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.

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USS CLAIRTON WORKS
A DIVISION OF USX CORPORATION
CLAIRTON, PA

Report on
COMPLIANCE DEMONSTRATION
19 AND 20 BATTERY PUSHING EMISSIONS CONTROL

FEBRUARY 1993

Prepared By: CHESTER ENVIRONMENTAL
Project No.: 300185-01

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BUREAU OF
AIR POLLUTION CONTROL

CHESTER
ENVIRONMENTAL

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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 19 and 20 operated at USS Clairton Works was conducted on October 21, 22, and 23, 1992. A baghouse controls the emissions which result from the pushing operations from the ovens of Batteries 19 and 20. 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 19 or 20.

The field work activities were completed by Chester Environmental. The test crew included David Beranek, Richard Casselberry, Mark Grunebach, Bernie May, Thomas Morgan, Paul Pastorik, Tim Redenbaugh, and John Shimshock. All test procedures were witnessed by the Allegheny County Health Department Bureau of Air Pollution Control (BAPC).

ABSTRACT

A demonstration of the pushing emissions control system for Batteries 19 and 20 operated at USS Clairton Works was conducted on October 21, 22, and 23, 1992. 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 19 or 20.

The results of the testing showed an average particulate matter emissions rate of 0.27 lbs per hour, while the allowable emissions rate is 5.12 lbs per hour. No visible emissions were observed from any of the baghouse stacks during the test program. Over the three day test program, a maximum plume opacity during the pushing operation greater than or equal to 20 percent was observed once, while a maximum plume opacity during the travelling operation greater than 10 percent was observed on 17 of the 60 cases on the first day of the test program, five of the 60 cases on the second day of the test program, and five of the 60 cases on the second day of the test program. During the pushing operation, the plume opacity was greater than or equal to 20 percent for an average of 0.1 seconds. During the travelling operation, the plume opacity was greater than 10 percent for an average of 3.0 seconds.

2.0 METHODOLOGIES

A test protocol was prepared by Chester Environmental and submitted to BAPC 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 were 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 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.

Gas concentrations of carbon dioxide (CO_2), oxygen (O_2), and nitrogen (N_2, by difference) were determined with the use of a Bacharach "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.

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 train included a water and acetone rinse of both the front-half and back-half components. The water soluble and water insoluble portions of the front-half of the sampling train were determined as a total, while the water soluble and water insoluble portions of the back-half were determined separately. The back-half water and the water soluble rinses of the back-half components of the sampling train were treated in accordance with Section 139.12 of the DER Source Testing Manual.

All plume opacity determinations were performed in accordance with EPA Method 9 and Section F of Chapter 18 of the BAPC 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 for one minute for each push in which emissions testing was conducted.

3.0 RESULTS

All testing was performed during periods of normal plant operation. Copies of the plant operational data for each day of the test program for Batteries 19 and 20 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 BAPC can be found in Appendix C. The post test calibration of the control box used on Stack 1-1 yielded an average dry gas meter coefficient which was more than five percent lower than the dry gas meter coefficient determined during the initial three point calibration of the control box. Therefore, in accordance with EPA Method 5, the lower coefficient was used in the emissions calculations.

Copies of the field data sheets can be found in Appendix A. The analytical results and emissions calculations for each test can be found in Appendix D. The results have been summarized in Tables 3-1, 3-2, 3-3, and 3-4. The total particulate matter emissions rates for each day of testing was obtained by summing the emissions rates from each stack. The three day average particulate matter emissions rate is 1.89 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, 8.65 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:

$$\frac{1.89\ \text{lb}}{\text{hr pushing}} \times \frac{1\ \text{hr pushing}}{60\ \text{min pushing}} \times \frac{1\ \text{min pushing}}{1\ \text{push}} \times \frac{8.65\ \text{pushes}}{\text{hr}} = 0.27\ \text{lbs/hr}$$

The allowable particulate matter emissions rate is equal to 0.04 lbs per ton of coke pushed. Since there were on average 14.8 tons of coke per oven, and on average 8.65 ovens were pushed per hour, the particulate matter emissions rate is equal to (0.04 lbs / ton coke pushed) x (14.8 tons coke pushed / oven) x (8.65 ovens pushed / hour), or

.047 lb/ton × 14.8 tons/oven × 8.65 ovens/hr =

TABLE 3-1

USS CLAIRTON WORKS
CLAIRTON, PA

BATTERIES 19 AND 20
PUSHING EMISSIONS CONTROL SYSTEM
PARTICULATE MATTER EMISSIONS DATA

DAY 1
TEST DATE: 10-21-92
TEST TIME: 9:23-16:26

Stack Number Test Number		1-1 CLR-1-1-1	1-2 CLR-1-2-1	1-3 CLR-1-3-1	1-4 CLR-1-4-1	Total
Mass Emission Rate and Concentration						
Particulate Matter	(lb/hr pushing)	0.66	0.62	0.59	0.76	2.62
	(gr/dscf)	0.0033	0.0029	0.0028	0.0036	
Stack Conditions						
Flow Rate	(acfm)	25913	28215	27282	27594	
	(scfm)	23612	25417	24936	24938	
	(dscfm)	22984	24848	24323	24472	
Temperature	(°F)	112	120	111	118	
Moisture Content	(%)	2.7	2.2	2.5	1.9	
Sampling Conditions						
Sampling Time	(minutes)	60	60	60	60	
Sample Volume	(dscf)	36.446	53.220	41.611	57.520	
Isokinetics	(%)	105.7	101.0	114.1	110.9	

TABLE 3-2

USS CLAIRTON WORKS
CLAIRTON, PA

BATTERIES 19 AND 20
PUSHING EMISSIONS CONTROL SYSTEM
PARTICULATE MATTER EMISSIONS DATA

DAY 2
TEST DATE: 10-22-92
TEST TIME: 8:26-15:26

Stack Number Test Number		1-1 CLR-1-1-2	1-2 CLR-1-2-2	1-3 CLR-1-3-2	1-4 CLR-1-4-2	Total
Mass Emission Rate and Concentration						
Particulate Matter	(lb/hr pushing)	0.33	0.26	0.22	0.29	1.10
	(gr/dscf)	0.0017	0.0012	0.0010	0.0014	
Stack Conditions						
Flow Rate	(acfm)	25322	26891	27668	26686	
	(scfm)	23331	25060	25694	24636	
	(dscfm)	22916	24584	25219	24225	
Temperature	(°F)	113	107	113	112	
Moisture Content	(%)	1.8	1.9	1.9	1.7	
Sampling Conditions						
Sampling Time	(minutes)	60	60	60	60	
Sample Volume	(dscf)	36.440	50.201	42.683	56.431	
Isokinetics	(%)	106.0	96.3	112.8	109.9	

TABLE 3-3

USS CLAIRTON WORKS
CLAIRTON, PA

BATTERIES 19 AND 20
PUSHING EMISSIONS CONTROL SYSTEM
PARTICULATE MATTER EMISSIONS DATA

DAY 3
TEST DATE: 10-23-92
TEST TIME: 9:22-16:11

Stack Number Test Number		1-1 CLR-1-1-3	1-2 CLR-1-2-3	1-3 CLR-1-3-3	1-4 CLR-1-4-3	Total
Mass Emission Rate and Concentration						
Particulate Matter	(lb/hr pushing)	0.61	0.59	0.43	0.33	1.96
	(gr/dscf)	0.0030	0.0029	0.0020	0.0016	
Stack Conditions						
Flow Rate	(acfm)	25807	26724	27901	27283	
	(scfm)	23716	24261	25531	25201	
	(dscfm)	23287	23815	25069	24780	
Temperature	(°F)	111	118	114	109	
Moisture Content	(%)	1.8	1.8	1.8	1.7	
Sampling Conditions						
Sampling Time	(minutes)	60	60	60	60	
Sample Volume	(dscf)	45.651	37.471	39.319	54.005	
Isokinetics	(%)	92.5	104.9	104.6	102.8	

TABLE 3-4

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CLAIRTON, PA

BATTERIES 19 AND 20
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	10-21-92	2.62
2	10-22-92	1.10
3	10-23-92	1.96
Average		1.89

5.12 lbs per hour. The average particulate matter emissions rate determined in the test program is less than the allowable emissions rate.

Tables 3-1, 3-2, and 3-3 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% and 110% is considered acceptable. All sample volumes were greater than 30 dscf per test. Three of the twelve isokinetics values were slightly above the acceptable range of values. However, the emissions rates determined in this test program were low in comparison with the standard.

The plume opacity data has been summarized in Table 3-5. No visible emissions were observed from any of the baghouse stacks during the test program. Over the three day test program, a maximum plume opacity during the pushing operation greater than or equal to 20 percent was observed once. For this particular case, a maximum plume opacity during the travelling operation greater than 10 percent was also observed.

Over the three day test program, a maximum plume opacity during the travelling operation greater than 10 percent was observed on 17 of the 60 cases on the first day of the test program, five of the 60 cases on the second day of the test program, and five of the 60 cases on the third day of the test program.

A pushing performance or travel performance of 100 percent was registered if the maximum plume opacity observed during the pushing or travelling operation was less than 20 percent or less than or equal to 10 percent, respectively. A pushing performance or travel performance of 0 percent was registered if the maximum plume opacity was greater than or equal to 20 percent or greater than 10 percent, respectively. The average pushing performance for test program was 99.4 percent, while the average travel performance was 85.0 percent. During the pushing operation, the plume opacity was greater than or equal to 20 percent for an average of 0.1 seconds. During the

TABLE 3-5

USS CLAIRTON WORKS
CLAIRTON, PA

19 AND 20 BATTERY PUSHING EMISSIONS CONTROL
VISIBLE EMISSIONS DATA SUMMARY

Baghouse Stacks

Observation Date	Number of Observations	Greatest Opacity (%)
10-21-92	240	0
10-22-92	240	0
10-23-92	240	0

Pushing Operation

Observation Date	Number of Observations	Number of Observations with Opacity >=20%	Pushing Performance (%)	Average Time with Opacity > 20% (sec)
10-21-92	60	0	100	0
10-22-92	60	1	98.3	0.2
10-23-92	60	0	100	0
Average			99.4	0.1

Travelling Operation

Observation Date	Number of Observations	Number of Observations with Opacity >10%	Travelling Performance (%)	Average Time with Opacity >=10% (sec)
10-21-92	60	17	71.7	6.0
10-22-92	60	5	91.7	0.8
10-23-92	60	5	91.7	2.1
Average			85.0	3.0

travelling operation, the plume opacity was greater than 10 percent for an average of 3.0 seconds.

COMPLIANCE DEMONSTRATION
19 AND 20 BATTERY PUSHING EMISSIONS CONTROL

USS CLAIRTON WORKS
CLAIRTON, PA

APPENDIX A

TEST PROTOCOL, FIELD DATA SHEETS

COMPLIANCE TEST PROTOCOL
BATTERIES 19 & 20
PUSHING EMISSIONS CONTROL SYSTEM

Prepared for:

USS CLAIRTON WORKS
CLAIRTON, PA

Prepared by:

KEYSTONE ENVIRONMENTAL RESOURCES
3000 TECH CENTER DRIVE
MONROEVILLE, PA 15146

PROJECT NUMBER: 300185-01

OCTOBER 1992

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 19 and 20 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 Pollution Control (BAPC) 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 preweighed 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.

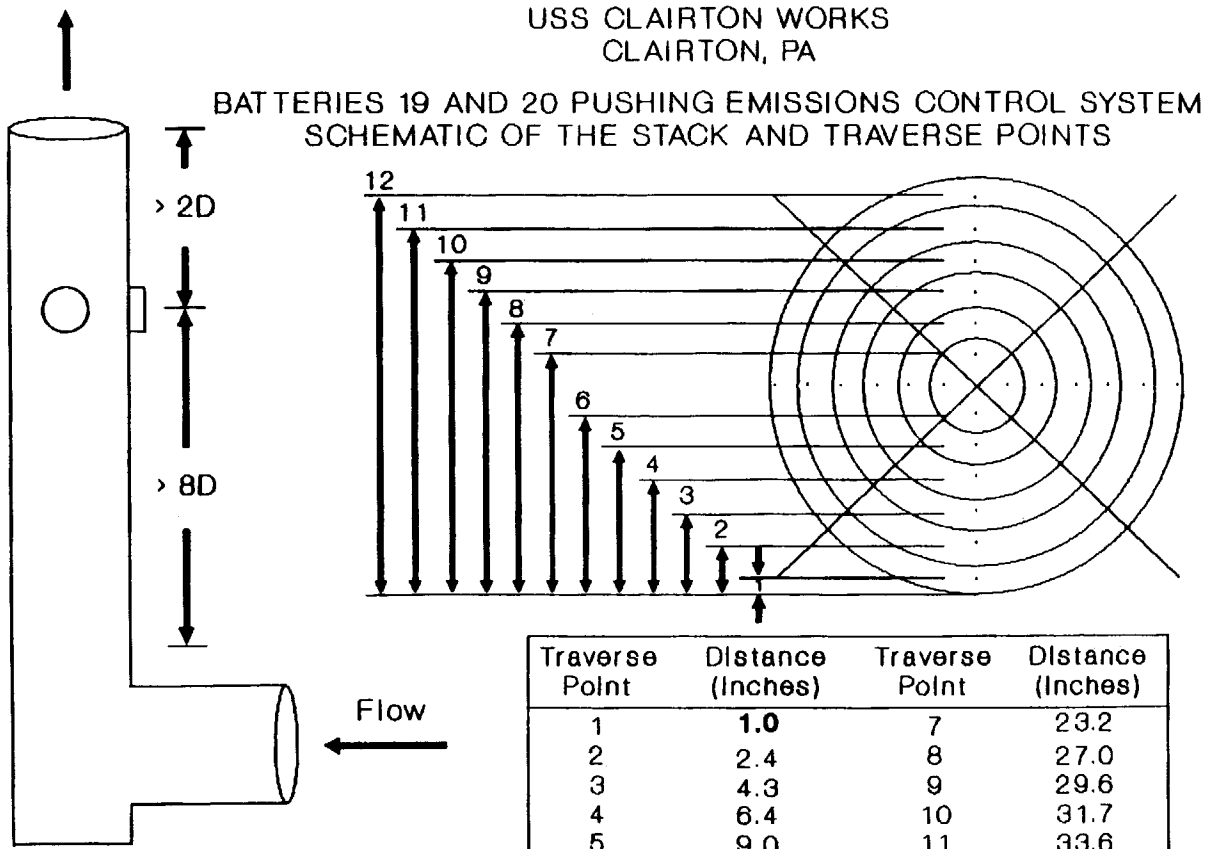
All visible emissions determinations from the baghouse exhausts stacks will be performed in accordance with EPA Stationary Source Sampling Method 9 and BAPC Method 18F. Visible emissions will be recorded for the duration of each of the sixty oven pushes. All plume opacity measurements will also be performed in accordance with EPA Method 9 and BAPC 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.

FIGURE 1

USS CLAIRTON WORKS
CLAIRTON, PA

BATTERIES 19 AND 20 PUSHING EMISSIONS CONTROL SYSTEM
SCHEMATIC OF THE STACK AND TRAVERSE POINTS



Stack Diameter (D) = 36 inches

Traverse Point	Distance (Inches)	Traverse Point	Distance (Inches)
1	**1.0**	7	23.2
2	2.4	8	27.0
3	4.3	9	29.6
4	6.4	10	31.7
5	9.0	11	33.6
6	12.8	12	35.0

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

RPC 10-21-92 19&20 PEC 8 [redacted] pushes/hour avg.

#	OVEN	BATT	TIME
1	B-7	19	09:23
2	B-5	20	09:28
3	B-7	20	09:36
4	B-9	20	09:44
5	B-11	20	09:54
6	B-13	20	10:04
7	B-9	19	10:10
8	B-11	19	10:22
9	B-15	20	10:27
10	B-13	19	10:35
11	B-19	20	10:40
12	B-15	19	10:46
13	B-17	19	10:59
14	B-19	20	11:04
15	B-19	19	11:12
16	B-21	20	11:18
17	B-21	19	11:24
18	B-23	19	11:34
19	B-23	20	11:39
20	B-25	19	11:45
21	B-25	20	11:52
22	B-27	19	11:58
23	B-27	20	12:03
24	B-29	19	12:09
25	B-29	20	12:14
26	C-2	19	12:20
27	C-2	20	12:26
28	C-4	19	12:32
29	C-4	20	12:37
30	C-6	19	12:44

10:00 — 8 — 11:00 — 9 — 12:00 — 10

#	OVEN	BATT	TIME
31	C-6	20	12:49
32	C-8	19	12:55
33	C-8	20	13:00
34	C-10	19	13:07
35	C-10	20	13:12
36	C-12	19	13:18
37	C-14	20	13:42
38	C-16	19	13:48
39	C-16	20	13:53
40	C-18	19	14:00
41	C-18	20	14:05
42	C-20	19	14:11
43	C-20	20	14:16
44	C-22	19	14:22
45	C-22	20	14:28
46	C-24	19	14:34
47	C-24	20	14:39
48	C-26	19	15:03
49	C-26	20	15:09
50	C-28	19	15:16
51	C-28	20	15:22
52	A-7	19	15:29
53	A-1	20	15:35
54	A-9	19	15:42
55	A-3	20	15:47
56	A-11	19	15:53
57	A-5	20	15:59
58	A-13	19	16:14
59	A-9	20	16:19
60	A-15	19	16:25

13:00 — 7 — 14:00 — 8 — 15:00 — 10 — 16:00

RPC 10-22-92 19+20 PEC 8:59 [redacted] pushed/hour avg.

#	OVEN	BATTERY	TIME
1	C-14	20	08:26
2	C-14	19	08:32
3	C-16	20	08:38
4	C-16	19	08:44
5	C-18	20	08:50
6	C-18	19	08:56
7	C-20	20	09:02
8	C-20	19	09:09
9	C-22	20	09:15
10	C-22	19	09:23
11	C-24	20	09:28
12	C-24	19	09:35
13	C-26	20	09:44
14	C-26	19	09:51
15	C-28	20	09:58
16	C-28	19	10:05
17	A-1	20	10:13
18	A-7	19	10:22
19	A-3	20	10:27
20	A-9	19	10:34
21	A-5	20	10:40
22	A-11	19	10:46
23	A-7	20	10:51
24	A-13	19	10:58
25	A-9	20	11:04
26	A-15	19	11:11
27	A-11	20	11:17
28	A-17	19	11:23
29	A-13	20	11:29
30	A-19	19	11:35

9:00

9

10:00

9

11:00

9

#	OVEN	BATTERY	TIME
31	A-15	20	11:41
32	A-21	19	11:47
33	A-17	20	11:53
34	A-23	19	12:00
35	A-19	20	12:04
36	A-25	19	12:11
37	A-21	20	12:16
38	A-27	19	12:22
39	A-23	20	12:28
40	A-29	19	12:34
41	A-25	20	12:40
42	B-2	19	12:47
43	B-2	20	12:56
44	B-4	19	13:01
45	B-4	20	[illegible]
46	B-6	19	[illegible]
47	B-6	20	[illegible]
48	B-8	19	[illegible]
49	B-8	[illegible]	[illegible]
50	B-10	19	[illegible]
51	B-10	20	[illegible]
52	B-12	19	[illegible]
53	B-12	20	13:55
54	B-14	19	[illegible]
55	B-14	20	[illegible]
56	B-16	19	[illegible]
57	B-16	20	[illegible]
58	B-18	19	15:13
59	B-18	20	15:19
60	B-20	19	15:25

12

10

13:

10

14:

RPC 10-23-92 14420 REC 8.22 [redacted] pushes/hour avg.

#	OPEN	BATTERY	TIME	
1	B-12	20	09:22	
2	B-10	19	09:29	
3	B-14	20	09:34	
[redacted]	[redacted]	19	09:44	
[redacted]	B-16	20	09:48	
[redacted]	B-12	19	09:54	
[redacted]	B-18	20	10:08	10:00
8	B-14	19	10:15	
9	B-20	20	10:20	
10	B-16	19	10:29	
11	B-22	20	10:38	8 pushes
12	B-18	19	10:43	
13	B-24	20	10:48	
14	B-20	19	10:54	
15	B-26	20	11:00	11:00
16	B-22	19	1106	
17	B-28	20	11:12	
18	B-26	19	11:18	
19	C-1	20	11:24	
20	B-27	19	11:31	10 pushes
21	C-3	20	11:36	
22	C-1	19	11:44	
23	C-5	20	11:50	
24	C-3	19	11:55	
25	C-7	20	12:13	12:00
26	C-5	19	12:19	
27	C-9	20	12:24	
28	C-7	19	12:31	8 pushes
29	C-11	20	12:36	
30	C-9	19	12:42	

#	OPEN	BATTERY	TIME	
31	C-13	20	[redacted]	
32	C-11	19	[redacted]	
33	C-15	20	[redacted]	1300
34	C-13	19	13:07	
35	C-17	20	13:13	
36	C-15	19	13:22	
37	C-19	20	13:27	10 pus
38	C-17	19	13:33	
39	C-21	20	13:39	
40	C-19	19	13:45	
41	C-23	20	13:51	
42	C-21	19	13:57	
43	C-25	20	14:02	1400
44	C-23	19	14:08	
45	C-27	20	14:14	
46	C-25	19	14:20	
47	C-29	20	14:25	9 pus
48	C-27	19	14:31	
49	A-2	20	14:37	
50	C-29	19	14:44	
51	A-4	20	14:49	
52	A-6	19	15:13	1500
53	A-6	20	15:19	
54	A-2	19	15:37	
55	A-8	20	15:36	7 pu
56	A-8	19	15:43	
57	A-09	20	15:52	
58	A-10	19	15:59	
59	A-10	20	16:04	1600
60	A-12	19	16:10	

(1)

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19+20 [redacted]
ACTIVITY NO.: Stack 1-1
CONTROL BOX OPERTOR: TM
PROBE HANDLER: TM
CLEAN UP:

DATE: 10-21-92
TEST NO.: CLR-1-1-1
NOZZLE: #11 0.180
STATIC PRESSURE Ps: 0.75
PORT DIRECTION: East
BAROMETRIC PRESSURE: 29.50

ΔH@: 1.535 (9-14-92)
METER CORRECTION: 0.9916
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 7
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' 1 x 50' 4" Pots

HOT BOX NO.: 1
COLD BOX NO.: 1
PROBE NO.: 5-4
FILTER NO.: 121 QTZ
STACK DIA.: 36"

2% moisture
28.7 mw

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0	8:	664.792	1.50	1.26	1.26	72	67	3.5	112	250	468°F	250	1 min/pt
33.6		666.612	1.25	1.05	1.05	72	67	3.2	114				
31.7		667.428	1.35	1.13	1.13	73	68	3.2	113				
29.6		668.072	1.25	1.05	1.05	74	68	3.0	113				
27.0		668.682	1.30	1.09	1.09	74	68	3.0	112				
23.2		669.430	1.50	1.26	1.26	72	68	3.2	112				
12.8		670.068	1.25	1.05	1.05	74	68	3.2	113				
9.0		670.692	1.00 rm	0.84	0.84	75	69	3.2	113				
6.4		671.252	1.00	0.84	0.84	73	68	2.5	112				
4.3		671.930	1.00	0.84	0.84	74	68	2.0	112				2% H_2O
2.4		672.565	1.25	1.05	1.05	77	70	3.0	114				28.7 mw
1.0		673.250	1.00 rm	0.84	0.84	76	70	2.5	114				

LEAK CHECK

	in. Hg.	Rate
Before	5.0	<0.02 cfm
After	4.0	0.005 cfm

ORSAT

	1	2
CO_2	0	
O_2	20.5	
CO	0	
N	79.5	

PITOT LEAK CHECK

POS.	NEG.
OK 15 sec.	OK 15 sec
OK	OK

Impinger No.	Final	Initial	Difference
1	571.1	558.3	12.8
2	540.7	539.7	1.0
3	437.8	437.3	0.5
4	675.9	669.1	6.8

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: US Clairton Works
DATE: 12 21 92
ΔH@: 1.535 (5.14.72)
HOT BOX NO.: 1
LOCATION: A & 20 Battery Pc
TEST NO.: CLR-1-1-1
METER CORRECTION: 0.9916
COLD BOX NO.: 1
ACTIVITY NO.: Stack Test
NOZZLE: #11 0.180
PITOT CORRECTION: 0.84
PROBE NO.: 3-4
CONTROL BOX OPERTOR: TM
STATIC PRESSURE Ps: 0.75
CONTROL BOX NO.: 7
FILTER NO.: 121 [illegible]
PROBE HANDLER: TM
PORT DIRECTION: East West
NOMOGRAPH SET POINT: —
STACK DIA.: 36"
CLEAN UP:
BAROMETRIC PRESSURE: 29.50
LENGTHS OF UMBILICAL ____ x 25' ✓ x 50' 4" Pitot

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
1.0		623.250	1.00	0.84	0.84	72	70	2.5	111	250	<68°F	250°	1 min/pt
2.4		623.880	1.00	0.84	0.84	73	70	2.0	112				
4.3		624.480	1.00	0.84	0.84	73	70	2.5	112				
6.4		624.980	1.00	0.84	0.84	73	70	3.0	112				
9.0		625.545	0.80	0.69	0.69	77	70	2.0	114				
12.8		626.140	0.85	0.74	0.74	76	72	3.0	113				
23.2		626.681	1.10	0.95	0.95	78	72	3.0	114				
27.0		627.285	1.15	1.00	1.00	78	72	3.0	115				
29.6		627.925	1.50	1.30	1.30	79	72	3.8	114				
31.7		628.715	1.45	1.20	1.20	78	72	3.4	114				2% H_2O
33.6		629.364	1.25	1.09	1.09	77	72	3.0	114				28.7 mw
35.0		630.002	1.10	0.95	0.95	77	72	2.5	115				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: U33 Charlton Works
DATE: 10 21 92
ΔH@: 1.333 (9.14.92)
HOT BOX NO.: 1
LOCATION: 19 + 20 Battery Pkg
TEST NO.: Cal-1-1-1
METER CORRECTION: 0.9916
COLD BOX NO.: 1
ACTIVITY NO.: Stack Tl
NOZZLE: #11 0.180
PITOT CORRECTION: 0.84
PROBE NO.: 5.4
CONTROL BOX OPERTOR: TM
STATIC PRESSURE Ps: 0.75
CONTROL BOX NO.: 7
FILTER NO.: 121 QTZ
PROBE HANDLER: TM
PORT DIRECTION: East
NOMOGRAPH SET POINT:
STACK DIA.: 36"
CLEAN UP:
BAROMETRIC PRESSURE: 29.50
LENGTHS OF UMBILICAL ____ x 25' ✓ x 50' 4" PST

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
33.0		680.634	1.55	1.35	1.35	78	72	3.8	115	250	< 68 °F	250°	INPUT
33.6		681.312	1.25	1.09	1.09	77	72	3.0	115				
31.7		681.715	1.20	1.04	1.04	77	72	3.2	115				
27.6		682.525	1.25	1.09	1.09	76	72	3.2	115				
27.0		683.259	1.25	1.09	1.09	77	72	3.2	115				
23.2		683.933	1.00	0.87	0.87	78	73	3.2	114				
12.8		684.570	0.85	0.74	0.74	79	73	2.5	116				
9.0		685.200	0.75	0.65	0.65	78	72	2.5	116				
6.4		685.770	0.75	0.65	0.65	78	72	2.5	116				
4.3		686.496	1.00	0.87	0.87	77	72	2.5	115				
2.4		686.987	0.90	0.78	0.78	78	73	2.5	116				
1.0		687.580	0.90	0.78	0.78	77	72	2.5	115				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19120 Battery Pkg
ACTIVITY NO.: Stack 1-1
CONTROL BOX OPERTOR: TMJ
PROBE HANDLER: TMJ
CLEAN UP:

DATE: 10·21·92
TEST NO.: CL2-1-1-1
NOZZLE: #11 0.80
STATIC PRESSURE Ps: 0.25
PORT DIRECTION: South
BAROMETRIC PRESSURE: 29.50

ΔH@: 1.535 (5-14-92)
METER CORRECTION: 0.9916
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 7
NOMOGRAPH SET POINT: ✓
LENGTHS OF UMBILICAL ____ x 25' ____ x 50' 4" PBA

HOT BOX NO.: 1
COLD BOX NO.: 1
PROBE NO.: 5-4
FILTER NO.: 121 GFZ
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
1.0		688.195	1.35	1.17	1.17	70	66	3.5	110	270°	<68°	250	1 min/pt
2.4		688.860	1.25	1.09	1.09	73	68	3.0	110				
4.3		689.490	1.10	0.95	0.95	72	69	3.0	110				
6.4		690.120	1.25	1.09	1.09	75	70	3.2	110				
9.0		690.790	1.10	0.95	0.95	75	70	3.2	110				
12.8		691.420	1.20	1.04	1.04	75	70	3.2	111				
23.2		692.055	0.80	0.69	0.69	75	70	2.0	111				
27.0		692.540	1.05	0.91	0.91	76	70	3.0	111				
27.6		693.120	0.85	0.74	0.74	75	70	2.5	111				
31.7		693.570	0.85	0.74	0.74	75	70	2.5	111				
33.6		694.100	0.80	0.69	0.69	75	70	2.0	112				
35.0		694.680	0.75	0.65	0.65	74	70	2.0	110				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USX Clairton Works
DATE: 10·21·92
ΔH@: 1.535 (9.14.92)
HOT BOX NO.: 1
LOCATION: Battery 20
TEST NO.: CLR-1-1-1
METER CORRECTION: 0.9946
COLD BOX NO.: 1
ACTIVITY NO.: Stack 1-1
NOZZLE: #11 0.180
PITOT CORRECTION: 0.84
PROBE NO.: 5-4
CONTROL BOX OPERTOR: TM
STATIC PRESSURE Ps: 0.25
CONTROL BOX NO.: 7
FILTER NO.: 121 GFC
PROBE HANDLER: TM
PORT DIRECTION: South
NOMOGRAPH SET POINT: —
STACK DIA.: 36
CLEAN UP:
BAROMETRIC PRESSURE: 29.50
LENGTHS OF UMBILICAL ___ x 25' ✓ x 50' 4" I.D.

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0		695.200	0.75	0.65	0.65	76	70	2.0	110	250	<68°	250	Imp.
33.6		695.740	0.75	0.65	0.65	74	70	2.2	110				
31.7		696.250	0.90	0.78	0.78	74	70	2.5	110				
27.6		696.810	0.75	0.65	0.65	74	70	2.5	110				
27.0		697.330	0.85	0.74	0.74	74	70	2.5	110				
23.2		698.860	0.80	0.69	0.69	72	68	2.5	110				
12.5		698.371	1.35	1.17	1.17	72	68	3.8	110				
9.0		699.006	1.15	1.00	1.00	70	66	3.2	110				
6.4		699.641	1.25	1.09	1.09	74	68	3.5	110				
4.3		700.350	1.35	1.17	1.17	68	66	3.5	110				
2.4		701.080	1.25	1.09	1.09	70	66	3.0	110				
1.0		701.647	1.05	0.91	0.91	70	66	3.0	110				

END 702.250

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT USS Clairton Works | DATE: 10-21-92 | ΔH@: 1.618 (5-5-92) | HOT BOX NO.: 4

LOCATION: 19+20 Battery RC | TEST NO.: CLR-1-2-1 | METER CORRECTION: 0.9915 | COLD BOX NO.: 4

ACTIVITY NO.: Stack 1-2 | NOZZLE: #54 0.214 | PITOT CORRECTION: 0.84 | PROBE NO.: 5-1

CONTROL BOX OPERTOR: | STATIC PRESSURE Ps: 1.1 | CONTROL BOX NO.: 3 | FILTER NO.: 122 QTZ

PROBE HANDLER: | PORT DIRECTION: East | NOMOGRAPH SET POINT: | STACK DIA.: 36"

CLEAN UP: | BAROMETRIC PRESSURE: 29.50 | LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

Point	Time	Meter Reading (Gals)	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0		[redacted]	[redacted]	2.85	2.85	74	68	5.0	112		68°F	250	1 min/pt
33.6			[redacted].0	2.85	2.85	77	68	5.0	114				
31.7		375.459	1.60	2.93	2.93	77	69	5.0	115				
29.6		376.372	1.60	2.93	2.93	77	68	5.0	118				
27.0		377.315	1.60	2.93	2.93	77	69	5.0	118				
23.2		378.338	1.30	2.37	2.37	76	69	4.0	118				
12.8		379.252	1.30	2.37	2.37	78	70	4.0	117				
9.0		380.175	1.20	2.19	2.19	76	69	4.0	118				
6.4		381.053	1.20	2.19	2.19	77	70	4.0	119				
4.3		381.965	1.20	2.19	2.19	76	69	4.0	117				
2.4		382.866	1.10	2.00	2.00	77	70	3.5	116				
1.0		383.735	1.10	2.00	2.00	77	70	3.5	115				
		384.69											

LEAK CHECK

	in. Hg.	Rate
Before	5.0	<0.02 cfm
After	6.0	0.005 cfm

ORSAT

	1	2
CO_2	0	
O_2	20.5	
CO	0	
N	79.5	

PITOT LEAK CHECK

POS.	NEG.
OK 15 sec	OK 15 sec

Impinger No.	Final	Initial	Difference
1	562.9	550.7	12.2
2	485.0	482.7	2.3
3	378.8	377.6	1.2
4	608.8	598.6	10.2

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19420 PEC Battery
ACTIVITY NO.: Stack 1-2
CONTROL BOX OPERTOR:
PROBE HANDLER:
CLEAN UP:

DATE: 10-4-92
TEST NO.: CLR-1-2-1
NOZZLE: ~~#54~~ 0.214
STATIC PRESSURE Ps: 1.1
PORT DIRECTION: East
BAROMETRIC PRESSURE: 29.50

ΔH@: 1.618 (5-5-92)
METER CORRECTION: 0.9915
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 3
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 4
COLD BOX NO.: 4
PROBE NO.: 54
FILTER NO.: 122 QTZ
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
1.0		384.69	1.10	2.01	2.01	76	71	3.5	115		<68°F	250	1min/pt
2.4		385.502	1.10	2.01	2.01	77	70	3.5	116				
4.3		386.409	1.20	2.19	2.19	77	71	4.0	117				
6.4		387.311	1.20	2.19	2.19	78	70	4.0	118				
9.0		388.209	1.20	2.19	2.19	78	71	4.0	118				
12.8		389.113	1.20	2.19	2.19	78	71	4.0	118				
23.2		390.015	1.40	2.56	2.56	81	72	4.5	121				
27.0		390.962	1.40	2.56	2.56	81	72	4.5	121				
29.6		391.891	1.40	2.55	2.55	80	72	4.5	120				
31.7		392.814	1.70	3.10	3.10	82	72	6.0	122				
33.6		393.858	1.60	2.91	2.91	82	73	5.0	124				
35.0		394.925	1.30	2.37	2.37	82	72	4.0	123				
		395.816											

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
DATE: 10-21-92
ΔH@: 1.618 (5-5-92)
HOT BOX NO.: 4
LOCATION: 19+20 Battery PEC.
TEST NO.: CLR-1-2-1
METER CORRECTION: 0.9915
COLD BOX NO.: 4
ACTIVITY NO.: Stack 1-2
NOZZLE: #54 0.214
PITOT CORRECTION: 0.84
PROBE NO.: 5-1
CONTROL BOX OPERTOR:
STATIC PRESSURE Ps: 1.1
CONTROL BOX NO.: 3
FILTER NO.: 122 QTZ
PROBE HANDLER:
PORT DIRECTION: East
NOMOGRAPH SET POINT:
STACK DIA.: 36"
CLEAN UP:
BAROMETRIC PRESSURE: 29.50
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0		395.816	1.30	2.37	2.37	81	73	4.0	122		<68°F	250°F	1min/pt
33.6		396.746	1.50	2.73	2.73	82	73	5.0	123				
31.7		397.686	1.50	2.73	2.73	80	73	5.0	122				
29.6		398.640	1.50	2.73	2.73	81	72	5.0	122				
27.0		399.633	1.50	2.73	2.73	83	74	5.0	123				
23.2		400.646	1.30	2.37	2.37	82	73	4.0	124				
12.8		401.544	1.30	2.37	2.37	81	74	4.0	122				
9.0		402.455	1.20	2.19	2.19	81	73	4.0	122				
6.4		403.355	1.10	2.00	2.00	81	74	3.5	124				
4.3		404.208	1.10	2.00	2.00	81	73	3.5	123				
2.4		405.060	1.10	2.00	2.00	81	73	3.5	121				
1.0		405.927	1.10	2.00	2.00	79	73	3.5	118				
		406.802											

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19th & Battery PEC
ACTIVITY NO.: Stack 4-2
CONTROL BOX OPERTOR:
PROBE HANDLER:
CLEAN UP:

DATE: 10-21-92
TEST NO.: CL2-1-2-1
NOZZLE: #54 0.214
STATIC PRESSURE Ps: 1.1
PORT DIRECTION: South
BAROMETRIC PRESSURE: 29.50

ΔH@: 1.68 (5-5-92)
METER CORRECTION: 0.9915
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 3
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 4
COLD BOX NO.: 4
PROBE NO.: 5-1
FILTER NO.: 122 QTZ
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0		406.802	1.10	2.00	2.00	75	71	4.0	120		<68°F	250	1 min/pt
33.6		407.666	1.40	2.55	2.55	77	70	5.0	121				
31.7		408.549	1.20	2.18	2.18	77	70	4.0	120				
29.6		409.410	1.30	2.36	2.36	77	69	4.0	121				
27.0		410.319	1.30	2.36	2.36	77	70	4.0	122				
23.2		411.242	1.40	2.54	2.54	78	69	5.0	121				
12.8		412.179	1.00	1.81	1.81	77	70	3.5	119				
9.0		412.999	1.00	1.81	1.81	79	71	3.5	118				
6.4		413.812	1.10	2.00	2.00	79	71	4.0	122				
4.3		414.678	1.10	2.00	2.00	78	70	4.0	118				
2.4		415.538	0.90	1.63	1.63	77	71	3.0	117				
1.0		416.301	0.90	1.63	1.63	75	67	3.0	115				
		417.193											

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19420 Battery Pac
ACTIVITY NO.: Stack 1-2
CONTROL BOX OPERTOR:
PROBE HANDLER:
CLEAN UP:

DATE: 10-21-92
TEST NO.: CLR-1-2-1
NOZZLE: #54 0.214
STATIC PRESSURE Ps: 1.1
PORT DIRECTION: South
BAROMETRIC PRESSURE: 29.50

ΔH@: 1.618 (5-5-92)
METER CORRECTION: 0.9915
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 3
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 4
COLD BOX NO.: 4
PROBE NO.: 5-1
FILTER NO.: 122 QTZ
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
1.0		417.193	0.90	1.63	1.63	76	70	3.0	114		468°F	250	1min/pt
2.4		417.880	1.10	2.00	2.00	77	69	4.0	113				
4.3		418.735	1.10	2.00	2.00	77	70	4.0	115				
6.4		419.596	1.10	2.00	2.00	77	71	4.0	122				
9.0		420.461	1.10	2.00	2.00	76	71	4.0	122				
12.8		421.342	1.10	2.00	2.00	76	71	4.0	123				
23.2		422.190	1.30	2.36	2.36	77	69	4.0	124				
27.0		423.091	1.50	2.72	2.72	76	70	5.0	122				
29.6		424.040	1.50	2.72	2.72	76	69	5.0	121				
31.7		424.976	1.20	2.18	2.18	72	67	4.0	121				
33.6		425.852	1.50	2.72	2.72	74	66	5.0	122				
35.0		426.789	1.20	2.18	2.18	73	67	4.0	120				
		427.659											

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19+20 Battery REC
ACTIVITY NO.: Stack 1-3
CONTROL BOX OPERTOR: MCG
PROBE HANDLER:
CLEAN UP:

DATE: 10-21-92
TEST NO.: CLR-1-3-1
NOZZLE: #34 0.180
STATIC PRESSURE Ps: 1.2"
PORT DIRECTION: EAST
BAROMETRIC PRESSURE: 29.50

ΔH@: 1.768 (10-15-92)
METER CORRECTION: 1.0295
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 1
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 8
COLD BOX NO.: 8
PROBE NO.: 5-3
FILTER NO.: 119 QTZ
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0		513.926	1.0	.96	.96	68	64	4.0	111	260	<68°F	250	1 min/pt
33.6		515.211	1.1	1.05	1.05	69	65	4.0	112				
31.7		515.941	1.6	1.53	1.53	71	66	5.5	108	259	49	252	
29.6		516.666	1.4	1.34	1.34	71	65	4.5	109				
27.0		517.270	1.2	1.15	1.15	69	65	4.5	112	257	51	255	
23.2		517.916	1.2	1.15	1.15	68	65	4.5	112				
12.8		518.531	1.2	1.15	1.15	70	65	4.5	110	262	53	255	
9.0		519.216	1.3	1.30	1.30	69	66	4.5	110				
6.4		519.833	1.2	1.20	1.20	69	65	4.5	113	263	53	250	
4.3		520.446	1.1	1.10	1.10	68	65	4.0	111				
2.4		521.055	1.1	1.10	1.10	68	65	4.0	112	249	54	253	
1.0		521.666	1.0	1.0	1.0	68	65	4.5	110				

LEAK CHECK

	in. Hg.	Rate
Before	5.0	<0.02 cfm
After	6.5	0.018

ORSAT

	1	2
CO_2		
O_2	Air	
CO		
N		

PITOT LEAK CHECK

POS.	NEG.
OK 15sec	OK 15sec
OK	OK

Impinger No.	Final	Initial	Difference
1 100ml	571.0	557.8	13.2
2 100ml	490.7	489.6	1.1
3 Dry	381.6	381.2	0.4
4 Silicel	657.8	650.2	7.6

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
DATE: 10-21-92
ΔH@: 1.768 (10-15-92)
HOT BOX NO.: 8
LOCATION: 19 & 20 Battery Pec
TEST NO.: CL2-1-3-1
METER CORRECTION: 1.0295
COLD BOX NO.: 8
ACTIVITY NO.: Stack 1-3
NOZZLE: 0.180 #34
PITOT CORRECTION: 0.84
PROBE NO.: 5-3
CONTROL BOX OPERTOR: MG
STATIC PRESSURE Ps: 1.2"
CONTROL BOX NO.: 1
FILTER NO.: 19 QTZ
PROBE HANDLER:
PORT DIRECTION: EAST
NOMOGRAPH SET POINT:
STACK DIA.: 36"
CLEAN UP:
BAROMETRIC PRESSURE: 29.50
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0		522.434	1.6	1.6	1.6	69	65	5.0	108	249	48	252	
33.6		523.106	1.3	1.3	1.3	70	65	4.5	110	~~245~~		~~252~~ 252	1 min/pt
31.7		523.816	1.4	1.4	1.4	69	65	4.5	110	245	50	250	
29.6		524.534	1.3	1.3	1.3	69	66	4.5	110				
27.0		525.258	1.3	1.3	1.3	71	66	4.5	113	255	50	250	
23.2		525.914	1.2	1.2	1.2	70	66	4.0	110				
12.8		526.643	1.2	1.2	1.2	70	67	4.0	113	260	50	260	
9.0		527.301	1.2	1.2	1.2	72	67	4.0	112				
6.4		528.010	1.1	1.1	1.1	71	67	3.5	112	259	50	250	
4.3		528.681	1.0	1.0	1.0	71	67	3.5	112				
2.4		529.305	1.0	1.0	1.0	72	67	3.5	115	244	48	250	
1.0		529.967	1.0	1.0	1.0	71	67	3.5	113				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19+20 Battery PEC
ACTIVITY NO.: Stack 1-3
CONTROL BOX OPERTOR: MG
PROBE HANDLER:
CLEAN UP:

DATE: 10-21-92
TEST NO.: CU2-1-3-1
NOZZLE: 0.180 #34
STATIC PRESSURE Ps: 1.2
PORT DIRECTION: EAST
BAROMETRIC PRESSURE: 29.50

ΔH@: 1.768 (10-15-92)
METER CORRECTION: 1.0295
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 1
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 8
COLD BOX NO.: 8
PROBE NO.: 5-3
FILTER NO.: 19 QTZ
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0		530.604	1.1	1.1	1.1	72	67	3.5	112	265	50	250	
33.6		531.233	1.2	1.2	1.2	72	68	4.0	113				
31.7		532.002	1.5	1.5	1.5	74	67	5.0	110	246	49	255	
29.6		532.664	1.3	1.3	1.3	72	68	4.5	112				
27.0		533.367	1.3	1.3	1.3	72	68	4.5	110	248	47	257	
23.2		533.974	1.1	1.1	1.1	72	68	3.5	114				
12.8		534.647	1.2	1.2	1.2	73	68	4.0	112	260	49	255	
9.0		535.323	1.3	1.3	1.3	72	68	4.5	114				
6.4		535.966	1.2	1.2	1.2	74	68	4.0	113	260	52	250	
4.3		536.603	1.1	1.1	1.1	72	68	4.0	116				
2.4		537.185	1.0	1.0	1.0	72	67	4.0	114	262	54	253	
1.0		537.835	1.2	1.2	1.2	72	68	4.0	114				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Work
LOCATION: Rio 20 Battery Area
ACTIVITY NO.: Stack 1-3
CONTROL BOX OPERTOR: MG
PROBE HANDLER:
CLEAN UP:

DATE: 10-21-92
TEST NO.: CLR-1-3-1
NOZZLE: 0.180 #34
STATIC PRESSURE Ps: 1.2"
PORT DIRECTION: South
BAROMETRIC PRESSURE: 29.50

ΔH@: 1.768 (10-15-92)
METER CORRECTION: 1.0295
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 1
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 8
COLD BOX NO.: 8
PROBE NO.: 5-3
FILTER NO.: 119 QT2
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0		538.546	1.2	1.2	1.2	66	65	4.5	113	265	52	260	
33.6		539.337	1.3	1.3	1.3	67	64	4.5	109				
31.7		540.153	1.5	1.5	1.5	67	64	5.0	108	262	50	245	
29.6		541.007	1.4	1.4	1.4	69	64	5.0	110				
27.0		541.714	1.2	1.2	1.2	69	64	4.5	112	260	52	242	
23.2		542.368	1.2	1.2	1.2	69	65	4.5	111				
12.8		543.033	1.0	1.0	1.0	70	65	4.0	111	263	53	260	
9.0		543.648	1.1	1.1	1.1	70	65	4.0	111				
6.4		544.309	1.1	1.1	1.1	69	65	4.0	111	265	53	247	
4.3		545.046	1.2	1.2	1.2	69	65	4.5	110				
2.4		545.641	1.0	1.0	1.0	70	65	4.0	111	261	53	250	
1.0		546.229	1.0	1.0	1.0	66	63	4.0	109				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Work
LOCATION: 19th & Bossen/PoC
ACTIVITY NO.: Stack 1-3
CONTROL BOX OPERTOR: MG
PROBE HANDLER:
CLEAN UP:

DATE: 10-21-92
TEST NO.: CLR-1-3-1
NOZZLE: 0.180 #34
STATIC PRESSURE Ps: 1.2"
PORT DIRECTION: South
BAROMETRIC PRESSURE: 29.50

ΔH@: 1.768 (10-15-92)
METER CORRECTION: 1.0295
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 1
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 8
COLD BOX NO.: 8
PROBE NO.: 5-3
FILTER NO.: 119 QTZ
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
1.0		—	.90	.90	.90	67	63	3.0	108	262	55	261	
2.4		547.452	1.0	1.0	1.0	67	64	3.5	109				
4.3		548.146	1.1	1.1	1.1	68	64	4.0	109	260	55	251	
6.4		548.835	1.1	1.1	1.1	69	64	4.0	110				
9.0		549.523	1.2	1.2	1.2	69	64	4.0	112	265	54	250	
12.8		550.148	1.1	1.1	1.1	66	64	4.0	111				
23.2		550.865	1.1	1.1	1.1	66	63	4.0	112	264	53	242	
27.0		551.549	1.3	1.3	1.3	65	62	4.5	111				
29.6		552.415	1.4	1.4	1.4	66	62	4.5	113	262	54	248	
31.7		553.281	1.3	1.3	1.3	64	61	4.5	110				
33.6		553.972	1.3	1.3	1.3	64	61	4.5	112	260	54	250	
35.0		554.717	1.4	1.4	1.4	65	61	4.5	111				60 MIN TOTAL

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

~~1.84~~ 1.99

①

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
DATE: 10-21-92 WED
ΔH@: 1.756 (6-3-92)
HOT BOX NO.: 6
LOCATION: 19 to 20 Battery Pkg
TEST NO.: CLR-1-4-1
METER CORRECTION: 0.9721
COLD BOX NO.: 6
ACTIVITY NO.: Stack 1-4
NOZZLE: #A5 0.214
PITOT CORRECTION: 084
PROBE NO.: 5-5
CONTROL BOX OPERTOR: DEG
STATIC PRESSURE Ps: +1.2 "H2O
CONTROL BOX NO.: 4
FILTER NO.: 123 QTZ
PROBE HANDLER: DEG
PORT DIRECTION: EAST
NOMOGRAPH SET POINT: —
STACK DIA.: 36" ID
CLEAN UP:
BAROMETRIC PRESSURE: 29.50
LENGTHS OF UMBILICAL: 1 x 25' ___ x 50'

	Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
1.0	~~35.0~~		300.175	1.0	1.89	1.90	66	65	6.5	117	270	48°F	250°F	1min/pt
2.4	~~33.6~~		—	1.1	2.08	2.10	69	66	7.0	118				
4.3	~~31.7~~		302.599	1.1	2.08	2.10	67	66	7.0	118		65	240	
6.4	~~29.6~~		303.576	1.4	2.65	2.65	66	65	8.0	118	247			
9.0	~~27.0~~		304.460	1.4	2.65	2.65	67	66	8.5	119			245	
12.8	~~23.2~~		305.385	1.2	2.33	2.35	66	65	7.0	116	267	63	225	
23.2	~~12.8~~		306.333	1.2	2.33	2.35	68	67	7.0	119				
27.0	~~9.0~~		306.994	1.0	1.94	1.95	66	66	6.5	119	237	61		
29.6	6.4		307.973	1.2	2.33	2.35	66	66	7.5	119	238		240	
31.7	4.3		308.854	1.3	2.55	2.55	65	65	8.0	116		59		H_2O=6.2
33.6	2.4		309.655	1.2	2.33	2.33	67	66	6.5	114	242	60	230	MW=28.7
35.0	1.0		310.536	1.0	1.94	1.95	67	66	6.0	107				

LEAK CHECK

	in. Hg.	Rate
Before	5.0	0.01cfm
After	9.0	0.018

ORSAT

	1	2
CO_2	0	
O_2	20.5	
CO	0	
N	79.5	

PITOT LEAK CHECK

POS.	NEG.
OK 15sec	OK 15sec
OK 15sec	OK 15sec

Impinger No.	Final	Initial	Difference
1	568.6	558.7	9.9
2	560.6	558.8	1.8
3	481.7	480.9	0.6
4	634.1	623.2	10.9

②

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
DATE: 10-21-92
ΔH@: 1.756 (6-3-92)
HOT BOX NO.: 6
LOCATION: 19&20 Batteries PEC
TEST NO.: CU2-1-4-1
METER CORRECTION: 0.9721
COLD BOX NO.: 6
ACTIVITY NO.: Stack 1-4
NOZZLE: 0.214 #45
PITOT CORRECTION: 0.84
PROBE NO.: 55
CONTROL BOX OPERTOR: DRB
STATIC PRESSURE Ps: +1.2
CONTROL BOX NO.: 4
FILTER NO.: 123 Quartz
PROBE HANDLER: DRB
PORT DIRECTION: ~~South~~ East
NOMOGRAPH SET POINT: –
STACK DIA.: 36"
CLEAN UP:
BAROMETRIC PRESSURE: 29.50
LENGTHS OF UMBILICAL: 1 x 25' ___ x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
1.0		311.389	1.0	1.94	1.95	65	64	6.5	~~272~~ 119	272	60	242	
2.4		312.480	1.4	2.7	2.7	67	66	8.5	119				
4.3		313.560	1.3	2.52	2.50	68	65	8.0	118	258	51	246	
6.4		314.505	1.3	2.52	2.50	66	66	8.0	117				
9.0		315.585	1.3	2.52	2.50	67	67	8.0	120	241	52	245	
12.8		316.576	1.3	2.52	2.50	67	65	8.0	117				
23.2		317.671	1.2	2.33	2.35	69	68	8.0	118	242	54	238	
27.0		318.647	1.2	2.33	2.35	68	67	8.0	121				
29.6		319.722	1.3	2.52	2.50	66	67	8.0	122	228	51	238	
31.7		320.746	1.2	2.33	2.35	67	66	7.5	117				
33.6		321.703	1.1	2.13	2.15	68	67	7.5	117	265	52	240	
35.0		322.787	1.1	2.13	2.15	68	68	7.0	113				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
DATE: 10-12-92
ΔH@: 1.756 (6-3-92)
HOT BOX NO.: 6
LOCATION: 19/20 Battery PC
TEST NO.: Cu2-1-4-1
METER CORRECTION: 0.9721
COLD BOX NO.: 6
ACTIVITY NO.: Stack 1-4
NOZZLE: #45 0.214
PITOT CORRECTION: 0.84
PROBE NO.: 5-5
CONTROL BOX OPERTOR: [illegible]
STATIC PRESSURE Ps: +1.2
CONTROL BOX NO.: 4
FILTER NO.: 123 Quartz
PROBE HANDLER: [illegible]
PORT DIRECTION: East
NOMOGRAPH SET POINT: –
STACK DIA.: 36" ID
CLEAN UP:
BAROMETRIC PRESSURE: 29.50
LENGTHS OF UMBILICAL 1 x 25' ___ x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
1.0		323.632	1.1	2.13	2.15	68	66	7.0	105	247	51	240	
2.4		324.666 ~~325.652~~	1.2	2.33	2.35	68	66	7.5	117				
4.3		325.746	1.2	2.33	2.35	67	67	8.0	118	270	54	246	
6.4		326.706	1.2	2.33	2.35	68	67	7.5	122				
9.0		327.703	1.3	2.52	2.50	68	68	8.0	122	257	54	244	
12.8		328.698	1.2	2.33	2.35	69	68	7.5	120				
23.2		329.649	1.1	2.13	2.15	68	67	7.0	118	249	54	240	
27.0		330.572	1.0	1.94	1.95	70	68	6.5	121				
29.6		331.764	1.4	2.72	2.70	67	66	9.0	122	244	53	230	
31.7		332.751	1.3	2.52	2.50	68	67	8.0	122				
33.6		333.732	1.1	2.13	2.15	70	69	7.0	120	252	54	240	
35.0		334.620	1.1	2.13	2.15	68	69	7.0	121				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 1942 Battery Dr.
ACTIVITY NO.: Stack #4
CONTROL BOX OPERTOR: DRB
PROBE HANDLER: DRB
CLEAN UP:

DATE: 10-21-92
TEST NO.: CUR-1-4-1
NOZZLE: #A5 0.214
STATIC PRESSURE Ps: +1.2
PORT DIRECTION: South
BAROMETRIC PRESSURE: 29.5

ΔH@: 1.756 (6-3-92)
METER CORRECTION: 0.9721
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 4
NOMOGRAPH SET POINT: —
LENGTHS OF UMBILICAL: 1 x 25' ___ x 50'

HOT BOX NO.: 6
COLD BOX NO.: 6
PROBE NO.: 5-5
FILTER NO.: 123 Quartz
STACK DIA.: 36" ID

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
1.0		335.605	1.1	2.13	2.15	67	66	7.0	92	262	51	260	
2.4		336.585	1.2	2.33	2.35	66	67	7.5	113				
4.3		337.936	1.2	2.33	2.35	67	65	8.0	116	266	53	267	
6.4		338.828	1.2	2.33	2.35	67	67	8.0	114				
9.0		339.733	1.0	1.94	1.95	68	67	6.5	120	242	56	250	
12.8		340.584	1.0	1.94	1.95	67	67	6.5	120				
23.2		341.612	1.3	2.52	2.50	66	65	8.5	116	230	56	265	
27.0		342.719	1.4	2.72	2.70	65	64	9.0	118				
29.6		343.980	1.5	2.91	2.90	66	65	10.0	118	214	58	258	
31.7		345.076	1.4	2.72	2.70	67	67	9.0	118				
33.6		346.108	1.3	2.52	2.50	67	66	8.5	121	241	51	266	
35.0		347.108	1.3	2.52	2.50	66	65	8.0	116				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19 & 20 PBC
ACTIVITY NO.: Stack 1-4
CONTROL BOX OPERTOR: DEB
PROBE HANDLER: DEB
CLEAN UP:

DATE: 10-2-92
TEST NO.: CLR-1-4-1
NOZZLE: #A5 0.215
STATIC PRESSURE Ps: +1.2
PORT DIRECTION: East South
BAROMETRIC PRESSURE: 29.5

ΔH@: 1.756 (6-3-92)
METER CORRECTION: 0.9721
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 4
NOMOGRAPH SET POINT: —
LENGTHS OF UMBILICAL: 1 x 25' ___ x 50'

HOT BOX NO.: 6
COLD BOX NO.: 6
PROBE NO.: 5-5
FILTER NO.: 123 Quartz
STACK DIA.: 36" ID

	Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
	1.0		348.100	1.1	2.13	2.15	67	63	7.0	111	271	50	265	
	2.4		349.110	1.2	2.33	2.35	66	64	7.5	115				
	4.3		350.232	1.2	2.33	2.35	67	66	8.0	119	246	49	258	
	6.4		351.177	1.1	2.13	2.15	68	68	7.0	122				
9.0	~~12.8~~		352.120	1.1	2.13	2.15	68	68	7.0	122	233	48	256	
12.8	~~23.2~~		353.002	1.1	2.13	2.15	66	66	7.0	121				
23.2	~~27.0~~		354.155	1.3	2.52	2.50	69	67	8.5	121	240	47	258	
27.0	~~29.6~~		355.194	1.4	2.72	2.70	68	66	9.0	120				
29.6	~~31.7~~		356.240	1.4	2.72	2.70	66	66	9.0	119	240	49	236	
31.7	~~33.6~~		357.492	1.4	2.72	2.70	67	65	9.0	118				
[illegible]	33.6		358.607	1.4	2.72	2.70	65	64	9.0	117	241	48	238	
[illegible]	35.0		359.645	1.2	2.33	2.35	65	63	8.0	118				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19420 Battery Rd
ACTIVITY NO.: Stack #1
CONTROL BOX OPERTOR: TM
PROBE HANDLER: TM
CLEAN UP:

DATE: 10-22-92
TEST NO.: CLR-1-1-2
NOZZLE: #11 0.180
STATIC PRESSURE Ps: 0.75
PORT DIRECTION: South
BAROMETRIC PRESSURE: 29.81

ΔH@: 1.535 (9-14-92)
METER CORRECTION: 0.9916
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 7
NOMOGRAPH SET POINT: ✓
LENGTHS OF UMBILICAL ___ x 25' ✓ x 50'

HOT BOX NO.: 4
COLD BOX NO.: 4
PROBE NO.: 5-4
FILTER NO.: [illegible]
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0		718.120	1.20	1.02	1.02	68	64	3.5	115	250	<68°F	250	1 min/pt
33.6		718.760	1.25	1.06	1.06	66	64	3.5	115				
31.7		719.430	1.25	1.06	1.06	64	60	3.5	114				
29.6		720.060	1.10	0.94	0.94	64	60	3.5	115				
27.0		720.770	1.35	1.13	1.13	67	62	3.5	116				
23.2		721.410	0.80	0.68	0.68	65	60	2.2	115				
12.6		722.012	0.85	0.72	0.72	64	60	2.5	114				
9.0		722.580	0.90	0.77	0.77	62	60	2.5	113				
6.4		723.140	0.80	0.68	0.68	66	60	2.5	114				
4.3		723.687	0.75	0.64	0.64	62	60	2.5	115				
2.4		724.194	0.85	0.72	0.72	64	60	2.5	114				
1.0		724.786	0.90	0.77	0.77	66	62	2.5	115				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

(4)

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19420 Bathey Rd
ACTIVITY NO.: Stack 1-1
CONTROL BOX OPERTOR: TM
PROBE HANDLER: TM
CLEAN UP:

DATE: 10-22-92
TEST NO.: CLR-1-1-2.
NOZZLE: #11 0.180
STATIC PRESSURE Ps: 0.75
PORT DIRECTION: EAST
BAROMETRIC PRESSURE: 29.84

ΔH@: 1.535 (9-14-92)
METER CORRECTION: 0.9916
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 7
NOMOGRAPH SET POINT: —
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 4
COLD BOX NO.: 4
PROBE NO.: 5-4
FILTER NO.: CTL 126
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0		725.300	1.35	1.15	1.15	70	64	3.5	115	250	<68°F	250	1 min/pt
33.6		725.930	1.35	1.15	1.15	66	62	3.5	115				
31.7		726.580	1.70	1.44	1.44	70	64	4.0	113				
29.6		727.283	1.30	1.11	1.11	70	65	3.5	113				
27.0		728.948	1.35	1.15	1.15	69	65	3.5	115				
23.2		728.585	1.35	1.15	1.15	68	66	3.5	116				
12.8		729.241	1.00	0.85	0.85	68	65	2.8	114				
9.0		729.849	0.85	0.72	0.72	70	65	2.5	117				
6.4		730.423	1.20	1.02	1.02	70	66	3.4	116				
4.3		731.040	0.90	0.77	0.77	72	67	2.5	117				
2.4		731.861	1.00	0.85	0.85	73	68	3.0	118				
1.0		732.180	1.25	1.06	1.06	70	66	3.5	116				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19420 Battery PEC
ACTIVITY NO.: Stack #1
CONTROL BOX OPERTOR: TM
PROBE HANDLER: TM
CLEAN UP:

DATE: 10-22-92
TEST NO.: CLR-1-1-2
NOZZLE: #11 0.180
STATIC PRESSURE Ps: 0.75
PORT DIRECTION: East
BAROMETRIC PRESSURE: 27.84

ΔH@: 1.535 (9-14-92)
METER CORRECTION: 0.9916
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 7
NOMOGRAPH SET POINT: —
LENGTHS OF UMBILICAL ___ x 25' ✓ x 50'

HOT BOX NO.: 4
COLD BOX NO.: 4
PROBE NO.: 5-4
FILTER NO.: OTZ 136
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
1.0		232.814	1.00	0.85	0.85	72	66	3.0	112	250	<66°F	250	1min/pt
2.4		233.380	0.90	0.77	0.77	71	65	2.5	116				
4.3		233.930	0.85	0.72	0.72	70	65	2.5	117				
6.4		234.460	1.00	0.85	0.85	70	65	3.0	115				
9.0		235.048	0.90	0.77	0.77	72	66	2.5	116				
12.8		235.600	0.90	0.77	0.77	71	66	3.0	116				
23.2		236.180	1.10	0.94	0.94	72	67	3.2	116				
27.0		236.860	1.40	1.19	1.19	72	67	3.5	117				
29.6		237.518	1.35	1.15	1.15	74	69	3.4	116				
31.7		238.180	1.25	1.06	1.06	72	70	3.5	110				
33.6		238.910	1.60	1.36	1.36	75	71	3.8	116				
35.0		239.621	1.30	1.11	1.11	75	70	3.5	115				
END		740.913											

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19420 Battery PEC
ACTIVITY NO.: Stack 1&2
CONTROL BOX OPERTOR:
PROBE HANDLER:
CLEAN UP:

DATE: 10-22-92
TEST NO.: CLR-1-2-2
NOZZLE: # 54 0.214
STATIC PRESSURE Ps: 1.2"
PORT DIRECTION: South
BAROMETRIC PRESSURE: 29.84

ΔH@: 1.618 (5-5-92)
METER CORRECTION: 0.9915
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 3
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 1
COLD BOX NO.: 1
PROBE NO.: 5-1
FILTER NO.: 124 QTZ
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0		427.986	1.30	2.31	2.31	53	47	12.5	96		<68°F	250°F	1min/pt
33.6		428.865	1.30	2.31	2.31	55	48	12.0	96				
31.7		429.752	1.30	2.35	2.35	58	48	10.5	95				
29.6		430.632	1.40	2.53	2.53	58	49	12.0	99				
27.0		431.493	1.30	2.35	2.35	59	50	10.5	97				
23.2		432.360	1.50	2.71	2.71	59	51	13.0	99				
12.8		433.293	1.00	1.81	1.81	61	57	8.0	98				
9.0		434.066	1.00	1.81	1.81	61	52	8.0	98				
6.4		434.865	1.00	1.81	1.81	62	53	8.0	99				
4.3		435.660	1.20	2.17	2.17	63	54	9.0	96				
2.4		436.477	1.10	1.99	1.99	65	55	8.5	99				
1.0		437.305	1.00	1.99	1.99	66	55	9.0	100				
		438.129											

LEAK CHECK

	in. Hg.	Rate
Before	5.0	<0.02 cfm
After	12.5	0.01 cfm

ORSAT

	1	2
CO_2	0	
O_2	20.5	
CO	0	
N	79.5	

PITOT LEAK CHECK

POS.	NEG.
15sec OK	15sec OK
post-01C	pit-OK
15sec	15sec

Impinger No.	Final	Initial	Difference
1	567.9	559.5	8.4
2	541.3	539.5	1.8
3	439.3	438.9	0.4
4	685.6	~~683~~ 675.7	9.9

(2)

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19th & Battery PGH
ACTIVITY NO.: Stack 1-2
CONTROL BOX OPERTOR:
PROBE HANDLER:
CLEAN UP:

DATE: 10-22-92
TEST NO.: CLR-1-2-2
NOZZLE: #54 0.214
STATIC PRESSURE Ps: 1.2"
PORT DIRECTION: South
BAROMETRIC PRESSURE: 29.84

ΔH@: 1.618 (5-5-92)
METER CORRECTION: 0.9915
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 3
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 1
COLD BOX NO.: 1
PROBE NO.: 5-1
FILTER NO.: 124 QTZ
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
1.0		438.129	1.00	1.81	1.81	66	57	8.0	97		<68°F	250	1 min/pt
2.4		438.911	1.00	1.81	1.81	67	58	8.0	96				
4.3		439.693	1.00	1.81	1.81	68	59	8.0	95				
6.4		440.598	1.10	1.99	1.99	69	60	8.5	107				
9.0		441.340	1.10	1.98	1.98	70	61	8.5	107				
12.8		442.145	1.10	1.98	1.98	71	63	8.5	108				
23.2		443.979	1.40	2.52	2.52	71	62	10.5	112				
27.0		443.866	1.30	2.34	2.34	72	64	10.0	111				
29.6		444.729	1.40	2.52	2.52	73	63	11.0	113				
31.7		445.625	1.40	2.52	2.52	72	64	11.0	111				
33.6		446.502	1.30	2.34	2.34	74	64	10.0	112				
35.0		447.370	1.00	1.80	1.80	73	65	8.0	109				
		448.161											

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19 two Battery Pit
ACTIVITY NO.: Stack 4-2
CONTROL BOX OPERTOR:
PROBE HANDLER:
CLEAN UP:

DATE: 10-22-92
TEST NO.: CL12-1-2-2
NOZZLE: #54 0.214
STATIC PRESSURE Ps: 1.2"
PORT DIRECTION: South
BAROMETRIC PRESSURE: 29.84

ΔH@: 1.618 (5-5-92)
METER CORRECTION: 0.9915
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 3
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 1
COLD BOX NO.: 1
PROBE NO.: 5-1
FILTER NO.: 124 QTZ
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0		448.161	1.30	2.34	2.34	74	65	10.0	110		<68°F	250	(mist pt
33.6		448.988	1.20	2.16	2.16	73	66	9.5	110				
31.7		449.803	1.40	2.52	2.52	72	65	11.0	110				
29.6		450.716	1.40	2.52	2.52	72	65	9.0	108				
27.0		451.669	1.40	2.52	2.52	73	65	9.0	110				
23.2		452.562	1.40	2.52	2.52	73	66	9.0	109				
12.8		453.489	1.20	2.16	2.16	72	65	7.5	109				
9.0		454.330	1.10	1.98	1.98	72	66	7.0	108				
6.4		455.170	1.10	1.98	1.98	72	65	7.0	107				
4.3		456.010	1.10	1.98	1.98	74	65	7.0	107				
2.4		456.840	1.00	1.80	1.80	73	64	6.0	104				
1.0		457.605	1.00	1.80	1.80	72	65	6.0	102				
		458.413											

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			
5			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19+20 Battery PEC
ACTIVITY NO.: Stack 1-2
CONTROL BOX OPERTOR:
PROBE HANDLER:
CLEAN UP:

DATE: 10-22-92
TEST NO.: CLR-1-2-2
NOZZLE: #54 0.214
STATIC PRESSURE Ps: 1.2"
PORT DIRECTION: East
BAROMETRIC PRESSURE: 29.84

ΔH@: 1.618 (5-5-92)
METER CORRECTION: 0.9915
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 3
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 1
COLD BOX NO.: 1
PROBE NO.: 5-1
FILTER NO.: 124 QTZ
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0		458.413	1.50	2.69	2.69	75	64	9.0	110		<68°F=	252	1-min/pt
33.6		459.252	1.50	2.69	2.69	75	66	9.0	111				
31.7		460.154	1.50	2.69	2.69	76	65	9.0	110				
29.6		461.068	1.40	2.56	2.56	77	67	9.0	110				
27.0		461.978	1.40	2.56	2.56	78	67	9.0	113				
23.2		462.857	1.30	2.38	2.38	78	68	8.0	114				
12.8		463.720	1.20	2.22	2.22	78	68	7.5	114				
9.0		464.580	1.30	2.40	2.40	79	70	8.0	112				
6.4		465.449	1.20	2.22	2.22	79	70	7.5	109				
4.3		466.302	0.80	1.48	1.48	77	71	5.0	106				
2.4		467.030	0.80	1.48	1.48	78	70	5.0	105				
1.0		467.753	0.80	1.48	1.48	79	71	5.0	104				
		468.490											

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19420 Bethany Rec
ACTIVITY NO.: Stack 1-2
CONTROL BOX OPERTOR:
PROBE HANDLER:
CLEAN UP:

DATE: 10-22-92
TEST NO.: CLR-1-2-2
NOZZLE: #54 0.214
STATIC PRESSURE Ps: 1.2"
PORT DIRECTION: East
BAROMETRIC PRESSURE: 29.84

ΔH@: 1.618 (5-5-92)
METER CORRECTION: 0.9915
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 3
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 1
COLD BOX NO.: 1
PROBE NO.: 5-1
FILTER NO.: 124 QTE
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
1.0		468.490	0.80	1.48	1.48	78	69	5.0	104		<68°F	250	1min/pt
2.4		469.201	0.80	1.48	1.48	77	71	5.0	106				
4.3		469.940	0.80	1.48	1.48	77	69	5.0	107				
6.4		470.667	1.00	1.85	1.85	78	69	6.0	109				
9.0		471.462	1.30	2.40	2.40	79	71	8.0	115				
12.8		472.340	1.20	2.22	2.22	80	70	7.5	116				
23.2		473.175	1.20	2.22	2.22	79	71	7.5	115				
27.0		474.030	1.20	2.22	2.22	79	70	7.5	113				
29.6		474.880	1.30	2.40	2.40	79	72	8.0	114				
31.7		475.735	1.40	2.59	2.59	80	71	9.0	110				
33.6		476.634	1.20	2.22	2.22	82	73	7.5	117				
35.0		477.488	1.50	2.77	2.77	83	73	9.5	116				
		478.425											

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

(2)

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19420 Battery Rd
ACTIVITY NO.: Stack 1-3
CONTROL BOX OPERTOR: MG
PROBE HANDLER:
CLEAN UP:

DATE: 10-22-92
TEST NO.: CLR-1-3-2
NOZZLE: #34 0.180
STATIC PRESSURE Ps: 1.1
PORT DIRECTION: South
BAROMETRIC PRESSURE: 29.84

ΔH@: 1.768 (10-15-92)
METER CORRECTION: 1.0295
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 1
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 8
COLD BOX NO.: 8
PROBE NO.: 5-3
FILTER NO.: 125 QTZ
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
1.0		563.926	1.0	1.0	1.0	62	56	3.5	102	251	48°F	250	1 min/pt
2.4		564.543	1.0	1.0	1.0	62	57	3.5	103				
4.3		565.233	1.2	1.2	1.2	63	59	4.0	105	262	49	248	
6.4		565.934	1.3	1.3	1.3	64	60	4.5	105				
9.0		566.629	1.3	1.3	1.3	65	60	4.5	105	262	47	259	
12.8		567.306	1.2	1.2	1.2	66	61	4.0	105				
23.2		567.977	1.2	1.2	1.2	66	61	4.0	114	263	50	244	
27.0		568.707	1.4	1.4	1.4	67	61	4.5	109				
29.6		569.435	1.5	1.5	1.5	68	61	5.0	115	255	50	248	
31.7		570.156	1.5	1.5	1.5	68	63	5.0	111				
33.6		570.915	1.5	1.5	1.5	70	62	5.0	113	247	44	250	
35.0		571.646	1.5	1.5	1.5	69	63	5.0	114				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

①

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19+20 Battery PEC
ACTIVITY NO.: Stack 1-3
CONTROL BOX OPERTOR: MG
PROBE HANDLER:
CLEAN UP:

DATE: 10-22-92
TEST NO.: CLR-1-3-2
NOZZLE: #34 0.180
STATIC PRESSURE Ps: 1.1
PORT DIRECTION: South
BAROMETRIC PRESSURE: 29.84

ΔH@: 1.768 (10-15-92)
METER CORRECTION: 1.0295
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 1
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 8
COLD BOX NO.: 8
PROBE NO.: 5-3 1
FILTER NO.: QTZ#125
STACK DIA.: 76"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0		555.242	1.4	1.4	1.4	53	50	4.5	96	260	<68°F	250	1 min/pt
33.6		556.607	1.5	1.5	1.5	54	50	4.5	97				
31.7		557.435	1.3	1.3	1.3	55	50	4.5	97	245	50	252	
29.6		558.168	1.5	1.5	1.5	56	51	5.0	96				
27.0		558.864	1.2	1.2	1.2	56	51	4.0	96	255	50	254	
23.2		559.485	1.1	1.1	1.1	56	52	4.0	97				
12.8		560.094	1.0	1.0	1.0	58	52	3.5	100	262	48	255	
9.0		560.822	1.3	1.3	1.3	58	53	4.5	99				
6.4		561.456	1.2	1.2	1.2	59	54	4.0	99	264	49	260	
4.3		562.123	1.2	1.2	1.2	60	55	4.0	100				
2.4		562.737	1.0	1.0	1.0	59	55	3.5	101	262	47	260	
1.0		563.310	.90	.90	.90	61	56	3.0	102				

LEAK CHECK

	in. Hg.	Rate
Before	4.0	<0.02 cfm
After	6.5	.015 cfm

ORSAT

	1	2
CO_2	0	
O_2	20.5	
CO	0.1	
N	79.5	

PITOT LEAK CHECK

POS.	NEG.
OK 15 sec	OK 15 sec
OK 15 sec	OK 15 sec

Impinger No.	Final	Initial	Difference
1 (wet)	566.3	559.1	7.2
2 (wet)	490.9	490.9	0.0
3 (dry)	381.7	381.6	0.1
4 silica	667.5	657.7	9.8

(3)

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 1942 Battery PEC
ACTIVITY NO.: Stack 4-3
CONTROL BOX OPERTOR: M.G.
PROBE HANDLER:
CLEAN UP:

DATE: 10-11-92
TEST NO.: CLR-1-3-2
NOZZLE: #34 0.180
STATIC PRESSURE Ps: 1.1
PORT DIRECTION: South
BAROMETRIC PRESSURE: 29.84

ΔH@: 1.768 (10-15-92)
METER CORRECTION: 1.0295
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 1
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 8
COLD BOX NO.: 8
PROBE NO.: 5-3
FILTER NO.: 125 QTZ
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0		572.361	1.5	1.5	1.5	69	64	5.0	113	247	<68°F	250	1min/pt
33.6		573.113	1.4	1.4	1.4	69	64	4.5	110				
31.7		573.851	1.6	1.6	1.6	67	63	5.0	113	263	45	251	
29.6		574.558	1.4	1.4	1.4	67	63	4.5	108				
27.0		575.245	1.3	1.3	1.3	67	63	4.5	112	264	44	243	
23.2		575.875	1.1	1.1	1.1	66	62	4.0	109				
12.8		576.518	1.1	1.1	1.1	66	62	4.0	113	262	44	246	
9.0		577.183	1.2	1.2	1.2	66	62	4.0	108				
6.4		577.863	1.3	1.3	1.3	66	62	4.5	111	265	47	251	
4.3		578.517	1.1	1.1	1.1	66	62	4.0	109				
2.4		579.121	1.0	1.0	1.0	66	63	3.5	110	263	50	244	
1.0		579.748	1.0	1.0	1.0	67	63	3.5	109				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19420 Battery Pkg
ACTIVITY NO.: Stack 9-3
CONTROL BOX OPERTOR: MG
PROBE HANDLER:
CLEAN UP:

DATE: 10-22-92
TEST NO.: CLR-1-3-2
NOZZLE: #34 0.180
STATIC PRESSURE Ps: 1.1
PORT DIRECTION: EAST
BAROMETRIC PRESSURE: 29.84

ΔH@: 1.768 (10-15-92.)
METER CORRECTION: 1.0295
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 1
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 8
COLD BOX NO.: 8
PROBE NO.: 5-3
FILTER NO.: 125 QTZ
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0		580.585	1.7	1.7	1.7	69	64	5.5	109	262	68°F	250	1 min pt
33.6		581.330	1.6	1.6	1.6	70	64	5.0	110				
31.7		582.103	1.4	1.4	1.4	71	65	5.0	110	249	51	246	
29.6		582.898	1.5	1.5	1.5	70	65	5.0	110				
27.0		583.633	1.4	1.4	1.4	71	65	5.0	113	253	52	244	
23.2		584.310	1.2	1.2	1.2	70	66	4.0	111				
12.8		584.942	1.2	1.2	1.2	70	66	4.0	113	255	46	246	
9.0		585.607	1.2	1.2	1.2	69	66	4.0	112				
6.4		586.357	1.2	1.2	1.2	70	66	4.0	113	258	50	245	
4.3		587.030	1.1	1.1	1.1	70	66	4.0	114				
2.4		587.661	1.1	1.1	1.1	70	66	4.0	115	252	49	242	
1.0		588.245	1.0	1.0	1.0	69	65	3.5	113				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: US Clairton Works
LOCATION: 19+20 Battery PEC
ACTIVITY NO.: Stack 4-3
CONTROL BOX OPERTOR: M. G.
PROBE HANDLER:
CLEAN UP:

DATE: 10-22-92
TEST NO.: CLR-1-3-2
NOZZLE: #34 0.180
STATIC PRESSURE Ps: 1.1
PORT DIRECTION: EAST
BAROMETRIC PRESSURE: 29.84

ΔH@: 1.768 (10-15-92)
METER CORRECTION: 1.0295
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 1
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 8
COLD BOX NO.: 8
PROBE NO.: 5-3
FILTER NO.: 125 QTZ
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
1.0		588.836	1.0	1.0	1.0	69	65	3.5	112	264	<68°F	250	1 min pt
~~3.8~~	2.4	589.477	1.2	1.2	1.2	69	65	4.0	112				
~~3.7~~	4.3	590.164	1.2	1.2	1.2	71	65	4.0	114	265	47	244	
~~2.6~~	6.4	590.768	1.1	1.1	1.1	70	66	4.0	115				
~~2.0~~	9.0	591.430	1.3	1.3	1.3	72	67	4.5	114	261	48	246	
~~2.2~~	12.8	592.113	1.2	1.2	1.2	72	67	4.0	113				
~~1.8~~	23.2	592.753	1.1	1.1	1.1	72	67	4.0	114	264	48	248	
~~9.0~~	27.0	593.420	1.1	1.1	1.1	72	68	4.0	114				
~~6.4~~	29.6	594.257	1.3	1.3	1.3	74	69	4.5	115	260	50	247	
~~4.3~~	31.7	594.960	1.5	1.5	1.5	69	67	5.0	113				
~~2.4~~	33.6	595.673	1.4	1.4	1.4	72	67	5.0	116	256	48	245	
~~1.0~~	35.0	596.331	1.2	1.2	1.2	72	68	4.0	115				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
DATE: 10-22-92
ΔH@: 1.756 (6-3-92)
HOT BOX NO.: 6
LOCATION: 19+20 Battery PEC
TEST NO.: CLR-1-4-2
METER CORRECTION: 0.9721
COLD BOX NO.: 6
ACTIVITY NO.: Stack CL-4
NOZZLE: #45 0.214
PITOT CORRECTION: 0.84
PROBE NO.: 5-5
CONTROL BOX OPERTOR: DEB
STATIC PRESSURE Ps: +1.0
CONTROL BOX NO.: 4
FILTER NO.: 127 quartz
PROBE HANDLER: DEB
PORT DIRECTION: South
NOMOGRAPH SET POINT: —
STACK DIA.: 36"
CLEAN UP: —
BAROMETRIC PRESSURE: 29.84
LENGTHS OF UMBILICAL: 4 x 25' 1 x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0	828	360.020	1.3	2.51	2.50	53	52	7.5	101	254	<68°F/43	250	1 min/pt
33.6		362.065	1.3	2.51	2.50	53	52	8.0	103		42	260	
31.7		363.101	1.4	2.71	2.70	54	52	8.5	101	253	43	258	
29.6		364.115	1.4	2.71	2.70	54	54	8.5	104				
27.0		365.455	1.5	2.90	2.90	54	54	9.0	100	262	45	260	
23.2		366.482	1.3	2.51	2.50	55	55	8.0	101				
12.8		367.485	1.3	2.51	2.50	56	55	8.0	101	273	47	262	
9.0		368.375	1.1	2.13	2.15	57	54	6.5	103				
6.4		369.228	1.2	2.32	2.30	57	56	7.0	102	247	48	270	
4.3		370.250	1.3	2.51	2.50	57	57	8.0	102				%H_2O = 2
2.4		371.237	1.3	2.51	2.50	58	57	8.0	102	246	47	248	MW = 28.7
1.0		372.139	1.1	2.13	2.15	60	58	6.5	98				

LEAK CHECK

	in. Hg.	Rate
Before	5.0	<0.02 cfm
After	9.5	0.016

ORSAT

	1	2
CO_2	0	
O_2	20.5	
CO	0	
N	79.5	

PITOT LEAK CHECK

POS.	NEG.
OK 15sec	OK 15sec
OK 15sec	OK 15sec

Impinger No.	Final	Initial	Difference
1	566.4	559.6	6.8
2	560.9	559.6	1.3
3	481.9	481.8	0.1
4	641.5	629.4	12.1

(2)

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
DATE: 10-22-92
ΔH@: 1.756 (6-3-92)
HOT BOX NO.: 6
LOCATION: 19+20 Battery PEC
TEST NO.: CLR-1-4-2
METER CORRECTION: 0.9721
COLD BOX NO.: 6
ACTIVITY NO.: Stack 1-4
NOZZLE: #45 0.214
PITOT CORRECTION: 0.84
PROBE NO.: 5-5
CONTROL BOX OPERTOR: DCB
STATIC PRESSURE Ps: +1.0
CONTROL BOX NO.: 4
FILTER NO.: 127 quartz
PROBE HANDLER: DCB
PORT DIRECTION: South
NOMOGRAPH SET POINT: –
STACK DIA.: 36"
CLEAN UP: ---
BAROMETRIC PRESSURE: 29.84
LENGTHS OF UMBILICAL: 1 x 25' 1 x 50'

	Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0	~~1.0~~		373.140	1.3	2.51	2.50	60	58	8.0	104	247	~~46°/48~~	~~250~~ 1242	1 min/pt
33.6	~~2.4~~		374.130	1.3	2.51	2.50	61	60	8.0	106				
31.7	~~4.3~~		375.333	1.6	3.09	3.10	60	60	9.5	103	256	49	238	
29.6	~~6.4~~		376.425	1.6	3.09	3.10	61	61	9.5	109				
27.0	~~9.0~~		377.473	1.5	2.90	2.90	61	61	9.0	109	262	51	238	
23.2	~~12.8~~		378.467	1.2	2.32	2.30	62	63	7.2	111				
12.8	~~23.2~~		379.386	1.0	1.93	1.95	65	63	6.0	115	255	45	240	
9.0	~~27.0~~		380.439	1.0	1.93	1.95	64	64	6.0	115				
6.4	~~29.6~~		381.357	1.1	2.13	2.15	64	65	6.5	114	261	45	240	
4.3	~~31.7~~		382.290	1.2	2.32	2.30	65	64	7.0	114				
2.4	~~33.6~~		383.260	1.2	2.32	2.30	66	65	7.0	111	260	45	242	
1.0	~~35.0~~		384.110	1.0	1.93	1.95	67	66	6.0	103				

DCB

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19+20 Battery PEC
ACTIVITY NO.: Stack 01-4
CONTROL BOX OPERTOR: DeB
PROBE HANDLER: DeB
CLEAN UP: —

DATE: 10-22-92
TEST NO.: CLR-1-4-2
NOZZLE: #45 0.214
STATIC PRESSURE Ps: +1.0
PORT DIRECTION: South
BAROMETRIC PRESSURE: 29.84

ΔH@: 1.756 (6-3-92)
METER CORRECTION: 0.9721
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 4
NOMOGRAPH SET POINT: -
LENGTHS OF UMBILICAL ___ x 25' 1 x 50'

HOT BOX NO.: 6
COLD BOX NO.: 6
PROBE NO.: 5-5
FILTER NO.: 127 quartz
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0	1106	385.186	1.3	2.51	2.50	64	64	7.5	115	240	~~68~~/45	250	1 min/pt
33.6	1112	386.196	1.3	2.51	2.50	66	65	7.5	115				
31.7	—	387.175	1.4	2.71	2.70	68	67	8.0	116	245	42	246	
29.6	1126	388.144	1.3	2.51	2.50	67	65	7.5	112				
27.0	1130	389.147	1.4	2.71	2.70	68	66	8.0	112	273	45	238	
23.2	1137	390.013	1.1	2.13	2.15	66	64	6.5	114				
12.8	1143	390.857	1.0	1.93	1.95	65	66	5.5	118	227	44	242	
9.0	1149	391.741	1.0	1.93	1.95	66	66	6.0	116				
6.4	1155	392.590	1.0	1.93	1.95	65	66	6.0	117	229	43	240	
4.3	1202	393.565	1.1	2.13	2.15	66	67	6.5	115				
2.4	1207	394.495	1.1	2.13	2.15	66	65	6.5	115	254	44	242	
1.0	1213	395.365	1.0	1.93	1.95	66	65	6.0	99				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19&20 Battery PZ
ACTIVITY NO.: Stack 1-4
CONTROL BOX OPERTOR: DEB
PROBE HANDLER: DEB
CLEAN UP: —

DATE: 10-12-92
TEST NO.: CLA-1-4-2
NOZZLE: #4/5 0.214
STATIC PRESSURE Ps: 11.0
PORT DIRECTION: East
BAROMETRIC PRESSURE: 29.84

ΔH@: 1.756 (6-3-92)
METER CORRECTION: 0.9721
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 3
NOMOGRAPH SET POINT: —
LENGTHS OF UMBILICAL ___ x 25' 1 x 50'

HOT BOX NO.: 6
COLD BOX NO.: 6
PROBE NO.: 5-5
FILTER NO.: 127 quartz
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0	1210	396.218	1.0	1.83	1.95	69	66	6.0	113	233	44/45	286 227	1 min/pt
33.6	1225	397.110	1.0	1.93	1.95	71	69	6.0	113				
31.7	1230	397.963	0.9	1.74	1.75	69	68	5.0	113	245	44	226	
29.6	1237	398.773	0.9	1.74	1.75	69	69	5.5	115				
27.0	1242	399.723	0.9	1.74	1.75	69	69	5.5	114	249	48	244	
23.2	1249	400.582	0.9	1.74	1.75	69	69	5.5	116				
12.8	1258	401.485	1.0	1.93	1.95	70	69	6.0	120	247	43	258	
9.0	1304	402.380	1.1	2.13	2.15	70	69	6.5	117				
6.4	1309	403.245	1.0	1.93	1.95	70	69	6.0	120	227	41	230	
4.3	1316	404.103	1.0	1.93	1.95	68	68	6.0	120				
2.4	1322	404.988	1.0	1.93	1.95	70	70	6.0	113	244	46	242	
1.0	1328	405.738	0.8	1.55	1.55	69	68	5.5	98				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

(5)

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
DATE: 10-22-92
ΔH@: 1.756 (6-3-92)
HOT BOX NO.: 6
LOCATION: 19+20 Bethany Rd
TEST NO.: CU2-1-4-2
METER CORRECTION: 0.9721
COLD BOX NO.: 6
ACTIVITY NO.: Stack 1-4
NOZZLE: #45 0.214
PITOT CORRECTION: 0.84
PROBE NO.: 5-5
CONTROL BOX OPERTOR: SEB
STATIC PRESSURE Ps: +1.0
CONTROL BOX NO.: 3
FILTER NO.: 127 quartz
PROBE HANDLER: SEB
PORT DIRECTION: East
NOMOGRAPH SET POINT:
STACK DIA.: 36"
CLEAN UP:
BAROMETRIC PRESSURE: 29.84
LENGTHS OF UMBILICAL ___ x 25' 1 x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0	1334	406.634	1.0	1.93	1.95	69	68	6.0	121	251	~~68°F~~ 43	~~250~~ 246	1 min/pt
33.6	1341	407.477	0.9	1.74	1.75	70	68	6.0	120				
31.7	—	408.727	1.6	3.09	3.10	70	69	9.5	119	263	44	236	
29.6	1352	409.618	1.1	2.13	2.15	69	69	6.5	122				
27.0	1357	410.551	1.2	2.32	2.30	69	68	7.0	117	262	44	243	
23.2	1404	411.598	1.0	1.93	1.95	69	70	6.0	121				
12.8	1409	412.558	1.2	2.32	2.30	72	71	7.0	120	251	47	254	
9.0	1416	413.688	1.2	2.32	2.30	71	70	7.0	122				
6.4	1423	414.736	1.2	2.32	2.30	72	74	7.0	123	236	47	232	
4.3	1515	415.582	1.2	2.32	2.30	70	68	7.0	122				
2.4	1521	416.587	1.1	2.13	2.15	70	68	6.5	117	251	50	236	
1.0	1528	417.482	1.1	2.13	2.15	70	70	6.5	116				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

8/0 ①

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
DATE: 10-23-92
ΔHP: 1.535 (9-14-92)
HOT BOX NO.: 1
LOCATION: 19420 Battery PEC
TEST NO.: CU2-1-1-3
METER CORRECTION: 0.9916
COLD BOX NO.: 1
ACTIVITY NO: Stack G-1
NOZZLE: #34 .214
PITOT CORRECTION: 0.84
PROBE NO.: 5-1
CONTROL BOX OPERATOR TM
STATIC PRESSURE Ps: 0.75
CONTROL BOX NO.: 7
FILTER NO.: 131
PROBE HANDLER TM
PORT DIRECTION: East
NOMOGRAPH SET POINT: —
STACK DIA.: 36"
CLEAN UP
BAROMETRIC PRESSURE 29.68
LENGTHS OF UMBILICAL ___ x 25' ✓ x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
35.0	5:24	740.880	1.25	2.19	2.19	52	48	6.0	100	250	<68°F	250	0 min/pt
33.6		741.630	1.50	2.54	2.54	52	48	6.0	100				
31.7		742.485	1.35	2.36	2.36	54	49	6.0	100				
29.6		743.355	1.25	2.19	2.19	55	50	5.8	101				
27.0		744.144	1.25	2.19	2.19	56	50	5.8	101				
23.2		744.951	1.25	2.14	2.14	56	50	6.0	100				
12.8		745.745	1.00	1.71	1.71	58	54	5.0	99				
9.0		746.450	0.95	1.63	1.63	58	54	5.0	99				
6.4		747.179	0.90	1.54	1.54	59	55	4.8	99				
4.3		747.950	1.00	1.71	1.71	59	55	4.8	99				
2.4		748.450	1.10	1.89	1.89	62	58	5.2	98				
1.0		749.314	1.00	1.71	1.71	64	58	5.0	98				

LEAK CHECK

	in Hg	Rate
Before	5.5	0.02 cfm
After	0	0.005

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Pitot Leak Check
Red OK ✓
Green OK ✓

Impinger No.	Final	Initial	Difference
~~1~~ 2	540.6	538.9	1.7
~~2~~ 1	566.8	559.5	7.3
3	438.4	438.1	0.3
4	680.0	671.5	8.5
5			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

(2)

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19+20 Battery RGC
ACTIVITY NO: Stack U1-1
CONTROL BOX OPERATOR TM
PROBE HANDLER TM
CLEAN UP

DATE: 10-23-92
TEST NO.: CR-1-1-3
NOZZLE: #11 0.180
STATIC PRESSURE Ps: 0.25
PORT DIRECTION: East
BAROMETRIC PRESSURE 29.68

ΔH@: 1.535 (9-14-92)
METER CORRECTION: 0.9916
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 7
NOMOGRAPH SET POINT: —
LENGTHS OF UMBILICAL ___ x 25' ___ x 50'

HOT BOX NO.: 1
COLD BOX NO.: 1
PROBE NO.: 5-#1
FILTER NO.:
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp. T_m °F In	Meter Temp. T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
1.0		250.230	0.95	1.63	1.63	66	60	4.8	99	250	<68°F	250	1min/pt
2.4		250.910	1.35	2.32	2.32	70	62	6.0	105				
4.3		251.754	1.05	1.84	1.84	70	62	5.0	105				
6.4		252.548	0.90	1.57	1.57	68	64	4.8	105				
9.0		253.159	0.85	1.49	1.49	70	64	4.5	106				
12.8		253.890	1.15	2.01	2.01	70	65	5.5	106				
23.2		254.898	1.90	2.27	2.27	70	65	6.0	106				
27.0		255.716	1.25	2.19	2.19	72	66	5.8	106				
29.6		256.534	1.30	2.27	2.27	72	68	6.0	109				
31.7		257.370	1.50	2.62	2.62	74	70	7.0	110				
33.6		258.196	1.30	2.27	2.27	74	70	6.2	110				
35.0		258.997	1.50	2.62	2.62	75	70	6.0	118				

LEAK CHECK

	in Hg	Rate
Before		
After		

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			
5			

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

(3)

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19-20 Battery Rec
ACTIVITY NO: Stack 9-1
CONTROL BOX OPERATOR: TM
PROBE HANDLER: TM
CLEAN UP:

DATE: 10-23-92
TEST NO.: CLR-1-1-3
NOZZLE: #11 0.180
STATIC PRESSURE Ps: 0.75
PORT DIRECTION: East
BAROMETRIC PRESSURE: 29.68

ΔHP: 1.535 (9-14-92)
METER CORRECTION: 0.9916
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 7
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL: ___ x 25' ___ x 50'

HOT BOX NO.: 1
COLD BOX NO.: 1
PROBE NO.: 5-#1
FILTER NO.: 131
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HO in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
35.0		759.760	1.30	2.27	2.27	75	70	6.0	112	250	460°F	250	Leak pt
33.6		760.550	1.25	2.19	2.19	72	70	6.0	111				
31.7		761.380	1.15	2.01	2.01	75	70	5.5	111				
29.6		762.210	1.35	2.36	2.36	75	70	6.0	111				
27.10		762.990	1.25	2.19	2.19	75	70	6.0	111				
23.0		763.769	1.35	2.36	2.36	76	70	6.0	111				
12.8		764.636	0.85	1.49	1.49	75	70	4.5	111				
9.0		765.385	1.00	1.75	1.75	75	70	5.0	113				
6.4		766.052	0.90	1.57	1.57	75	70	4.8	112				
4.3		766.760	1.25	2.19	2.19	75	70	5.5	111				
2.4		767.389	1.25	2.18	2.18	80	75	6.0	113				
1.0		768.371	0.90	1.57	1.57	80	75	4.5	110				

LEAK CHECK

	In Hg	Rate
Before		
After		

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			
5			

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

(4)

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19-420 Battery A&C
ACTIVITY NO: Stack 1-1
CONTROL BOX OPERATOR TM
PROBE HANDLER TM
CLEAN UP

DATE: 10-23-92
TEST NO.: CR-1-1-3
NOZZLE: #11 0.180
STATIC PRESSURE Ps: 0.75
PORT DIRECTION: South
BAROMETRIC PRESSURE 29.68

ΔH@: 1.535 (9-14-92)
METER CORRECTION: 0.9916
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 7
NOMOGRAPH SET POINT: —
LENGTHS OF UMBILICAL ___ x 25' ✓ x 50'

HOT BOX NO.: 1
COLD BOX NO.: 1
PROBE NO.: 5-1
FILTER NO.: 131
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
35.0		769.100	1.00	1.74	1.74	80	75	5.0	116	250	68°F	250	6min/pt
33.6		769.910	1.25	2.18	2.18	80	76	5.5	117				
31.7		770.850	1.10	1.92	1.92	80	76	5.5	117				
29.6		771.800	1.00	1.74	1.74	80	80	5.0	120				
27.0		772.299	1.15	2.01	2.01	80	80	5.5	120				
23.3		773.040	1.00	1.74	1.74	80	80	5.0	120				
12.8		773.758	0.75	1.31	1.31	80	81	4.0	120				
9.0		774.475	0.90	1.57	1.57	80	80	4.5	120				
6.4		775.152	0.75	1.31	1.31	80	80	4.4	118				
4.3		775.810	0.75	1.31	1.31	80	80	4.4	118				
2.4		776.500	0.75	1.31	1.31	80	80	4.5	115				
1.0		777.230	0.75	1.31	1.31	80	80	4.5	114				

LEAK CHECK

	in Hg	Rate
Before		
After		

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			
5			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19420 Battery Rd
ACTIVITY NO.: Stack 1-1
CONTROL BOX OPERTOR: TM
PROBE HANDLER: TM
CLEAN UP:

DATE: 10-22-92
TEST NO.: CLR 1-1-2
NOZZLE: #11 0.180
STATIC PRESSURE Ps: 0.75
PORT DIRECTION: South
BAROMETRIC PRESSURE: 29.84

ΔH@: 1.535 (9-14-92)
METER CORRECTION: 0.9916
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 7
NOMOGRAPH SET POINT: —
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 4
COLD BOX NO.: 4
PROBE NO.: 5-4
FILTER NO.: OT2 126
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
1.0		710.960	0.75	0.64	0.64	60	58	2.5	111	250	<68°F	250	1 min pt
2.4		711.590	0.75	0.64	0.64	64	58	2.5	115				
4.3		712.252	0.75	0.64	0.64	64	60	2.5	115				
6.4		712.640	1.00	0.85	0.85	62	61	3.0	115				
9.0		713.221	0.90	0.77	0.77	68	62	3.0	116				
12.8		713.817	0.80	0.68	0.68	66	62	2.8	115				
23.2		714.345	1.10	0.94	0.94	67	62	3.5	114				
27.0		714.950	1.25	1.00	1.00	66	63	3.5	115				
29.6		715.64	1.20	1.02	1.02	65	64	3.2	115				
31.7		716.285	1.10	0.94	0.94	68	64	3.0	115				
33.6		716.890	1.15	0.98	0.98	68	64	3.0	116				
35.0		717.520	1.05	0.89	0.89	66	64	3.0	115				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

40 5/6

①

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: Pt 20 Battery PEC
ACTIVITY NO.: Stack J-1
CONTROL BOX OPERTOR: TM
PROBE HANDLER: TM
CLEAN UP:

DATE: 10-22-92
TEST NO.: CLR-1-1-2
NOZZLE: #11 0.180
STATIC PRESSURE Ps: 0.75
PORT DIRECTION: South
BAROMETRIC PRESSURE: 29.84

ΔH@: 1.535 (9-14-92)
METER CORRECTION: 0.9916
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 7
NOMOGRAPH SET POINT: —
LENGTHS OF UMBILICAL ___ x 25' ✓ x 50'

HOT BOX NO.: 4
COLD BOX NO.: 4
PROBE NO.: 5-4
FILTER NO.: 9T2 126
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Reg.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0	8:26	703.828	.75	0.64	0.64	56	48	3.0	102	250	<68°F	250	1 min/pt
33.6		704.516	1.05	1.06	1.06	56	50	3.0	102				
31.7		705.170	1.05	0.89	0.89	58	50	2.5	102				
29.6		705.854	1.00	0.85	0.85	57	52	2.8	104				
27.0		706.445	1.00	0.85	0.85	57	52	2.8	104				
23.2		707.056	1.00	0.85	0.85	58	52	2.8	105				
12.8		707.630	1.00	0.85	0.85	58	53	3.0	105				
9.0		708.271	0.80	0.68	0.68	62	54	2.4	105				
6.4		708.801	0.80	0.68	0.68	58	54	2.5	102				
4.3		709.310	0.75	0.64	0.64	58	54	2.0	100				
2.4		709.812	0.75	0.64	0.64	58	55	2.2	100				2%
1.0		710.364	0.95	0.81	0.81	58	55	3.0	105				28.7 AW

LEAK CHECK

	in. Hg.	Rate
Before	5.0	.012 cfm
After	5.0	0.005 cfm

ORSAT

	1	2
CO_2	0	
O_2	20.5	
CO	0	
N	79.5	

15 sec

PITOT LEAK CHECK

POS.	NEG.
Pos ok	Neg ok
Pos ok	Neg ok

Impinger No.	Final	Initial	Difference
1	559.9	553.2	6.7
2	486.0	485.3	0.7
3	378.8	378.7	0.1
4	615.1	608.6	6.5

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

(5)

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
DATE: 10-23-92
ΔH@: 1.535 (9-14-92)
HOT BOX NO.: 1
LOCATION: 19+20 Battery Pgc
TEST NO.: CLR-1-1-3
METER CORRECTION: 0.9916
COLD BOX NO.: 1
ACTIVITY NO: Stack #1
NOZZLE: #11 0.180
PITOT CORRECTION: 0.84
PROBE NO.: 5-#1
CONTROL BOX OPERATOR TJ7
STATIC PRESSURE Ps: 0.75
CONTROL BOX NO.: 7
FILTER NO.: 131
PROBE HANDLER TJ7
PORT DIRECTION: South
NOMOGRAPH SET POINT: —
STACK DIA.: 36"
CLEAN UP
BAROMETRIC PRESSURE 29.68
LENGTHS OF UMBILICAL ___ x 25' ✓ x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
1.0		777.932	0.75	1.31	1.31	80	80	4.5	112	250	<68°F	250	Initial pt
2.4		778.630	1.00	1.74	1.74	80	81	5.0	118				
4.3		779.393	0.85	1.48	1.48	80	81	4.5	121				
6.4		780.110	1.00	1.74	1.74	80	80	5.0	121				
9.0		780.930	0.85	1.48	1.48	80	80	4.5	120				
12.8		781.622	0.85	1.48	1.48	80	80	4.5	121				
23.3		782.343	1.00	1.74	1.74	80	80	4.5	122				
27.0		783.040	1.00	1.74	1.74	80	80	5.0	121				
29.6		783.815	1.10	1.92	1.92	80	80	5.5	122				
31.7		784.688	1.25	2.18	2.18	80	80	5.5	120				
33.6		785.495	1.25	2.18	2.18	80	80	5.5	120				
35.0		786.430	1.25	2.18	2.18	80	80	5.5	120				
		787.311											

LEAK CHECK

	in Hg	Rate
Before		
After		

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			
5			

①

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19+20 Battery Bc
ACTIVITY NO: Stack 1-2
CONTROL BOX OPERATOR
PROBE HANDLER
CLEAN UP

DATE: 10-23-92
TEST NO.: CLR-1-2-3
NOZZLE: #[redacted]11 [redacted] 0.180
STATIC PRESSURE Ps: 1.0"
PORT DIRECTION: East
BAROMETRIC PRESSURE 29.68

ΔH@: 1.618 (5-5-92)
METER CORRECTION: 0.9915
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 3
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50' ____

HOT BOX NO.: 4
COLD BOX NO.: 4
PROBE NO.: 5-4
FILTER NO.: 130 QTZ
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HO in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp. T_m °F In	Meter Temp. T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
35.0		478.720	1.40	1.26	1.26	56	48	3.0	102		<68°F	250	Leak/pt
33.6		479.415	1.30	1.17	1.17	57	49	3.0	100				
31.7		480.098	1.50	1.34	1.34	58	48	3.0	99				
29.6		480.819	1.30	1.17	1.17	59	50	3.0	99				
27.0		481.493	1.30	1.17	1.17	61	50	3.0	104				
23.2		482.177	1.20	1.08	1.08	61	52	2.5	104				
12.8		482.827	1.20	1.08	1.08	62	50	3.0	104				
9.0		483.486	1.30	1.17	1.17	64	55	3.0	104				
6.4		484.165	1.20	1.08	1.08	65	55	3.0	103				
4.3		484.824	0.80	0.72	0.72	65	57	2.0	101				
2.4		485.365	0.80	0.72	0.72	65	57	2.0	100				
1.0		485.913	0.70	0.63	0.63	67	59	1.5	98				
		486.434											
								(3.0)					

LEAK CHECK

	in Hg	Rate
Before	5.5	0.02 cfm
After	4.0	0.005

ORSAT

	1	2	3
CO_2	0		
O_2	20.5		
CO	0		
N	79.5		

Pitot Leak Check
Pre. Red OK 15 sec
Green OK 15 sec
Post. Red OK 15 sec

Impinger No.	Final	Initial	Difference
1	558.4	552.0	6.4
2	483.8	483.8	0.0
3	378.1	378.1	0.0
4	586.7	578.2	8.5
5			

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

(2)

PLANT: USS Clairton Works
LOCATION: 19+20 Battery PEC
ACTIVITY NO: Stack 1-2
CONTROL BOX OPERATOR
PROBE HANDLER
CLEAN UP

DATE: 10-23-92
TEST NO.: CL2-1-2-3
NOZZLE: # 11 0.180
STATIC PRESSURE Ps: 1.0"
PORT DIRECTION: East
BAROMETRIC PRESSURE 29.68

ΔH@: 1.618 (5-5-92)
METER CORRECTION: 0.9915
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 3
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 4
COLD BOX NO.: 4
PROBE NO.: 5-4
FILTER NO.: 130 QTZ
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
1.0		486.434	0.70	0.63	0.63	68	58	1.5	98		<68°F	250	Imp pt
2.4		486.961	0.70	0.63	0.63	70	61	1.5	98				
4.3		487.374	0.90	0.82	0.82	71	60	2.0	97				
6.4		487.949	1.10	1.00	1.00	71	63	2.5	110				
9.0		488.590	1.20	1.09	1.09	72	62	2.5	114				
12.8		489.243	1.20	1.09	1.09	73	64	2.5	116				
23.2		489.905	1.10	1.00	1.00	74	63	2.5	116				
27.0		490.544	1.30	1.18	1.18	75	65	3.0	119				
29.6		491.230	1.30	1.18	1.18	76	66	3.0	121				
31.7		491.914	1.40	1.26	1.26	77	69	3.0	119				
33.6		492.613	1.40	1.27	1.27	78	69	3.0	120				
35.0		493.302	1.30	1.18	1.18	79	70	3.0	121				
		493.984											
								(3.0)					

LEAK CHECK

	in Hg	Rate
Before		
After		

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			
5			

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

③

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19+20 Battery PEC
ACTIVITY NO: Stack 1-2
CONTROL BOX OPERATOR
PROBE HANDLER
CLEAN UP

DATE: 10-23-92
TEST NO.: CR-1-2-3
NOZZLE: [redacted] 11 0.180 [redacted]
STATIC PRESSURE Ps:
PORT DIRECTION: East
BAROMETRIC PRESSURE 29.69

ΔH@: 1.618 (5-5-92)
METER CORRECTION: 0.9915
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 3
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50' ____

HOT BOX NO.: 4
COLD BOX NO.: 4
PROBE NO.: 5-4
FILTER NO.: 130 QTZ
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp. T_m °F In	Meter Temp. T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
35.0		493.984	1.50	1.36	1.36	79	70	3.0	121		<68F	250	Leak in pt
33.6		494.718	1.40	1.27	1.27	81	73	3.0	124				
31.7		495.420	1.30	1.18	1.18	82	72	3.0	125				
29.6		496.102	1.10	1.00	1.00	82	74	2.5	126				
27.0		496.730	1.20	1.09	1.09	82	72	2.5	128				
23.2		497.391	1.20	1.09	1.09	82	75	2.5	129				
12.8		498.052	1.00	0.91	0.91	83	74	2.0	126				
9.0		498.667	1.00	0.91	0.91	84	76	2.0	124				
6.4		499.266	1.00	0.91	0.91	84	76	2.0	123				
4.3		499.871	0.90	0.82	0.82	86	78	2.0	121				
2.4		500.464	0.70	0.64	0.64	86	77	1.5	119				
1.0		500.975	0.70	0.64	0.64	86	78	1.5	118				
		501.486						(3.0)					

LEAK CHECK

	in Hg	Rate
Before		
After		

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			
5			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19420 Bethany Rd
ACTIVITY NO: Stack 1-2
CONTROL BOX OPERATOR
PROBE HANDLER
CLEAN UP

DATE: 10-23-92
TEST NO.: CLR-1-2-3
NOZZLE: #11 0.180
STATIC PRESSURE Ps:
PORT DIRECTION: South
BAROMETRIC PRESSURE 29.68

ΔH@: 1.618 (5-5-92)
METER CORRECTION: 0.9915
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 3
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50' ____

HOT BOX NO.: 4
COLD BOX NO.: 4
PROBE NO.: 5-4
FILTER NO.: 130 QTZ
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp. T_m °F In	Meter Temp. T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
35.0		501.486	1.20	1.09	1.09	87	78	2.5	122		<68°F	250	Leak/pt
33.6		502.131	1.20	1.09	1.09	87	78	2.5	123				
31.7		502.803	1.50	1.39	1.39	89	82	3.0	122				
29.6		503.530	1.50	1.39	1.39	89	82	3.0	123				
27.0		504.252	1.40	1.30	1.30	89	82	3.0	125				
23.2		504.975	1.40	1.30	1.30	90	80	3.0	126				
12.8		505.682	1.10	1.02	1.02	90	82	2.0	129				
9.0		506.323	1.10	1.01	1.01	90	82	2.0	127				
6.4		506.956	1.10	1.01	1.01	91	85	2.0	126				
4.3		507.586	1.20	1.10	1.10	91	85	2.5	126				
2.4		508.249	1.00	0.92	0.92	91	84	2.0	123				
1.0		508.857	1.10	1.01	1.01	92	81	2.0	120				
		509.482						(3.0)					

LEAK CHECK

	in Hg	Rate
Before		
After		

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			
5			

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19 & 20 Battery PEC
ACTIVITY NO: Stack 1-2
CONTROL BOX OPERATOR
PROBE HANDLER
CLEAN UP

DATE: 10-23-92
TEST NO.: CLR-1-2-3
NOZZLE: ~~#~~ 11 ~~0.275~~ 0.180
STATIC PRESSURE Ps:
PORT DIRECTION: South
BAROMETRIC PRESSURE 29.63

ΔH@: 1.618 (5-5-92)
METER CORRECTION: 0.9915
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 3
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 4
COLD BOX NO.: 4
PROBE NO.: 5-4
FILTER NO.: 130 QTZ
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp. T_m °F In	Meter Temp. T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
1.0		509.482	1.10	1.01	1.01	91	84	2.0	120		<60°F	250	Initial pt
2.4		510.115	1.00	0.92	0.92	92	83	2.0	121				
4.3		510.746	1.10	1.01	1.01	92	85	2.0	130				
6.4		511.390	0.70	0.64	0.64	90	83	1.5	140				
9.0		511.975	1.10	1.01	1.01	93	85	2.0	129				
12.8		512.612	1.10	1.01	1.01	92	84	2.0	131				
23.2		513.243	1.20	1.10	1.10	92	86	2.5	130				
27.0		513.900	1.50	1.38	1.38	93	84	3.0	132				
29.6		514.67	1.50	1.38	1.38	93	86	3.0	132				
31.7		515.343	1.10	1.01	1.01	92	85	2.0	132				
33.6		515.978	1.20	1.10	1.10	93	86	2.5	133				
75.0		516.641	1.10	1.01	1.01	93	86	2.0	130				
		517.255						(1.0)					

LEAK CHECK

	in Hg	Rate
Before		
After		

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			
5			

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
DATE: 10-23-92
ΔHP: 1.768 (10-15-92)
HOT BOX NO.: 8
LOCATION: 19+20 Battery Pce
TEST NO.: CLR-1-3-3
METER CORRECTION: 1.0295
COLD BOX NO.: 8
ACTIVITY NO: Stack 1-3
NOZZLE: #34 0.180
PITOT CORRECTION: 0.84
PROBE NO.: 5-3
CONTROL BOX OPERATOR MG
STATIC PRESSURE Ps: 1.1
CONTROL BOX NO.: 1
FILTER NO.: 132 QTZ
PROBE HANDLER
PORT DIRECTION: East
NOMOGRAPH SET POINT:
STACK DIA.: 36"
CLEAN UP
BAROMETRIC PRESSURE 29.68
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp. T_m °F In	Meter Temp. T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
35.0	922	596.809	1.6	1.6	1.6	52	49	4.5	92	263	<68°F	250	(min/pt
33.6		598.111	1.3	1.3	1.3	54	50	4.0	95				
31.7		598.828	1.4	1.4	1.4	55	50	4.0	95	264	45	251	
29.6		599.585	1.5	1.5	1.5	56	51	4.5	100				
27.0		600.306	1.4	1.4	1.4	56	52	4.0	102	261	48	250	
23.2		600.927	1.1	1.1	1.1	56	52	3.5	108				
12.8		601.605	1.2	1.2	1.2	57	53	3.5	97	263	52	250	
9.0		602.230	1.2	1.2	1.2	59	54	3.5	97				
6.4		602.937	1.3	1.3	1.3	60	55	4.0	99	260	53	252	
4.3		603.602	1.2	1.2	1.2	60	56	4.0	98				
2.4		604.220	1.0	1.0	1.0	60	56	3.5	102	261	54	249	
1.0		604.818	1.0	1.0	1.0	61	57	3.5	103				

LEAK CHECK

	In Hg	Rate
Before	6.0	0.014
After		.008

ORSAT

	1	2	3
CO_2	0		
O_2	20.5		
CO	0		
N	79.5		

Pitot check
Before OK 15cc
After 15cc

Impinger No.	Final	Initial	Difference
1 100ml	565.2	558.8	6.4
2 100ml	490.9	490.6	0.3
3 Dry	381.6	381.4	0.2
4 Silica	670.9	662.4	8.5
5			

KEYSTONE ENVIRONMENTAL RESOURCES, INC.

(2)

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
DATE: 10-27-92
ΔH@: 1.768 (10-15-92)
HOT BOX NO.: 8
LOCATION: 19+20 Battery PEC
TEST NO.: CLR-1-3-3
METER CORRECTION: 1.0295
COLD BOX NO.: 8
ACTIVITY NO: Stack 1-3
NOZZLE: #34 0.180
PITOT CORRECTION: 0.84
PROBE NO.: 53
CONTROL BOX OPERATOR: M.G
STATIC PRESSURE Ps: 1.1
CONTROL BOX NO.: 1
FILTER NO.: 132 QTZ
PROBE HANDLER:
PORT DIRECTION: East
NOMOGRAPH SET POINT:
STACK DIA.: 36"
CLEAN UP:
BAROMETRIC PRESSURE 29.68
LENGTHS OF UMBILICAL ____ x 25' ____ x 50' ____

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
1.0		605.478	1.0	1.0	1.0	61	57	3.5	106	262	68°F	250	1min/pt
2.4		606.156	1.2	1.2	1.2	63	58	4.0	105				
4.3		606.786	1.1	1.1	1.1	63	59	4.0	105	263	57	255	
6.4		607.448	1.3	1.3	1.3	64	60	4.5	107				
9.0		608.083	1.2	1.2	1.2	65	60	4.0	109	264	55	252	
12.8		608.746	1.2	1.2	1.2	67	61	4.0	110				
23.2		609.323	1.1	1.1	1.1	67	62	4.0	110	260	57	250	
27.0		609.920	1.3	1.3	1.3	67	63	4.5	111				
29.6		610.623	1.5	1.5	1.5	68	64	5.0	111	263	54	252	
31.7		611.297	1.4	1.4	1.4	69	64	4.5	111				
33.6		612.005	1.6	1.6	1.6	70	65	5.0	112	264	53	250	
35.0		612.651	1.5	1.5	1.5	72	66	5.0	113				

LEAK CHECK

	in Hg	Rate
Before		
After		

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			
5			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

(3)

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19+20 Battery PEC
ACTIVITY NO: Stack 1-3
CONTROL BOX OPERATOR
PROBE HANDLER
CLEAN UP

DATE: 10-23-92
TEST NO.: CL2-1-3-3
NOZZLE: #34 0.180
STATIC PRESSURE Ps: 1.1
PORT DIRECTION: East
BAROMETRIC PRESSURE 29.68

ΔH@: 1.768 (10-15-92)
METER CORRECTION: 1.0295
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 1
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50' ____

HOT BOX NO.: 8
COLD BOX NO.: 8
PROBE NO.: 5-3
FILTER NO.: 132 QTZ
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp. T_m °F In	Meter Temp. T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
35.0		613.306	1.5	1.5	1.5	71	67	5.0	114	263	<68°F	250	1min/pt
33.6		614.007	1.6	1.6	1.6	72	68	5.0	114				
31.7		614.653	1.4	1.4	1.4	73	68	5.0	115	261	53	249	
29.6		615.250	1.1	1.1	1.1	74	69	4.0	116				
27.0		615.854	1.2	1.2	1.2	74	69	4.0	116	260	54	250	
23.2		616.441	1.2	1.2	1.2	74	70	4.0	116				
12.8		617.058	1.2	1.2	1.2	74	71	4.0	116	262	52	251	
9.0		617.680	1.2	1.2	1.2	75	71	4.0	117				
6.4		618.334	1.3	1.3	1.3	76	72	4.5	117	260	54	254	
4.3		618.952	1.2	1.2	1.2	77	72	4.0	117				
2.4		619.585	1.2	1.2	1.2	77	73	4.0	118	260	54	252	
1.0		620.022	1.2	1.2	1.2	77	73	4.0	118				

LEAK CHECK

	in Hg	Rate
Before		
After		

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			
5			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

(4)

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
DATE: 10-23-92
ΔH@: 1.768 (10-15-92)
HOT BOX NO.: 8
LOCATION: 19+20 Battery Pec
TEST NO.: CU2-1-3-3
METER CORRECTION: 1.0295
COLD BOX NO.: 8
ACTIVITY NO: Stack 1-3
NOZZLE: #34 0.180
PITOT CORRECTION: 0.84
PROBE NO.: 5-3
CONTROL BOX OPERATOR
STATIC PRESSURE Ps: 1.1
CONTROL BOX NO.: 1
FILTER NO.: 132 QTZ
PROBE HANDLER
PORT DIRECTION: South
NOMOGRAPH SET POINT:
STACK DIA.: 36"
CLEAN UP
BAROMETRIC PRESSURE 29.68
LENGTHS OF UMBILICAL ____ x 25' ____ x 50' ____

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
35.0		620.835	1.3	1.3	1.3	79	74	4.5	117	263	<68°F	250	1 min/pt
33.6		621.475	1.4	1.4	1.4	80	75	5.0	118				
31.7		622.143	1.4	1.4	1.4	81	75	5.0	120	261	58	255	
29.6		622.810	1.4	1.4	1.4	81	76	5.0	119				
27.0		623.460	1.3	1.3	1.3	81	77	4.5	121	259	57	250	
22.2		624.055	1.2	1.2	1.2	81	77	4.5	121				
12.8		624.652	1.0	1.0	1.0	82	78	4.0	122	262	58	251	
9.0		625.227	1.1	1.1	1.1	82	78	4.0	123				
6.4		625.840	1.2	1.2	1.2	83	79	4.5	123	265	59	260	
4.3		626.471	1.2	1.2	1.2	84	78	4.5	123				
2.4		627.105	1.1	1.1	1.1	84	79	4.0	123	261	59	251	
1.0		627.704	1.0	1.0	1.0	84	79	4.0	124				

LEAK CHECK

	in Hg	Rate
Before		
After		

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			
5			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

(5)

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19+20 Battery Rd
ACTIVITY NO: Stack 1-3
CONTROL BOX OPERATOR
PROBE HANDLER
CLEAN UP

DATE: 10-23-92
TEST NO.: CU2-1-3-3
NOZZLE: #34 0.180
STATIC PRESSURE Ps: 1.1
PORT DIRECTION: South
BAROMETRIC PRESSURE 27.68

ΔHP: 1.768 (10-15-92)
METER CORRECTION: 1.0295
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 1
NOMOGRAPH SET POINT:
LENGTHS OF UMBILICAL ____ x 25' ____ x 50'

HOT BOX NO.: 8
COLD BOX NO.: 8
PROBE NO.: 5-3
FILTER NO.: 132 QTZ
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp., T_m °F In	Meter Temp., T_m °F Out	Vacuum V_m in. Hg	Stack Temp. T_s °F	Probe Temp. T_p °F	Imp. Temp. T_I °C/°F	Hot Box Temp. T_H °F	Comments
1.0		628.258	1.0	1.0	1.0	84	80	3.5	124	263	<68°F	250	Leak pt
2.4		628.863	1.2	1.2	1.2	84	80	4.5	126				
4.3		629.463	1.1	1.1	1.1	85	81	4.0	127	260	60	253	
6.4		630.125	1.5	1.5	1.5	83	80	5.0	121				
9.0		630.843	1.2	1.2	1.2	84	81	4.5	125	255	58	248	
12.8		631.433	1.0	1.0	1.0	83	81	4.0	123				
27.2		632.051	1.1	1.1	1.1	84	81	4.0	123	262	57	251	
27.0		632.705	1.3	1.3	1.3	84	81	4.5	123				
29.6		633.365	1.4	1.4	1.4	85	82	5.0	124	263	59	250	
31.7		634.032	1.4	1.4	1.4	85	82	5.0	124				
33.6		634.721	1.5	1.5	1.5	86	82	5.0	126	258	59	250	
35.0		635.362	1.3	1.3	1.3	86	82	5.0	125				

LEAK CHECK

	in Hg	Rate
Before		
After		

ORSAT

	1	2	3
CO_2			
O_2			
CO			
N			

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			
5			

①

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19420 Battery PEC
ACTIVITY NO.: Stack 1-4
CONTROL BOX OPERTOR: JGB
PROBE HANDLER: JGB
CLEAN UP: at KER AQE Lab

DATE: 10-23-92
TEST NO.: CLR-1-4-3
NOZZLE: #45 0.214
STATIC PRESSURE Ps: +1.0
PORT DIRECTION: East
BAROMETRIC PRESSURE: 29.68

ΔH@: 1.756 (6-3-92)
METER CORRECTION: 0.9721
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 4
NOMOGRAPH SET POINT: —
LENGTHS OF UMBILICAL ___ x 25' 1 x 50'

HOT BOX NO.: 6
COLD BOX NO.: 6
PROBE NO.: 5-5
FILTER NO.: 133 Quartz
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0	925	418.575	1.0	1.93	1.95	55	53	6.0	88	235	44/43	250	1min/pt
33.6	933	420.218	1.0	1.93	1.95	54	55	6.0	89				
31.7	938	421.034	1.0	1.93	1.95	54	53	6.0	88	226	40	231	
29.6	947	421.840	1.0	1.93	1.95	55	53	6.0	88				
27.0	952	422.908	1.3	2.51	2.50	57	57	8.0	90	233	43	270	
23.2	958	423.904	1.3	2.51	2.50	56	55	8.0	90				
12.8	1013	424.906	1.2	2.32	2.30	58	56	7.5	94	245	46	248	
9.0	1018	425.835	1.2	2.32	2.30	57	56	7.0	94				
6.4	1024	426.859	1.3	2.51	2.50	58	58	8.0	92	239	47	246	
4.3	1033	427.895	1.4	2.71	2.70	60	59	8.5	95				$\%H_2O$ = 2%
2.4	1040	428.778	1.2	2.32	2.30	60	59	7.0	95	226	47	248	MW = 28.7
1.0	1047	429.618	1.0	1.93	1.95	59	60	6.0	94				

LEAK CHECK

	in. Hg.	Rate
Before	5.0	0.013
After	9.5	0.015

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.
OK 15sec	OK 15sec
OK 15sec	OK 15sec

Impinger No.	Final	Initial	Difference
1	569.3	562.4	6.9
2	564.2	562.2	2.0
3	482.8	482.8	0.0
4	624.0	613.5	10.5

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19+20 Battery ROC
ACTIVITY NO.: Stack 1-4
CONTROL BOX OPERTOR: SEB
PROBE HANDLER: SEB
CLEAN UP:

DATE: 10-23-92
TEST NO.: CLR-1-4-3
NOZZLE: #45 0.214
STATIC PRESSURE Ps: +1.0
PORT DIRECTION: East
BAROMETRIC PRESSURE: 29.68

ΔH@: 1.756 (6-3-92)
METER CORRECTION: 0.9721
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 4
NOMOGRAPH SET POINT: —
LENGTHS OF UMBILICAL: ___ x 25' 1 x 50'

HOT BOX NO.: 6
COLD BOX NO.: 6
PROBE NO.: 5-5
FILTER NO.: 133 Quartz
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
1.0	1052	430.548	1.0	1.93	1.95	61	60	6.0	~~2~~95	258	<68°F/51	~~250~~ 246	1 min/pt
2.4	1058	431.530	1.4	2.71	2.70	61	60	8.0	98				
4.3	1103	432.516	1.2	2.32	2.30	62	62	7.5	98	264	52	242	
6.4	1110	433.408	1.2	2.32	2.30	63	62	7.0	100				
9.0	1115	434.447	1.4	2.71	2.70	62	61	8.5	99	268	51	246	
12.8	1121	435.356	1.2	2.32	2.30	64	62	7.0	103				
23.2	1128	436.250	1.1	2.13	2.15	64	63	6.5	102	249	54	254	
27.0	1135	437.207	1.2	2.32	2.30	65	64	7.0	104				
29.6	1140	438.046	1.1	2.13	2.15	68	66	7.0	103	248	52	246	
31.7	1148	438.929	1.1	2.13	2.15	66	65	7.0	104				
33.6	1153	439.807	1.1	2.13	2.15	67	65	6.5	105	256	50	256	
35.0	1159	440.650	1.1	2.13	2.15	69	68	6.5	105				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19+20 Battery REC
ACTIVITY NO.: Stack #4
CONTROL BOX OPERTOR: DEB
PROBE HANDLER: DEB
CLEAN UP:

DATE: 10-23-92
TEST NO.: CLR-1-4-3
NOZZLE: #45 0.214
STATIC PRESSURE Ps: +1.0
PORT DIRECTION: East
BAROMETRIC PRESSURE: 29.68

ΔH@: 1.756 (6-3-92)
METER CORRECTION: 0.9721
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 4
NOMOGRAPH SET POINT: —
LENGTHS OF UMBILICAL ___ x 25' 1 x 50'

HOT BOX NO.: 6
COLD BOX NO.: 6
PROBE NO.: 55
FILTER NO.: 133 Quartz
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0	1216	441.440	1.0	1.93	1.95	70	68	6.0	105	261	~~68°F~~ 52	~~250~~ 254	1 min/pt
33.6	1222	442.252	1.0	1.93	1.95	72	71	6.0	109				
31.7	1228	443.202	1.4	2.71	2.70	70	70	8.0	108	257	50	258	
29.6	1234	444.063	1.1	2.13	2.15	73	69	7.0	109				
27.0	1239	444.980	1.2	2.32	2.30	72	71	7.5	110	253	51	255	
23.2	1247	445.824	1.0	1.94	1.95	73	72	6.5	112				
12.8	1253	446.797	1.1	2.13	2.15	74	73	7.0	109	243	51	258	
9.0	1259	447.544	1.2	2.32	2.30	75	75	7.0	110				
6.4	1305	448.450	1.2	2.32	2.30	76	75	7.0	111	252	53	246	
4.3	1311	449.432	1.3	2.51	2.50	77	76	8.0	111				
2.4	1317	450.417	1.3	2.51	2.50	76	76	8.0	111	250	54	250	
1.0	1325	451.233	1.0	1.94	1.95	78	76	6.5	113				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19+20 Battery PCC
ACTIVITY NO.: Stack C 1-4
CONTROL BOX OPERTOR: [illegible]
PROBE HANDLER: [illegible]
CLEAN UP:

DATE: 10-23-92
TEST NO.: CLR-1-4-3
NOZZLE: #45 0.214
STATIC PRESSURE Ps: +1.0
PORT DIRECTION: South
BAROMETRIC PRESSURE: 29.68

ΔH@: 1.756 (6-3-92.)
METER CORRECTION: 0.9721
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 4
NOMOGRAPH SET POINT: –
LENGTHS OF UMBILICAL ___ x 25' 1 x 50'

HOT BOX NO.: 6
COLD BOX NO.: 6
PROBE NO.: 5-5
FILTER NO.: 133 Quartz
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
35.0	1331	452.188	1.4	2.71	2.70	77	76	8.0	112	246	~~68~~ 52	~~250~~ 254	1 min/pt
33.6	1337	453.156	1.4	2.71	2.70	77	77	8.0	113				
31.7	1343	454.277	1.5	2.90	2.90	78	77	9.5	114	265	59	242	
29.6	1349	455.336	1.5	2.90	2.90	79	79	9.2	118				
27.0	1356	456.356	1.3	2.51	2.50	78	78	8.0	116	272	55	240	
23.2	1400	457.291	1.2	2.32	2.30	80	82	7.0	117				
12.8	1406	458.111	1.0	1.94	1.95	83	84	6.0	117	273	56	242	
9.0	1412	458.945	1.0	1.94	1.95	83	83	6.0	119				
6.4	1417	459.903	1.3	2.51	2.50	82	82	8.0	118	252	57	242	
4.3	1424	460.966	1.3	2.51	2.50	82	83	8.0	118				
2.4	1429	461.873	1.1	2.13	2.15	81	83	7.0	118	250	55	242	
1.0	1435	462.801	1.2	2.32	2.32	84	83	~~6~~ 7.0	120				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

KEYSTONE
ENVIRONMENTAL RESOURCES, INC.

STACK SAMPLING DATA SHEET

PLANT: USS Clairton Works
LOCATION: 19+20 Battery REC
ACTIVITY NO.: Stack 4-4
CONTROL BOX OPERTOR: DEG
PROBE HANDLER: DEG
CLEAN UP: —

DATE: 10-23-92
TEST NO.: CLR-1-4-3
NOZZLE: #45 0.214
STATIC PRESSURE Ps: +1.0
PORT DIRECTION: South
BAROMETRIC PRESSURE: 29.68

ΔH@: 1.756 (6-3-92)
METER CORRECTION: 0.9721
PITOT CORRECTION: 0.84
CONTROL BOX NO.: 4
NOMOGRAPH SET POINT: —
LENGTHS OF UMBILICAL ___ x 25' 1 x 50'

HOT BOX NO.: 6
COLD BOX NO.: 6
PROBE NO.: 5-5
FILTER NO.: 133 Quartz
STACK DIA.: 36"

Point	Time	Meter Reading (dry) CF	Velocity HD in. H_2O	Orifice ΔH in. H_2O Req.	Orifice ΔH in. H_2O Act.	Meter Temp °F In	Meter Temp °F Out	Vacuum in. Hg	Stack Temp °F	Probe Temp °F	Imp. Temp. °C/°F	Hot Box °F	Comments
1.0	1440	463.709	1.2	2.32	2.30	83	82	7.0	119	239	~~68~~ 54	~~250~~ 230	1 min pt
2.4	1448	464.246	1.4	2.71	2.70	86	85	8.5	124				
4.3	1453	465.704	1.2	2.32	2.30	86	86	7.0	127	247	55	242	shift change
6.4	1517	466.655	1.3	2.51	2.50	86	84	8.0	121				
9.0	1523	467.546	1.1	2.13	2.15	84	85	6.5	124	253	53	240	
12.8	1533	468.379	1.0	1.94	1.95	85	85	6.0	123				
23.2	1539	469.326	1.2	2.32	2.30	85	86	7.0	122	250	55	246	
27.0	1547	470.308	1.3	2.51	2.50	84	85	8.0	122				
29.6	1556	471.388	1.6	3.09	3.10	84	84	9.5	123	246	57	240	
31.7	1602	472.475	1.6	3.09	3.10	86	85	9.5	123				
33.6	1608	473.637	1.6	3.09	3.10	85	86	9.5	124	239	57	238	
35.0	1615	474.616	1.4	2.71	2.70	86	85	8.5	124				

LEAK CHECK

	in. Hg.	Rate
Before		
After		

ORSAT

	1	2
CO_2		
O_2		
CO		
N		

PITOT LEAK CHECK

POS.	NEG.

Impinger No.	Final	Initial	Difference
1			
2			
3			
4			

PAGE # 1

VISIBLE EMISSIONS OBSERVATIONS FORM

OBSERVER: BERNIE MAY

DATE: 10-21-92

FACILITY: U.S.R. CLAIRTON

OBSERVATION: START TIME: _____

END TIME: _____

OBSERVATION POINT: _____

SOURCE: 19 & 20 BAG HOUSE

DISTANCE: 150 FT.

DIRECTION FROM: S. E

HEIGHT: 100 FT.

WIND:

SPEED: 13 MPH

DIRECTION: S. W

TEMPERATURE: 52°

SKY CONDITION: 100%

BACKGROUND: SKY

READING CONDITIONS: FAIR

COLOR OF EMISSION: _____

TOTAL No. OF READINGS: _____

No. READINGS >= 20% _____

No. READINGS >= 60% _____

GREATEST OPACITY: _____

CREW: A FOREMAN: LEWIS

COMMENTS: BAG HOUSE READINGS

PAGE # 1

B7-19	0	0	0	0	0	9:22	30					
B5-20	1	0	0	0	0	9:28	31					
B7-20	2	0	0	0	0	9:36	32					
B9-20	3	0	0	0	0	9:44	33					
B11-20	4	0	0	0	0	9:54	34					
B13-20	5	0	0	0	0	10:4	35					
B7-19	6	0	0	0	0	10:10	36					
B11-19	7	0	0	0	0	10:22	37					
B15-20	8	0	0	0	0	10:27	38					
B13-19	9	0	0	0	0	10:35	39					
B17-20	10	0	0	0	0	10:40	40					
B15-19	11	0	0	0	0	10:46	41					
B17-19	12	0	0	0	0	10:59	42					
B19-20	13	0	0	0	0	11:04	43					
B19-19	14	0	0	0	0	11:12	44					
B21-20	15	0	0	0	0	11:18	45					
B21-19	16	0	0	0	0	11:24	46					
B23-19	17	0	0	0	0	11:29	47					
B23-20	18	0	0	0	0	11:39	48					
B25-19	19	0	0	0	0	11:45	49					
B25-20	20	0	0	0	0	11:51	50					
B27-19	21	0	0	0	0	11:58	51					
B27-20	22	0	0	0	0	12:03	52					
B29-19	23	0	0	0	0	12:09	53					
B29-20	24	0	0	0	0	12:14	54					
C2-19	25	0	0	0	0	12:20	55					
C2-20	26	0	0	0	0	12:26	56					
C4-19	27	0	0	0	0	12:32	57					
C4-20	28	0	0	0	0	12:37	58					
C6-19	29	0	0	0	0	12:43	59					

PAGE #2

VISIBLE EMISSIONS OBSERVATIONS FORM

PAGE #2

OBSERVER: BERNIE MAY

DATE: 10-21-92

FACILITY: U.S. KLAIRTON

OBSERVATION: START TIME: _____

END TIME: _____

OBSERVATION POINT: _____

SOURCE: 19 & 20 BAGHOUSE

DISTANCE: 150 FT.

DIRECTION FROM: S.E

HEIGHT: 100 FT.

WIND:

SPEED: 13 MPH.

DIRECTION: S.W

TEMPERATURE: 52°

SKY CONDITION: _____

BACKGROUND: SKY

READING CONDITIONS: FAIR

COLOR OF EMISSION: _____

TOTAL No. OF READINGS: _____

No. READINGS >= 20% _____

No. READINGS >= 60% _____

GREATEST OPACITY: _____

CREW: A FOREMAN: LEWIS

COMMENTS: BAG HOUSE READINGS

C 6-20	0	0	0	0	0	12:49	30					
C8-19	1	0	0	0	0	12:55	31					
C8-20	2	0	0	0	0	1:00	32					
C10-19	3	0	0	0	0	1:06	33					
C10-20	4	0	0	0	0	1:12	34					
C12-19	5	0	0	0	0	1:18	35					
C14-20	6	0	0	0	0	1:42	36					
C16-19	7	0	0	0	0	1.48	37					
C16-20	8	0	0	0	0	1:53	38					
C18-20	9	0	0	0	0	1:59	39					
C18-19	10	0	0	0	0	2:05	40					
C20-19	11	0	0	0	0	2:10	41					
C20-20	12	0	0	0	0	2:16	42					
C22-19	13	0	0	0	0	2:22	43					
C22-20	14	0	0	0	0	2:28	44					
C24-19	15	0	0	0	0	2:33	45					
C24-20	16	0	0	0	0	2:39	46					
C26-19	17	0	0	0	0	3.03	47					
C26-20	18	0	0	0	0	3:09	48					
C28-19	19	0	0	0	0	3:16	49					
C28-20	20	0	0	0	0	3:22	50					
A7-19	21	0	0	0	0	3:28	51					
A1-20	22	0	0	0	0	3:35	52					
A9-19	23	0	0	0	0	3:42	53					
A3-20	24	0	0	0	0	3:47	54					
A11-19	25	0	0	0	0	3:53	55					
A5-20	26	0	0	0	0	3:58	56					
A13-19	27	0	0	0	0	4:13	57					
A9-20	28	0	0	0	0	4:18	58					
A15-19	29	0	0	0	0	4:25	59					

USX CORPORATION – USS CLAIRTON WORKS
EMISSION CONTROL REPORT – P.E.C. SYSTEM

Battery 19, 20 Date: 10/21/92

Batt. #	Oven Observ.	PUSHING Sec. >=20%	PUSHING Max. Opacity	TRAVEL Sec. >10%	TRAVEL Max. Opacity	Pushing Performance	Travel Performance
19	B-7	0	15%	10	15%	100%	0%
20	B-5	0	5%	0	10%	100%	100%
20	B-7	0	0%	0	10%	100%	100%
20	B-9	0	0%	0	50%	100%	100%
20	B-11	0	0%	34	80%	100%	0%
20	B-13	0	0%	0	5%	100%	100%
19	B-9	0	0%	36	55%	100%	0%
19	B-11	0	5%	10	15%	100%	0%
20	B-15	0	0%	0	5%	100%	100%
19	B-13	0	0%	0	0%	100%	100%
20	B-17	0	0%	0	5%	100%	100%
19	B-15	0	0%	0	10%	100%	100%
19	B-17	0	0%	0	0%	100%	100%
20	B-19	0	0%	0	0%	100%	100%
19	B-19	0	0%	0	0%	100%	100%
20	B-21	0	5%	0	5%	100%	100%
19	B-21	0	15%	0	10%	100%	100%
19	B-23	0	0%	0	0%	100%	100%
20	B-23	0	0%	0	0%	100%	100%
19	B-25	0	0%	25	75%	100%	0%
20	B-25	0	0%	0	0%	100%	100%
19	B-27	0	0%	0	5%	100%	100%
20	B-27	0	15%	23	25%	100%	0%
19	B-29	0	0%	0	0%	100%	100%
20	B-29	0	0%	0	0%	100%	100%
19	C-2	0	10%	18	30%	100%	0%
20	C-2	0	0%	0	0%	100%	100%
19	C-4	0	0%	0	0%	100%	100%
20	C-4	0	0%	9	30%	100%	0%
19	C-6	0	0%	0	0%	100%	100%
20	C-6	0	15%	39	50%	100%	0%
19	C-8	0	0%	0	10%	100%	100%
20	C-8	0	5%	26	40%	100%	0%
19	C-10	0	5%	35	80%	100%	0%
20	C-10	0	10%	6	20%	100%	0%
19	C-12	0	10%	0	10%	100%	100%
20	C-14	0	5%	0	5%	100%	100%
19	C-16	0	10%	29	45%	100%	0%
20	C-16	0	5%	0	10%	100%	100%
19	C-18	0	10%	20	30%	100%	0%
20	C-18	0	5%	0	10%	100%	100%
19	C-20	0	0%	0	0%	100%	100%
20	C-20	0	5%	0	10%	100%	100%
19	C-22	0	0%	0	10%	100%	100%
20	C-22	0	5%	0	10%	100%	100%
19	C-24	0	0%	0	5%	100%	100%
20	C-24	0	5%	0	10%	100%	100%
19	C-26	0	0%	10	25%	100%	0%
20	C-26	0	0%	0	10%	100%	100%
19	C-28	0	5%	0	10%	100%	100%
20	C-28	0	0%	0	10%	100%	100%
19	A-7	0	0%	0	10%	100%	100%
20	A-1	0	0%	0	5%	100%	100%
19	A-9	0	0%	0	10%	100%	100%
20	A-3	0	0%	0	10%	100%	100%
19	A-11	0	0%	0	10%	100%	100%
20	A-5	0	15%	22	30%	100%	0%
19	A-13	0	0%	8	15%	100%	0%
20	A-9	0	0%	0	10%	100%	100%
19	A-15	0	0%	0	10%	100%	100%
TOTAL	60	0.00 AVG. SEC.		6.00 AVG. SEC.		100.00% (PERFORMANCE)	71.67% (PERFORMANCE)
# In Compliance		60		43			

Name [illegible]
Date 10-21-92
Foreman D. Lewis Crew A

BATTERY 19-20

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:
19	B-7	9:22	0-15%	10-15%	1 —	Coke Face not Visible
20	B-5	9:28	0-5%	0-10%	2 —	Good Face At Top Hook
20	B-7	9:36	0	0-10%	3 —	Slight Green Face At Top Hook
20	B-9	9:44	0	0-5%	4 —	Good Face At Top Latch
20	B-11	9:54	0	:34-80%	5 —	Good Coke Face
20	B-13	10:04	0	0-5%	6 —	Good Face At Top Hook
19	B-9	10:10	0	:36-55%	7 —	Good Face At Top Hook
19	B-11	10:22	0-5%	10-15%	8 —	Coke Face not Visible
20	B-15	10:27	0	0-5%	9 —	Good Face At Top Hook
19	B-13	10:35	0	0	10 —	Coke Face Not Visible
20	B-17	10:40	0	0-5%	11 —	Slight Green Face At Top Hook
19	B-15	10:46	0	0-10%	12 —	Good Face At Top Hook
19	B-17	10:59	0	0	13 —	Coke Face not Visible
20	B-19	11:04	0	0	14 —	Good Face At Top Latch
19	B-19	11:12	0	0	15 —	Slight Green Face At Top Latch
20	B-21	11:18	0-5%	0-5%	16 —	Slight Green Face At Top Hook
19	B-21	11:24	0-15%	0-10%	17 —	Good Face At Top Latch
19	B-23	11:34	0	0	18 —	No Face Tracing To Top Hook
20	B-23	11:39	0	0	19 —	Good Face At 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

Name [illegible]
Date 10-21-92
Foreman D. Lewis Crew A

BATTERY 19-20 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:
19	B-25	11:45	0	:25 - 75%	20	—	Good face at Top Hook
20	B-25	11:51	0	0	21	—	Coke face not Visible
19	B-27	11:58	0	0 - 5%	22	—	Good face at Top Hook
20	B-27	12:03	0 - 15%	:23 - 25%	23	—	Green face at Top Hook
19	B-29	12:09	0	0	24	—	Slight Green face at Top Lat
20	B29	1214	0	0	25	—	Good Face top Hoo
19	C 2	1220	0 = 10%	18 = 30%	26	—	Face ok top Hoo
20	C 2	1226	0	0	27	—	Face ok. top Hoo
19	C4	1232	0	0	28	—	Face ok top Lat
20	C4	1237	0	9 = 30%	29	—	Face ok top Hook
19	C6	1243	0	0	30	—	" " top Lat
20	C 6	1249	0 = .15	:39 = 50%	31	—	Blocked
19	C 8	1255	0	0 - 10	32	—	Face ok top Hook
20	C-8	13:00	0 - 5%	:26 = 40%	33	—	Coke face not Visible
19	C-10	13:06	0 - 5%	:35 = 50%	34	—	Slight Green face at Top Lat
20	C-10	13:12	0 - 10%	:6 = 20%	35	—	Coke face not Visible
19	C-12	13:18	0 - 10%	0 - 10%	36	—	Good face at Top Hook
19	C-14	13:35	No	Hood	37	—	Slight Green coke face at Top Ho
20	C-14	13:42	0 - 5%	0 - 5%	38	—	Good face at 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

Name [illegible]
Date 10-21-92
Foreman D. Lewis Crew A

BATTERY 19-20

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:
19	C-16	13:48	0 - 10%	:29 = 45%	38 —	Slight Green Face at Top Hook
20	C-16	13:53	0 - 5%	0 = 10%	39 —	Good Face At Top Hook
19	C-18	13:59	0 - 10%	:20 = 30%	40 —	Slight Green Face at Top Hook
20	C-18	14:05	0 - 5%	0 = 10%	41 —	Slight Green Face at Top Hook
19	C-20	14:10	0	0	42 —	Good Face at Top Hook
20	C-20	14:16	0 - 5%	0 - 10%	43 —	Green Coke Face at Top Hook
19	C-22	14:22	0	0 - 10%	44 —	Good Face at Top Hook
20	C-22	14:28	0 - 5%	0 - 10%	45 —	Coke Face not Visible
19	C-24	14:33	0	0 - 5%	46 —	Good Face Below Top Hook
20	C-24	14:39	0 - 5%	0 - 10%	47 —	Coke Face not Visible
19	C-26	15:03	0	:10 - 25%	48 Start B Crew	Coke Face not Visible
20	C-26	15:09	0	0 - 10%	49 —	Slight Green Coke Face at Top Hoo
19	C-28	15:16	0 - 5%	0 - 10%	50 —	Good Face at Number Plate
20	C-28	15:22	0	0 - 10%	51 —	Good Face at Top Hook
19	A-7	15:28	0	0 - 10%	52 —	Good Face at Top Hook
20	A-1	15:35	0	0 - 5%	53 —	Coke Face not Visible
19	A-9	15:42	0	0 - 10%	54 —	Good Face at Top Hook
20	A-3	15:47	0	0 - 10%	55 —	Good Face at Top Latch
19	A-11	15:53	0	0 - 10%	56 —	Good Face at 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

Name Paul Parsons

Date 10/22/92

#3

P.E.C. TEST KEYSTONE

Foreman LEWIS Crew A

BATTERY 19-20

	Oven	Time	I. PUSH Seconds Max. ≥ 20% Opac.		II. TRAVEL* Seconds Max. > 10% Opac.		III. SCRUBBER Seconds Max. ≥ 20% Opac.	Comments:
20	A-23	12:28	0	0%	0	0%		FACE-TOP HOOK SLIGHT GREEN
19	A-29	12:35	0	0%	0	0%		FACE-HOOK GOOD
20	A-25	12:40	0	0%	0	5%		FACE-HOOK Very Green
19	B-2	12:47	0	0%	70	75%	OUT OF COMPLIANCE	FACE-LOW NAMEPLATE-GOOD FAC
20	B-2	12:56	0	0%	0	10%		FACE-HOOK SLIGHT GREEN
19	B-4	13:02	0	0%	0	0%		FACE-LATCH GOOD
20	B-4	13:07	0	15%	0	10%		FACE-HOOK Very Green
19	B-6	13:14	0	0%	12	50%	OUT OF COMPLIANCE	FACE-HOOK Good Face
20	B-6	13:20	0	10%	0	0%		FACE-LATCH Very Green
19	B-8	13:26	0	0%	0	0%		FACE-HOOK GOOD
20	B-8	13:32	0	0%	10	75%	OUT OF COMPLIANCE	FACE-latch Very Green
19	B-10	13:39	0	0%	0	0%		FACE-latch GOOD FACE
20	B-10	13:44	0	0%	0	5%		FACE-latch Good Face
19	B-12	13:50	0	15%	0	10%		FACE-HOOK SLIGHT Green
20	B-12	13:55	0	0%	0	0%		FACE HOOK Good Face
19	B-14	14:02	0	0%	0	0%		FACE-HIGH-LATCH Good Face
20	B-14	14:07	0	0%	0	0%		View Blocked
19	B-16	14:13	0	0%	0	0%		FACE-HOOK SLIGHT-GREEN
20	B-16	14:20	0	0%	0	5%		FACE SLIGHT GREEN

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

Page 3 of 4

Name [illegible]
Date 10-23-92
Foreman D-Lewis Crew A

BATTERY 19-20 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:
20	C-21	13:39	0	0-10%	39 —	Coke face not visible
19	C-19	13:45	0-10%	:20-:30%	40 —	Good coke face at top hook
20	C-23	13:51	0	0-10%	41 —	Coke face not visible
19	C-21	13:57	0	0	42 —	Good face at top latch
20	C-25	14:02	0	0-10%	43 —	Good face at top hook
19	C-23	14:08	0	0-10%	44 —	Good face at top hook
20	C-27	14:14	0-5%	0-10%	45 —	Slight green face at top hook
19	C-25	14:20	0	0	46 —	Good face at top hook
20	C-29	14:25	0-5%	0-5%	47 —	Green face at top hook
19	C-27	14:31	0-5%	0-5%	48 —	Good face at lumber plate
20	A-2	14:37	0	0	49 —	Slight green face at top hook
19	C-29	14:44	0-10%	0-10%	50 —	Good face at top hook
20	A-4	14:49	0	0-10%	51 —	Good face at top latch
19	A-6	15:13	0	0-10%	52 Smart's call	Coke face not visible
20	A-6	15:19	0	0-10%	53 —	Good face at top hook
19	A-2	15:31	0	0	54 —	No coke face
20	A-8	15:36	0	0-10%	55 —	Good coke face at top hook
19	A-8	15:43	0	0	56 —	Good face at top hook
20	A-29	15:52	0	0-10%	57 —	Good face at top hook

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

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

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

* 13-15 Travel > 10% Opacity

CC-10285 REV. 1101
03.001.0620

UNITED STATES STEEL CORPORATION
CLAIRTON COKE AND COAL CHEMICAL WORKS

PUSHING AND CHARGING REPORT

UNIT NO. 7

12 Hrs. Beginning 12:00 P M

Date 10-22-92

22
1

BATTERY NO. A-19

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	3	52	4	59	
3					
5					
7					
9			11	08	
11			11	21	
13			11	33	
15	11	10	11	45	
17	11	23	11	56	
19	11	35	12	08	
21	11	47	12	20	
23	11	58	12	32	
25	12	10	12	44	
27	12	22	1	—	
29	12	34	1	11	
31	X	X	X	X	
2					
4					
6	7	42	8	16	
8	7	54	8	30	
10	8	07	8	40	
12	8	18	8	49	
14	8	32	9	03	
16	8	42	9	15	
18	8	51	9	27	
20	9	05	9	38	
22	9	17	9	50	
24	9	29	10	06	
26	9	40	10	13	
28	9	52	10	31	
30					
1					
2					

BATTERY NO. B-19

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	10	08			
3	10	15			
5	10	33			
7					
9					
11					
13					
15					
17					
19					
21					
23					
25					
27					
29					
31	X	X	X	X	
2	12	46	1	23	
4	1	02	1	36	
6	1	13	1	48	
8	1	25	2	—	
10	1	38	2	12	
12	1	50	3	12	
14	2	02	3	26	
16	2	14	3	38	
18	3	14	4	03	
20	3	28	4	15	
22	3	40	4	25	
24					
26	4	05	4	28	
28	4	17	5	—	
30					
1					
2					

BATTERY NO. C-19

OVEN NO.	TIME PUSHED		TIME CHARGED		NOTES
1	4	27	5	12	
3	4	30	5	24	
5	5	02	5	36	
7	5	14	5	48	
9	5	26	6	—	
11	5	38	6	12	
13	5	50	6	23	
15	6	02	6	35	
17	6	14	6	49	
19	6	25	7	02	
21	6	37	7	12	
23	6	51	7	26	
25	7	04	7	40	
27	7	14	7	52	
29	7	28	8	05	
31	X	X	X	X	
2					
4					
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					
26					
28					
30					
1					
2					

REMARKS: 21/24 16/13 15/15

Condition of Signals

Condition of Pusher

HOURLY REPORT OF OPERATION

TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED	TIME	OVENS PUSHED	OVENS CHARGED	OVENS SCHEDULED
11	5	5		6-7	5	5	
12	4	4		7-8	5	5	
1	5	5		8-9	5	5	
2	2	2		9-10	5	5	
4-5	4	3		10-11	5	5	
5-6	4	5		11-12	3	3	
	24	24			28	28	

Total Ovens Pushed 52

Total Ovens Charged 52

Pusherman

Battery Foreman [illegible]

OCT 27 '92 16:30 FROM COKING OFFICE TO BOB BROWN PAGE.001

PUSHING SCHEDULE

Wednesday, October 21, 1992 Turn 1
Batteries: 19-20

Seq #	Oven	Last Pushed	Earliest	Desired	Latest
1	A25/19	0:00	10:50pm	11:00pm	11:10pm
2	A25/20	0:00	10:57pm	11:06pm	11:16pm
3	A27/19	0:00	11:03pm	11:13pm	11:23pm
4	A27/19	0:00	11:10pm	11:20pm	11:30pm
5	B2 /19	0:00	11:17pm	11:27pm	11:37pm
6	B2 /20	0:00	11:23pm	11:33pm	11:43pm
7	A5 /19	0:07	11:30pm	11:40pm	11:50pm
8	B4 /20	0:00	11:37pm	11:47pm	11:57pm
9	B6 /19	0:00	11:44pm	11:54pm	12:04am
10	B6 /20	18:54	11:50pm	12:00am	12:10am
11	B8 /19	18:54	11:57pm	12:07am	12:17am
12	B8 /20	18:54	12:04am	12:14am	12:24am
13	B10/19	18:55	12:11am	12:21am	12:31am
14	B10/20	18:54	12:17am	12:27am	12:37am
15	A26/20	19:01	12:24am	12:34am	12:44am
16	B12/19	19:01	12:31am	12:41am	12:51am
17	B12/20	19:02	12:38am	12:48am	12:58am
18	B14/19	19:01	12:44am	12:54am	1:04am
19	B14/20	19:01	12:51am	1:01am	1:11am
20	B16/19	19:02	12:58am	1:08am	1:18am
21	B16/20	19:02	1:05am	1:15am	1:25am
22	B18/19	19:01	1:11am	1:21am	1:31am
23	B18/20	19:02	1:18am	1:28am	1:38am
24	B20/19	19:02	1:25am	1:35am	1:45am
25	B20/20	19:02	1:32am	1:42am	1:52am
26	B22/19	19:03	1:39am	1:49am	1:59am
27	B22/20	19:02	1:45am	1:55am	2:05am
28	B24/19	19:02	1:52am	2:02am	2:12am
29	B24/20	19:03	1:59am	2:09am	2:19am
30	B26/19	19:03	2:06am	2:16am	2:26am
31	B26/20	19:03	2:12am	2:22am	2:32am
32	B28/19	19:02	2:19am	2:29am	2:39am
33	B28/20	19:02	2:26am	2:36am	2:46am
34	C1 /19	19:02	2:33am	2:43am	2:53am
35	C1 /20	19:01	2:39am	2:49am	2:59am
36	C3 /19	19:01	2:46am	2:56am	3:06am
37	C3 /20	19:01	2:53am	3:03am	3:13am
38	C5 /19	19:01	3:00am	3:10am	3:20am
39	C5 /20	19:00	3:06am	3:16am	3:26am
40	C7 /19	19:00	3:13am	3:23am	3:33am
41	C7 /20	19:00	3:20am	3:30am	3:40am
42	C9 /19	19:00	3:27am	3:37am	3:47am
43	C9 /20	18:59	3:33am	3:43am	3:53am
44	C11/19	18:59	3:40am	3:50am	4:00am
45	C11/20	18:59	3:47am	3:57am	4:07am
46	C13/19	18:59	3:54am	4:04am	4:14am
47	C13/20	18:58	4:00am	4:10am	4:20am
48	C15/19	18:58	4:07am	4:17am	4:27am
49	C15/20	18:58	4:14am	4:24am	4:34am
50	C17/19	18:58	4:21am	4:31am	4:41am
51	C17/20	18:58	4:28am	4:38am	4:48am
52	C19/19	18:58	4:34am	4:44am	4:54am
53	C19/20	18:57	4:41am	4:51am	5:01am
54	C21/19	18:57	4:48am	4:58am	5:08am
55	C21/20	18:57	4:55am	5:05am	5:15am
56	C23/19	18:57	5:01am	5:11am	5:21am
57	C23/20	18:56	5:08am	5:18am	5:28am
58	C25/19	18:56	5:15am	5:25am	5:35am
59	C25/20	18:56	5:22am	5:32am	5:42am
60	C27/19	18:56	5:28am	5:38am	5:48am
61	C27/20	18:55	5:35am	5:45am	5:55am
62	C29/19	18:46	5:42am	5:52am	6:02am
63	C29/20	18:46	5:49am	5:59am	6:09am
64	A1 /20	18:39	5:55am	6:05am	6:15am
65	A4 /20	18:39	6:02am	6:12am	6:22am
66	A6 /19	18:39	6:09am	6:19am	6:29am
67	A6 /20	18:46	6:16am	6:26am	6:36am
68	A8 /19	18:37	6:22am	6:32am	6:42am
69	A8 /20	18:39	6:29am	6:39am	6:49am
70	A10/19	18:40	6:35am	6:45am	6:55am
71	A10/20	18:40	6:42am	6:52am	7:02am

- A27/20 - A29/20 - B4/19 - A21/19 - A W/19
- A14/20
+ A5/19 W B2/20 + A26/20 W B10/20

PUSHING SCHEDULE

Thursday, October 22, 1992 Turn 2
Batteries: 19-20

Seq #	Oven	Last Pushed	Earliest	Desired	Latest
1	C2 /19	18:47	6:50am	7:00am	7:25am
2	C2 /20	18:46	6:57am	7:06am	7:31am
3	C4 /19	18:47	7:03am	7:13am	7:30am
4	C4 /20	18:47	7:10am	7:20am	7:45am
5	C6 /19	18:47	7:17am	7:27am	7:55am
6	C6 /20	18:47	7:24am	7:34am	7:52am
7	C8 /19	18:47	7:31am	7:41am	8:06am
8	C8 /20	18:47	7:38am	7:48am	8:13am
9	C10/19	18:47	7:45am	7:55am	8:20am
10	C10/20	18:47	7:52am	8:02am	8:27am
11	C12/19	18:47	7:59am	8:09am	8:34am
12	C12/20	18:47	8:06am	8:16am	8:41am
13	C14/19	18:47	8:13am	8:23am	8:40am
14	C14/20	18:47	8:20am	8:30am	8:55am
15	C16/19	18:47	8:27am	8:37am	9:02am
16	C16/20	18:47	8:34am	8:44am	9:09am
17	C18/19	18:47	8:41am	8:51am	9:12am
18	C18/20	18:47	8:48am	8:58am	9:15am
19	C20/19	18:47	8:55am	9:05am	9:30am
20	C20/20	18:47	9:02am	9:12am	9:37am
21	C22/19	18:47	9:09am	9:19am	9:44am
22	C22/20	18:47	9:16am	9:26am	9:51am
23	C24/19	18:47	9:23am	9:33am	9:58am
24	C24/20	18:47	9:30am	9:40am	10:05am
25	C26/19	18:46	9:36am	9:46am	10:11am
26	C26/20	18:47	9:43am	9:53am	10:18am
27	C28/19	18:47	9:50am	10:00am	10:25am
28	C28/20	18:47	9:57am	10:07am	10:32am
29	A1 /20	18:48	10:04am	10:14am	10:39am
30	A3 /20	18:48	10:11am	10:21am	10:46am
31	A5 /20	18:48	10:18am	10:28am	10:53am
32	A7 /19	18:49	10:25am	10:35am	11:00am
33	A7 /20	18:49	10:32am	10:42am	11:07am
34	A9 /19	18:50	10:39am	10:49am	11:14am
35	A9 /20	18:50	10:46am	10:56am	11:21am
36	A11/19	18:50	10:53am	11:03am	11:28am
37	A11/20	18:50	11:00am	11:10am	11:35am
38	A13/19	18:51	11:07am	11:17am	11:42am
39	A13/20	18:51	11:14am	11:24am	11:49am
40	A15/19	18:51	11:21am	11:31am	11:56am
41	A15/20	18:52	11:28am	11:38am	12:03pm
42	A17/19	18:52	11:35am	11:45am	12:10pm
43	A17/20	18:52	11:42am	11:52am	12:17pm
44	A19/19	18:53	11:49am	11:59am	12:24pm
45	A19/20	18:53	11:56am	12:06pm	12:31pm
46	A21/19	18:53	12:03pm	12:13pm	12:38pm
47	A21/20	18:54	12:10pm	12:20pm	12:45pm
48	A23/19	18:54	12:16pm	12:26pm	12:51pm
49	A23/20	18:54	12:23pm	12:33pm	12:58pm
50	A25/19	18:54	12:30pm	12:40pm	1:05pm
51	A25/20	18:54	12:37pm	12:47pm	1:12pm
52	A27/19	18:55	12:44pm	12:54pm	1:19pm
53	A29/19	18:48	12:51pm	1:01pm	1:26pm
54	B2 /19	18:42	12:58pm	1:08pm	1:33pm
55	B2 /20	18:42	1:05pm	1:15pm	1:40pm
56	B4 /19	18:42	1:12pm	1:22pm	1:47pm
57	B4 /20	18:43	1:19pm	1:26pm	1:54pm
58	B6 /19	18:43	1:26pm	1:36pm	2:01pm
59	B6 /20	18:44	1:33pm	1:43pm	2:08pm
60	B8 /19	18:44	1:40pm	1:50pm	2:15pm
61	B8 /20	18:44	1:47pm	1:57pm	2:22pm
62	B10/19	18:45	1:54pm	2:04pm	2:29pm
63	B10/20	18:45	2:01pm	2:11pm	2:36pm
64	B12/19	18:45	2:08pm	2:18pm	2:43pm
65	B12/20	18:46	2:15pm	2:25pm	2:50pm
66	B14/19	18:46	2:22pm	2:32pm	2:57pm
67	B14/20	18:46	2:29pm	2:39pm	3:04pm
68	B16/19	18:46	2:36pm	2:46pm	3:11pm
69	B16/20	18:47	2:43pm	2:53pm	3:18pm

$-A\frac{1}{19}-A\frac{3}{19}-A\frac{5}{19}-A\frac{17}{20}-A\frac{19}{20}$

PUSHING SCHEDULE

Thursday, October 22, 1992 Turn 3
Batteries: 19-20

Seq #	Oven	Last Pushed	Earliest	Desired	Latest
1	B18/19	18:47	2:50pm	3:00pm	3:10pm
2	B18/20	18:46	2:57pm	3:06pm	3:15pm
3	B20/19	18:47	3:03pm	3:13pm	3:23pm
4	B20/20	18:47	3:10pm	3:20pm	3:30pm
5	B22/19	18:46	3:16pm	3:26pm	3:36pm
6	B22/20	18:47	3:23pm	3:33pm	3:43pm
7	A1 /19	18:54	3:30pm	3:40pm	3:50pm
8	B24/20	18:53	3:36pm	3:46pm	3:56pm
9	B26/19	18:53	3:43pm	3:53pm	4:03pm
10	B26/20	18:54	3:49pm	3:59pm	4:10pm
11	B28/19	18:53	3:56pm	4:06pm	4:16pm
12	B28/20	18:53	4:03pm	4:13pm	4:23pm
13	C1 /19	18:54	4:10pm	4:20pm	4:30pm
14	C1 /20	18:53	4:16pm	4:26pm	4:36pm
15	C3 /19	18:53	4:23pm	4:33pm	4:43pm
16	C3 /20	18:54	4:30pm	4:40pm	4:50pm
17	C5 /19	18:53	4:36pm	4:46pm	4:56pm
18	A14/20	19:00	4:43pm	4:53pm	5:03pm
19	C5 /20	19:00	4:50pm	5:00pm	5:10pm
20	C7 /19	19:00	4:56pm	5:06pm	5:16pm
21	A29/20	19:07	5:03pm	5:13pm	5:23pm
22	C7 /20	19:07	5:10pm	5:20pm	5:30pm
23	C9 /19	19:06	5:16pm	5:26pm	5:36pm
24	C9 /20	19:07	5:23pm	5:33pm	5:43pm
25	C11/19	19:07	5:30pm	5:40pm	5:50pm
26	C11/20	19:06	5:36pm	5:46pm	5:56pm
27	C13/19	19:07	5:43pm	5:53pm	6:03pm
28	C13/20	19:06	5:49pm	5:59pm	6:09pm
29	C15/19	19:06	5:56pm	6:06pm	6:16pm
30	C15/20	19:07	6:03pm	6:13pm	6:23pm
31	C17/19	19:06	6:09pm	6:19pm	6:29pm
32	C17/20	19:06	6:16pm	6:26pm	6:36pm
33	C19/19	19:07	6:23pm	6:33pm	6:43pm
34	C19/20	19:06	6:29pm	6:39pm	6:49pm
35	C21/19	19:06	6:36pm	6:46pm	6:56pm
36	C21/20	19:06	6:43pm	6:53pm	7:03pm
37	C23/19	18:53	6:49pm	6:59pm	7:09pm
38	C23/20	18:53	6:56pm	7:06pm	7:16pm
39	C25/19	18:53	7:03pm	7:13pm	7:23pm
40	C25/20	18:53	7:09pm	7:19pm	7:29pm
41	C27/19	18:53	7:16pm	7:26pm	7:36pm
42	C27/20	18:53	7:23pm	7:33pm	7:43pm
43	C29/19	18:53	7:29pm	7:39pm	7:49pm
44	C29/20	18:53	7:36pm	7:46pm	7:56pm
45	A2 /20	18:53	7:43pm	7:53pm	8:03pm
46	A4 /20	18:54	7:50pm	8:00pm	8:10pm
47	A6 /19	18:53	7:56pm	8:06pm	8:16pm
48	A6 /20	18:47	8:03pm	8:13pm	8:23pm
49	A8 /19	18:47	8:10pm	8:20pm	8:30pm
50	A8 /20	18:46	8:16pm	8:26pm	8:36pm
51	A10/19	18:47	8:23pm	8:33pm	8:43pm
52	A10/20	18:47	8:30pm	8:40pm	8:50pm
53	A12/19	18:47	8:36pm	8:46pm	8:56pm
54	A12/20	18:47	8:43pm	8:53pm	9:03pm
55	A14/19	18:47	8:50pm	9:00pm	9:10pm
56	A16/19	18:47	8:56pm	9:06pm	9:16pm
57	A16/20	18:47	9:03pm	9:13pm	9:23pm
58	A18/19	18:47	9:10pm	9:20pm	9:30pm
59	A18/20	18:47	9:16pm	9:26pm	9:36pm
60	A20/19	18:47	9:23pm	9:33pm	9:43pm
61	A20/20	18:47	9:30pm	9:40pm	9:50pm
62	A22/19	18:47	9:36pm	9:46pm	9:56pm
63	A22/20	18:47	9:43pm	9:53pm	10:03pm
64	A24/19	18:47	9:50pm	10:00pm	10:10pm
65	A24/20	37:43	9:56pm	10:03pm	10:13pm
66	A26/19	37:43	10:03pm	10:13pm	10:23pm
67	A28/19	37:43	10:10pm	10:20pm	10:30pm
68	B1 /19	37:42	10:16pm	10:26pm	10:36pm
69	B1 /20	37:42	10:23pm	10:33pm	10:43pm
70	B3 /19	37:42	10:30pm	10:40pm	10:50pm
71	B3 /20	37:41	10:36pm	10:46pm	10:56pm
72	B5 /19	37:41	10:43pm	10:53pm	11:03pm

19/- B24 A2 A4

20/- A14 A26 A28

A1/19 after B22/20

A14/20 after C5/19

A28/20 after C7/19

NOON
MIDNIGHT
6 AM
6 PM
1
2
3
4
5
6
7
8
9
10
11
12
1
2
3
4
5
6
7
8
9
10
11
12
Feet
Miles

MIDNIGHT
6 AM
NOON
6 PM
GRAPHIC CONTROLS CORPORATION
BUFFALO, N.Y.
BR 727
10/1/92

NOON
1
2
3
4
5
6
7
8
9
10
11
12
1
2
3
4
5
6
7
8
9
10
11
12
100
200
300
400
500
600
700
800
900
1000
10/12/01
Air Drovers

MIDNIGHT
MOON
AM
1
2
3
4
5
6
7
8
9
10
11
12
10/21/72

NOON
1
2
3
4
5
6 PM
7
8
9
10
11
6 AM
5
4
3
2
1
MIDNIGHT
12
1
2
3
4
5
6
7
8
9
10
11
TRAPHIC CONTROLS CORPORATION
BR 723

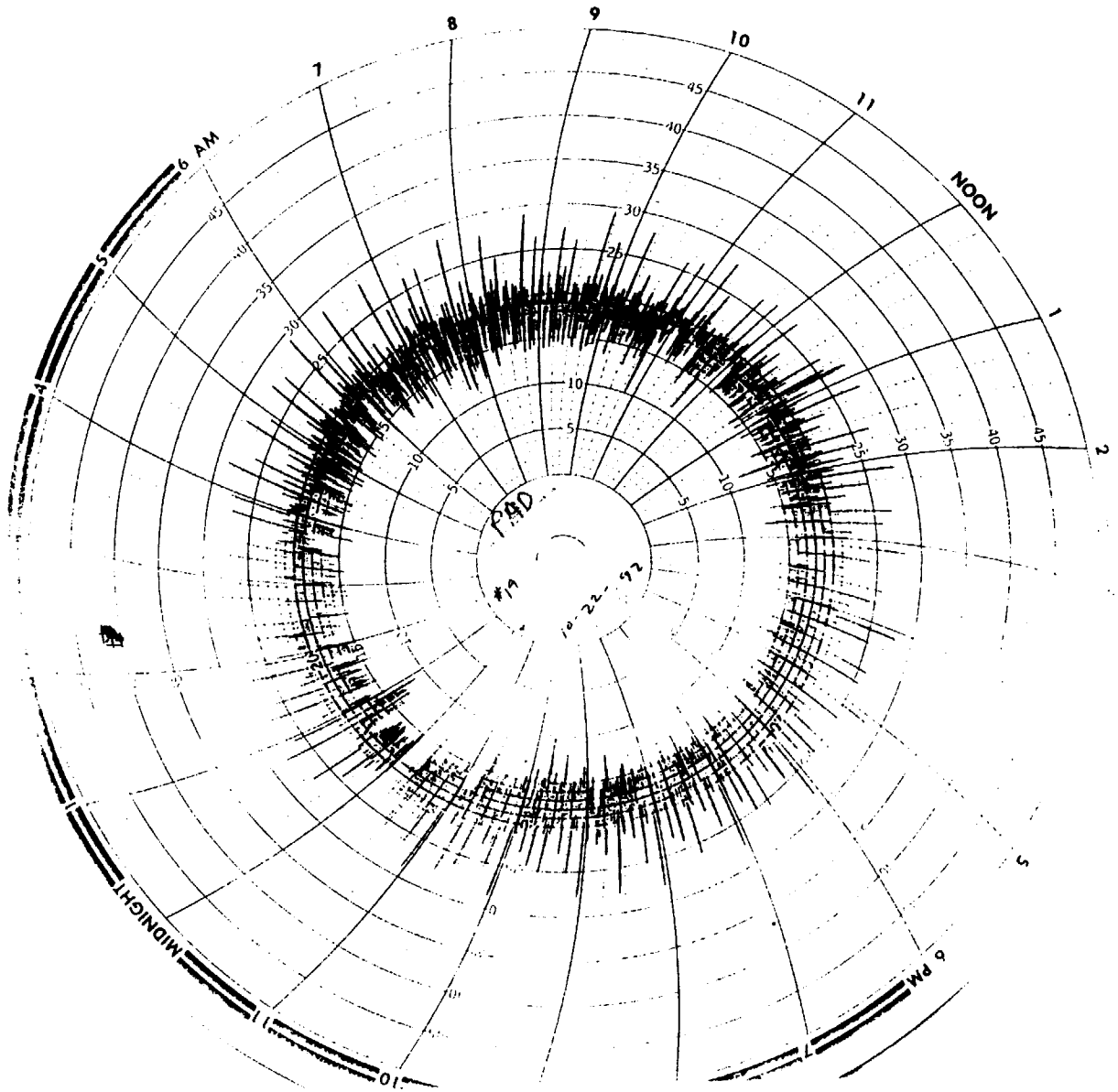
6 AM
7
8
9
10
11
NOON
1
2
3
4
5
6 PM
7
10
11
MIDNIGHT
1
2
3
4
5
6
10/21/92

6 AM
NOON
6 PM
MIDNIGHT

6 AM
NOON
MIDNIGHT
6 PM
10/21/92

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

MIDNIGHT
6 AM
NOON
6 PM

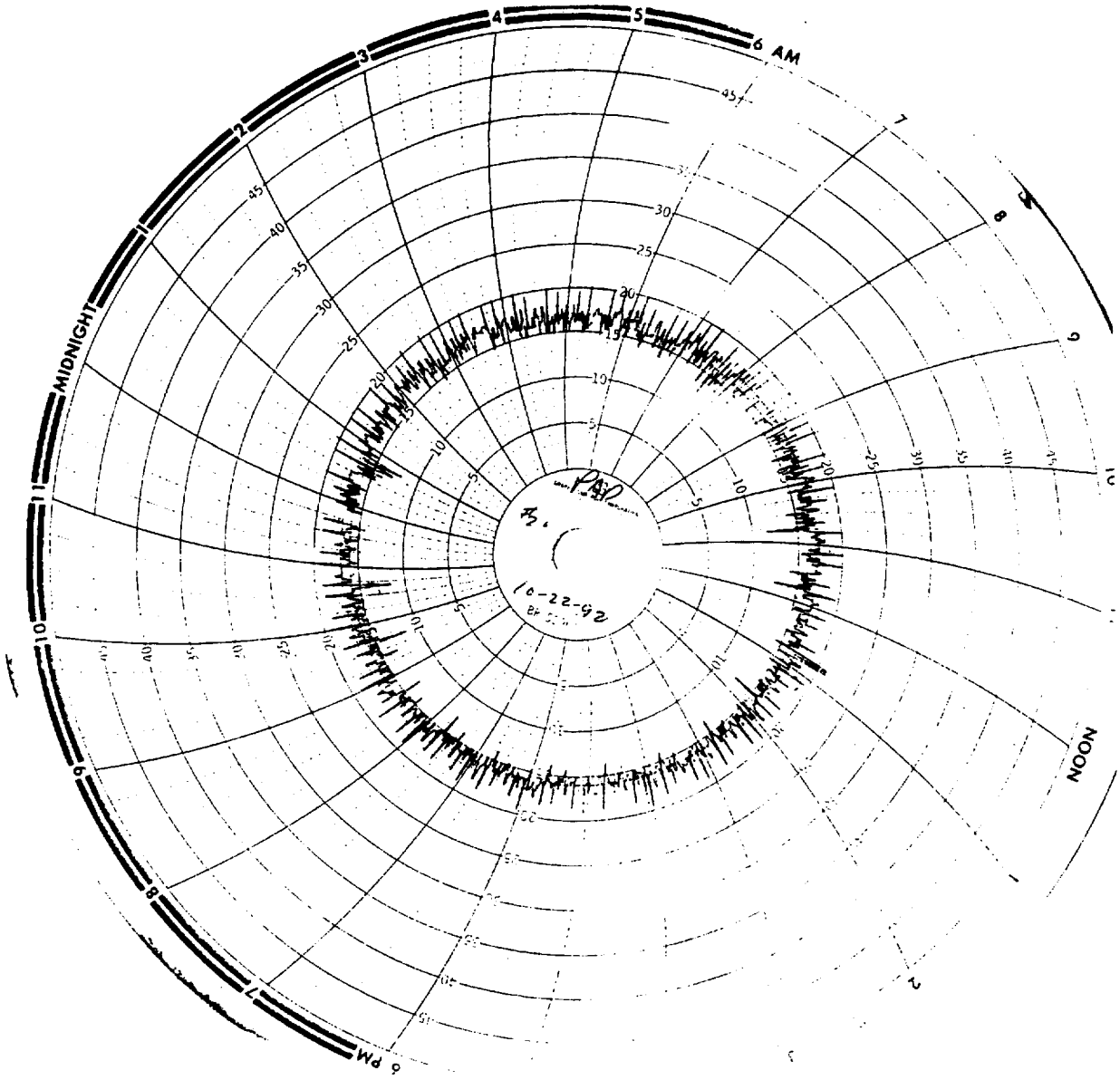

6 AM
7
8
9
10
11
NOON
1
2
3
4
5
6 PM
7
8
9
10
11
MIDNIGHT
5
10
15
20
25
30
35
40
45
#19
10-22-92

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

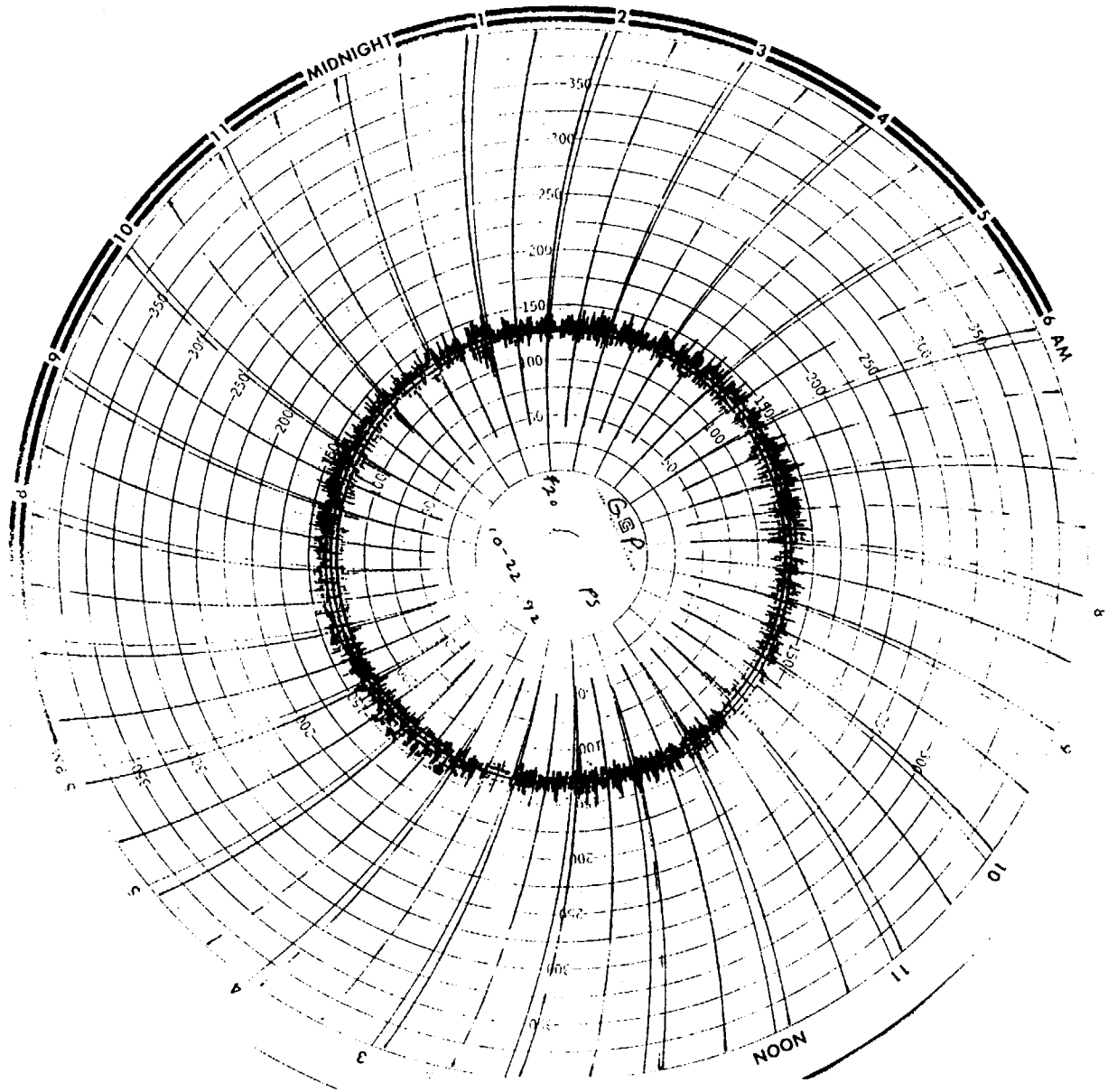
165

NOON
PM
MIDNIGHT
1
2
3
4
5
6
7
8
9
10
11
12
10
20
30
40
50
100
200
250
300
350
360

NOON
MIDNIGHT
6 AM
6 PM
1
2
3
4
5
6
7
8
9
10
11
5 BD
#19
10-22-92
2/1/92


MIDNIGHT
6 AM
NOON
6 PM
10-22-92

NOON
MIDNIGHT
6 AM
6 PM
GRAPHIC CONTROLS CORPORATION
BUFFALO NEW YORK
Volume


6 AM
7
8
9
10
11
NOON
1
2
3
4
5
6
MIDNIGHT
7
8
9
10
11
1
2
3
4
5
6
350
300
250
200
150
100
50
GSP
10-22-92

NOON
6 PM
MIDNIGHT
6 AM
10-22-92

6 AM
7
8
9
10
11
NOON
1
2
3
4
5
6 PM
7
10
11
MIDNIGHT
1
2
3
4
5

COMPLIANCE DEMONSTRATION
19 AND 20 BATTERY PUSHING EMISSIONS CONTROL

USS CLAIRTON WORKS
CLAIRTON, PA

APPENDIX C

CALIBRATION RESULTS

CONTROL BOX CALIBRATION

THREE POINT CALIBRATION

BOX # 1 BP 28.80
DATE 10-16-92 OPERATOR TM

	WET TEST METER				DRY TEST METER					METER	ORIFICE
	TIME (min)	TEMP TW	VOLUME VM	PRESSURE PW	TEMP IN TI	TEMP OUT TO	TEMP AVG TA	ORIFICE PD	VOLUME VD	COEFFICIENT Y	COEFFICIENT ΔH@
START			0.000	28.80				0.50	411.710		
HALF		80.0			88.0	105.0	96.5				
STOP	12.42		5.000						416.712		
CALCULATION	12.42	540.0	5.013	28.80			556.5	28.84	5.002	1.0314	1.770
START			0.000	28.80				1.00	418.880		
HALF		80.0			89.0	108.0	98.5				
STOP	8.82		5.000						423.915		
CALCULATION	8.82	540.0	5.013	28.80			558.5	28.87	5.035	1.0270	1.779
START			0.000	28.80				2.00	425.730		
HALF		80.0			89.0	111.0	100.0				
STOP	6.20		5.000						430.750		
CALCULATION	6.20	540.0	5.013	28.80			560.0	28.95	5.020	1.0302	1.754
AVERAGE										1.0295	1.768

CHESTER ENVIRONMENTAL

POST TEST

BOX # 1
DATE 01-21-93

BP 28.87
OPERATOR KS

	WET TEST METER				DRY TEST METER						
	TIME (min)	TEMP TW	VOLUME VM	PRESSURE PW	TEMP IN TI	TEMP OUT TO	TEMP AVG TA	ORIFICE PD	VOLUME VD	METER COEFFICIENT Y	ORIFICE COEFFICIENT ΔH@
START			0.000	28.87				1.00	478.129		
HALF		71.0			76.0	80.0	78.0				
STOP	8.87		5.000						483.225		
CALCULATION	8.87	531.0	5.013	28.87			538.0	28.94	5.096	0.9940	1.802
START			0.000	28.87				1.00	483.300		
HALF		71.0			77.0	87.0	82.0				
STOP	9.22		5.200						488.658		
CALCULATION	9.22	531.0	5.213	28.87			542.0	28.94	5.358	0.9906	1.787
START			0.000	28.87				1.00	488.558		
HALF		71.0			79.0	85.0	82.0				
STOP	10.75		6.000						494.850		
CALCULATION	10.75	531.0	6.015	28.87			542.0	28.94	6.292	0.9733	1.825
AVERAGE										0.9860	1.804
DIFFERENCE										4.42%	-2.03%

CHESTER ENVIRONMENTAL

PRE-TEST MAGNEHELIC CALIBRATION

BOX# 1
DATE 10-16-92
OPERATOR TM

0 to 10" H2O RANGE

MAGNEHELIC Δ P	MANOMETER
0.50	0.50
1.00	1.05
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 DELTA 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 10-16-92
OPERATOR TM

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	410.100	410.310	0.210	10.000	0.007
WET	0.000	0.275	0.275		

PYROMETER CALIBRATION

DATE 04-28-88
OPERATOR AGL

mV input	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 10-16-92
OPERATOR TM

mV input	TEMP °F	TEMP READING °F
0.18	40	40.0
0.40	50	50.0
0.84	70	70.0
1.29	90	89.0
1.74	110	109.0
2.66	150	149.0
3.82	200	200.0
6.09	300	301.0
8.31	400	400.0
10.57	500	499.0

CHESTER ENVIRONMENTAL

POST-TEST MAGNEHELIC CALIBRATION

BOX# 1
DATE 01-21-93
OPERATOR KS

0 to 10" H2O RANGE

MAGNEHELIC DELTA 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 DELTA P	MANOMETER
0.49	0.50
0.40	0.40
0.30	0.30
0.20	0.20
0.10	0.10

0 to 5" H2O RANGE

MAGNEHELIC DELTA H	MANOMETER
4.00	4.00
3.00	3.00
2.00	2.00
1.00	1.00
0.49	0.50

POST-TEST LEAK CHECK

DATE 01-21-93
OPERATOR KS

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	494.925	495.101	0.176	10.000	-0.001
WET	0.000	0.170	0.170		

PYROMETER CALIBRATION
DATE 04-28-88
OPERATOR AGL

mV input	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 01-21-93
OPERATOR KS

mV input	TEMP °F	TEMP READING °F
0.18	40	41.0
0.40	50	50.0
0.84	70	71.0
1.29	90	90.0
1.74	110	110.0
2.66	150	151.0
3.82	200	200.0
6.09	300	301.0
8.31	400	400.0
10.57	500	500.0

CHESTER ENVIRONMENTAL

QA ORIFICE AUDIT

ORIFICE BAPC-3 DATE 10-27-92 B.P. 28.80
OPERATOR RPC BOX # 1

RUN	1		2		3	
INITIAL CF	637.400		644.700		652.100	
FINAL CF	644.540		651.841		659.280	
DIFFERENCE	7.140		7.141		7.180	
	IN	OUT	IN	OUT	IN	OUT
TEMP INITIAL	73	70	73	70	74	71
TEMP 5 MIN	73	70	74	71	75	71
TEMP 10 MIN	72	70	74	71	75	72
TEMP 15 MIN	73	70	74	71	75	72
		TEMP R		TEMP R		TEMP R
TEMP AVG	71.375	531.375	72.25	532.25	73.125	533.125
TIME MINUTES	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		28.85		28.85		28.85
	°F	°C	°F	°C	°F	°C
AMBIENT TEMP.	75.0	23.9	75.0	23.9	75.0	23.9
VACUUM IN HG	18.0		18.0		18.0	
DGM CAL Y	1.0295		1.0295		1.0295	
STD CF	7.070		7.059		7.086	
STD CUBIC METERS	0.2002		0.1999		0.2007	

CHESTER ENVIRONMENTAL

CONTROL BOX CALIBRATION

THREE POINT CALIBRATION

BOX # 3 BP 28.8 in. Hg
DATE 05-06-92 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	28.80				0.50	985.600		
HALF		70.0			101.0	84.0	92.5				
STOP	11.73		5.000						990.906		
CALCULATION	11.73	530.0	5.013	28.80			552.5	28.84	5.306	0.9835	1.532
START			0.000	28.80				1.00	991.350		
HALF		70.0			106.0	88.0	97.0				
STOP	8.60		5.000						996.656		
CALCULATION	8.60	530.0	5.013	28.80			557.0	28.87	5.306	0.9903	1.634
START			0.000	28.80				2.00	997.200		
HALF		70.0			112.0	90.0	101.0				
STOP	6.20		5.000						1002.475		
CALCULATION	6.20	530.0	5.013	28.80			561.0	28.95	5.275	1.0007	1.686
AVERAGE										0.9915	1.618

POST TEST

BOX # 3 BP 28.90 in. Hg
DATE 01-05-93 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				1.25	126.900		
HALF		70.0			101.0	89.0	95.0				
STOP	7.70		5.000						131.974		
CALCULATION	7.70	530.0	5.013	28.90			555.0	28.99	5.074	1.0312	1.638
START			0.000	28.90				1.25	132.300		
HALF		70.0			104.0	90.0	97.0				
STOP	7.70		5.000						137.421		
CALCULATION	7.70	530.0	5.013	28.90			557.0	28.99	5.121	1.0254	1.632
START			0.000	28.90				1.25	137.800		
HALF		70.0			105.0	90.0	97.5				
STOP	7.78		5.000						142.930		
CALCULATION	7.78	530.0	5.013	28.90			557.5	28.99	5.130	1.0245	1.664
AVERAGE										1.0270	1.645
DIFFERENCE										-3.5%	-1.6%

PRE-TEST MAGNEHELIC CALIBRATION

BOX# 3
DATE 05-04-92
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 05-05-92
OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	985.075	985.288	0.213	10.000	-0.010
WET	0.000	0.112	0.112		

PYROMETER CALIBRATION

DATE 04-28-88
OPERATOR AGL

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	400.0
10.57	500	500.0

PRE-TEST PYROMETER CHECK

DATE 05-04-92
OPERATOR RPC

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	69.0
1.29	90	89.0
1.74	110	109.0
2.66	150	150.0
3.82	200	201.0
6.09	300	301.0
8.31	400	401.0
10.57	500	501.0

POST-TEST MAGNEHELIC CALIBRATION

BOX# 3
DATE 01-05-93
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 01-05-93
OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	125.610	125.856	0.246	10.000	-0.0004
WET	0.000	0.242	0.242		

PYROMETER CALIBRATION

DATE 04-28-88
OPERATOR AGL

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	400.0
10.57	500	500.0

POST-TEST PYROMETER CHECK

DATE 01-07-93
OPERATOR RPC

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	39.0
0.40	50	49.0
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 05-05-92 B.P. 28.80
OPERATOR RPC BOX # 3

RUN	1		2		3	
INITIAL CF	4.800		12.480		20.050	
FINAL CF	12.287		19.912		27.566	
DIFFERENCE	7.487		7.432		7.516	
	IN	OUT	IN	OUT	IN	OUT
TEMP INITIAL	80	77	83	79	87	82
TEMP 5 MIN	81	78	84	80	87	83
TEMP 10 MIN	82	78	85	81	89	83
TEMP 15 MIN	83	79	87	82	89	84
		TEMP R		TEMP R		TEMP R
TEMP AVG	79.75	539.75	82.625	542.625	85.5	545.5
TIME (MIN.)	15.00		15.00		15.00	
	IN WATER	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		28.85		28.85		28.85
	°F	°C	°F	°C	°F	°C
AMBIENT TEMP.	75.0	23.9	75.0	23.9	75.0	23.9
VACUUM IN HG	19.0		19.0		19.0	
DGM CAL Y	0.9915		0.9915		0.9915	
STD CF	7.028		6.939		6.981	
STD CUBIC METERS	0.1990		0.1965		0.1977	

CONTROL BOX CALIBRATION

THREE POINT CALIBRATION

BOX # 4 BP 28.9 in. Hg
DATE 06-03-92 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				0.50	525.800		
HALF		73.0			93.0	89.0	91.0				
STOP	12.17		5.000						531.165		
CALCULATION	12.17	533.0	5.013	28.90			551.0	28.94	5.365	0.9646	1.667
START			0.000	28.90				1.00	531.500		
HALF		73.0			94.0	90.0	92.0				
STOP	8.85		5.000						536.800		
CALCULATION	8.85	533.0	5.013	28.90			552.0	28.97	5.300	0.9770	1.760
START			0.000	28.90				2.00	537.600		
HALF		73.0			94.0	90.0	92.0				
STOP	6.40		5.000						542.899		
CALCULATION	6.40	533.0	5.013	28.90			552.0	29.05	5.299	0.9747	1.841
AVERAGE										0.9721	1.756

POST TEST

BOX # 4 BP 29.05 in. Hg
DATE 01-07-93 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				1.00	494.100		
HALF		70.0			77.0	76.0	76.5				
STOP	8.63		5.000						499.250		
CALCULATION	8.63	530.0	5.013	29.05			536.5	29.12	5.150	0.9828	1.694
START			0.000	29.05				1.00	499.600		
HALF		70.0			80.0	79.0	79.5				
STOP	8.65		5.000						504.766		
CALCULATION	8.65	530.0	5.013	29.05			539.5	29.12	5.166	0.9852	1.692
START			0.000	29.05				1.00	505.100		
HALF		70.0			83.0	81.0	82.0				
STOP	8.61		5.000						510.247		
CALCULATION	8.61	530.0	5.013	29.05			542.0	29.12	5.147	0.9934	1.669
AVERAGE										0.9871	1.685
DIFFERENCE										-1.5%	4.2%

PRE-TEST MAGNEHELIC CALIBRATION

BOX# 4
DATE 06-03-92
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 06-03-92
OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	508.320	508.433	0.113	10.000	-0.000
WET	0.000	0.111	0.111		

PYROMETER CALIBRATION

DATE 04-28-88
OPERATOR AGL

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	400.0
10.57	500	500.0

PRE-TEST PYROMETER CHECK

DATE 06-03-92
OPERATOR RPC

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	40.0
0.40	50	50.0
0.84	70	69.0
1.29	90	90.0
1.74	110	109.0
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# 4
DATE 01-07-93
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 01-07-93
OPERATOR RPC

	START CF	STOP CF	VOLUME CF	TIME (min)	LEAK RATE
DRY	493.445	493.574	0.129	10.000	-0.0008
WET	0.000	0.121	0.121		

PYROMETER CALIBRATION

DATE 04-28-88
OPERATOR AGL

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	400.0
10.57	500	500.0

POST-TEST PYROMETER CHECK

DATE 01-07-93
OPERATOR RPC

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	91.0
1.74	110	111.0
2.66	150	151.0
3.82	200	201.0
6.09	300	301.0
8.31	400	402.0
10.57	500	502.0

QA ORIFICE AUDIT

ORIFICE	BAPC-3	DATE	12-07-92	B.P.	28.85
OPERATOR	RPC	BOX #	4		

RUN	1		2		3	
INITIAL CF	483.900		496.500		504.600	
FINAL CF	491.400		504.010		512.121	
DIFFERENCE	7.500		7.510		7.521	
	IN	OUT	IN	OUT	IN	OUT
TEMP INITIAL	71	69	78	75	82	80
TEMP 5 MIN	74	73	78	77	83	80
TEMP 10 MIN	75	74	80	78	85	81
TEMP 15 MIN	78	76	81	79	85	83
		TEMP R		TEMP R		TEMP R
TEMP AVG	73.75	533.75	78.25	538.25	82.375	542.375
TIME (MIN.)	15.00		15.00		15.00	
	IN 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		28.90		28.90		28.90
	°F	°C	°F	°C	°F	°C
AMBIENT TEMP.	75.0	23.9	75.0	23.9	75.0	23.9
VACUUM IN HG	19.0		19.0		19.0	
DGM CAL Y	0.9721		0.9721		0.9721	
STD CF	6.992		6.943		6.900	
STD CUBIC METERS	0.1980		0.1966		0.1954	

CONTROL BOX CALIBRATION

METERING SYSTEM THREE POINT CALIBRATION

CONTROL BOX NO. 7 BAROMETRIC PRESSURE 29.10 in. Hg
CALIBRATION DATE 9-14-92 OPERATOR TJM

	WET TEST METER				DRY TEST METER						
	ELAPSED TIME (min)	METER TEMP Tw (°F/°R)	VOLUME Vw (CF)	METER PRESSURE Pw (in. Hg)	TEMP IN Ti (°F)	TEMP OUT To (°F)	AVERAGE TEMP Ta (°F/°R)	ORIFICE PRESSURE DIFFERENTIAL ΔH (in. H2O/in. Hg)	VOLUME Vd (DCF)	METER COEFFICIENT Y	ORIFICE COEFFICIENT ΔH@
START			0.000	29.10				0.50	837.072		
MIDWAY		70			108	84	96				
STOP	11.55		5.000						841.999		
CALCULATION	11.55	530	5.013	29.10			556	29.14	4.927	1.0659	1.461
START			0.000	29.10				1.00	842.750		
MIDWAY		82			108	85	97				
STOP	8.23		5.000						847.678		
CALCULATION	8.23	542	5.013	29.10			557	29.17	4.928	1.0417	1.550
START			0.000	29.10				2.00	851.820		
MIDWAY		82			115	85	100				
STOP	5.92		5.000						856.742		
CALCULATION	5.92	542	5.013	29.10			560	29.25	4.922	1.0469	1.594
AVERAGE										1.0515	1.535

METERING SYSTEM POST-TEST CALIBRATION

CONTROL BOX NO. 7
CALIBRATION DATE 01-08-93

BAROMETRIC PRESSURE 28.95 in. Hg
OPERATOR RPC

	WET TEST METER				DRY TEST METER						
	ELAPSED TIME (min)	METER TEMP Tw (°F/°R)	VOLUME Vw (CF)	METER PRESSURE Pw (in. Hg)	TEMP IN Ti (°F)	TEMP OUT To (°F)	AVERAGE TEMP Ta (°F/°R)	ORIFICE PRESSURE DIFFERENTIAL ΔH (in. H2O/in. Hg)	VOLUME Vd (DCF)	METER COEFFICIENT Y	ORIFICE COEFFICIENT ΔH@
START			0.000	28.95				1.00	430.300		
MIDWAY		70			103	79	91				
STOP	8.75		5.000						435.480		
CALCULATION	8.75	530	5.013	28.95			551	29.02	5.180	1.0035	1.701
START			0.000	28.95				1.00	435.700		
MIDWAY		82			108	81	95				
STOP	8.78		5.000						440.909		
CALCULATION	8.78	542	5.013	28.95			555	29.02	5.209	0.9820	1.780
START			0.000	28.95				1.00	441.300		
MIDWAY		82			110	84	97				
STOP	8.75		5.000						446.491		
CALCULATION	8.75	542	5.013	28.95			557	29.02	5.191	0.9898	1.760
AVERAGE										0.9918	1.747
DIFFERENCE										6.03%	-12.12%

PRE-TEST MAGNEHELIC CALIBRATION

CONTROL BOX 7

DATE 9-14-92

OPERATOR TJM

0 to 2.0" H2O RANGE

MAGNEHELIC Δ P (in. H2O)	MANOMETER (in. H2O)
0.50	0.50
0.75	0.75
1.00	1.00
1.50	1.50
2.00	2.00

0 to 0.50" H2O RANGE

MAGNEHELIC Δ P (in. H2O)	MANOMETER (in. H2O)
0.50	0.48
0.40	0.40
0.30	0.28
0.20	0.19
0.10	0.10

0 to 3.0" H2O RANGE

MAGNEHELIC Δ H (in. H2O)	MANOMETER (in. H2O)
3.00	2.90
2.00	1.90
1.00	0.97
0.50	0.49

PRE-TEST METERING SYSTEM LEAK CHECK

DATE 9-14-92

OPERATOR TJM

METER	INITIAL VOLUME (CF)	FINAL VOLUME (CF)	VOLUME DIFF. (CF)	ELAPSED TIME (min)	LEAK RATE (CFM)
DRY	831.640	831.809	0.169	10.00	0.0031
WET	0.000	0.200	0.200		

PYROMETER CALIBRATION

DATE 04-28-88

OPERATOR AGL

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	40
0.40	50	50
0.84	70	70
1.29	90	90
1.74	110	110
2.66	150	150
3.82	200	200
6.09	300	301
8.31	400	400
10.57	500	500

PRE-TEST PYROMETER CALIBRATION

DATE 9-14-92

OPERATOR MG

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	40
0.40	50	50
0.84	70	69
1.29	90	89
1.74	110	109
2.66	150	149
3.82	200	200
6.09	300	300
8.31	400	398
10.57	500	498

POST-TEST MAGNEHELIC CALIBRATION

CONTROL BOX 7
DATE 01-08-93
OPERATOR RPC

0 to 10" H2O RANGE

MAGNEHELIC Δ P (in. H2O)	MANOMETER (in. H2O)
0.50	0.50
0.75	0.75
1.00	1.00
1.50	1.50
2.00	2.00

0 to 0.50" H2O RANGE

MAGNEHELIC Δ P (in. H2O)	MANOMETER (in. H2O)
0.50	0.50
0.40	0.40
0.30	0.30
0.20	0.20
0.10	0.10

0 to 3.0" H2O RANGE

MAGNEHELIC Δ H (in. H2O)	MANOMETER (in. H2O)
3.00	3.00
2.00	2.00
1.00	1.00
0.50	0.50

POST-TEST METERING SYSTEM LEAK CHECK

DATE 01-08-93
OPERATOR RPC

METER	INITIAL VOLUME (CF)	FINAL VOLUME (CF)	VOLUME DIFF. (CF)	ELAPSED TIME (min)	LEAK RATE (CFM)
DRY	429.340	429.639	0.299	10.00	-0.0135
WET	0.000	0.164	0.164		

PYROMETER CALIBRATION

DATE 04-28-88
OPERATOR AGL

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	40
0.40	50	50
0.84	70	70
1.29	90	90
1.74	110	110
2.66	150	150
3.82	200	200
6.09	300	301
8.31	400	400
10.57	500	500

POST-TEST PYROMETER CALIBRATION

DATE 01-08-93
OPERATOR RPC

VOLTAGE INPUT (mV)	TARGET TEMP (°F)	TEMP READING (°F)
0.18	40	39
0.40	50	50
0.84	70	70
1.29	90	89
1.74	110	109
2.66	150	149
3.82	200	199
6.09	300	299
8.31	400	398
10.57	500	499

QA ORIFICE AUDIT

ORIFICE	BAPC-3	DATE	10-27-92	B.P.	28.80
OPERATOR	RPC	BOX #	7		

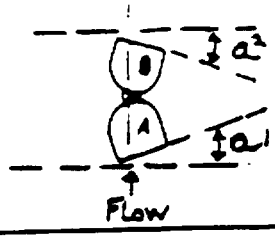
RUN	1		2		3	
INITIAL CF	791.800		799.400		807.100	
FINAL CF	799.222		806.850		814.566	
DIFFERENCE	7.422		7.450		7.466	
	IN	OUT	IN	OUT	IN	OUT
TEMP INITIAL	78	73	81	75	85	78
TEMP 5 MIN	79	74	83	76	86	78
TEMP 10 MIN	80	75	84	76	87	78
TEMP 15 MIN	80	75	85	78	88	79
		TEMP R		TEMP R		TEMP R
TEMP AVG	76.75	536.75	79.75	539.75	82.375	542.375
TIME MINUTES	15.00		15.00		15.00	
	IN WATER	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		28.85		28.85		28.85
	°F	°C	°F	°C	°F	°C
AMBIENT TEMP.	75.0	23.9	75.0	23.9	75.0	23.9
VACUUM IN HG	18.0		18.0		18.0	
DGM CAL Y	1.0515		1.0515		1.0515	
STD CF	7.430		7.417		7.396	
STD CUBIC METERS	0.2104		0.2100		0.2095	

GEOMETRIC PITOT CALIBRATION

Caliper # XS-59
Precheck ✓
Post Check

Probe #: S-1
Date: 5-1-92
Initials: TAJ

①

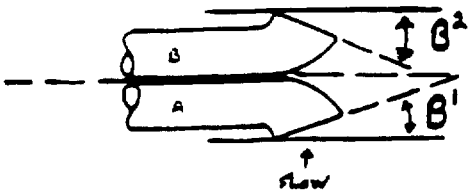


a^1 = 12.0°
a^2 = 1.0°
a^1, a^2 = <10°

B^1 = 3.0°
B^2 = 3.5°
B^1, B^2, = <5°

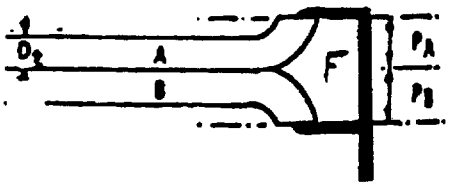
F = 1.062"

②



μ = 0.0371 — μ = ≤ 0.1250" (μ = F TAN γ)
V = 0.0278 — V = ≤0.03125" (V = F TAN θ)
W = 0.193 — W ≥ 0"

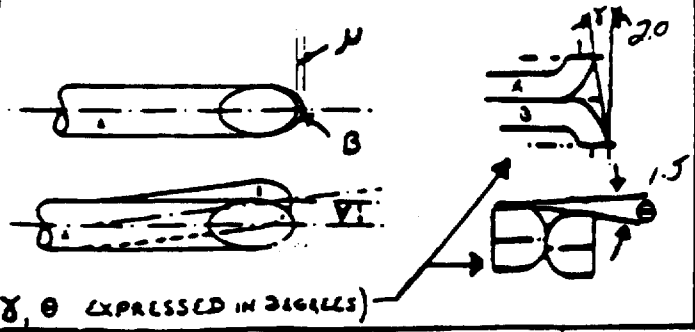
③



1.05 D_t < d < 1.50 D_t
P_A = P_B
2.10 D_t < L < 3.00 D_t

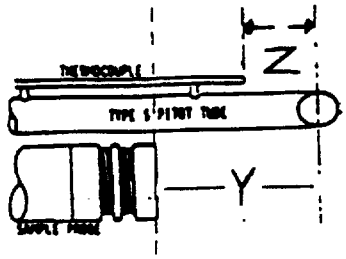
X = 0.679 — X ≥ 0.750" (3/4" using 1/2" nozzle)
Y = 5.836 — Y ≥ 3.0"
Z = 3.841 — Z > 2.0"
D_t = .378 — D_t > .1875" to .375" (3/16" to 3/8")

④

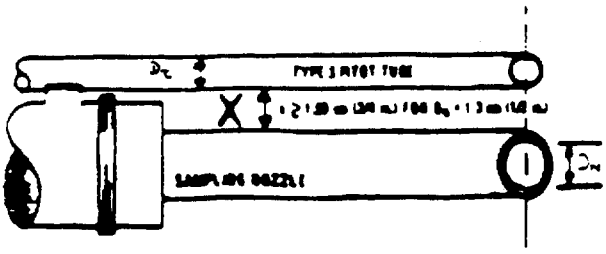


(γ, θ EXPRESSED IN DEGREES)

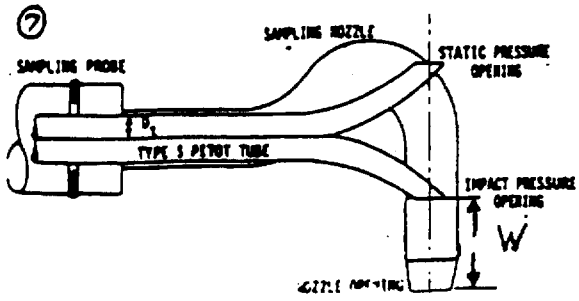
⑥



⑤



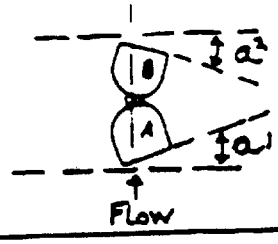
⑦



GEOMETRIC PITOT CALIBRATION

Caliper # XES-68 | Probe #: 5-1
Precheck | Date: 12-11-98
Post Check ✓ | Initials: TMM

①

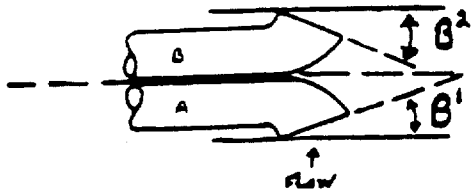


a¹ = 2.0
a² = 4.0
a¹, a² = <10°

B¹ = 3.0
B² = 3.0
B¹, B², = <5°

F = 1.028"

②



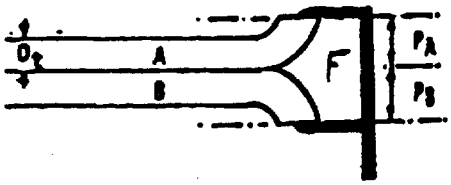
μ = 0.0179 — μ = ≤ 0.1250" (μ = F TAN γ)

V = 0.0179 — V = ≤0.03125" (V = F TAN θ)

W = 0.361 — W ≥ 0"

X = .800 — X ≥ 0.750" (3/4" using 1/2" nozzle)

③



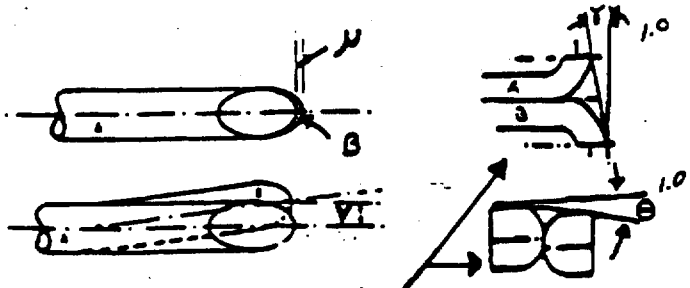
1.05 D_t < d < 1.50 D_t
$P_A = P_B$
2.10 D_t < L < 3.00 D_t

Y = 6.184 — Y ≥ 3.0"

Z = 3.168 — Z > 2.0"

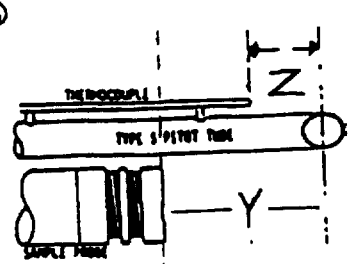
D_t = 0.375 — D_t > .1875" to .375" (3/16" to 3/8")

④

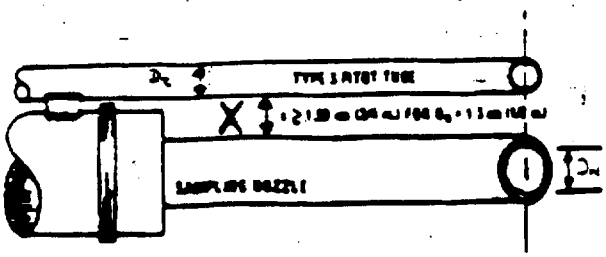


(γ, θ EXPRESSED IN DEGREES)

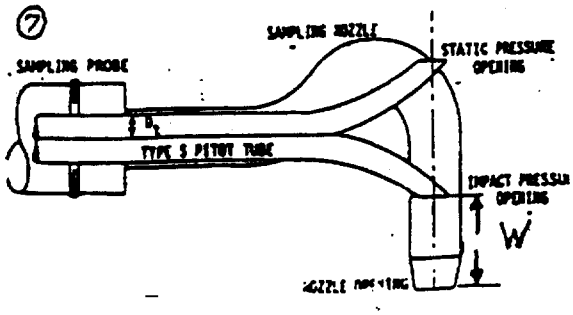
⑥



⑤



⑦

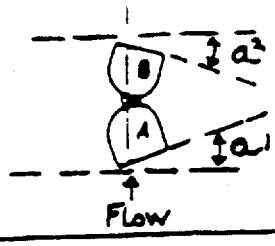


GEOMETRIC PITOT CALIBRATION

Caliper # VEF-59
Precheck ✓
Post Check

Probe #: S-3
Date: 2-27-92
Initials: [illegible]

①

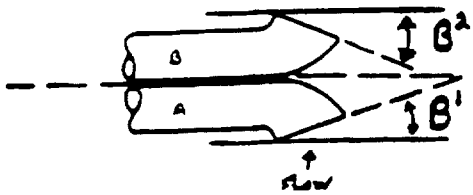


a^1 = 1.0°
a^2 = 1.5°
a^1, a^2 = <10°

B^1 = 0°
B^2 = 1.5°
B^1, B^2, = <5°

F = 0.869"

②



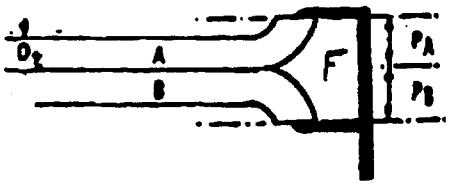
μ = 0 — μ = ≤ 0.1250" (μ = F TAN γ)

V = 0 — V = ≤0.03125" (V = F TAN θ)

W = 0.495 — W ≥ 0"

X = 0.775 — X ≥ 0.750" (3/4" using 1/2" nozzle)

③



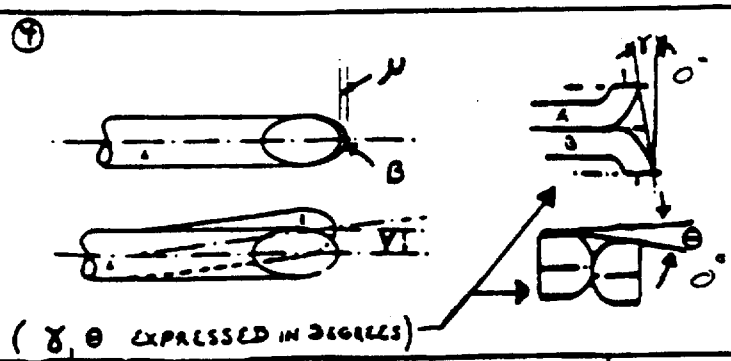
1.05 D_t < d < 1.50 D_t
P_A = P_B
2.10 D_t < l < 3.00 D_t

Y = 5.678 — Y ≥ 3.0"

Z = 2.120 — Z > 2.0"

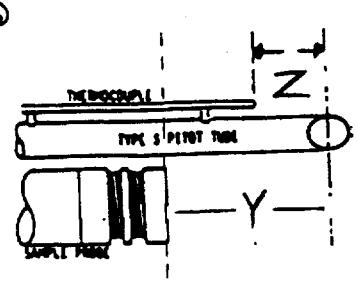
D_t = 0.375 — D_t > .1875" to .375" (3/16" to 3/8")

④

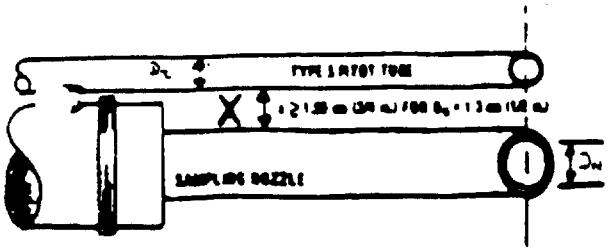


(γ, θ EXPRESSED IN DEGREES)

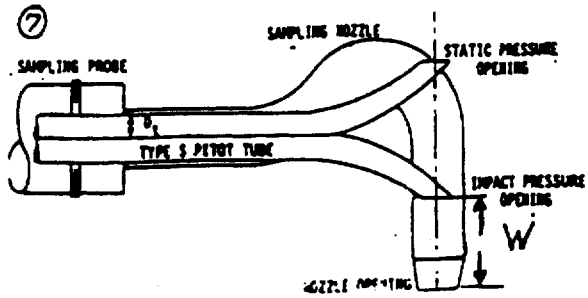
⑥



⑤



⑦

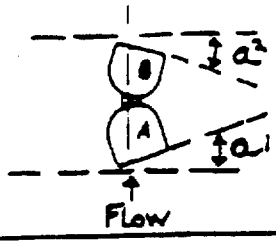


GEOMETRIC PITOT CALIBRATION

Caliper # XFJ-68
Precheck
Post Check

Probe #: 5-3
Date: 12-11-92
Initials: [illegible]

①

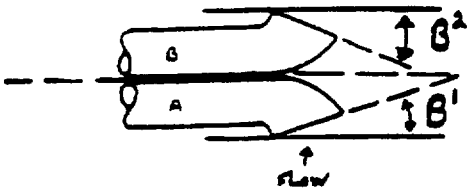


a^1 = 0
a^2 = 3.0
a^1, a^2 = <10°

B^1 = 1.0
B^2 = 1.0
B^1, B^2, = <5°

F = 0.875"

②



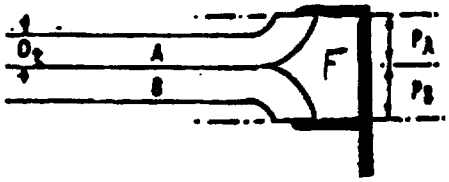
μ = 0.0152 — μ = ≤ 0.1250" (μ = F TAN γ)

V = 0.0305 — V = ≤0.03125" (V = F TAN θ)

W = 0.405 — W ≥ 0"

X = 0.879 — X ≥ 0.750" (3/4" using 1/2" nozzle)

③



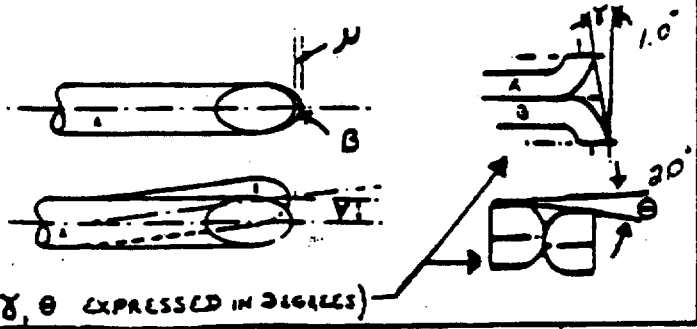
1.05 D_t < A < 1.50 D_t
P_A = P_B
2.10 D_t < A < 3.00 D_t

Y = 5.656 — Y ≥ 3.0"

Z = 2.051 — Z > 2.0"

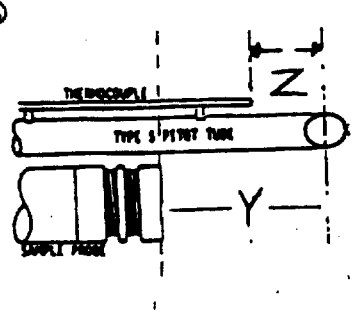
D_t = 0.376 — D_t > .1875" to .375" (3/16" to 3/8")

④

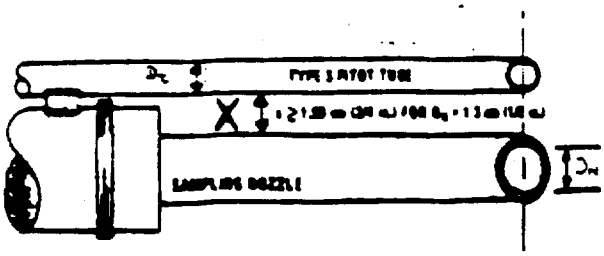


(γ, θ EXPRESSED IN DEGREES)

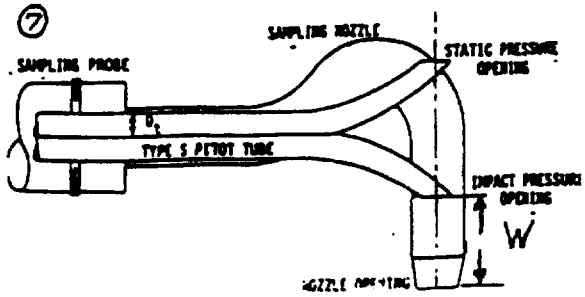
⑥



⑤



⑦

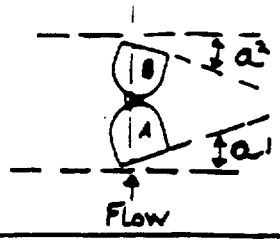


GEOMETRIC PITOT CALIBRATION

Caliper # XCF-59
Precheck ✓
Post Check

Probe #: 5-4
Date: 2-27-92
Initials: TAM

①

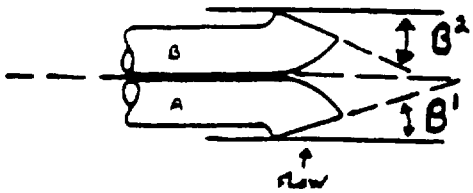


a¹ = 1.0°
a² = 2.5°
a¹, a² = <10°

B¹ = 1.5°
B² = 0.5°
B¹, B², = <5°

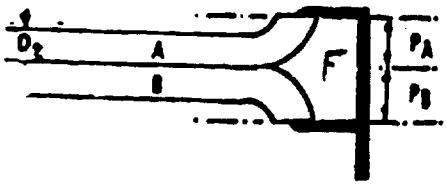
F = 0.854"

②



μ = 0.0149 — μ = ≤ 0.1250" (μ = F TAN γ)
V = 0.0074 — V = ≤0.03125" (V = F TAN θ)
W = 0.741 — W ≥ 0"
X = 0.762 — X ≥ 0.750" (3/4" using 1/2" nozzle)

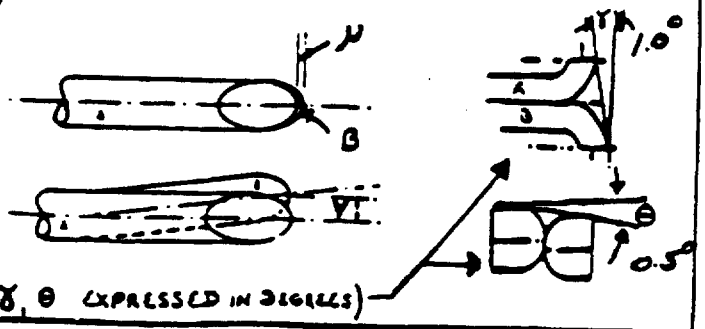
③



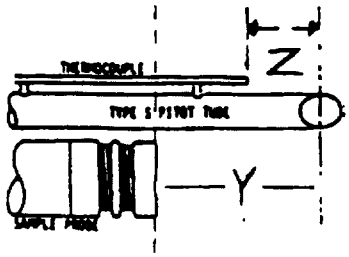
1.05 D_t < B < 1.50 D_t
$P_A = P_B$
2.10 D_t < A < 3.00 D_t

Y = 5.826 — Y ≥ 3.0"
Z = 2.831 — Z > 2.0"
D_t = 0.376 — D_t > .1875" to .375" (3/16" to 3/8")

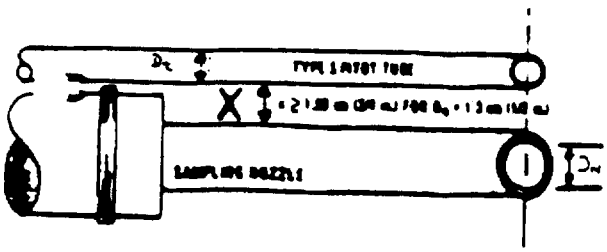
④



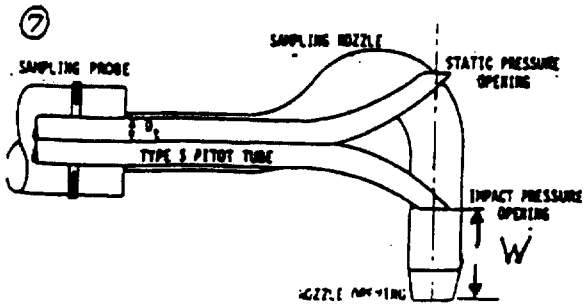
⑥



⑤



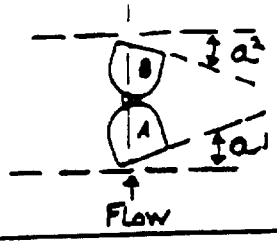
⑦



GEOMETRIC PITOT CALIBRATION

Caliper # XFS-68 Probe #: 5.4
Precheck Date: 12.1.92
Post Check W Initials: ZM

①

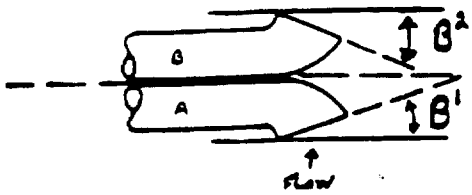


a¹ = 1.0
a² = 3.0
a¹, a² = <10°

B¹ = 2.0
B² = 1.0
B¹, B², = <5°

F = 0.869 "

②



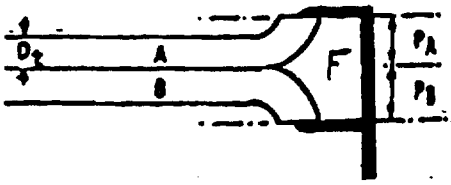
μ = 0.0151 — μ = ≤ 0.1250" (μ = F TAN γ)

V = 0.0151 — V = ≤0.03125" (V = F TAN θ

W = 0.464 — W ≥ 0 "

X = 0.791 — X ≥ 0.750" (3/4" using 1/2" nozzle)

③



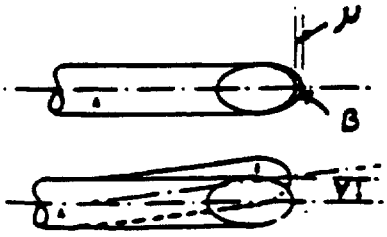
1.05 D_t < <1.50 D_t
P_A = P_B
2.10 D_t <A <3.00 D_t

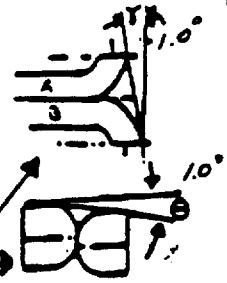
Y = 5.671 — Y ≥ 3.0"

Z = 2.104 — Z > 2.0"

D_t = 0.371 — D_t > .1875" to .375" (3/16" to 3/8")

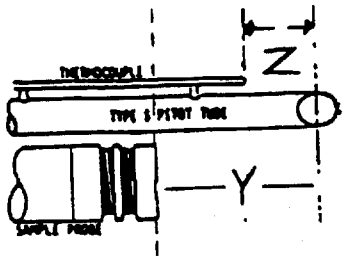
④



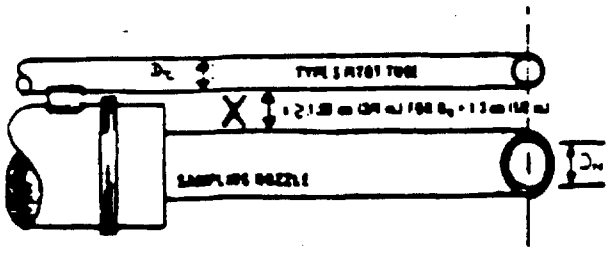


(γ, θ EXPRESSED IN DEGREES)

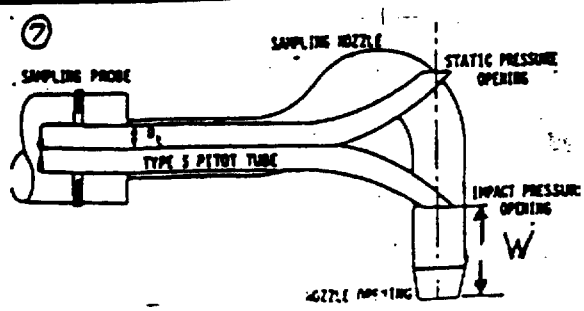
⑥



⑤



⑦

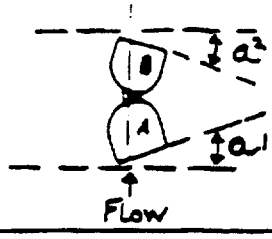


GEOMETRIC PITOT CALIBRATION

Caliper # XLF.59
Precheck
Post Check VX

Probe #: 5-5
Date: 8-24-92
Initials: TGM

①

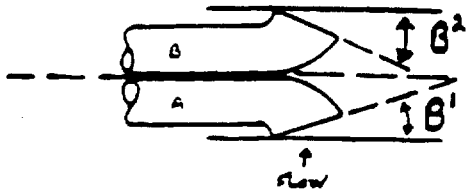


a¹ = 1.0°
a² = 1.0°
a¹, a² = <10°

B¹ = 1.5°
B² = 0
B¹, B², = <5°

F = 0.894"

②



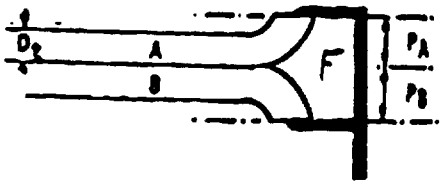
μ = 0.0234 — μ = ≤ 0.1250" (μ = F TAN γ)

V = 0.0156 — V = ≤0.03125" (V = F TAN θ)

W = .210 — W ≥ 0"

X = 0.782 — X ≥ 0.750" (3/4" using 1/2" nozzle)

③



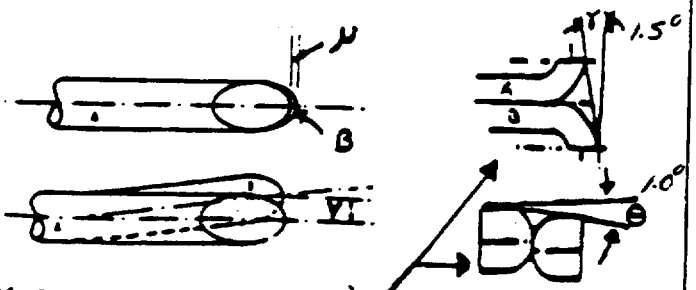
1.05 D_t < B < 1.50 D_t
$P_A = P_B$
2.10 D_t < A < 3.00 D_t

Y = 5.715 — Y ≥ 3.0"

Z = 2.144 — Z > 2.0"

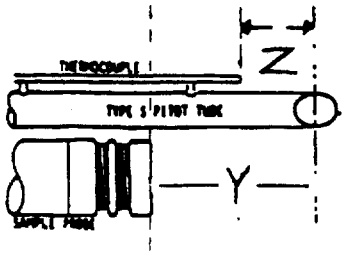
D_t = 0.375 — D_t > .1875" to .375" (3/16" to 3/8")

④

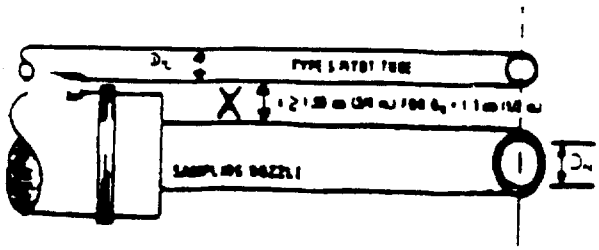


(γ, θ EXPRESSED IN DEGREES)

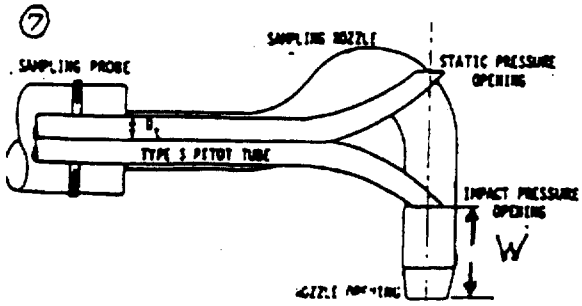
⑥



⑤



⑦



COMPLIANCE DEMONSTRATION
19 AND 20 BATTERY PUSHING EMISSIONS CONTROL

USS CLAIRTON WORKS
CLAIRTON, PA

APPENDIX D

ANALYTICAL RESULTS, EMISSIONS CALCULATIONS

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

ANALYTICAL REPORTING FORM

CLIENT: USX-Clairton Steel
PLANT LOCATION: 19 + 20 PEC
PROJECT NUMBER: 300185-01
UNIT TESTED: 19 + 20 PEC

TEST DATE: 10/21, 10/22 AND 10/23/92
DATE RECEIVED: 10/23/92
DATE ANALYZED: 10/27/92
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	121	Particulate		0.0010	0.0035	0.0028	0.0149	0.0057	0.0011
CLR-1-2-1	122	Particulate		0.0040	0.0039	0.0025	0.0185	0.0054	0.0001
CLR-1-3-1	119	Particulate		0.0007	0.0038	0.0028	0.0212	0.0049	0.0008
CLR-1-4-1	123	Particulate		0.0009	0.0096	0.0033	0.0123	0.0026	0.0003
CLR-1-1-2	126	Particulate		0.0005	0.0006	0.0014	0.0037	0.0037	0.0000
CLR-1-2-2	124	Particulate		0.0002	0.0032	0.0010	0.0101	0.0019	0.0001
CLR-1-3-2	125	Particulate		0.0009	0.0012	0.0011	0.0135	0.0019	0.0001
CLR-1-4-2	127	Particulate		0.0006	0.0036	0.0013	0.0016	0.0082	0.0001
CLR-1-1-3	131	Particulate		0.0008	0.0033	0.0053	0.0058	0.0041	0.0001
CLR-1-2-3	130	Particulate		0.0013	0.0043	0.0032	0.0088	0.0019	0.0007
CLR-1-3-3	132	Particulate		0.0009	0.0026	0.0019	0.0114	0.0042	0.0002
CLR-1-4-3	133	Particulate		0.0007	0.0022	0.0030	0.0034	0.0022	0.0001
CLR-19+20PEC-Blk	120	Particulate		0.0002	0.0001	0.0002	0.0001	0.0002	—

Analyst's Signature: Patrick J. Stockton
Date: 10/30/92

Comments

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
1920 PEC BAGHOUSE STACK 1-1

DATE: 10-21-92
CHARGE #: ...150-300185
TEST #: CLR-1-1-1

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00334	.65763

2. STACK CONDITIONS

FLOW (ACFM)	25913.
(SCFM)	23612.
MOISTURE CONTENT (%)	2.66
STACK TEMPERATURE (F)	112.4

3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	60.0
SCFD GAS SAMPLED	36.446
PERCENT ISOKINETIC	105.71

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1920 PEC BAGHOUSE
CLR-1-1-1 10-21-92

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTED VELOCITY FT/SEC
35.0E	923.0	664.792	1.500	1.26	1.26	72.	67.	3.5	112.	72.2
			1.250	1.05	1.05	72.	67.	3.2	114.	66.1
			1.350	1.13	1.13	73.	68.	3.2	113.	68.6
			1.250	1.05	1.05	74.	68.	3.0	113.	66.0
			1.300	1.09	1.09	74.	68.	3.0	112.	67.2
			1.500	1.26	1.26	72.	68.	3.2	112.	72.2
			1.250	1.05	1.05	74.	68.	3.2	113.	66.0
			1.000	.84	.84	75.	69.	2.2	113.	59.0
			1.000	.84	.84	73.	68.	2.5	112.	59.0
			1.000	.84	.84	74.	68.	2.0	112.	59.0
			1.250	1.05	1.05	77.	70.	3.0	114.	66.1
1.0E			1.000	.84	.84	76.	70.	2.5	114.	59.1
1.0E			1.000	.84	.84	72.	70.	2.5	111.	58.9
			1.000	.84	.84	73.	70.	2.0	112.	59.0
			1.000	.84	.84	73.	70.	2.5	112.	59.0
			1.000	.84	.84	73.	70.	3.0	112.	59.0
			.800	.69	.69	77.	70.	2.0	114.	52.8
			.850	.74	.74	76.	72.	3.0	113.	54.4
			1.100	.95	.95	78.	72.	3.0	114.	62.0
			1.150	1.00	1.00	78.	72.	3.0	115.	63.4
			1.500	1.30	1.30	79.	72.	3.8	114.	72.4
			1.450	1.20	1.20	78.	72.	3.4	114.	71.1
			1.250	1.09	1.09	77.	72.	3.0	114.	66.1
35.0E			1.100	.75	.75	77.	72.	2.5	115.	62.0
35.0E			1.550	1.35	1.35	78.	72.	3.8	115.	73.6
			1.250	1.09	1.09	77.	72.	3.0	115.	66.1
			1.200	1.04	1.04	77.	72.	3.2	115.	64.8
			1.250	1.09	1.09	76.	72.	3.2	115.	66.1
			1.250	1.09	1.09	77.	72.	3.2	115.	66.1
			1.000	.87	.87	78.	73.	3.2	114.	59.1
			.850	.74	.74	77.	73.	2.5	116.	54.6
			.750	.65	.65	78.	72.	2.5	116.	51.3
			.750	.65	.65	72.	72.	2.5	116.	51.3
			1.000	.87	.87	77.	72.	2.5	115.	59.1
			.900	.78	.78	78.	73.	2.5	116.	56.1
1.0E			.900	.78	.78	77.	72.	2.5	115.	56.1
1.0S			1.350	1.17	1.17	70.	66.	3.5	110.	68.4
			1.250	1.09	1.09	73.	68.	3.0	110.	65.8
			1.100	.95	.95	72.	69.	3.0	110.	61.7
			1.250	1.09	1.09	75.	70.	3.2	110.	65.8
			1.100	.95	.95	75.	70.	3.2	110.	61.7
			1.200	1.04	1.04	75.	70.	3.2	111.	64.5
			.800	.69	.69	75.	70.	2.0	111.	52.7
			1.050	.91	.91	76.	70.	3.0	111.	60.4
			.850	.74	.74	75.	70.	2.5	111.	54.3
			.850	.74	.74	75.	70.	2.5	111.	54.3
			.800	.69	.69	75.	70.	2.0	112.	52.8

35.0S		.750	.65	.65	74.	70.	2.0	110.	51.0
35.0S		.750	.65	.65	76.	70.	2.0	110.	51.0
		.750	.65	.65	74.	70.	2.2	110.	51.0
		.900	.78	.78	74.	70.	2.5	110.	55.9
		.750	.65	.65	74.	70.	2.5	110.	51.0
		.850	.74	.74	74.	70.	2.5	110.	54.3
		.800	.69	.69	72.	68.	2.5	110.	52.7
		1.350	1.17	1.17	72.	68.	3.8	110.	68.4
		1.150	1.00	1.00	70.	66.	3.2	110.	63.1
		1.250	1.09	1.09	74.	68.	3.5	110.	65.8
		1.350	1.17	1.17	68.	66.	3.5	110.	68.4
		1.250	1.09	1.09	70.	66.	3.0	110.	65.8
1.0S	1023.0	702.250 1.050	.91	.91	70.	66.	3.0	110.	60.3

O R S A T

CO2	.0
O2	20.5
CO	.0
N	79.5

IMPINGER NO.	1	12.8
	2	1.0
	3	.5
	4	.0
ABSORBED H2O		6.8

CONTROL BOX CALIBRATIONS

	FACTOR	DATE
ORIFICE	1.535	9-14-92
METER	1.0515	9-14-92
PITOT	0.84	~~8-24-92~~ 7-27-92

LEAK CHECK

	RATE	IN.HG
INITIAL	LT 0.02CFM	5.0
FINAL	0.005 CFM	4.0

CONTROL BOX NO. 7 PROBE NO. 5-4 NOZZLE NO. 11

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1920 PEC BAGHOUSE
CLR-1-1-1 10-21-92

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG.....	29.50
B.	AVG. DELTA H (IN H2O).....	.93
C.	METER PRESSURE (IN. HG.).....	29.57
D.	STATIC PRESSURE (IN. H2O).....	.75
E.	STATIC PRESSURE (IN. HG.).....	.055
F.	STACK PRESSURE (IN. HG.) (A+E).....	29.56
G.	STACK DIAMETER (IN.).....	36.00
H.	STACK AREA (SQ. FT.).....	7.07
	NOZZLE DIAMETER.....	.1800
I.	NOZZLE AREA (SQ. FT.).....	.000177
J.	AVG. STACK TEMP (DEG. R.).....	572.4
K.	AVG. METER TEMP (DEG. R.).....	532.2
L.	CONDENSATE VOL. (ML).....	14.3
M.	ABSORBED H2O (ML).....	6.8
N.	TOTAL H2O (ML).....	21.1
O.	METERED GAS (CF).....	37.458
P.	GAS METER CORRECTION.....	.9918
Q.	CORRECTED METERED GAS (CF).....	37.151
R.	H2O GAS VOLUME (CF) (0.00267N(K/C).....	1.014
S.	TOTAL SAMPLED VOLUME (CF) (Q+R).....	38.165
T.	PERCENT H2O (100R/S).....	2.66
	THEORETICAL MAXIMUM.....	9.31
	PERCENT WATER USED.....	2.66
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K)).....	36.446

V. MOLECULAR WEIGHT OF STACK GAS

COMPONENT	ORSAT-DRY VOL.PCT./100	X	MOISTURE CORRECTION (1-T/100)	X	MOLECULAR WEIGHT	=	WEIGHT PER MOLE
CO2	.000	X	.9734	X	44.0	=	.00
CO	.000	X	.9734	X	28.0	=	.00
O2	.205	X	.9734	X	32.0	=	6.39
N2	.795	X	.9734	X	28.2	=	21.82
H2O		X	T/100= .0266	X	18.0	=	.48
					MOLECULAR WEIGHT OF STACK GAS	=	28.69

W.	PITOT CORRECTION.....	.840
X.	AVERAGE CORRECTED VELOCITY (FPS)..... [85.49*W*SQRT{(J*DELTA P)/(V*F)}]	61.10
Y.	AVG. FLOW RATE (CFM) (X*H*60).....	25913.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92).....	23612.
	STACK FLOW RATE (DRY).....	22984.
AA.	SAMPLE TIME (SEC).....	3600.
BB.	PERCENT ISOKINETIC..... (J*100*U*29.92)/(528*X*AA*I*F*(1-T/100))	105.71

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA — 1920 PEC BAGHOUSE
CLR-1-1-1 — 10-21-92

PARAMETER	CYCLONE WT. (G)	MATL.ON FILTER(G)	INSOL.MATL. IN PROBE(G)	SOL.MATL. IN PROBE(G)
PARTICULATE	.00000	.00080	.00000	.00600

PARAMETER	INSOL.MATL. IN IMP.(G)	SOLUBLE MATL. IN IMP.(G)
PARTICULATE	.00110	.02050
PARTICULATE	.02840	
ALL MATLS.	.02840	

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00334	.65763

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
1920 PEC BAGHOUSE STACK 81-2

DATE: 10-21-92
CHARGE #: ...150-300185
TEST #: CLR-1-2-1

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00289	.61626

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2. STACK CONDITIONS

FLOW (ACFM)	28215.
(SCFM)	25417.
MOISTURE CONTENT (%)	2.24
STACK TEMPERATURE (F)	119.5

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3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	60.0
SCFD GAS SAMPLED	53.220
PERCENT ISOKINETIC	101.03

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1920 PEC BAGHOUSE
CLR-1-2-1 10-21-92

POINT	TIME	METER READING (DRY)CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTED VELOCITY FT/SEC
35.0E	923.0	372.968	1.600	2.85	2.85	74.	68.	5.0	112.	74.5
			1.600	2.85	2.85	77.	68.	5.0	114.	74.6
			1.600	2.93	2.93	77.	69.	5.0	115.	74.7
			1.600	2.93	2.93	77.	68.	5.0	118.	74.9
			1.600	2.93	2.93	77.	69.	5.0	118.	74.9
			1.300	2.37	2.37	76.	69.	4.0	118.	67.5
			1.300	2.37	2.37	78.	70.	4.0	117.	67.5
			1.200	2.19	2.19	76.	69.	4.0	118.	64.9
			1.200	2.19	2.19	77.	70.	4.0	119.	64.9
			1.200	2.19	2.19	76.	69.	4.0	117.	64.8
			1.100	2.00	2.00	77.	70.	3.5	116.	62.0
1.0E			1.100	2.00	2.00	77.	70.	3.5	115.	61.9
1.0E			1.100	2.01	2.01	76.	71.	3.5	115.	61.9
			1.100	2.01	2.01	77.	70.	3.5	116.	62.0
			1.200	2.19	2.17	77.	71.	4.0	117.	64.8
			1.200	2.19	2.19	78.	70.	4.0	118.	64.9
			1.200	2.19	2.19	78.	71.	4.0	118.	64.9
			1.200	2.19	2.19	78.	71.	4.0	118.	64.9
			1.400	2.56	2.56	81.	72.	4.5	121.	70.2
			1.400	2.56	2.56	81.	72.	4.5	121.	70.2
			1.400	2.55	2.55	80.	72.	4.5	120.	70.2
			1.700	3.10	3.10	82.	72.	6.0	122.	77.5
			1.600	2.91	2.91	82.	73.	5.0	124.	75.3
35.0E			1.300	2.37	2.37	82.	72.	4.0	123.	67.8
35.0E			1.300	2.37	2.37	81.	73.	4.0	122.	67.7
			1.500	2.73	2.73	82.	73.	5.0	123.	72.8
			1.500	2.73	2.73	80.	73.	5.0	122.	72.8
			1.500	2.73	2.73	81.	72.	5.0	122.	72.8
			1.500	2.73	2.73	83.	74.	5.0	123.	72.8
			1.300	2.37	2.37	82.	73.	4.0	124.	67.9
			1.300	2.37	2.37	81.	74.	4.0	122.	67.7
			1.200	2.19	2.19	81.	73.	4.0	122.	65.1
			1.100	2.00	2.00	81.	74.	3.5	124.	62.4
			1.100	2.00	2.00	81.	73.	3.5	123.	62.4
			1.100	2.00	2.00	81.	73.	3.5	121.	62.3
1.0E			1.100	2.00	2.00	79.	73.	3.5	118.	62.1
35.0S			1.100	2.00	2.00	75.	71.	4.0	120.	62.2
			1.400	2.55	2.55	77.	70.	5.0	121.	70.2
			1.200	2.18	2.18	77.	70.	4.0	120.	65.0
			1.300	2.36	2.36	77.	69.	4.0	121.	67.7
			1.300	2.36	2.36	77.	70.	4.0	122.	67.7
			1.400	2.54	2.54	78.	69.	5.0	121.	70.2
			1.000	1.81	1.81	77.	70.	3.5	119.	59.3
			1.000	1.81	1.81	79.	71.	3.5	118.	59.2
			1.100	2.00	2.00	79.	71.	4.0	122.	62.3
			1.100	2.00	2.00	78.	70.	4.0	118.	62.1
			.900	1.63	1.63	77.	71.	3.0	117.	56.1

1.0S			.900	1.63	1.63	75.	67.	3.0	115.	56.0
1.0S			.900	1.63	1.63	76.	70.	3.0	114.	56.0
			1.100	2.00	2.00	77.	69.	4.0	113.	61.8
			1.100	2.00	21.00	77.	70.	4.0	115.	61.9
			1.100	2.00	2.00	77.	71.	4.0	122.	62.3
			1.100	2.00	2.00	76.	71.	4.0	122.	62.3
			1.100	2.00	2.00	76.	71.	4.0	123.	62.4
			1.300	2.36	2.36	77.	69.	4.0	124.	67.9
			1.500	2.72	2.72	76.	70.	5.0	122.	72.8
			1.500	2.72	2.72	76.	69.	5.0	121.	72.7
			1.200	2.18	2.18	72.	67.	4.0	121.	65.0
			1.500	2.72	2.72	74.	66.	5.0	122.	72.8
35.0S	1023.0	427.659	1.200	2.18	2.18	73.	67.	4.0	120.	65.0

O R S A T

CO2	.0
O2	20.5
CO	.0
N	79.5

IMPINGER NO.	1	12.2
	2	2.3
	3	1.2
	4	.0
ABSORBED H2O		10.2

CONTROL BOX CALIBRATIONS

	FACTOR	DATE
ORIFICE	1.618	5-5-92
METER	0.9915	5-5-92
PITOT	0.84	5-1-92

LEAK CHECK

	RATE	IN.HG
INITIAL LT	0.02CFM	5.0
FINAL	0.005 CFM	6.0

CONTROL BOX NO. 3 PROBE NO. 5-1 NOZZLE NO. 54

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1920 PEC BAGHOUSE
CLR-1-2-1 10-21-92

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG	29.50
B.	AVG. DELTA H (IN H2O)	2.62
C.	METER PRESSURE (IN. HG.)	29.69
D.	STATIC PRESSURE (IN. H2O)	1.10
E.	STATIC PRESSURE (IN. HG.)	.081
F.	STACK PRESSURE (IN. HG.) (A+E)	29.58
G.	STACK DIAMETER (IN.)	36.00
H.	STACK AREA (SQ. FT.)	7.07
	NOZZLE DIAMETER	.2140
I.	NOZZLE AREA (SQ. FT.)	.000250
J.	AVG. STACK TEMP (DEG. R.)	579.5
K.	AVG. METER TEMP (DEG. R.)	534.3
L.	CONDENSATE VOL. (ML)	15.7
M.	ABSORBED H2O (ML)	10.2
N.	TOTAL H2O (ML)	25.9
O.	METERED GAS (CF)	54.691
P.	GAS METER CORRECTION	.9915
Q.	CORRECTED METERED GAS (CF)	54.226
R.	H2O GAS VOLUME (CF) (0.00267N(K/C)	1.244
S.	TOTAL SAMPLED VOLUME (CF) (Q+R)	55.470
T.	PERCENT H2O (100R/S)	2.24
	THEORETICAL MAXIMUM	11.34
	PERCENT WATER USED	2.24
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K))	53.220

V. MOLECULAR WEIGHT OF STACK GAS

COMPONENT	ORSAT-DRY VOL.PCT./100	X	MOISTURE CORRECTION (1-T/100)	X	MOLECULAR WEIGHT	=	WEIGHT PER MOLE
CO2	.000	X	.9776	X	44.0	=	.00
CO	.000	X	.9776	X	28.0	=	.00
O2	.205	X	.9776	X	32.0	=	6.41
N2	.795	X	.9776	X	28.2	=	21.92
H2O		X	T/100= .0224	X	18.0	=	.40
					MOLECULAR WEIGHT OF STACK GAS	=	28.73

W.	PITOT CORRECTION	.840
X.	AVERAGE CORRECTED VELOCITY (FPS) [85.49*W*SQRT((J*DELTA P)/(V*F))]	66.53
Y.	AVG. FLOW RATE (CFM) (X*H*60)	28215.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92)	25417.
	STACK FLOW RATE (DRY)	24846.
AA.	SAMPLE TIME (SEC)	3600.
BB.	PERCENT ISOKINETIC (J*100*U*29.92)/(528*X*AA*I*F*(1-T/100))	101.03

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1920 PEC BAGHOUSE
CLR-1-2-1 10-21-92

PARAMETER	CYCLONE WT. (G)	MATL.ON FILTER(G)	INSOL.MATL. IN PROBE(G)	SOL.MATL. IN PROBE(G)
PARTICULATE	.00000	.00380	.00000	.00610

PARAMETER	INSOL.MATL. IN IMP.(G)	SOLUBLE MATL. IN IMP.(G)
PARTICULATE	.00010	.02390
PARTICULATE	.03390	
ALL MATLS.	.03390	

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00289	.61626

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
1920 PEC BAGHOUSE STACK #1-3

DATE: 10-21-92
CHARGE #: ...150-300185
TEST #: CLR-1-3-1

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00281	.58636

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2. STACK CONDITIONS

FLOW (ACFM)	27282.
(SCFM)	24936.
MOISTURE CONTENT (%)	2.46
STACK TEMPERATURE (F)	111.3

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3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	60.0
SCFD GAS SAMPLED	41.611
PERCENT ISOKINETIC	114.06

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1920 PEC BAGHOUSE
CLR-1-3-1 10-21-92

POINT	TIME	METER READING (DRY)CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ACT	METER TEMP DEG F IN	OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTED VELOCITY FT/SEC
35.0E	923.0	513.926	1.000	.96	.96	68.	64.	4.0	111.	58.9
			1.100	1.05	1.05	69.	65.	4.0	112.	61.8
			1.600	1.53	1.53	71.	66.	5.5	108.	74.3
			1.400	1.34	1.34	71.	65.	4.5	109.	69.5
			1.200	1.15	1.15	69.	65.	4.5	112.	64.5
			1.200	1.15	1.15	68.	65.	4.5	112.	64.5
			1.200	1.15	1.15	70.	65.	4.5	110.	64.4
			1.300	1.30	1.30	69.	66.	4.5	110.	67.1
			1.200	1.20	1.20	69.	65.	4.5	113.	64.6
			1.100	1.10	1.10	68.	65.	4.0	111.	61.7
			1.100	1.10	1.10	68.	65.	4.0	112.	61.8
1.0E			1.000	1.00	1.00	68.	65.	3.5	110.	58.8
35.0E			1.600	1.60	1.60	69.	65.	5.0	108.	74.3
			1.300	1.30	1.30	70.	65.	4.5	110.	67.1
			1.400	1.40	1.40	69.	65.	4.5	110.	69.6
			1.300	1.30	1.30	69.	66.	4.5	110.	67.1
			1.300	1.30	1.30	71.	66.	4.5	113.	67.2
			1.200	1.20	1.20	70.	66.	4.0	110.	64.4
			1.200	1.20	1.20	70.	67.	4.0	113.	64.6
			1.200	1.20	1.20	72.	67.	4.0	112.	64.5
			1.100	1.10	1.10	71.	67.	3.5	112.	61.8
			1.000	1.00	1.00	71.	67.	3.5	112.	58.9
			1.000	1.00	1.00	72.	67.	3.5	115.	59.1
1.0E			1.000	1.00	1.00	71.	67.	3.5	113.	59.0
35.0E			1.100	1.10	1.10	72.	67.	3.5	112.	61.8
			1.200	1.20	1.20	72.	68.	4.0	113.	64.6
			1.500	1.50	1.50	74.	67.	5.0	110.	72.0
			1.300	1.30	1.30	72.	68.	4.5	112.	67.2
			1.300	1.30	1.30	72.	68.	4.5	110.	67.1
			1.100	1.10	1.10	72.	68.	3.5	114.	61.9
			1.200	1.20	1.20	73.	68.	4.0	112.	64.5
			1.300	1.30	1.30	72.	68.	4.5	114.	67.3
			1.200	1.20	1.20	74.	68.	4.0	113.	64.6
			1.100	1.10	1.10	72.	68.	4.0	116.	62.0
			1.000	1.00	1.00	72.	67.	4.0	114.	59.0
1.0E			1.200	1.20	1.20	72.	68.	4.0	114.	64.7
35.0S			1.200	1.20	1.20	66.	65.	4.5	113.	64.6
			1.300	1.30	1.30	67.	64.	4.5	109.	67.0
			1.500	1.50	1.50	67.	64.	5.0	108.	71.9
			1.400	1.40	1.40	69.	64.	5.0	110.	69.6
			1.200	1.20	1.20	69.	64.	4.5	112.	64.5
			1.200	1.20	1.20	69.	65.	4.5	111.	64.5
			1.000	1.00	1.00	70.	65.	4.0	111.	58.9
			1.100	1.10	1.10	70.	65.	4.0	111.	61.7
			1.100	1.10	1.10	69.	65.	4.0	111.	61.7
			1.200	1.20	1.20	69.	65.	4.5	110.	64.4
			1.000	1.00	1.00	70.	65.	4.0	111.	58.9

1.0S		1.000	1.00	1.00	66.	63.	4.0	109.	58.8
1.0S		.900	.90	.90	67.	63.	3.0	108.	55.7
		1.000	1.00	1.00	67.	64.	3.5	109.	58.8
		1.100	1.10	1.10	68.	64.	4.0	109.	61.6
		1.100	1.10	1.10	69.	64.	4.0	110.	61.7
		1.200	1.20	1.20	69.	64.	4.0	112.	64.5
		1.100	1.10	1.00	66.	64.	4.0	111.	61.7
		1.100	1.10	1.10	66.	63.	4.0	112.	61.8
		1.300	1.30	1.30	65.	62.	4.5	111.	67.1
		1.400	1.40	1.40	66.	62.	4.5	113.	69.8
		1.300	1.30	1.30	64.	61.	4.5	110.	67.1
		1.300	1.30	1.30	64.	61.	4.5	112.	67.2
35.0S	1023.0 554.717	1.400	1.40	1.40	65.	61.	4.5	111.	69.7

O R S A T

CO2	.0
O2	20.5
CO	.0
N	79.5

IMPINGER NO.	1	13.2
	2	1.1
	3	.4
	4	.0
ABSORBED H2O		7.6

CONTROL BOX CALIBRATIONS

	FACTOR	DATE
ORIFICE	1.768	10-15-92
METER	1.0295	10-15-92
PITOT	0.84	7-27-92

LEAK CHECK

	RATE	IN.HG
INITIAL LT	0.02CFM	5.0
FINAL	0.018 CFM	6.5

CONTROL BOX NO. 1 PROBE NO. 5-3 NOZZLE NO. 34

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1920 PEC BAGHOUSE
CLR-1-3-1 10-21-92

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG	29.50
B.	AVG. DELTA H (IN H2O)	1.19
C.	METER PRESSURE (IN. HG.)	29.59
D.	STATIC PRESSURE (IN. H2O)	1.20
E.	STATIC PRESSURE (IN. HG.)	.088
F.	STACK PRESSURE (IN. HG.) (A+E)	29.59
G.	STACK DIAMETER (IN.)	36.00
H.	STACK AREA (SQ. FT.)	7.07
	NOZZLE DIAMETER	.1800
I.	NOZZLE AREA (SQ. FT.)	.000177
J.	AVG. STACK TEMP (DEG. R.)	571.3
K.	AVG. METER TEMP (DEG. R.)	527.3
L.	CONDENSATE VOL. (ML)	14.7
M.	ABSORBED H2O (ML)	7.6
N.	TOTAL H2O (ML)	22.3
O.	METERED GAS (CF)	40.791
P.	GAS METER CORRECTION	1.0295
Q.	CORRECTED METERED GAS (CF)	41.994
R.	H2O GAS VOLUME (CF) (0.00267N(K/C)	1.061
S.	TOTAL SAMPLED VOLUME (CF) (Q+R)	43.055
T.	PERCENT H2O (100R/S)	2.46
	THEORETICAL MAXIMUM	9.04
	PERCENT WATER USED	2.46
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K))	41.611

V. MOLECULAR WEIGHT OF STACK GAS

COMPONENT	ORSAT-DRY VOL.PCT./100	X	MOISTURE CORRECTION (1-T/100)	X	MOLECULAR WEIGHT	=	WEIGHT PER MOLE
CO2	.000	X	.9754	X	44.0	=	.00
CO	.000	X	.9754	X	28.0	=	.00
O2	.205	X	.9754	X	32.0	=	6.40
N2	.795	X	.9754	X	28.2	=	21.87
H2O		X	T/100= .0246	X	18.0	=	.44
					MOLECULAR WEIGHT OF STACK GAS	=	28.71

W.	PITOT CORRECTION	.840
X.	AVERAGE CORRECTED VELOCITY (FPS) [85.49*W*SQRT{(J*DELTA P)/(V*F)}]	64.33
Y.	AVG. FLOW RATE (CFM) (X*H*60)	27282.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92)	24936.
	STACK FLOW RATE (DRY)	24322.
AA.	SAMPLE TIME (SEC)	3600.
BB.	PERCENT ISOKINETIC (J*100*U*29.92)/(528*X*AA*I*F*(1-T/100))	114.06

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1920 PEC BAGHOUSE
CLR-1-3-1 10-21-92

PARAMETER	CYCLONE WT. (G)	MATL.ON FILTER(G)	INSOL.MATL. IN PROBE(G)	SOL.MATL. IN PROBE(G)
PARTICULATE	.00000	.00050	.00000	.00630

PARAMETER	INSOL.MATL. IN IMP.(G)	SOLUBLE MATL. IN IMP.(G)
PARTICULATE	.00080	.02580

PARTICULATE	.03340
ALL MATLS.	.03340

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00281	.58636

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
1920 PEC BAGHOUSE STACK #1-4

DATE: 10-21-92
CHARGE #: ...150-300185
TEST #: CLR-1-4-1

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00364	.76378

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2. STACK CONDITIONS

FLOW (ACFM)	27594.
(SCFM)	24938.
MOISTURE CONTENT (%)	1.87
STACK TEMPERATURE (F)	117.8

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3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	60.0
SCFD GAS SAMPLED	57.520
PERCENT ISOKINETIC	110.86

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1920 PEC BAGHOUSE
CLR-1-4-1 10-21-92

POINT	TIME	METER READING (DRY)CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTED VELOCITY FT/SEC
1.0E	923.0	300.175	1.000	1.89	1.90	66.	65.	6.5	117.	59.1
			1.100	2.08	2.10	69.	66.	7.0	118.	62.1
			1.100	2.08	2.10	67.	66.	7.0	118.	62.1
			1.400	2.65	2.65	66.	65.	8.0	118.	70.0
			1.400	2.65	2.65	67.	66.	8.5	119.	70.1
			1.200	2.33	2.35	66.	65.	7.0	116.	64.7
			1.200	2.33	2.35	68.	67.	7.0	119.	64.9
			1.000	1.94	1.95	66.	66.	6.5	119.	59.2
			1.200	2.33	2.35	66.	66.	7.5	119.	64.9
			1.300	2.55	2.55	65.	65.	8.0	116.	67.3
			1.200	2.33	2.35	67.	66.	6.5	114.	64.6
35.0E			1.000	1.84	1.95	67.	66.	6.0	107.	58.6
1.0E			1.000	1.94	1.95	65.	64.	6.5	124.	59.5
			1.400	2.70	2.70	67.	66.	8.5	119.	70.1
			1.300	2.52	2.50	68.	65.	8.0	118.	67.5
			1.300	2.52	2.50	66.	66.	8.0	117.	67.4
			1.300	2.52	2.50	67.	67.	8.0	120.	67.6
			1.300	2.52	2.50	67.	65.	8.0	117.	67.4
			1.200	2.33	2.35	69.	68.	8.0	118.	64.8
			1.200	2.33	2.35	68.	67.	8.0	121.	65.0
			1.300	2.52	2.50	66.	67.	8.0	122.	67.7
			1.200	2.33	2.35	67.	66.	7.5	117.	64.8
			1.100	2.13	2.15	68.	67.	7.5	117.	62.0
35.0E			1.100	2.13	2.15	68.	68.	7.0	113.	61.8
1.0E			1.100	2.13	2.15	68.	66.	7.0	115.	61.9
			1.200	2.33	2.35	68.	66.	7.5	117.	64.8
			1.200	2.33	2.35	67.	67.	8.0	118.	64.8
			1.200	2.33	2.35	68.	67.	7.5	122.	65.0
			1.300	2.52	2.50	68.	68.	8.0	122.	67.7
			1.200	2.33	2.35	69.	68.	7.5	120.	64.9
			1.100	2.13	2.15	68.	67.	7.0	118.	62.1
			1.000	1.94	1.95	70.	68.	6.5	121.	59.3
			1.400	2.72	2.70	67.	66.	9.0	122.	70.2
			1.300	2.52	2.50	68.	67.	8.0	122.	67.7
			1.100	2.13	2.15	70.	69.	7.0	120.	62.2
35.0E			1.100	2.13	2.15	68.	69.	7.0	121.	62.2
1.0S			1.100	2.13	2.15	67.	66.	7.0	92.	60.6
			1.200	2.33	2.35	66.	67.	7.5	113.	64.5
			1.200	2.33	2.35	67.	65.	8.0	116.	64.7
			1.200	2.33	2.35	67.	67.	8.0	114.	64.6
			1.000	1.94	1.95	68.	67.	6.5	120.	59.3
			1.000	1.94	1.98	67.	67.	6.5	120.	59.3
			1.300	2.52	2.50	66.	65.	8.5	116.	67.3
			1.400	2.72	2.70	65.	64.	9.0	118.	70.0
			1.500	2.91	2.90	66.	65.	10.0	118.	72.5
			1.400	2.72	2.70	67.	67.	9.0	118.	70.0
			1.300	2.52	2.50	67.	66.	8.5	121.	67.6

35.0S		1.300	2.52	2.50	66.	65.	8.0	116.	67.3
1.0S		1.100	2.13	2.15	67.	63.	7.0	111.	61.7
		1.200	2.33	2.35	66.	64.	7.5	115.	64.6
		1.200	2.33	2.35	67.	66.	8.0	119.	64.9
		1.100	2.13	2.15	68.	68.	7.0	122.	62.3
		1.100	2.13	2.15	68.	68.	7.0	122.	62.3
		1.100	2.13	2.15	66.	66.	7.0	121.	62.2
		1.300	2.52	2.50	69.	67.	8.5	121.	67.6
		1.400	2.72	2.70	68.	66.	9.0	120.	70.1
		1.400	2.72	2.70	66.	66.	9.0	119.	70.1
		1.400	2.72	2.70	67.	65.	9.0	118.	70.0
		1.400	2.72	2.70	65.	64.	9.0	117.	69.9
35.0S	1023.0 359.645	1.200	2.33	2.35	65.	64.	8.0	118.	64.8

O R S A T

CO2	.0
O2	20.5
CO	.0
N	79.5

IMPINGER NO.	1	9.9
	2	1.8
	3	.6
	4	.0
ABSORBED H2O		10.9

CONTROL BOX CALIBRATIONS

	FACTOR	DATE
ORIFICE	1.756	6-3-92
METER	0.9721	6-3-92
PITOT	0.84	8-24-92

LEAK CHECK

	RATE		IN.HG
INITIAL	0.010	CFM	5.0
FINAL	0.018	CFM	9.0

CONTROL BOX NO. 14 PROBE NO. 5-5 NOZZLE NO. 45

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1920 PEC BAGHOUSE
CLR-1-4-1 10-21-92

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG	29.50
B.	AVG. DELTA H (IN H2O)	2.35
C.	METER PRESSURE (IN. HG.)	29.67
D.	STATIC PRESSURE (IN. H2O)	1.20
E.	STATIC PRESSURE (IN. HG.)	.088
F.	STACK PRESSURE (IN. HG.) (A+E)	29.59
G.	STACK DIAMETER (IN.)	36.00
H.	STACK AREA (SQ. FT.)	7.07
	NOZZLE DIAMETER	.2140
I.	NOZZLE AREA (SQ. FT.)	.000250
J.	AVG. STACK TEMP (DEG. R.)	577.8
K.	AVG. METER TEMP (DEG. R.)	526.6
L.	CONDENSATE VOL. (ML)	12.3
M.	ABSORBED H2O (ML)	10.9
N.	TOTAL H2O (ML)	23.2
O.	METERED GAS (CF)	59.470
P.	GAS METER CORRECTION	.9721
Q.	CORRECTED METERED GAS (CF)	57.811
R.	H2O GAS VOLUME (CF) (0.00267N(K/C)	1.099
S.	TOTAL SAMPLED VOLUME (CF) (Q+R)	58.910
T.	PERCENT H2O (100R/S)	1.87
	THEORETICAL MAXIMUM	11.03
	PERCENT WATER USED	1.87
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K))	57.520

V. MOLECULAR WEIGHT OF STACK GAS

COMPONENT	ORSAT-DRY VOL.PCT./100	X	MOISTURE CORRECTION (1-T/100)	X	MOLECULAR WEIGHT	=	WEIGHT PER MOLE
CO2	.000	X	.9813	X	44.0	=	.00
CO	.000	X	.9813	X	28.0	=	.00
O2	.205	X	.9813	X	32.0	=	6.44
N2	.795	X	.9813	X	28.2	=	22.00
H2O		X	T/100= .0187	X	18.0	=	.34
					MOLECULAR WEIGHT OF STACK GAS	=	28.77

W.	PITOT CORRECTION	.840
X.	AVERAGE CORRECTED VELOCITY (FPS) [85.49*W*SQRT((J*DELTA P)/(V*F))]	65.06
Y.	AVG. FLOW RATE (CFM) (X*H*60)	27594.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92)	24938.
	STACK FLOW RATE (DRY)	24472.
AA.	SAMPLE TIME (SEC)	3600.
BB.	PERCENT ISOKINETIC (J*100*U*29.92)/(528*X*AA*I*F*(1-T/100))	110.86

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1920 PEC BAGHOUSE
CLR-1-4-1 10-21-92

PARAMETER	CYCLONE WT. (G)	MATL.ON FILTER(G)	INSOL.MATL. IN PROBE(G)	SOL.MATL. IN PROBE(G)
PARTICULATE	.00000	.00070	.00000	.01260

PARAMETER	INSOL.MATL. IN IMP.(G)	SOLUBLE MATL. IN IMP.(G)
PARTICULATE	.00030	.01460

PARTICULATE	.02820
ALL MATLS.	.02820

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00364	.76378

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
1920 PEC BAGHOUSE STACK 1-1

DATE: 10-22-92
CHARGE #: ...150-300185
TEST #: CLR-1-1-2

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00169	.33204

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2. STACK CONDITIONS

FLOW (ACFM)	25322.
(SCFM)	23331.
MOISTURE CONTENT (%)	1.78
STACK TEMPERATURE (F)	112.6

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3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	60.0
SCFD GAS SAMPLED	36.440
PERCENT ISOKINETIC	106.01

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1920 PEC BAGHOUSE
CLR-1-1-2 10-22-92

FIELD DATA AND VELOCITY CALCULATIONS

POINT	TIME	METER READING (DRY)CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTE VELOCITY FT/SEC
35.0S	826.0	703.873	.750	.64	.64	56.	48.	3.0	102.	50.3
			1.250	1.06	1.06	56.	50.	3.0	102.	64.9
			1.050	.89	.89	58.	50.	2.5	102.	59.5
			1.000	.85	.85	57.	52.	2.8	104.	58.1
			1.000	.85	.85	57.	52.	2.8	104.	58.1
			1.000	.85	.85	58.	52.	2.8	105.	58.2
			1.000	.85	.85	58.	53.	3.0	105.	58.2
			.800	.68	.68	62.	54.	2.4	105.	52.0
			.800	.68	.68	58.	54.	2.5	102.	51.9
			.750	.64	.64	58.	54.	2.0	100.	50.2
			.750	.64	.64	58.	55.	2.2	100.	50.2
1.0S			.950	.81	.81	58.	55.	3.0	105.	56.7
1.0S			.750	.64	.64	60.	58.	2.5	111.	50.7
			.750	.64	.64	64.	58.	2.5	115.	50.8
			.750	.64	.64	64.	60.	2.5	115.	50.8
			1.000	.85	.85	62.	61.	3.0	115.	58.7
			.900	.77	.77	68.	62.	3.0	116.	55.7
			.800	.68	.68	66.	62.	2.8	115.	52.5
			1.100	.94	.94	67.	62.	3.5	114.	61.5
			1.250	1.00	1.00	66.	63.	3.5	115.	65.6
			1.200	1.02	1.02	65.	64.	3.2	115.	64.3
			1.100	.94	.94	68.	64.	3.0	115.	61.6
			1.150	.98	.98	68.	64.	3.0	116.	63.0
35.0S			1.050	.89	.89	66.	64.	3.0	115.	60.1
35.0S			1.200	1.02	1.02	68.	64.	3.5	115.	64.3
			1.250	1.06	1.06	66.	64.	3.5	115.	65.6
			1.250	1.06	1.06	64.	60.	3.5	114.	65.6
			1.100	.94	.94	64.	60.	3.5	115.	61.6
			1.350	1.15	1.15	67.	62.	3.5	116.	68.3
			.800	.68	.68	65.	60.	2.2	115.	52.5
			.850	.72	.72	64.	60.	2.5	114.	54.1
			.900	.77	.77	62.	60.	2.5	113.	55.6
			.800	.68	.68	66.	60.	2.5	114.	52.5
			.750	.64	.64	64.	60.	2.5	115.	50.8
			.850	.72	.72	64.	60.	2.5	114.	54.1
1.0S			.900	.77	.77	66.	62.	2.5	115.	55.7
35.0E			1.350	1.15	1.15	70.	64.	3.5	115.	68.2
			1.350	1.15	1.15	66.	62.	3.5	115.	68.2
			1.700	1.44	1.44	70.	64.	4.0	113.	76.4
			1.300	1.11	1.11	70.	65.	3.5	113.	66.8
			1.350	1.15	1.15	69.	65.	3.5	115.	68.2
			1.350	1.15	1.15	68.	66.	3.5	116.	68.3
			1.000	.85	.85	68.	65.	2.8	114.	58.6
			.850	.72	.72	70.	65.	2.5	117.	54.2

			1.200	1.02	1.02	70.	66.	3.4	116.	64.4
			.900	.77	.77	72.	67.	2.5	117.	55.8
			1.000	.85	.85	73.	68.	3.0	118.	58.8
1.0E			1.250	1.06	1.06	70.	66.	3.5	116.	65.7
1.0E			1.000	.85	.85	72.	66.	3.0	112.	58.5
			.900	.77	.77	71.	65.	2.5	116.	55.7
			.850	.72	.72	70.	65.	2.5	117.	54.2
			1.000	.85	.85	70.	65.	3.0	115.	58.7
			.900	.77	.77	72.	66.	2.5	116.	55.7
			.900	.77	.77	71.	66.	3.0	116.	55.7
			1.100	.94	.94	72.	67.	3.2	116.	61.6
			1.400	1.19	1.19	72.	67.	3.5	117.	69.6
			1.350	1.15	1.15	74.	69.	3.4	116.	68.3
			1.250	1.06	1.06	72.	70.	3.5	110.	65.3
			1.600	1.36	1.36	75.	71.	3.8	116.	74.3
35.0E	926.0	740.313	1.300	1.11	1.11	75.	70.	3.5	115.	66.9

O R S A T	
CO2	.0
O2	20.5
CO	.0
N	79.5

IMPINGER NO.	1	6.7
	2	.7
	3	.1
	4	.0
ABSORBED H2O		6.5

CONTROL BOX CALIBRATIONS

	FACTOR	DATE
ORIFICE	1.535	9-14-92
METER	1.0515	9-14-92
PITOT	0.84	7-27-92

LEAK CHECK

	RATE		IN.HG
INITIAL	0.012	CFM	5.0
FINAL	0.005	CFM	5.0

CONTROL BOX NO. 7 PROBE NO. 5-4 NOZZLE NO. 11

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1920 PEC BAGHOUSE
CLR-1-1-2 10-22-92

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG.....	29.84
B.	AVG. DELTA H (IN H2O).....	.89
C.	METER PRESSURE (IN. HG.).....	29.91
D.	STATIC PRESSURE (IN. H2O).....	.75
E.	STATIC PRESSURE (IN. HG.).....	.055
F.	STACK PRESSURE (IN. HG.) (A+E).....	29.90
G.	STACK DIAMETER (IN.).....	36.00
H.	STACK AREA (SQ. FT.).....	7.07
	NOZZLE DIAMETER.....	.1800
I.	NOZZLE AREA (SQ. FT.).....	.000177
J.	AVG. STACK TEMP (DEG. R.).....	572.6
K.	AVG. METER TEMP (DEG. R.).....	523.8
L.	CONDENSATE VOL. (ML).....	7.5
M.	ABSORBED H2O (ML).....	6.5
N.	TOTAL H2O (ML).....	14.0
O.	METERED GAS (CF).....	36.440
P.	GAS METER CORRECTION.....	.9918
Q.	CORRECTED METERED GAS (CF).....	36.141
R.	H2O GAS VOLUME (CF) (0.00267N(K/C).....	.655
S.	TOTAL SAMPLED VOLUME (CF) (Q+R).....	36.796
T.	PERCENT H2O (100R/S).....	1.78
	THEORETICAL MAXIMUM.....	9.47
	PERCENT WATER USED.....	1.78
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K)).....	36.440
V.	MOLECULAR WEIGHT OF STACK GAS	

COMPONENT	ORSAT-DRY VOL.PCT./100	X	MOISTURE CORRECTION (1-T/100)	X	MOLECULAR WEIGHT	=	WEIGHT PER MOLE
CO2	.000	X	.9822	X	44.0	=	.00
CO	.000	X	.9822	X	28.0	=	.00
O2	.205	X	.9822	X	32.0	=	6.44
N2	.795	X	.9822	X	28.2	=	22.02
H2O		X	T/100= .0178	X	18.0	=	.32
					MOLECULAR WEIGHT OF STACK GAS	=	28.78

W.	PITOT CORRECTION.....	.840
X.	AVERAGE CORRECTED VELOCITY (FPS)..... [85.49*W*SQRT((J*DELTA P)/(V*F))]	59.70
Y.	AVG. FLOW RATE (CFM) (X*H*60).....	25322.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92).....	23331.
	STACK FLOW RATE (DRY).....	22916.
AA.	SAMPLE TIME (SEC).....	3600.
BB.	PERCENT ISOKINETIC..... (J*100*U*29.92)/(528*X*AA*I*F*(1-T/100))	106.01

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1920 PEC BAGHOUSE
CLR-1-1-2 10-22-92

PARAMETER	CYCLONE WT. (G)	MATL.ON FILTER(G)	INSOL.MATL. IN PROBE(G)	SOL.MATL. IN PROBE(G)
PARTICULATE	.00000	.00230	.00000	.00170

PARAMETER	INSOL.MATL. IN IMP.(G)	SOLUBLE MATL. IN IMP.(G)
PARTICULATE	.00000	.00710
PARTICULATE	.01110	
ALL MATLS.	.01110	

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00169	.33204

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
1920 PEC BAGHOUSE STACK 1-2

DATE: 10-22-92
CHARGE #: ...150-300185
TEST #: CLR-1-2-2

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00123	.25859

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2. STACK CONDITIONS

FLOW (ACFM)	26891.
(SCFM)	25060.
MOISTURE CONTENT (%)	1.89
STACK TEMPERATURE (F)	106.7

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3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	60.0
SCFD GAS SAMPLED	50.201
PERCENT ISOKINETIC	96.30

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1920 PEC BAGHOUSE
CLR-1-2-2 10-22-92

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTED VELOCITY FT/SEC
35.0S	826.0	427.986	1.300	2.31	2.31	53.	47.	12.5	96.	65.8
			1.300	2.31	2.31	55.	48.	12.0	96.	65.8
			1.300	2.35	2.35	58.	48.	10.5	95.	65.7
			1.400	2.53	2.53	58.	49.	12.0	99.	68.5
			1.300	2.35	2.35	59.	50.	10.5	97.	65.8
			1.500	2.71	2.71	59.	51.	13.0	99.	70.9
			1.000	1.81	1.81	61.	51.	8.0	98.	57.8
			1.000	1.81	1.81	61.	52.	8.0	98.	57.8
			1.000	1.81	1.81	62.	53.	8.0	99.	57.9
			1.200	2.17	2.17	63.	54.	9.0	96.	63.2
			1.100	1.99	1.99	65.	55.	8.5	99.	60.7
1.0S			1.100	1.99	1.99	66.	55.	9.0	100.	60.7
1.0S			1.000	1.81	1.81	66.	57.	8.0	97.	57.7
			1.000	1.81	1.81	67.	58.	8.0	96.	57.7
			1.000	1.81	1.81	68.	59.	8.0	95.	57.6
			1.100	1.99	1.99	69.	60.	8.5	107.	61.1
			1.100	1.98	1.98	70.	61.	8.5	107.	61.1
			1.100	1.98	1.98	71.	63.	8.5	108.	61.2
			1.400	2.52	2.52	71.	62.	10.5	112.	69.2
			1.300	2.34	2.34	72.	64.	10.0	111.	66.7
			1.400	2.52	2.52	73.	63.	11.0	113.	69.3
			1.400	2.52	2.52	72.	64.	11.0	111.	69.2
			1.300	2.34	2.34	74.	64.	10.0	112.	66.7
35.0S			1.000	1.80	1.80	73.	65.	8.0	109.	58.4
35.0S			1.300	2.34	2.34	74.	65.	10.0	110.	66.6
			1.200	2.16	2.16	73.	66.	9.5	110.	64.0
			1.400	2.52	2.52	72.	65.	11.0	110.	69.1
			1.400	2.52	2.52	72.	65.	9.0	108.	69.0
			1.400	2.52	2.52	73.	65.	9.0	110.	69.1
			1.400	2.52	2.52	73.	66.	9.0	109.	69.1
			1.200	2.16	2.16	72.	65.	7.5	109.	63.9
			1.100	1.98	1.98	72.	66.	7.0	108.	61.2
			1.100	1.98	1.98	72.	65.	7.0	107.	61.1
			1.100	1.98	1.98	74.	65.	7.0	107.	61.1
			1.000	1.80	1.80	73.	64.	6.0	104.	58.1
1.0S			1.000	1.80	1.80	72.	65.	6.0	102.	58.0
35.0E			1.500	2.69	2.69	75.	64.	9.0	110.	71.5
			1.500	2.69	2.69	75.	66.	9.0	111.	71.6
			1.500	2.69	2.69	76.	65.	9.0	110.	71.5
			1.400	2.56	2.56	77.	67.	9.0	110.	69.1
			1.400	2.56	2.56	78.	67.	9.0	113.	69.3
			1.300	2.38	2.38	78.	68.	8.0	114.	66.8
			1.200	2.22	2.22	78.	68.	7.5	114.	64.2
			1.300	2.40	2.40	79.	70.	8.0	112.	66.7
			1.200	2.22	2.22	79.	70.	7.5	109.	63.9
			.800	1.48	1.48	77.	71.	5.0	106.	52.1
			.800	1.48	1.48	78.	70.	5.0	105.	52.0

			.800	1.48	1.48	79.	71.	5.0	104.	52.0
1.0E			.800	1.48	1.48	78.	69.	5.0	104.	52.0
1.0E			.800	1.48	1.48	77.	71.	5.0	106.	52.1
			.800	1.48	1.48	77.	69.	5.0	107.	52.1
			1.000	1.85	1.85	78.	69.	6.0	109.	58.4
			1.300	2.40	2.40	79.	71.	8.0	115.	66.9
			1.200	2.22	2.22	80.	70.	7.5	116.	64.3
			1.200	2.22	2.22	79.	71.	7.5	115.	64.3
			1.200	2.22	2.22	79.	70.	7.5	113.	64.2
			1.300	2.40	2.40	79.	72.	8.0	114.	66.8
			1.400	2.59	2.59	80.	71.	9.0	110.	69.1
			1.200	2.22	2.22	82.	73.	7.5	117.	64.4
35.0E	926.0	478.425	1.500	2.77	2.77	93.	73.	9.5	116.	71.9

O R S A T	
CO2	.0
O2	20.5
CO	.0
N	79.5

IMPINGER NO.	1	8.4
	2	1.8
	3	.4
	4	.0
ABSORBED H2O		9.9

CONTROL BOX CALIBRATIONS

	FACTOR	DATE
ORIFICE	1.618	5-5-92
METER	0.9915	5-5-92
PITOT	0.84	5-1-92

LEAK CHECK

	RATE	IN.HG
INITIAL	LT 0.02CFM	5.0
FINAL	0.010 CFM	12.5

CONTROL BOX NO. 3 PROBE NO. 5-1 NOZZLE NO. 54

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* Measured in pounds per gallon at 60 degrees F.

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1920 PEC BAGHOUSE
CLR-1-2-2 10-22-92

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG.....	29.84
B.	AVG. DELTA H (IN H2O).....	2.17
C.	METER PRESSURE (IN. HG.).....	30.00
D.	STATIC PRESSURE (IN. H2O).....	1.20
E.	STATIC PRESSURE (IN. HG.).....	.088
F.	STACK PRESSURE (IN. HG.) (A+E).....	29.93
G.	STACK DIAMETER (IN.).....	36.00
H.	STACK AREA (SQ. FT.).....	7.07
	NOZZLE DIAMETER.....	.2140
I.	NOZZLE AREA (SQ. FT.).....	.000250
J.	AVG. STACK TEMP (DEG. R.).....	566.7
K.	AVG. METER TEMP (DEG. R.).....	527.7
L.	CONDENSATE VOL. (ML).....	10.6
M.	ABSORBED H2O (ML).....	9.9
N.	TOTAL H2O (ML).....	20.5
O.	METERED GAS (CF).....	50.439
P.	GAS METER CORRECTION.....	.9915
Q.	CORRECTED METERED GAS (CF).....	50.010
R.	H2O GAS VOLUME (CF) (0.00267N(K/C).....	.963
S.	TOTAL SAMPLED VOLUME (CF) (Q+R).....	50.973
T.	PERCENT H2O (100R/S).....	1.89
	THEORETICAL MAXIMUM.....	7.96
	PERCENT WATER USED.....	1.89
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K)).....	50.201

V. MOLECULAR WEIGHT OF STACK GAS

COMPONENT	ORSAT-DRY VOL.PCT./100	X	MOISTURE CORRECTION (1-T/100)	X	MOLECULAR WEIGHT	=	WEIGHT PER MOLE
CO2	.000	X	.9811	X	44.0	=	.00
CO	.000	X	.9811	X	28.0	=	.00
O2	.205	X	.9811	X	32.0	=	6.44
N2	.795	X	.9811	X	28.2	=	22.00
H2O		X	T/100= .0189	X	18.0	=	.34
					MOLECULAR WEIGHT OF STACK GAS	=	28.77

W.	PITOT CORRECTION.....	.840
X.	AVERAGE CORRECTED VELOCITY (FPS).....	63.40
	[85.49*W*SQRT{(J*DELTA P)/(V*F)}]	
Y.	AVG. FLOW RATE (CFM) (X*H*60).....	26891.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92).....	25060.
	STACK FLOW RATE (DRY).....	24586.
AA.	SAMPLE TIME (SEC).....	3600.
BB.	PERCENT ISOKINETIC.....	96.30
	(J*100*U*29.92)/(528*X*AA*I*F*(1-T/100))	

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
CLR-1-2-2

1920 PEC BAGHOUSE
10-22-92

PARAMETER	CYCLONE WT. (G)	MATL.ON FILTER(G)	INSOL.MATL. IN PROBE(G)	SOL.MATL. IN PROBE(G)
PARTICULATE	.00000	.00000	.00000	.00390

PARAMETER	INSOL.MATL. IN IMP.(G)	SOLUBLE MATL. IN IMP.(G)
PARTICULATE	.00010	.01170
PARTICULATE	.01570	
ALL MATLS.	.01570	

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00123	.25859

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
1920 PEC BAGHOUSE STACK #1-3

DATE: 10-22-92
CHARGE #: ...150-300185
TEST #: CLR-1-3-2

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00101	.21836

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2. STACK CONDITIONS

FLOW (ACFM)	27668.
(SCFM)	25694.
MOISTURE CONTENT (%)	1.85
STACK TEMPERATURE (F)	108.6

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3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	60.0
SCFD GAS SAMPLED	42.683
PERCENT ISOKINETIC	112.84

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
CLR-1-3-2

1920 PEC BAGHOUSE
10-22-92

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTED VELOCITY FT/SEC
35.0S	826.0	555.242	1.400	1.40	1.40	53.	50.	4.5	96.	68.3
			1.500	1.50	1.50	54.	50.	4.5	97.	70.7
			1.300	1.30	1.30	55.	50.	4.5	97.	65.8
			1.500	1.50	1.50	56.	51.	5.0	96.	70.7
			1.200	1.20	1.20	56.	51.	4.0	96.	63.2
			1.100	1.10	1.10	56.	52.	4.0	97.	60.6
			1.000	1.00	1.00	58.	52.	3.5	100.	57.9
			1.300	1.30	1.30	58.	53.	4.5	99.	66.0
			1.200	1.20	1.20	59.	54.	4.0	99.	63.4
			1.200	1.20	1.20	60.	55.	4.0	100.	63.4
			1.000	1.00	1.00	59.	55.	3.5	101.	58.0
			.900	.90	.90	61.	56.	3.0	102.	55.0
1.0S			1.000	1.00	1.00	62.	56.	3.5	102.	58.0
1.0S			1.000	1.00	1.00	62.	57.	3.5	103.	58.1
			1.200	1.20	1.20	63.	59.	4.0	105.	63.7
			1.300	1.30	1.30	64.	60.	4.5	105.	66.3
			1.300	1.30	1.30	65.	60.	4.5	105.	66.3
			1.200	1.20	1.20	66.	61.	4.0	105.	63.7
			1.200	1.20	1.20	66.	61.	4.0	114.	64.2
			1.400	1.40	1.40	67.	61.	4.5	109.	69.1
			1.500	1.50	1.50	68.	61.	5.0	115.	71.9
			1.500	1.50	1.50	68.	63.	5.0	111.	71.6
			1.500	1.50	1.50	70.	62.	5.0	113.	71.7
			1.500	1.50	1.50	69.	63.	5.0	114.	71.8
35.0S			1.500	1.50	1.50	69.	64.	5.0	113.	71.7
35.0S			1.400	1.40	1.40	69.	64.	4.5	110.	69.1
			1.600	1.60	1.60	67.	63.	5.0	113.	74.1
			1.400	1.40	1.40	67.	63.	4.5	108.	69.0
			1.300	1.30	1.30	67.	63.	4.5	112.	66.7
			1.100	1.10	1.10	66.	62.	4.0	109.	61.2
			1.100	1.10	1.10	66.	62.	4.0	113.	61.4
			1.200	1.20	1.20	66.	62.	4.0	108.	63.9
			1.300	1.30	1.30	66.	62.	4.5	111.	66.7
			1.100	1.10	1.10	66.	62.	4.0	109.	61.2
			1.000	1.00	1.00	66.	63.	3.5	110.	58.4
			1.000	1.00	1.00	67.	63.	3.5	109.	58.4
1.0S			1.700	1.70	1.70	69.	64.	5.5	109.	76.1
35.0E			1.600	1.60	1.60	70.	64.	5.0	110.	73.9
			1.400	1.40	1.40	71.	65.	5.0	110.	69.1
			1.500	1.50	1.50	70.	65.	5.0	110.	71.6
			1.400	1.40	1.40	71.	65.	5.0	113.	69.3
			1.200	1.20	1.20	70.	66.	4.0	111.	64.1
			1.200	1.20	1.20	70.	66.	4.0	113.	64.2
			1.200	1.20	1.20	69.	66.	4.0	112.	64.1
			1.200	1.20	1.20	70.	66.	4.0	113.	64.2
			1.100	1.10	1.10	70.	66.	4.0	114.	61.5
			1.100	1.10	1.10	70.	66.	4.0	115.	61.5

1.0E			1.000	1.00	1.00	69.	65.	3.5	113.	58.6
1.0E			1.000	1.00	1.00	69.	65.	3.5	112.	58.5
			1.200	1.20	1.20	69.	65.	4.0	112.	64.1
			1.200	1.20	1.20	71.	65.	4.0	114.	64.2
			1.100	1.10	1.10	70.	66.	4.0	115.	61.5
			1.300	1.30	1.30	72.	67.	4.5	114.	66.8
			1.200	1.20	1.20	72.	67.	4.0	113.	64.2
			1.100	1.10	1.10	72.	67.	4.0	114.	61.5
			1.100	1.10	1.10	72.	68.	4.0	114.	61.5
			1.300	1.30	1.30	74.	69.	4.5	115.	66.9
			1.500	1.50	1.50	69.	67.	5.0	113.	71.7
			1.400	1.40	1.40	72.	67.	5.0	116.	69.5
35.0E	926.0	596.331	1.200	1.20	1.20	72.	68.	4.0	115.	64.3

O R S A T

CO2	.0
O2	20.5
CO	.0
N	79.5

IMPINGER NO.	1	7.2
	2	.0
	3	.1
	4	.0
ABSORBED H2O		9.8

CONTROL BOX CALIBRATIONS

	FACTOR	DATE
ORIFICE	1.768	10-15-92
METER	1.0295	10-15-92
PITOT	0.84	7-27-92

LEAK CHECK

	RATE	IN.HG
INITIAL	LT 0.02CFM	4.0
FINAL	0.015 CFM	6.5

CONTROL BOX NO. 1 PROBE NO. 5-3 NOZZLE NO. 34

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
CLR-1-3-2

1920 PEC BAGHOUSE
10-22-92

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG.	29.84
B.	AVG. DELTA H (IN H2O)	1.26
C.	METER PRESSURE (IN. HG.)	29.93
D.	STATIC PRESSURE (IN. H2O)	1.10
E.	STATIC PRESSURE (IN. HG.)	.081
F.	STACK PRESSURE (IN. HG.) (A+E)	29.92
G.	STACK DIAMETER (IN.)	36.00
H.	STACK AREA (SQ. FT.)	7.07
	NOZZLE DIAMETER	.1800
I.	NOZZLE AREA (SQ. FT.)	.000177
J.	AVG. STACK TEMP (DEG. R.)	568.6
K.	AVG. METER TEMP (DEG. R.)	523.8
L.	CONDENSATE VOL. (ML)	7.3
M.	ABSORBED H2O (ML)	9.8
N.	TOTAL H2O (ML)	17.1
O.	METERED GAS (CF)	41.089
P.	GAS METER CORRECTION	1.0295
Q.	CORRECTED METERED GAS (CF)	42.301
R.	H2O GAS VOLUME (CF) (0.00267N(K/C)	.799
S.	TOTAL SAMPLED VOLUME (CF) (Q+R)	43.100
T.	PERCENT H2O (100R/S)	1.85
	THEORETICAL MAXIMUM	8.44
	PERCENT WATER USED	1.85
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K))	42.683

V. MOLECULAR WEIGHT OF STACK GAS

COMPONENT	ORSAT-DRY VOL.PCT./100	X	MOISTURE CORRECTION (1-T/100)	X	MOLECULAR WEIGHT	=	WEIGHT PER MOLE
CO2	.000	X	.9815	X	44.0	=	.00
CO	.000	X	.9815	X	28.0	=	.00
O2	.205	X	.9815	X	32.0	=	6.44
N2	.795	X	.9815	X	28.2	=	22.00
H2O		X	T/100= .0185	X	18.0	=	.33
					MOLECULAR WEIGHT OF STACK GAS	=	28.78

W.	PITOT CORRECTION	.840
X.	AVERAGE CORRECTED VELOCITY (FPS) [85.49*W*SQRT{(J*DELTA P)/(V*F)}]	65.24
Y.	AVG. FLOW RATE (CFM) (X*H*60)	27668.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92)	25694.
	STACK FLOW RATE (DRY)	25217.
AA.	SAMPLE TIME (SEC)	3600.
BB.	PERCENT ISOKINETIC (J*100*U*29.92)/(528*X*AA*I*F*(1-T/100))	112.84

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
1920 PEC BAGHOUSE STACK #1-4

DATE: 10-22-92
CHARGE #: ...150-300185
TEST #: CLR-1-4-2

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00139	.28900

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2. STACK CONDITIONS

FLOW (ACFM)	26686.
(SCFM)	24636.
MOISTURE CONTENT (%)	1.67
STACK TEMPERATURE (F)	111.8

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3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	60.0
SCFD GAS SAMPLED	56.431
PERCENT ISOKINETIC	109.87

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
CLR-1-4-2

1920 PEC BAGHOUSE
10-22-92

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTED VELOCITY FT/SEC
35.0S	826.0	360.020	1.300	2.51	2.50	53.	52.	7.5	101.	66.1
			1.300	2.51	2.50	53.	52.	8.0	103.	66.2
			1.400	2.71	2.70	54.	52.	8.5	101.	68.6
			1.400	2.71	2.70	54.	54.	8.5	104.	68.7
			1.500	2.90	2.90	54.	54.	9.0	100.	70.9
			1.300	2.51	2.50	55.	55.	8.0	101.	66.1
			1.300	2.51	2.50	56.	55.	8.0	101.	66.1
			1.100	2.13	2.15	57.	54.	6.5	103.	60.9
			1.200	2.32	2.30	57.	56.	7.0	102.	63.5
			1.300	2.51	2.50	57.	57.	8.0	102.	66.1
1.0S			1.300	2.51	2.50	58.	57.	8.0	102.	66.1
35.0S			1.100	2.13	2.15	60.	58.	6.5	98.	60.6
			1.300	2.51	2.50	60.	58.	8.0	104.	66.2
			1.300	2.51	2.50	61.	60.	8.0	106.	66.4
			1.600	3.09	3.10	60.	60.	9.5	103.	73.4
			1.600	3.09	3.10	61.	61.	9.5	109.	73.8
			1.600	2.90	2.90	61.	61.	9.0	109.	73.8
			1.200	2.32	2.30	62.	63.	7.2	111.	64.0
			1.000	1.93	1.95	65.	63.	6.0	115.	58.7
			1.000	1.93	1.95	64.	64.	6.0	115.	58.7
			1.100	2.13	2.15	64.	65.	6.5	114.	61.5
			1.200	2.32	2.30	65.	64.	7.0	114.	64.2
			1.200	2.32	2.30	66.	65.	7.0	111.	64.0
1.0S			1.000	1.93	1.95	67.	66.	6.0	103.	58.0
35.0S			1.300	2.51	2.50	64.	64.	7.5	115.	66.9
			1.300	2.51	2.50	66.	65.	7.5	115.	66.9
			1.400	2.71	2.70	68.	67.	8.0	116.	69.5
			1.300	2.51	2.50	67.	65.	7.5	112.	66.7
			1.400	2.71	2.70	68.	66.	7.5	112.	69.2
			1.100	2.13	2.15	66.	64.	6.5	114.	61.5
			1.000	1.93	1.95	65.	66.	5.5	118.	58.8
			1.000	1.93	1.95	66.	66.	6.0	116.	58.7
			1.000	1.93	1.95	65.	66.	6.0	117.	58.8
			1.100	2.13	2.15	66.	67.	6.5	115.	61.5
1.0S			1.100	2.13	2.15	66.	65.	6.5	115.	61.5
35.0E			1.000	1.93	1.95	66.	65.	6.0	99.	57.8
			1.000	1.93	1.95	69.	66.	6.0	113.	58.6
			1.000	1.93	1.95	71.	69.	6.0	113.	58.6
			.900	1.74	1.75	69.	68.	5.0	113.	55.6
			.900	1.74	1.75	69.	69.	5.5	115.	55.7
			.900	1.74	1.75	69.	69.	5.5	114.	55.6
			.900	1.74	1.75	69.	69.	5.5	116.	55.7
			1.000	1.93	1.95	70.	69.	6.0	120.	58.9
			1.100	2.13	2.15	70.	69.	6.5	117.	61.6
			1.000	1.93	1.95	70.	69.	6.0	120.	58.9
			1.000	1.93	1.95	68.	68.	6.0	120.	58.9
			1.000	1.93	1.95	70.	70.	6.0	113.	58.6

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
CLR-1-3-2

1920 PEC BAGHOUSE
10-22-92

PARAMETER	CYCLONE WT. (G)	MATL.ON FILTER(G)	INSOL.MATL. IN PROBE(G)	SOL.MATL. IN PROBE(G)
PARTICULATE	.00000	.00070	.00000	.00200

PARAMETER	INSOL.MATL. IN IMP.(G)	SOLUBLE MATL. IN IMP.(G)
PARTICULATE	.00010	.01510
PARTICULATE	.01790	
ALL MATLS.	.01790	

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00101	.21836

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations

1.0E			.800	1.55	1.55	69.	68.	5.5	98.	51.7
35.0E			1.000	1.93	1.95	69.	68.	6.0	121.	59.0
			.900	1.74	1.75	70.	68.	6.0	120.	55.9
			1.600	3.09	3.10	70.	69.	9.5	119.	74.5
			1.100	2.13	2.15	69.	69.	6.5	122.	61.9
			1.200	2.32	2.30	69.	68.	7.0	117.	64.4
			1.000	1.93	1.95	69.	70.	6.0	121.	59.0
			1.200	2.32	2.30	72.	71.	7.0	120.	64.5
			1.200	2.32	2.30	71.	70.	7.0	122.	64.7
			1.200	2.32	2.30	72.	74.	7.0	123.	64.7
			1.200	2.32	2.30	70.	68.	7.0	122.	64.7
			1.100	2.13	2.15	70.	68.	6.5	117.	61.6
1.0E	926.0	417.482	1.100	2.13	2.15	70.	70.	6.5	116.	61.6

O R S A T

CO2	.0
O2	20.5
CO	.0
N	79.5

IMPINGER NO.	1	6.8
	2	1.3
	3	.1
	4	.0
ABSORBED H2O		12.1

CONTROL BOX CALIBRATIONS

	FACTOR	DATE
ORIFICE	1.756	6-3-92
METER	0.9721	6-3-92
PITOT	0.84	8-24-92

LEAK CHECK

	RATE	IN.HG
INITIAL	LT 0.02CFM	5.0
FINAL	0.016 CFM	9.5

CONTROL BOX NO. 4 PROBE NO. 5-5 NOZZLE NO. 45

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1920 PEC BAGHOUSE
CLR-1-4-2 10-22-92

PARAMETER	CYCLONE WT. (G)	MATL.ON FILTER(G)	INSOL.MATL. IN PROBE(G)	SOL.MATL. IN PROBE(G)
PARTICULATE	.00000	.00040	.00000	.00460

PARAMETER	INSOL.MATL. IN IMP.(G)	SOLUBLE MATL. IN IMP.(G)
PARTICULATE	.00010	.00950
PARTICULATE	.01460	
ALL MATLS.	.01460	

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00139	.28900

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA — 1920 PEC BAGHOUSE
CLR-1-4-2 — 10-22-92

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG.	29.84
B.	AVG. DELTA H (IN H2O)	2.25
C.	METER PRESSURE (IN. HG.)	30.01
D.	STATIC PRESSURE (IN. H2O)	1.00
E.	STATIC PRESSURE (IN. HG.)	.074
F.	STACK PRESSURE (IN. HG.) (A+E)	29.91
G.	STACK DIAMETER (IN.)	36.00
H.	STACK AREA (SQ. FT.)	7.07
	NOZZLE DIAMETER	.2140
I.	NOZZLE AREA (SQ. FT.)	.000250
J.	AVG. STACK TEMP (DEG. R.)	571.8
K.	AVG. METER TEMP (DEG. R.)	524.5
L.	CONDENSATE VOL. (ML)	8.2
M.	ABSORBED H2O (ML)	12.1
N.	TOTAL H2O (ML)	20.3
O.	METERED GAS (CF)	57.462
P.	GAS METER CORRECTION	.9721
Q.	CORRECTED METERED GAS (CF)	55.859
R.	H2O GAS VOLUME (CF) (0.00267N(K/C)	.947
S.	TOTAL SAMPLED VOLUME (CF) (Q+R)	56.806
T.	PERCENT H2O (100R/S)	1.67
	THEORETICAL MAXIMUM	9.20
	PERCENT WATER USED	1.67
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K))	56.431

V. MOLECULAR WEIGHT OF STACK GAS

COMPONENT	ORSAT-DRY VOL.PCT./100	X	MOISTURE CORRECTION (1-T/100)	X	MOLECULAR WEIGHT	=	WEIGHT PER MOLE
CO2	.000	X	.9833	X	44.0	=	.00
CO	.000	X	.9833	X	28.0	=	.00
O2	.205	X	.9833	X	32.0	=	6.45
N2	.795	X	.9833	X	28.2	=	22.05
H2O		X	T/100= .0167	X	18.0	=	.30
					MOLECULAR WEIGHT OF STACK GAS	=	28.80

W.	PITOT CORRECTION	.840
X.	AVERAGE CORRECTED VELOCITY (FPS) [85.49*W*SQRT((J*DELTA P)/(V*F))]	62.92
Y.	AVG. FLOW RATE (CFM) (X*H*60)	26686.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92)	24636.
	STACK FLOW RATE (DRY)	24225.
AA.	SAMPLE TIME (SEC)	3600.
BB.	PERCENT ISOKINETIC (J*100*U*29.92)/(528*X*AA*I*F*(1-T/100))	109.87

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
1920 PEC BAGHOUSE STACK 1-1

DATE: 10-23-92
CHARGE #: ...150-300185
TEST #: CLR-1-1-3

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00304	.60602

2. STACK CONDITIONS

FLOW (ACFM)	25807.
(SCFM)	23716.
MOISTURE CONTENT (%)	1.81
STACK TEMPERATURE (F)	111.0

3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	60.0
SCFD GAS SAMPLED	45.651
PERCENT ISOKINETIC	92.46

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
CLR-1-1-3

1920 PEC BAGHOUSE
10-23-92

FIELD DATA AND VELOCITY CALCULATIONS

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTE VELOCITY FFT/SEC
35.0E	922.0	740.880	1.250	2.19	2.19	52.	48.	6.0	100.	64.9
			1.500	2.54	2.54	52.	48.	6.0	100.	71.1
			1.250	2.36	2.36	54.	49.	6.0	100.	64.9
			1.250	2.19	2.19	55.	50.	5.8	101.	65.0
			1.250	2.19	2.19	56.	50.	5.8	101.	65.0
			1.250	2.14	2.14	56.	50.	6.0	100.	64.9
			1.000	1.71	1.71	58.	54.	5.0	99.	58.0
			.950	1.63	1.63	58.	54.	5.0	99.	56.6
			.900	1.54	1.54	59.	55.	4.8	99.	55.1
			1.000	1.71	1.71	59.	55.	4.8	99.	58.0
			1.100	1.89	1.89	62.	58.	5.2	98.	60.8
			1.000	1.71	1.71	64.	58.	5.0	98.	58.0
1.0E			.950	1.63	1.63	66.	60.	4.8	99.	56.6
1.0E			1.350	2.32	2.30	70.	62.	6.0	105.	67.8
			1.050	1.84	1.84	70.	62.	5.0	105.	59.8
			.900	1.57	1.57	68.	64.	4.8	105.	55.3
			.850	1.49	1.49	70.	64.	4.5	106.	53.8
			1.150	2.01	2.01	70.	65.	5.5	106.	62.6
			1.300	2.27	2.27	70.	65.	6.0	106.	66.6
			1.250	2.19	2.19	72.	66.	5.8	106.	65.3
			1.300	2.27	2.27	72.	68.	6.0	109.	66.8
			1.500	2.62	2.62	74.	70.	7.0	110.	71.8
			1.300	2.27	2.27	74.	70.	6.2	110.	66.8
			1.500	2.62	2.62	75.	70.	6.0	111.	71.8
35.0E			1.300	2.27	2.27	75.	70.	6.0	112.	66.9
35.0E			1.250	2.19	2.19	72.	70.	6.0	111.	65.6
			1.150	2.01	2.01	75.	70.	5.5	111.	62.9
			1.350	2.36	2.36	75.	70.	6.0	111.	68.1
			1.250	2.19	2.19	75.	70.	6.0	111.	65.6
			1.350	2.36	2.36	76.	70.	6.0	111.	68.1
			.850	1.49	1.49	75.	70.	4.5	111.	54.1
			1.000	1.75	1.75	75.	70.	5.0	113.	58.8
			.900	1.57	1.57	75.	70.	4.8	112.	55.7
			1.250	2.19	2.19	75.	70.	5.5	111.	65.6
			1.250	2.18	2.18	80.	75.	6.0	112.	65.6
			.900	1.57	1.57	80.	75.	4.5	110.	55.6
1.0E			1.000	1.74	1.74	80.	75.	5.0	116.	58.9
35.0S			1.250	2.18	2.13	80.	76.	5.8	117.	65.9
			1.100	1.72	1.72	80.	76.	4.5	117.	61.8
			1.000	1.74	1.74	80.	80.	5.0	120.	59.1
			1.150	2.01	2.01	80.	80.	5.5	120.	63.4
			1.000	1.74	1.74	80.	80.	5.0	120.	59.1
			.750	1.31	1.31	80.	81.	4.0	120.	51.2
			.900	1.57	1.57	82.	80.	4.5	120.	56.1

			.750	1.21	1.21	80.	80.	4.4	118.	51.1
			.750	1.31	1.31	80.	80.	4.4	118.	51.1
1.0S			.750	1.31	1.31	80.	80.	4.5	115.	51.0
1.0S			.750	1.31	1.31	80.	80.	4.5	114.	50.9
			.750	1.31	1.31	80.	80.	4.5	112.	50.8
			1.000	1.74	1.74	80.	81.	5.0	118.	59.0
			.850	1.48	1.48	80.	81.	4.5	121.	54.5
			1.000	1.74	1.74	80.	80.	5.0	121.	59.2
			.850	1.48	1.48	80.	80.	4.5	120.	54.5
			.850	1.48	1.48	80.	80.	4.5	121.	54.5
			1.000	1.74	1.74	80.	80.	4.8	122.	59.2
			1.000	1.74	1.74	80.	80.	5.0	121.	59.2
			1.100	1.92	1.92	80.	80.	5.0	122.	62.1
			1.250	2.18	2.18	80.	80.	5.5	120.	66.1
			1.250	2.18	2.18	80.	80.	5.5	120.	66.1
35.0S	1022.0	787.311	1.250	2.18	2.18	80.	80.	5.5	120.	66.1

O R S A T

CO2	.0
O2	20.5
CO	.0
N	79.5

IMPINGER NO.	1	7.3
	2	1.7
	3	.3
	4	.0
ABSORBED H2O		8.5

CONTROL BOX CALIBRATIONS

	FACTOR	DATE
ORIFICE	1.535	9-14-92
METER	1.0515	9-14-92
PITOT	0.84	5-1-92

LEAK CHECK

	RATE	IN.HG
INITIAL	LT 0.02CFM	5.0
FINAL	0.005 CFM	8.0

CONTROL BOX NO. 7 PROBE NO. 5-1 NOZZLE NO. 54

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
CLR-1-1-3

1920 PEC BAGHOUSE
10-23-92

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG	29.68
B.	AVG. DELTA H (IN H2O)	1.89
C.	METER PRESSURE (IN. HG.)	29.82
D.	STATIC PRESSURE (IN. H2O)	.75
E.	STATIC PRESSURE (IN. HG.)	.055
F.	STACK PRESSURE (IN. HG.) (A+E)	29.74
G.	STACK DIAMETER (IN.)	36.00
H.	STACK AREA (SQ. FT.)	7.07
	NOZZLE DIAMETER	.2140
I.	NOZZLE AREA (SQ. FT.)	.000250
J.	AVG. STACK TEMP (DEG. R.)	571.0
K.	AVG. METER TEMP (DEG. R.)	531.2
L.	CONDENSATE VOL. (ML)	9.3
M.	ABSORBED H2O (ML)	8.5
N.	TOTAL H2O (ML)	17.8
O.	METERED GAS (CF)	46.431
P.	GAS METER CORRECTION	.9918
Q.	CORRECTED METERED GAS (CF)	46.050
R.	H2O GAS VOLUME (CF) (0.00267N(K/C)	.847
S.	TOTAL SAMPLED VOLUME (CF) (Q+R)	46.897
T.	PERCENT H2O (100R/S)	1.81
	THEORETICAL MAXIMUM	8.99
	PERCENT WATER USED	1.81
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K))	45.651
V.	MOLECULAR WEIGHT OF STACK GAS	

COMPONENT	ORSAT-DRY VOL.PCT./100	X	MOISTURE CORRECTION (1-T/100)	X	MOLECULAR WEIGHT	=	WEIGHT PER MOLE
CO2	.000	X	.9819	X	44.0	=	.00
CO	.000	X	.9819	X	28.0	=	.00
O2	.205	X	.9819	X	32.0	=	6.44
N2	.795	X	.9819	X	28.2	=	22.01
H2O		X	T/100= .0181	X	18.0	=	.32
					MOLECULAR WEIGHT OF STACK GAS	=	28.78

W.	PITOT CORRECTION	.840
X.	AVERAGE CORRECTED VELOCITY (FPS) [85.49*W*SQRT((J*DELTA P)/(V*F))]	60.85
Y.	AVG. FLOW RATE (CFM) (X*H*60)	25807.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92)	23716.
	STACK FLOW RATE (DRY)	23287.
AA.	SAMPLE TIME (SEC)	3600.
BB.	PERCENT ISOKINETIC (J*100*U*29.92)/(528*X*AA*I*F*(1-T/100))	92.46

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
CLR-1-1-3

1920 PEC BAGHOUSE
10-23-92

PARAMETER	CYCLONE WT. (G)	MATL.ON FILTER(G)	INSOL.MATL. IN PROBE(G)	SOL.MATL. IN PROBE(G)
PARTICULATE	.00000	.00060	.00000	.00830

PARAMETER	INSOL.MATL. IN IMP.(G)	SOLUBLE MATL. IN IMP.(G)
PARTICULATE	.00010	.00960
PARTICULATE	.01860	
ALL MATLS.	.01860	

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00304	.60602

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
1920 PEC BAGHOUSE STACK 1-2

DATE: 10-23-92
CHARGE #: ...150-300185
TEST #: CLR-1-2-3

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00288	.58723

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2. STACK CONDITIONS

FLOW (ACFM)	26724.
(SCFM)	24261.
MOISTURE CONTENT (%)	1.84
STACK TEMPERATURE (F)	118.4

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3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	60.0
SCFD GAS SAMPLED	37.471
PERCENT ISOKINETIC	104.90

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
CLR-1-2-3

1920 PEC BAGHOUSE
10-23-92

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTED VELOCITY FT/SEC
35.0E	922.0	478.720	1.400	1.26	1.26	56.	48.	3.0	102.	68.8
			1.300	1.17	1.17	57.	49.	3.0	100.	66.2
			1.500	1.34	1.34	58.	48.	3.0	99.	71.1
			1.300	1.17	1.17	59.	50.	3.0	99.	66.1
			1.300	1.17	1.17	61.	50.	3.0	104.	66.4
			1.200	1.08	1.08	61.	52.	2.5	104.	63.8
			1.200	1.08	1.08	62.	50.	3.0	104.	63.8
			1.300	1.17	1.17	64.	55.	3.0	104.	66.4
			1.200	1.08	1.08	65.	55.	2.0	103.	63.8
			.800	.72	.72	65.	57.	2.0	101.	52.0
			.800	.72	.72	65.	57.	2.0	100.	51.9
1.0E			.700	.63	.63	67.	59.	1.5	98.	48.5
1.0E			.700	.63	.63	68.	58.	1.5	98.	48.5
			.700	.63	.63	70.	61.	1.5	98.	48.5
			.900	.82	.82	71.	60.	2.0	97.	54.9
			1.100	1.00	1.00	71.	63.	2.5	110.	61.4
			1.200	1.09	1.09	72.	62.	2.5	114.	64.4
			1.200	1.09	1.09	73.	64.	2.5	116.	64.5
			1.100	1.00	1.00	74.	63.	2.5	116.	61.8
			1.300	1.18	1.18	75.	65.	3.0	119.	67.3
			1.300	1.18	1.18	76.	66.	3.0	121.	67.4
			1.400	1.26	1.26	77.	69.	3.0	119.	69.9
35.0E			1.400	1.27	1.27	78.	69.	3.0	120.	69.9
35.0E			1.300	1.18	1.18	79.	70.	3.0	121.	67.4
			1.500	1.36	1.36	79.	70.	3.0	121.	72.4
			1.400	1.27	1.27	81.	73.	3.0	124.	70.2
			1.300	1.18	1.18	82.	72.	3.0	125.	67.7
			1.100	1.00	1.00	82.	74.	2.5	126.	62.3
			1.200	1.09	1.09	82.	72.	2.5	128.	65.2
			1.200	1.09	1.09	82.	75.	2.5	129.	65.2
			1.000	.91	.91	83.	74.	2.0	126.	59.4
			1.000	.91	.91	84.	76.	2.0	124.	59.3
			1.000	.91	.91	84.	76.	2.0	123.	59.2
			.900	.82	.82	86.	78.	2.0	121.	56.1
			.700	.64	.64	86.	77.	1.5	119.	49.4
1.0E			.700	.64	.64	86.	78.	1.5	118.	49.4
35.0S			1.200	1.09	1.09	87.	78.	2.5	122.	64.8
			1.200	1.20	1.09	87.	78.	2.5	123.	64.9
			1.500	1.39	1.39	89.	82.	3.0	122.	72.5
			1.500	1.39	1.39	89.	82.	3.0	123.	72.6
			1.400	1.30	1.30	89.	82.	3.0	125.	70.2
			1.400	1.30	1.30	90.	80.	3.0	126.	70.3
			1.100	1.02	1.02	90.	82.	2.0	129.	62.5
			1.100	1.02	1.02	90.	82.	2.0	127.	62.4
			1.100	1.01	1.01	91.	85.	2.0	126.	62.3
			1.200	1.10	1.10	91.	85.	2.5	126.	65.1
			1.000	.92	.92	91.	84.	2.0	123.	59.2

		1.100	1.01	1.01	92.	81.	2.0	120.	62.0
1.0S		1.100	1.01	1.01	91.	84.	2.0	120.	62.0
1.0S		1.000	.92	.92	92.	83.	2.0	121.	59.1
		1.100	1.01	1.01	92.	85.	2.0	130.	62.5
		.700	.64	.64	90.	83.	1.5	140.	50.3
		1.100	1.01	1.01	93.	85.	2.0	129.	62.5
		1.100	1.01	1.01	92.	84.	2.0	131.	62.6
		1.200	1.10	1.10	92.	86.	2.5	130.	65.3
		1.500	1.38	1.38	93.	84.	3.0	132.	73.1
		1.500	1.38	1.38	93.	86.	3.0	132.	73.1
		1.100	1.01	1.01	92.	85.	2.0	132.	62.6
		1.200	1.10	1.10	93.	86.	2.5	133.	65.5
35.0S	1022.0 517.255	1.100	1.01	1.03	93.	86.	2.0	130.	62.5

O R S A T	
CO2	.0
O2	20.5
CO	.0
N	79.5

IMPINGER NO.	1	6.4
	2	.0
	3	.0
	4	.0
ABSORBED H2O		8.5

CONTROL BOX CALIBRATIONS

	FACTOR	DATE
ORIFICE	1.618	5-5-92
METER	0.9915	5-5-92
PITOT	0.84	7-27-92

LEAK CHECK

	RATE	IN.HG
INITIAL	LT 0.02CFM	5.5
FINAL	0.005 CFM	4.0

CONTROL BOX NO. 3 PROBE NO. 5-4 NOZZLE NO. 11

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1920 PEC BAGHOUSE
CLR-1-2-3 10-23-92

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG.	29.68
B.	AVG. DELTA H (IN H2O)	1.05
C.	METER PRESSURE (IN. HG.)	29.76
D.	STATIC PRESSURE (IN. H2O)	1.00
E.	STATIC PRESSURE (IN. HG.)	.074
F.	STACK PRESSURE (IN. HG.) (A+E)	29.75
G.	STACK DIAMETER (IN.)	36.00
H.	STACK AREA (SQ. FT.)	7.07
	NOZZLE DIAMETER	.1800
I.	NOZZLE AREA (SQ. FT.)	.000177
J.	AVG. STACK TEMP (DEG. R.)	578.4
K.	AVG. METER TEMP (DEG. R.)	535.8
L.	CONDENSATE VOL. (ML)	6.4
M.	ABSORBED H2O (ML)	8.5
N.	TOTAL H2O (ML)	14.9
O.	METERED GAS (CF)	38.535
P.	GAS METER CORRECTION	.9915
Q.	CORRECTED METERED GAS (CF)	38.207
R.	H2O GAS VOLUME (CF) (0.00267N(K/C)	.716
S.	TOTAL SAMPLED VOLUME (CF) (Q+R)	38.924
T.	PERCENT H2O (100R/S)	1.84
	THEORETICAL MAXIMUM	10.97
	PERCENT WATER USED	1.84
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K))	37.471

V. MOLECULAR WEIGHT OF STACK GAS

COMPONENT	ORSAT-DRY VOL.PCT./100	X	MOISTURE CORRECTION (1-T/100)	X	MOLECULAR WEIGHT	=	WEIGHT PER MOLE
CO2	.000	X	.9816	X	44.0	=	.00
CO	.000	X	.9816	X	28.0	=	.00
O2	.205	X	.9816	X	32.0	=	6.44
N2	.795	X	.9816	X	28.2	=	22.01
H2O		X	T/100= .0184	X	18.0	=	.33
					MOLECULAR WEIGHT OF STACK GAS	=	28.78

W.	PITOT CORRECTION	.840
X.	AVERAGE CORRECTED VELOCITY (FPS) [85.49*W*SQRT((J*DELTA P)/(V*F))]	63.01
Y.	AVG. FLOW RATE (CFM) (X*H*60)	26724.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92)	24261.
	STACK FLOW RATE (DRY)	23814.
AA.	SAMPLE TIME (SEC)	3600.
BB.	PERCENT ISOKINETIC (J*100*U*29.92)/(528*X*AA*I*F*(1-T/100))	104.90

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
CLR-1-2-3

1920 PEC BAGHOUSE
10-23-92

PARAMETER	CYCLONE WT. (G)	MATL.ON FILTER(G)	INSOL.MATL. IN PROBE(G)	SOL.MATL. IN PROBE(G)
PARTICULATE	.00000	.00110	.00000	.00520

PARAMETER	INSOL.MATL. IN IMP.(G)	SOLUBLE MATL. IN IMP.(G)
PARTICULATE	.00070	.01040
PARTICULATE	.01740	
ALL MATLS.	.01740	

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00288	.58723

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
1920 PEC BAGHOUSE STACK #1-3

DATE: 10-23-92
CHARGE #: ...150-300185
TEST #: CLR-1-3-3

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00200	.42920

2. STACK CONDITIONS

FLOW (ACFM)	27901.
(SCFM)	25531.
MOISTURE CONTENT (%)	1.81
STACK TEMPERATURE (F)	114.0

3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	60.0
SCFD GAS SAMPLED	39.319
PERCENT ISOKINETIC	104.57

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
CLR-1-3-3

1920 PEC BAGHOUSE
10-23-92

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTED VELOCITY FT/SEC
35.0E	922.0	596.809	1.600	1.60	1.60	52.	49.	4.5	92.	72.9
			1.300	1.30	1.30	54.	50.	4.0	95.	65.9
			1.400	1.40	1.40	55.	50.	4.0	95.	68.4
			1.500	1.50	1.50	56.	51.	4.5	100.	71.1
			1.400	1.40	1.40	56.	52.	4.0	102.	68.8
			1.100	1.10	1.10	56.	52.	3.5	108.	61.3
			1.200	1.20	1.20	57.	53.	3.5	97.	63.4
			1.200	1.20	1.20	59.	54.	3.5	97.	63.4
			1.300	1.30	1.30	60.	55.	4.0	99.	66.1
			1.200	1.20	1.20	60.	56.	4.0	98.	63.5
1.0E			1.000	1.00	1.00	60.	56.	3.5	102.	58.2
1.0E			1.000	1.00	1.00	61.	57.	3.5	103.	58.2
			1.000	1.00	1.00	61.	57.	3.5	106.	58.4
			1.200	1.20	1.20	63.	58.	4.0	105.	63.9
			1.100	1.10	1.10	63.	59.	4.0	105.	61.2
			1.300	1.30	1.30	64.	60.	4.5	107.	66.6
			1.200	1.20	1.20	65.	60.	4.0	109.	64.1
			1.200	1.20	1.20	67.	60.	4.0	110.	64.2
			1.100	1.10	1.10	67.	62.	4.0	110.	61.4
			1.300	1.30	1.30	67.	63.	4.5	111.	66.8
			1.500	1.50	1.50	68.	64.	5.0	111.	71.8
			1.400	1.40	1.40	69.	64.	4.5	111.	69.4
35.0E			1.600	1.60	1.60	70.	65.	5.0	112.	74.2
35.0E			1.500	1.50	1.50	72.	66.	5.0	113.	71.9
			1.500	1.50	1.50	71.	67.	5.0	114.	72.0
			1.600	1.60	1.60	72.	68.	5.0	114.	74.4
			1.400	1.40	1.40	73.	68.	5.0	115.	69.6
			1.100	1.10	1.10	74.	69.	4.0	116.	61.8
			1.200	1.20	1.20	74.	69.	4.0	116.	64.5
			1.200	1.20	1.20	74.	70.	4.0	116.	64.5
			1.200	1.20	1.20	74.	71.	4.0	116.	64.5
			1.200	1.20	1.20	75.	71.	4.0	117.	64.6
			1.300	1.30	1.30	76.	72.	4.5	117.	67.2
			1.200	1.20	1.20	77.	72.	4.0	117.	64.6
1.0E			1.200	1.20	1.20	77.	73.	4.0	118.	64.6
35.0S			1.200	1.20	1.20	77.	73.	4.0	118.	64.6
			1.300	1.30	1.30	79.	74.	4.5	117.	67.2
			1.400	1.40	1.40	80.	75.	5.0	118.	69.8
			1.400	1.40	1.40	81.	75.	5.0	120.	69.9
			1.400	1.40	1.40	81.	76.	5.0	119.	69.9
			1.300	1.30	1.30	81.	77.	4.5	121.	67.4
			1.200	1.20	1.20	81.	77.	4.5	121.	64.8
			1.000	1.00	1.00	82.	78.	4.0	122.	59.2
			1.100	1.10	1.10	82.	78.	4.0	123.	62.1
			1.200	1.20	1.20	83.	79.	4.5	123.	64.9
			1.200	1.20	1.20	84.	78.	4.5	123.	64.9
			1.100	1.10	1.10	84.	79.	4.0	123.	62.1

1.0S			1.000	1.00	1.00	84.	79.	4.0	124.	59.3
1.0S			1.000	1.00	1.00	84.	80.	3.5	124.	59.3
			1.200	1.20	1.20	84.	80.	4.5	126.	65.1
			1.100	1.10	1.10	85.	81.	4.0	127.	62.3
			1.500	1.50	1.50	83.	80.	5.0	121.	72.4
			1.200	1.20	1.20	84.	81.	4.5	125.	65.0
			1.000	1.00	1.00	83.	81.	4.0	123.	59.2
			1.100	1.10	1.10	84.	81.	4.0	123.	62.1
			1.300	1.30	1.30	84.	81.	4.5	123.	67.5
			1.400	1.40	1.40	85.	82.	5.0	124.	70.2
			1.400	1.40	1.40	85.	82.	5.0	124.	70.2
			1.500	1.50	1.50	86.	82.	5.0	126.	72.7
35.0S	1022.0	635.362	1.300	1.30	1.30	86.	82.	5.0	125.	67.7

O R S A T	
CO2	.0
O2	20.5
CO	.0
N	79.5

IMPINGER NO.	1	6.4
	2	.3
	3	.2
	4	.0
ABSORBED H2O		8.5

CONTROL BOX CALIBRATIONS

	FACTOR	DATE
ORIFICE	1.768	10-15-92
METER	1.0295	10-15-92
PITOT	0.84	7-27-92

LEAK CHECK

	RATE		IN.HG
INITIAL	0.014	CFM	5.5
FINAL	0.008	CFM	6.5

CONTROL BOX NO. 1 PROBE NO. 5-3 NOZZLE NO. 34

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1920 PEC BAGHOUSE
CLR-1-3-3 10-23-92

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG.....	29.68
B.	AVG. DELTA H (IN H2O).....	1.26
C.	METER PRESSURE (IN. HG.).....	29.77
D.	STATIC PRESSURE (IN. H2O).....	1.10
E.	STATIC PRESSURE (IN. HG.).....	.081
F.	STACK PRESSURE (IN. HG.) (A+E).....	29.76
G.	STACK DIAMETER (IN.).....	36.00
H.	STACK AREA (SQ. FT.).....	7.07
	NOZZLE DIAMETER.....	.1800
I.	NOZZLE AREA (SQ. FT.).....	.000177
J.	AVG. STACK TEMP (DEG. R.).....	574.0
K.	AVG. METER TEMP (DEG. R.).....	530.7
L.	CONDENSATE VOL. (ML).....	6.9
M.	ABSORBED H2O (ML).....	8.5
N.	TOTAL H2O (ML).....	15.4
O.	METERED GAS (CF).....	38.553
P.	GAS METER CORRECTION.....	1.0295
Q.	CORRECTED METERED GAS (CF).....	39.690
R.	H2O GAS VOLUME (CF) (0.00267N(K/C).....	.733
S.	TOTAL SAMPLED VOLUME (CF) (Q+R).....	40.423
T.	PERCENT H2O (100R/S).....	1.81
	THEORETICAL MAXIMUM.....	9.79
	PERCENT WATER USED.....	1.81
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K)).....	39.319

V. MOLECULAR WEIGHT OF STACK GAS

COMPONENT	ORSAT-DRY VOL.PCT./100	X	MOISTURE CORRECTION (1-T/100)	X	MOLECULAR WEIGHT	=	WEIGHT PER MOLE
CO2	.000	X	.9819	X	44.0	=	.00
CO	.000	X	.9819	X	28.0	=	.00
O2	.205	X	.9819	X	32.0	=	6.44
N2	.795	X	.9819	X	28.2	=	22.01
H2O		X	T/100= .0181	X	18.0	=	.33
					MOLECULAR WEIGHT OF STACK GAS	=	28.78

W.	PITOT CORRECTION.....	.840
X.	AVERAGE CORRECTED VELOCITY (FPS).....	65.79
	[85.49*W*SQRT{(J*DELTA P)/(V*F)}]	
Y.	AVG. FLOW RATE (CFM) (X*H*60).....	27901.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92).....	25531.
	STACK FLOW RATE (DRY).....	25068.
AA.	SAMPLE TIME (SEC).....	3600.
BB.	PERCENT ISOKINETIC.....	104.57
	(J*100*U*29.92)/(528*X*AA*I*F*(1-T/100))	

KEYSTONE ENVIRONMENTAL RESOURCES
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
1920 PEC BAGHOUSE STACK #1-4

DATE: 10-26-92
CHARGE #: ...150-300185
TEST #: CLR-1-4-3

1. EMISSION RESULTS

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00157	.33313

2. STACK CONDITIONS

FLOW (ACFM)	27283.
(SCFM)	25201.
MOISTURE CONTENT (%)	1.67
STACK TEMPERATURE (F)	108.5

3. SAMPLING CONDITIONS

SAMPLE TIME (MIN.)	60.0
SCFD GAS SAMPLED	54.005
PERCENT ISOKINETIC	102.79

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
CLR-1-3-3

1920 PEC BAGHOUSE
10-23-92

PARAMETER	CYCLONE WT. (G)	MATL.ON FILTER(G)	INSOL.MATL. IN PROBE(G)	SOL.MATL. IN PROBE(G)
PARTICULATE	.00000	.00070	.00000	.00420

PARAMETER	INSOL.MATL. IN IMP.(G)	SOLUBLE MATL. IN IMP.(G)
PARTICULATE	.00020	.01530
PARTICULATE	.02040	
ALL MATLS.	.02040	

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00200	.42920

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA
CLR-1-4-3

1920 PEC BAGHOUSE
10-26-92

POINT	TIME	METER READING (DRY) CF	DELTA P IN.H2O	ORIFICE DELTA H REQ	ORIFICE DELTA H ACT	METER TEMP DEG F IN	METER TEMP DEG F OUT	VACUUM IN.HG.	STACK TEMP DEG F	CORRECTED VELOCITY FFT/SEC
35.0E	922.0	418.575	1.000	1.93	1.95	55.	53.	6.0	88.	57.4
			1.000	1.93	1.95	54.	55.	6.0	89.	57.5
			1.000	1.93	1.95	54.	53.	6.0	88.	57.4
			1.000	1.93	1.95	55.	53.	6.0	88.	57.4
			1.300	2.51	2.50	57.	57.	8.0	90.	65.6
			1.300	2.51	2.50	56.	55.	8.0	90.	65.6
			1.200	2.32	2.30	58.	56.	7.5	94.	63.2
			1.200	2.32	2.30	57.	56.	7.0	94.	63.2
			1.300	2.51	2.50	58.	58.	8.0	92.	65.7
			1.400	2.71	2.70	60.	59.	8.5	95.	68.4
			1.200	2.32	2.30	60.	59.	7.0	95.	63.3
1.0E			1.000	1.93	1.95	59.	60.	6.0	94.	57.7
1.0E			1.000	1.93	1.95	61.	60.	6.0	95.	57.8
			1.400	2.71	2.70	61.	60.	8.0	98.	68.6
			1.200	2.51	2.50	62.	62.	7.5	98.	63.5
			1.200	2.32	2.30	63.	62.	7.0	100.	63.6
			1.400	2.71	2.70	62.	61.	8.5	99.	68.6
			1.200	2.32	2.30	64.	62.	7.0	103.	63.8
			1.100	2.13	2.15	64.	63.	6.5	102.	61.0
			1.200	2.32	2.30	65.	64.	7.0	104.	63.8
			1.100	2.13	2.15	68.	66.	7.0	103.	61.0
			1.100	2.13	2.15	66.	65.	7.0	104.	61.1
			1.100	2.13	2.15	67.	65.	6.5	105.	61.2
35.0E			1.100	2.13	2.15	69.	68.	6.5	105.	61.2
35.0E			1.000	1.93	1.95	70.	68.	6.0	105.	58.3
			1.000	1.93	1.95	72.	71.	6.0	109.	58.5
			1.400	2.71	2.70	70.	70.	8.0	108.	69.2
			1.100	2.13	2.15	73.	69.	7.0	109.	61.4
			1.200	2.32	2.30	72.	71.	7.5	110.	64.2
			1.000	1.94	1.95	73.	72.	6.5	112.	58.7
			1.100	2.13	2.15	74.	73.	7.0	109.	61.4
			1.200	2.32	2.30	75.	75.	7.0	110.	64.2
			1.200	2.32	2.30	76.	75.	7.0	111.	64.2
			1.300	2.51	2.50	77.	76.	8.0	111.	66.8
			1.300	2.51	2.50	76.	76.	8.0	111.	66.8
1.0E			1.000	1.94	1.95	78.	76.	6.5	113.	58.7
35.0S			1.400	2.71	2.70	77.	76.	8.0	112.	69.4
			1.400	2.71	2.70	77.	77.	8.5	113.	69.5
			1.500	2.90	2.90	78.	77.	9.5	114.	72.0
			1.500	2.90	2.90	79.	79.	9.2	118.	72.2
			1.300	2.51	2.50	78.	78.	8.0	116.	67.1
			1.200	2.32	2.30	80.	82.	7.0	117.	64.5
			1.000	1.94	1.95	83.	84.	6.0	117.	58.9
			1.000	1.94	1.95	83.	83.	6.0	119.	59.0
			1.300	2.51	2.50	82.	82.	8.0	118.	67.2
			1.300	2.51	2.50	82.	83.	8.0	118.	67.2
			1.100	2.13	2.15	81.	83.	7.0	118.	61.9

1.0S		1.200	2.32	2.30	84.	83.	7.0	120.	64.7
1.0S		1.200	2.32	2.30	83.	82.	7.0	119.	64.7
		1.400	2.71	2.70	86.	85.	8.5	124.	70.1
		1.200	2.32	2.30	86.	86.	7.0	127.	65.1
		1.300	2.51	2.56	86.	84.	8.0	121.	67.4
		1.100	2.13	2.15	84.	85.	6.5	124.	62.2
		1.000	1.94	1.95	85.	85.	6.0	123.	59.2
		1.200	2.32	2.30	85.	86.	7.0	122.	64.8
		1.300	2.51	2.50	84.	85.	8.0	122.	67.5
		1.600	3.09	3.10	84.	84.	9.5	123.	74.9
		1.600	3.09	3.10	86.	85.	9.5	123.	74.9
		1.600	3.09	3.10	85.	86.	9.5	124.	75.0
35.0S	1022.0 474.616	1.400	2.71	2.70	86.	85.	8.5	124.	70.1

O R S A T

CO2	.0
O2	20.5
CO	.0
N	79.5

IMPINGER NO.	1	6.9
	2	2.0
	3	.0
	4	.0
ABSORBED H2O		10.5

CONTROL BOX CALIBRATIONS

	FACTOR	DATE
ORIFICE	1.756	6-3-92
METER	0.9721	6-3-92
PITOT	0.84	8-24-92

LEAK CHECK

	RATE		IN.HG
INITIAL	0.013	CFM	5.0
FINAL	0.015	CFM	9.5

CONTROL BOX NO. 4 PROBE NO. 5-5 NOZZLE NO. 45

KEYSTONE ENVIRONMENTAL RESOURCES, INC.
AIR QUALITY ENGINEERING

USS CLAIRTON WORKS
CLAIRTON, PA 1920 PEC BAGHOUSE
CLR-1-4-3 10-26-92

STACK SAMPLING CALCULATIONS

A.	BAROMETRIC PRESSURE IN. HG.....	29.68
B.	AVG. DELTA H (IN H2O).....	2.35
C.	METER PRESSURE (IN. HG.).....	29.85
D.	STATIC PRESSURE (IN. H2O).....	1.00
E.	STATIC PRESSURE (IN. HG.).....	.074
F.	STACK PRESSURE (IN. HG.) (A+E).....	29.75
G.	STACK DIAMETER (IN.).....	36.00
H.	STACK AREA (SQ. FT.).....	7.07
	NOZZLE DIAMETER.....	.2140
I.	NOZZLE AREA (SQ. FT.).....	.000250
J.	AVG. STACK TEMP (DEG. R.).....	568.5
K.	AVG. METER TEMP (DEG. R.).....	531.8
L.	CONDENSATE VOL. (ML).....	8.9
M.	ABSORBED H2O (ML).....	10.5
N.	TOTAL H2O (ML).....	19.4
O.	METERED GAS (CF).....	56.041
P.	GAS METER CORRECTION.....	.9721
Q.	CORRECTED METERED GAS (CF).....	54.477
R.	H2O GAS VOLUME (CF) (0.00267N(K/C).....	.923
S.	TOTAL SAMPLED VOLUME (CF) (Q+R).....	55.400
T.	PERCENT H2O (100R/S).....	1.67
	THEORETICAL MAXIMUM.....	8.24
	PERCENT WATER USED.....	1.67
U.	SCFD GAS SAMPLED (528*Q*C/(29.9*K)).....	54.005

V. MOLECULAR WEIGHT OF STACK GAS

COMPONENT	ORSAT-DRY VOL.PCT./100	X	MOISTURE CORRECTION (1-T/100)	X	MOLECULAR WEIGHT	=	WEIGHT PER MOLE
CO2	.000	X	.9833	X	44.0	=	.00
CO	.000	X	.9833	X	28.0	=	.00
O2	.205	X	.9833	X	32.0	=	6.45
N2	.795	X	.9833	X	28.2	=	22.05
H2O		X	T/100= .0167	X	18.0	=	.30
					MOLECULAR WEIGHT OF STACK GAS	=	28.80

W.	PITOT CORRECTION.....	.840
X.	AVERAGE CORRECTED VELOCITY (FPS).....	64.33
	[85.49*W*SQRT((J*DELTA P)/(V*F))]	
Y.	AVG. FLOW RATE (CFM) (X*H*60).....	27283.
Z.	STACK FLOW RATE (SCFM) (528*Y/J*F/29.92).....	25201.
	STACK FLOW RATE (DRY).....	24781.
AA.	SAMPLE TIME (SEC).....	3600.
BB.	PERCENT ISOKINETIC.....	102.79
	(J*100*U*29.92)/(528*X*AA*I*F*(1-T/100))	

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PARAMETER	CYCLONE WT. (G)	MATL.ON FILTER(G)	INSOL.MATL. IN PROBE(G)	SOL.MATL. IN PROBE(G)
PARTICULATE	.00000	.00050	.00000	.00490

PARAMETER	INSOL.MATL. IN IMP.(G)	SOLUBLE MATL. IN IMP.(G)
PARTICULATE	.00010	.00530

PARTICULATE	.01080
ALL MATLS.	.01080

PARAMETER	GR/SCFD	LB/HR
PARTICULATE	.00157	.33313

Emission rates are based on the PA method.
The soluble impinger weight is excluded from the calculations