MWI TEST REPORTS: Answer as many as you can easily.

1. **Test report number**

   1 Ref 37

2. **Facility name, location**

   Helene Fuld Medical Center, Trenton, NJ

3. **Design charging rate**

   800 lb/hr Incinerator fired with auxiliary No. 2 fuel oil and equipped with a waste heat boiler recovery system.

4. **Air pollution control device**

   None

5. **Test conducted by**

   Bureau of Technical Services

6. **Date tested**

   7/25-27/89

7. **Pollutants tested**

   Total PM, HCl, CO, NOx, THC

8. **Controlled and uncontrolled for which pollutants (just put all if applicable)?**

9. **Test methods used (if not EPA or CARB, note)**

   PM - draft New Jersey Administrative Code 7:27B-5 Air Test Method Five, "Sampling and Analytical Procedures for Determining Emissions of Particulates from the Combustion of Waste."
   THC - NJ Adm Code 7:27B-3 Air Test Method 3 - "Sampling and Analytical Procedures for the Determination of Volatile Organic Substances from Source Operations".
   HCl - draft method entitled "Method for the Determination of HCl Emissions from Municipal and Hazardous Waste Incinerators" (July 1989).

10. **Data quality rating, reason**

    "A" for CO + NOx; report provided good documentation. "B" for HCl and THC, as they used non-EPA test methods were used.

11. **Reason for excluding test report**

    "C" for PM, as the test method employed was not EPA and, furthermore, the test sampled after the boiler, which may have affected emissions.

(1.)

Ref 37

REPORT OF EMISSION TESTS

THE NEW JERSEY AIR POLLUTION CONTROL CODE

Helene Fuld Medical Center
750 Brunswick Avenue
Trenton, New Jersey 08607
A.P.C. Plant I.D. No. 060172
NJ Stack No. 001

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF ENVIRONMENTAL QUALITY

December 1, 1989

New Jersey Test Data: Site 1

Helene Fuld Medical Center, Trenton, New Jersey

Incinerator: Ecolaire Inc. Model ECP 800 E
Waste heat boiler: York-Shipley Scotch Marine Dry Back Fire Tube Boiler Model HRH-500 G
Permitted wastes: Waste types 0, 1, 2, 3, and 4
Permitted charge rate: Up to 800 lb/hr
Add-on controls: None

		PM	PM	PM
Date	1989	07/25	07/26	07/27
Time		AM	PM	PM
Auxilliary fuel		Oil	Oil	Oil
Aux. fuel use	gal/hr	13.3	13.9	13.6
Charge rate	lb/hr	288	372	315
% of capacity		36.00%	46.50%	39.37%
Avg. pri. temp.	F	2047	2069	1994
Avg. sec. temp.	F	1695	1646	1610
Avg. exit temp.	F	527	550	530
Front + back	gr/dscf @ 12% CO2	0.13	0.19	0.19
Allowable	gr/dscf @ 12% CO2	0.08	0.08	0.08
Front	gr/dscf @ 7% O2	0.06	0.09	0.04
Actual emissions	lb/hr	0.41	0.44	0.30

		HCl	HCl	HCl	CO	CO	CO	NOx	NOx	NOx	THC	THC	THC
Date	1989	07/26	07/27	07/28	07/25	07/26	07/26	07/26	07/27	07/28	07/25	07/26	07/27
Time		AM	AM	AM	AM	AM	PM	AM	AM	AM	AM	PM	AM
Auxilliary fuel		Oil	Oil	Oil	Oil	Oil	Oil	Oil	Oil	Oil	Oil	Oil	Oil
Aux. fuel use	gal/hr	13.3	13.9	13.6	13.3	13.3	13.9	13.3	13.9	13.6	13.3	13.9	13.9
Charge rate	lb/hr	456	328	408	288	456	372	456	328	408	288	372	328
% of capacity		57.00%	41.00%	51.00%	36.00%	57.00%	46.50%	57.00%	41.00%	51.00%	36.00%	46.50%	41.00%
Avg. pri. temp.	F	1959	1928	1983	2047	1959	2069	1959	1928	1983	2047	2069	1928
Avg. sec. temp.	F	1613	1612	1472	1695	1613	1646	1613	1612	1472	1695	1646	1612
Avg. exit temp.	F	550	520	537	527	550	550	550	520	537	527	550	520
	ppmvd	234	257	303	10	5	5	54.2	45.0	41.6	23.7	15.5	16.6
	ppmvd @ 7% O2	431	428	589	21.2	10.6	11.3	96.5	75.0	80.8	50.3	32.8	27.7
Actual emissions	lb/hr	2.20	2.37	2.59	0.07	0.04	0.04	0.64	0.52	0.45	0.09	0.06	0.07
Allowable emissions	lb/hr	--	--	--	--	--	--	--	--	--	--	--	--

Source Emission Test Summary

Helene Fuld Medical Center

Table of Contents

SECTION I

PROJECT PURPOSE

Helene Fuld Medical Center
750 Brunswick Avenue
Trenton, New Jersey, 08607
A.P.C. Plant I.D. No. 060172
NJ Stack No. 001

PROJECT PURPOSE:

The Bureau of Technical Services, conducted a Pathological Incinerator test program in order to determine various air contaminants and emission levels being emitted from this source category.

Several Pathological Incinerator sources were inspected and evaluated by personnel from the Bureau of Technical Services for the purpose of this testing project. The Pathological Incinerator selection for testing was based on a wide profile of units with special attention focused on the following:

1. Amount and type of material charged per hour.
2. Unit operating times.
3. Operating Temperatures.
4. Manner of material charge.
5. Type and percentage of plastics charged.

Stack emission tests were conducted on the Pathological Incinerator (N.J. Stack No. 001) for the following contaminants.

A) Particulates

B) Carbon Monoxide

C) Total Hydrocarbons

D) Nitrogen Oxides

E) Hydrochloric Acid

The stack emissions tests were conducted to determine compliance with the standards stated on Permit/Certificate Number P-48618 as filed under New Jersey Administrative Code 7:27-8 "Permits" and the standards prescribed by New Jersey Administrative Code 7:27-11 "Incinerators".

SECTION II

EMISSION TEST PROJECT PERSONNEL

PERSONNEL:

The emission tests were conducted by personnel of the New Jersey Department of Environmental Protection, Air Quality Engineering and Technology Element, Bureau of Technical Services.

Those participating in the emission test program were as follows:

Frank Papp - Environmental Compliance Investigator I
Frederick Ballay - Senior Environmental Specialist
Stafford Stewart - Environmental Engineer
Gary Andrew - Environmental Specialist
Robert Tembrevilla - Environmental Specialist
Debra Berman - Environmental Engineer Trainee
Andrew Coleman - Summer Intern
Susan McLaughlin - Summer Intern

The Pathological Incinerator (N.J. Stack No. 001) was being operated at the conditions listed in the Incinerator Operating Conditions (Section VI). These process conditions were monitored by Mr. Thomas Morris of the Central Regional Enforcement Office and Mr. Michael Pratt of the Bureau of Technical Services.

The emission test samples were analyzed at the Bureau of Organic Analytical Service Laboratories located in West Trenton, New Jersey by:

Henry Smith, Principal Chemist

Randolph Barbiero, Principal Chemist

Gloria Griffith, Principal Laboratory Technician

SECTION III

SOURCE DESCRIPTION

SOURCE DESCRIPTION:

The Helene Fuld Medical Center operates an Ecolaire Inc. (formerly Environmental Control Products) Model Number ECP 800 E Pathological Incinerator. This unit is operated with a York-Shipley Scotch Marine Dry Back-Fire Tube Boiler Model Number HRH-500 G. The unit is equipped with a waste heat recovery system.

The general medical and surgical hospital waste is placed manually into a ram charging unit after being classified and weighed. The Pathological Incinerator normally burns approximately 400 lbs/hr at a primary chamber temperature of 1800^{o}F and a secondary chamber temperature of 2000^{o}F (The exact operating condition and operating temperatures are contained in Section VII Incinerator Operating Conditions). The unit is fired with No. 2 fuel oil.

Hot flue gases from the Ecolaire Inc. Solid Waste Incinerator are drawn through refractory lined breeching and into the York-Shipley Scotch Marine Dry Back Fire Tube Boiler. The hot gases enter the boiler and pass through the boiler three times. Heat is released to the water surrounding the tubes, producing steam and exits the boiler. The outlet damper is electronically controlled to monitor any changes in steam pressure. The steam pressure can be maintained by controlling the flow of the flue gas from the unit. A more accurate control of steam pressure can be maintained in this manner.

The control panel monitors temperature, water levels, water pressure, steam pressure, steam output, and flue gas flow. If fluctuations in the system occur the control panel picks up the malfunctions and relays it to the correcting components. The correcting components then react accordingly to maintain the correct operating conditions of the boiler.

Water levels in the boiler are monitored by a McDonnell & Miller water column gauge. If water levels would fall below the safety level, the McDonnel & Miller water column monitor will cut the power to the induced draft blower and shut down the system.

Thermocouples monitor the flue gas temperature and relays the signal to the control panel. A thermocouple monitors the output flue gas temperature and relays the signal to the control panel. The low temperature flue gases leave the heat recovery boiler system through carbon steel stack.

The Pathological Incinerator (N.J. Stack No. 001) is permitted to charge at a rate of 600 to 800 pounds per hour of Type 0, 1, 2, 3, and 4 waste.

"Type 0 Waste" means trash, a mixture of highly combustible waste such as paper, cardboard, cartons, wood boxes and combustible floor sweepings, containing approximately ten percent moisture and five percent incombustible solids, and have a heating value of approximately 8500 British Thermal Units per pound as fired, and deriving from commercial and industrial activities. The mixtures containing up to ten percent by weight of plastic bags, coated paper, laminated paper, treated corrugated cardboard, oily rags, and plastic or rubber scraps.

"Type 1 Waste" means rubbish, a mixture of combustible waste such as paper, cardboard cartons, wood scraps, foliage and combustible floor sweepings, containing approximately 25 percent moisture and ten percent incombustible solids and have a heating value of approximately 6500 British Thermal Units per pound as fired, and deriving for domestic, commercial and industrial activities. The mixture contains up to 20 percent by weight of restaurant or cafeteria waste, but contains little or no treated paper, plastic or rubber wastes.

"Type 2 Waste" Means refuse, consisting of an approximately even mixture of rubbish and garbage by weight, containing up to 50 percent moisture and approximately 4300 British Thermal Units per pound as fired, and commonly deriving from apartment and residential occupancy.

"Type 3 Waste" means garbage, consisting of animal and vegetable wastes containing up to 70 percent moisture and up to five percent incombustible solids and having a heating value of approximately 2500 British Thermal Units per pound as fired and deriving from restaurants, cafeterias, hotels, hospitals, markets, and like installations.

"Type 4 Waste" means human and animal remains, consisting of carcasses, organs, and solid organic wastes from hospitals, laboratories, abattoirs, animal pounds, and similar sources, consisting of up to 85 percent moisture and approximately five percent incombustible solids and having a heating value of approximately 1000 British Thermal Units per pound as fired.

SECTION IV

SAMPLING DATES AND TESTING SCHEDULE

SAMPLING DATES AND TESTING SCHEDULE:

The Pathological Incinerator (N.J. Stack No. 001) was tested on July 25, 26, 27, and 28, 1989

July 25, 1989

Time 1:10 PM - 2:20 PM

Run Number 1 Particulate
Run Number 1 Carbon Monoxide
Run Number 1 Total Hydrocarbons

July 26, 1989

Time 11:36 AM - 12:40 PM

Run Number 1 Hydrochloric Acid
Run Number 1 Nitrogen Oxides
Run Number 2 Carbon Monoxide

Time 2:33 PM - 3:37 PM

Run Number 2 Particulate
Run Number 2 Total Hydrocarbons
Run Number 3 Carbon Monoxide

July 27, 1989

Time 10:45 AM - 11:53 AM

Run Number 2 Hydrochloric Acid
Run Number 2 Nitrogen Oxides
Run Number 3 Total Hydrocarbons

Time 1:05 - 2:18 PM

Run Number 3 Particulate

July 28, 1989

Time 10:33 AM - 11:39 AM

Run Number 3 Hydrochloric Acid
Run Number 3 Nitrogen Oxides

SECTION V

SAMPLING PROCEDURES

SAMPLING PROCEDURES:

The Particulate emission tests were conducted in accordance with the sampling and analytical procedures outlined in draft New Jersey Administrative Code 7:27B-5 Air Test Method Five, "Sampling and Analytical Procedures for Determining Emissions of Particulates from the Combustion of Waste".

The Total Hydrocarbon emission tests were conducted in accordance with sampling and analytical procedures outlined in New Jersey Administrative Code 7:27B-3 Air Test Method 3 - "Sampling and Analytical Procedures for the Determination of Volatile Organic Substances from Source Operations".

The Nitrogen Oxide emission tests were conducted in accordance with the sampling and analytical procedures outlined in the Code of Federal Regulations - Part 60 - Appendix A, Reference Method 7D - "Determination of Nitrogen Oxide Emission from Stationary Sources - Alkaline - Permagante/Colorimetric Method".

The Carbon Monoxide emission tests were conducted in accordance with the sampling and analytical procedures outlined in the Code of Federal Regulations - Part 60 - Appendix A - Reference Method 10 "Determination of Carbon Monoxide Emissions from Stationary Sources".

The Hydrochloric Acid emission tests were conducted in accordance with the procedures outlined in draft method entitled "Method for the Determination of HCl Emissions from Municipal and Hazardous Waste Incinerators" (July 1989).

A complete description of the sampling trains, analytical procedures, original field notes and quality assurance procedures are on file with the Bureau of Technical Services.

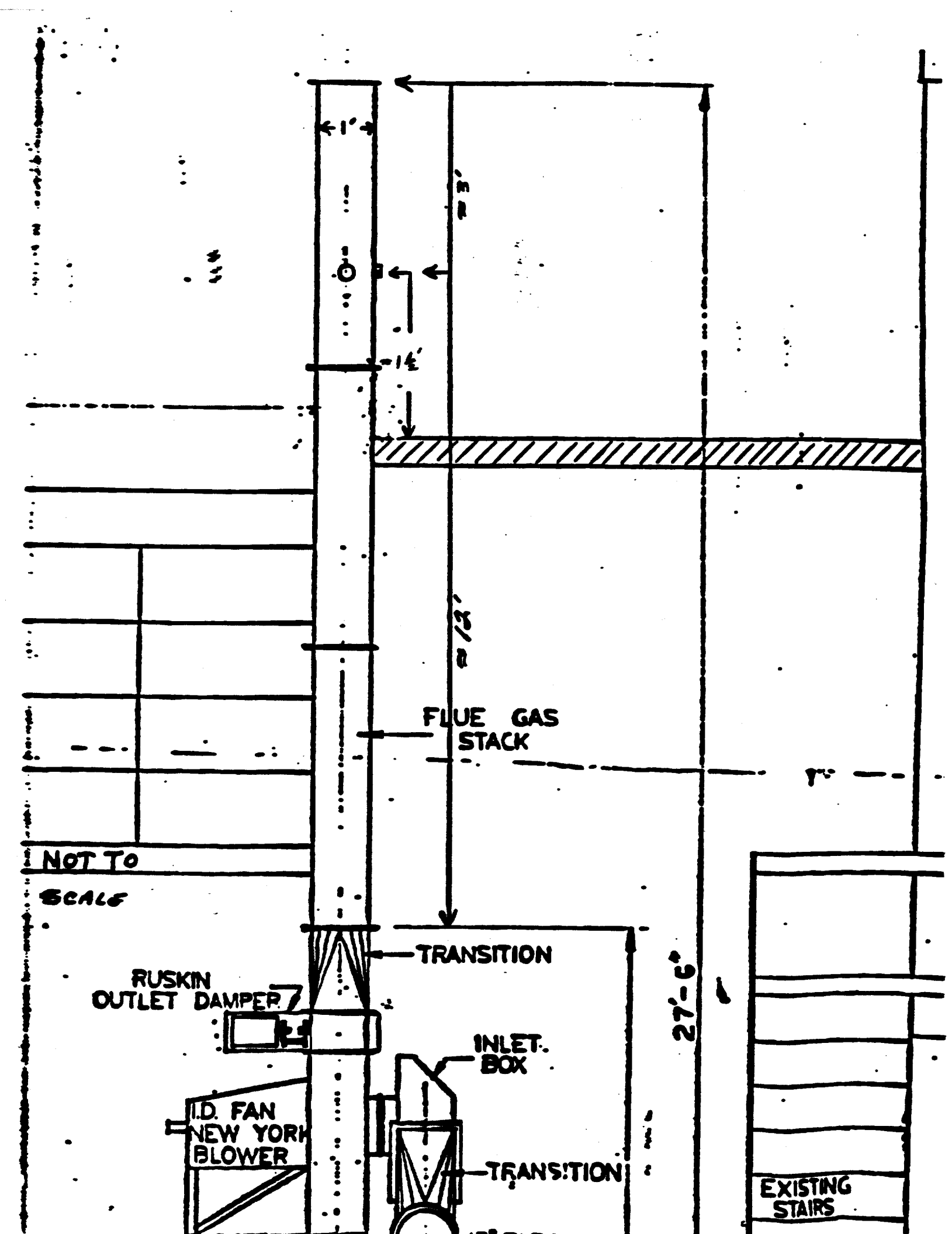
SECTION VI

SAMPLING LOCATION

SAMPLING LOCATION:

Two 3-inch half couplings with removable seals were installed 90^{o} to each other and located approximately 15 to 18 inches above the roofline. The diameters downstream is approximately 12 stack diameters and the diameter upstream approximately 3 stack diameters. The upstream and downstream distance can be seen in the following drawing. This sampling location was determined in accordance with the guidelines outlined in the Code of Federal Regulations 40, Part 60 - Reference Method One - "Sample and Velocity Traverses for Stationary Sources".

The exact stack measurements, sampling location, breeching size, and preliminary set-up data were obtained by Bureau of Technical Services Personnel.


1'
2'-3"
14'
2'-13"
FLUE GAS STACK
NOT TO SCALE
TRANSITION
RUSKIN OUTLET DAMPER
INLET BOX
I.D. FAN NEW YORK BLOWER
TRANSITION
27'-5"
EXISTING STAIRS

DRAFT

BUREAU OF TECHNICAL SERVICES

PATHOLOGICAL INCINERATOR TESTING PROJECT

FACILITY	PARTICULATE			HYDROCHLORIC ACID			NITROGEN OXIDE			TOTAL HYDROCARBONS			CARBON MONOXIDE			OXYGEN	PRIM TEMP	SEC TEMP	CHARGE RATE	FUEL
NAME APC. ID NO. N.J. STACK NO.	GR/DSCF @ 12% CO2*	GR/DSCF @ 7% O2**	LBS/HR	PPMVD	PPMVD @ 7% O2	LBS/HR	PPMVD	PPMVD @ 7% O2	LBS/HR	PPMVD	PPMVD @ 7% O2	LBS/HR	PPMVD	PPMVD @ 7% O2	LBD/HR	*** PERCENT	DEG F.	DEG F.	LBS/HR.	TYPE
HELENE FULD HOSPITAL	0.13	0.06	0.41	334	431	2.20	54.2	96.5	0.64	27.7	50.3	0.09	10.00	21.2	0.07	14.40	2000	1700	382	OIL
060172	0.19	0.09	0.44	257	428	2.37	45.0	75.0	0.52	18.5	32.8	0.06	5.00	10.6	0.04	13.40	2000	1600	210	OIL
001																				
JULY, 1989	0.19	0.04	0.30	303	589	2.53	41.6	80.8	0.45	15.6	27.7	0.07	5.00	11.3	0.04	14.40	2000	1650	228	OIL
BURLINGTON CO. MEMORIAL HOSPITAL	0.17	0.16	0.95	461	1998	3.45	90.3	180.6	0.88	14.6	60.1	0.05	13.30	54.7	0.08	14.00	2000	1775	560	GAS
045043	0.19	0.17	0.97	489	856	3.67	72.5	158.6	0.73	16.3	28.5	0.05	41.00	71.8	0.24	14.60	2000	1800	450	GAS
001																				
AUGUST, 1989	0.19	0.17	0.76	409	842	2.45	58.5	146.3	0.58	18.7	31.5	0.04	28.00	57.7	0.13	15.40	1700	1700	850	GAS
RARITAN BAY HEALTH SERVICES	0.18	0.12	1.90	418	1045	6.80	31.6	76.3	0.77	13.4	30.3	0.11	8.00	20.0	0.10	15.30	2150	1880	870	OIL
015462	0.22	0.14	1.66	263	682	3.43	44.3	100.0	1.03	12.4	26.4	0.08	5.00	13.0	0.05	15.20	2080	1890	1200	OIL
009																				
AUGUST, 1989	0.16	0.13	1.23	395	1024	6.56	36.0	76.4	0.69	13.7	31.0	0.10	4.50	12.0	0.06	15.00	2100	1920	953	OIL
HAMILTON HOSPITAL	0.10	0.068	0.32	187	689	1.48	28.00	103.16	0.28	12.44	34.83	0.05	29.00	81.20	0.19	16.50	1690	1650	105	OIL
060164	0.07	0.210	0.17	175	533	1.48	29.90	91.00	0.32	21.10	59.08	0.07	12.50	35.00	0.08	16.20	1840	1670	167	OIL
002																				
AUGUST, 1989	0.11	0.060	0.25	144	403	1.30	33.00	92.40	0.38	18.18	50.90	0.07	8.00	22.40	0.05	16.00	1700	1600	274	OIL
AMERICAN CYANAMID CORP.	0.15	0.0273	0.35	1.50	4.04	0.02	44.20	119.00	0.74	13.9	48.56	0.07	31.00	108.5	0.27	16.00	1930	1500	140	GAS
060105	0.06	0.028	0.16	N/D	N/D	N/D	47.70	123.67	0.81	13.9	44.23	0.16	7.00	22.27	0.06	16.10	1780	1500	160	GAS
026																				
SEPTEMBER, 1989	0.07	0.038	0.36	1.05	3.83	0.01	54.80	147.54	0.92	14.3	32.29	0.09	4.00	9.03	0.04	15.30	1860	1500	93	GAS

REMARKS:

HELENE FULD MEDICAL CENTER
NON-METHANE HYDROCARBONS

RUN	PPMVD	PPMVD @ 7 % 02	LBS/HR.
1	22.47	47.66	0.089
2	14.67	31.12	0.060
3	15.67	26.15	0.064

BURLINGTON CO. MEMORIAL HOSPITAL
NON-METHANE HYDROCARBONS

RUN	PPMVD	PPMVD @ 7 % 02	LBS/HR.
1	13.9	57.2	0.05
2	0.7	1.23	0.002
3	0.21	0.21	0.0002

RARITAN BAY HEALTH SERVICES
NON-METHANE HYDROCARBONS

RUN	PPMVD	PPMVD @ 7 % 02	LBS/HR.
1	12.03	27.16	0.1055
2	11.47	24.33	0.0774
3	12.33	27.64	0.0860

HAMILTON HOSPITAL
NON-METHANE HYDROCARBONS

RUN	PPMVD	PPMVD @ 7 % 02	LBS/HR.
1	11.05	30.94	0.040
2	19.05	53.34	0.070
3	16.56	46.37	0.062

AMERICAN CYANAMID CORPORATION
NON-METHANE HYDROCARBONS

RUN	PPMVD	PPMVD @ 7 % 02	LBS/HR
1	10.10	35.35	0.051
2	10.10	32.14	0.053
3	10.20	23.03	0.064

NOTES:

* GR/DSCF AT 12 % CO2 MINUS THE CO2 FROM THE AUXILLARY FUEL (FRONT HALF COLLECT AND BACK HALF COLLECT)
** GR/DSCF AT 7% OXYGEN (FRONT HALF CATCH ONLY)
*** THE OXYGEN VALUES SHOWN ARE THE AVERAGE OXYGEN LEVEL OF THE PARTICULATE AND THE HYDROCHLORIC ACID TEST RUNS

ALL VALUES LISTED ON THIS SUMMARY ARE FROM PILMENARY TEST AND LABORATORY DATA SUPPLIED TO THE BUREAU OF TECHNICAL SERVICES. ADDITIONAL AND MORE EXACT TESTING DATA WILL BECOME AVAILABLE WHEN THE ENFORCEMENT REPORTS OF EMISSIONS ARE PUBLISHED AND OFFICIALLY RELEASED.

DRAFT

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF ENVIRONMENTAL QUALITY
Bureau of New Source Review
CN 027
Trenton, N.J. 08625-0027
1-800-441-0065

Anthony J. McMahon
Acting Director

William O'Sullivan, P.E., Assistant Director
Air Quality Engineering and Technology

December 14, 1989

Mr. James A. Eddinger
U.S.E.P.A.
ESD/ISB/SDS
Mail Drop - 13
Research Triangle Park, North Carolina 27711

RE: New Jersey's Pathological Incinceraton Emission Test Program

Dear Mr. Eddinger,

Enclosed are copies of the Emission Test Reports for two pathological incinerations which were tested by my staff. With this submittal we have submitted 3 test reports from these type facilities. The final two reports should be finalized during the week of December 18, 1989. There will be forwarded to your office when released.

If you have any questions regarding the data, please feel free to call me at (609) 530-4041.

Sincerely,

Edward M. Choromanski
Chief
Bureau of Technical Services

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF ENVIRONMENTAL QUALITY
Bureau of New Source Review
CN 027
Trenton, N.J. 08625-0027
1-800-441-0065

Anthony J. McMahon
Acting Director

William O'Sullivan, P.E., Assistant Director
Air Quality Engineering and Technology

December 28, 1989

Mr. James A. Eddinger
U.S.E.P.A.
ESD/ISB/SDS
Mail Drop - 13
Research Triangle Park, North Carolina 27711

Re: New Jersey's Pathological Incinerator Emission Test Program.

Dear Mr. Eddinger:

Enclosed are copies of the emission test reports for the remaining two sources. These incinerators were tested by personnel of the New Jersey Department of Environmental Protection. I have included a copy of an executive summary of the project.

The Department is continuing to determine the emission levels for these sources by requiring the facilities to conduct tests upon expiration of their current operating certificates.

These tests are similar to what we have required but also include heavy metals (Chromium, Nickel, Lead, Mercury, Cadmium, and Arsenic) and Sulfur Oxides. To date two of these sources have completed these tests and submitted their reports. At least ten other sources are in the process of conducting the tests or reporting the emission levels. If you are interested in obtaining this information please advise me.

If you have any questions or comments regarding any of the data which was submitted, please feel free to call me at (609)-530-4041.

Sincerely,

Edward M. Choromanski
Chief
Bureau of Technical Services

SECTION VII

INCINERATOR OPERATING CONDITIONS

INCINERATOR OPERATING CONDITIONS:

The Pathological Incinerator (N.J. Stack No. 001) is permitted by the New Jersey Department of Environmental Protection, Air Pollution Control Program. Permit/Certificate Number P-48618 allows this facility to incinerate Waste Types 0, 1, 2, 3, and 4 at a rate not to exceed 800 pounds per hour.

The following is a compilation of process data monitored by the Department of Environmental Protection, Regional Enforcement Personnel and Personnel from the Bureau of Technical Services, present on each of the test dates.

FUEL CONSUMPTION DATA

DATE	TOTAL TIME	TOTAL CONSUMPTION	AVERAGE CONSUMPTION
07-25-89	5.50 hrs.	73 Gallons	13.3 Gal./hr
07-26-89	7.00 hrs.	97 Gallons	13.9 Gal./hr
07-27-89	6.25 hrs.	85 Gallons	13.6 Gal./hr

PATHOLOGICAL INCINERATOR CHARGING DATA

July 25, 1989

Time	Load Number	Medical Waste/ Black Bags	General Trash/ Brown Bags	Kitchen/ White Bags	Paper/ Card-Board	Total Charge
13:15	25	17 LBS.	37 LBS.	22 LBS.	9 LBS.	85 LBS.
13:25	26	10 LBS.	29 LBS.	28 LBS.	3 LBS.	64 LBS.
13:35	27	15 LBS.	17 LBS.	---	3 LBS.	35 LBS.
13:46	28	16 LBS.	23 LBS.	---	2 LBS.	41 LBS.
13:58	29	29 LBS.	23 LBS.	---	3 LBS.	55 LBS.
14:08	30	12 LBS.	24 LBS.	---	2 LBS.	38 LBS.
14:18	31	10 LBS.	21 LBS.	---	2 LBS.	33 LBS.
14:20	32	19 LBS.	19 LBS.	---	3 LBS.	41 LBS.
Totals (LBS)		128	193	50	27 =	398
Avg. (LBS/HR)		92.5	139.5	36	19.5 =	288

The aforementioned waste was being incinerated during the following test runs.

Run Number 1 Particulate
Run Number 1 Carbon Monoxide
Run Number 1 Total Hydrocarbons

Testing Period 13:10 - 14:20

PATHOLOGICAL INCINERATOR
TEMPERATURE LOG
JULY 25, 1989

Time	Primary Temperature (^{o}F)	Secondary Temperature (^{o}F)	Boiler Outlet Temperature(^{o}F)
13:10	2000	1700	530
13:15	2175	1750	540
13:20	2100	1750	530
13:25	2050	1725	530
13:30	2000	1650	530
13:35	1925	1625	520
13:40	2050	1650	520
13:45	2000	1675	520
13:50	2050	1675	520
13:55	2075	1700	520
14:00	2100	1700	530
14:05	2075	1700	530
14:10	2050	1700	530
14:15	2050	1725	530
14:20	2000	1700	530

Average Primary Temperature 2047 ^{o}F over the test period.
Average Secondary Temperature 1695 ^{o}F over the test period.
Average Boiler Outlet Temperature 527 ^{o}F over the test period.

PATHOLOGICAL INCINERATOR
CHARGING DATA

July 26, 1989

Time	Load Number	Medical Waste/ Black Bags	General Trash/ Brown Bags	Kitchen/ White Bags	Paper/ Card-board	Total Charge
11:40	16	34 LBS.	32 LBS.	21 LBS.	2 LBS.	89 LBS.
11:40	17	26 LBS.	22 LBS.	---	5 LBS.	53 LBS.
11:45	18	24 LBS.	37 LBS.	---	4 LBS.	65 LBS.
11:55	19	19 LBS.	27 LBS.	---	4 LBS.	50 LBS.
12:05	20	29 LBS.	21 LBS.	---	3 LBS.	53 LBS.
12:20	21	24 LBS.	26 LBS.	---	4 LBS.	54 LBS.
12:30	22	26 LBS.	24 LBS.	---	4 LBS.	54 LBS.
12:40	23	14 LBS.	21 LBS.	---	3 LBS.	38 LBS.
Totals (LBS)		196	210	21	29 =	456
Avg. (LBS/HR)		196	210	21	29 =	456

The above waste was being incinerated during the following test runs.

Run Number 1 Hydrochloric Acid
Run Number 1 Nitrogen Oxide
Run Number 2 Carbon Monoxide

Testing Period 11:36 - 12:40

PATHOLOGICAL INCINERATOR
TEMPERATURE LOG
JULY 26, 1989

Time	Primary Temperature (^{o}F)	Secondary Temperature (^{o}F)	Boiler Outlet Temperature(^{o}F)
11:36	2000	1600	550
11:46	1850	1610	550
11:50	1900	1620	550
11:55	1950	1620	550
12:00	2000	1620	550
12:05	1900	1610	550
12:10	2000	1610	550
12:15	1950	1610	550
12:20	1900	1610	550
12:25	1950	1620	550
12:30	1950	1620	550
12:35	2000	1610	550
12:40	2025	1610	550
12:45	2050	1610	550

Average Primary Temperature 1959 ^{o}F over the test period.
Average Secondary Temperature 1613 ^{o}F over the test period.
Average Boiler Outlet Temperature 550 ^{o}F over the test period.

PATHOLOGICAL INCINERATOR
CHARGING DATA
July 26, 1989

Time	Load Number	Medical Waste/ Black Bags	General Trash/ Brown Bags	Kitchen/ White Bags	Paper/ Card-board	Total Charge
14:30	31	27 LBS.	21 LBS.	---	4 LBS.	52 LBS.
14:43	32	32 LBS.	20 LBS.	19 LBS.	3 LBS.	74 LBS.
14:53	33	19 LBS.	22 LBS.	---	4 LBS.	45 LBS.
15:03	34	38 LBS.	30 LBS.	---	4 LBS.	72 LBS.
15:13	35	34 LBS.	23 LBS.	---	7 LBS.	64 LBS.
15:25	36	30 LBS.	32 LBS.	---	3 LBS.	65 LBS.
Totals (LBS)		180	148	19	25	= 372
Avg. (LBS/55 MIN)		180	148	19	25	= 372

The above mentioned waste was being incinerated during the following test runs.

Run Number 2 Particulate
Run Number 2 Total Hydrocarbons
Run Number 3 Carbon Monoxide

Testing Period 14:32 - 15:37

PATHOLOGICAL INCINERATOR
TEMPERATURE LOG
JULY 26, 1989

Time	Primary Temperature (^{o}F)	Secondary Temperature (^{o}F)	Boiler Outlet Temperature(^{o}F)
14:33	2000	1600	550
14:40	2000	1600	550
14:50	2100	1600	550
15:00	2050	1600	550
15:10	2050	1650	550
15:20	1950	1700	550
15:30	2300	1800	550
15:40	2100	1620	550

Average Primary Temperature 2069 ^{o}F over the test period.
Average Secondary Temperature 1646 ^{o}F over the test period.
Average Boiler Outlet Temperature 550 ^{o}F over the test period.

PATHOLOGICAL INCINERATOR
CHARGING DATA
July 27, 1989

Time	Load Number	Medical Waste/ Black Bags	General Trash/ Brown Bags	Kitchen/ White Bags	Paper/ Card-board	Total Charge
10:34	13	18 LBS.	26 LBS.	---	3 LBS.	47 LBS.
10:45	14	32 LBS.	20 LBS.	---	5 LBS.	57 LBS.
11:00	15	23 LBS.	24 LBS.	---	4 LBS.	51 LBS.
10:14	16	---	43 LBS.	---	3 LBS.	46 LBS.
11:23	17	20 LBS.	34 LBS.	---	3 LBS.	57 LBS.
11:37	18	32 LBS.	36 LBS.	---	3 LBS.	71 LBS.
11:45	19	29 LBS.	22 LBS.	---	5 LBS.	56 LBS.
11:55	20	28 LBS.	23 LBS.	---	7 LBS.	58 LBS.
Totals (LBS)		182	228	---	33	= 443
Avg. (LBS/HR)		135	169	---	24	= 328

The above waste was being incinerated during the following test runs.

Run Number 2 Hydrochloric Acid
Run Number 2 Nitrogen Oxides
Run Number 3 Total Hydrocarbons

Testing Period 10:45 - 11:53

PATHOLOGICAL INCINERATOR
TEMPERATURE LOG
JULY 27, 1989

Time	Primary Temperature (^{o}F)	Secondary Temperature (^{o}F)	Boiler Outlet Temperature(^{o}F)
10:43	1900	1600	500
10:47	1900	1600	500
10:55	1850	1500	500
11:05	1950	1680	520
11:15	1900	1600	520
11:25	1900	1520	520
11:35	1950	1610	530
11:45	1950	1680	540
11:55	2050	1720	550

Average Primary Temperature 1928 ^{o}F over the test period.
Average Secondary Temperature 1612 ^{o}F over the test period.
Average Boiler Outlet Temperature 520 ^{o}F over the test period.

PATHOLOGICAL INCINERATOR
CHARGING DATA
July 27, 1989

Time	Load Number	Medical Waste/ Black Bags	General Trash/ Brown Bags	Kitchen/ White Bags	Paper/ Card-board	Total Charge
13:05	26	10 LBS.	43 LBS.	---	2 LBS.	55 LBS.
13:15	27	29 LBS.	30 LBS.	---	---	59 LBS.
13:22	28	15 LBS.	30 LBS.	30 LBS.	17 LBS.	92 LBS.
13:34	29	---	31 LBS.	60 LBS.	3 LBS.	94 LBS.
13:48	30	20 LBS.	20 LBS.	24 LBS.	6 LBS.	70 LBS.
14:14	31	24 LBS.	17 LBS.	---	3 LBS.	44 LBS.
Totals (LBS)		98	171	114	31	= 414
Avg. (LBS/HR)		74	130	87	24	= 315

The above waste was being incinerated during the following test run.

Run Number 3 Particulate

Testing Period 13:05 - 14:18

PATHOLOGICAL INCINERATOR
TEMPERATURE LOG
JULY 27, 1989

Time	Primary Temperature (^{o}F)	Secondary Temperature (^{o}F)	Boiler Outlet Temperature (^{o}F)
13:07	1900	1520	530
13:20	1950	1610	540
13:30	2100	1750	540
13:40	2050	1680	540
13:50	1950	1580	530
14:00	1950	1580	520
14:10	1950	1580	520
14:20	2100	1580	520

Average Primary Temperature 1994 ^{o}F over the test period.
Average Secondary Temperature 1610 ^{o}F over the test period.
Average Boiler Outlet Temperature 530 ^{o}F over the test period.

PATHOLOGICAL INCINERATOR
CHARGING DATA
July 28, 1989

Time	Load Number	Medical Waste/ Black Bags	General Trash/ Brown Bags	Kitchen/ White Bags	Paper/ Card-board	Total Charge
10:30	9	18 LBS.	30 LBS.	---	3 LBS.	51 LBS.
10:34	10	13 LBS.	24 LBS.	---	3 LBS.	40 LBS.
10:42	11	13 LBS.	19 LBS.	50 LBS.	4 LBS.	86 LBS.
10:55	12	25 LBS.	20 LBS.	20 LBS.	2 LBS.	67 LBS.
10:58	13	20 LBS.	14 LBS.	15 LBS.	2 LBS.	51 LBS.
11:18	14	20 LBS.	28 LBS.	6 LBS.	3 LBS.	57 LBS.
11:30	15	48 LBS.	26 LBS.	33 LBS.	1 LBS.	108 LBS.
11:45	16	17 LBS.	20 LBS.	10 LBS.	3 LBS.	50 LBS.
Totals (LBS)		174	181	134	21	510
Avg. (LBS/HR)		139	145	107	17	408

The above waste was being incinerated during the following test runs.

Run Number 3 Hydrochloric Acid
Run Number 3 Nitrogen Oxides

Testing Period 10:33 - 11:39

PATHOLOGICAL INCINERATOR
TEMPERATURE LOG
JULY 28, 1989

Time	Primary Temperature (^{o}F)	Secondary Temperature (^{o}F)	Boiler Outlet Temperature(^{o}F)
10:30	1960	1480	540
10:40	1950	1480	520
10:50	2040	1470	530
11:00	2020	1470	540
11:10	1950	1480	540
11:20	1980	1470	540
11:30	1940	1470	540
11:40	1970	1470	540
11:50	2040	1460	540

Average Primary Temperature 1983 ^{o}F over the test period.
Average Secondary Temeprature 1472 ^{o}F over the test period.
Average Boiler Outlet Temperaturee 537 ^{o}F over the test period.

SECTION VIII

EMISSION TEST RESULTS

TEST RESULTS:

PARTICULATE

RUN	DATE	ACTUAL EMISSIONS			ALLOWABLE EMISSIONS SUB. 8	ALLOWABLE EMISSIONS SUB. 11
		GR/DSCF * @ 12% CO_2	GR/DSCF ** @ 7% O_2	LBS/HR	GR/DSCF @ 12% CO_2	GR/DSCF @ 12% CO_2
1	07-25-89	0.13	0.06	0.41	0.08	0.10
2	07-26-89	0.19	0.09	0.44	0.08	0.10
3	07-27-89	0.19	0.04	0.30	0.08	0.10

The above Subchapter 8 allowable, GR/DSCF @ 12% CO_2, is based upon the standards stated on Permit/Certificate Number P-48618, as filed under New Jersey Administrative Code 7:27-8 "Permits".

The above Subchapter 11 allowable, GR/DSCF @ 12% CO_2, is based upon the standards prescribed by New Jersey Administrative Code 7:27-11 "Incinerators".

* GR/DSCF at 12% CO_2 minus the CO_2 from the auxillary fuel (front half collect and back half collect).

** GR/DSCF at 7% O_2 (front half collect only).

HYDROCHLORIC ACID

RUN	DATE	ACTUAL EMISSIONS		
		PPMVD	PPMVD @ 7% O_2	LBS/HR
1	07-26-89	234	431	2.20
2	07-27-89	257	428	2.37
3	07-28-89	303	589	2.59

Note: Hydrochloric Acid is not listed as an air contaminant on Permit/Certificate Number P-48618, as filed under New Jersey Administrative Code 7:27-8 "Permits".

NITROGEN OXIDE

RUN	DATE	ACTUAL EMISSIONS		
		PPMVD	PPMVD @ 7% O_2	LBS/HR
1	07-26-89	54.2	96.5	0.64
2	07-27-89	45.0	75.0	0.52
3	07-28-89	41.6	80.8	0.45

Note: Nitrogen Oxides are not listed as an air contaminant on Permit/Certificate Number P-48618, as filed under New Jersey Administrative Code 7:27-8 "Permits".

CARBON MONOXIDE

RUN	DATE	ACTUAL EMISSIONS		
		PPMVD	PPMVD @ 7% O_2	LBS/HR
1	07-25-89	10	21.2	0.07
2	07-26-89	5	10.6	0.04
3	07-26-89	5	11.3	0.04

Note: Carbon Monoxide is not listed as an air contaminant on Permit/Certificate Number P-48618, as filed under New Jersey Administrative Code 7:27-8 "Permits".

TOTAL HYDROCARBONS

RUN	DATE	ACTUAL EMISSIONS		
		PPMVD	PPMVD @ 7% O_2	LBS/HR
1	07-25-89	23.7	50.3	0.09
2	07-26-89	15.5	32.8	0.06
3	07-27-89	16.6	27.7	0.07

Note : Total Hydrocarbons are not listed as an air contaminant on Permit/Certificate Number P-48618, as filed under New Jersey Administrative Code 7:27-8 "Permits".

SECTION IX

CONCLUSIONS

CONCLUSION:

The test results indicated that the Particulate emissions from the Pathological Incinerator exceeded the standards stated on Permit/Certificate No. P-48618, as filed under New Jersey Administrative Code 7:27-8 "Permits" and the standards prescribed by New Jersey Administrative Code 7:27-11 "Incinerators", during all test runs.

The tests results also indicated that Hydrochloric Acid, Nitrogen Oxide and Hydrocarbons are being emitted into the atmosphere and are not listed as air contaminants on Permit/Certificate Number P-48618, as filed under New Jersey Administrative Code 7:27-8 "Permits".

Stack Emissions Test Report
Prepared by:

Leonard S. Sobolewski
Supervising Environmental
Compliance Investigator
December 1, 1989

SECTION X

EMISSION TEST DATA SHEETS:

PRINTOUT ARE CHRONOLOGICALLY DIFFERENT FROM THESE GIVEN TO DEP KEITH CORNEL

PRINTOUT RUN #

HELENE FULD HOSPITAL
APC PLANT ID NO.:060172
:OR N.J. STACK NO: 001

PARTICULATE RUN NO:1 TEST DATE: 07-25-89

POINT	DELTA P (IN H20)	DELTA H (IN H20)	STACK TEMP (DEGREES F)	METER TEMP (DEGREES F)
A- 1	0.890	1.52	406	100.5
A- 2	1.100	1.88	482	102.5
A- 3	1.250	2.14	478	103.0
A- 4	1.200	2.05	480	103.5
B- 1	0.740	1.27	418	102.8
B- 2	0.910	1.56	475	104.0
B- 3	1.300	2.22	480	107.3
B- 4	1.290	2.21	483	107.5
AVGS.=	1.075	1.86	463	103.9

METER VOL= 48.139 (DACF)
Y-FACTOR= 1.02
NOZZLE DIAM.= .237 (INCHES)
H2O(COLLECTED)= 103.8 (mls)

Pb= 30.26 (IN. Hg)
Pst= +0.01 (IN. H2O)
Cp= .8330
TEST TIME= 60 (MIN.)

ORSAT-CO2= 5.40 %
O2= 14.40 %
CO= 0.00 %
N2= 80.20 %

STACK DIAM= 11.0 (INCHES)

STACK AREA= 0.66 (SQ. FT.)

Ps= 30.26 (IN. Hg)
METER VOL= 45.968 (DSCF)
Gd= 0.98

Pm= 30.40 (IN. Hg)
Ms= 28.34
ISOKINETICS= 103.85 %

MOISTURE= 9.65 %
Us= 76.47 (FT/SEC)

ACFM= 3,027.9
WSCFM= 1,759.0
DSCFM= 1,589.2

.0694
.00
.1391
.0301 (Front half)

SAMPLE WT= .0903 (GRAMS)
GRAINS/DSCF= 0.0303 (TOTA)
GRAINS/WSCF= 0.0274

GRAMS/DSCM= 0.0694
GRAMS/WSCM= 0.0627

GRAINS/DSCF @ 12% CO2(MINUS AUX FUEL)= 0.1282
GRAMS/DSCM @ 12% CO2(MINUS AUX FUEL)= 0.2932

PARTICULATE EMISSION RATE= 0.4129 (LB/HR)

0.4700

ADDITIONAL TESTS USING FLOW DATA FROM PARTICULATE RUN:1

CONCENTRATION-HYDROCARBONS AS METHANE= 23.7 (PPM-DRY)
EMISSION RATE-HYDROCARBONS AS METHANE= 0.0938 (LB/HR)

CONCENTRATION- CO= 10 (PPM-DRY)
EMISSION RATE- CO= 0.07 (LB/HR)

HELENE FULD HOSPITAL
APC PLANT ID NO.:060172
INCINERATOR N.J. STACK NO: 001

PARTICULATE RUN NO:2 TEST DATE: 07-26-89

POINT	DELTA P (IN H20)	DELTA H (IN H20)	STACK TEMP (DEGREES F)	METER TEMP (DEGREES F)
A- 1	0.950	1.60	460	106.5
A- 2	1.100	1.88	480	109.5
A- 3	1.200	2.05	476	112.0
A- 4	1.150	1.97	472	114.0
B- 1	0.830	1.42	420	112.5
B- 2	0.910	1.56	430	113.5
B- 3	1.400	2.39	486	113.5
B- 4	1.200	2.05	447	115.0
AVGS.=	1.085	1.87	459	112.1

METER VOL= 46.519 (DACF)
Y-FACTOR= 1.02
NOZZLE DIAM.= .237 (INCHES)
H2O(COLLECTED)= 64.5 (mls)

Pb= 30.14 (IN. Hg)
Pst= +0.01 (IN. H2O)
Cp= .8330
TEST TIME= 60 (MIN.)

ORSAT-CO2= 5.40 %
O2= 14.40 %
CO= 0.00 %
N2= 80.20 %

STACK DIAM= 11.0 (INCHES)

STACK AREA= 0.66 (SQ. FT.)

Ps= 30.14 (IN. Hg)
METER VOL= 43.613 (DSCF)
Gd= 0.99

Pm= 30.28 (IN. Hg)
Ms= 28.70
ISOKINETICS= 95.38 %

MOISTURE= 6.54 %
Us= 76.34 (FT/SEC)

ACFM= 3,022.9
WSCFM= 1,756.5
DSCFM= 1,641.6

SAMPLE WT= .1256 (GRAMS)
GRAINS/DSCF= 0.0444 (TOTAL) .0404 (front half)
GRAINS/WSCF= 0.0415
GRAINS/DSCF @ 12% CO2(MINUS AUX FUEL)= 0.1925
GRAMS/DSCM @ 12% CO2(MINUS AUX FUEL)= 0.4405

GRAMS/DSCM= 0.1017
GRAMS/WSCM= 0.0950

PARTICULATE EMISSION RATE= 0.6253 (LB/HR) 5.0585

ADDITIONAL TESTS USING FLOW DATA FROM PARTICULATE RUN:2

CONCENTRATION-HYDROCARBONS AS METHANE= 15.47 (PPM-DRY)
EMISSION RATE-HYDROCARBONS AS METHANE= 0.0632 (LB/HR)

CONCENTRATION- CO= 5 (PPM-DRY)
EMISSION RATE- CO= 0.04 (LB/HR)

PO Run # 5

HELENE FULD HOSPITAL
APC PLANT ID NO.:060172
INCINERATOR N.J. STACK NO: 001

PARTICULATE RUN NO:3 TEST DATE: 07-27-89

POINT	DELTA P (IN H20)	DELTA H (IN H20)	STACK TEMP (DEGREES F)	METER TEMP (DEGREES F)
A- 1	0.880	1.50	422	101.5
A- 2	0.960	1.64	475	104.0
A- 3	1.100	1.88	471	107.5
A- 4	0.930	1.59	481	109.0
B- 1	0.830	1.42	459	108.5
B- 2	0.960	1.64	469	110.5
B- 3	1.030	1.76	472	112.0
B- 4	1.020	1.74	458	115.5
AVGS.=	0.962	1.65	463	108.6

METER VOL= 44.691 (DACF) Pb= 30.02 (IN. Hg) ORSAT-CO2= 4.20 %
Y-FACTOR= 1.02 Pst= +0.01 (IN. H2O) O2= 14.80 %
NOZZLE DIAM.= .237 (INCHES) Cp= .8330 CO= 0.00 %
H2O(COLLECTED)= 81.9 (mls) TEST TIME= 60 (MIN.) N2= 81.00 %

STACK DIAM= 11.0 (INCHES) STACK AREA= 0.66 (SQ. FT.)

Ps= 30.02 (IN. Hg) Pm= 30.14 (IN. Hg) MOISTURE= 8.45 %
METER VOL= 41.968 (DSCF) Ms= 28.32 Us= 72.67 (FT/SEC)
Gd= 0.98 ISOKINETICS= 99.31 %

ACFM= 2,877.6
WSCFM= 1,657.3
DSCFM= 1,517.2

SAMPLE WT= .062 (GRAMS)
GRAINS/DSCF= 0.0228 (TOTAL) .0178 (FRONT HALF) GRAMS/DSCM= 0.0522
GRAINS/WSCF= 0.0209 GRAMS/WSCM= 0.0477
GRAINS/DSCF @ 12% CO2(MINUS AUX FUEL)= 0.1933
GRAMS/DSCM @ 12% CO2(MINUS AUX FUEL)= 0.4423

PARTICULATE EMISSION RATE= 0.2964 (LB/HR)
0.2315 (FRONT HALF)

ADDITIONAL TESTS USING FLOW DATA FROM PARTICULATE RUN:3

NO ADDITIONAL TESTS WERE CONDUCTED

HELENE FULD HOSPITAL
APC PLANT ID NO.:060172
INCINERATOR N.J. STACK NO: 001

HCL RUN NO:1 TEST DATE: 07-26-89

POINT	DELTA P (IN H20)	DELTA H (IN H20)	STACK TEMP (DEGREES F)	METER TEMP (DEGREES F)
A- 1	0.910	1.85	413	105.0
A- 2	1.200	1.85	428	106.0
A- 3	1.300	1.80	455	106.0
A- 4	1.200	1.80	475	107.5
B- 1	0.760	1.80	421	107.0
B- 2	1.050	1.80	421	108.0
B- 3	1.300	1.80	469	108.0
B- 4	1.400	1.80	460	108.0
AVGS.=	1.130	1.81	443	106.9

METER VOL= 45.062 (DACF) Pb= 30.14 (IN. Hg) ORSAT-CO2= 6.00 %
Y-FACTOR= 1.02 Pst= +0.01 (IN. H2O) O2= 13.40 %
NOZZLE DIAM.= .238 (INCHES) Cp= .8260 CO= 0.00 %
H2O(COLLECTED)= 74.1 (mls) TEST TIME= 60 (MIN.) N2= 80.60 %

STACK DIAM= 11.0 (INCHES) STACK AREA= 0.66 (SQ. FT.)

Ps= 30.14 (IN. Hg) Pm= 30.27 (IN. Hg) MOISTURE= 7.60 %
METER VOL= 42.623 (DSCF) Ms= 28.63 Us= 76.66 (FT/SEC)
Gd= 0.99 ISOKINETICS= 91.48 %

ACFM= 3,035.4
WSCFM= 1,795.2
DSCFM= 1,658.8

CONCENTRATION- HCL= 234 (PPM-DRY)
EMISSION RATE- HCL= 2.20 (LB/HR)

ADDITIONAL TESTS USING FLOW DATA FROM HCL RUN:1

CONCENTRATION- CO= 5 (PPM-DRY)
EMISSION RATE- CO= 0.04 (LB/HR)

CONCENTRATION- 54.2 (PPM-DRY)
EMISSION RATE- NOx 0.64 (LB/HR)

PO RUN 4

HELENE FULD HOSPITAL
APC PLANT ID NO.:060172
INCINERATOR N.J. STACK NO: 001

HCL RUN NO:2 TEST DATE: 07-27-89

POINT	DELTA P (IN H2O)	DELTA H (IN H2O)	STACK TEMP (DEGREES F)	METER TEMP (DEGREES F)
A- 1	1.100	0.71	431	101.0
A- 2	1.050	0.68	408	101.0
A- 3	1.200	0.77	468	102.0
A- 4	1.200	0.77	455	105.0
B- 1	0.850	0.55	416	108.0
B- 2	0.900	0.58	397	108.0
B- 3	1.400	0.90	448	108.5
B- 4	1.350	0.87	464	108.0
AVGS.=	1.124	0.73	436	105.2

METER VOL= 29.517 (DACF)
Y-FACTOR= 1.02
NOZZLE DIAM.= .186 (INCHES)
H2O(COLLECTED)= 60.1 (mls)

Pb= 30.02 (IN. Hg)
Pst= +0.01 (IN. H2O)
Cp= .8260
TEST TIME= 60 (MIN.)

ORSAT-CO2= 6.80 %
O2= 12.60 %
CO= 0.00 %
N2= 80.60 %

STACK DIAM= 11.0 (INCHES)

STACK AREA= 0.66 (SQ. FT.)

Ps= 30.02 (IN. Hg)
METER VOL= 27.821 (DSCF)
Gd= 0.99

Pm= 30.07 (IN. Hg)
Ms= 28.53
ISOKINETICS= 99.49 %

MOISTURE= 9.27 %
Us= 76.43 (FT/SEC)

ACFM= 3,026.6
WSCFM= 1,796.5
DSCFM= 1,630.0

CONCENTRATION- HCL= 257 (PPM-DRY)
EMISSION RATE- HCL= 2.37 (LB/HR)

ADDITIONAL TESTS USING FLOW DATA FROM HCL RUN:2

CONCENTRATION-HYDROCARBONS AS METHANE= 16.6 (PPM-DRY)
EMISSION RATE-HYDROCARBONS AS METHANE= 0.0674 (LB/HR)

CONCENTRATION- 45 (PPM-DRY)
EMISSION RATE- NOx 0.52 (LB/HR)

PC Run #

HELENE FULD HOSIPTAL
APC PLANT ID NO.:060172
INCINERATOR N.J. STACK NO: 001

HCL RUN NO:3 TEST DATE: 07-28-89

POINT	DELTA P (IN H20)	DELTA H (IN H20)	STACK TEMP (DEGREES F)	METER TEMP (DEGREES F)
A- 1	0.810	0.52	393	97.0
A- 2	0.920	0.59	413	98.5
A- 3	1.040	0.67	453	100.5
A- 4	1.040	0.67	466	101.5
B- 1	0.850	0.55	422	103.0
B- 2	0.980	0.63	398	105.5
B- 3	1.030	0.66	455	106.0
B- 4	1.030	0.66	456	107.5
AVGS.=	0.961	0.62	432	102.4

METER VOL= 27.713 (DACF)
Y-FACTOR= 1.02
NOZZLE DIAM.= .186 (INCHES)
H2O(COLLECTED)= 54.7 (mls)

Pb= 29.84 (IN. Hg)
Pst= +0.01 (IN. H2O)
Cp= .8260
TEST TIME= 60 (MIN.)

ORSAT-CO2= 5.80 %
O2= 13.80 %
CO= 0.00 %
N2= 80.40 %

STACK DIAM= 11.0 (INCHES)

STACK AREA= 0.66 (SQ. FT.)

Ps= 29.84 (IN. Hg)
METER VOL= 26.085 (DSCF)
Gd= 0.98

Pm= 29.89 (IN. Hg)
Ms= 28.45
ISOKINETICS= 100.58 %

MOISTURE= 9.02 %
Us= 70.82 (FT/SEC)

ACFM= 2,804.2
WSCFM= 1,661.8
DSCFM= 1,511.8

CONCENTRATION- HCL= 303 (PPM-DRY)
EMISSION RATE- HCL= 2.59 (LB/HR)

ADDITIONAL TESTS USING FLOW DATA FROM HCL RUN:3

CONCENTRATION- 41.6 (PPM-DRY)
EMISSION RATE- 0.45 (LB/HR)

SECTION XI

LABORATORY RESULTS

FH Filter Acetone

SOURCE TEST
N.J. DEPT ENV PROT
PARTICULATE ANALYSIS
SUMMARY

COMPANY: HELENE FULD MEDICAL CENTER
LOCATION: TRENTON
NJ#: 001
STACK DES: INCINERATOR
APPLIABLE SUBCHAPTER: 11

ID # 60172
DATE REC: 7/26/89
REP DATE: 8/1/89

TEST RUNS: 3
RESULTS ON DRY BASIS

DATA

			RUN 1	RUN 2	RUN 3
1	part filter	gm	* 0.0715	0.0847	0.0386
2	part acetone	gm	0.0134	0.0195	0.0091
	water desc	gm	31.8000	30.5000	28.9000
3	acetone blk	gm	0.0002	0.0002	0.0002
	init. imp vol	ml	0.0000	0.0000	0.0000
	final imp vol	ml	0.0000	0.0000	0.0000
4	acetone vol	ml	164.0000	146.0000	162.0000
5	blank vol	ml	100.0000	100.0000	100.0000
6	ins part blk	gm	0.0008	0.0008	0.0002
9	org part	gm	0.0034	0.0064	0.0008
10	inorg resd	gm	0.0020	0.0044	0.0126

.896 FH
.0189
-.0003
.0186
.0163 gm

RESULTS

7	acetone resd	gm	0.0003	0.0003	0.0003
8	adj part acet	gm	* 0.0131	0.0195	0.0088
	total part	gm	0.0303	0.1256	0.0620
	total water	gm	31.8000	30.5000	28.9000
	FRONT HALF (gr)		0.0896	0.1142	0.0484

ORSAT RESULTS

%CO2	5.4000	5.4000	4.2000
%O2	14.4000	14.4000	14.8000
%CO	0.0000	0.0000	0.0000
%N2	80.2000	80.2000	81.0000

(#1)+(#8) = .0896 = Front half

(#2)-(#7) = #8

[(#3)/(#5)]×(#4) = #7

(#1)+(#8)+(#6)+(#9)+(#10)

SIGNATURE Henry Smith

Source Test
N.J. Department of Environmental Protection
NO_2, CO Analyses
Summary

Company: Helene Fuld Medical Center
Location: Trenton
N.J. Stack Number: 001
Stack Designation: Incinerator
Applicable Subchapter: 11

I.D. Number: 60172
Date Recorded: 7-28-89
Report Date: 8-28-89
Number of Test Runs: 3
NO_2 results on dry basis

Nitrogen Dioxide

Field Data	Run 1	Run 2	Run 3
Barometric Pressure (Hg")	30.14	30.02	29.84
Avg. Meter Pressure (H_2O")	1.200	0.500	0.600
Meter Volume (LTR's)	28.170	28.093	27.956
Avg. Meter Temp. (^oF)	107.000	106.000	100.000

Analytical Data	Run 1	Run 2	Run 3
Total volume of KMNO4/NAOH solution, (ml)	1300	1340	1300
Aliquot of KMNO4/NAOH solution (ml)	50	50	50
Volume of prepared sample (ml)	250	250	250
Sample Response (Pk. Hgt.)	226	179	170

Slope = 0.0018
V-Intercept = 0.0163
Correlation Coeff. = 0.9978

Results	EPA Conc.		Measured Conc.
Audit Sample, Difference from EPA Value = .16%	390.00	mg DSCM	390.63 mg DSCM
Sample Conc., NO_2 (ppm)	54.2	45.0	41.6

	Run 1	Run 2	Run 3
Carbon Monoxide			
Instrumentation: Beckman NDIR Analyzer			
Calibration: 0-100 ppm range spanned with 81 ppm CO			
Results			
Sample conc., CO (ppm)	10	5	5

c: Jay Quimby
Leonard Sobolewski

Source Test
N.J. Department of Environmental Protection
HCL, Orsat Analyses

Summary

Company: Helene Fuld Medical Center
Location: Trenton
N.J. Stack Number: 001
Stack Designation: Incinerator
Applicable Subchapter: 11

I.D. Number: 60172
Date Recorded: 7-28-89
Report Date: 8-28-89
Number of Test Runs: 3
HCL results on dry basis

Hydrochloric Acid

Field Data	Run 1	Run 2	Run 3
Barometric Pressure (Hg")	30.140	30.02	27.713
Avg. Meter Pressure (H_2O")	1.990	0.63	0.62
Meter Volume (ft^3)	45.06	29.516	27.713
Avg. Meter Temp. (^oF)	107.000	105.000	102.000

Analytical Data			
Total Volume of sample (ml)	540	650	670
Aliquot of sample (ml)	5	5	5
Volume of prepared sample (ml)	200	200	200
Sample Response (Pk. Hgt.)	29753	18621	19810

Slope = 0.0007
Y-Intercept = -1.6035
Correlation Coeff. = 0.9993

Results

Sample conc., HCL (ppm)	234	257	303

Orsat	Run 1	Run 2	Run 3
CO_2%	6.0	6.8	5.8
O_2%	13.4	12.6	13.8
CO%	0.0	0.0	0.0
N_2%	80.6	80.6	80.4
Drierite, Water (gm)	17.1	11.1	8.3

c: Jay Quimby
Leonard Sobolewski

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF ENVIRONMENTAL QUALITY
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Trenton, N.J. 08625-0411
(609) 530-4100

Anthony J. McMahon
Acting Director

Eric Rau, Ph.D., Assistant Director
Laboratories and Quality Assurance

MEMORANDUM

August 30, 1989

TO: Henry Smith

FROM: Randy Barbiero

SUBJECT: Total Hydrocarbon Analyses from Helene Fuld Hospital Stack #001.

The results from the total hydrocarbon gas bag analyses (reported as methane and non-methane) are reported below.

Run #	Methane THC ppm (V/V)	Non-Methane THC ppm (V/V)
1A	23.6	22.6
1B	21.2	19.5
1C	26.3	25.3
2A	15.0	14.2
2B	16.2	15.2
2C	15.2	14.6
3A	16.0	15.0
3B	15.0	14.1
3C	18.8	17.9

7/26/89 Relative Standard Deviation of Run 1 = 10.8% CH_4

Relative Standard Deviation of Run 1 = 12.9% non CH_4

7/27/89 Relative Standard Deviation of Run 2 = 4.2 % CH_4

Relative Standard Deviation of Run 2 = 3.4% non CH_4

7/28/89 Relative Standard Deviation of Run 3 = 11.9% CH_4

Relative Standard Deviation of Run 3 = 12.7% non CH4

Randy Barbiero

kaz

c: Jay Quimby
Lenny Sobolewski
Ed Chromanski

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Anthony J. McMahon
Acting Director

Eric Rau, Ph.D., Assistant Director
Laboratories and Quality Assurance

MEMORANDUM

TO: Lenny Sobolewski

FROM: Randy Barbiero

SUBJECT: Total Hydrocarbon blank data from the Helene Fuld pathological stack.

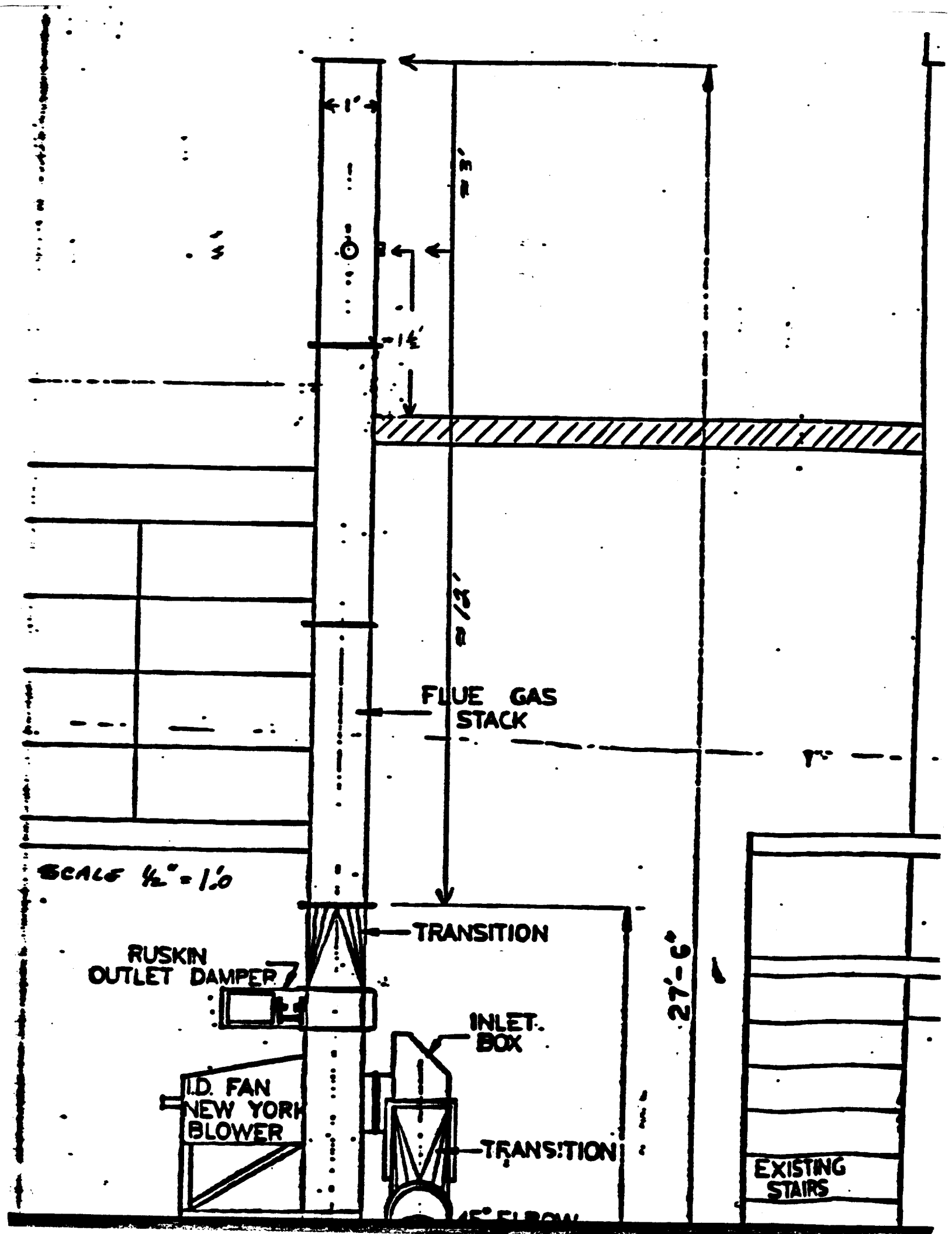
DATE: September 22, 1989

The total hydrocarbon blank data (reported as methane and non-methane) is reported below

Date	Run#	PPM (v/v) as methane	PPM (v/v) as non-methane
7/16/89	1	15.3	12.0
7/27/89	2	15.2	14.7
7/28/89	3	18.6	15.3

Randy Barbiero

RB:kaz
c: Jay Quimby
John Jenks


1'
FLUE GAS
STACK
SCALE ½" = 1'-0
TRANSITION
RUSKIN
OUTLET DAMPER
INLET
BOX
I.D. FAN
NEW YORK
BLOWER
TRANSITION
27'-6"
EXISTING
STAIRS