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Commonwealth of Pennsylvania
Environmental Resources
January 14, 1993
772-2304

Subject: Wine Construction, Inc.

To: Data File
Wine Construction Company
Economy Borough, Beaver County

From: Richard St. Louis, Chief
Source Testing Section
Division of Source Testing and Monitoring
Bureau of Air Quality Control

Through: Acting Chief, Division of Source Testing and Monitoring

Wine Construction, Inc. operates a Gencor/Bituma drum mix asphalt plant in Sewickley, Beaver County. The bituminous concrete asphalt plant has a rated capacity of 350 tons per hour. Proportional aggregate is introduced near the burner-end of the revolving drum mixer. The hot aggregate is discharged from the drum mixer into a hot bucket elevator and is transferred to a screening section where the aggregate is classified into four different grades (sizes). The classified material then enters the mixing operation and is discharged into trucks as needed.

The effluent gases pass through a Gencor/Bituma 64,000 CFM baghouse collector system that has a total cloth area of 12,095 square feet. This baghouse has a reverse pulse cleaning system that blows its accumulated dust from the outside fabric surface of each individual NOMEX bag (each of which are 16 feet long and 6.25 inches in diameter), permitting the dust to drop into the hopper. This dust is then recycled back to the hot bucket elevator. The main flow of the effluent is uninterrupted and exits the Gencor/Bituma baghouse where it discharges to the atmosphere through a 4.5 feet diameter stack.

Hemeton Associates, Inc. conducted a particulate emission and a visible emission test consisting of three runs in the baghouse outlet stack on June 30, 1992, utilizing PADER Method No. 5 and EPA Method 9. Both tests appear to have been conducted in accordance with a preapproved protocol and the calculations are correct and results appear to be valid and are then acceptable to the Department. However, the test report is deficient in providing the type of mix that was used in the test. The consultants did indicate that the operating rate during the stack test was 240 tons per hour.

Data File
Wine Construction Company
Economy Borough, Beaver County

- 2 -

January 14, 1993

The following data was extracted from the test reports:

Particulate Emission Tests

Test run no.	Run #1	Run #2	Run #3	Allowable
Test date	06/30/92	06/30/92	06/30/92	N/A
Concentration (gr/dscf)	0.003	0.004	0.004	N/A
Mass Rate (lbs/hr)	0.45	0.57	0.55	16.12
Opacity %	0	0	0	20

cc: William Charlton, Southwest Regional Office
04-303-004A
Reading File - Source Testing
EPA/RSL
Jim Benson, C&E

RS:pke



HENNEON ASSOCIATES INC.

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**PARTICULATE AND VISIBLE EMISSION TESTING
WINE CONSTRUCTION, INC.
SEWICKLEY, PA**

Report To:
Mr. Floyd Wine
Wine Construction, Inc.
R.D. # 3
Sewickley, PA 15143

Report By:
Mr. Christopher J. Michael
Project Manager
Henneon Associates, Inc.
125 Thirty-ninth Street
Pittsburgh, PA 15201

July 13, 1992

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Air Quality Control
District 4

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1.0 INTRODUCTION

On June 30, 1992 particulate and visible emissions testing was conducted on the asphalt plant baghouse at Wine Construction, Inc.'s plant in Sewickley, PA. The test program was authorized by Mr. Floyd Wine of Wine Construction, Inc. Testing was performed by Mr. John C. Parry, Ms. Amy M. Parry, and Mr. George Abi-Nader of Hemdon Associates, Inc. Process coordination was provided by Wine Construction Inc.'s personnel. Testing was observed by Mr. Bruce Frye and Ms. Nancy Morris of the Pennsylvania Department of Environmental Resources.

PURPOSE

The purpose of this test program was to determine whether particulate matter and visible emissions from the baghouse exit were in compliance with Pennsylvania DER emission regulations.

2.0 SUMMARY OF RESULTS

TABLE NO. 1

PARTICULATE EMISSION RESULTS

Test Date 1992	Sample Location	Test No.	Particulate Emissions		
			a gr/dscf	b measured lb/hr	b allowable lb/hr
6-30	Baghouse Outlet	1	0.203	0.45	16.12
6-30	Baghouse Outlet	2	0.204	0.57	16.12
6-30	Baghouse Outlet	3	0.204	0.55	16.12
		Average	0.2037	0.52	16.12

a - Grains per dry standard cubic foot.
b - Pounds per hour.

According to regulations of the PA DER, the allowable emission rate is based on process feed rate. Based on the test results, the baghouse is in compliance with DER regulations for particulate emissions.

TABLE NO. 2

VISIBLE EMISSIONS RESULTS

Date 1992	Sample Location	Test No.	Particulate Emissions		
			Minimum %	Maximum %	Highest 6 Min. Avg.
6-32	Baghouse Outlet	1	0	0	0
6-32	Baghouse Outlet	2	0	0	0
6-32	Baghouse Outlet	3	0	0	0

TABLE NO. 3
 STACK GAS FLOW AND PARTICULATE EMISSIONS

Test No.	1	2	3
Date	6/30/92	6/30/92	6/30/92
Overall sampling period	6:55 AM 8:45 AM	8:55 AM 12:10 AM	11:35 AM 12:45 PM
Net sampling time, min.	60	60	60

STACK GAS

Temperature, deg. F	188.2	215.5	228.8
Flow rate:			
Actual lbs/hr	100420	95000	96800
Dry basis lbs/hr	91020	81800	79000
Acfm	29102	31300	31700
Scfm, dry Q_d	19802	17820	17200

PARTICULATE MATTER

Concentration			
Dry Basis:			
Lbs dust per 1000 lb gas	.005	.007	.007
Grains per scf	.003	.024	.004
DUST EMISSION RATE, lbs/hr	.455	.573	.553

TABLE NO. 4
CALCULATION OF ALLOWABLE EMISSION RATE

Allowable Emission Formula

$$A = 0.75 E^{0.42} \quad \text{where:}$$

A = Allowable emissions in pounds per hour

E = Emission index = F x W pounds per hour

F = Process factor in pounds per unit, and

W = Production or charging rate in units per hour

Allowable Emission Rate:

$$A = 0.75 (W \times F)^{0.42}$$

TEST NO. 1

Date: June 30, 1992

Testing Time: 6:55 AM - 8:25 AM

Average Production Rate: 240 tons per hr

Allowable Emission Rate: $A = 0.75 (W \times F)^{0.42}$

$$A = 0.75 (240 \times 6)^{0.42}$$

$$A = 16.12 \text{ pounds per hour}$$

TEST NO. 2

Date: June 30, 1992

Testing Time: 8:55 AM - 12:10 AM

Average Production Rate: 240 tons per hr

Allowable Emission Rate: $A = 0.75 (W \times F)^{0.42}$

$$A = 0.75 (240 \times 6)^{0.42}$$

$$A = 16.12 \text{ pounds per hour}$$

TEST NO. 3

Date: June 30, 1992

Testing Time: 11:35 AM - 12:45 PM

Average Production Rate: 240 tons per hr

Allowable Emission Rate: $A = 0.75 (W \times F)^{0.42}$

$$A = 0.75 (240 \times 6)^{0.42}$$

$$A = 16.12 \text{ pounds per hour}$$

3.4 TEST PROGRAM AND PROCESS DESCRIPTION

The plant is a Gencor/Bituma stationary 240 ton per hour Bituminous concrete batching plant. The exhaust gases from this plant are passed through a Gencor/Bituma primary dust collector, then onto a Gencor/Bituma 64,320 CFM baghouse. There are 462 nomex bags, each of which are 16 feet long and 6.25 inches in diameter. The total cloth area of this baghouse is 12,095 square feet with a rated capacity of 350 tons per hour.

The operating rate during these stack tests were 230 to 240 tons per hour.

Baghouse cleaning is controlled by an automatic continuously timed pulse jet system.

Sampling was conducted at the baghouse outlet shown in Figure No. 1. A total of 24 sample points were used to traverse the 54 inch circular exit duct. Two sample ports were located 90 degrees apart. Twelve points were sampled in each port for 2.5 minutes a point, for a total test time of 62 minutes for all of the tests. With each particulate test, simultaneous visible emissions were recorded by a certified visible emissions reader.

Sampling Procedure

After selecting the sampling site and the minimum number of traverse points, the stack pressure, temperature, moisture and range of velocity head were measured according to the procedures described in the Federal Register.

Approximately 200 grams of silica gel were weighed in a sealed impinger prior to each test. Glass fiber filters** (4 inch diameter) were desiccated for at least 24 hours and weighed to the nearest 0.1 mg on an analytical balance. One-hundred ml of distilled water was placed in each of the first two impingers; the third impinger was initially empty; and the impinger containing the silica gel was placed next in series. The sampling train was leak-checked at the sampling site prior to each test run by plugging the inlet to the nozzle and pulling a 15 inch Hg vacuum, and at the conclusion of the test by plugging the inlet to the nozzle and pulling a vacuum equal to the highest vacuum reached during the test run.

A more detailed description of sampling and analytical procedure is given in Appendix B.

*Federal Register, Part 60, App. A, July 1, 1986

**Glass Fiber Filters, Type 934 AH

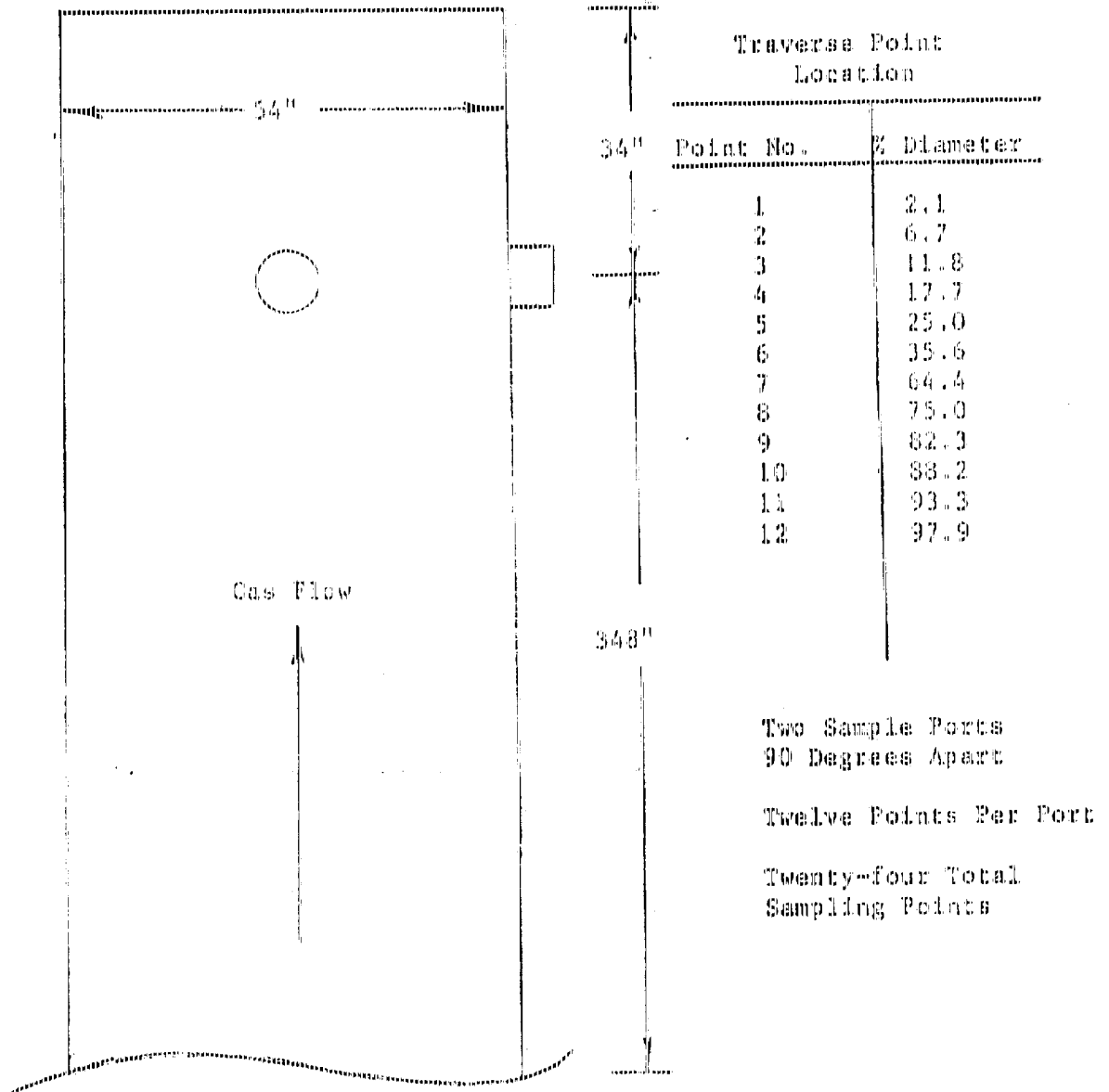


FIGURE NO. 1
 Baghouse Outlet Stack
 Sampling Location
 Winc Construction, Inc.

Hemench Associates, Inc. report of 6/13/92
to Wine Construction, Inc., Sewickley, PA

A. FORMULAS AND CALCULATIONS

NOMENCLATURE

A_g	"	Cross-sectional area of stack, (ft^2).
A_n	"	Cross-sectional area of nozzle, (ft^2).
c_d	"	Concentration of particulate matter in stack gas, dry basis corrected to standard conditions, (g/dscf).
C_p	"	Pitot tube coefficient.
D_g	"	Flue gas density (lbs. per scf).
D_{gs}	"	Flue gas density at stack conditions (lbs/ft^3).
E_r	"	Emission rate (lbs/hr).
GV_w	"	Gas sample volume weight (lbs).
H_{fg}	"	Humidity of flue gas (lbs of H_2O /lb. dry gas).
I	"	Percent of isokinetic sampling (%).
m_m	"	Total amount of particulate matter collected, g.
P_{bar}	"	Barometric pressure at the sampling site, (in. Hg).
P_a	"	Absolute stack gas pressure, (in. Hg).
P_{std}	"	Standard absolute pressure, (29.92 in. Hg).
P_s	"	Static pressure of stack.
Q_f	"	Stack volumetric flow (ACFM).
Q_{wf}	"	Stack weight flow at stack conditions (lbs./hr).
Q_{wfd}	"	Stack weight flow dry basis (lbs./hr).
T_m	"	Absolute average dry gas wetter temperature ($^{\circ}\text{R}$).
T_g	"	Absolute average stack gas temperature ($^{\circ}\text{R}$).
T_{std}	"	Standard absolute temperature, (528°R).

V_m	Volume of gas sample as measured by dry gas meter, (dcf).
$V_m(\text{std})$	Volume of gas sample measured by the dry gas meter, corrected to standard conditions, (dcf).
W_{fg}	Water in flue gas sample (lbs. of H_2O).
W_p	Weight of particulate (10^{-3} lbs.).
W_p/g	Pounds of particulate per 1000 lbs. of gas (lbs. particulate/1000 lbs. gas).
γ	Dry gas meter calibration factor.
ΔH	Average pressure differential across the orifice meter (in. H_2O).
ϕ	Total sampling time, min.

Hameon Associates, Inc.

Example Calculations for Particulate Emissions

1. Volume of dry gas sampled corrected to standard conditions. Note: V_m must be corrected for leakage if any leakage rates exceed L_a .

$$V_{mstd} = 17.65 \times V_m \times \left[\frac{P}{\text{bar}} + \frac{\frac{\Delta H}{13.5}}{T_m} \right]$$

2. Weight of water in flue gas sample (lbs.).

$$Wfg = \left(\frac{\text{ml. condensate} + \text{grams desic. gain}}{453.6} \right)$$

3. Water vapor concentration (%).

$$Wvc = \left(\frac{21.5 \times Wfg \times 100}{21.5 \times Wfg + V_{mstd}} \right)$$

4. Dry molecular weight of stack gas.

$$M_d = 0.44 (\% \text{ CO}_2) + 0.32 (\% \text{ O}_2) + 0.28 (\% \text{ N}_2 + \% \text{ CO})$$

5. Stack gas density (lbs./dacf).

$$Dg = \left(\frac{M_d}{29} \right) \times .0753$$

6. Stack gas density at stack conditions (lbs./ft.³).

$$Dgs = .0753 \times \left(\frac{M_d}{29} \right) \times \frac{P_s}{29.92 \text{ in. Hg}} \times \left(\frac{528}{T_{gs} R} \right)$$

7. Molecular weight of stack gas.

$$M_g = M_d (1 - Wvc) + 18 Wvc$$

8. Stack velocity at stack conditions, fpm.

$$V_g = 85.49 C_p \sqrt{\Delta P} \quad \text{avg.} \quad \sqrt{\frac{T_a}{P_g M_g}}$$

9. Actual volumetric flow rate (ACFM).

$$SE = \frac{1096.7 \times Cp \times \sqrt{\Delta P(RMS)} \times As}{\sqrt{Dg}}$$

10. Stack weight flow at stack conditions (lbs./hr.).

$$SWF = SE \times Dg \times 60$$

11. Gas sample weight (lbs.).

$$Gsw = V_{std} \times Dg$$

12. Humidity of flue gas (lbs. of H₂O/lbs. dry gas).

$$HEg = \left(\frac{WEg}{Gsw} \right)$$

13. Stack weight flow on dry basis (lbs./hr.).

$$SWFd = \left(\frac{SWF}{1 + HEg} \right)$$

14. Stack volumetric flow at standard conditions (SCFM).

$$SEs = \left(\frac{SWFd}{60 \times Dg} \right)$$

15. Isokinetic sampling rate (%).

$$I = \left(\frac{V_{std} \times As \times 100}{SEs \times An \times 60} \right)$$

16. Weight of particulate (10⁻³ lbs.).

$$Wp = (M_m \text{ wt. grams}) \times 2.2046$$

17. Pounds of particulate per 1000 lbs. of gas (lbs. part./1000 lbs. gas).

$$(Wp/G) = \left(\frac{Wp}{GVw} \right)$$

18. Concentration of particulate in stack, dry basis corrected to standard conditions (g/dscf).

$$C_d = \left(\frac{P}{P_{std}} \right) \times W_p$$

19. Particulate emission rate (lb./hr.)

$$E_r = Swfd \times (W_p/g) \times 10^{-3}$$

Hemcon Associates, Inc.

SUMMARY OF FLOE GAS PARAMETERS

TEST NO.	1	2	3
WINEFLO			
TEST DATA			
Test Date	6/30/92	6/30/92	6/30/92
Static Pressure, in. WC	-.17	-.17	-.18
Pitot Readings, rms ΔP	.227	.24	.238
Gas Temp., deg. F T_g	188.2	215.5	228.5
Fluometer Average, in. WC ΔH	3.68	3.48	2.93
Gasmeter Avg. Temp., deg. F T_m	83.8	127.4	115.7
Sampling Time, min. ϕ	60	60	60
Sample Volume, acf V_{sc}	62.57	61.802	57.141
Barometric Pressure, in. Hg P_b	29.24	29.23	28.93
Condensate, ml T_{cp} W_{20}	196	387	366
Desiccant Gain, g W_{H_2O}	23.1	25.6	34
GAS COMPOSITION			
CO ₂ mole fraction	.06	.06	.06
O ₂ mole fraction	.156	.156	.157
N ₂ mole fraction	.784	.784	.783
AREAS			
Stack Diameter, in.	54	54	54
Stack Area, sq. ft. A_s	15.904	15.904	15.904
Nozzle Diameter, in.	.375	.375	.375
Nozzle Area sq. ft. A_n	.000767	.000767	.000767
CALCULATED RESULTS			
Gas, Dry mol. wt.	29.59	29.58	29.59
Gas Dens., lb/cu ft	.0765	.0765	.0765
Sample vol., dry scf	59.7	56.4	50.9
Gas samp., dry lbs	4.57	4.32	3.9
Water in Samp., lbs	.483	.91	.882
Water Cont. lbs/lb	.106	.211	.226
Water, volume %	14.8	25.8	27.1
Water, weight %	9.6	17.4	18.5
Gas Mol. Wt., Actual	27.87	26.59	26.45
Gas Dens. in stack	.0576	.0527	.0509
Stack Gas, acfm	29100	31300	31720
Stack Gas, lbs/hr	120600	99000	96800
Stack Gas, lbs/hr dry	91000	81800	75000
Stack Gas, scfm dry Q_g	19800	17820	17200
Percent Isokinetic	104.2	109.5	102.3

Hemdon Associates, Inc. report of 6/13/92
to Wine Construction, Inc., Sewickley, PA

B. TEST METHODOLOGY

Hemdon Associates, Inc. report of 6/11/92
to Wine Construction, Inc., Sewickley, PA

DETERMINATION OF PARTICULATE EMISSIONS EPA METHOD 5

The following method was used in this test program. Sampling procedures follow those described in Method 5 of the Federal Register*.

SAMPLING APPARATUS

The particulate sampling train used in these tests at the exit stack met certain design specifications established by the Federal EPA and was assembled by Hemdon personnel. It consisted of:

Nozzle - Stainless steel (316) with sharp, tapered leading edge and accurately measured round opening.

Probe - Glass lined with a heating system capable of maintaining a minimum gas temperature of 250°F at the exit end during sampling.

Pitot Tube - Type B pitot tube that met all geometry standards was used to monitor stack gas velocity.

Filter Holder - Pyrex glass with heating system capable of maintaining a filter temperature of approximately 250°F.

Draft Gauge - An inclined manometer made by Dwyer with a readability of 0.01 inches H₂O in the 0-1 inch range was used.

Impingers - Four impingers connected in series with glass ball joints. The first, third and fourth impingers are of the Greensburg-Smith design, modified by replacing the tip with a 1/2 inch I.D. glass tube extending to 1/2 inch from the bottom of the flask.

Measuring System - Vacuum gauge, leak-free pump, thermometers capable of measuring temperature to within 5°F, calibrated dry gas meter, and related equipment, to maintain an isokinetic sampling rate and to determine sample volume. The dry gas meter is made by Rockwell and the fiber vane pump is made by Gast.

Barometer - Aneroid type to measure atmospheric pressures to ±0.1 inch Hg.

SAMPLING PROCEDURE

After selecting the sampling site and the minimum number of traverse points, the stack pressure, temperature, moisture and range of velocity head was measured according to the procedures described in the Federal Register.*

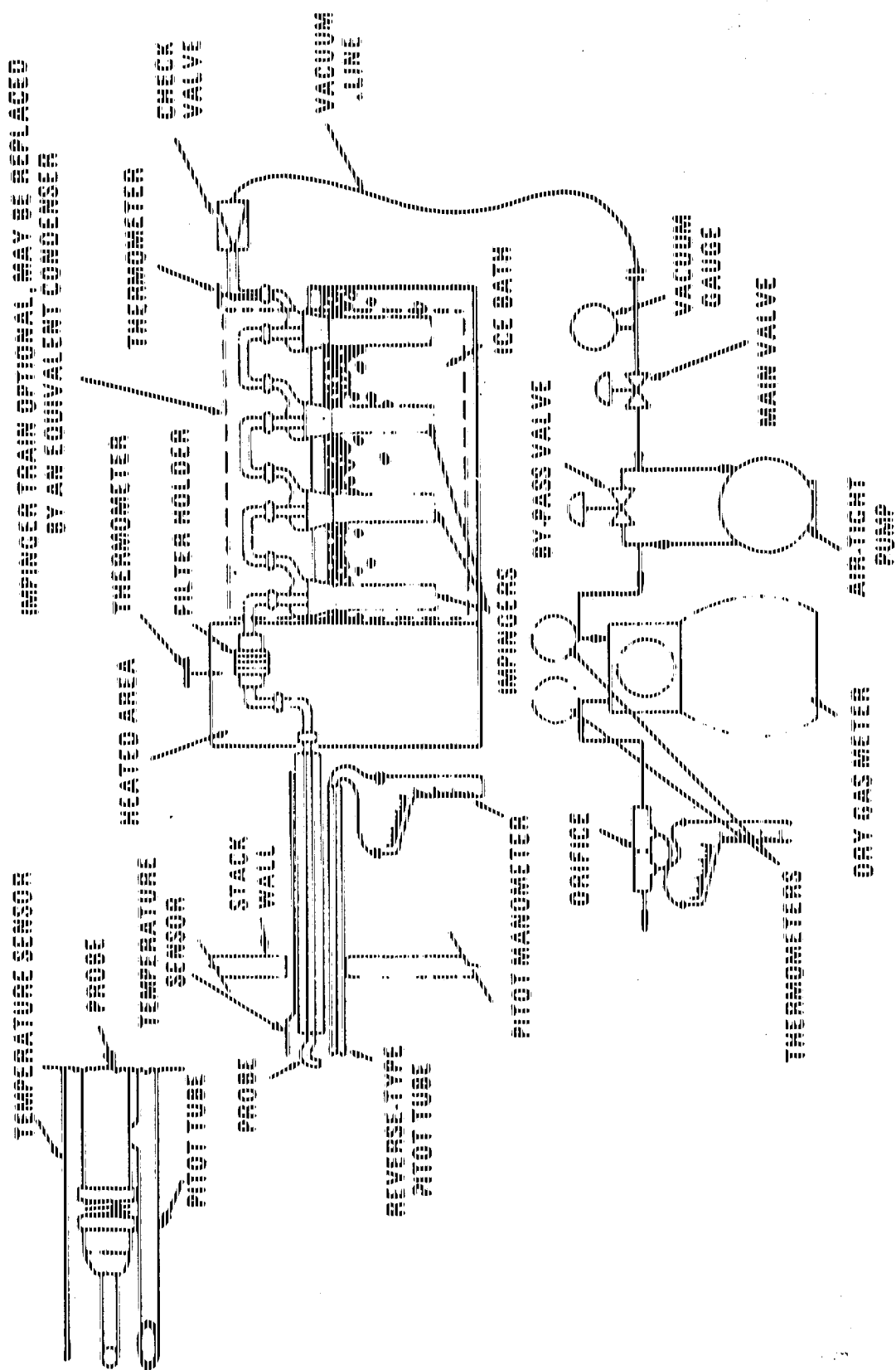
Approximately 220 grams of silica gel were weighed in a sealed impinger prior to each test. Glass Fiber Filters** (4 inch diameter) were desiccated for at least 24 hours, dried at 105°C, and weighed to the nearest 0.1 mg on an analytical balance. One-hundred ml of distilled water was placed in each of the first two impingers; the third impinger was initially empty; and the impinger containing the silica gel was placed next in series. The train was set up with the probe as shown in Figure 1. The sampling train was leak-checked at the sampling site prior to each test run by plugging the inlet to the nozzle and pulling a 15 inch Hg vacuum, and at the conclusion of the test by plugging the inlet to the nozzle and pulling a vacuum equal to the highest vacuum reached during the test run.

The pitot tube and lines were leak-checked at the test site prior to and following the initial velocity traverse. The check was made by blowing into the impact opening of the pitot tube until 3 or more inches of water was recorded on the manometer and then capping the impact opening and holding it for 15 seconds to assure it was leak free. The static pressure side of the pitot tube was leak-checked using the same procedure, except suction was used to obtain the 3 inch H₂O manometer reading. Crushed ice was placed around the impingers to keep the temperature of the gases leaving the last impinger at 68°F or less.

During sampling, stack gas and sampling train data were recorded at each sampling point and when significant changes in stack flow conditions occurred. Isokinetic sampling rates were set throughout the sampling period with the aid of isokinetic sampling equations. All sampling data was recorded on the Field Data Sheet.

*Federal Register, CFR 40, Part 60, July 1, 1986

**Glass Fiber Filters, 934 A- Type



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Hammon Associates, Inc. report of 6/13/92
to Wine Construction, Inc., Sewickley, PA

SAMPLE RECOVERY PROCEDURE

The sampling train was moved carefully from the test site to the cleanup area. Samples of the acetone and distilled water used in the sample recovery were taken for use as blanks. The volume of water from the first three impingers were measured. Sample fractions were recovered as follows:

Container No. 1 - The filter was removed from its holder and placed in a petri dish and sealed.

Container No. 2 - Loose particulate and water washings from all sample-exposed surfaces prior to the filter were placed in a sample container, sealed and labeled. Particulate was removed from the probe with the aid of a brush and acetone rinsing. The liquid level was marked after the container was sealed.

Container No. 3 - Loose particulate and acetone washings from all sample-exposed surfaces prior to the filter were placed in a sample container, sealed and labeled. Particulate was removed from the probe with the aid of a brush and acetone rinsing. The liquid level was marked after the container was sealed.

Container No. 4 - A minimum of 200 ml of acetone was taken for the blank analysis. The blank was obtained and treated in a similar manner as the acetone washing.

Container No. 5 - Distilled water in the impinger section of the sampling train was placed in a sample container. The impingers and connecting glassware were rinsed with distilled H₂O and this rinse added to the container for shipment to the laboratory.

Container No. 6 - Acetone washings from all sample-exposed surfaces in the impingers were placed in a sample container, labeled and sealed. The liquid level was marked after the container was sealed.

Container No. 7 - A minimum of 200 ml of distilled water was taken for the blank analysis. The blank was obtained and treated in a similar manner as the water rinse.

The silica gel from the fourth impinger was weighed and the gain recorded on the Field Data Sheet with other pertinent data.

Harnon Associates, Inc. report of 6/13/52
to Wine Construction, Inc., Sawickley, PA

ANALYTICAL PROCEDURES

The following procedures were used and follow the methods prescribed by the Federal Register.*

Container No. 1 - The filter and any loose particulate matter from this sample container were placed into a tared glass weighing dish, desiccated for 24 hours to a constant weight and weighed to the nearest 0.1 mg.

Container No. 2 - The distilled water washings were transferred to a tared beaker and evaporated to dryness at ambient temperature and pressure, desiccated for 24 hours to a constant weight and weighed to the nearest 0.1 mg.

Container No. 3 - The acetone washings were transferred to a tared beaker and evaporated to dryness at ambient temperature and pressure, desiccated for 24 hours to a constant weight and weighed to the nearest 0.1 mg.

Container No. 4 - The acetone blank was transferred to a tared beaker and evaporated to dryness at ambient temperature and pressure. The blank was desiccated for 24 hours to a constant weight and weighed to the nearest 0.1 mg.

Container No. 5 - The contents of this container were filtered through tared (0.5u - 2.22u) filters to remove insoluble particulate. The filters and filtrates in tared beakers were then evaporated to dryness at ambient temperature and pressure, desiccated to a constant weight and weighed on an analytical balance to the nearest 0.1 mg.

Container No. 6 - The distilled water blank was transferred to a tared beaker and evaporated to dryness at 125°C. The blank was desiccated to a constant weight and weighed on an analytical balance to the nearest 0.1 mg.

Container No. 7 - Same as Container No. 3.

The term "constant weight" means a difference of no more than 0.5 mg or 1% of total weight less tare weight, whichever is greater between two consecutive readings, with no less than 6 hours of desiccation between weighings.

*Federal Register, CFR 40, Part 60, July 1, 1956

Hameon Associates, Inc. report of 6/13/92
to Wine Construction, Inc., Sawickley, PA

C. LABORATORY DATA

AIR QUALITY SERVICES, INC.

4527 Clinton Boulevard
Pittsburgh, PA 15236
(412) 681-5630

FORM 32 45726
REVISED 1992

TABLE I
TOTAL SOLIDS ANALYSIS
HEMEON ASSOCIATES
125 THIRTY NINTH STREET
PITTSBURGH, PA 15201
PURCHASE ORDER #15992 WINE CONSTRUCTION
SAMPLES RECEIVED: JULY 6, 1992

HEMEON SAMPLE NUMBER	AQS LABORATORY NUMBER	SAMPLE TYPE	SAMPLE VOLUME MILLILITER	TOTAL SOLIDS MILLIGRAMS
9016	62027	ACETONE	104	2.9
9017	62028	ACETONE	101	3.9
9018	62029	ACETONE	98	3.5
9025	62030	ACETONE	86	3.6
9026	62031	ACETONE	73	5.8
9027	62032	ACETONE	72	4.2
BLANK 9029	62033	ACETONE	97	<0.1

THE SAMPLES WERE WEIGHED ON A BALANCE CALIBRATED WITH WEIGHTS
TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS.
THE DATA HAS NOT BEEN CORRECTED FOR THE BLANK.

AIR QUALITY SERVICES, INC.

4527 Clairton Boulevard
Pittsburgh, PA. 15236
(412) 681-5630

JUL 12 1992

1001 110 1992

TABLE II
TOTAL SOLIDS ANALYSIS
HEMBON ASSOCIATES
125 THIRTY NINTH STREET
PITTSBURGH, PA. 15201
PURCHASE ORDER #15992 WINE CONSTRUCTION
SAMPLES RECEIVED: JULY 6, 1992

HEMBON SAMPLE NUMBER	AQS LABORATORY NUMBER	SAMPLE TYPE	SAMPLE VOLUME MILLILITER	TOTAL SOLIDS MILLIGRAMS
9013	62023	WATER	102	1.2
9014	62024	WATER	102	2.0
9015	62025	WATER	106	1.6
BLANK 9028	62026	WATER	100	1.2 *

THE SAMPLES WERE WEIGHED ON A BALANCE CALIBRATED WITH WEIGHTS
TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS.
THE DATA HAS NOT BEEN CORRECTED FOR THE BLANK.

* VISIBLE WHITE RESIDUE IN THE BEAKER

John D. Gallagher
AIR QUALITY SERVICES, INC.

JOB 3492

AIR QUALITY SERVICES, INC.

4527 Clairton Boulevard
Pittsburgh, PA 15236
(412) 881-5630

PAID 12 1992
JULY 1992

TABLE III
ANALYSIS OF SAMPLES FOR SOLUBLE-INSOLUBLE SOLIDS
HEMBON ASSOCIATES
125 THIRTY NINTH STREET
PITTSBURGH, PA 15201
PURCHASE ORDER #15992 WINE CONSTRUCTION
SAMPLES RECEIVED: JULY 6, 1992

HEMBON SAMPLE NUMBER	AQS LABORATORY NUMBER	SAMPLE VOLUME MILLILITERS	INSOLUBLE SOLIDS MILLIGRAMS	SOLUBLE SOLIDS MILLIGRAMS
9019	62034	475	1.05	273.3
9020	62035	702	0.49	396.7
9021	62036	760	2.02	434.6

THE SAMPLES WERE WEIGHED ON A BALANCE CALIBRATED WITH WEIGHTS
TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS.
THE DATA HAS NOT BEEN CORRECTED FOR A BLANK.

Hemcon Associates, Inc.

SAMPLE WEIGHTS AND DUST CONCENTRATION

Test No.	1	2	3
Test Date	6/30/92	6/30/92	6/30/92
Filter No.	120721	120722	120723
Probe Rinse, Acetone, mg	2.9 ✓	3.9 ✓	3.5
Probe Rinse, Water, mg	1.2 ✓	2 ✓	1.6
Impinger Insoluble, mg	1.05 ✓	.49 ✓	2.02
Impinger Soluble, mg	273.3	395.7	434.6
Impinger Rinse, Acetone, mg	3.5 ✓	5.8 ✓	4.2
Filter Tare, mg	655.2	681.2	683.5
Filter + Sample, mg	657.6	682.8	684.6
Filterable sample, mg	2.4 ✓	1.6 ✓	1.1
Total Filterable Catch, mg	11.15	13.79	12.42
Sample Gas Volume scf	59.7	56.4	50.9
Sample Gas Weight, lbs	4.57	4.32	3.9
PM Conc., #/1000 #gas	.206	.008	.008
PM Conc., gr/dry scf	.203	.004	.004

* - Data not used in calculations.

DRY GAS METER CALIBRATION DATA FORM

Test numbers 1, 2, 3 Date 2-24-92 Meter box number RMC 2548 Plant Wine Construction
 Barometric pressure, $P_b = 29.10$ in. Hg Dry gas meter number 59222 Pretest Y

Orifice meter setting, (AW) in. H ₂ O	Gas volume		Temperature				Time (θ), min	Vacuum setting, in. Hg	Y_1	Y_1	
	Wet test meter (V_1) ft ³	Dry gas meter (V_2) ft ³	Wet test meter (θ_1) °F	Inlet (t_{d1}) °F	Outlet (t_{d2}) °F	Average ($\bar{t}_d$) °F				$V_1 P_b (t_d + 460)$	$V_2 P_b + \frac{AW}{13.6} (t_d + 460)$
2.0	10.040	10.547	72	91	91	100.2	13	2.5	.996		
2.0	10.184	10.711	72	91	91	101.5	13	2.5	.997		
2.0	10.020	10.557	72	91	91	101.3	13	2.5	.994		
									$Y = .996$		

* If there is only one thermometer on the dry gas meter, record the temperature under t_d .

V_1 = Gas volume passing through the wet test meter, ft³.

V_2 = Gas volume passing through the dry gas meter, ft³.

t_d = Temperature of the gas in the wet test meter, °F.

t_{d1} = Temperature of the inlet gas of the dry gas meter, °F.

t_{d2} = Temperature of the outlet gas of the dry gas meter, °F.

t_d = Average temperature of the gas in the dry gas meter, obtained by the average of t_{d1} and t_{d2} , °F.

AW = Pressure differential across orifice, in H₂O.

Y_1 = Ratio of accuracy of wet test meter to dry gas meter for each run.

Y = Average ratio of accuracy of wet test meter to dry gas meter for all three runs;
 tolerance = pretest $Y \pm 0.05Y$

P_b = Barometric pressure, in. Hg.

θ = Time of calibration run, min.

Memom Associates, Inc.
 125 Third Main Street
 Pittsburgh, PA 15201

calculated

230.153

243.825

254.432

calculated

221.001

232.153

243.825

PITOT TUBE CALIBRATION DATA

Calibration pitot tube: type 522 size (OD) .22 ID number 4222

Type S pitot tube ID number 4222 $C_{p(Std)}$ = 1.00

Calibration: date 12/15/62 performed by W. J. J. J.

A - Side Calibration

ΔP_{Std} cm H ₂ O (in. H ₂ O)	ΔP_B cm H ₂ O (in. H ₂ O)	a $C_p(S)$	b DEV.
0.12	0.12	0.99	0.01
0.22	0.22	0.99	0.01
0.32	0.32	0.99	0.01
0.42	0.42	0.99	0.01
0.52	0.52	0.99	0.01
0.62	0.62	0.99	0.01
0.72	0.72	0.99	0.01
0.82	0.82	0.99	0.01
0.92	0.92	0.99	0.01
1.02	1.02	0.99	0.01
1.12	1.12	0.99	0.01
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1.82	1.82	0.99	0.01
1.92	1.92	0.99	0.01
2.02	2.02	0.99	0.01
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5.02	5.02	0.99	0.01
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25.12	25.12	0.99	0.01
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25.52	25.52	0.99	0.01
25.62	25.62	0.99	0.01
25.72	25.72	0.99	0.01
25.82	25.82	0.99	0.01
25.92	25.92	0.99	0.01
26.02	26.02	0.99	0.01
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26.72	26.72	0.99	0.01
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26.92	26.92	0.99	0.01
27.02	27.02	0.99	0.01
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27.72	27.72	0.99	0.01
27.82	27.82	0.99	0.01
27.92	27.92	0.99	0.01
28.02	28.02	0.99	0.01
28.12	28.12	0.99	0.01
28.22	28.22	0.99	0.01

Hemench Associates, Inc. report of 6/13/92
to Wine Construction, Inc., Sewickley, PA

D. FIELD DATA SHEETS

HEMEON ASSOCIATES, INC. :
PARTICULATE FIELD DATA SHEET

Plant Miner Co. - 119 Operator W. J. [Signature]
Location Boydston Road Test No. 1 Date 1-22-54
Stack Dimension 54" Ø Desiccant No. D 407 Filter No. 102
Pitot Coefficient .84 Pitot No. 1 Motorbox No. 24C-249
Motorbox (Cal. Y) 992 Nozzle Diameter 3/8" Nozzle I.D. .375

Tray Point No.	Velocity Head (ΔP) H ₂ O	Gas Temp. °F	Orifice Uncorr. Inches (H ₂ O)	ΔH Corr. for Point. Inches (H ₂ O)	Clock Time	Sample Time Mins.	Vacuum "HG	Motor Read Cu. Ft.	Motor Temperature Degrees F		Temperatures Degrees		
									In	Out	Probe 230 275	Filter Box	Last Impinger 68 degree or less
Init.	XXXXXX	XXXXXX	Factor	(22)	0	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXXXX	XXXXXX
1	14	18		29	0	1.5	1.2	22	80	14	12	11	42
2	14	18		43	5	2.2	2.2	23	84	15			
3	14	18		43	7.5	2.2	2.2	23	87	16	14	14	53
4	17	18		44	10	2.4	2.5	23	88	17			
5	14	18		43	12.5	2.2	2.2	23	90	22	17	15	54
6	15	18		40	15	1.9	2.2	23	91	22			
7	14	18		25	12.5	1.9	2.2	23	91	21	14	15	54
8	14	18		1.9	10	1.1	2.2	23	91	21			
9	14	18		1.5	12.5	2.2	2.2	23	91	22	15	17	54
10	19	19		20	15	1.9	2.2	23	91	24			
11	14	19		25	12.5	1.7	2.2	23	92	25	14	15	54
12	10	19		20	10	1.3	2.2	23	93	21			
Sum- mation	0.227	186.2		3.68	60		922	238	122	838			

Ambient Temp. 44 °F
Bar. Pres. 29.4 "Hg
Stat. Pres. 21.2 "WC

IMPINGER WATER
Final 396 ml
Init. 100 ml
Cond. 196 ml

DESICCANT
Final 423.1 gms
Init. 402.0 gms
Gain 21.1 gms

ORGANIC ANALYSES
Time - 14
CO₂ - 0.0
O₂ - 15.4 CO - 0.0

Final Leak Rate 0.222 cfm 0.2 inches Hg

Notes: Run 1000 cc of 10% H₂SO₄ in 100 cc of water
1000 cc of 10% H₂SO₄ in 100 cc of water
1000 cc of 10% H₂SO₄ in 100 cc of water

HEMEON ASSOCIATES, INC.
PARTICULATE FIELD DATA SHEET

Plant Wine Garden City Everett State WA Operator ACB
Location Baghouse Stack Test No. 1 Date 1-22-80
Stack Dimension 54" dia Desiccant No. 0407 Filter No. 00201
Pitot Coefficient 0.94 Pitot No. 1 Meterbox No. 2404549
Meterbox (Cal. Y) 992 Nozzle Diameter 2 1/2" Nozzle I.D. 225

Tray. Point No.	Veloc- ity Head (ΔP) H ₂ O	Gas Temp. ° F	Orificed Uncorr. Inches (H ₂ O)	ΔH Corr. for Moist. Inches (H ₂ O)	Clock Time	Sample Time Min.	Vac- uum "HG	Meter Read Cu. Ft.	Meter Temperature Degrees F		Temperature Degrees F		
									In	Out	Probe 230 275	Filter Box	Last Impinger 68 degree or less
Init.	XXXXXX	XXXXX	Factor	(.75)	0225	30	XXXX	2.2	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXXXX
1	1.2	124		2.2	0235	35	2.4	2.2	22	24	152	111	52
2	1.2	123		2.5	0245	35	2.9	2.5	21	24			
3	1.2	125		2.5	0255	40	2.9	2.2	22	22	159	155	55
4	1.2	125		2.5	0245	40	2.1	2.2	24	28			
5	1.2	123		2.9	0255	45	2.0	2.2	24	24	162	155	50
6	1.2	120		2.9	0250	45	2.0	2.2	22	28			
7	1.2	122		2.9	0255	50	2.0	2.2	24	28	162	152	54
8	1.2	123		2.5	0255	50	2.2	2.2	22	28			
9	1.2	122		2.5	0255	55	2.2	2.2	20	28	121	111	52
10	1.2	122		2.5	0250	55	2.3	2.2	20	24			
11	1.2	122		2.9	0255	57.5	2.2	2.2	20	24	111	159	59
12	1.2	122		2.9	0255	60	2.2	2.2	20	23			

VISIBLE EMISSION OBSERVATION FORM

SOURCE NAME			OBSERVATION DATE				START TIME				STOP TIME			
Wine Construction, Inc.			6-30-92				7:10 AM				8:10 AM			
ADDRESS #0 #3														
CITY Newark			STATE PA				ZIP 15143							
PHONE 366-9500			CONTACT TO MONITOR Bussell											
EQUIPMENT Bussell			OPERATING MODE											
CONTROL EQUIPMENT			OPERATING MODE											
DESIGNATED EMISSION POINT														
HEIGHT ABOVE GROUND LEVEL 30 ft			HEIGHT RELATIVE TO OUTLETER											
DISTANCE FROM OBSERVER 60 ft			DIRECTION FROM OBSERVER West											
EMISSION COLOR White														
PLUME TYPE CONTINUOUS			INTERMITTENT											
WATER DISCHARGE PRESENT			WATER DISCHARGE PLUME											
ATTACHED DETACHED														
AT WHAT POINT IN THE PLUME WAS OPACITY DETERMINED														
Observed back end														
BACKGROUND														
COLOR AND COLOR			SKY CONDITIONS											
Blue			Clear											
WIND SPEED 0-5 MPH			WIND DIRECTION E-W											
AIR TEMP. 60°			RELATIVE HUMIDITY											
SOURCE LAYOUT SKETCH						DRAW NORTH ARROW								
COMMENTS														
AVERAGE OPACITY FOR HIGHEST PERIOD												NUMBER OF READINGS ABOVE		
RANGE OF OPACITY READINGS												MINIMUM MAXIMUM		
OBSERVER'S SIGNATURE Amy M. Barry												DATE 6-30-92		
SUPERVISOR'S SIGNATURE James J. Associates Inc.												DATE 3-26-92		
I HAVE RECEIVED A COPY OF THESE OPACITY OBSERVATIONS														
SIGNATURE TITLE												DATE		

[Handwritten signature]

Plant Waco Corporation City Georgetown, Guyana Operator A. C. G.
Location Boydston Plant Test No. 100 Date 1-20-68
Stack Dimension 54" Ø Desiccant No. 2-100 Filter No. 102
Pitot Coefficient 0.94 Pitot No. 100 Motorbox No. 200
Motorbox (Cal. Y) 222 Nozzle Diameter 3/8" Nozzle I.D. 225

Trav. Point No.	Velocity Head (ΔP) H ₂ O	Gas Temp. °F	Orifice Uncorr. Inches (H ₂ O)	ΔH Corr. for Moist. Inches (H ₂ O)	Clock Time	Sample Time Min.	Vacuum "HG	Motor Read Cu. Ft	Motor Temperature Degrees F		Temperatures Degrees		
									In	Out	Probe 230 275	Filter Box	Last Impinger 68 degree or less
Init.	XXXXXX	XXXX	Factor	(.70)	0000	0	XXXX	23.5	XXXX	XXXX	XXXX	XXXX	XXXX
1	1.23	124		.24	0005	5	29	23.5	101	99	121	149	52
2	1.24	124		.25	0010	10	29	23.5	101	99			
3	1.24	124		.25	0025	25	29	23.5	102	99	122	149	54
4	1.24	124		.25	0045	40	29	23.5	111	99			
5	1.24	124		.25	0055	55	29	23.5	113	99	122	149	55
6	1.25	125		.27	0110	15	29	23.5	114	99			
7	1.25	125		.27	0125	25	29	23.5	119	99	123	151	57
8	1.25	129		.27	0145	40	29	23.5	119	99			
9	1.26	129		.27	0155	55	29	23.5	119	97	123	157	57
10	1.23	120		.24	0210	15	29	23.5	119	99			
11	1.26	129		.28	0225	25	27	23.5	121	100	125	159	58
12	1.26	140		.28	0245	30	27	23.5	126	100			
Sum-Total	1240 RMS	215.5		3.48	0250	60	29.2	23.5	107.4				

Notes: *Reddy Miggins married 24-26-1904*
1412 E. 13th St. Portland, Ore.
4200 1/2 Ave. B. B. - 11th Year

HEMEON ASSOCIATES, INC.
PARTICULATE FIELD DATA SHEET

Plant Waco Construction City Waco, Texas Operator [Signature]
Location Bohannon Park Test No. 1 Date 12-22-82
Stack Dimension 34" dia Desiccant No. 10-1149 Filter No. 11221
Pitot Coefficient 0.95 Pitot No. 1 Meterbox No. 2462548
Meterbox (Cal. Y) 992 Nozzle Diameter 3/16" Nozzle I.D. 3/32"

Trav. Point No.	Velocity Head (H _P) H ₂ O	Gas Temp. ° F	Orifice Uncorr. Inches (H ₂ O)	ΔH Corr. for Moist. Inches (H ₂ O)	Clock Time	Sample Time Mins.	Vacuum "HG	Meter Read Cu. Ft.	Meter Temperature Degrees F		Temperatures Degrees F		
									In	Out	Probe 230 275	Filter Box	Last Impinger 68 degree or less
Init.	xxxxxx	xxxxxx	Factor	(72)	0845	30	xxxx	29.1	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxxxx
1	1.5	112		0.8	0845	30	29.1	29.1	112	102	115	112	52
2	1.2	112		0.9	0845	35	29.1	29.1	112	102			
3	1.2	112		0.9	0845	37.5	29.1	29.1	115	102	121	115	52
4	1.9	112		1.1	0850	40	10.8	29.1	112	102			
5	1.9	112		1.1	0850	40.5	10.8	29.1	119	102	127	119	52
6	1.2	112		0.9	0855	45	0.8	29.1	119	102			
7	1.2	112		0.9	0855	47.5	2.9	29.1	119	102	119	119	52
8	1.0	112		0.9	0900	50	2.0	29.1	119	102			
9	1.9	112		1.1	0905	50.5	1.2	29.1	119	102	123	119	52
10	1.2	112		0.9	0905	55	2.8	29.1	112	102			
11	1.2	119		0.9	0910	57.5	2.8	29.1	119	102	123	119	59
12	1.2	119		0.9	0910	60	2.8	29.1	119	102			

OBSERVER NAME <i>Wine Construction Inc.</i>			OBSERVATION DATE <i>6-30-92</i>					START TIME <i>9:00 AM</i>					STOP TIME <i>10:00 AM</i>				
ADDRESS <i>P.O. #3</i>																	
CITY <i>Shirley</i>			STATE <i>PA</i>					ZIP <i>15143</i>									
PHONE <i>412-9500</i>			OBJECT NUMBER <i>Run 2</i>														
EQUIPMENT <i>Baghouse</i>			OPERATING MODE														
CONTROL EQUIPMENT			OPERATING MODE														
OBSERVER POSITION POINT																	
HEIGHT ABOVE GROUND LEVEL <i>30 ft.</i>			HEIGHT RELATIVE TO OBSERVER														
DISTANCE FROM OBSERVER <i>60 ft.</i>			DIRECTION FROM OBSERVER <i>W-E</i>														
OBSERVER EMISSION POINT																	
EMISSION COLOR <i>White</i>			PLUME TYPE CONTINUOUS ☒ INTERMITTENT ☐														
WATER GOSPLET PRESENT <i>NO</i>			WATER GOSPLET PLUME ATTACHED ☐ DETACHED ☐														
AT WHAT POINT IN THE PLUME WAS OPACITY DETERMINED <i>Down stack exit</i>																	
OBSERVER BACKGROUND <i>Clear</i>																	
WIND DIRECTION <i>3-5 mph</i>			WIND SPEED <i>W-E</i>														
MOISTURE TEMP.			WET BULB TEMP.														
SOURCE LAYOUT SKETCH			DRAW NORTH ARROW														
			1					6					11				
			2					7					12				
			3					8					13				
			4					9					14				
			5					10					15				
			6					11					16				
			7					12					17				
			8					13					18				
			9					14					19				
			10					15					20				
			11					16					21				
			12					17					22				
			13					18					23				
			14					19					24				
			15					20					25				
			16					21					26				
			17					22					27				
			18					23					28				
			19					24					29				
			20					25					30				
AVERAGE OPACITY FOR HIGHEST PERIOD													NUMBER OF READINGS ABOVE				
RANGE OF OPACITY READINGS													WERE				
OBSERVER'S NAME (PRINT) <i>Amy M. Parry</i>													DATE <i>6-30-92</i>				
OBSERVER'S SIGNATURE <i>Amy M. Parry</i>													DATE <i>6-30-92</i>				
ORGANIZATION <i>Hemlock Associates, Inc.</i>													DATE <i>6-30-92</i>				
I HAVE RECEIVED A COPY OF THESE OPACITY OBSERVATIONS													DATE <i>6-30-92</i>				
SIGNATURE <i>Robert J. Hecox</i>			DATE <i>6-30-92</i>														
TITLE <i>Director</i>			DATE <i>6-30-92</i>														

MEMEON ASSOCIATES, INC. :
PARTICULATE FIELD DATA SHEET

Plant Waco Chemicals City Waco, Texas Operator [Signature]
Location Boiler Room Test No. 2 Date 1-22-69
Stack Dimension 54" Ø Desiccant No. 1-429 Filter No. 142232
Pitot Coefficient 0.99 Pitot No. 1 Motorbox No. 225
Motorbox (Cal. V) 222 Nozzle Diameter 2 1/2" Nozzle I.D. 225

Trav. Point No.	Velocity Head (ΔP) H ₂ O	Gas Temp. °F	Orifice Uncorr. Inches (H ₂ O)	ΔH Corr. for Moist. Inches (H ₂ O)	Clock Time	Sample Time Min.	Vacuum "HG	Meter Read Cu. Ft.	Meter Temperature Degrees F		Temperatures Degrees		
									In	Out	Probe 230 275	Filter Box	Last Impinger 60 degree or less
Init.	XXXXXX	XXXXX	Factor	(.80)	1135	0	XXXX	83.5	XXXXX	XXXXX	XXXXX	XXXXXX	XXXXXXXX
1	1.24	125		2.1	1145	5	25	83.5	112	119	112	125	54
2	1.29	125		2.5	1150	5	30	83.5	111	119	111	125	54
3	1.31	125		2.8	1155	7.5	40	83.5	113	129	113	146	55
4	1.31	125		2.8	1145	10	40	83.5	112	109	112	146	55
5	1.29	124		2.4	1155	12.5	30	83.5	113	110	113	142	55
6	1.25	123		1.9	1150	15	30	83.5	114	111	114	142	55
7	1.24	123		1.7	1155	17.5	25	83.5	111	111	111	151	55
8	1.29	124		1.2	1155	20	19	83.5	111	111	111	151	54
9	1.29	124		1.2	1155	22.5	19	83.5	111	111	111	151	54
10	1.29	122		1.4	1100	25	19	83.5	110	111	110	151	54
11	1.21	121		1.4	1125	25	25	83.5	119	111	119	151	54
12	1.21	121		1.4	1145	30	25	83.5	119	111	119	151	54
Sum	1.238	129.5		2.93		60	897.0	313.5	141	115.7			
Ave													

Ambient Temp. 82 F
Bar. Press. 14.92 "Hg
Stat. Press. 14.9 "Hg
IMPINGER WATER Final 54.6 ml
Init. 1.2 ml
Cond. 2.6 ml
DESICCANT Final 439.1 gms
Init. 408.1 gms
Gain 39.0 gms
ORGAN ANALYSES Time - 1.9
CO₂ - 1.0
O₂ - 15.2 CO -
Final Leak Rate 2.02 cfm 112 inches Hg

Notes: 2.02 cfm 54.6 ml water 24.0 ml - 22.4 ml
1.2 ml water 1.2 ml - 0.2 ml
2.6 ml cond. 2.6 ml - 0.2 ml

MEMEON ASSOCIATES, INC.
PARTICULATE FIELD DATA SHEET

Plant Nice Corporation City San Francisco, Ca. Operator John J. [Signature]
 Location Bay Area Plant Test No. 2 Date 1-22-69
 Stack Dimension 34" dia Desiccant No. 1-423 Filter No. 2223
 Pitot Coefficient 0.94 Pitot No. 1 Meterbox No. ME 519
 Meterbox (Cal. Y) 992 Nozzle Diameter 3/16" Nozzle I.D. 0.275"

Trav. Point No.	Velocity Head (H _P) H ₂ O	Gas Temp. ° F	Orifice Uncorr. Inches (H ₂ O)	ΔH Corr. for Moist. Inches (H ₂ O)	Clock Time	Sample Time Mins.	Vacuum "HG	Meter Read Cu. Ft.	Meter Temperature Degrees F		Temperatures Degrees F		
									In	Out	Probe 230 275	Filter Box	Last Impinger 60 degree or less
Init.	XXXXXX	XXXXX	Factor	(1.0)	125	30	XXXX	3.03 2.71	XXXX	XXXX	XXXX	XXXXXX	XXXXXXXX
1	1.4	115		0.9	140	35	9.1	3.45 3.12	112	111	115	115	52
2	1.4	114		0.9	140	35	9.1	3.45 3.12	112	111	115	115	52
3	1.4	115		0.9	140	35	9.1	3.45 3.12	112	111	115	115	52
4	1.4	115		0.9	140	35	9.1	3.45 3.12	112	111	115	115	52
5	1.4	115		0.9	140	35	9.1	3.45 3.12	112	111	115	115	52
6	1.4	115		0.9	140	35	9.1	3.45 3.12	112	111	115	115	52
7	1.4	115		0.9	140	35	9.1	3.45 3.12	112	111	115	115	52
8	1.4	115		0.9	140	35	9.1	3.45 3.12	112	111	115	115	52
9	1.4	115		0.9	140	35	9.1	3.45 3.12	112	111	115	115	52
10	1.4	115		0.9	140	35	9.1	3.45 3.12	112	111	115	115	52
11	1.4	115		0.9	140	35	9.1	3.45 3.12	112	111	115	115	52
12	1.4	115		0.9	140	35	9.1	3.45 3.12	112	111	115	115	52
13	1.4	115		0.9	140	35	9.1	3.45 3.12	112	111	115	115	52
14	1.4	115		0.9	140	35	9.1	3.45 3.12	112	111	115	115	52
15	1.4	115		0.9	140	35	9.1	3.45 3.12	112	111	115	115	52
16	1.4	115		0.9	140	35	9.1	3.45 3.12	112	111	115	115	52
17	1.4	115		0.9	140	35	9.1	3.45 3.12	112	111	115	115	52
18	1.4	115		0.9	140	35	9.1	3.45 3.12	112	111	115	115	52
19	1.4	115		0.9	140	35	9.1	3.45 3.12	112	111	115	115	52
20	1.4	115		0.9	140	35	9.1	3.45 3.12	112	111	115	115	52

210
160
196
566

VISIBLE EMISSION OBSERVATION FORM

OBSERVER NAME			OBSERVATION DATE					START TIME		STOP TIME	
Wire Construction, Inc.			6-30-92					11:35 AM		12:35 PM	
ADDRESS Rd # 3											
CITY Savickley	STATE PA	ZIP 15143									
PHONE 266-9500			SOURCE ID NUMBER Run 3								
POLLUTED EQUIPMENT			OPERATING MODE								
CONTROL EQUIPMENT			OPERATING MODE								
DESIGNER EMISSION POINT											
HEIGHT ABOVE GROUND LEVEL 30 m			HEIGHT RELATIVE TO OBSERVER								
DISTANCE FROM OBSERVER 100 ft			DIRECTION FROM OBSERVER West								
DESIGNER EMISSION											
EMISSION COLOR White			PLUME TYPE CONTINUOUS POSITIVE OR INTERMITTENT								
WATER DROPLET PRESENT NO YES			WATER DROPLET PLUME ATTACHED DETACHED								
AT WHAT POINT IN THE PLUME WAS OPACITY DETERMINED Downstream black pit											
GASEOUS BACKGROUND Sky			WIND CONDITION Clear								
WIND SPEED 5-10 mph			WIND DIRECTION W-E								
AIR TEMP 80°			RELATIVE HUMIDITY								
GROUND LAYOUT SKETCH			DRAW NORTH ARROW								
EMISSION POINT SUN SHA / SHADOW LINE OBSERVER POSITION			AVERAGE OPACITY FOR NINE PERIODS					NUMBER OF READINGS ABOVE		% WERE	
			RANGE OF OPACITY READINGS								
COMMENTS			OBSERVER'S NAME (PRINT)					DATE			
			OBSERVER'S SIGNATURE								
I HAVE RECEIVED A COPY OF THESE OPACITY OBSERVATIONS			OCCUPATION					DATE			
			CERTIFIED BY								
SIGNATURE			VERIFIED BY					DATE			

Plant Hess Creek Dam City _____ Operator _____
Location Cypress Creek Street Test No. 2067 Date 1-19-68
Stack Dimension _____ Discharge No. _____ Filter No. _____
Pitot Coefficient _____ Pitot No. _____ Motorbox No. _____
Motorbox (Cal. Yr) _____ Nozzle Diameter _____ Nozzle I.D. _____

Ambient Temp. _____ °F	IMPINGER WATER Final <u>322</u> ml	DESICCANT Final <u>322</u> gms	ORSAT ANALYSES Time _____
Bar. Press. _____ "Hg	Init. <u>100</u> ml	Init. <u>322</u> gms	CO ₂ _____
Stat. Press. _____ "WC	Cond. <u>322</u> ml	Gain <u>320</u> gms	CO _____
Final Leak Rate _____ cfm _____ Inches Hg			

Notes: 1st of 2nd of 1941
1st of 2nd of 1941