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AP-42 Section	<u>12.2</u>
Reference	
Report Sect.	<u>4</u>
Reference	<u>76</u>

revised

**USS CLAIRTON WORKS
CLAIRTON, PENNSYLVANIA**

Report on

**COMPLIANCE DEMONSTRATION
NO. 7 BATTERY COMBUSTION STACK**

JUNE 1994

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Project No.: 3934-45-01

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EXECUTIVE SUMMARY

On April 26 and 27, 1994, a compliance test program was conducted for USS Clairton Works, Clairton, PA, on the #7 Battery Combustion Stack. The purpose of the testing was to determine the (1) concentration and mass emission rate of particulate matter, and (2) presence and extent of visible emissions from the stack as required by the Amended Mon Valley Consent Decree, Paragraph V.A.(6) and Appendix 4.A.

The results of the testing showed an average particulate matter concentration and emission rate of 0.0282 grains per dry standard cubic feet (gr/dscf) and 8.45 pounds per hour (lb/hr), respectively. As promulgated by the Amended Mon Valley Consent Decree, Paragraph V.A.(6), the allowable particulate matter concentration for #7 Battery Combustion Stack is 0.030 gr/dscf. Thus, the average particulate matter concentration in the stack gas is less than the allowable concentration.

The opacity of the exhaust gas during any of the three tests was less than or equal to 25 percent. The average opacity of the exhaust gas in any 3 consecutive minute period was less than or equal to 15 percent. As promulgated by the Amended Mon Valley Consent Decree, Paragraph V.A.(6), the "visible emissions shall not equal or exceed 20 percent opacity for a period or periods aggregating in excess of 3 minutes in any 60-minute period and shall never equal or exceed 60 percent opacity."

1.0 INTRODUCTION

On April 26 and 27, 1994, a compliance test program was conducted for USS Clairton Works, Clairton, PA, on the #7 Battery Combustion Stack. The purpose of the testing was to determine the (1) concentration and mass emission rate of particulate matter, and (2) presence and extent of visible emissions from the stack as required by the Amended Mon Valley Consent Decree, Paragraph V.A.(6) and Appendix 4.A.

Testing was performed by Chester Environmental. All test procedures were witnessed by Phil Lawrence from the Allegheny County Health Department - Department of Air Quality (DAQ).



2.0 METHODOLOGIES

The compliance test program was conducted in accordance with the emissions measurement test protocol, which can be found in Appendix A.

Particulate matter sampling was performed in accordance with EPA Stationary Source Sampling Methods 1 through 5. Three two-hour tests were executed during normal, maximum operation and production of the battery.

The process exhausts through a 114 inch inside diameter stack. A total of 24 traverse points, 12 per diameter, were sampled; the traverse points were calculated in accordance with EPA Method 1. Sampling was conducted through four equally spaced ports, with six traverse points sampled per port. Each traverse point was sampled for 5 minutes, thus bringing the total sampling time to 120 minutes for each test run.

In accordance with EPA Method 2, velocities and volumetric flow rates of the exhaust gas were determined 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.

At the beginning and end of each test, gas concentrations of carbon dioxide (CO_2), oxygen (O_2), and nitrogen (N_2 , by difference) were determined with the use of 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 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 was assembled as required by the method, leak-checked on site at the beginning and end of each test run, and operated such that isokinetic conditions were maintained. Clean up of the sampling train included an acetone rinse of the front-half components of the sample train. Front-half acetone rinses were 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 was prepared in the same manner as the test sample rinses. The blank residue weight was subtracted from the test sample residue weights. After blank correction, the acetone rinse residue weights and sample train filter weights were used to determine total particulate matter catch.

All visible emissions determinations were performed in accordance with EPA Stationary Source Sampling Method 9. Visible emission readings were recorded for the duration of each particulate matter test.

3.0 RESULTS

All testing was performed during periods of normal plant operation. The test results have been summarized in Table 1. The results of the testing showed an average particulate matter concentration and emission rate of 0.0282 grains per dry standard cubic feet (gr/dscf) and 8.45 pounds per hour (lb/hr), respectively. As promulgated by the Amended Mon Valley Consent Decree, Paragraph V.A.(6), the allowable particulate matter concentration for #7 Battery Combustion Stack is 0.030 gr/dscf. Thus, the average particulate matter concentration in the stack gas is less than the allowable concentration.

Table 1 also lists other pertinent stack and sampling parameters which include stack 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), stack gas temperature ($^{\circ}\text{F}$), moisture content of the stack gas (percent by volume), gas volume sampled for each test in units of dry standard cubic feet (dscf), and the isokinetics value for each test. The gas volume sampled for each 120 minute test was greater than 50 dry standard cubic feet. The isokinetics value is equal to the ratio of the average linear gas velocity sampled through the probe nozzle to the average stack gas velocity. An isokinetics value between 90 percent and 110 percent is considered acceptable. Isokinetic values for the three test runs were 105.1 percent, 103.0 percent, and 102.8 percent; therefore, all values were within the acceptable range. Actual test sampling times have also been included in Table 1.

Copies of the field data sheets for the visible emissions readings can be found in Appendix A. As promulgated by the Amended Mon Valley Consent Decree, Paragraph V.A.(6), the "visible emissions shall not equal or exceed 20 percent opacity for a period or periods aggregating in excess of 3 minutes in any 60-minute period and shall never equal or exceed 60 percent opacity." The opacity of the exhaust gas during any of the three tests was less than or equal to 25 percent. The average opacity of the exhaust gas in any 3 consecutive minute period was less than or equal to 15 percent.

Copies of the field data sheets can be found in Appendix A. All sampling equipment was calibrated and operated in accordance with EPA Stationary Source Sampling Methods 1 through 5. Copies of the pre-test calibration results, post-test calibration results, and the

results of an audit conducted with a critical orifice provided by the Allegheny County Health Department DAQ can be found in Appendix A.

Copies of the plant operational data can be found in Appendix B. The gravimetric results and the emissions calculations for each test can be found in Appendix C.

USS CLAIRTON WORKS
CLAIRTON, PA

TABLE 1

#7 BATTERY COMBUSTION STACK
PARTICULATE MATTER EMISSIONS DATA

Test Number		Run 1	Run 2	Run 3	Average
Test Date		CLR-BS#7-1	CLR-BS#7-2	CLR-BS#7-3	
		04-26-94	04-26-94	04-27-94	
<u>Mass Emissions Rate and Concentration</u>					
Particulate Matter	(lb/hr)	11.87	6.65	6.82	8.45
	(gr/dscf)	0.0413	0.0213	0.0220	0.0282
<u>Stack Conditions</u>					
Flow Rate	(acfm)	76300	83700	83900	81300
	(scfm)	39300	43000	43100	41800
	(dscfm)	33500	36500	36200	35400
Temperature	(°F)	535	537	538	537
Moisture Content	(%)	14.7	15.2	15.9	15.3
<u>Sampling Conditions</u>					
Test times		1056	1400	0755	
		to 1126	to 1430	to 0825	
		1134	1434	0829	
		to 1204	to 1504	to 0859	
		1209	1508	0904	
		to 1239	to 1538	to 0934	
		1258	1543	0938	
		to 1328	to 1613	to 1008	
Sampling Time	(minutes)	120	120	120	
Sample Volume	(dscf)	78.128	83.302	82.588	
Isokinetics	(%)	105.1	103.0	102.8	



**COMPLIANCE DEMONSTRATION
NO. 7 BATTERY COMBUSTION STACK**

**USS CLAIRTON WORKS
CLAIRTON, PENNSYLVANIA**

**APPENDIX A
TEST PROTOCOL, FIELD DATA SHEETS, CALIBRATION
RESULTS**

**TEST PROTOCOL
COMPLIANCE DEMONSTRATION
#7 BATTERY COMBUSTION STACK**

**USS CLAIRTON WORKS
CLAIRTON, PA**

Particulate matter sampling will be performed in accordance with EPA Stationary Source Sampling Methods 1 through 5 (40 CFR, Part 60, Appendix A) and Sections 139.11 and 139.12 of the Pennsylvania Department of Environmental Resources (PA DER) Source Testing Manual. Three two-hour tests will be executed during normal operating conditions. Greater than 50 dry standard cubic feet of sample gas will be collected during each test run.

The process exhausts through a 114 inch diameter stack. A total of 24 traverse points (12 per diameter) will be sampled; the traverse points will be calculated in accordance with EPA Method 1. Sampling will be conducted through four equally spaced ports, with six traverse points sampled per port. Each point will be sampled for 5 minutes, thus bringing the total sampling time to 120 minutes.

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.

At the beginning and end of each test, gas concentrations of CO₂, O₂, and N₂ (by difference) will be determined with the use of Fyrite apparatus as specified by EPA Method 3. Gas concentrations will be used to obtain molecular weight of the process 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 such that isokinetic conditions are maintained. Clean up of the sampling train will include an acetone rinse of the front-half components of the sample train. Front-half acetone rinses will be evaporated to dryness, desiccated, and weighed to a constant weight. Sample train glass fiber 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 milligram. One acetone blank will be prepared in the same manner as the test sample rinses. The blank residue weight will be subtracted from the test sample residue weights. After blank correction, front-half acetone rinse residue weights and sample train filter weights will be used to determine total particulate matter catch. Clean up and analytical procedures will follow the methodology of EPA Method 5.

All visible emissions determinations will be performed in accordance with EPA Stationary Source Sampling Method 9. Visible emission readings will be recorded for the duration of each particulate matter test.

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 Allegheny County Health Department Bureau of Air Quality, field data sheets for the particulate matter sampling and visible emissions determinations, computer-generated emissions calculations, and analytical results for each test.

"STACK SAMPLING DATA SIGEL"

CLIENT	USS - CLAYTON WARRS	TEST DATE	04-26-94	ORIFICE CORRECTION (ΔH@) 1.814	HOT/COLD BOX NO. 5
TEST UNIT	WASTE HEAT STORM #7	TEST NO.	USS - CLAYTON #7-1	METER CORRECTION (Y)	1.028
PROJECT NO.	3934-45-01	NOZZLE (SIZE, #)	0.490	CALIBRATION DATE	02-02-94
TEST CREW	2PC TNA LG	STATIC PRESSURE	-1.0' H ₂ O	PITOT CORRECTION	0.84
BAROMETRIC PRESSURE	29.10	PORT DIRECTION	SOUTH, WEST	CONTROL BOX NO.	SIX
				PORT SIZE	3"

Traverse Point (inches)	Time	Dry Gas Meter Reading (def)	Pilot ΔP (in. H ₂ O)	Orifice ΔH		Meter Temperature		Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
				Required (in. H ₂ O)	Actual (in. H ₂ O)	In (°F)	Out (°F)						
24	10:56	86.450	.03	.92	.92	86	85	3.0	490	220°F	468	250	5 min./point
76			.03	.92	.92	94	86	3.0	501				
135			.04	1.23	1.23	100	86	4.0	511				
202			.05	1.54	1.54	109	89	5.5	520				
285			.05	1.54	1.54	113	92	5.5	541				
406	11:25	105.316	.06	1.81	1.81	113	92	6.5	553				
24	11:34	105.346	.03	.90	.90	99	93	4.0	547				
76			.05	1.50	1.50	109	93	6.0	535				
135			.06	1.80	1.80	114	93	6.5	544				
202			.07	2.10	2.10	115	95	7.0	532				
285			.08	2.39	2.39	117	95	8.5	564				
406	12:04	127.708	.08	2.39	2.39	116	97	9.0	569				
													Estimates:
													MW = 28.8
													%H ₂ O = 10

PITOT LEAK CHECK

	Positive	Negative
Before	0% / 15264	0% / 15366
After	0% / 15264	0% / 15366

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	50	5001 cfm
After	10.5	50005 cfm

Impinger	Impinger
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No.	Contents	Final	Initial	Difference
1.	100000	836.4	640.4	196.0
2.	100000	567.5	515.0	52.5
3.	EMRY	465.1	456.6	8.5
4.	Share 984.	697.6	670.7	26.9
5.				
6.				
7.				
8.			total 7	285.9

STACK SAMPLING DATA SHEET

Page 2 of 2

CLIENT USS-CLARKSON WORKS TEST DATE 04-26-94 ORIFICE CORRECTION (ΔH) 1.814 HOT/COLD BOX NO. 5
 TEST UNIT 1/2" BENT SPARE #7 TEST NO. USS-CL-AS-7-1 METER CORRECTION (Y) 1.928 PROBE NO. 7-1
 PROJECT NO. 3934-45-01 NOZZLE (SIZE, #) 0490 CALIBRATION DATE 02-02-94 FILTER NO. 1246
 TEST CREW L.C. PM, LC STATIC PRESSURE -1.0" H₂O PITOT CORRECTION 0.84 STACK DIA. 14"
 BAROMETRIC PRESSURE 29.10 PORT DIRECTION NORTH, EAST CONTROL BOX NO. SIX PORT SIZE 3"

Traverse Point (inches)	Time	Dry Gas Meter Reading (scf)	Pilot ΔP (in. H ₂ O)	Orifice ΔH		Meter Temperature		Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
				Required (in. H ₂ O)	Actual (in. H ₂ O)	In (°F)	Out (°F)						
24	12:09	127.708	.03	.90	.90	104	98	4.0	493	-250	468	230	5 min./point
76			.06	1.80	1.80	113	98	6.5	535				
135			.07	2.10	2.10	113	99	8.0	546				
202			.09	2.69	2.69	119	99	9.5	535				
285			.08	2.39	2.39	120	100	9.5	563				
406	12:39	150.970	.07	2.10	2.10	121	102	9.5	574				
24	12:58	150.970	.03	.90	.90	98	98	4.5	488				
76			.04	1.20	1.20	109	97	6.0	800				
135			.05	1.50	1.50	114	97	7.0	530				
202			.05	1.80	1.80	121	100	7.0	534				
285			.05	1.50	1.50	121	102	7.0	542				
406	1:28	170.675	.05	1.50	1.50	122	102	7.0	534				
Test	1:20	A=84.225	(ΔP) _{avg} =	(ΔH) _{avg} =	(ΔH) _{avg} =	(ΔH) _{avg} =	(ΔH) _{avg} =		(ΔH) _{avg} =				Estimates:
Totals		dcf	(ΔP) _{avg} =	(ΔH) _{avg} =	(ΔH) _{avg} =	(ΔH) _{avg} =	(ΔH) _{avg} =		(ΔH) _{avg} =				MW = 28.8
			(ΔP) _{avg} =	(ΔH) _{avg} =	(ΔH) _{avg} =	(ΔH) _{avg} =	(ΔH) _{avg} =		(ΔH) _{avg} =				%H ₂ O = 10%

SYSTEM LEAK CHECK

Before	After	DGM Ratio (cfm)

PITOT LEAK CHECK

Before	After	Positive	Negative

Impinger

No.	Contents	Final	Initial	Difference
1.	100 ml distilled			
2.	100 ml H ₂ O			
3.	empty			
4.	50 ml H ₂ O			
5.				
6.				
7.				
8.				

STACK SAMPLING DATA SHEET

Page 1 of 2

CLIENT JSS CLARKSON WOLVES TEST DATE 04-26-94 ORIFICE CORRECTION (ΔH) 1.814 HOT/COLD BOX NO. 7
 TEST UNIT WASTE HEAT STOVE #7 TEST NO. 055-CL-AS 7-2 METER CORRECTION (Y) 1.0128 PROBE NO. 7-1
 PROJECT NO. 3934-45-001 NOZZLE (SIZE) 0.490" CALIBRATION DATE 02-02-94 FILTER NO. 1317
 TEST CREW RDC-T M, L G STATIC PRESSURE -1.0" H₂O PITOT CORRECTION 0.84 STACK DIA. 1.44"
 BAROMETRIC PRESSURE 29.10 PORT DIRECTION E 45° 2047H CONTROL BOX NO. 57 PORT SIZE 3

Traverse Point (inches)	Time	Dry Gas Meter Reading (dcl)	Pitot ΔP (in. H ₂ O)	Orifice ΔH		Meter Temperature		Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
				Required (in. H ₂ O)	Actual (in. H ₂ O)	In (°F)	Out (°F)						
24	14:20	171.000	.04	1.21	1.21	95	95	1.0	488	~250	~68	~250	5 min./point
76			.06	1.82	1.82	111	96	2.0	520				
135			.05	1.52	1.52	117	98	2.0	530				
202			.05	1.52	1.52	121	99	2.5	541				
285			.05	1.52	1.52	123	101	2.5	549				
406	14:30	192.210	.05	1.52	1.52	124	102	2.5	559				
24	14:34	192.210	.05	1.52	1.52	114	103	2.0	503				
76			.07	2.12	2.12	123	103	3.0	522				
135			.07	2.12	2.12	125	104	3.0	550				
202			.08	2.43	2.43	127	104	3.0	537				
285			.08	2.43	2.43	129	106	3.0	559				
406	15:04	217.200	.07	2.12	2.12	129	106	2.5	580				
													Estimates:
													MW = 288
													%H ₂ O = 10

PITOT LEAK CHECK

	Before	After	Positive	Negative
GAS	0.1534	0.1534	0.1534	0.1534
CO ₂	4.0	4.0	4.0	4.0
O ₂	12.0	12.0	12.0	12.0
CO	0	0	0	0
N ₂	84.0	84.0	84.0	84.0

SYSTEM LEAK CHECK

	Vacuum (in. Hg)	DGM Rate (cfm)
Before	5.0	20.01 cfm
After	6.0	20.01 cfm

Impinger Contents

Impinger No.	Contents	Final	Initial	Difference
1.	100 ml H ₂ O	86.43	674.8	189.5
2.	100 ml H ₂ O	66.80	571.3	90.7
3.	Empty	46.88	458.4	8.4
4.	200 ml GSC	675.6	649.6	26.0
5.				
6.				
7.				
8.				



CHESTER ENVIRONMENTAL

288.69
 90.7
 8.4
 26.0
 314.69
 15.77%

WACK JUMPING DATA SHEET

Page 2 of 2

CLIENT USS CLARENCE WORKS TEST DATE 04-26-94 ORIFICE CORRECTION (ΔH) 1.814 HOT/COLD BOX NO. 7
 TEST UNIT WARE HEAT STAGE 7 TEST NO. 055-CL-657-2 METER CORRECTION (Y) 1.0128 PROBE NO. 7-1
 PROJECT NO. 3934-45-01 NOZZLE (SIZE, #) 0.490 CALIBRATION DATE 02-02-94 FILTER NO. 1217
 TEST CREW RJC TGA LG STATIC PRESSURE -1.0" H₂O PITOT CORRECTION 0.84 STACK DIA. 1141
 BAROMETRIC PRESSURE 29.10 PORT DIRECTION WEST, 50° TM CONTROL BOX NO. 517 PORT SIZE 3'

Traverse Point (inches)	Time	Dry Gas Meter Reading (scf)	Pitot ΔP (in. H ₂ O)	Orifice ΔH		Meter Temperature		Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
24	15:08	217.200	.05	Required (in. H ₂ O)	Actual (in. H ₂ O)	In (°F)	Out (°F)						
26			.06	1.82	1.82	122	107	3.0	521	~250°	568°	-250°	5 min./point
135			.06	1.82	1.82	122	107	3.0	530				
202			.06	1.82	1.82	123	107	3.0	531				
285			.08	2.43	2.43	128	108	4.0	548				
406	15:38	240.846	.05	1.52	1.52	129	108	3.0	530				
24	15:43	240.840	.05	1.52	1.52	110	105	15	500				
76	15:45	240.840	.06	1.82	1.82	120	107	3.0	571				
135			.05	1.52	1.52	125	105	2.0	558				
202			.04	1.21	1.21	125	106	2.0	568				
285			.04	1.21	1.21	125	105	2.0	577				
406	16:13	262.218	.04	1.21	1.21	125	105	2.0	531				
Test	1-120	$\Delta = 91.218$	$Q_{P_{H_2O}} =$	$\Delta H / H_0 =$		$T_{stack} / T_{H_2O} =$			$T_{stack} / T_{H_2O} =$				Estimates:
Totals			0.06	1.72			112°F		537°F				MW = 28.8
													%H ₂ O = 10

PITOT LEAK CHECK

Before	Positive	Negative
After		
GAS	1	2
CO ₂		
O ₂		
CO		
N ₂		

SYSTEM LEAK CHECK

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

Impinger Contents

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

STACK SAMPLING DATA SHEET

CLIENT USS CLAYTON WORKS TEST DATE 04-27-94 ORIFICE CORRECTION (A/H) 1.814 HOT/COLD BOX NO. 85
 TEST UNIT WASTE HEAT STEAM #7 TEST NO. 055-022-6547-3 METER CORRECTION (V) 1.012 PROBE NO. 2-1
 PROJECT NO. 3734-45-01 NOZZLE (SIZE, #) D 490 CALIBRATION DATE 02-02-94 FILTER NO. 1221
 TEST CREW LPC TBA, LG STATIC PRESSURE -10.4 PITOT CORRECTION 0.84 STACK DIA. 117"
 BAROMETRIC PRESSURE 29.10 PORT DIRECTION SOUTHWEST CONTROL BOX NO. 511 PORT SIZE 3"

Traverse Point (inches)	Time	Dry Gas Meter Reading (scf)	Pitot Δ P (in. H2O)	Orifice Δ H		Meter Temperature		Vacuum (in. Hg)	Stack Temp. (°F)	Probe Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
				Required (in. H2O)	Actual (in. H2O)	In (°F)	Out (°F)						
2.4	07:55	262.465	.04	1.17	1.17	73	73	4.5	489	~250 F	<68 F	~250 F	5 min./point
7.6			.04	1.17	1.17	87	74	4.5	502				
13.5			.05	1.46	1.46	93	76	6.0	539				
20.2			.06	1.75	1.75	98	77	6.5	530				
28.5			.05	1.46	1.46	102	80	6.0	540				
40.6	08:25	282.368	.06	1.75	1.75	105	82	6.5	549				
24	08:29	282.368	.06	1.75	1.75	100	84	7.0	499				
7.6			.06	1.75	1.75	105	85	7.0	540				
13.5			.07	2.07	2.07	108	85	9.5	533				
20.2			.08	2.37	2.37	108	87	9.5	546				
28.5			.08	2.37	2.37	109	88	9.5	557				
40.6	08:59	306.622 306.622	.09	2.66	2.66	109	90	10.0	665				Estimates: MW = 289 %H2O = 10

PITOT LEAK CHECK

Before	After	Positive	Negative
6.5/15.0	6.5/15.0	0.0/15.0	0.0/15.0
GAS		0.0	0.0
CO2		4.0	4.0
O2		12.0	12.0
CO		0	0
N2		84.0	84.0

SYSTEM LEAK CHECK

Before	After	Vacuum (in. Hg)	DGM Rate (cfm)
5.0	5.0	5.0	5.0
12.0	12.0	12.0	12.0

Impinger Contents

Impinger No.	Impinger Contents	Final	Initial	Difference
1.	100 ml AT H2O	804.4	516.1	288.3
2.	100 ml AT H2O	553.5	496.6	56.9
3.	empty	473.0	465.1	7.9
4.	Stem gsl.	701.9	679.6	22.3
5.				
6.				
7.				
8.				

STACK SAMPLING DATA SHEET

Page 2 of 2

CLIENT USS-CLARKSON WAREHOUSE TEST DATE 04-27-14 ORIFICE CORRECTION (ΔH) 1814 HOT/COLD BOX NO. 5
 TEST UNIT WASTE HEAT STOVE #7 TEST NO. USS-CL-BS#7-3 METER CORRECTION (Y) 1.0128 PROBE NO. 7-1
 PROJECT NO. 384-45-01 NOZZLE (SIZE, #) 0.490 CALIBRATION DATE 02-02-94 FILTER NO. 1221
 TEST CREW R.P.C. TM, LG STATIC PRESSURE 10.14 PITOT CORRECTION 0.84 STACK DIA. 11.1
 BAROMETRIC PRESSURE 29.10 PORT DIRECTION NORTH, EAST CONTROL BOX NO. SIX PORT SIZE 3.0

Traverse Point (inches)	Time	Dry Gas Meter Reading (dscf)	Pilot ΔP (in. H ₂ O)	Orifice ΔH		Meter Temperature		Vacuum (in. Hg)	Stack Temp. (°F)	Impinger Temp. (°F)	Hot Box Temp. (°F)	Comments
				Required (in. H ₂ O)	Actual (in. H ₂ O)	In (°F)	Out (°F)					
2.4	09:04	306.622	0.06	1.77	1.77	95	90	7.5	540	~250	~280	5 min./point
7.6			0.07	1.90	1.90	108	90	8.0	524			
13.5			0.08	2.17	2.17	110	90	8.5	538			
20.2			0.07	1.90	1.90	111	92	9.0	530			
29.5			0.07	1.90	1.90	113	92	8.0	535			
40.6	09:34	329.961	0.08	2.17	2.17	113	93	9.0	565			
2.4	09:38	329.961	0.05	1.36	1.36	100	94	5.5	490			
7.6			0.06	1.77	1.77	112	94	7.5	531			
13.5			0.06	1.77	1.77	114	94	7.5	557			
20.2			0.05	1.36	1.36	115	95	5.5	565			
29.5			0.05	1.36	1.36	116	95	5.5	570			
40.6	10:08	350.360	0.05	1.36	1.36	116	95	5.5	581			
Test	11:20	1-87.895	0.00	(1.77) ΔH	(1.77) ΔH				(538) ΔH			Estimates:
Totals		dscf	0.00	1.77	1.77				538			MW = 28.9
												%H ₂ O = 10.2

SYSTEM LEAK CHECK

Before	After	GAS	PITOT LEAK CHECK	
			Positive	Negative

Impinger

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

VISIBLE EMISSIONS OBSERVATIONS FORM

7 STACK TEST

OBSERVER: Kenneth D. Dooling

DATE: 4-26-94

FACILITY: USX - CLARKTON

OBSERVATION: START TIME: 10:30

END TIME: 11:30

OBSERVATION POINT:

MAPLE AVE LOT

SOURCE:

DISTANCE: 700'

DIRECTION FROM: S-W

HEIGHT: 200

WIND:

SPEED: 13 MPH

DIRECTION: S-W

TEMPERATURE: 75°F

SKY CONDITION: SUNNY + HAZY

BACKGROUND: SKY

READING CONDITIONS: Good

COLOR OF EMISSION: —

TOTAL NO. OF READINGS: 240

NO. READINGS $\geq$ 20% —

NO. READINGS $\geq$ 60% —

GREATEST OPACITY: —

CREW: C FOREMAN: ZACUR

COMMENTS: — 50%

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

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

VISIBLE EMISSIONS OBSERVATIONS FORM

OBSERVER: Lance Paulis

7 STACK TEST

DATE: 4-26-94

FACILITY: USX-CLAIRTON

OBSERVATION: START TIME: 11:30

END TIME: 12:30

OBSERVATION POINT:

MAPLE AVE LOT

SOURCE:

DISTANCE: 700'

DIRECTION FROM: S-W

HEIGHT: 200'

WIND:

SPEED: 13 MPH

DIRECTION: S-W

TEMPERATURE: 78°F

SKY CONDITION: SUNNY + HAZY

BACKGROUND: SKY

READING CONDITIONS: Good

COLOR OF EMISSION: -

TOTAL No. OF READINGS: 240

No. READINGS $\geq$ 20% -

No. READINGS $\geq$ 60% -

GREATEST OPACITY: -

CREW: C FOREMAN: LACUR

COMMENTS: - = 0%

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

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

VISIBLE EMISSIONS OBSERVATIONS FORM

OBSERVER: James D. Smith

DATE: 4-26-94

FACILITY: USX-CLINTON

OBSERVATION START TIME: 12:30

END TIME: 13:30

OBSERVATION POINT:

WABASH AVE. LOT

SOURCE:

DISTANCE: 700'

DIRECTION FROM: S-W

HEIGHT: 200'

WIND:

SPEED: 13 MPH

DIRECTION: S-W

TEMPERATURE: 78°F

SKY CONDITION: SUNNY + HAZY

BACKGROUND: SKY

READING CONDITIONS: GOOD

COLOR OF EMISSION: BLACK

TOTAL No. OF READINGS: 240

No. READINGS $\geq$ 20% 0

No. READINGS $\geq$ 60% 0

GREATEST OPACITY: 15%

CREW: C FOREMAN: ZACHARY

COMMENTS: - = 0%

7 STACK TEST

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

30	-	-	-	-
31	-	-	-	-
32	-	-	-	-
33	-	-	-	-
34	-	-	-	-
35	-	-	-	-
36	-	-	-	-
37	-	-	-	-
38	-	-	-	-
39	-	-	-	-
40	-	-	-	-
41	-	-	-	-
42	-	-	-	-
43	-	-	-	-
44	-	-	-	-
45	-	-	-	-
46	-	-	-	-
47	-	-	-	-
48	-	-	-	-
49	-	-	-	-
50	-	-	-	-
51	-	-	-	-
52	-	-	-	-
53	-	-	-	-
54	-	-	-	-
55	-	-	-	-
56	-	-	5	5
57	5	10	10	10
58	15	15	10	10
59	10	5	5	-

B-1

VISIBLE EMISSIONS OBSERVATIONS FORM

7 STACK TEST

OBSERVER: James D. Smith

DATE: 4-26-94

FACILITY: USX-CLAIRTON

OBSERVATION: START TIME: 13:30

END TIME: 14:30

OBSERVATION POINT:

WABASH AVE LOT

SOURCE:

DISTANCE: 700'

DIRECTION FROM: S-W

HEIGHT: 200'

WIND:

SPEED: 14 MPH

DIRECTION: S-W

TEMPERATURE: 81°F

SKY CONDITION: SUNNY + HAZY

BACKGROUND: SKY

READING CONDITIONS: GOOD

COLOR OF EMISSION: —

TOTAL No. OF READINGS: 240

No. READINGS $\geq$ 20% —

No. READINGS $\geq$ 60% —

GREATEST OPACITY: —

CREW: C FOREMAN: ZACH

COMMENTS: — = 0%

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

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

VISIBLE EMISSIONS OBSERVATIONS FORM

7 STACK TEST

OBSERVER: Sam Purling

DATE: 4.26-94

FACILITY: USX-C/AIRTON

OBSERVATION: START TIME: 14:20
END TIME: 15:30

OBSERVATION POINT:
WABASH AVE. LOT

SOURCE:

DISTANCE: 700'

DIRECTION FROM: S-W

HEIGHT: 200'

WIND:

SPEED: 16 MPH

DIRECTION: S-W

TEMPERATURE: 82°F

SKY CONDITION: SUNNY + HAZY

BACKGROUND: SKY

READING CONDITIONS: GOOD

COLOR OF EMISSION: BLACK

TOTAL No. OF READINGS: 240

No. READINGS $\geq$ 20% -

No. READINGS $\geq$ 60% -

GREATEST OPACITY: 15%

CREW: C FOREMAN: 2 ACUR

COMMENTS: - = 0%

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

30	-	-	-	-
31	-	-	-	-
32	-	-	-	-
33	-	-	-	-
34	-	-	-	-
35	-	-	-	-
36	-	-	-	-
37	-	-	-	-
38	-	-	-	-
39	-	-	-	-
40	-	-	-	-
41	-	-	-	-
42	-	-	-	-
43	-	-	-	-
44	-	-	-	-
45	-	-	-	-
46	-	-	-	-
47	-	-	-	-
48	-	-	-	-
49	-	-	-	-
50	-	-	-	-
51	-	-	-	-
52	-	-	-	-
53	-	-	-	-
54	-	-	-	-
55	-	-	-	-
56	-	-	-	-
57	5	10	10	15
58	10	5	5	-
59	-	-	-	-

B-25

VISIBLE EMISSIONS OBSERVATIONS FORM

7 STACK TEST

OBSERVER: Jane Purdy

DATE: 4-26-94

FACILITY: USX-CLAIRTON

OBSERVATION: START TIME: 15:30

END TIME: 16:20

OBSERVATION POINT:

MAPLE AVE LOT

SOURCE:

DISTANCE: 700'

DIRECTION FROM: S-W

HEIGHT: 200

WIND:

SPEED: 17 MPH

DIRECTION: S-W

TEMPERATURE: 84°F

SKY CONDITION: SUNNY + HAZY

BACKGROUND: SKY

READING CONDITIONS: GOOD

COLOR OF EMISSION: BLACK

TOTAL NO. OF READINGS: 200

NO. READINGS $\geq$ 20% 0

NO. READINGS $\geq$ 60% 0

GREATEST OPACITY: 15%

CREW: C FOREMAN: ZACHRY + SMITH

COMMENTS: - = 0%

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

30	-	-	-	-
31	-	-	-	-
32	-	-	-	-
33	-	-	-	-
34	-	-	-	-
35	-	-	-	-
36	-	-	-	-
37	-	-	-	-
38	-	-	-	-
39	-	-	-	-
40	-	-	-	-
41	5	15	15	15
42	10	10	5	5
43	5	-	-	-
44	-	-	-	-
45	10	15	5	5
46	-	-	-	-
47	-	-	-	-
48	-	-	-	-
49	-	-	-	-
50				
51				
52				
53				
54				
55				
56				
57				
58				
59				

B-27

VISIBLE EMISSIONS OBSERVATIONS FORM

7 STACK TEST

OBSERVER: James D. Smith

DATE: 4-27-94

FACILITY: USX-CLAIRTON

OBSERVATION: START TIME: 7:45

END TIME: 8:45

OBSERVATION POINT:

MAPLE AVE LOT

SOURCE:

DISTANCE: 700'

DIRECTION FROM: S-W

HEIGHT: 200'

WIND:

SPEED: 10 MPH

DIRECTION: S-W

TEMPERATURE: 68

SKY CONDITION: SOME clouds + HAZE

BACKGROUND: SKY

READING CONDITIONS: FAIR

COLOR OF EMISSION: -

TOTAL No. OF READINGS: 240

No. READINGS $\geq$ 20% -

No. READINGS $\geq$ 60% -

GREATEST OPACITY: -

CREW: D FOREMAN: SAWYERS

COMMENTS: - = 0%

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

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

VISIBLE EMISSIONS OBSERVATIONS FORM

7 STACK TEST

OBSERVER: James D. Sawyer

DATE: 4-27-94

FACILITY: USX CLAIRTON

OBSERVATION: START TIME: 8:45
END TIME: 9:45

OBSERVATION POINT:
MAPLE AVE. LOT

SOURCE:

DISTANCE: 700'

DIRECTION FROM: S-W

HEIGHT: 200'

WIND:

SPEED: 14 MPH

DIRECTION: S-W

TEMPERATURE: 73°F

SKY CONDITION: SUNNY + HAZY

BACKGROUND: SKY

READING CONDITIONS: FAIR

COLOR OF EMISSION: -

TOTAL No. OF READINGS: 240

No. READINGS $\geq$ 20% -

No. READINGS $\geq$ 60% -

GREATEST OPACITY: -

CREW: D FOREMAN: SAWYER'S

COMMENTS: - 20%

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

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

VISIBLE EMISSIONS OBSERVATIONS FORM

7 STACK TEST

OBSERVER: Jane Priddy

DATE: 4-27-94

FACILITY: USX-C/AIRTON

OBSERVATION: START TIME: 9:45

END TIME: 10:15

OBSERVATION POINT:

MAPLE AVE LOT

SOURCE:

DISTANCE: 700'

DIRECTION FROM: S-W

HEIGHT: 200'

WIND:

SPEED: 16 MPH

DIRECTION: S-W

TEMPERATURE: 75°F

SKY CONDITION: SUNNY + HAZY

BACKGROUND: SKY

READING CONDITIONS: FAIR

COLOR OF EMISSION: BLACK

TOTAL No. OF READINGS: 120

No. READINGS $\geq$ 20% 2

No. READINGS $\geq$ 60% 0

GREATEST OPACITY: 25%

CREW: D FOREMAN: SAWDERS

COMMENTS: - 20%

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

30				
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58				
59				

CONTROL BOX CALIBRATION

THREE POINT CALIBRATION

BOX # 6 BP 29 In. Hg
DATE 02-02-94 OPERATOR RPC

	WET TEST METER				DRY TEST METER						METER COEFFICIENT Y	ORIFICE COEFFICIENT $\Delta H @$
	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	265.100		
HALF		69.0			90.0	76.0	83.0					
STOP	12.90		5.000							270.200		
CALCULATION	12.90	529.0	5.013	29.00			543.0	29.04		5.100	1.0076	1.866
START			0.000	29.00					1.00	270.500		
HALF		69.0			96.0	82.0	89.0					
STOP	9.00		5.000							275.602		
CALCULATION	9.00	529.0	5.013	29.00			549.0	29.07		5.102	1.0170	1.796
START			0.000	29.00					2.00	276.100		
HALF		69.0			96.0	81.0	88.5					
STOP	6.33		5.000							281.200		
CALCULATION	6.33	529.0	5.013	29.00			548.5	29.15		5.100	1.0139	1.779
AVERAGE											1.0128	1.814

POST TEST

BOX # 6 BP 29.00 In. Hg
DATE 06-09-94 OPERATOR RPC

	WET TEST METER				DRY TEST METER							METER COEFFICIENT Y	ORIFICE COEFFICIENT Δ H@
	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	112.0	96.0	104.0	1.70	135.300				
HALF		78.0							140.394				
STOP	6.95		5.000										
CALCULATION	6.95	538.0	5.013	29.00			564.0	29.13	5.094	1.0271	1.833		
START			0.000	29.00	116.0	97.0	106.5	1.70	140.900				
HALF		78.0							146.000				
STOP	7.00		5.000										
CALCULATION	7.00	538.0	5.013	29.00			566.5	29.13	5.100	1.0305	1.852		
START			0.000	29.00	117.0	97.0	107.0	1.70	146.700				
HALF		78.0							151.809				
STOP	7.00		5.000										
CALCULATION	7.00	538.0	5.013	29.00			567.0	29.13	5.109	1.0296	1.850		
AVERAGE										1.0291	1.845		
DIFFERENCE										-1.6%	-1.7%		

PRE-TEST MAGNEHELIC CALIBRATION

BOX# 6

DATE 02-02-94

OPERATOR RPC

0 to 3.0" H2O RANGE

0 to 0.50" H2O RANGE

SLANT TUBE

PRIMARY STANDARD

0 to 5" H2O RANGE

MAGNEHELIC

ΔP MANOMETER

0.50	0.50
1.00	1.00
2.00	2.00
3.00	3.00

MAGNEHELIC

ΔH 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 02-02-94

OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	264.400	264.560	0.160	10.000	-0.001
WET	0.000	0.150	0.150		

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 02-02-94

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# 6
DATE 06-09-94
OPERATOR RPC

0 to 3.0" H2O RANGE

MAGNEHELIC	Δ P	MANOMETER
	0.50	0.50
	1.00	1.00
	2.00	2.00
	3.00	3.00

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 06-09-94

OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	134.261	134.471	0.210	10.000	-0.0000
WET	0.000	0.210	0.210		

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 06-09-94

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	402.0
10.57	500	502.0

QA ORIFICE AUDIT

ORIFICE BAPC-3 DATE 06-09-94 B.P. 29.00
 OPERATOR RPC BOX # 6

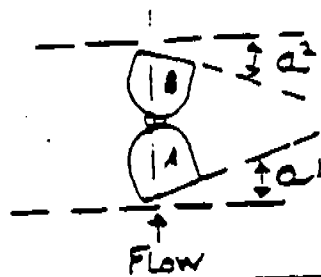
RUN	1	2	3
INITIAL CF	110.300	118.300	126.300
FINAL CF	117.825	125.828	133.810
DIFFERENCE	7.525	7.528	7.510
TEMP INITIAL	IN 105 OUT 100	IN 102 OUT 98	IN 102 OUT 97
TEMP 5 MIN	102 99	101 97	102 97
TEMP 10 MIN	102 98	102 97	103 98
TEMP 15 MIN	102 98	102 97	103 98
TEMP AVG	TEMP R 100.75 560.75	TEMP R 99.5 559.5	TEMP R 100 560
TIME (MIN.)	15.00	15.00	15.00
ORIFICE	IN WATE 0.75 IN HG 0.06	IN WATER 0.75 IN HG 0.06	IN WATER 0.75 IN HG 0.06
METER PRESSURE	29.06	29.06	29.06
AMBIENT TEMP.	°F 78.0 °C 25.6	°F 78.0 °C 25.6	°F 78.0 °C 25.6
VACUUM IN HG	21.0	21.0	21.0
DGM CAL Y	1.0128	1.0128	1.0128
STD CF	6.995	7.014	6.991
STD CUBIC METERS	0.1981	0.1986	0.1980

GEOMETRIC PITOT CALIBRATION

Caliper # XEF-59
 Precheck _____
 Post Check _____

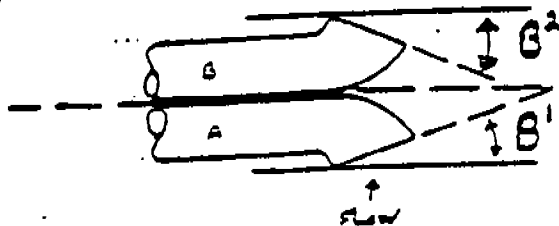
Probe #: 7-1
 Date: 1-24-94
 Initials: SM

①



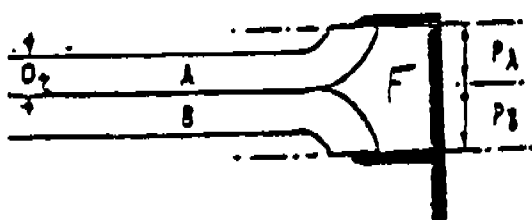
$$\begin{aligned} a^1 &= 1.0^\circ \\ a^2 &= 4.0^\circ \\ B^1 &= 1.0^\circ \\ B^2 &= 1.0^\circ \\ F &= 1.042'' \end{aligned} \quad \begin{aligned} a^1, a^2 &= < 10^\circ \\ B^1, B^2 &= < 5^\circ \end{aligned}$$

②



$$\begin{aligned} \mu &= 0.008 \\ V &= 0.0262 \\ W &= 1.160 \end{aligned} \quad \begin{aligned} \mu &\leq 0.1250 (\mu = F \tan \theta) \\ V &\leq 0.03125 (V = F \tan \theta) \\ W &\geq 0'' \end{aligned}$$

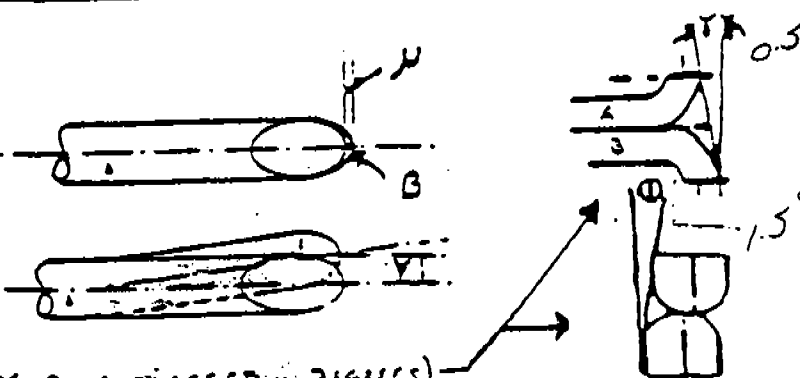
③



$$\begin{aligned} 1.05 D_t &\leq 1.50 D_t \\ P_A &= P_B \\ 2.10 D_t &\leq 3.00 D_t \end{aligned}$$

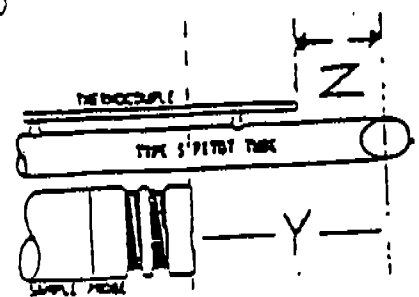
$$\begin{aligned} X &= 1.491 \\ Y &= 6.000 \\ Z &= 2.551 \\ D_t &= .374 \end{aligned} \quad \begin{aligned} X &\geq 0.750'' \\ & \quad (3/4'' \text{ using } 1/2'' \text{ nozzle}) \\ Y &\geq 3.0'' \\ Z &\geq 2.0'' \\ D_t &\geq .1875'' \end{aligned}$$

④

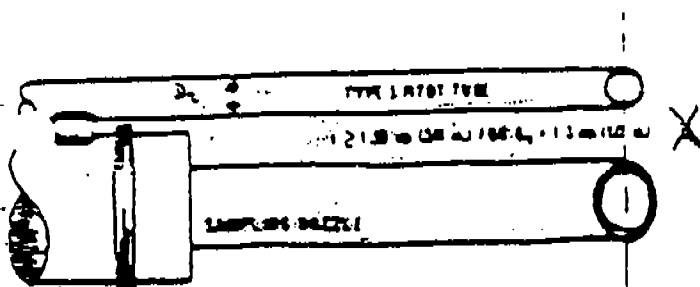


(θ, θ EXPRESSED IN DEGREES)

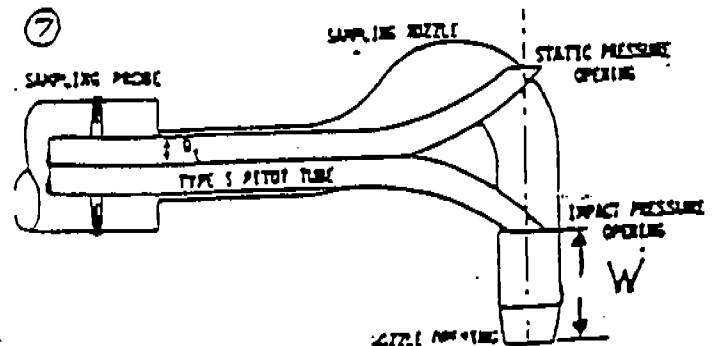
⑤



⑥



⑦

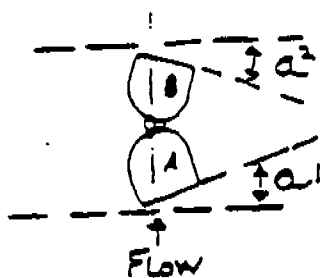


GEOMETRIC PITOT CALIBRATION

Caliper # XEF-59
 Precheck _____
 Post Check _____

Probe #: 7-1
 Date: 06-10-94
 Initials: PPC

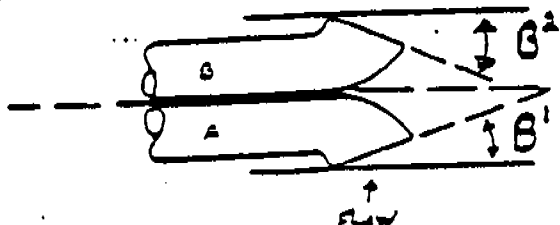
①



$$\begin{aligned} a^1 &= 1^\circ \\ a^2 &= 2^\circ \\ B^1 &= 1^\circ \\ B^2 &= 1^\circ \end{aligned} \quad \begin{aligned} &\Rightarrow a^1, a^2 = < 10^\circ \\ &\Rightarrow B^1, B^2 = < 5^\circ \end{aligned}$$

$F = 1.50"$

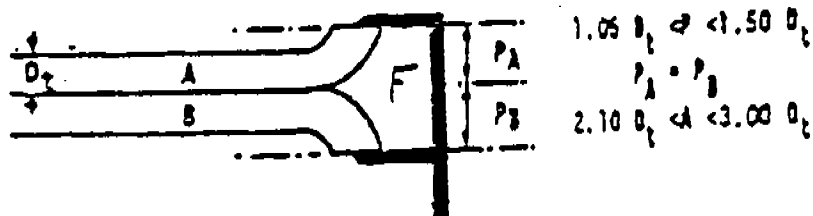
②



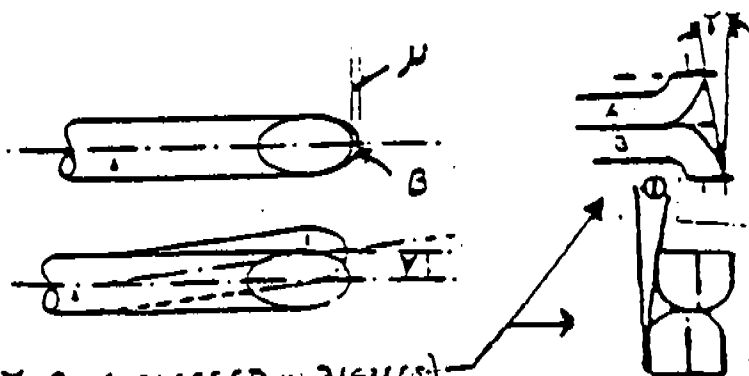
$$\begin{aligned} \mu &= 0 \\ V &= 0 \\ W &= .25 \end{aligned} \quad \begin{aligned} \mu &= \leq 0.1250^\circ (\mu = F \tan \delta) \\ V &= \leq 0.03125^\circ (V = F \tan \epsilon) \\ W &\geq 0 \end{aligned}$$

$$\begin{aligned} X &= .850 \\ Y &= 6.10 \\ Z &= 2.6 \\ D_t &= .390 \end{aligned} \quad \begin{aligned} X &\geq 0.750 \\ &\text{(3/4" using 1/2" nozzle)} \\ Y &\geq 3.0^\circ \\ Z &\geq 2.0^\circ \\ D_t &\geq .1875 \end{aligned}$$

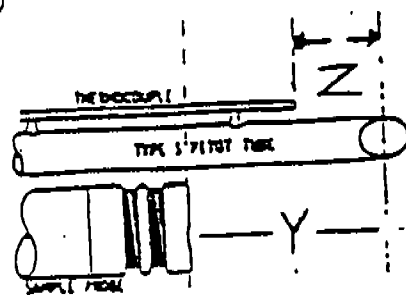
③



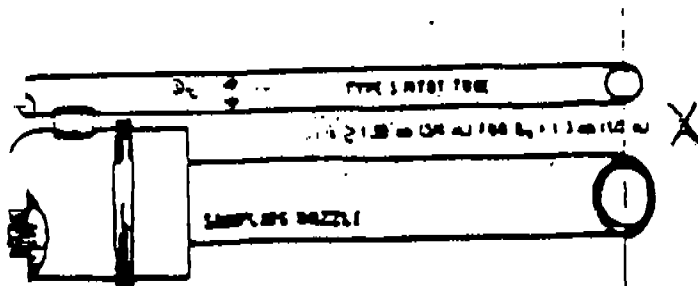
④



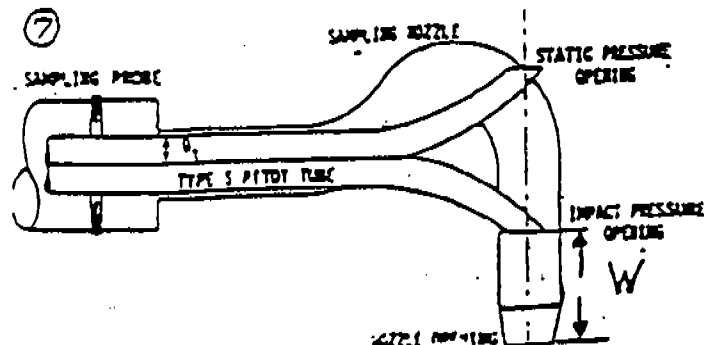
⑤



⑥



⑦



**COMPLIANCE DEMONSTRATION
NO. 7 BATTERY COMBUSTION STACK**

**USS CLAIRTON WORKS
CLAIRTON, PENNSYLVANIA**

**APPENDIX B
PLANT OPERATIONAL DATA**



**CHESTER
ENVIRONMENTAL**

Tuesday, April 26, 1994 Turn 1
Batteries: 7-9_2

Seq #	Oven	Last Pushed	Earliest	Desired	Latest
824/8		18:39			
831/7		18:44			
826/9		18:44			
826/8		18:44			
828/9		18:44			
828/8		18:44			
838/9		18:44			
838/8		18:43			
C1/8		18:44			
B1/9		18:44			
A1/7		18:44			
B3/9		18:44			
A3/7		18:44			
B5/9		18:44			
B5/7		18:43			
B7/9		18:44			
A7/7		18:44			
B9/9		18:44			
A9/7		18:44			
311/9		18:44			
411/7		18:44			
813/9		18:43			
813/7		18:44			
815/9		18:44			
815/7		18:44			
817/9		18:44			
A17/7		18:44			
819/9		18:44			
819/7		18:43			
821/9		18:43			
821/7		18:43			
823/9		18:43			
823/7		18:43			
825/9		18:43			
A25/7		18:43			
827/9		18:43			
827/7		18:42			
829/9		18:42			
829/7		18:42			
831/9		18:42			
831/7		18:42			
C2/9		18:41			
A2/7		18:41			
842/9		18:41			
842/7		18:41			
844/9		18:41			
844/7		18:41			
846/9		18:41			
846/7		18:41			
848/9		18:40			
848/7		18:40			
850/9		18:40			
850/7		18:40			
852/9		18:40			
852/7		18:40			
854/9		18:40			
854/7		18:40			
856/9		18:40			
856/7		18:40			
858/9		18:40			
858/7		18:40			
860/9		18:40			
860/7		18:40			
862/9		18:40			
862/7		18:40			
864/9		18:40			
864/7		18:40			
866/9		18:40			
866/7		18:40			
868/9		18:40			
868/7		18:40			
870/9		18:40			
870/7		18:40			
872/9		18:40			
872/7		18:40			
874/9		18:40			
874/7		18:40			
876/9		18:40			
876/7		18:40			
878/9		18:40			
878/7		18:40			
880/9		18:40			
880/7		18:40			
882/9		18:40			
882/7		18:40			
884/9		18:40			
884/7		18:40			
886/9		18:40			
886/7		18:40			
888/9		18:40			
888/7		18:40			
890/9		18:40			
890/7		18:40			
892/9		18:40			
892/7		18:40			
894/9		18:40			
894/7		18:40			
896/9		18:40			
896/7		18:40			
898/9		18:40			
898/7		18:40			
900/9		18:40			
900/7		18:40			

$$+ \frac{B-31}{7} \quad A \frac{B-24}{8}$$

PUSHING SCHEDULE

Tuesday, April 26, 1994 Turn 1
Batteries: 7-9_1

Seq #	Oven	Last Pushed	Earliest	Desired	Latest
89/9		18:34	7:37am	7:37am	7:37am
89/8		18:35	7:42am	7:42am	7:42am

PUSHING SCHEDULE

Tuesday, April 26, 1994 Turn 2

Batteries: 7-9_2

sq	Oven	Last Pushed	Earliest	Desired	Latest
	A11/9	152:54	7:45:30	7:20:30	7:20:30
	B11/8	150:54	7:45:30	7:20:30	7:20:30
	A13/9	148:54	7:45:30	7:20:30	7:20:30
	B13/8	146:54	7:45:30	7:20:30	7:20:30
	A15/9	144:54	7:45:30	7:20:30	7:20:30
	B15/8	142:54	7:45:30	7:20:30	7:20:30
	A17/9	140:54	7:45:30	7:20:30	7:20:30
	B17/8	138:54	7:45:30	7:20:30	7:20:30
	A19/9	136:54	7:45:30	7:20:30	7:20:30
	B19/8	134:54	7:45:30	7:20:30	7:20:30
	A21/9	132:54	7:45:30	7:20:30	7:20:30
	B21/8	130:54	7:45:30	7:20:30	7:20:30
	A23/9	128:54	7:45:30	7:20:30	7:20:30
	B23/8	126:54	7:45:30	7:20:30	7:20:30
	A25/9	124:54	7:45:30	7:20:30	7:20:30
	B25/8	122:54	7:45:30	7:20:30	7:20:30
	A27/9	120:54	7:45:30	7:20:30	7:20:30
	B27/8	118:54	7:45:30	7:20:30	7:20:30
	A29/9	116:54	7:45:30	7:20:30	7:20:30
	B29/8	114:54	7:45:30	7:20:30	7:20:30
	A31/9	112:54	7:45:30	7:20:30	7:20:30
	B31/8	110:54	7:45:30	7:20:30	7:20:30
	C2/8	108:54	7:45:30	7:20:30	7:20:30
	B2/9	106:54	7:45:30	7:20:30	7:20:30
	A2/7	104:54	7:45:30	7:20:30	7:20:30
	B4/9	102:54	7:45:30	7:20:30	7:20:30
	A4/7	100:54	7:45:30	7:20:30	7:20:30
	B6/9	98:54	7:45:30	7:20:30	7:20:30
	A6/7	96:54	7:45:30	7:20:30	7:20:30
	B8/9	94:54	7:45:30	7:20:30	7:20:30
	A8/7	92:54	7:45:30	7:20:30	7:20:30
	B10/9	90:54	7:45:30	7:20:30	7:20:30
	A10/7	88:54	7:45:30	7:20:30	7:20:30
	B12/9	86:54	7:45:30	7:20:30	7:20:30
	A12/7	84:54	7:45:30	7:20:30	7:20:30
	B14/9	82:54	7:45:30	7:20:30	7:20:30
	A14/7	80:54	7:45:30	7:20:30	7:20:30
	B16/9	78:54	7:45:30	7:20:30	7:20:30
	A16/7	76:54	7:45:30	7:20:30	7:20:30
	B18/9	74:54	7:45:30	7:20:30	7:20:30
	A18/7	72:54	7:45:30	7:20:30	7:20:30
	B20/9	70:54	7:45:30	7:20:30	7:20:30
	A20/7	68:54	7:45:30	7:20:30	7:20:30
	B22/9	66:54	7:45:30	7:20:30	7:20:30
	A22/7	64:54	7:45:30	7:20:30	7:20:30
	B24/9	62:54	7:45:30	7:20:30	7:20:30
	A24/7	60:54	7:45:30	7:20:30	7:20:30
	B26/9	58:54	7:45:30	7:20:30	7:20:30
	A26/7	56:54	7:45:30	7:20:30	7:20:30
	B28/9	54:54	7:45:30	7:20:30	7:20:30
	A28/7	52:54	7:45:30	7:20:30	7:20:30
	B30/9	50:54	7:45:30	7:20:30	7:20:30
	A30/7	48:54	7:45:30	7:20:30	7:20:30
	B1/8	46:54	7:45:30	7:20:30	7:20:30
	A1/7	44:54	7:45:30	7:20:30	7:20:30
	B3/9	42:54	7:45:30	7:20:30	7:20:30
	A3/7	40:54	7:45:30	7:20:30	7:20:30
	B5/9	38:54	7:45:30	7:20:30	7:20:30
	A5/7	36:54	7:45:30	7:20:30	7:20:30
	B7/9	34:54	7:45:30	7:20:30	7:20:30
	A7/7	32:54	7:45:30	7:20:30	7:20:30
	B9/9	30:54	7:45:30	7:20:30	7:20:30
	A9/7	28:54	7:45:30	7:20:30	7:20:30
	B11/9	26:54	7:45:30	7:20:30	7:20:30
	A11/7	24:54	7:45:30	7:20:30	7:20:30
	B13/9	22:54	7:45:30	7:20:30	7:20:30
	A13/7	20:54	7:45:30	7:20:30	7:20:30
	B15/9	18:54	7:45:30	7:20:30	7:20:30
	A15/7	16:54	7:45:30	7:20:30	7:20:30
	B17/9	14:54	7:45:30	7:20:30	7:20:30
	A17/7	12:54	7:45:30	7:20:30	7:20:30
	B19/9	10:54	7:45:30	7:20:30	7:20:30
	A19/7	8:54	7:45:30	7:20:30	7:20:30
	B21/9	6:54	7:45:30	7:20:30	7:20:30
	A21/7	4:54	7:45:30	7:20:30	7:20:30
	B23/9	2:54	7:45:30	7:20:30	7:20:30
	A23/7	0:54	7:45:30	7:20:30	7:20:30

- B 7/7

Tuesday, April 26, 1994 Turn 3
Batteries: 7-9_2

Oven	Last Pushed	Earliest	Desired	Latest
327/7	18:41		4:08	4:11
329/8	18:48		4:08	4:11
329/7	18:48		4:08	4:11
331/2	18:48		4:08	4:11
331/8	18:48		4:08	4:11
332/2	18:48		4:08	4:11
332/8	18:48		4:08	4:11
334/8	18:48		4:08	4:11
334/9	18:48		4:08	4:11
336/8	18:48		4:08	4:11
336/9	18:48		4:08	4:11
338/8	18:48		4:08	4:11
338/9	18:48		4:08	4:11
340/8	18:48		4:08	4:11
340/9	18:48		4:08	4:11
342/8	18:48		4:08	4:11
342/9	18:48		4:08	4:11
344/8	18:48		4:08	4:11
344/9	18:48		4:08	4:11
346/8	18:48		4:08	4:11
346/9	18:48		4:08	4:11
348/8	18:48		4:08	4:11
348/9	18:48		4:08	4:11
350/8	18:48		4:08	4:11
350/9	18:48		4:08	4:11
352/8	18:48		4:08	4:11
352/9	18:48		4:08	4:11
354/8	18:48		4:08	4:11
354/9	18:48		4:08	4:11
356/8	18:48		4:08	4:11
356/9	18:48		4:08	4:11
358/8	18:48		4:08	4:11
358/9	18:48		4:08	4:11
360/8	18:48		4:08	4:11
360/9	18:48		4:08	4:11
362/8	18:48		4:08	4:11
362/9	18:48		4:08	4:11
364/8	18:48		4:08	4:11
364/9	18:48		4:08	4:11
366/8	18:48		4:08	4:11
366/9	18:48		4:08	4:11
368/8	18:48		4:08	4:11
368/9	18:48		4:08	4:11
370/8	18:48		4:08	4:11
370/9	18:48		4:08	4:11
372/8	18:48		4:08	4:11
372/9	18:48		4:08	4:11
374/8	18:48		4:08	4:11
374/9	18:48		4:08	4:11
376/8	18:48		4:08	4:11
376/9	18:48		4:08	4:11
378/8	18:48		4:08	4:11
378/9	18:48		4:08	4:11
380/8	18:48		4:08	4:11
380/9	18:48		4:08	4:11
382/8	18:48		4:08	4:11
382/9	18:48		4:08	4:11
384/8	18:48		4:08	4:11
384/9	18:48		4:08	4:11
386/8	18:48		4:08	4:11
386/9	18:48		4:08	4:11
388/8	18:48		4:08	4:11
388/9	18:48		4:08	4:11
390/8	18:48		4:08	4:11
390/9	18:48		4:08	4:11
392/8	18:48		4:08	4:11
392/9	18:48		4:08	4:11
394/8	18:48		4:08	4:11
394/9	18:48		4:08	4:11
396/8	18:48		4:08	4:11
396/9	18:48		4:08	4:11
398/8	18:48		4:08	4:11
398/9	18:48		4:08	4:11
400/8	18:48		4:08	4:11
400/9	18:48		4:08	4:11
402/8	18:48		4:08	4:11
402/9	18:48		4:08	4:11
404/8	18:48		4:08	4:11
404/9	18:48		4:08	4:11
406/8	18:48		4:08	4:11
406/9	18:48		4:08	4:11
408/8	18:48		4:08	4:11
408/9	18:48		4:08	4:11
410/8	18:48		4:08	4:11
410/9	18:48		4:08	4:11
412/8	18:48		4:08	4:11
412/9	18:48		4:08	4:11

- B 31-7

B 7-7

W A 1-7

FURNING SCHEDULE

Tuesday, April 26, 1994 Turn 3
Batteries: 7-9_2

Oven	Last Pushed	Earliest	Desired	Latest
312/7	18:39	18:37:00	18:40:00	18:42:00
314/8	18:38	18:36:00	18:39:00	18:41:00

Wednesday, April 27, 1994 Turn 1
Batteries: 7-9_2

Seq #	Oven	Last Pushed	Earliest	Desired	Latest
	B14/7	10:19			
	B11/7	10:44			
	A16/8	10:44			
	B16/7	10:44			
	B18/8	10:44			
	B18/7	10:44			
	A28/8	10:44			
	B28/7	10:43			
	A22/9	10:44			
	B22/7	10:44			
	A24/8	10:44			
	B24/7	10:44			
	A26/8	10:44			
	B26/7	10:44			
	A28/8	10:43			
	B28/7	10:44			
	A38/8	10:44			
	B38/7	10:44			
	B1/9	10:44			
	B1/8	10:44			
	A3/9	10:44			
	B3/8	10:44			
	A5/9	10:44			
	B5/8	10:44			
	A7/9	10:44			
	B7/8	10:44			
	A9/9	10:44			
	B9/8	10:44			
	A11/9	10:43			
	B11/8	10:43			
	A13/9	10:43			
	B13/8	10:43			
	A15/9	10:43			
	B15/8	10:43			
	A17/9	10:43			
	B17/8	10:43			
	A19/9	10:43			
	B19/8	10:43			
	A21/9	10:43			
	B21/8	10:42			
	A23/9	10:42			
	B23/8	10:41			
	A25/9	10:41			
	B25/8	10:41			
	A27/9	10:41			
	B27/8	10:41			
	A29/9	10:41			
	B29/8	10:41			
	A31/9	10:40			
	B31/8	10:40			
	A33/9	10:40			
	B33/8	10:40			
	A35/9	10:40			
	B35/8	10:40			
	A37/9	10:40			
	B37/8	10:40			
	A39/9	10:40			
	B39/8	10:40			
	A41/9	10:40			
	B41/8	10:40			
	A43/9	10:40			
	B43/8	10:40			
	A45/9	10:40			
	B45/8	10:40			
	A47/9	10:40			
	B47/8	10:40			
	A49/9	10:40			
	B49/8	10:40			
	A51/9	10:40			
	B51/8	10:40			
	A53/9	10:40			
	B53/8	10:40			
	A55/9	10:40			
	B55/8	10:40			
	A57/9	10:40			
	B57/8	10:40			
	A59/9	10:40			
	B59/8	10:40			
	A61/9	10:40			
	B61/8	10:40			
	A63/9	10:40			
	B63/8	10:40			
	A65/9	10:40			
	B65/8	10:40			
	A67/9	10:40			
	B67/8	10:40			
	A69/9	10:40			
	B69/8	10:40			
	A71/9	10:40			
	B71/8	10:40			
	A73/9	10:40			
	B73/8	10:40			
	A75/9	10:40			
	B75/8	10:40			
	A77/9	10:40			
	B77/8	10:40			
	A79/9	10:40			
	B79/8	10:40			
	A81/9	10:40			
	B81/8	10:40			
	A83/9	10:40			
	B83/8	10:40			
	A85/9	10:40			
	B85/8	10:40			
	A87/9	10:40			
	B87/8	10:40			
	A89/9	10:40			
	B89/8	10:40			
	A91/9	10:40			
	B91/8	10:40			
	A93/9	10:40			
	B93/8	10:40			
	A95/9	10:40			
	B95/8	10:40			
	A97/9	10:40			
	B97/8	10:40			
	A99/9	10:40			
	B99/8	10:40			
	A101/9	10:40			
	B101/8	10:40			
	A103/9	10:40			
	B103/8	10:40			
	A105/9	10:40			
	B105/8	10:40			
	A107/9	10:40			
	B107/8	10:40			
	A109/9	10:40			
	B109/8	10:40			
	A111/9	10:40			
	B111/8	10:40			
	A113/9	10:40			
	B113/8	10:40			
	A115/9	10:40			
	B115/8	10:40			
	A117/9	10:40			
	B117/8	10:40			
	A119/9	10:40			
	B119/8	10:40			
	A121/9	10:40			
	B121/8	10:40			
	A123/9	10:40			
	B123/8	10:40			
	A125/9	10:40			
	B125/8	10:40			
	A127/9	10:40			
	B127/8	10:40			
	A129/9	10:40			
	B129/8	10:40			
	A131/9	10:40			
	B131/8	10:40			
	A133/9	10:40			
	B133/8	10:40			
	A135/9	10:40			
	B135/8	10:40			
	A137/9	10:40			
	B137/8	10:40			
	A139/9	10:40			
	B139/8	10:40			
	A141/9	10:40			
	B141/8	10:40			
	A143/9	10:40			
	B143/8	10:40			
	A145/9	10:40			
	B145/8	10:40			
	A147/9	10:40			
	B147/8	10:40			
	A149/9	10:40			
	B149/8	10:40			
	A151/9	10:40			
	B151/8	10:40			
	A153/9	10:40			
	B153/8	10:40			
	A155/9	10:40			
	B155/8	10:40			
	A157/9	10:40			
	B157/8	10:40			
	A159/9	10:40			
	B159/8	10:40			
	A161/9	10:40			
	B161/8	10:40			
	A163/9	10:40			
	B163/8	10:40			
	A165/9	10:40			
	B165/8	10:40			
	A167/9	10:40			
	B167/8	10:40			
	A169/9	10:40			
	B169/8	10:40			
	A171/9	10:40			
	B171/8	10:40			
	A173/9	10:40			
	B173/8	10:40			
	A175/9	10:40			
	B175/8	10:40			
	A177/9	10:40			
	B177/8	10:40			
	A179/9	10:40			
	B179/8	10:40			
	A181/9	10:40			
	B181/8	10:40			
	A183/9	10:40			
	B183/8	10:40			
	A185/9	10:40			
	B185/8	10:40			
	A187/9	10:40			
	B187/8	10:40			
	A189/9	10:40			
	B189/8	10:40			
	A191/9	10:40			
	B191/8	10:40			
	A193/9	10:40			
	B193/8	10:40			
	A195/9	10:40			
	B195/8	10:40			
	A197/9	10:40			
	B197/8	10:40			
	A199/9	10:40			
	B199/8	10:40			
	A201/9	10:40			
	B201/8	10:40			
	A203/9	10:40			
	B203/8	10:40			
	A205/9	10:40			
	B205/8	10:40			
	A207/9	10:40			
	B207/8	10:40			
	A209/9	10:40			
	B209/8	10:40			
	A211/9	10:40			
	B211/8	10:40			
	A213/9	10:40			
	B213/8	10:40			
	A215/9	10:40			
	B215/8	10:40			
	A217/9	10:40			
	B217/8	10:40			
	A219/9	10:40			
	B219/8	10:40			
	A221/9	10:40			
	B221/8	10:40			
	A223/9	10:40			
	B223/8	10:40			
	A225/9	10:40			
	B225/8	10:40			
	A227/9	10:40			
	B227/8	10:40			
	A229/9	10:40			
	B229/8	10:40			
	A231/9	10:40			
	B231/8	10:40			
	A233/9	10:40			
	B233/8	10:40			
	A235/9	10:40			
	B235/8	10:40			
	A237/9	10:40			
	B237/8	10:40			
	A239/9	10:40			
	B239/8	10:40			
	A241/9	10:40			
	B241/8	10:40			
	A243/9	10:40			
	B243/8	10:40			
	A245/9	10:40			
	B245/8	10:40			
	A247/9	10:40			
	B247/8	10:40			
	A249/9	10:40			
	B249/8	10:40			
	A251/9	10:40			
	B251/8	10:40			
	A253/9	10:40			
	B253/8	10:40			
	A255/9	10:40			
	B255/8	10:40			
	A257/9	10:40			
	B257/8	10:40			
	A259/9	10:40			
	B259/8	10:40			
	A261/9	10:40			
	B261/8	10:40			
	A263/9	10:40			
	B263/8	10:40			
	A265/9	10:40			
	B265/8	10:40			
	A267/9	10:40			
	B267/8	10:40			
	A269/9	10:40			
	B269/8	10:40			
	A271/9	10:40			
	B271/8	10:40			
	A273/9	10:40			
	B273/8	10:40			
	A275/9	10:40			
	B275/8	10:40			
	A277/9	10:40			
	B277/8	10:40			
	A279/9	10:40			
	B279/8	10:40			
	A281/9	10:40			
	B281/8	10:40			
	A283/9	10:40			
	B283/8	10:40			

Wednesday, April 27, 1994 Turn 2
Batteries: 7-9_2

eq #	Oven	Last Pushed	Earliest	Desired	Latest
1	A1 / 8	18:36	7:45am	8:00am	8:15am
2	B1 / 7	18:36	7:51am	8:06am	8:21am
3	A3 / 8	18:36	7:57am	8:12am	8:27am
4	B3 / 7	18:36	8:03am	8:18am	8:33am
5	A5 / 8	18:36	8:09am	8:24am	8:39am
6	B5 / 7	18:36	8:15am	8:30am	8:45am
7	A7 / 8	18:36	8:21am	8:36am	8:51am
8	B7 / 7	18:36	8:27am	8:42am	8:57am
9	A9 / 8	18:36	8:33am	8:48am	9:03am
10	B9 / 7	18:36	8:39am	8:54am	9:09am
11	A11 / 8	18:36	8:45am	9:00am	9:15am
12	B11 / 7	18:36	8:51am	9:06am	9:21am
13	A13 / 8	18:36	8:57am	9:12am	9:27am
14	B13 / 7	18:36	9:03am	9:18am	9:33am
15	A15 / 8	18:36	9:09am	9:24am	9:39am
16	B15 / 7	18:36	9:15am	9:30am	9:45am
17	A17 / 8	18:36	9:21am	9:36am	9:51am
18	B17 / 7	18:36	9:27am	9:42am	9:57am
19	A19 / 8	18:36	9:33am	9:48am	10:03am
20	B19 / 7	18:36	9:39am	9:54am	10:09am
21	A21 / 8	18:36	9:45am	10:00am	10:15am
22	B21 / 7	18:36	9:51am	10:06am	10:21am
23	A23 / 8	18:36	9:57am	10:12am	10:27am
24	B23 / 7	18:36	10:03am	10:18am	10:33am
25	A25 / 8	18:36	10:09am	10:24am	10:39am
26	B25 / 7	18:36	10:15am	10:30am	10:45am
27	A27 / 8	18:36	10:21am	10:36am	10:51am
28	B27 / 7	18:36	10:27am	10:42am	10:57am
29	A29 / 8	18:37	10:33am	10:48am	11:03am
30	B29 / 7	18:37	10:39am	10:54am	11:09am
31	A31 / 8	18:37	10:45am	11:00am	11:15am
32	B31 / 7	18:37	10:51am	11:06am	11:21am
33	A1 / 9	18:37	10:57am	11:12am	11:27am
34	B1 / 8	18:38	11:03am	11:18am	11:33am
35	A3 / 9	18:38	11:09am	11:24am	11:39am
36	B3 / 8	18:38	11:15am	11:30am	11:45am
37	A5 / 9	18:38	11:21am	11:36am	11:51am
38	B5 / 8	18:38	11:27am	11:42am	11:57am
39	A7 / 9	18:38	11:33am	11:48am	12:03pm
40	B7 / 8	18:38	11:39am	11:54am	12:09pm
41	A9 / 9	18:39	11:45am	12:00pm	12:15pm
42	B9 / 8	18:39	11:51am	12:06pm	12:21pm
43	A11 / 9	18:39	11:57am	12:12pm	12:27pm
44	B11 / 8	18:39	12:03pm	12:18pm	12:33pm
45	A13 / 9	18:39	12:09pm	12:24pm	12:39pm
46	B13 / 8	18:39	12:15pm	12:30pm	12:45pm
47	A15 / 9	18:39	12:21pm	12:36pm	12:51pm
48	B15 / 8	18:40	12:27pm	12:42pm	12:57pm
49	A17 / 9	18:40	12:33pm	12:48pm	1:03pm
50	B17 / 8	18:40	12:39pm	12:54pm	1:09pm
51	A19 / 9	18:40	12:45pm	1:00pm	1:15pm
52	B19 / 8	18:40	12:51pm	1:06pm	1:21pm
53	A21 / 9	18:40	12:57pm	1:12pm	1:27pm
54	B21 / 8	18:40	1:03pm	1:18pm	1:33pm
55	A23 / 9	18:41	1:09pm	1:24pm	1:39pm
56	B23 / 8	18:41	1:15pm	1:30pm	1:45pm
57	A25 / 9	18:41	1:21pm	1:36pm	1:51pm
58	B25 / 8	18:41	1:27pm	1:42pm	1:57pm
59	A27 / 9	18:41	1:33pm	1:48pm	2:03pm
60	B27 / 8	18:41	1:39pm	1:54pm	2:09pm
61	A29 / 9	18:41	1:45pm	2:00pm	2:15pm
62	B29 / 8	18:42	1:51pm	2:06pm	2:21pm
63	A31 / 9	18:42	1:57pm	2:12pm	2:27pm
64	B31 / 8	18:36	2:03pm	2:18pm	2:33pm
65	A1 / 7	18:36	2:09pm	2:24pm	2:39pm
66	B1 / 6	18:36	2:15pm	2:30pm	2:45pm
67	A3 / 7	18:37	2:21pm	2:36pm	2:51pm
68	B3 / 6	18:37	2:27pm	2:42pm	2:57pm
69	A5 / 7	18:37	2:33pm	2:48pm	3:03pm
70	B5 / 6	18:37	2:39pm	2:54pm	3:09pm
71	A7 / 7	18:37	2:45pm	3:00pm	3:15pm
72	B7 / 6	18:37	2:51pm	3:06pm	3:21pm
73	A9 / 7	18:37	2:57pm	3:12pm	3:27pm
74	B9 / 6	18:38	3:03pm	3:18pm	3:33pm
75	A11 / 7	18:38	3:09pm	3:24pm	3:39pm
76	B11 / 6	18:38	3:15pm	3:30pm	3:45pm
77	A13 / 7	18:38	3:21pm	3:36pm	3:51pm
78	B13 / 6	18:38	3:27pm	3:42pm	3:57pm
79	A15 / 7	18:44	3:33pm	3:48pm	4:03pm
80	B15 / 6	18:50	3:39pm	3:54pm	4:09pm

- 0 7/8 - 0 3/4

PUSHING SCHEDULE

Wednesday, April 27, 1994 Turn 3
Batteries: 7-9_2

Set	Oven	Last Pushed	Earliest	Desired	Latest
1	A19/7	18:39	3:49pm	4:08pm	4:11pm
2	B21/9	18:38	3:55pm	4:05pm	4:16pm
3	A21/7	18:38	4:00pm	4:11pm	4:22pm
4	B23/9	18:38	4:06pm	4:17pm	4:29pm
5	A23/7	18:38	4:12pm	4:23pm	4:34pm
6	B25/9	18:38	4:18pm	4:29pm	4:40pm
7	A25/7	18:38	4:24pm	4:33pm	4:46pm
8	B27/9	18:38	4:29pm	4:40pm	4:51pm
9	A27/7	18:38	4:35pm	4:46pm	4:57pm
10	B29/9	18:38	4:41pm	4:52pm	5:03pm
11	A29/7	18:38	4:47pm	4:58pm	5:09pm
12	B31/9	18:38	4:53pm	5:04pm	5:15pm
13	A31/7	18:38	4:59pm	5:10pm	5:21pm
14	B33/9	18:38	5:05pm	5:16pm	5:27pm
15	A33/7	18:38	5:11pm	5:21pm	5:32pm
16	B35/9	18:38	5:16pm	5:27pm	5:38pm
17	A35/7	18:38	5:22pm	5:33pm	5:44pm
18	B37/9	18:38	5:28pm	5:39pm	5:50pm
19	A37/7	18:38	5:34pm	5:45pm	5:56pm
20	B39/9	18:38	5:40pm	5:51pm	6:02pm
21	A39/7	18:38	5:46pm	5:57pm	6:08pm
22	B41/9	18:38	5:51pm	6:02pm	6:13pm
23	A41/7	18:38	5:57pm	6:08pm	6:19pm
24	B43/9	18:38	6:03pm	6:14pm	6:25pm
25	A43/7	18:38	6:09pm	6:20pm	6:31pm
26	B45/9	18:38	6:15pm	6:26pm	6:37pm
27	A45/7	18:38	6:21pm	6:32pm	6:43pm
28	B47/9	18:38	6:27pm	6:38pm	6:49pm
29	A47/7	18:38	6:32pm	6:43pm	6:54pm
30	B49/9	18:32	6:38pm	6:49pm	7:00pm
31	A49/7	18:32	6:44pm	6:55pm	7:06pm
32	B51/9	18:32	6:50pm	7:01pm	7:12pm
33	A51/7	18:32	6:56pm	7:07pm	7:18pm
34	B53/9	18:32	7:02pm	7:13pm	7:24pm
35	A53/7	18:32	7:08pm	7:19pm	7:30pm
36	B55/9	18:32	7:13pm	7:24pm	7:35pm
37	A55/7	18:32	7:19pm	7:30pm	7:41pm
38	B57/9	18:32	7:25pm	7:36pm	7:47pm
39	A57/7	18:32	7:31pm	7:42pm	7:53pm
40	B59/9	18:32	7:37pm	7:48pm	7:59pm
41	A59/7	18:32	7:43pm	7:54pm	8:05pm
42	B61/9	18:32	7:49pm	7:59pm	8:10pm
43	A61/7	18:32	7:55pm	8:05pm	8:16pm
44	B63/9	18:32	8:01pm	8:11pm	8:22pm
45	A63/7	18:32	8:06pm	8:17pm	8:28pm
46	B65/9	18:32	8:12pm	8:23pm	8:34pm
47	A65/7	18:32	8:18pm	8:29pm	8:40pm
48	B67/9	18:32	8:24pm	8:35pm	8:46pm
49	A67/7	18:32	8:29pm	8:40pm	8:51pm
50	B69/9	18:32	8:35pm	8:46pm	8:57pm
51	A69/7	18:32	8:41pm	8:52pm	9:03pm
52	B71/9	18:32	8:47pm	8:58pm	9:09pm
53	A71/7	18:32	8:53pm	9:04pm	9:15pm
54	B73/9	18:32	8:59pm	9:10pm	9:21pm
55	A73/7	18:32	9:05pm	9:16pm	9:27pm
56	B75/9	18:32	9:11pm	9:21pm	9:32pm
57	A75/7	18:32	9:16pm	9:27pm	9:38pm
58	B77/9	18:32	9:22pm	9:33pm	9:44pm
59	A77/7	18:32	9:28pm	9:39pm	9:50pm
60	B79/9	18:32	9:34pm	9:45pm	9:56pm
61	A79/7	18:32	9:40pm	9:51pm	10:02pm
62	B81/9	18:32	9:46pm	9:57pm	10:08pm
63	A81/7	18:32	9:51pm	10:02pm	10:13pm
64	B83/9	18:32	9:57pm	10:08pm	10:19pm
65	A83/7	18:32	10:03pm	10:14pm	10:25pm
66	B85/9	18:32	10:09pm	10:20pm	10:31pm
67	A85/7	18:32	10:15pm	10:26pm	10:37pm
68	B87/9	18:32	10:21pm	10:32pm	10:43pm
69	A87/7	18:32	10:27pm	10:38pm	10:49pm
70	B89/9	18:32	10:32pm	10:43pm	10:54pm
71	A89/7	18:32	10:38pm	10:49pm	11:00pm
72	B91/9	18:32	10:44pm	10:55pm	11:06pm
73	A91/7	18:32	10:50pm	11:01pm	11:12pm
74	B93/9	18:32	10:56pm	11:07pm	11:18pm
75	A93/7	18:32	11:02pm	11:13pm	11:24pm
76	B95/9	18:32	11:08pm	11:19pm	11:30pm
77	A95/7	18:32	11:13pm	11:24pm	11:35pm
78	B97/9	18:32	11:19pm	11:30pm	11:41pm
79	A97/7	18:32	11:25pm	11:36pm	11:47pm
80	B99/9	18:32	11:31pm	11:42pm	11:53pm

PUSHING SCHEDULE

Wednesday, April 27, 1994 Turn 3
Batteries: 7-9_2

eq #	Oven	Last Pushed	Earliest	Desired	Latest
31	A4 /7	18:32	11:37pm	11:48pm	11:59pm
32	B6 /9	18:33	11:43pm	11:54pm	12:05pm

CC-10295 REV. 1161
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 3

12 Hrs. Beginning 12:00 AM

Date 4-27-74

BATTERY NO. <u>B³8</u>				BATTERY NO. <u>A³7</u>				BATTERY NO. <u>B³7</u>			
OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES	OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES	OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES
1	2 05	2 31		1				1	8 11	8 27	
3	2 43	3 02		3				3	8 21	8 23	
5	2 53	3 10		5				5	8 31	8 48	
7	3 04	3 21		7				7			Passup
9	3 12	3 31		9				9	8 46	9 06	
11	3 23	3 40		11				11	8 59	9 23	
13	3 32	3 49		13				13	9 10	9 33	
15	3 42	3 53		15				15	9 25	9 50	
17	3 51	4 01		17				17	9 53	10 01	
19	3 55	4 06		19				19	10 04	10 19	
21	4 03	4 36		21				21	10 17	10 37	
23	4 08	4 42		23				23	10 25	10 45	
25	4 32	4 57		25				25	10 50	11 00	
27	4 50	5 07		27				27	11 02	11 11	
29	4 59	5 12		29				29	11 14	11 25	
31	5 09	5 25		31				31	12 03	12 10	
2	11 28	11 46		2	5 27	5 45	HP 14 B	2			
4	11 38	11 59		4	5 39	5 54	FB	4			
6	11 49			6	5 47	6 04		6			
8				8	5 56	6 15		8			
10				10	6 08	6 24		10		12 12	
12				12	6 17	6 33		12		12 16	
14				14	6 26	6 45	FB	14	12 14	12 28	PD
16				16	6 35	6 52		16	12 19	12 37	
18				18	6 47	7 05		18	12 30	12 46	
20				20	6 54	7 14		20	12 39	12 55	
22				22	7 07	7 25		22	12 48	1 05	
24				24	7 16	7 35		24	12 57	1 16	
26				26	7 27	7 45		26	1 07	1 25	
28				28	7 37	7 49		28	1 18	2 03	
30				30	7 47	7 51		30	1 27	2 41	
C1				1	-	-	-	1	-	-	-
C2	5 14	5 36		2	-	-	-	2	-	-	-

REMARKS: 20 / 19

15 / 15

24 / 26

59 / 60

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	7	7		6-7	6	6	
1-2	3	3		7-8	5	7	
2-3	3	3		8-9	5	3	
3-4	7	7		9-10	3	4	
4-5	5	5		10-11	4	4	
5-6	6	6		11-12	5	5	
	31	31			28	29	

Total Ovens Pushed 59

Total Ovens Charged 60

Pusherman

Battery Foreman

CC-10295 REV. 1161
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 3

12 Hrs. Beginning 12:00 PM

Date 4/27/94

BATTERY NO. <u>B's 8</u>				BATTERY NO. <u>A's 7</u>				BATTERY NO. <u>B's 7</u>			
OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES	OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES	OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES
1	8 33	8 59		1	2 19	2 38		1			
3	8 43	9 07		3	2 30	2 49		3			
5	8 54	9 17		5	2 41	3 00		5			
7	9 05	9 29		7	2 52	3 11		7			
9	9 15	9 38		9	3 02	3 21		9			
11	9 27	9 48		11	3 14	3 32		11			
13	9 41	9 55		13	3 24	3 43		13			
15	9 52	10 10		15	3 35	4 09		15			
17	10 05	10 17		17	3 46	4 20		17			
19	10 15	10 27		19	4 07	4 27		19			
21	10 25	10 39		21	4 18	4 35		21			
23	10 37	10 50		23	4 24	4 53		23			
25	10 47	11 04		25	4 37	5 04		25			
27	10 56	11 12		27	4 55	5 16		27			
29	11 04	11 22		29	5 06	5 39		29			
31	11 10	11 28		31	5 18	5 44		31			
2				2	11 38			2	5 31	5 48	
4				4	11 48			4	5 46	5 58	
6		12 09		6				6	5 56	6 10	
8	12 01	12 21		8				8	6 08	6 22	
10	12 12	12 32		10				10	6 19	6 34	
12	12 24	12 43		12				12	6 31	6 45	
14	12 35	12 54		14				14	6 42	6 55	
16	12 46	1 05		16				16	6 52	7 05	
18	12 57	1 16		18				18	7 23	7 17	
20	1 08	1 27		20				20	7 15	7 28	
22	1 19	1 37		22				22	7 36	7 40	
24	1 30	1 48		24				24	7 37	7 52	
26	1 40	1 58		26				26	7 50	8 05	
28	1 57	2 04		28				28	8 03	8 38	
30	2 01	2 16		30				30	8 15	8 48	
C1	2 07	2 27		1	-	-	-	1	-	-	-
C2	11 16	11 42		2	-	-	-	2	-	-	-

REMARKS:

30/31 10/16 15/5

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	5		8-7	5	5	
1-2	5	6		7-8	5	5	
2-3	6	5		8-9	5	4	
3-4	5	5		9-10	5	6	
4-5	5	5		10-11	6	5	
5-6	5	6		11-12	5	5	
	32	32			31	30	

Total Ovens Pushed 63

Total Ovens Charged 62

Pusherman

Battery Foreman

CC-10295 REV. 1181
03.001.0020

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 23

12 Hrs. Beginning 12:00 A.M.

Date 4/26/74

BATTERY NO. <u>B's 8</u>				BATTERY NO. <u>A's 7</u>				BATTERY NO. <u>B's 7</u>			
OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES	OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES	OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES
1	6 19	6 44		1	12 54	1 13		1			
3	6 35	7 00		3	1 05	1 22		3			
5	6 46	7 13		5	1 15	1 33		5			
7	7 02	7 15		7	1 24	1 42		7			
9	7 15	8 08		9	1 35	1 57		9			
11	8 18	8 40		11	1 44	2 03		11			
13	8 30	8 52		13	1 56	2 12		13			
15	8 42	9 04		15	2 08	2 22		15			
17	8 55	9 10		17	2 15	2 33		17			
19	9 06	9 28		19	2 24	2 44		19			
21	9 18	9 45		21	2 35	2 55		21			
23	9 30	9 52		23	2 46	3 01		23			
25	9 42	10 04		25	2 57	3 12		25			
27	9 55	10 10		27	3 03	3 27		27			
29	10 06	10 28		29	3 14	3 39		29			
31	10 18	10 40		31	3 29	3 50		31	12 02	12 00	
2				2	10 42	11 04		2	3 41	4 00	
4				4	10 55	11 14		4	3 52	4 14	
6				6	11 06	11 29		6	4 02	4 20	
8				8	11 18	11 40		8	4 16	4 32	
10				10	11 30	11 52		10	4 22	4 42	
12				12	11 42			12	4 34	4 54	
14				14	11 55			14	4 44	5 05	
16				16				16	4 55	5 14	
18				18				18	5 07	5 25	
20		12 11		20				20	5 16	5 35	
22		12 16		22				22	5 27	5 44	
24	12 13	12 26		24				24	5 37	5 55	
26	12 19	12 36		26				26	5 46	6 05	
28	12 29	12 42		28				28	5 57	6 17	
30	12 38	12 52		30				30	6 07	6 31	
31	12 44	1 03		1	-	-	-	1	-	-	-
32	10 30	10 52		2	-	-	-	2	-	-	-

REMARKS: 22/24 23/21 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	7	7		6-7	4	4	
1-2	6	6		7-8	2	2	
2-3	6	6		8-9	4	4	
3-4	5	5		9-10	5	5	
4-5	6	6		10-11	5	5	
5-6	6	6		11-12	5	5	
	36	36			25	25	
				Total Ovens Pushed <u>61</u>			
				Total Ovens Charged <u>61</u>			
				Pusherman			
				Battery Foreman			

CC-10295 REV. 1161
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 04-26-94

BATTERY NO. <u>B³-8</u>				BATTERY NO. <u>A³-7</u>				BATTERY NO. <u>B³-7</u>			
OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES	OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES	OVEN NO.	TIME PUSHED	TIME CHARGED	NOTES
1				1	7 33	8 37		1	1 36	1 54	
3				3	8 04	8 43		3	1 46	2 04	
5				5	8 10	8 53		5	1 56	2 14	
7				7	8 20	9 10		7	2 47	2 22	*
9				9	8 35	9 17		9	2 06	2 24	
11				11	8 45	9 35		11	2 16	2 34	
13				13	8 52	9 46		13	2 26	2 44	
15				15	9 06	9 56		15	2 36	2 54	
17				17	9 16	10 02		17	2 46	3 04	
19				19	9 26	10 12		19	2 56	3 14	
21				21	9 38	10 20		21	3 46	3 31	
23				23	9 48	10 30		23	3 21	3 38	
25				25	9 58	10 40		25	3 34	3 45	
27				27	10 10	10 47		27	4 13	4 27	
29				29	10 23	10 53		29	4 24	4 37	
31				31	10 32	11 04		31	-	-	-
2	4 35	4 55		2				2	10 50	11 14	
4	4 47	5 10		4				4	11 01	11 23	
6	4 57	5 20		6				6	11 12	11 33	
8	5 12	5 38		8				8	11 21	11 42	
10	5 22	5 50		10				10	11 31		
12	5 32	6 10		12		12 04		12	11 40		
14	5 42	6 25		14		12 16		14			
16	5 52	6 39		16	12 00	12 28		16			
18	6 05	6 58		18	12 18	12 50		18			
20	6 15	7 10		20	12 30	12 52		20			
22	6 27	7 26		22		1 04		22			
24	6 37	7 44		24	12 55	1 14		24			
26	6 47	7 50		26	1 06	1 24		26			
28	7 02	7 58		28	1 16	1 34		28			
30	7 12	8 12		30	1 26	1 44		30			
C1	7 22	8 24		1				1			
2				2				2			

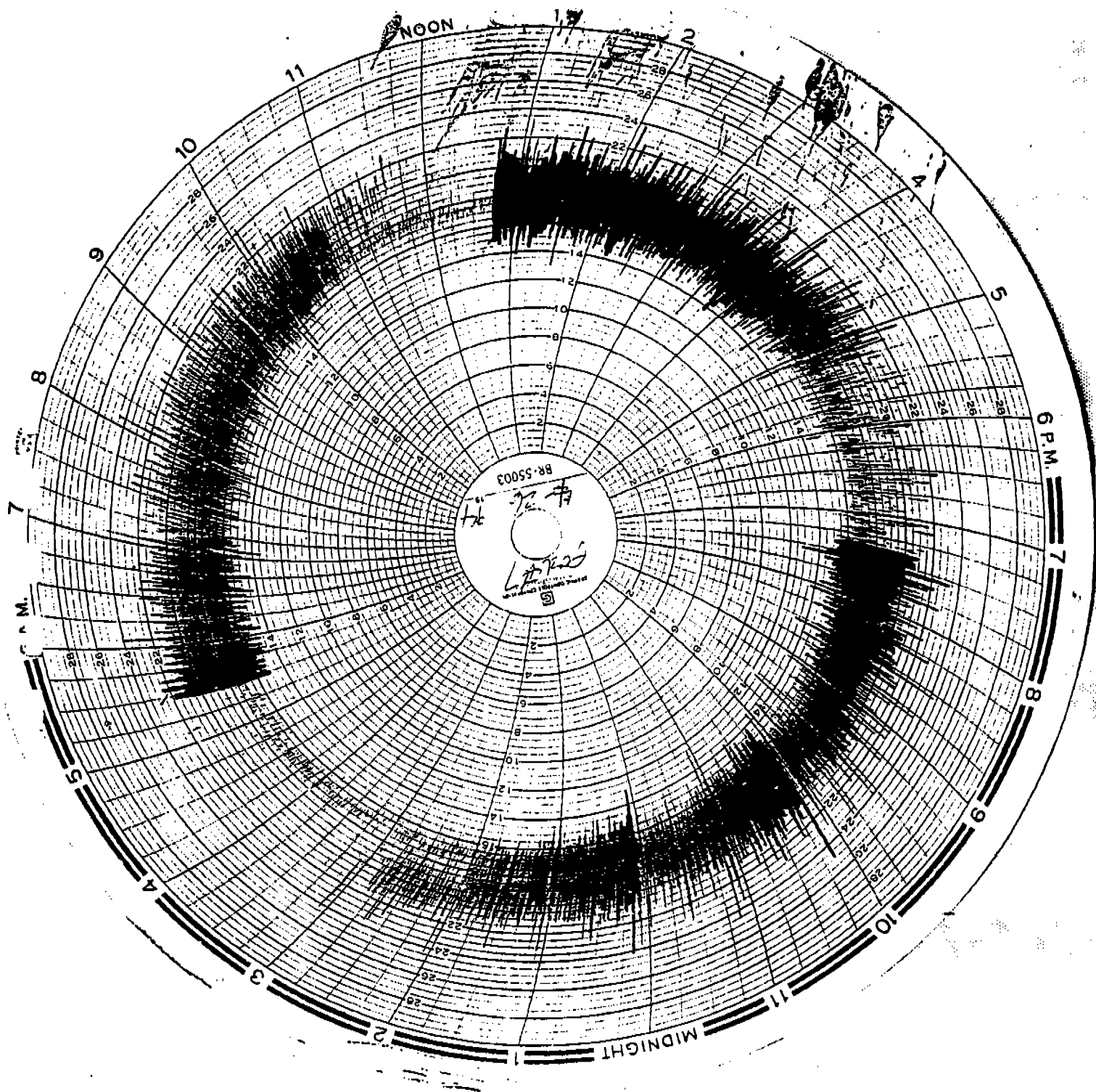
REMARKS:

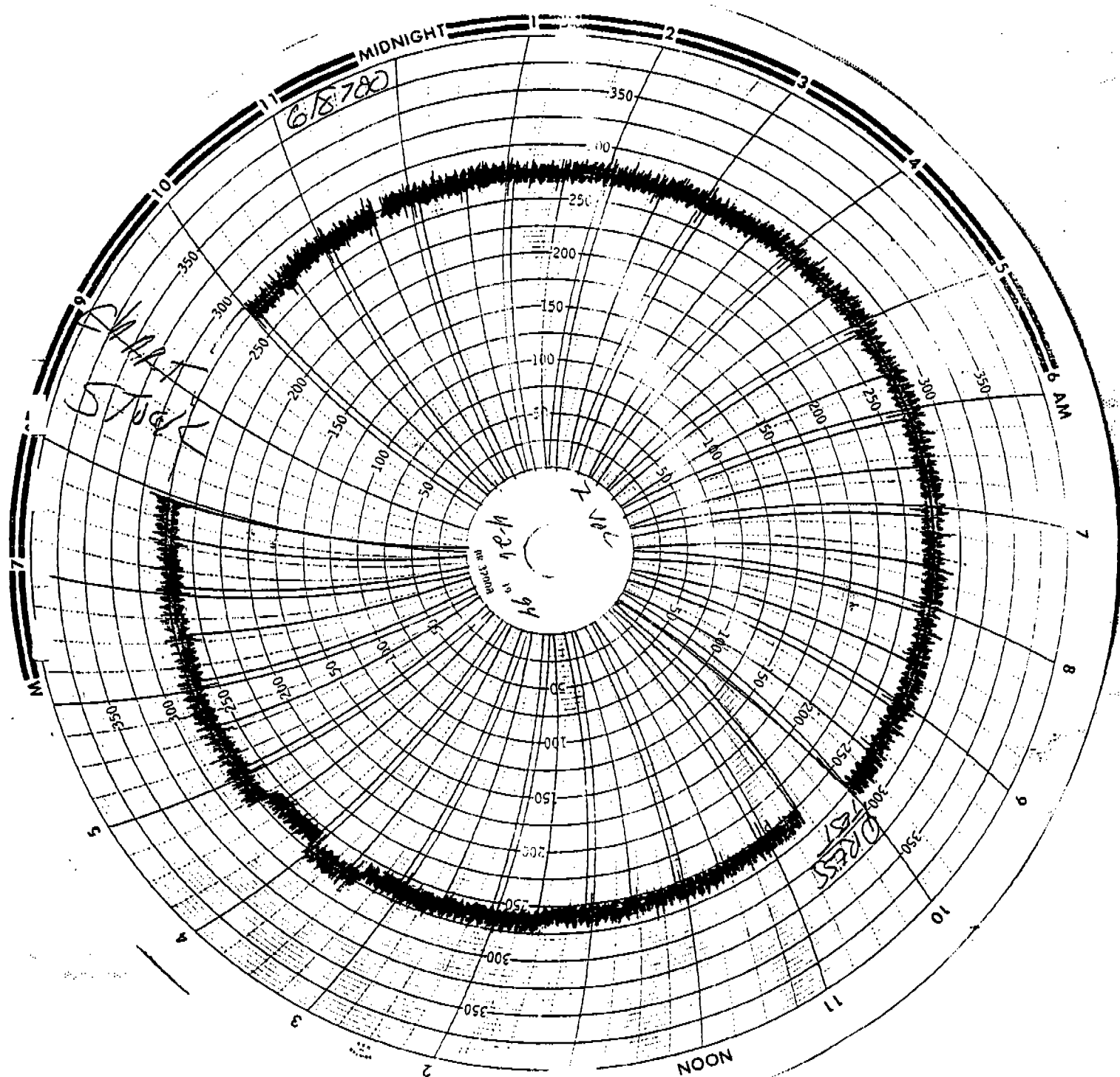
Condition of Signals

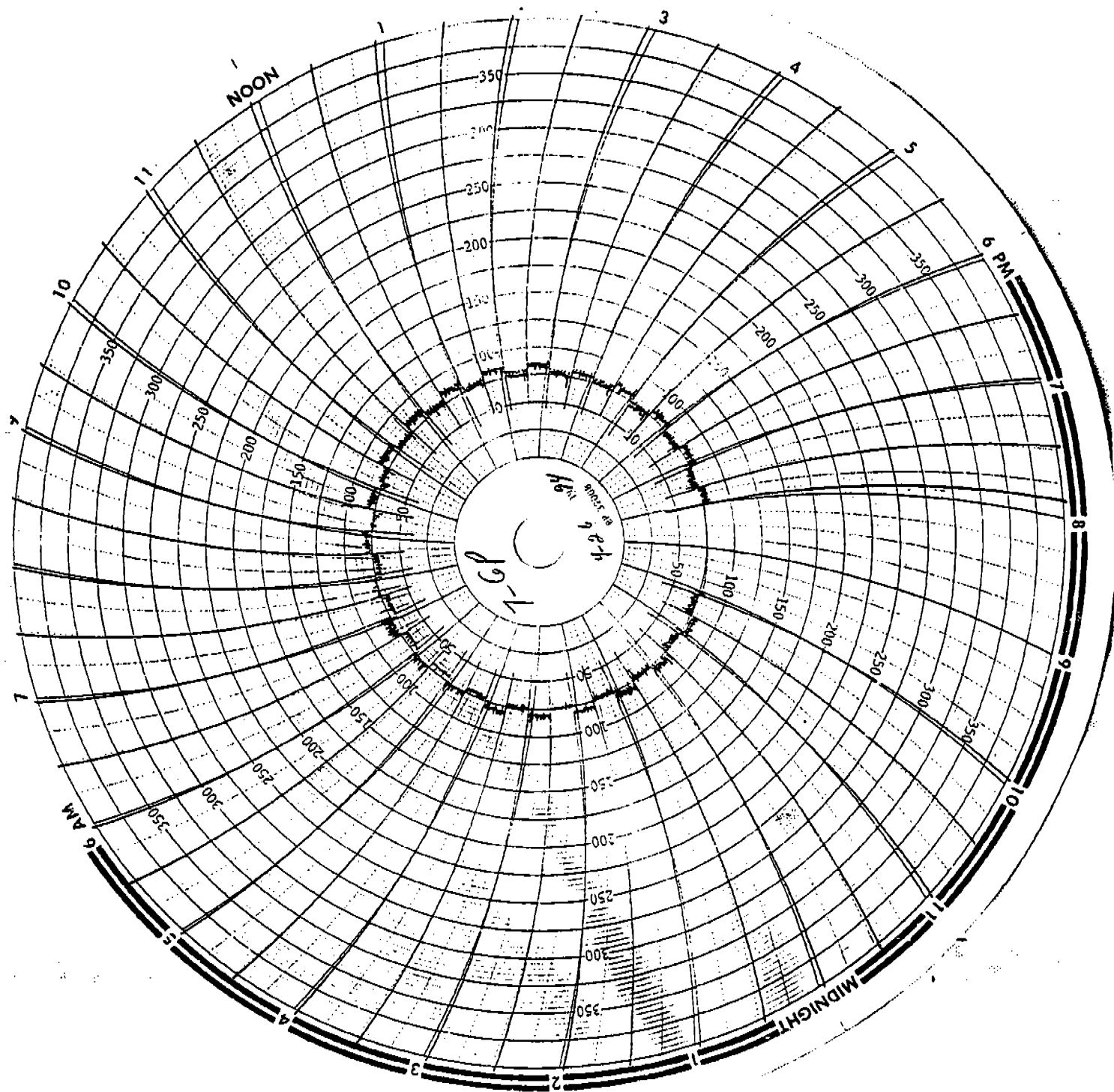
Condition of Pusher

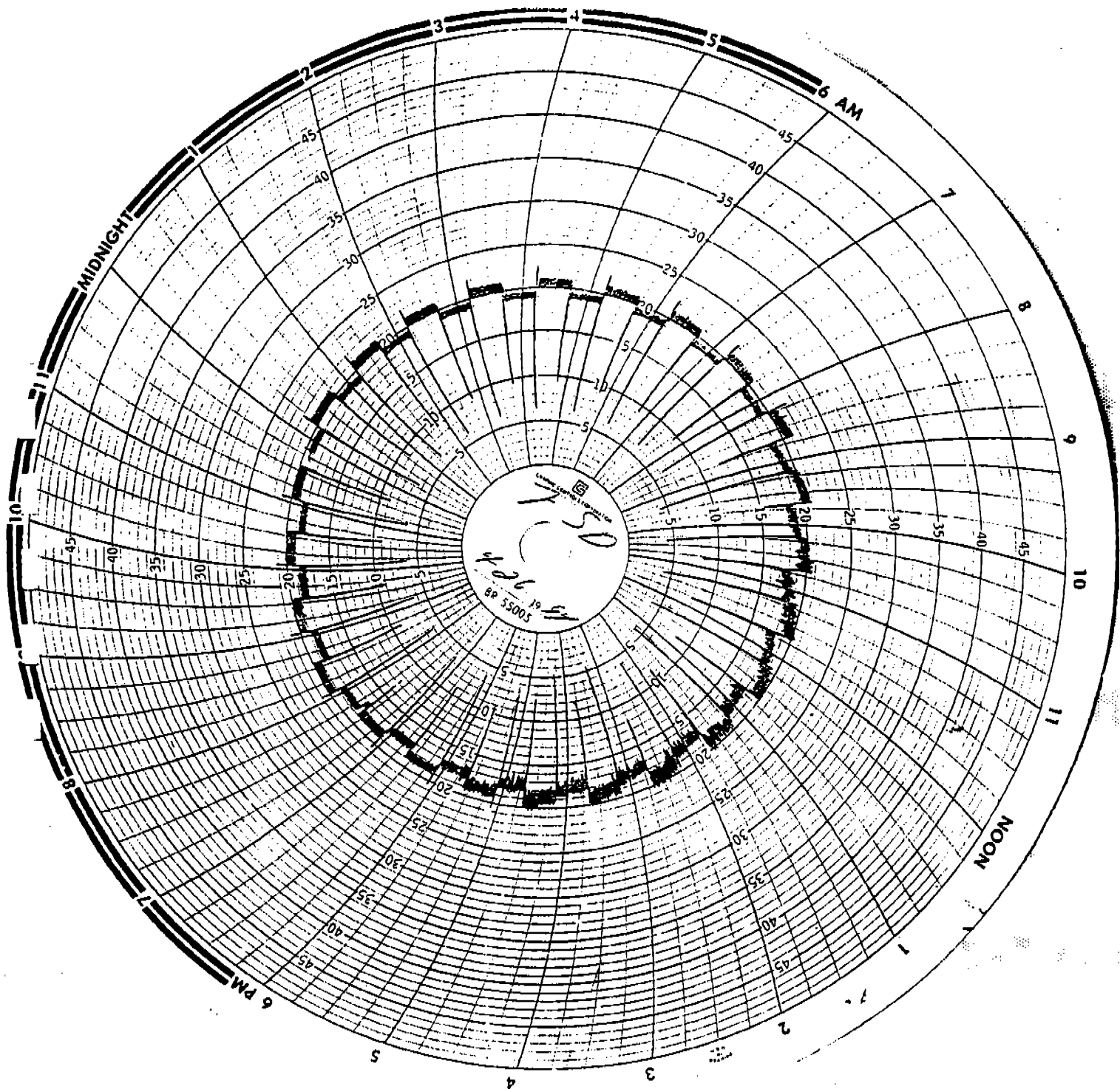
HOURLY REPORT OF OPERATION

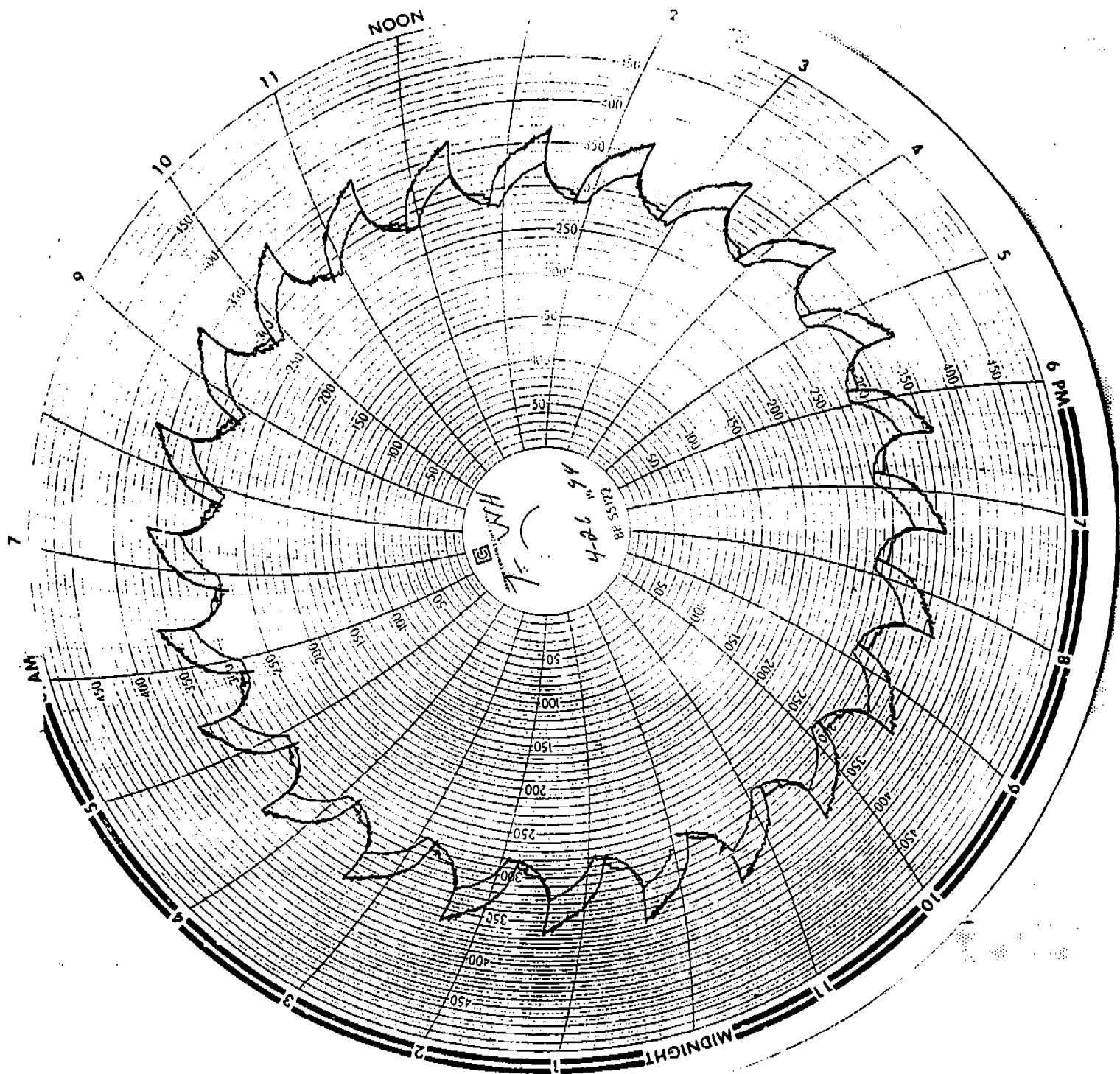
TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED	TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
12-1	5	5		5-7	5	4	
1-2	6	6		7-8	5	5	
2-3	6	6		8-9	6	5	
3-4	3	5		9-10	6	6	
4-5	5	3		10-11	4	7	
5-6	5	4		11-12	5	5	
	30	29			31	22	
				Total Ovens Pushed			
				Total Ovens Charged			
				Pusherman			
				Battery Foreman			

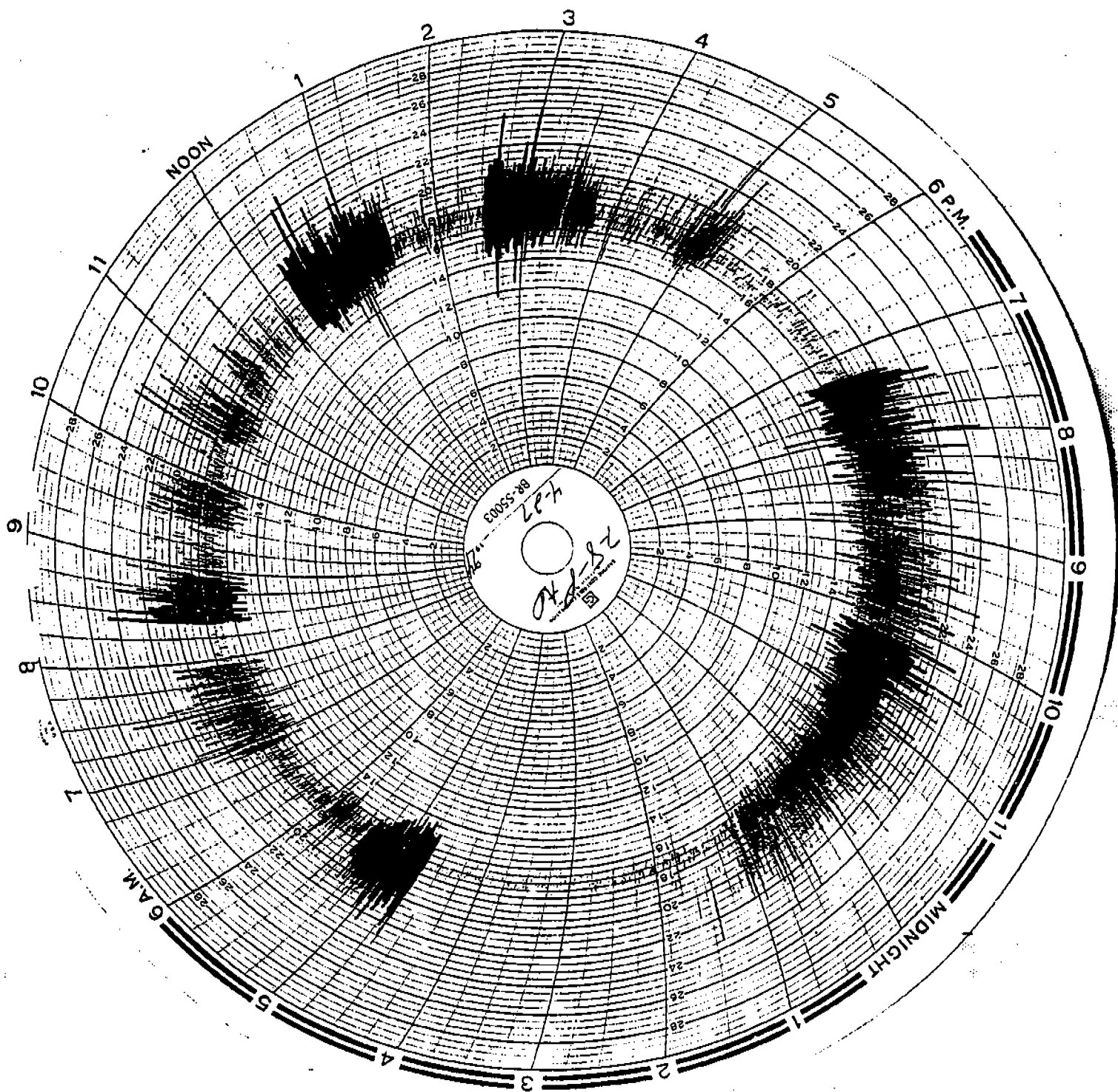


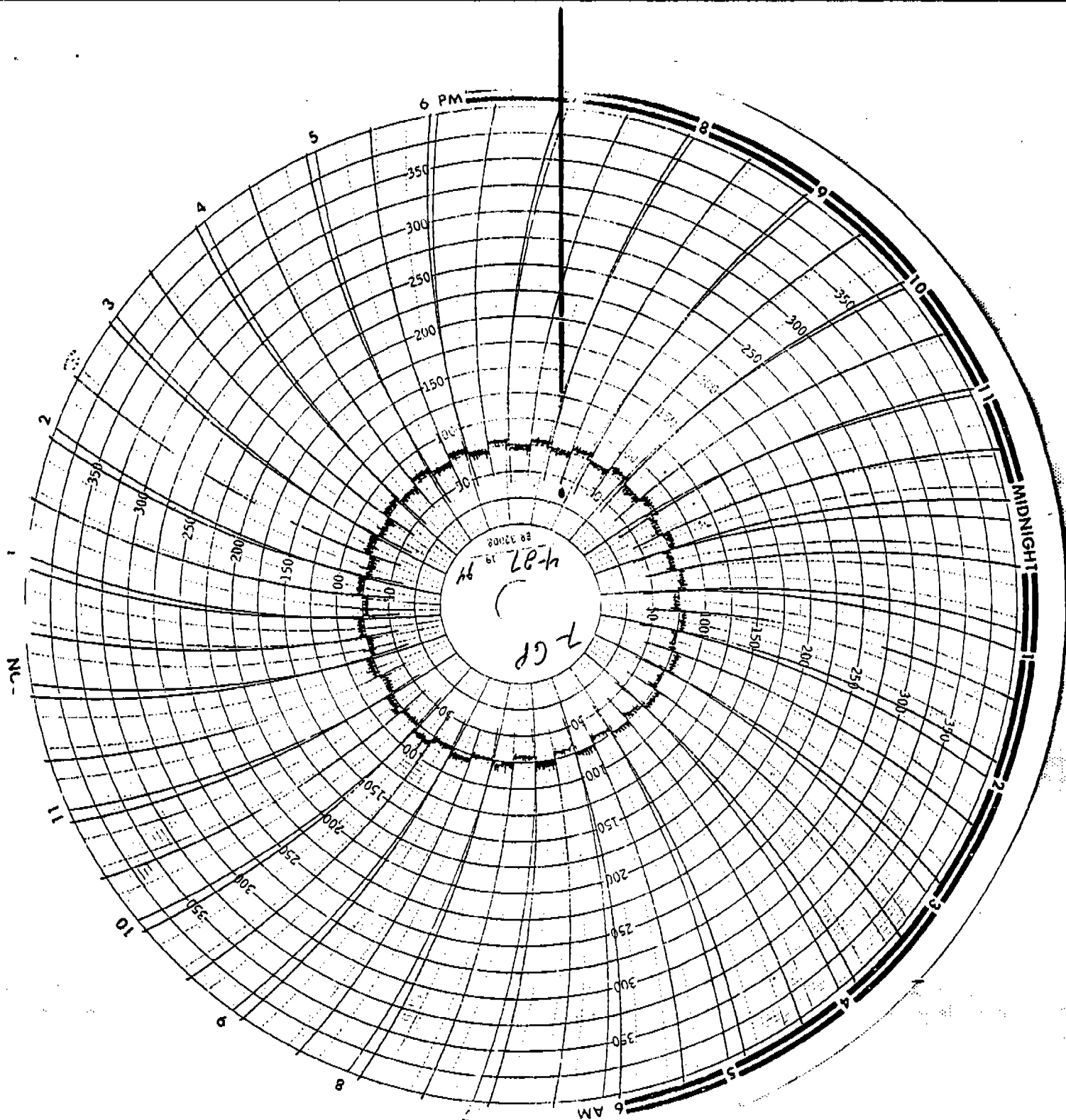


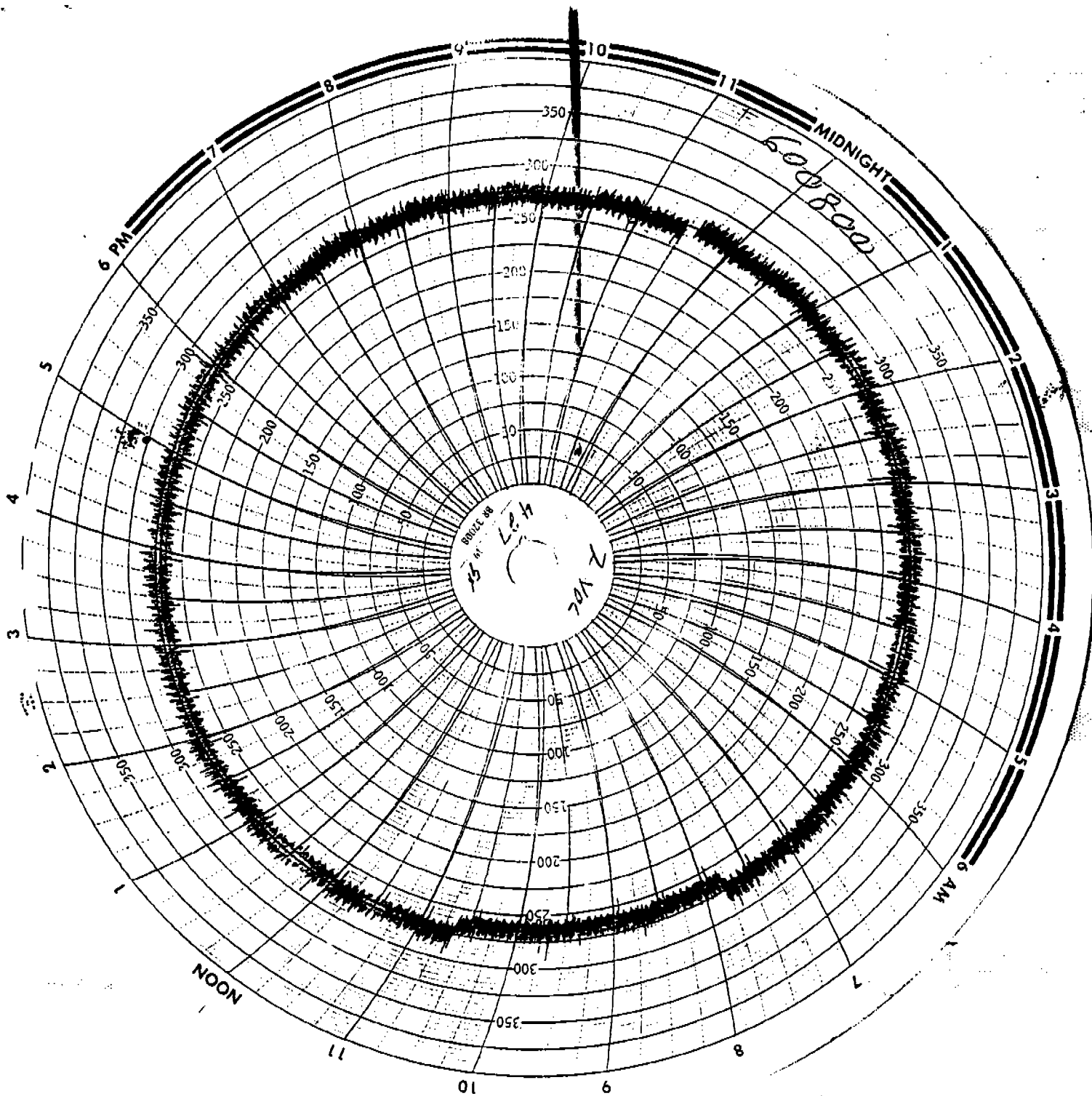


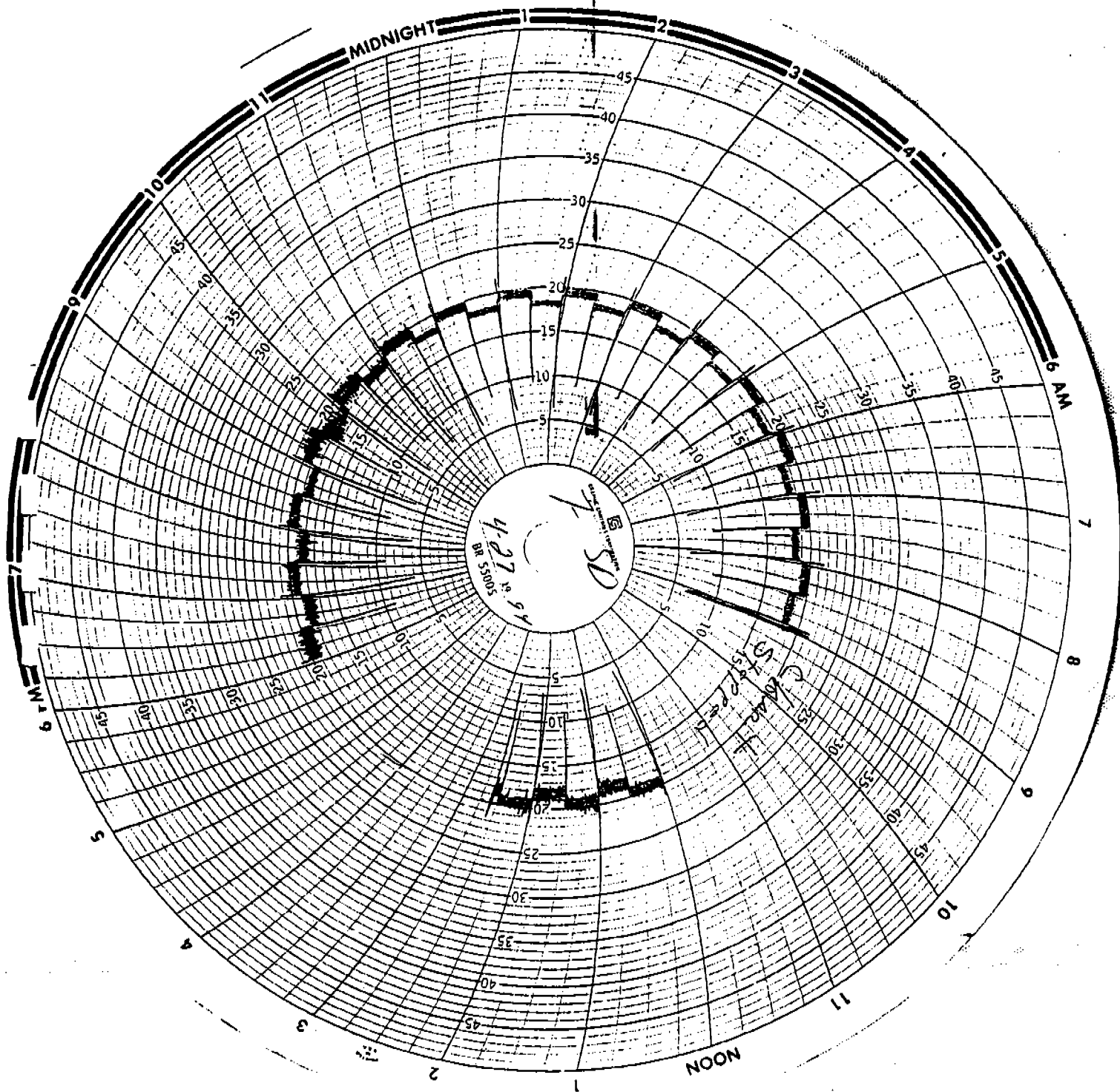


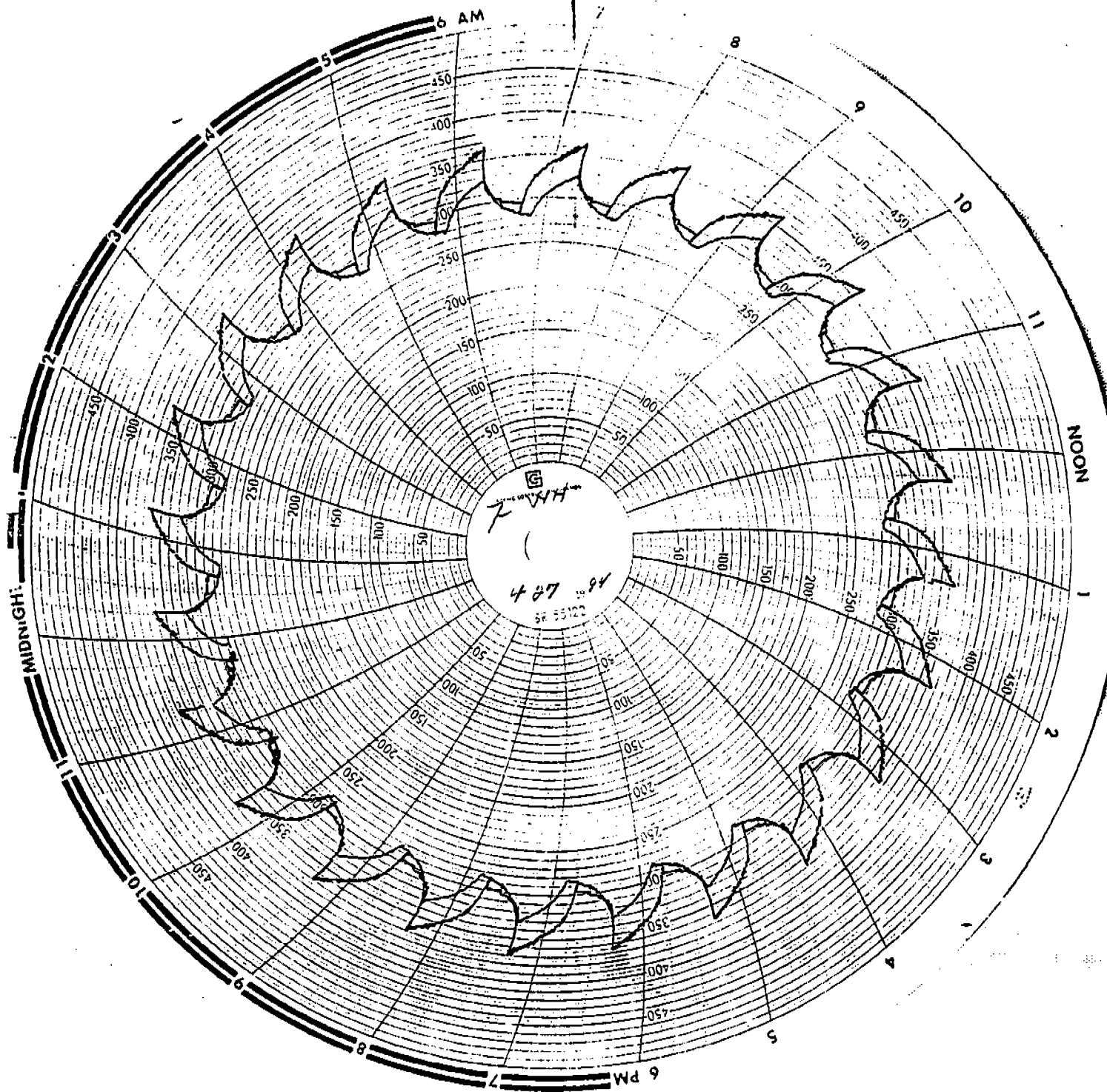












**COMPLIANCE DEMONSTRATION
NO. 7 BATTERY COMBUSTION STACK**

**USS CLAIRTON WORKS
CLAIRTON, PENNSYLVANIA**

**APPENDIX C
GRAVIMETRIC RESULTS, EMISSIONS CALCULATIONS**

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS
 TEST SITE #7 BATTERY COMBUSTION STACK

TEST DATE: 04-26-94
 TEST NUMBER: CLR-BS#7-1

A.	Barometric Pressure	29.10	in. Hg	
B.	Static Pressure	-1.0	in. H2O	
C.	Stack Pressure	29.03	in. Hg	$[A + (B/13.6)]$
D.	Average ΔH	1.63	in. H2O	
E.	Meter Pressure	29.22	in. Hg	$[A + (D/13.6)]$
F.	Average ΔP	0.05	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0128		
I.	Stack Diameter	114	in.	
J.	Stack Area	70.88	ft ²	$(0.00545 \cdot I^2)$
K.	Nozzle Diameter	0.490	in.	
L.	Nozzle Area	1.31E-03	ft ²	$(0.00545 \cdot K^2)$
M.	Average Stack Temperature	535	°F	
N.	Average Stack Temperature	995	°R	$(460 + M)$
O.	Average Meter Temperature	103	°F	
P.	Average Meter Temperature	563	°R	$(460 + O)$
Q.	Condensate Volume	257.0	mL	
R.	Absorbed H2O	26.9	mL	
S.	Total H2O	283.9	mL	$(Q + R)$
T.	Filter Weight	0.0295	g	
U.	Probe Weight	0.1796	g	
V.	Impinger Weight		g	
W.	Total Weight	0.2091	g	$(T + U + V)$
X.	Metered Gas Volume	84.225	dscf	
Y.	Corrected Metered Gas Volume	85.303	dscf	$(X \cdot H)$
Z.	H2O Gas Volume	14.665	cf	$(0.00267 \cdot S \cdot P/A)$
AA.	Total Sample Volume	99.968	cf	$(Y + Z)$
BB.	Percent H2O	14.7	%	$(100 \cdot Z/AA)$
CC.	Gas Volume Sampled	78.128	dscf	$[Y \cdot (528/P) \cdot (E/29.92)]$
DD.	Grain Loading	0.0413	gr/dscf	$(15.43 \cdot W/CC)$
EE.	Average Molecular Weight:			

Component	% Volume + 100	$\cdot (1 - BB/100)$	$\cdot$ Mol. Weight	= Weight/Mol
H2O	0.147		18	2.641
CO2	0.040	0.853	44	1.502
CO	0.000	0.853	28	0.000
O2	0.120	0.853	32	3.277
N2	0.840	0.853	28	20.070

Average Molecular Weight

27.49

lb./lb. mol

FF.	Average Stack Velocity	17.9	fps	$\{85.49 \cdot G \cdot [(F \cdot N)/(C \cdot EE)]^{0.5}\}$
GG.	Average Flow Rate	76300	acfm	$(60 \cdot FF \cdot J)$
HH.	Standard Flow Rate	39300	scfm	$[GG \cdot (528/N) \cdot (C/29.92)]$
II.	Sample Time	7200	sec	
JJ.	Percent Isokinetic	105.1	%	$\{[100 \cdot CC \cdot 60 \cdot J]/[HH \cdot L \cdot II \cdot (1 - BB/100)]\}$
KK.	Mass Flow Rate	11.87	lb/hr	$[DD \cdot HH \cdot (1 - BB/100) \cdot 60/7000]$

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS
TEST SITE #7 BATTERY COMBUSTION STACK

TEST DATE: 04-26-94
TEST NUMBER: CLR-BS#7-2

A.	Barometric Pressure	29.10	in. Hg	
B.	Static Pressure	-1.0	in. H2O	
C.	Stack Pressure	29.03	in. Hg	[A+(B/13.6)]
D.	Average Δ H	1.72	in. H2O	
E.	Meter Pressure	29.23	in. Hg	[A+(D/13.6)]
F.	Average Δ P	0.06	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0128		
I.	Stack Diameter	114	in.	
J.	Stack Area	70.88	ft²	(0.00545*I²)
K.	Nozzle Diameter	0.490	in.	
L.	Nozzle Area	1.31E-03	ft²	(0.00545*K²)
M.	Average Stack Temperature	537	°F	
N.	Average Stack Temperature	997	°R	(460+M)
O.	Average Meter Temperature	112	°F	
P.	Average Meter Temperature	572	°R	(460+O)
Q.	Condensate Volume	288.6	mL	
R.	Absorbed H2O	26.0	mL	
S.	Total H2O	314.6	mL	(Q+R)
T.	Filter Weight	0.0355	g	
U.	Probe Weight	0.0793	g	
V.	Impinger Weight		g	
W.	Total Weight	0.1148	g	(T+U+V)
X.	Metered Gas Volume	91.218	dcf	
Y.	Corrected Metered Gas Volume	92.386	dcf	(X*H)
Z.	H2O Gas Volume	16.511	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	108.897	cf	(Y+Z)
BB.	Percent H2O	15.2	%	(100*Z/AA)
CC.	Gas Volume Sampled	83.302	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0213	gr/dscf	(15.43*W/CC)
EE.	Average Molecular Weight:			

Component	% Volume + 100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.152		18	2.729
CO2	0.040	0.848	44	1.493
CO	0.000	0.848	28	0.000
O2	0.120	0.848	32	3.258
N2	0.840	0.848	28	19.954

Average Molecular Weight

27.43

lb./lb. mol

FF.	Average Stack Velocity	19.7	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Average Flow Rate	83700	acfm	(60*FF*J)
HH.	Standard Flow Rate	43000	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	7200	sec	
JJ.	Percent Isokinetic	103.0	%	{[100*CC*60*J]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	6.65	lb/hr	[DD*HH*(1-BB/100)*60/7000]

STACK SAMPLING CALCULATIONS

CLIENT: USS CLAIRTON WORKS

TEST DATE: 04-27-94

TEST SITE #7 BATTERY COMBUSTION STACK

TEST NUMBER: CLR-BS#7-3

A.	Barometric Pressure	29.10	in. Hg	
B.	Static Pressure	-1.0	in. H2O	
C.	Stack Pressure	29.03	in. Hg	[A+(B/13.6)]
D.	Average Δ H	1.77	in. H2O	
E.	Meter Pressure	29.23	in. Hg	[A+(D/13.6)]
F.	Average Δ P	0.06	in. H2O	
G.	Pitot Coefficient	0.84		
H.	Gas Meter Coefficient	1.0128		
I.	Stack Diameter	114	in.	
J.	Stack Area	70.88	ft²	(0.00545*I²)
K.	Nozzle Diameter	0.490	in.	
L.	Nozzle Area	1.31E-03	ft²	(0.00545*K²)
M.	Average Stack Temperature	538	°F	
N.	Average Stack Temperature	998	°R	(460+M)
O.	Average Meter Temperature	96	°F	
P.	Average Meter Temperature	556	°R	(460+O)
Q.	Condensate Volume	308.1	mL	
R.	Absorbed H2O	22.3	mL	
S.	Total H2O	330.4	mL	(Q+R)
T.	Filter Weight	0.0255	g	
U.	Probe Weight	0.0920	g	
V.	Impinger Weight		g	
W.	Total Weight	0.1175	g	(T+U+V)
X.	Metered Gas Volume	87.895	dcf	
Y.	Corrected Metered Gas Volume	89.020	dcf	(X*H)
Z.	H2O Gas Volume	16.855	cf	(0.00267*S*P/A)
AA.	Total Sample Volume	105.875	cf	(Y+Z)
BB.	Percent H2O	15.9	%	(100*Z/AA)
CC.	Gas Volume Sampled	82.588	dscf	[Y*(528/P)*(E/29.92)]
DD.	Grain Loading	0.0220	gr/dscf	(15.43*W/CC)
EE.	Average Molecular Weight:			

Component	% Volume ÷ 100	*(1-BB/100)	* Mol. Weight	= Weight/Mol
H2O	0.159		18	2.866
CO2	0.040	0.841	44	1.480
CO	0.000	0.841	28	0.000
O2	0.120	0.841	32	3.229
N2	0.840	0.841	28	19.776

Average Molecular Weight

27.35 lb./lb. mol

FF.	Average Stack Velocity	19.7	fps	{85.49*G*[(F*N)/(C*EE)]^0.5}
GG.	Average Flow Rate	83900	acfm	(60*FF*I)
HH.	Standard Flow Rate	43100	scfm	[GG*(528/N)*(C/29.92)]
II.	Sample Time	7200	sec	
JJ.	Percent Isokinetic	102.8	%	{[100*CC*60*I]/[HH*L*II*(1-BB/100)]}
KK.	Mass Flow Rate	6.82	lb/hr	[DD*HH*(1-BB/100)*60/7000]

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UNIT TESTED

Analyst's Signature Richard J. Beckton
Date 5/19/94

AGE 10/92