:54pm
72	A24/1	18:48	10:40pm	10:50pm	11:00pm
73	B26/3	18:48	10:46pm	10:56pm	11:06pm
74	A26/1	18:48	10:52pm	11:02pm	11:12pm
75	B28/3	18:47	10:57pm	11:07pm	11:17pm
76	A28/1	18:47	11:03pm	11:13pm	11:23pm
77	B30/3	18:48	11:09pm	11:19pm	11:29pm
78	C1 /3	18:48	11:15pm	11:25pm	11:35pm
79	A30/1	18:48	11:21pm	11:31pm	11:41pm
80	A1 /2	18:47	11:26pm	11:36pm	11:46pm

$-A\frac{30}{2}-B\frac{20}{3}$

$+A\frac{30}{2}\omega B\frac{6}{3}$


GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
BR 4638
MIDNIGHT
NOON
6 AM
6 PM
2-22-94

MIDNIGHT
6 AM
NOON
6 PM
1
2
3
4
5
6
7
8
9
10
11
12
50
100
150
200
250
300
350

MIDNIGHT
6 PM
6 AM
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5
7
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9
10
11
50
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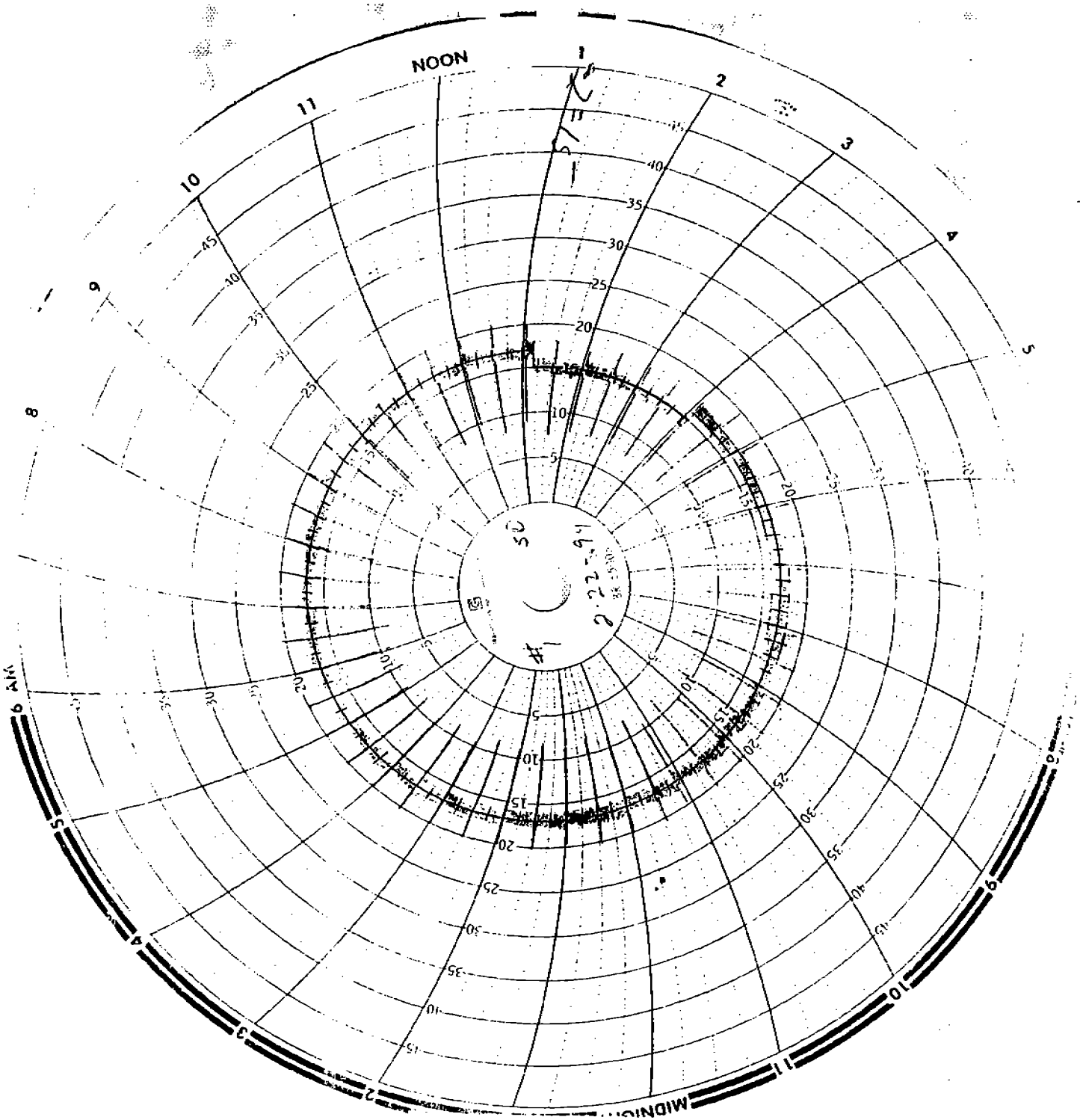
150
200
250
300
350


MIDNIGHT
NOON
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3
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AM
PM
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15
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25
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35
40
45

MIDNIGHT
6 AM
NOON
1
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3
4
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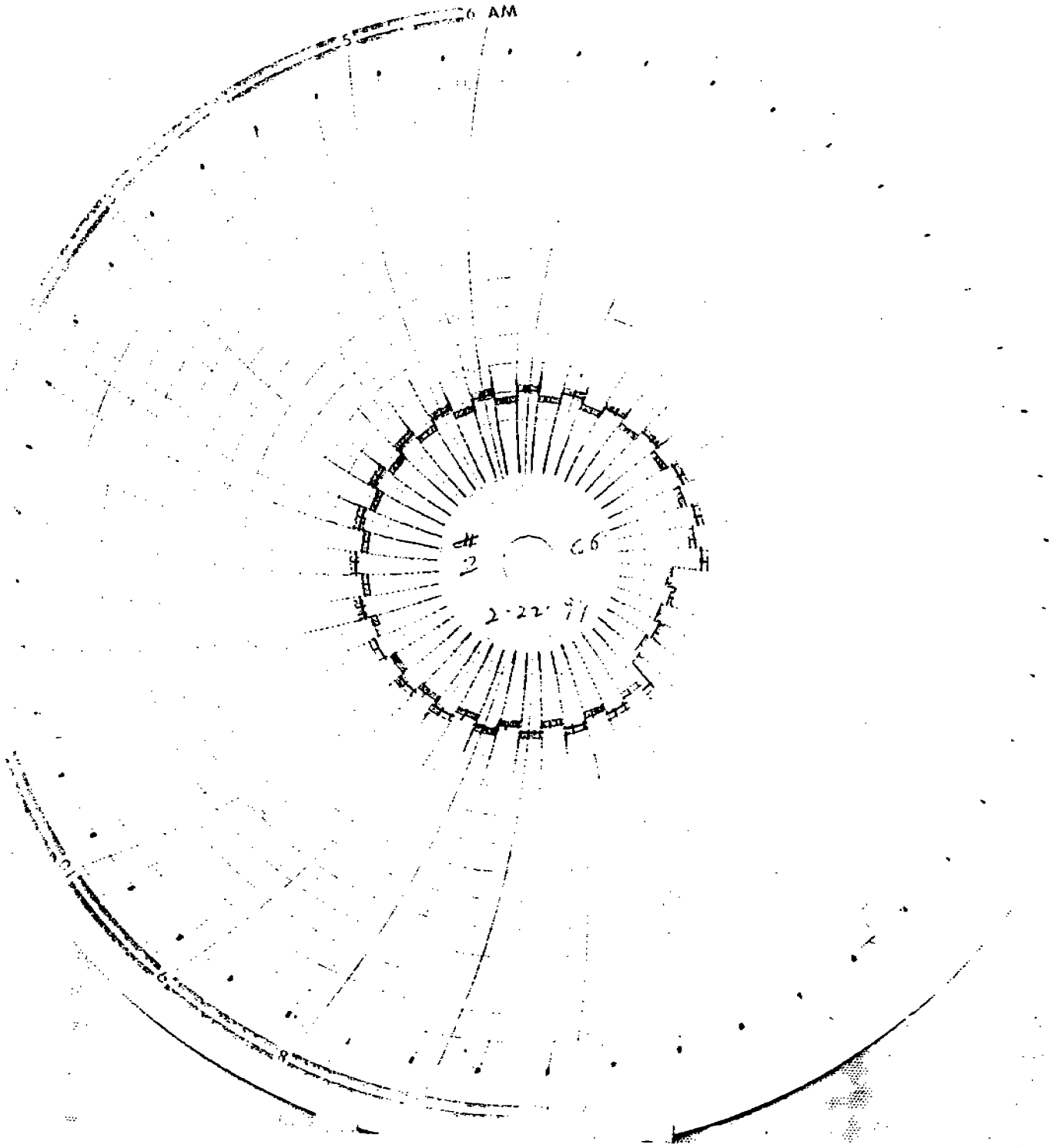
7
8
9
10
11
50
100
150
200
250
300
350


6 AM
5
#
2
66
2-22-91

6 AM
NOON
6 PM
MIDNIGHT

NOON
1
2
3
4
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6 PM
7
8
9
10
11
MIDNIGHT
1
2
3
4
5
6 AM
7
8
9
5
10
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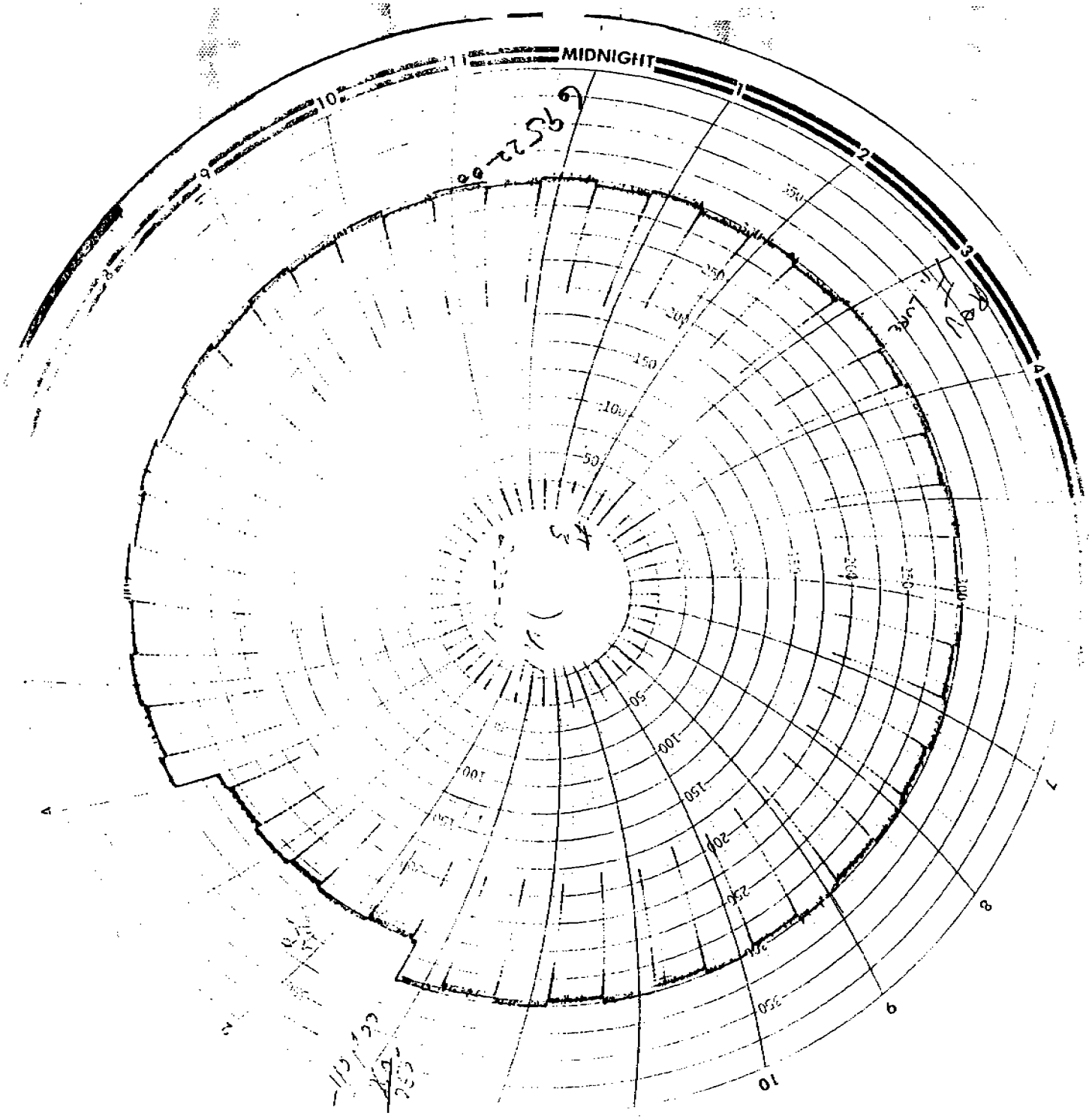
20
25
30
35
40
45


MIDNIGHT
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6
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7
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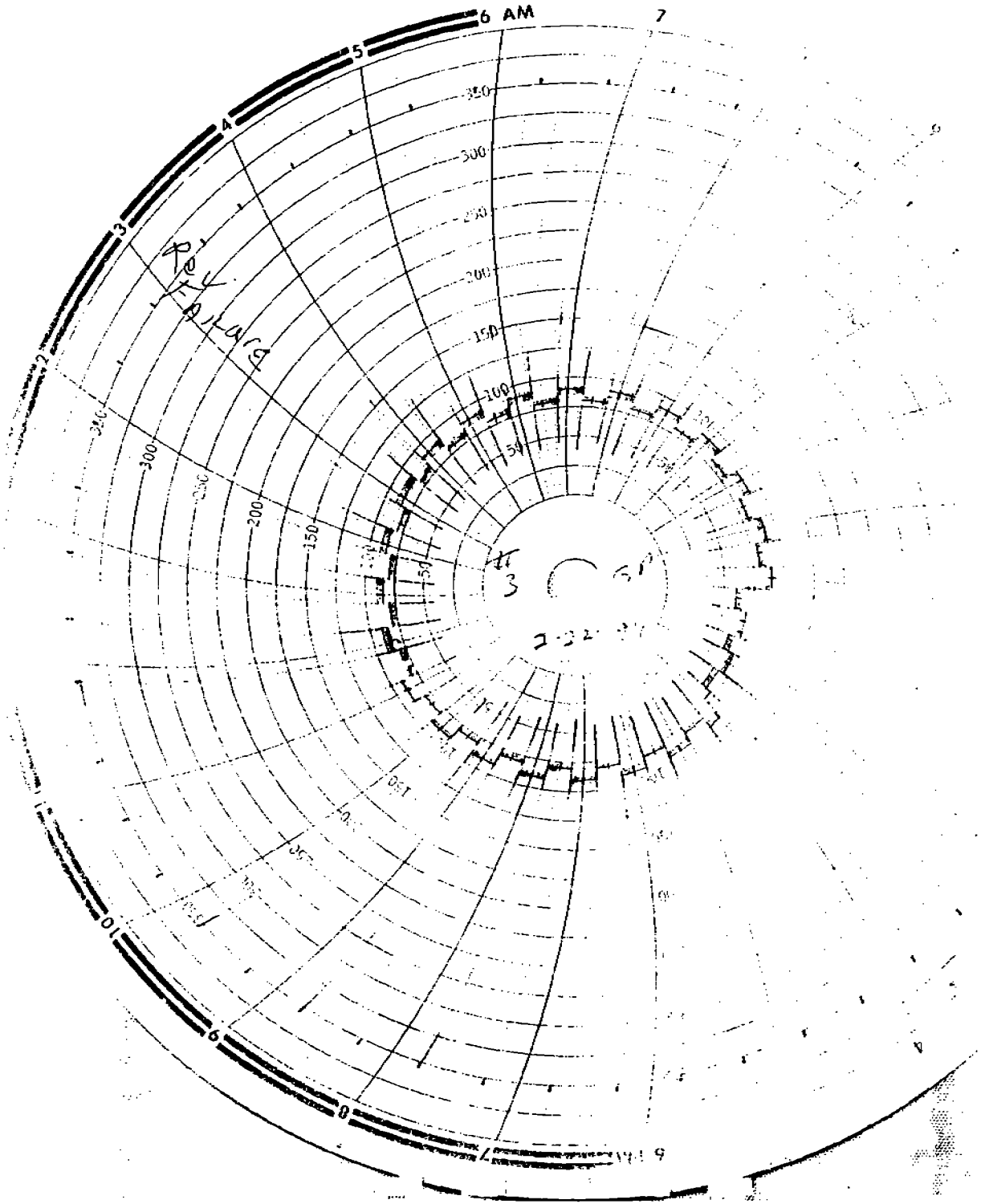
11
10
9
8
50
100
150
200
250
300
350


6 AM
7
5
4
3
2
1
10
6
0
350
300
250
200
150
100
50

NOON
MIDNIGHT
6 AM
1
2
3
4
5
6
7
8
9
10
11
12
1
2
3
4
5
6
7
8
9
10
11
12
5
10
15
20
25
30
35
40
45
50
55
60

NOON
6 PM
MIDNIGHT
6 AM
GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
BR 4638

NOON
6 PM
Vol
2-23-95
RP 22008

NOON
AM
PM

NOON
MIDNIGHT
AM
PM
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7
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10
11

6 AM
MIDNIGHT
6 PM
NOON

NOON
1
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6 PM
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11
MIDNIGHT
Vol
2-23

MIDNIGHT
6 AM
NOON
6 PM
BR 55005

NOON
6 PM
MIDNIGHT
6 AM
2-22-74
SSDOS

MIDNIGHT
6 AM
NOON
6 PM
1
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7
8
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300
350

MIDNIGHT
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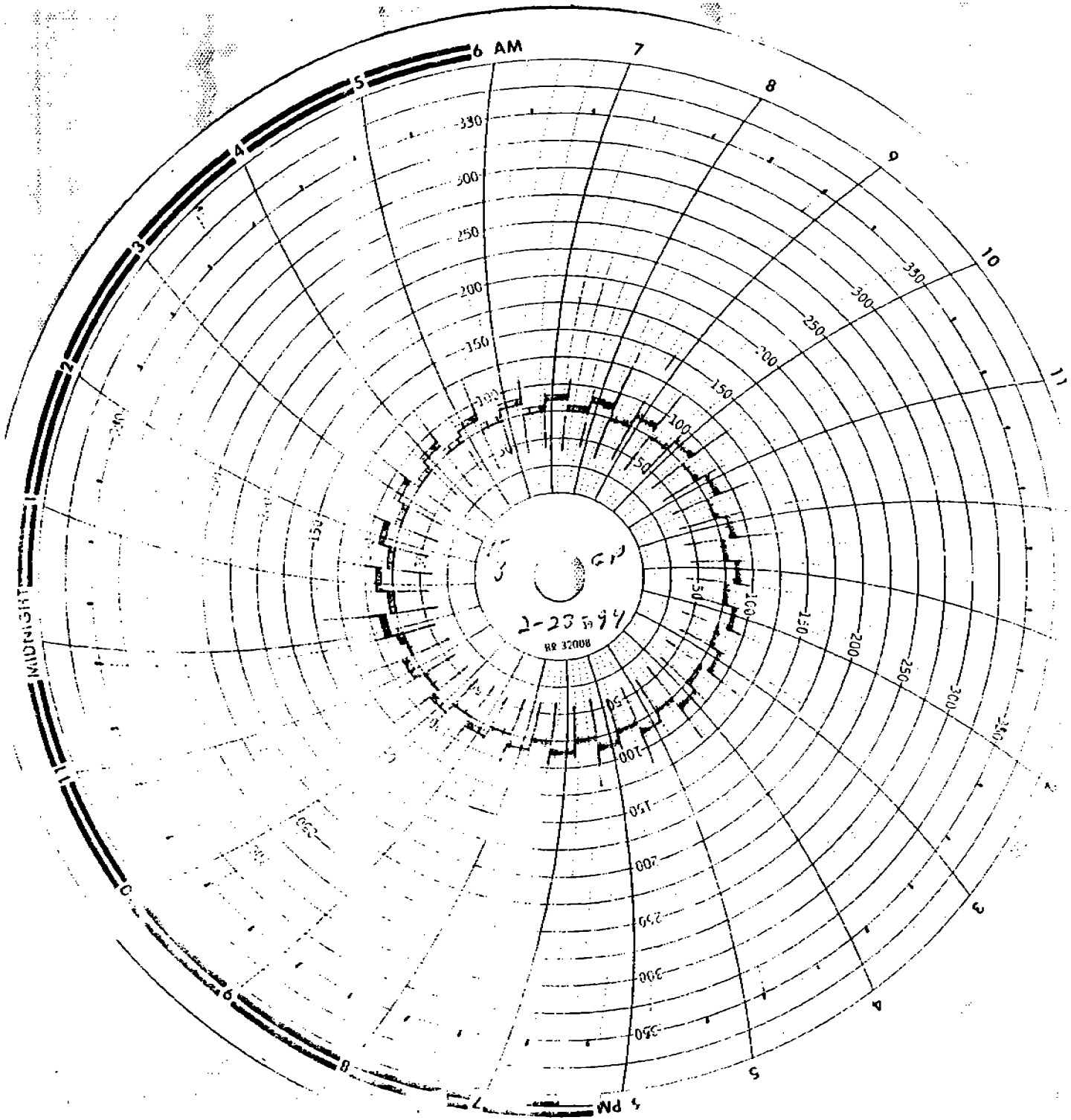
NOON
6 PM
2-23-59
BR 55005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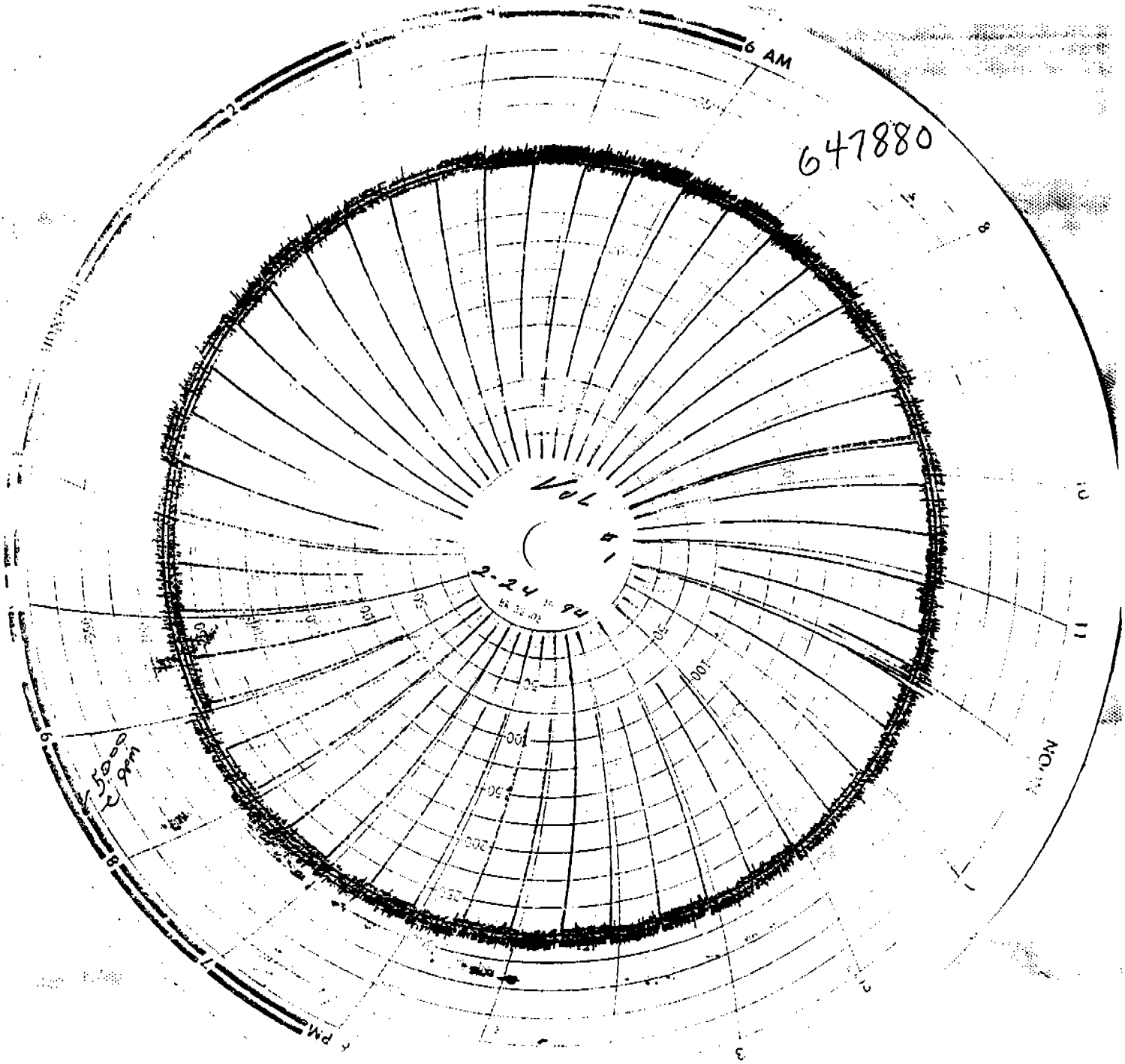
6 PM
RR 32008

6 PM
MIDNIGHT
6 AM
NOON
GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
BR 4638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Vol 79
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6 PM
NOON

MIDNIGHT
NOON
6 AM
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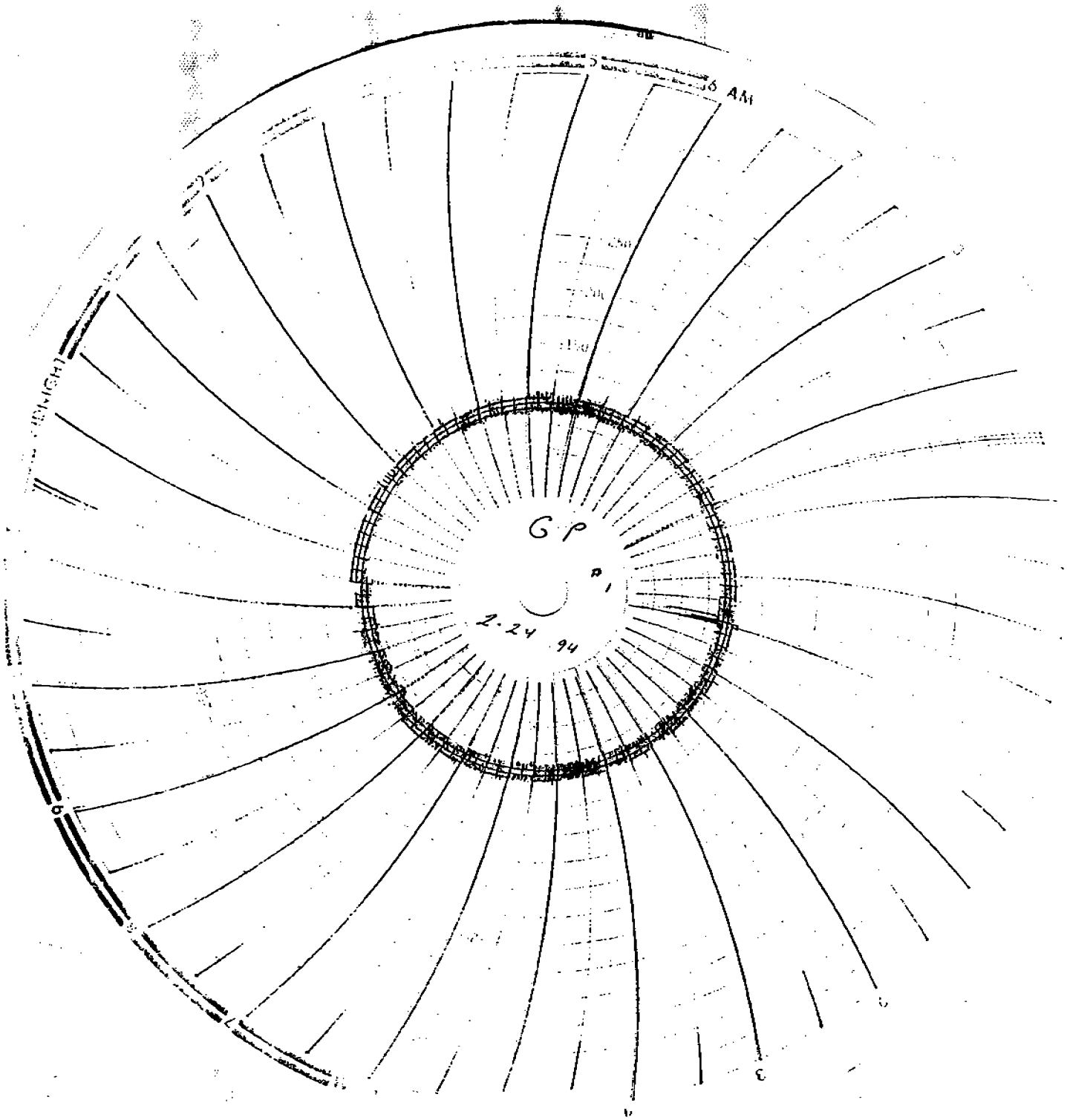
BR 55005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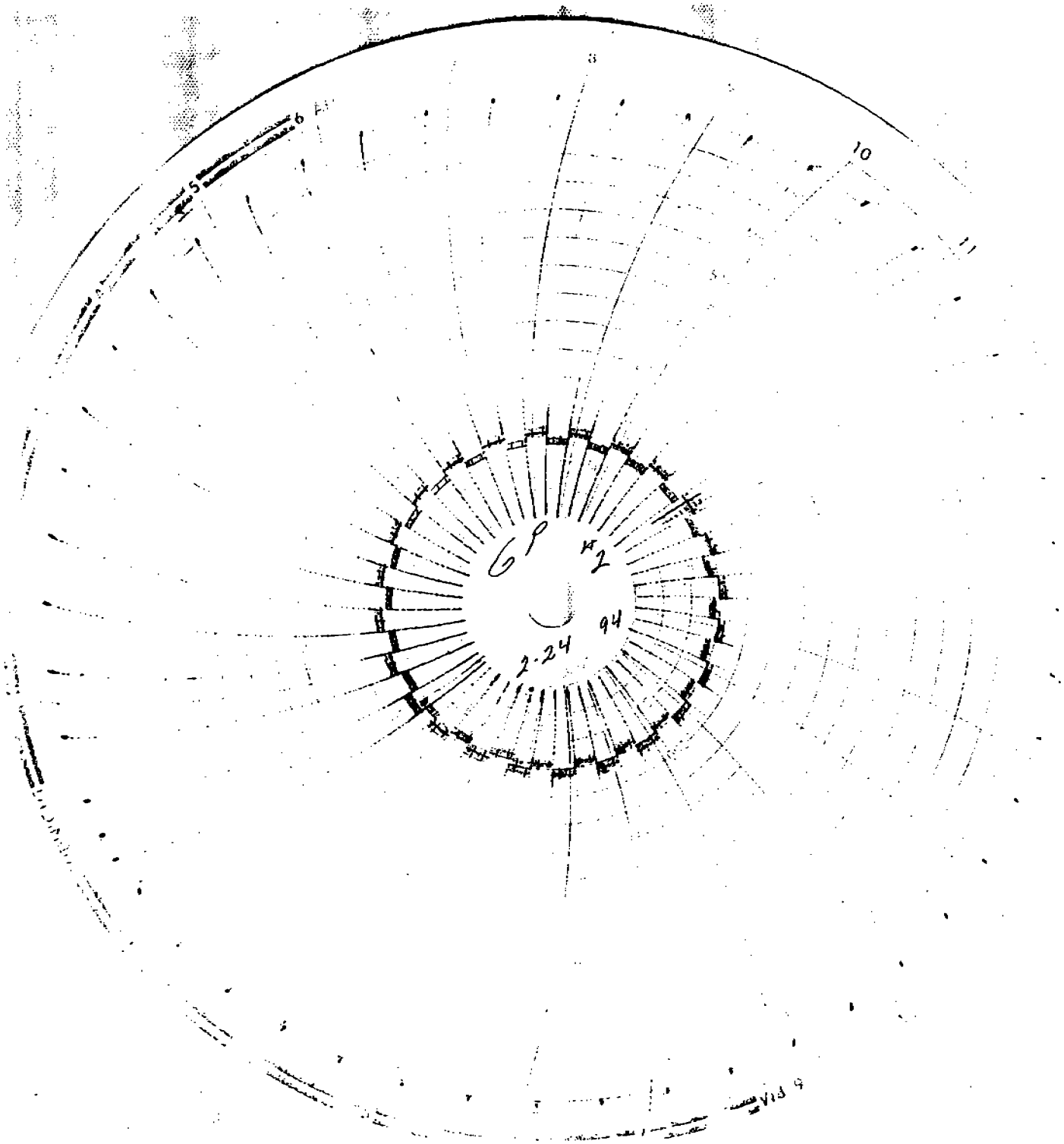
MIDNIGHT
6
Gp
P1
2-24 94

6 AM
NOON
6 PM
MIDNIGHT
2-24-94
BR 55005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H2
94
2.24

-5000
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2-5
Vol #2
Gain 94
662135

6 PM
MIDNIGHT
6 AM
NOON
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250
300
350

MIDNIGHT
6 AM
NOON
6 PM
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200
250
300

MIDNIGHT
AM
NOON
PM
STK
BR 55005

MIDNIGHT
6 AM
NOON
6 PM
BR 55005

COMPLIANCE DEMONSTRATION
NO. 1, 2, AND 3 BATTERY
PUSHING EMISSIONS CONTROL

USS CLAIRTON WORKS
CLAIRTON, PENNSYLVANIA

APPENDIX C

GRAVIMETRIC RESULTS, EMISSIONS CALCULATIONS

CHESTER
ENVIRONMENTAL

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS
TEST SITE 1,2,3 BATTERY PEC

TEST DATE: 02-22-94
TEST NUMBER: CLR-1-1-1

A.	Barometric Pressure	29.74	in. Hg	
B.	Static Pressure	1.0	in. H2O	
C.	Stack Pressure	29.81	in. Hg	[A+(B/13.6)]
D.	Average ΔH	1.49	in. H2O	
E.	Meter Pressure	29.85	in. Hg	[A+(D/13.6)]
F.	Average ΔP	1.1	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0032		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft^2	$(0.00545*I^2)$
K.	Nozzle Diameter	0.191	in.	
L.	Nozzle Area	1.99E-04	ft^2	$(0.00545*K^2)$
M.	Average Stack Temperature	103	°F	
N.	Average Stack Temperature	563	°R	(460+M)
O.	Average Meter Temperature	54	°F	
P.	Average Meter Temperature	514	°R	(460+O)
Q.	Condensate Volume	6.8	mL	
R.	Absorbed H2O	6.9	mL	
S.	Total H2O	13.7	mL	(Q+R)
T.	Filter Weight	0.0096	g	
U.	Probe Weight	0.0160	g	
V.	Impinger Weight	0.0011	g	
W.	Total Weight	0.0267	g	(T+U+V)
X.	Metered Gas Volume	38.474	dcf	
Y.	Corrected Metered Gas Volume	38.597	dcf	(X*H)
Z.	H2O Gas Volume	0.632	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	39.229	cf	(Y+Z)
BB.	Percent H2O	1.6	%	(100*Z/AA)
CC.	Gas Volume Sampled	39.555	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0104	gr/dscf	(15.43*W/CC)

EE. Average Molecular Weight:

Component	% Volume ÷100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.016		18	0.290
CO2	0.000	0.984	44	0.000
CO	0.000	0.984	28	0.000
O2	0.205	0.984	32	6.454
N2	0.795	0.984	28	21.901

Average Molecular Weight 28.65 lb./lb. mol

FF.	Average Stack Velocity	61.2	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	25900	acfm	(60*FF*J)
HH.	Standard Flow Rate	24200	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	98.4	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	2.13	lb/hr	[DD*HH*(1-BB/100)*60/7000]

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS
TEST SITE 1,2,3 BATTERY PEC

TEST DATE: 02-22-94
TEST NUMBER: CLR-1-2-1

A.	Barometric Pressure	29.74	in. Hg	
B.	Static Pressure	0.06	in. H2O	
C.	Stack Pressure	29.74	in. Hg	[A+(B/13.6)]
D.	Average ΔH	1.65	in. H2O	
E.	Meter Pressure	29.86	in. Hg	[A+(D/13.6)]
F.	Average ΔP	1.3	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0099		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft^2	$(0.00545*I^2)$
K.	Nozzle Diameter	0.197	in.	
L.	Nozzle Area	2.12E-04	ft^2	$(0.00545*K^2)$
M.	Average Stack Temperature	102	°F	
N.	Average Stack Temperature	562	°R	(460+M)
O.	Average Meter Temperature	56	°F	
P.	Average Meter Temperature	516	°R	(460+O)
Q.	Condensate Volume	6.3	mL	
R.	Absorbed H2O	8.1	mL	
S.	Total H2O	14.4	mL	(Q+R)
T.	Filter Weight	0.0019	g	
U.	Probe Weight	0.0058	g	
V.	Impinger Weight	0.0007	g	
W.	Total Weight	0.0084	g	(T+U+V)
X.	Metered Gas Volume	47.448	dcf	
Y.	Corrected Metered Gas Volume	47.918	dcf	(X*H)
Z.	H2O Gas Volume	0.667	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	48.585	cf	(Y+Z)
BB.	Percent H2O	1.4	%	(100*Z/AA)
CC.	Gas Volume Sampled	48.936	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0026	gr/dscf	(15.43*W/CC)

EE. Average Molecular Weight:

Component	% Volume ÷100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.014		18	0.247
CO2	0.000	0.986	44	0.000
CO	0.000	0.986	28	0.000
O2	0.205	0.986	32	6.470
N2	0.795	0.986	28	21.954

Average Molecular Weight 28.67 lb./lb. mol

FF.	Average Stack Velocity	66.5	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	28200	acfm	(60*FF*J)
HH.	Standard Flow Rate	26300	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	105.0	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	0.59	lb/hr	[DD*HH*(1-BB/100)*60/7000]

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS
TEST SITE 1,2,3 BATTERY PEC

TEST DATE: 02-22-94
TEST NUMBER: CLR-1-4-1

A.	Barometric Pressure	29.74	in. Hg	
B.	Static Pressure	0.9	in. H2O	
C.	Stack Pressure	29.81	in. Hg	[A+(B/13.6)]
D.	Average ΔH	1.26	in. H2O	
E.	Meter Pressure	29.83	in. Hg	[A+(D/13.6)]
F.	Average ΔP	1.20	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0054		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft^2	$(0.00545*I^2)$
K.	Nozzle Diameter	0.183	in.	
L.	Nozzle Area	1.83E-04	ft^2	$(0.00545*K^2)$
M.	Average Stack Temperature	102	°F	
N.	Average Stack Temperature	562	°R	(460+M)
O.	Average Meter Temperature	58	°F	
P.	Average Meter Temperature	518	°R	(460+O)
Q.	Condensate Volume	3.6	mL	
R.	Absorbed H2O	6.4	mL	
S.	Total H2O	10.0	mL	(Q+R)
T.	Filter Weight	0.0013	g	
U.	Probe Weight	0.0155	g	
V.	Impinger Weight	0.0002	g	
W.	Total Weight	0.0170	g	(T+U+V)
X.	Metered Gas Volume	37.100	dcf	
Y.	Corrected Metered Gas Volume	37.300	dcf	(X*H)
Z.	H2O Gas Volume	0.465	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	37.765	cf	(Y+Z)
BB.	Percent H2O	1.2	%	(100*Z/AA)
CC.	Gas Volume Sampled	37.909	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0069	gr/dscf	(15.43*W/CC)

EE. Average Molecular Weight:

Component	% Volume ÷ 100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.012		18	0.222
CO2	0.000	0.988	44	0.000
CO	0.000	0.988	28	0.000
O2	0.205	0.988	32	6.479
N2	0.795	0.988	28	21.986

Average Molecular Weight 28.69 lb./lb. mol

FF.	Average Stack Velocity	63.8	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	27000	acfm	(60*FF*J)
HH.	Standard Flow Rate	25300	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	97.8	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	1.48	lb/hr	[DD*HH*(1-BB/100)*60/7000]

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS
TEST SITE 1,2,3 BATTERY PEC

TEST DATE: 02-22-94
TEST NUMBER: CLR-1-5-1

A.	Barometric Pressure	29.74	in. Hg	
B.	Static Pressure	0.6	in. H2O	
C.	Stack Pressure	29.78	in. Hg	[A+(B/13.6)]
D.	Average ΔH	1.20	in. H2O	
E.	Meter Pressure	29.83	in. Hg	[A+(D/13.6)]
F.	Average ΔP	1.3	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0179		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft²	(0.00545*I²)
K.	Nozzle Diameter	0.181	in.	
L.	Nozzle Area	1.79E-04	ft²	(0.00545*K²)
M.	Average Stack Temperature	89	°F	
N.	Average Stack Temperature	549	°R	(460+M)
O.	Average Meter Temperature	43	°F	
P.	Average Meter Temperature	503	°R	(460+O)
Q.	Condensate Volume	4.3	mL	
R.	Absorbed H2O	7.3	mL	
S.	Total H2O	11.6	mL	(Q+R)
T.	Filter Weight	0.0030	g	
U.	Probe Weight	0.0071	g	
V.	Impinger Weight	0.0004	g	
W.	Total Weight	0.0105	g	(T+U+V)
X.	Metered Gas Volume	40.302	dcf	
Y.	Corrected Metered Gas Volume	41.023	dcf	(X*H)
Z.	H2O Gas Volume	0.524	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	41.547	cf	(Y+Z)
BB.	Percent H2O	1.3	%	(100*Z/AA)
CC.	Gas Volume Sampled	42.930	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0038	gr/dscf	(15.43*W/CC)

EE. Average Molecular Weight:

Component	% Volume ÷ 100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.013		18	0.227
CO2	0.000	0.987	44	0.000
CO	0.000	0.987	28	0.000
O2	0.205	0.987	32	6.477
N2	0.795	0.987	28	21.979

Average Molecular Weight 28.68 lb./lb. mol

FF.	Average Stack Velocity	65.6	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	27800	acfm	(60*FF*J)
HH.	Standard Flow Rate	26600	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	107.8	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	0.85	lb/hr	[DD*HH*(1-BB/100)*60/7000]

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS
TEST SITE 1,2,3 BATTERY PEC

TEST DATE: 02-23-94
TEST NUMBER: CLR-1-1-2

A.	Barometric Pressure	29.25	in. Hg	
B.	Static Pressure	0.6	in. H2O	
C.	Stack Pressure	29.29	in. Hg	[A+(B/13.6)]
D.	Average Δ H	1.58	in. H2O	
E.	Meter Pressure	29.37	in. Hg	[A+(D/13.6)]
F.	Average Δ P	1.1	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0032		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft²	(0.00545*I²)
K.	Nozzle Diameter	0.191	in.	
L.	Nozzle Area	1.99E-04	ft²	(0.00545*K²)
M.	Average Stack Temperature	97	°F	
N.	Average Stack Temperature	557	°R	(460+M)
O.	Average Meter Temperature	52	°F	
P.	Average Meter Temperature	512	°R	(460+O)
Q.	Condensate Volume	3.9	mL	
R.	Absorbed H2O	13.3	mL	
S.	Total H2O	17.2	mL	(Q+R)
T.	Filter Weight	0.0034	g	
U.	Probe Weight	0.0284	g	
V.	Impinger Weight	0.0002	g	
W.	Total Weight	0.0320	g	(T+U+V)
X.	Metered Gas Volume	39.986	dcf	
Y.	Corrected Metered Gas Volume	40.114	dcf	(X*H)
Z.	H2O Gas Volume	0.804	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	40.918	cf	(Y+Z)
BB.	Percent H2O	2.0	%	(100*Z/AA)
CC.	Gas Volume Sampled	40.602	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0122	gr/dscf	(15.43*W/CC)

EE. Average Molecular Weight:

Component	% Volume ÷100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.020		18	0.354
CO2	0.000	0.980	44	0.000
CO	0.000	0.980	28	0.000
O2	0.205	0.980	32	6.431
N2	0.795	0.980	28	21.823

Average Molecular Weight 28.61 lb./lb. mol

FF.	Average Stack Velocity	61.4	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	26000	scfm	(60*FF*J)
HH.	Standard Flow Rate	24100	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	101.7	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	2.46	lb/hr	[DD*HH*(1-BB/100)*60/7000]

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS
TEST SITE 1,2,3 BATTERY PEC

TEST DATE: 02-23-94
TEST NUMBER: CLR-1-2-2

A.	Barometric Pressure	29.25	in. Hg	
B.	Static Pressure	0.06	in. H2O	
C.	Stack Pressure	29.25	in. Hg	[A+(B/13.6)]
D.	Average ΔH	1.72	in. H2O	
E.	Meter Pressure	29.38	in. Hg	[A+(D/13.6)]
F.	Average ΔP	1.3	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0099		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft^2	$(0.00545*I^2)$
K.	Nozzle Diameter	0.197	in.	
L.	Nozzle Area	2.12E-04	ft^2	$(0.00545*K^2)$
M.	Average Stack Temperature	95	°F	
N.	Average Stack Temperature	555	°R	(460+M)
O.	Average Meter Temperature	59	°F	
P.	Average Meter Temperature	519	°R	(460+O)
Q.	Condensate Volume	5.2	mL	
R.	Absorbed H2O	12.8	mL	
S.	Total H2O	18.0	mL	(Q+R)
T.	Filter Weight	0.0023	g	
U.	Probe Weight	0.0038	g	
V.	Impinger Weight	0.0002	g	
W.	Total Weight	0.0063	g	(T+U+V)
X.	Metered Gas Volume	46.834	dcf	
Y.	Corrected Metered Gas Volume	47.298	dcf	(X*H)
Z.	H2O Gas Volume	0.853	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	48.150	cf	(Y+Z)
BB.	Percent H2O	1.8	%	(100*Z/AA)
CC.	Gas Volume Sampled	47.244	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0021	gr/dscf	(15.43*W/CC)

EE. Average Molecular Weight:

Component	% Volume ÷100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.018		18	0.319
CO2	0.000	0.982	44	0.000
CO	0.000	0.982	28	0.000
O2	0.205	0.982	32	6.444
N2	0.795	0.982	28	21.866

Average Molecular Weight 28.63 lb./lb. mol

FF.	Average Stack Velocity	66.7	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	28300	acfm	(60*FF*J)
HH.	Standard Flow Rate	26300	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	101.8	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	0.46	lb/hr	[DD*HH*(1-BB/100)*60/7000]

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS
TEST SITE 1,2,3 BATTERY PEC

TEST DATE: 02-23-94
TEST NUMBER: CLR-1-4-2

A.	Barometric Pressure	29.25	in. Hg	
B.	Static Pressure	1.0	in. H2O	
C.	Stack Pressure	29.32	in. Hg	[A+(B/13.6)]
D.	Average ΔH	1.57	in. H2O	
E.	Meter Pressure	29.37	in. Hg	[A+(D/13.6)]
F.	Average ΔP	1.20	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0054		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft^2	$(0.00545*I^2)$
K.	Nozzle Diameter	0.194	in.	
L.	Nozzle Area	2.05E-04	ft^2	$(0.00545*K^2)$
M.	Average Stack Temperature	102	°F	
N.	Average Stack Temperature	562	°R	(460+M)
O.	Average Meter Temperature	59	°F	
P.	Average Meter Temperature	519	°R	(460+O)
Q.	Condensate Volume	6.4	mL	
R.	Absorbed H2O	10.2	mL	
S.	Total H2O	16.6	mL	(Q+R)
T.	Filter Weight	0.0021	g	
U.	Probe Weight	0.0055	g	
V.	Impinger Weight	0.0003	g	
W.	Total Weight	0.0079	g	(T+U+V)
X.	Metered Gas Volume	42.983	dcf	
Y.	Corrected Metered Gas Volume	43.215	dcf	(X*H)
Z.	H2O Gas Volume	0.786	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	44.002	cf	(Y+Z)
BB.	Percent H2O	1.8	%	(100*Z/AA)
CC.	Gas Volume Sampled	43.150	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0028	gr/dscf	(15.43*W/CC)

EE. Average Molecular Weight:

Component	% Volume ÷100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.018		18	0.322
CO2	0.000	0.982	44	0.000
CO	0.000	0.982	28	0.000
O2	0.205	0.982	32	6.443
N2	0.795	0.982	28	21.862

Average Molecular Weight 28.63 lb./lb. mol

FF.	Average Stack Velocity	64.4	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	27300	acfm	(60*FF*J)
HH.	Standard Flow Rate	25100	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	100.5	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	0.60	lb/hr	[DD*HH*(1-BB/100)*60/7000]

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS
TEST SITE 1,2,3 BATTERY PEC

TEST DATE: 02-23-94
TEST NUMBER: CLR-1-5-2

A.	Barometric Pressure	29.25	in. Hg	
B.	Static Pressure	0.6	in. H2O	
C.	Stack Pressure	29.29	in. Hg	[A+(B/13.6)]
D.	Average ΔH	1.22	in. H2O	
E.	Meter Pressure	29.34	in. Hg	[A+(D/13.6)]
F.	Average ΔP	1.3	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0179		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft²	(0.00545*I²)
K.	Nozzle Diameter	0.181	in.	
L.	Nozzle Area	1.79E-04	ft²	(0.00545*K²)
M.	Average Stack Temperature	89	°F	
N.	Average Stack Temperature	549	°R	(460+M)
O.	Average Meter Temperature	46	°F	
P.	Average Meter Temperature	506	°R	(460+O)
Q.	Condensate Volume	5.1	mL	
R.	Absorbed H2O	10.5	mL	
S.	Total H2O	15.6	mL	(Q+R)
T.	Filter Weight	0.0021	g	
U.	Probe Weight	0.0108	g	
V.	Impinger Weight	0.0003	g	
W.	Total Weight	0.0132	g	(T+U+V)
X.	Metered Gas Volume	41.086	dcf	
Y.	Corrected Metered Gas Volume	41.821	dcf	(X*H)
Z.	H2O Gas Volume	0.721	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	42.542	cf	(Y+Z)
BB.	Percent H2O	1.7	%	(100*Z/AA)
CC.	Gas Volume Sampled	42.793	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0048	gr/dscf	(15.43*W/CC)

EE. Average Molecular Weight:

Component	% Volume ÷100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.017		18	0.305
CO2	0.000	0.983	44	0.000
CO	0.000	0.983	28	0.000
O2	0.205	0.983	32	6.449
N2	0.795	0.983	28	21.883

Average Molecular Weight 28.64 lb./lb. mol

FF.	Average Stack Velocity	66.2	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	28100	acfm	(60*FF*J)
HH.	Standard Flow Rate	26500	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	108.3	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	1.06	lb/hr	[DD*HH*(1-BB/100)*60/7000]

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS
TEST SITE 1,2,3 BATTERY PEC

TEST DATE: 02-24-94
TEST NUMBER: CLR-1-1-3

A.	Barometric Pressure	29.04	in. Hg	
B.	Static Pressure	1.0	in. H2O	
C.	Stack Pressure	29.11	in. Hg	[A+(B/13.6)]
D.	Average Δ H	1.65	in. H2O	
E.	Meter Pressure	29.16	in. Hg	[A+(D/13.6)]
F.	Average Δ P	1.2	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0032		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft^2	$(0.00545*I^2)$
K.	Nozzle Diameter	0.191	in.	
L.	Nozzle Area	1.99E-04	ft^2	$(0.00545*K^2)$
M.	Average Stack Temperature	93	°F	
N.	Average Stack Temperature	553	°R	(460+M)
O.	Average Meter Temperature	60	°F	
P.	Average Meter Temperature	520	°R	(460+O)
Q.	Condensate Volume	4.1	mL	
R.	Absorbed H2O	8.9	mL	
S.	Total H2O	13.0	mL	(Q+R)
T.	Filter Weight	0.0018	g	
U.	Probe Weight	0.0196	g	
V.	Impinger Weight	0.0003	g	
W.	Total Weight	0.0217	g	(T+U+V)
X.	Metered Gas Volume	40.098	dcf	
Y.	Corrected Metered Gas Volume	40.226	dcf	(X*H)
Z.	H2O Gas Volume	0.622	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	40.848	cf	(Y+Z)
BB.	Percent H2O	1.5	%	(100*Z/AA)
CC.	Gas Volume Sampled	39.809	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0084	gr/dscf	(15.43*W/CC)
EE.	Average Molecular Weight:			

Component	% Volume ÷100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.015		18	0.274
CO2	0.000	0.985	44	0.000
CO	0.000	0.985	28	0.000
O2	0.205	0.985	32	6.460
N2	0.795	0.985	28	21.921
Average Molecular Weight				28.66 lb./lb. mol

FF.	Average Stack Velocity	64.0	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	27200	acfm	(60*FF*J)
HH.	Standard Flow Rate	25300	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	94.6	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	1.80	lb/hr	[DD*HH*(1-BB/100)*60/7000]

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS
TEST SITE 1,2,3 BATTERY PEC

TEST DATE: 02-24-94
TEST NUMBER: CLR-1-2-3

A.	Barometric Pressure	29.04	in. Hg	
B.	Static Pressure	1.0	in. H2O	
C.	Stack Pressure	29.11	in. Hg	[A+(B/13.6)]
D.	Average ΔH	1.56	in. H2O	
E.	Meter Pressure	29.15	in. Hg	[A+(D/13.6)]
F.	Average ΔP	1.2	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0099		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft^2	$(0.00545*I^2)$
K.	Nozzle Diameter	0.197	in.	
L.	Nozzle Area	2.12E-04	ft^2	$(0.00545*K^2)$
M.	Average Stack Temperature	90	°F	
N.	Average Stack Temperature	550	°R	(460+M)
O.	Average Meter Temperature	60	°F	
P.	Average Meter Temperature	520	°R	(460+O)
Q.	Condensate Volume	1.2	mL	
R.	Absorbed H2O	12.5	mL	
S.	Total H2O	13.7	mL	(Q+R)
T.	Filter Weight	0.0015	g	
U.	Probe Weight	0.0041	g	
V.	Impinger Weight	0.0002	g	
W.	Total Weight	0.0058	g	(T+U+V)
X.	Metered Gas Volume	48.479	dcf	
Y.	Corrected Metered Gas Volume	48.959	dcf	(X*H)
Z.	H2O Gas Volume	0.655	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	49.614	cf	(Y+Z)
BB.	Percent H2O	1.3	%	(100*Z/AA)
CC.	Gas Volume Sampled	48.441	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0018	gr/dscf	(15.43*W/CC)

EE. Average Molecular Weight:

Component	% Volume ÷100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.013		18	0.238
CO2	0.000	0.987	44	0.000
CO	0.000	0.987	28	0.000
O2	0.205	0.987	32	6.473
N2	0.795	0.987	28	21.966

Average Molecular Weight 28.68 lb./lb. mol

FF.	Average Stack Velocity	63.8	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	27100	acfm	(60*FF*J)
HH.	Standard Flow Rate	25300	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	108.0	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	0.40	lb/hr	[DD*HH*(1-BB/100)*60/7000]

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS
TEST SITE 1,2,3 BATTERY PEC

TEST DATE: 02-24-94
TEST NUMBER: CLR-1-4-3

A.	Barometric Pressure	29.04	in. Hg	
B.	Static Pressure	0.6	in. H2O	
C.	Stack Pressure	29.08	in. Hg	[A+(B/13.6)]
D.	Average Δ H	1.54	in. H2O	
E.	Meter Pressure	29.15	in. Hg	[A+(D/13.6)]
F.	Average Δ P	1.2	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0054		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft^2	$(0.00545*I^2)$
K.	Nozzle Diameter	0.194	in.	
L.	Nozzle Area	2.05E-04	ft^2	$(0.00545*K^2)$
M.	Average Stack Temperature	96	°F	
N.	Average Stack Temperature	556	°R	(460+M)
O.	Average Meter Temperature	53	°F	
P.	Average Meter Temperature	513	°R	(460+O)
Q.	Condensate Volume	4.4	mL	
R.	Absorbed H2O	6.4	mL	
S.	Total H2O	10.8	mL	(Q+R)
T.	Filter Weight	0.0030	g	
U.	Probe Weight	0.0080	g	
V.	Impinger Weight	0.0002	g	
W.	Total Weight	0.0112	g	(T+U+V)
X.	Metered Gas Volume	42.475	dcf	
Y.	Corrected Metered Gas Volume	42.704	dcf	(X*H)
Z.	H2O Gas Volume	0.509	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	43.214	cf	(Y+Z)
BB.	Percent H2O	1.2	%	(100*Z/AA)
CC.	Gas Volume Sampled	42.827	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0040	gr/dscf	(15.43*W/CC)

EE. Average Molecular Weight:

Component	% Volume ÷100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.012		18	0.212
CO2	0.000	0.988	44	0.000
CO	0.000	0.988	28	0.000
O2	0.205	0.988	32	6.483
N2	0.795	0.988	28	21.998
Average Molecular Weight				28.69 lb./lb. mol

FF.	Average Stack Velocity	64.2	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	27200	acfm	(60*FF*J)
HH.	Standard Flow Rate	25100	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	99.1	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	0.86	lb/hr	[DD*HH*(1-BB/100)*60/7000]

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS
TEST SITE 1,2,3 BATTERY PEC

TEST DATE: 02-24-94
TEST NUMBER: CLR-1-5-3

A.	Barometric Pressure	29.04	in. Hg	
B.	Static Pressure	0.6	in. H2O	
C.	Stack Pressure	29.08	in. Hg	[A+(B/13.6)]
D.	Average ΔH	1.19	in. H2O	
E.	Meter Pressure	29.13	in. Hg	[A+(D/13.6)]
F.	Average ΔP	1.3	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0179		
I.	Stack Diameter	36	in.	
J.	Stack Area	7.07	ft^2	$(0.00545*I^2)$
K.	Nozzle Diameter	0.181	in.	
L.	Nozzle Area	1.79E-04	ft^2	$(0.00545*K^2)$
M.	Average Stack Temperature	84	°F	
N.	Average Stack Temperature	544	°R	(460+M)
O.	Average Meter Temperature	39	°F	
P.	Average Meter Temperature	499	°R	(460+O)
Q.	Condensate Volume	2.3	mL	
R.	Absorbed H2O	9.7	mL	
S.	Total H2O	12.0	mL	(Q+R)
T.	Filter Weight	0.0033	g	
U.	Probe Weight	0.0114	g	
V.	Impinger Weight	0.0004	g	
W.	Total Weight	0.0151	g	(T+U+V)
X.	Metered Gas Volume	40.222	dcf	
Y.	Corrected Metered Gas Volume	40.942	dcf	(X*H)
Z.	H2O Gas Volume	0.551	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	41.493	cf	(Y+Z)
BB.	Percent H2O	1.3	%	(100*Z/AA)
CC.	Gas Volume Sampled	42.174	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0055	gr/dscf	(15.43*W/CC)

EE. Average Molecular Weight:

Component	% Volume ÷100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.013		18	0.239
CO2	0.000	0.987	44	0.000
CO	0.000	0.987	28	0.000
O2	0.205	0.987	32	6.473
N2	0.795	0.987	28	21.965

Average Molecular Weight 28.68 lb./lb. mol

FF.	Average Stack Velocity	66.1	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Averge Flow Rate	28000	acfm	(60*FF*J)
HH.	Standard Flow Rate	26400	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	3600	sec	
JJ.	Percent Isokinetic	106.7	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	1.23	lb/hr	[DD*HH*(1-BB/100)*60/7000]

74

CHESTER ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

ANALYTICAL REPORTING FORM

CLIENT: USS - Edgar Thomson
PLANT LOCATION: Edgar Thomson - Mon Valley Works
PROJECT NUMBER: 39,345-09
UNIT TESTED: 1, 2, 3 Battery PEC

TEST DATE: 2/22, 2/23 + 2/24/94
DATE RECEIVED: 2/22, 2/23 + 2/24/94
DATE ANALYZED: 2/25, 2/28 + 3/1/94
ANALYTICAL METHOD:

Test Number	Filter ID Number	Component	Cyclone Weight Units ( )	Filter Weight Units (grams)	Soluble Portion of Front Half H2O Rinse Units (grams)	Soluble Portion of Front Half Acetone Rinse Units (grams)	Soluble Portion of Back Half H2O Rinse Units (grams)	Soluble Portion of Back Half Acetone Rinse Units (grams)	0.22μm Filter Insoluble Portion of Back Half H2O Rinse Units (grams)
CLR-1-1-1	1157	Particulate		0.0096	0.0105	0.0052	0.0206	0.0034	0.0011
CLR-1-2-1	1155	Particulate		0.0019	0.0040	0.0018	0.0078	0.0027	0.0007
CLR-1-4-1	1156	Particulate		0.0013	0.0100	0.0055	0.0084	0.0047	0.0002
CLR-1-5-1	1154	Particulate		0.0030	0.0043	0.0028	0.0155	0.0035	0.0004
CLR-1-1-2	1169	Particulate		0.0034	0.0206	0.0078	0.0123	0.0031	0.0002
CLR-1-2-2	1172	Particulate		0.0023	0.0010	0.0028	0.0142	0.0007	0.0002
CLR-1-4-2	1161	Particulate		0.0021	0.0032	0.0023	0.0068	0.0009	0.0003
CLR-1-5-2	1173	Particulate		0.0021	0.0013	0.0095	0.0197	0.0030	0.0003
CLR-1-1-3	1158	Particulate		0.0018	0.0125	0.0071	0.0025	0.0031	0.0003
CLR-1-2-3	1160	Particulate		0.0015	0.0004	0.0037	0.0090	0.0021	0.0002
CLR-1-4-3	1171	Particulate		0.0030	0.0038	0.0042	0.0156	0.0028	0.0002
CLR-1-5-3	1170	Particulate		0.0033	0.0021	0.0093	0.0016	0.0023	0.0004
CLR-BLANK	1182	Particulate		0.0000	0.0000	0.0000			

Analyst's Signature: Patrick J. Stockton
Date: 3/7/94

Comments

AQE 10/92