REPORT OF EMISSION TESTS

THE NEW JERSEY AIR POLLUTION CONTROL CODE

#35

Raritan Bay Health Services Corporation
530 New Brunswick Avenue
Perth Amboy, New Jersey 08861

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF ENVIRONMENTAL QUALITY

December 13, 1989

Source Emission Test Summary

Raritan Bay Health Services Corporation

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SECTION I

PROJECT PURPOSE

Raritan Bay Health Services Corporation
530 New Brunswick Avenue
Perth Amboy, New Jersey, 08861
APC Plant ID No. 15465
NJ Stack No. 009

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. 009) 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-52063 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
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. 009) was being operated at the conditions listed in the Incinerator Operating Conditions (Section VII). These process conditions were monitored by Mr. Bryan Cranston of the Central Regional Enforcement Office.

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 Raritan Bay Health Services Corporation operates a Power Pac Environmental Control Products ECP - Model 1100 Pathological Incinerator equipped with a Waste/Heat Recovery System. This unit is fired with Number 2 fuel oil. The unit is permitted to incinerate at a charge rate not to exceed 1100 pound per hour. This waste stream can contain approximately 10 to 15 percent plastics.

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 200 lbs/hr of the aforementioned waste at a primary chamber operating temperature of approximately 2000 degrees Fahrenheit and a secondary chamber operating temperature of 1800 degrees Fahrenheit (The exact operating condition and operating temperatures during the emission test project are contained in Section VII Incinerator Operating Conditions).

The flue gases from the solid waste Environmental Control Products ECP - Model 1100 Pathological Incinerator are drawn through refractory lined breeching and into the York-Shipley Scotch Marine Dry Back Fire Tube waste/heat recovery boiler.

The hot gases enter the York-Shipley Scotch Marine Dry Back Fire Tube waste/heat recovery boiler, pass through the waste/heat recovery boiler three times. Heat is released to the water surronding the tubes, producing steam and then exits the York-Shipley Scotch Marine Dry Back Fire Tube waste/heat recovery boiler.

The New York Blower Company induced draft blower draws the gases from the Environmental Control Products ECP - Model 1100 Pathological Incinerator through the breeching, into the York-Shipley Scotch Marine Dry Back Fire Tube waste/heat recovery boiler, and out. The induced draft blower is large enough to over come the pressure drop from the incinerator to the fan. The blower is electorically interlocked so as to shut down and bypass the waste/heat recovery boiler in the event of unacceptable conditions in the waste/heat recovery boiler.

The outlet damper is electonically controlled to sense any changes in steam pressure. The steam pressure is maintained by controlling the flow of the flue gas. Without the outlet damper the induced New York Draft Blower would be in complete control of regulating steam pressure. The life of the blower is preserved from not having to constatly shut down and start up. In addition 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. When fluctuations in ths system occur the control panel picks up the signal and relays it to the appliciable components. The components in turn, then react accordingly to maintain the best opeating conditions of the boiler.

The Bureau of Air Pollution Permit/Certificate Number P-52063 indicates the waste type for this incinerator is Types 0, 1, 2, and 4.

"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 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. 009) was tested on August 14, 15, 16, and 17, 1989

August 14, 1989

Test Time: 12:41 PM - 01:55 PM

Run Number 1 Particulate
Run Number 1 Nitrogen Oxides

August 15, 1989

Test Time: 09:45 AM - 11:03 AM

Run Number 2 Particulate
Run Number 2 Nitrogen Oxides
Run Number 1 Total Hydrocarbons

Test Time: 12:55 PM - 02:15 PM

Run Number 3 Particulate
Run Number 3 Nitrogen Oxides
Run Number 2 Total Hydrocarbons

August 16, 1989

Test Time: 09:30 AM - 10:44 AM

Run Number 4 Particulate
Run Number 3 Total Hydrocarbons

Test Time: 12:34 PM - 01:46 PM

Run Number 1 Hydrochloric Acid
Run Number 1 Carbon Monoxide

August 17, 1989

Test Time: 10:50 AM - 12:01 PM

Run Number 2 Hydrochloric Acid
Run Number 2 Carbon Monoxide

Test Time: 01:17 PM - 02:30 PM

Run Number 3 Hydrochloric Acid
Run Number 3 Carbon Monoxide

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

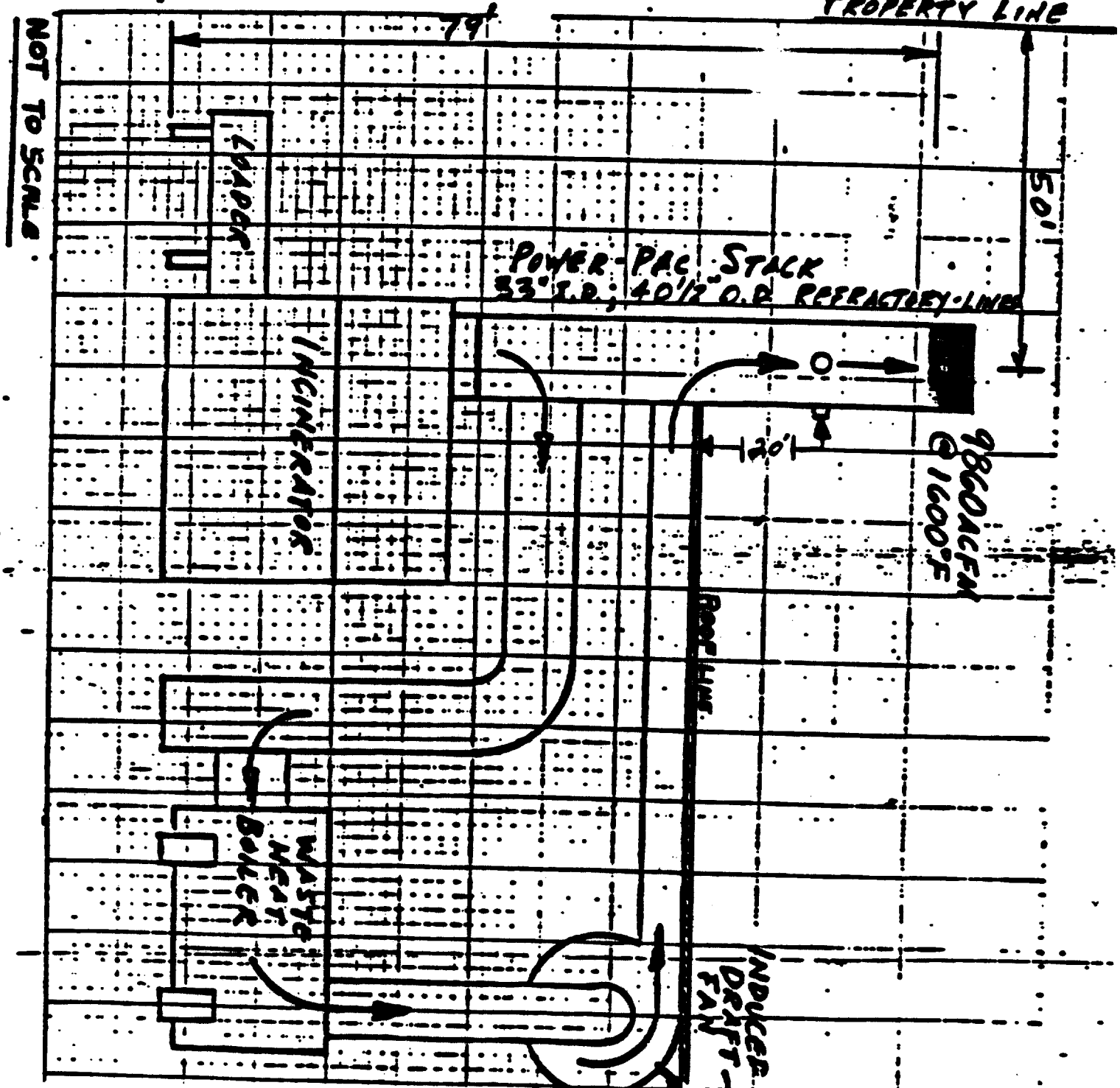
SAMPLING LOCATION

SAMPLING LOCATION:

Two 3-inch half couplings with removable seals were installed 90^{o} to each other and located approximately 20 feet above the roofline. The diameters downstream is approximately 8 stack diameters and the diameter upstream approximately 3 stack diameters. This sampling location was determined in accordance with the procedure outlined in the Code of Federal Regulations, 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.

Diagram


NOT TO SCALE
79'
PROPERTY LINE
50'
POWER-PAC STACK
33" I.D.; 40½" O.D. REFRACTORY LINED
120'
98,600 ACFM
@ 1600°F
INCINERATOR
ROOF LINE
WASTE HEAT BOILER
INDUCED DRAFT FAN

SECTION VII

INCINERATOR OPERATING CONDITIONS

INCINERATOR OPERATING CONDITIONS:

The Pathological Incinerator (N.J. Stack No. 009) is permitted by the New Jersey Department of Environmental Protection, Air Pollution Control Program. Permit/Certificate Number P-52063 allows this facility to incinerate Waste Types 0, 1, 2, and 4 at a rate not to exceed 1100 pounds per hour.

The following is a compilation of process data monitored during the emission tests.

FUEL CONSUMPTION DATA
NUMBER 2 FUEL OIL

DATE	08-14-89	08-15-89	08-15-89	08-16-89
TEST START	12:42 PM	09:45 AM	01:00 PM	09:30 AM
TEST STOP	02:00 PM	11:02 AM	02:15 PM	10:51 AM
TOTAL MINUTES	78 Min.	77 Min.	75 Min.	81 Min.
METER READING START	248	350	391	425
METER READING STOP	266	366	410	444
TOTAL COMBUSTION	18	16	19	19
AVGERAGE GAL/HR	13.8	12.5	15.2	14.1

AUGUST 14, 1989
PATHOLOGICAL INCINERATOR
CHARGING EVENTS LOG

	LOAD NUMBER	TIME	TYPE WASTE/No.	CHARGE WT. (LBS)	TOTAL WT. (LBS)
TEST START 12:42	1	12:42	4	97 LBS.	97 LBS.
	2	12:48	1	53 LBS.	150 LBS.
	3	12:56	2	17 LBS.	167 LBS.
Run No. 1	4	13:03	2	120 LBS.	287 LBS.
Particulate	5	13:10	2	71 LBS.	358 LBS.
	6	13:18	2	76 LBS.	434 LBS.
Run No. 1	7	13:25	2	50 LBS.	484 LBS.
NO_x	8	13:31	2	72 LBS.	556 LBS.
	9	13:36	4	100 LBS.	656 LBS.
TEST STOP	10	13:54	4	133 LBS.	789 LBS.
13:55	11		2	80 LBS.	869 LBS.

1.2h5

The average charge rate during the testing on the above date was 724 pound per hour of type 1, 2, and 4 waste.

AUGUST 14, 1989
PATHOLOGICAL INCINERATION
TEMPERATURE LOG

TIME	PRIMARY CHAMBER (DEG F)	SECONDARY CHAMBER (DEG F)
12:45	1900	1850
12:56	2100	1870
13:11	2100	1760
13:21	2200	1900
13:33	2300	2000
13:50	2200	1900
14:00	2260	1930

Average Primary Chamber Temperature 2151 ^{o}F.
Average Secondary Chamber Temperature 1887 ^{o}F.

AUGUST 15, 1989
PATHOLOGICAL INCINERATOR
CHARGING EVENTS LOG

	LOAD NUMBER	TIME	TYPE WASTE/No.	CHARGE WT. (LBS)	TOTAL WT. (LBS)
TEST START 09:45	1	09:43	4	97 LBS.	97 LBS.
	2	09:52	2	111 LBS.	208 LBS.
	3	09:58	4	145 LBS.	353 LBS.
Run No. 2	4	10:04	2	72 LBS.	425 LBS.
Particulate	5	10:10	4	208 LBS.	633 LBS.
NO_x	6	10:18	2	100 LBS.	733 LBS.
Run No. 1	7	10:25	1	51 LBS.	784 LBS.
THC	8	10:34	1	33 LBS.	817 LBS.
	9	10:42	2	150 LBS.	967 LBS.
TEST STOP 11:03	10	10:49	4	103 LBS.	1070 LBS.
	11	10:58	2	154 LBS.	1224 LBS.

1-2514

The average charge rate during the testing on the above date was 979 pound per hour of type 1, 2, and 4 waste.

AUGUST 15, 1989
PATHOLOGICAL INCINERATION
TEMPERATURE LOG

TIME	PRIMARY CHAMBER (DEG F)	SECONDARY CHAMBER (DEG F)
09:42	1950	1920
09:53	2000	1800
10:08	2000	1860
10:21	2040	1880
10:32	2100	1840
10:44	2180	1880
10:59	2200	1990
11:03	2100	1900

Average Primary Chamber Temperature 2081 ^{o}F.
Average Secondary Chamber Temperature 1884 ^{o}F.

AUGUST 15, 1989
PATHOLOGICAL INCINERATOR
CHARGING EVENTS LOG

	LOAD NUMBER	TIME	TYPE WASTE/No.	CHARGE WT. (LBS)	TOTAL WT. (LBS)
TEST START 12:55	1	12:57	2	89 LBS.	89 LBS.
	2	13:02	2	92 LBS.	181 LBS.
Run No. 3	3	13:11	2	105 LBS.	286 LBS.
Particulate	4	13:19	4	128 LBS.	414 LBS.
NO_x	5	13:27	1	62 LBS.	476 LBS.
Run No. 2	6	13:35	1	23 LBS.	499 LBS.
THC	7	13:53	4	91 LBS.	590 LBS.
	8	14:03	4	90 LBS.	680 LBS.
TEST STOP 14:15	9	14:14	4	139 LBS.	819 LBS.
	10		4	134 LBS.	953 LBS.

1.25

The average charge rate during the testing on the above date was 762 pound per hour of type 1, 2, and 4 waste.

AUGUST 15, 1989
PATHOLOGICAL INCINERATION
TEMPERATURE LOG

TIME	PRIMARY CHAMBER (DEG F)	SECONDARY CHAMBER (DEG F)
13:00	1920	1820
13:08	2080	1900
13:25	2010	2010
13:58	2190	1950
14:14	2200	1880
14:16	2210	2000

Average Primary Chamber Temperature 2102 ^{o}F.
Average Secondary Chamber Temperature 1927 ^{o}F.

AUGUST 16, 1989
PATHOLOGICAL INCINERATOR
CHARGING EVENTS LOG

	LOAD NUMBER	TIME	TYPE WASTE/No.	CHARGE WT. (LBS)	TOTAL WT. (LBS)
TEST START 09:30	1	09:30	2	100 LBS.	100 LBS.
	2	09:37	2	82 LBS.	182 LBS.
Run No. 4	3	09:43	2	145 LBS.	327 LBS.
Particulate	4	09:50	4	78 LBS.	405 LBS.
Run No. 3	5	10:05	2	118 LBS.	523 LBS.
THC	6	10:16	1	90 LBS.	613 LBS.
	7	10:26	4	142 LBS.	755 LBS.
TEST STOP 10:44	8	10:37	2	60 LBS.	815 LBS.
	9	10:45	1	53 LBS.	868 LBS.

1.25/hr

The average charge rate during the testing on the above date was 704 pound per hour of type 1, 2, and 4 waste.

AUGUST 16, 1989
PATHOLOGICAL INCINERATION
TEMPERATURE LOG

TIME	PRIMARY CHAMBER (DEG F)	SECONDARY CHAMBER (DEG F)
09:30	2000	1850
09:37	2070	1960
09:50	2060	1850
10:05	2110	1880
10:15	2140	1850
10:27	2070	1890
10:39	2200	1970
10:51	2250	1820

Average Primary Chamber Temperature 2113 ^{o}F.
Average Secondary Chamber Temperature 1884 ^{o}F.

AUGUST 16, 1989
PATHOLOGICAL INCINERATOR
CHARGING EVENTS LOG

	LOAD NUMBER	TIME	TYPE WASTE/No.	CHARGE WT. (LBS)	TOTAL WT. (LBS)
TEST START 12:34	1	12:39	1	43 LBS.	43 LBS.
	2	12:46	1	69 LBS.	112 LBS.
Run No. 1	3	12:55	2	75 LBS.	187 LBS.
HCl	4	13:03	2	123 LBS.	310 LBS.
and CO	5	13:10	2	74 LBS.	384 LBS.
	6	13:18	1	73 LBS.	457 LBS.
	7	13:26	1	94 LBS.	551 LBS.
	8	13:33	2	57 LBS.	608 LBS.
TEST STOP 13:46	9	13:40	2	80 LBS.	688 LBS.
	10	13:46	1	38 LBS.	726 LBS.

1.12 W

The average charge rate during the testing on the above date was 650 pound per hour of type 1 and 2 waste.

AUGUST 16, 1989
PATHOLOGICAL INCINERATION
TEMPERATURE LOG

TIME	PRIMARY CHAMBER (DEG F)	SECONDARY CHAMBER (DEG F)
12:39	2100	1850
12:47	2250	1890
13:03	2200	1860
13:17	2300	1900
13:30	2330	1870
13:45	2300	1870

Average Primary Chamber Temperature 2247 ^{o}F.
Average Secondary Chamber Temperature 1873 ^{o}F.

AUGUST 17, 1989
PATHOLOGICAL INCINERATOR
CHARGING EVENTS LOG

	LOAD NUMBER	TIME	TYPE WASTE/No.	CHARGE WT. (LBS)	TOTAL WT. (LBS)
TEST START 10:50	1	10:51	1	40 LBS.	40 LBS.
	2	10:56	1	79 LBS.	119 LBS.
Run No. 2	3	11:02	1	76 LBS.	195 LBS.
HCl	4	11:10	1	130 LBS.	325 LBS.
and CO	5	11:20	1	43 LBS.	368 LBS.
	6	11:38	1	31 LBS.	399 LBS.
	7	11:48	2	53 LBS.	452 LBS.
TEST STOP	8	11:53	1	44 LBS.	496 LBS.
12:01	9	12:00	4	150 LBS.	646 LBS.

1.12

The average charge rate during the testing on the above date was 579 pound per hour of type 1, 2, and 4 waste.

AUGUST 17, 1989
PATHOLOGICAL INCINERATION
TEMPERATURE LOG

TIME	PRIMARY CHAMBER (DEG F)	SECONDARY CHAMBER (DEG F)
10:54	1920	1900
11:02	2040	1910
11:14	2100	1900
11:26	2120	1850
11:40	2170	1900
11:53	2190	1930
12:03	2120	1900

Average Primary Chamber Temperature 2094 ^{o}F.
Average Secondary Chamber Temperature 1899 ^{o}F.

AUGUST 17, 1989
PATHOLOGICAL INCINERATOR
CHARGING EVENTS LOG

	LOAD NUMBER	TIME	TYPE WASTE/No.	CHARGE WT. (LBS)	TOTAL WT. (LBS)
TEST START 13:17	1	13:19	1	38 LBS.	38 LBS.
	2	13:24	4	105 LBS.	143 LBS.
Run No. 3	3	13:31	2	58 LBS.	201 LBS.
HCl	4	13:37	4	133 LBS.	334 LBS.
and CO	5	13:43	4	152 LBS.	486 LBS.
	6	13:49	2	75 LBS.	561 LBS.
	7	13:55	4	100 LBS.	661 LBS.
	8	14:01	4	90 LBS.	751 LBS.
	9	14:05	2	70 LBS.	821 LBS.
	10	14:12	2	65 LBS.	886 LBS.
TEST STOP 14:30	11	14:18	4	67 LBS.	953 LBS.
	12	14:24	1	50 LBS.	1003 LBS.

1.08

The average charge rate during the testing on the above date was 926 pound per hour of type 1, 2, and 4 waste.

AUGUST 17, 1989
PATHOLOGICAL INCINERATION
TEMPERATURE LOG

TIME	PRIMARY CHAMBER (DEG F)	SECONDARY CHAMBER (DEG F)
13:19	1780	1850
13:29	2110	1850
13:43	2220	1900
13:56	2300	1970
14:05	2200	1890
14:17	2280	1890
14:29	2200	1900

Average Primary Chamber Temperature 2156 °F.
Average Secondary Chamber Temperature ~~1807~~ °F.

1897
1890

New Jersey Test Data: Site [redacted]

Raritan Bay Health [redacted] Amboy, New Jersey
Incinerator: [redacted] ntal Control Products ECP Model 1100
Waste heat boiler: [redacted] h Marine Dry Back Fire Tube Boiler
Permitted wastes: Waste types 0, 1, 2, and 4
Permitted charge rate: Up to 1,100 lb/hr
Add-on controls: None

		PM	PM	PM
Date	1989	08/15	08/15	08/16
Time		AM	PM	AM
Auxilliary fuel		#2 Oil	#2 Oil	#2 Oil
Aux. fuel use	gal/hr	12.5	15.2	14.1
Charge rate	lb/hr	979	762	704
% of capacity		89.00%	69.27%	64.00%
Avg. pri. temp.	F	2081	2102	2113
Avg. sec. temp.	F	1884	1927	1884
Avg. exit temp.	F	--	--	--
Front + back	gr/dscf @ 12% CO2	0.18	0.22	0.16
Allowable	gr/dscf @ 12% CO2	0.10	0.10	0.10
Front	gr/dscf @ 7% O2	0.12	0.14	0.13
Actual emissions	lb/hr	1.90	1.60	1.20
Allow. emissions	lb/hr	0.03	0.03	0.03

		HCl	HCl	HCl	CO	CO	CO	NOx	NOx	NOx	THC	THC	THC
Date	89	08/16	08/17	08/17	08/16	08/17	08/17	08/14	08/15	08/15	08/15	08/15	08/16
Time		PM	AM	PM	PM	AM	PM	AM	AM	PM	AM	PM	AM
Auxilliary fuel		#2 Oil	#2 Oil	#2 Oil	#2 Oil	#2 Oil	#2 Oil	#2 Oil	#2 Oil	#2 Oil	#2 Oil	#2 Oil	#2 Oil
Aux. fuel use	gal/hr	14.1	--	--	--	--	--	13.8	12.5	15.2	12.5	15.2	14.1
Charge rate	lb/hr	650	579	926	650	579	926	724	979	762	979	762	704
% of capacity		59.09%	52.64%	84.18%	59.09%	52.64%	84.18%	65.82%	89.00%	69.27%	89.00%	69.27%	64.00%
Avg. pri. temp.	F	[redacted]	2094	2156	2247	2094	2156	2151	2081	2102	2081	2102	2113
Avg. sec. temp.	F	[redacted]	[redacted]	1807	1873	1899	1807	1887	1884	1927	1884	1927	1884
Avg. exit temp.	F	--	--	--	--	--	--	--	--	--	--	--	--
	ppmvd	418	263	395	8.0	5.0	4.5	31.6	44.3	36.0	13.4	12.4	13.7
	ppmvd @ 7% O2	1045	682	1024	20	13	12	76.3	100.0	76.4	30.3	26.4	31.0
Actual emissions	lb/hr	6.80	3.43	6.55	0.10	0.05	0.06	0.77	1.11	0.69	0.12	0.08	0.10
Allow. emissions	lb/hr	0.72	0.72	0.72	--	--	--	--	--	--	0.02	0.02	0.02

SECTION VIII

EMISSION TEST RESULTS

TEST RESULTS:

PARTICULATE

RUN	DATE	ACTUAL EMISSIONS			ALLOWABLE EMISSIONS	
		GR/DSCF* @ 12% CO_2	GR/DSCF** @ 7% O_2	LBS/HR	GR/DSCF @ 12% CO_2	LBS/HR
1	08-14-89	0.40 ***	0.25 ***	3.4 ***	0.08	0.03
2	08-15-89	0.18	0.12	1.9	0.08	0.03
3	08-15-89	0.22	0.14	1.6	0.08	0.03
4	08-16-89	0.16	0.13	1.2	0.08	0.03

The above Particulate Allowable Emissions GR/DSCF @ 12% CO_2 and the Allowable Emissions LBS/HR are based upon the standards stated on Permit/Certificate Number P-52063, as filed under the New Jersey Administrative Code 7:27-8 "Permits".

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

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

*** Particulate run number 1 was voided due to unacceptable isokinetic sampling rates.

PARTICULATE

RUN	DATE	ACTUAL EMISSIONS GR/DSCF @ 12% CO_2*	ALLOWABLE EMISSIONS GR/DSCF @ 12% CO_2
1	08-14-89	0.40 **	0.10**
2	08-15-89	0.18	0.10
3	08-15-89	0.22	0.10
4	08-16-89	0.16	0.10

The above Particulate Allowable Emissions GR/DSCF @ 12% CO_2 is based upon the standards prescribed in the New Jersey Administrative Code 7:27-11 "Incinerators".

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

** Particulate run number 1 was voided due to unacceptable isokinetic sampling rates.

HYDROCHLORIC ACID

RUN	DATE	ACTUAL EMISSIONS			ALLOWABLE EMISSIONS
		PPMVD	PPMVD @ 7% O_2	LBS/HR	LBS/HR
1	08-16-89	418	1045	6.80	0.72
2	08-17-89	263	682	3.43	0.72
3	08-17-89	395	1024	6.55	0.72

The above Hydrochloric Acid Allowable Emission Rate (LBS/HR) is based upon the standards stated on Permint/Certificate number P-52063 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	08-14-89	31.6	76.3	0.77
2	08-15-89	44.3	100.0	1.11
3	08-15-89	36.0	76.4	0.69

Note: Nitrogen Oxide is not listed as an air contaminant on Permit/Certificate Number P-52063, 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	08-16-89	8.0	20	0.10
2	08-17-89	5.0	13	0.05
3	08-17-89	4.5	12	0.06

Note: Carbon Monoxide is not listed as an air contaminant on Permit/Certificate Number P-52063, as filed under New Jersey Administrative Code 7:27-8 "Permits".

TOTAL HYDROCARBONS

RUN	DATE	ACTUAL EMISSIONS			ALLOWABLE EMISSIONS
		PPMVD	PPMVD @ 7% O_2	LBS/HR	LBS/HR
1	08-15-89	13.4	30.3	0.12	0.02
2	08-15-89	12.4	26.4	0.08	0.02
3	08-16-89	13.7	31.0	0.10	0.02

The above Total Hydrocarbons Allowable Emission Rate (LBS/HR) is based upon the standards stated on Permit/Certificate Number P-52063, as filed under New Jersey Administrative Code 7:27-8 "Permits".

SECTION IX

CONCLUSIONS

CONCLUSION:

The test results indicated that the Particulate, Hydrochloric Acid, and the Total Hydrocarbons emissions exceeded the standards stated on Permit/Certificate No. P-52063, as filed under New Jersey Administrative Code 7:27-8 "Permits", during all test runs.

The test results indicated that the Particulate emissions exceeded the standards prescribed by the New Jersey Administrative Code 727-11 "Incinerators", during all test runs.

The tests results also indicated that emissions of Nitrogen Oxide and Carbon Monoxide were being emitted to the atmosphere and are not listed as air contaminants on Permit/Certificate Number P-52063, 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 12, 1989

SECTION X

EMISSION TEST DATA SHEETS:

RARITAN BAY HEALTH SERVICES CORPORATION
APC PLANT ID NO.:015465
PATHOLOGICAL INCINERATOR N.J. STACK NO: 009

PARTICULATE RUN NO:1 TEST DATE: 08-14-89

POINT	DELTA P (IN H20)	DELTA H (IN H20)	STACK TEMP (DEGREES F)	METER TEMP (DEGREES F)
A- 1	0.043	0.60	290	88.5
A- 2	0.045	0.94	317	89.0
A- 3	0.058	1.42	360	91.0
A- 4	0.083	1.78	376	93.0
A- 5	0.041	1.00	299	95.0
A- 6	0.036	0.88	200	96.0
B- 1	0.080	1.40	360	93.5
B- 2	0.095	1.99	370	98.5
B- 3	0.085	1.78	315	96.5
B- 4	0.050	1.22	340	97.0
B- 5	0.035	0.85	325	97.5
B- 6	0.034	0.59	240	98.0
AVGS.=	0.055	1.20	316	94.5

METER VOL= 36.556 (DACF) Pb= 30.11 (IN. Hg) ORSAT-CO2= 4.60 %
Y-FACTOR= 1.01 Pst= -0.18 (IN. H2O) O2= 15.20 %
NOZZLE DIAM.= .490 (INCHES) Cp= .8295 CO= 0.00 %
H2O(COLLECTED)= 53.0 (mls) TEST TIME= 60 (MIN.) N2= 80.20 %

STACK DIAM= 32.0 (INCHES) STACK AREA= 5.59 (SQ. FT.)

Ps= 30.10 (IN. Hg) Pm= 30.20 (IN. Hg) MOISTURE= 6.64 %
METER VOL= 35.269 (DSCF) Ms= 28.60 Us= 15.79 (FT/SEC)
Gd= 0.99 ISOKINETICS= 73.87 %

ACFM= 5,290.5
WSCFM= 3,634.7
DSCFM= 3,393.5

SAMPLE WT= .2658 (GRAMS)
GRAINS/DSCF= 0.1163 (Total) .1024 (Front half) - GRAMS/DSCM= 0.2661
GRAINS/WSCF= 0.1086 GRAMS/WSCM= 0.2484
GRAINS/DSCF @ 12% CO2(MINUS AUX FUEL)= 0.4038
GRAMS/DSCM @ 12% CO2(MINUS AUX FUEL)= 0.9239

PARTICULATE EMISSION RATE= 3.3825 (LB/HR)
2.9785 (Front half)

ADDITIONAL TESTS USING FLOW DATA FROM PARTICULATE RUN:1

CONCENTRATION- NOx- = 31.6 (PPM-DRY)
EMISSION RATE- NOx- = 0.77 (LB/HR)

RARITAN BAY HEALTH SERVICES CORPORATION
APC PLANT ID NO.:015465
PATHOLOGICAL INCINERATOR N.J. STACK NO: 009

PARTICULATE RUN NO:2 TEST DATE: 08-15-89

POINT	DELTA P (IN H20)	DELTA H (IN H20)	STACK TEMP (DEGREES F)	METER TEMP (DEGREES F)
A- 1	0.090	3.10	460	82.0
A- 2	0.062	1.95	400	84.0
A- 3	0.085	2.67	370	85.5
A- 4	0.072	2.50	370	88.0
A- 5	0.070	2.23	450	89.5
A- 6	0.043	1.38	440	91.0
B- 1	0.055	1.87	440	88.5
B- 2	0.110	3.62	420	91.0
B- 3	0.065	2.14	420	92.0
B- 4	0.090	2.77	480	93.5
B- 5	0.065	2.07	450	93.5
B- 6	0.054	1.84	400	93.5
AVGS.=	0.071	2.35	425	89.3

METER VOL= 52.618 (DACF) Pb= 30.07 (IN. Hg) ORSAT-CO2= 5.40 %
Y-FACTOR= 1.01 Pst= -0.18 (IN. H2O) O2= 14.80 %
NOZZLE DIAM.= .490 (INCHES) Cp= .8295 CO= 0.00 %
H2O(COLLECTED)= 103.5 (mls) TEST TIME= 60 (MIN.) N2= 79.80 %

STACK DIAM= 32.0 (INCHES) STACK AREA= 5.59 (SQ. FT.)

Ps= 30.06 (IN. Hg) Pm= 30.24 (IN. Hg) MOISTURE= 8.71 %
METER VOL= 51.313 (DSCF) Ms= 28.47 Us= 19.14 (FT/SEC)
Gd= 0.98 ISOKINETICS= 103.56 %

ACFM= 6,412.7
WSCFM= 3,857.9
DSCFM= 3,521.9

SAMPLE WT= .2092 (GRAMS)
GRAINS/DSCF= 0.0629 (total) .0539 (from halt) GRAMS/DSCM= 0.1439
GRAINS/WSCF= 0.0574 GRAMS/WSCM= 0.1314
GRAINS/DSCF @ 12% CO2(MINUS AUX FUEL)= 0.1757
GRAMS/DSCM @ 12% CO2(MINUS AUX FUEL)= 0.4019

PARTICULATE EMISSION RATE= 1.8990 (LB/HR)
.6271

ADDITIONAL TESTS USING FLOW DATA FROM PARTICULATE RUN:2

CONCENTRATION-HYDROCARBONS AS METHANE= 13.43 (PPM-DRY)
EMISSION RATE-HYDROCARBONS AS METHANE= 0.1178 (LB/HR)

CONCENTRATION- NOx- = 44.3 (PPM-DRY)
EMISSION RATE- NOx- = 1.11 (LB/HR)

RARITAN BAY HEALTH SERVICES CORPORATION
APC PLANT ID NO.:015465
PATHOLOGICAL INCINERATOR N.J. STACK NO: 009

PARTICULATE RUN NO:3 TEST DATE: 08-15-89

POINT	DELTA P (IN H20)	DELTA H (IN H20)	STACK TEMP (DEGREES F)	METER TEMP (DEGREES F)
A- 1	0.050	1.83	330	90.0
A- 2	0.035	1.25	350	91.5
A- 3	0.043	1.54	350	93.5
A- 4	0.052	1.65	450	94.5
A- 5	0.040	1.43	350	95.5
A- 6	0.040	1.38	380	97.0
B- 1	0.042	1.24	520	91.5
B- 2	0.030	0.99	420	93.0
B- 3	0.080	2.34	530	92.5
B- 4	0.033	1.11	400	92.5
B- 5	0.040	1.23	480	93.0
B- 6	0.016	0.57	360	93.5
AVGS.=	0.041	1.38	410	93.2

METER VOL= 40.876 (DACF) Pb= 30.07 (IN. Hg) ORSAT-CO2= 5.60 %
Y-FACTOR= 1.01 Pst= -0.18 (IN. H2O) O2= 14.40 %
NOZZLE DIAM.= .490 (INCHES) Cp= .8295 CO= 0.00 %
H2O(COLLECTED)= 78.3 (mls) TEST TIME= 60 (MIN.) N2= 80.00 %

STACK DIAM= 32.0 (INCHES) STACK AREA= 5.59 (SQ. FT.)

Ps= 30.06 (IN. Hg) Pm= 30.17 (IN. Hg) MOISTURE= 8.57 %
METER VOL= 39.493 (DSCF) Ms= 28.50 Us= 14.36 (FT/SEC)
Gd= 0.98 ISOKINETICS= 104.26 %

ACFM= 4,812.4
WSCFM= 2,945.1
DSCFM= 2,692.6

SAMPLE WT= .1782 (GRAMS)
GRAINS/DSCF= 0.0696 (total) .0593 front only GRAMS/DSCM= 0.1593
GRAINS/WSCF= 0.0637 GRAMS/WSCM= 0.1456
GRAINS/DSCF @ 12% CO2(MINUS AUX FUEL)= 0.2172
GRAMS/DSCM @ 12% CO2(MINUS AUX FUEL)= 0.4970

PARTICULATE EMISSION RATE= 1.6069 (LB/HR)
.3686

ADDITIONAL TESTS USING FLOW DATA FROM PARTICULATE RUN:3

CONCENTRATION-HYDROCARBONS AS METHANE= 12.43 (PPM-DRY)
EMISSION RATE-HYDROCARBONS AS METHANE= 0.0833 (LB/HR)

CONCENTRATION- NOx- = 36 (PPM-DRY)
EMISSION RATE- NOx- = 0.69 (LB/HR)

RARITAN BAY HEALTH SRVICES CORPORATION
APC PLANT ID NO.:015465
PATHOLOGICAL INCINERATOR N.J. STACK NO: 009

PARTICULATE RUN NO:4 TEST DATE: 08-16-89

POINT	DELTA P (IN H20)	DELTA H (IN H20)	STACK TEMP (DEGREES F)	METER TEMP (DEGREES F)
A- 1	0.050	1.64	425	88.5
A- 2	0.068	2.07	490	91.0
A- 3	0.063	1.90	500	93.5
A- 4	0.060	1.91	450	95.5
A- 5	0.060	1.84	485	97.0
A- 6	0.030	1.02	390	98.5
B- 1	0.055	1.97	350	96.5
B- 2	0.050	1.59	450	98.5
B- 3	0.030	1.05	370	100.0
B- 4	0.050	1.49	510	102.5
B- 5	0.035	1.14	425	103.5
B- 6	0.032	1.02	450	105.0
AVGS.=	0.048	1.55	441	97.5

METER VOL= 45.692 (DACF)
Y-FACTOR= 1.01
NOZZLE DIAM.= .490 (INCHES)
H2O(COLLECTED)= 86.2 (mls)

Pb= 29.95 (IN. Hg)
Pst= -0.18 (IN. H2O)
Cp= .8295
TEST TIME= 60 (MIN.)

ORSAT-CO2= 5.20 %
O2= 14.80 %
CO= 0.00 %
N2= 80.00 %

STACK DIAM= 32.0 (INCHES)

STACK AREA= 5.59 (SQ. FT.)

Ps= 29.94 (IN. Hg)
METER VOL= 43.648 (DSCF)
Gd= 0.98

Pm= 30.06 (IN. Hg)
Ms= 28.46
ISOKINETICS= 108.24 %

MOISTURE= 8.54 %
Us= 15.90 (FT/SEC)

ACFM= 5,326.5
WSCFM= 3,134.1
DSCFM= 2,866.4

SAMPLE WT= .1412 (GRAMS)
GRAINS/DSCF= 0.0499 (total) .0445 (front half)
GRAINS/WSCF= 0.0457

GRAMS/DSCM= 0.1142
GRAMS/WSCM= 0.1045

GRAINS/DSCF @ 12% CO2(MINUS AUX FUEL)= 0.1631
GRAMS/DSCM @ 12% CO2(MINUS AUX FUEL)= 0.3733

PARTICULATE EMISSION RATE= 1.2264 (LB/HR)
1.0933 (front half)

ADDITIONAL TESTS USING FLOW DATA FROM PARTICULATE RUN:4

CONCENTRATION-HYDROCARBONS AS METHANE= 13.73 (PPM-DRY)
EMISSION RATE-HYDROCARBONS AS METHANE= 0.0980 (LB/HR)

RARITAN BAY HEALTH SERVICES CORPORATION
APC PLANT ID NO.:015465
PATHOLOGICAL INCINERATOR N.J. STACK NO: 009

HCL RUN NO:1 TEST DATE: 08-16-89

POINT	DELTA P (IN H20)	DELTA H (IN H20)	STACK TEMP (DEGREES F)	METER TEMP (DEGREES F)
A- 1	0.055	0.62	377	104.0
A- 2	0.039	0.44	365	104.0
A- 3	0.090	1.05	359	105.0
A- 4	0.031	0.38	315	106.0
A- 5	0.055	0.60	394	105.0
A- 6	0.038	0.47	300	105.0
B- 1	0.033	0.33	386	106.0
B- 2	0.030	0.33	410	105.0
B- 3	0.079	0.78	510	105.0
B- 4	0.060	0.59	497	106.0
B- 5	0.023	0.25	425	105.0
B- 6	0.030	0.36	317	104.0
AVGS.=	0.045	0.52	388	105.0

METER VOL= 25.318 (DACF) Pb= 29.95 (IN. Hg) ORSAT-CO2= 4.40 %
Y-FACTOR= 1.01 Pst= -0.18 (IN. H2O) O2= 15.40 %
NOZZLE DIAM.= .375 (INCHES) Cp= .8295 CO= 0.00 %
H2O(COLLECTED)= 46.1 (mls) TEST TIME= 60 (MIN.) N2= 80.20 %

STACK DIAM= 32.0 (INCHES) STACK AREA= 5.59 (SQ. FT.)

Ps= 29.94 (IN. Hg) Pm= 29.99 (IN. Hg) MOISTURE= 8.39 %
METER VOL= 23.803 (DSCF) Ms= 28.38 Us= 14.99 (FT/SEC)
Gd= 0.98 ISOKINETICS= 100.38 %

ACFM= 5,023.3
WSCFM= 3,141.6
DSCFM= 2,878.0

CONCENTRATION- HCL= 418 (PPM-DRY)
EMISSION RATE- HCL= 6.80 (LB/HR)

ADDITIONAL TESTS USING FLOW DATA FROM HCL RUN:1

CONCENTRATION- CO= 8 (PPM-DRY)
EMISSION RATE- CO= 0.10 (LB/HR)

RARITAN BAY HEALTH SERVICES CORPORATION
APC PLANT ID NO.:015465
PATHOLOGICAL INCINERATOR N.J. STACK NO: 009

HCL RUN NO:2 TEST DATE: 08-17-89

POINT	DELTA P (IN H20)	DELTA H (IN H20)	STACK TEMP (DEGREES F)	METER TEMP (DEGREES F)
A- 1	0.038	0.49	275	101.0
A- 2	0.052	0.59	385	101.0
A- 3	0.030	0.36	325	103.0
A- 4	0.034	0.40	337	104.0
A- 5	0.041	0.45	395	104.0
A- 6	0.015	0.19	260	104.0
B- 1	0.024	0.28	345	104.0
B- 2	0.022	0.27	282	104.0
B- 3	0.020	0.25	308	105.0
B- 4	0.043	0.47	400	106.0
B- 5	0.012	0.14	325	106.0
B- 6	0.012	0.15	300	107.0
AVGS.=	0.027	0.34	328	104.1

METER VOL= 20.850 (DACF) Pb= 30.01 (IN. Hg) ORSAT-CO2= 4.60 %
Y-FACTOR= 1.01 Pst= -0.18 (IN. H2O) O2= 15.60 %
NOZZLE DIAM.= .375 (INCHES) Cp= .8295 CO= 0.00 %
H2O(COLLECTED)= 41.7 (mls) TEST TIME= 60 (MIN.) N2= 79.80 %

STACK DIAM= 32.0 (INCHES) STACK AREA= 5.59 (SQ. FT.)

Ps= 30.00 (IN. Hg) Pm= 30.03 (IN. Hg) MOISTURE= 9.11 %
METER VOL= 19.666 (DSCF) Ms= 28.33 Us= 11.23 (FT/SEC)
Gd= 0.98 ISOKINETICS= 103.50 %

ACFM= 3,763.1
WSCFM= 2,537.2
DSCFM= 2,306.0

CONCENTRATION- HCL= 263 (PPM-DRY)
EMISSION RATE- HCL= 3.43 (LB/HR)

ADDITIONAL TESTS USING FLOW DATA FROM HCL RUN:2

CONCENTRATION- CO= 5 (PPM-DRY)
EMISSION RATE- CO= 0.05 (LB/HR)

RARITAN BAY HEALTH SERVICES CORPORATION
APC PLANT ID NO.:015465
PATHOLOGICAL INCINERATOR N.J. STACK NO: 009

HCL RUN NO:3 TEST DATE: 08-17-89

POINT	DELTA P (IN H20)	DELTA H (IN H20)	STACK TEMP (DEGREES F)	METER TEMP (DEGREES F)
A- 1	0.060	0.72	302	102.0
A- 2	0.085	1.09	280	103.0
A- 3	0.029	0.36	301	103.0
A- 4	0.017	0.20	340	103.0
A- 5	0.023	0.26	365	103.0
A- 6	0.015	0.17	345	103.0
B- 1	0.035	0.42	334	103.0
B- 2	0.043	0.50	358	103.0
B- 3	0.076	0.81	421	103.0
B- 4	0.062	0.64	439	103.0
B- 5	0.059	0.59	464	104.0
B- 6	0.059	0.71	320	104.0
AVGS.=	0.044	0.54	356	103.1

METER VOL= 24.645 (DACF) Pb= 30.01 (IN. Hg) ORSAT-CO2= 4.60 %
Y-FACTOR= 1.01 Pst= -0.18 (IN. H2O) O2= 15.60 %
NOZZLE DIAM.= .375 (INCHES) Cp= .8295 CO= 0.00 %
H2O(COLLECTED)= 38.9 (mls) TEST TIME= 60 (MIN.) N2= 79.80 %

STACK DIAM= 32.0 (INCHES) STACK AREA= 5.59 (SQ. FT.)

Ps= 30.00 (IN. Hg) Pm= 30.05 (IN. Hg) MOISTURE= 7.32 %
METER VOL= 23.298 (DSCF) Ms= 28.54 Us= 14.49 (FT/SEC)
Gd= 0.99 ISOKINETICS= 96.44 %

ACFM= 4,856.3
WSCFM= 3,163.3
DSCFM= 2,931.7

CONCENTRATION- HCL= 395 (PPM-DRY)
EMISSION RATE- HCL= 6.55 (LB/HR)

ADDITIONAL TESTS USING FLOW DATA FROM HCL RUN:3

CONCENTRATION- CO= 4.5 (PPM-DRY)
EMISSION RATE- CO= 0.06 (LB/HR)

SECTION XI

LABORATORY RESULTS

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF ENVIRONMENTAL QUALITY
380 Scotch Road
CN 411
Trenton, N.J. 08625-0411
(609) 530-4100

Anthony J. McMahon
Acting Director

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

MEMORANDUM

TO: Edward Choromanski, Chief
Bureau of Technical Services

FROM: Henry Smith, Supervisor
Source Compliance Laboratory

SUBJECT: Raritan Bay Medical Center Incinerator Tests

DATE: October 13, 1989

I have enclosed laboratory results on particulate matter, Nitrogen Dioxide, Hydrogen Chloride and Carbon Monoxide runs.

Please see Bob Reinowski, Bureau of Organic Analytical Services (BOAS), Quality Assurance Officer, for Compliance sample results.

HS:kaz
c: Jay Quimby
Leonard Sobolewski

Source Test

N.J. Department of Environmental Protection

NO_2, CO Analyses

Summary

Company:	Raritan Bay Medical Center	I.D. Number:	015465
Location:	Perth Amboy	Date Received:	8-15-89
N.J. Stack Number:	009	Report Date:	10-10-89
Stack Designation:	Incinerator	Number of Test Runs:	3
Applicable Subchapter:	11	NO_2 Results on Day basis	

Nitrogen Dioxide

Field Data	Run 1	Run 2	Run 3
Barometric Pressure (Hg")	30.110	30.070	30.070
Avg. Meter Pressure (H_2O")	1.400	1.200	1.200
Meter Volume (Liters)	45.180	29.213	29.260
Avg. Meter Temp (°F)	94.800	88.750	93.500

Analytical Data	Run 1	Run 2	Run 3
Total Volume of $KMNO_4$/NAOH solution (ml)	1000	1000	1000
Aliquot of $KMNO_4$/NAOH solution (ml)	50	50	50
Volume of prepared sample (ml)	250	250	250

Sample Response (Pk. Hgt.)	290	265	213

Slope = 0.0018

Y - Intercept = 0.0032

Correlation Coeff. 0.9995

Results

	EPA Conc.	Measured Conc.
NO_2 Audit Sample, Difference	649.5 $\frac{mg}{DSCM}$	636.2 $\frac{mg}{DSCM}$

from EPA Value = 2.04%

	Run 1	Run 2	Run 3
Sample conc., NO_2 (ppm)	31.6	44.3	36.0

Carbon Monoxide

Instrumentation: Beckman

NDIR Analyzer

Calibration: 0-100ppm

Range spanned with 81 ppm CO

	Run 1	Run 2	Run 3
Sample conc., CO (ppm)	8.0	5.0	4.5

HS:kaz
c: Jay Quimby
Leonard Sobolewski

Source Test

N.J. Department of Environmental Protection

HCL, Orsat Analyses

Summary

Company: Raritan Bay Medical Center
I.D. Number: 015465

Location: Perth Amboy
Date Received: 8-17-89

N.J. Stack Number: 009
Report Date: 10-10-89

Stack Designation: Incinerator
Number of Test Runs: 3

Applicable Subchapter: 11
NO_2 Results on Day Basis

Hydrogen Chloride

Field Data	Run 1	Run 2	Run 3
Barometric Pressure (Hg")	29.950	30.010	30.010
Avg. Meter Pressure (H_2O")	0.516	0.335	0.539
Meter Volume (ft^3)	25.320	20.850	25.150
Avg. Meter Temp. (°F)	105.000	104.000	103.000

Analytical Data	Run 1	Run 2	Run 3
Total Volume of sample (ml)	1000	1000	1000
Aliquot of sample (ml)	10	10	10
Volume of prepared sample (ml)	250	250	250

Slope = 0.005

A.E
(File name)

MEMORANDUM

August 28, 1989

TO: Henry Smith

FROM: Randy Barbiero

SUBJECT: Total Hydrocarbon Analyses from Raritan Bay Medical Center Pathological Incinerator Stack #009.

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

LC#	as Methane THC PPM (V/V)	Non-Methane THC PPM (V/V)	as Methane % RSD	Non-Methane %RSD
10849A	15.1	13.7		
10849C	11.9	10.5	12.2	13.7
10849D	13.3	11.9		
10850B	12.2	11.7		
10850C	11.6	10.4	7.8	8.4
10850D	13.5	12.3		
10864A	11.8	10.5		

10864C	13.1	11.7	16.9	18.1
10864D	16.3	14.8		

Randy Barbiero

CC: Jay Quimby
Lenny Sobolewski
Ed Chromanski

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

COMPANY: RARITAN BAY MEDICAL CENTER
LOCATION PERTH AMBOY
NJ#: 009
STACK DES: PATHOLOGICAL INCINERATOR
APPLIABLE SUBCHAPTER: 11

ID # 015465
DATE REC: 8/15/89
REP DATE: 10/6/89

TEST RUNS: 4
RESULTS ON DRY BASIS

DATA

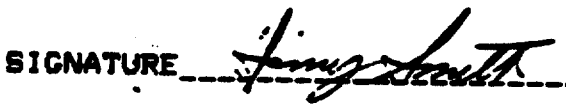
		RUN 1	RUN 2	RUN 3	RUN 4	RUN 5	RUN 6
part filter	gm	0.1907	0.1398	0.1221	0.1041		
part acetone	gm	0.0463	0.0422	0.0315	0.0246		
water desc	gm	11.0000	13.5000	9.3000	11.2000		
acetone blk	gm	0.0016	0.0016	0.0016	0.0016		
init. imp vol	ml	0.0000	0.0000	0.0000	0.0000		
final imp vol	ml	0.0000	0.0000	0.0000	0.0000		
acetone vol	ml	180.0000	170.0000	120.0000	180.0000		
blank vol	ml	100.0000	100.0000	100.0000	100.0000		
imp part	gm	0.0027	0.0030	0.0040	0.0005		
org part	gm	0.0066	0.0065	0.0037	0.0048		
inorg resd	gm	0.0224	0.0204	0.0188	0.0101		

RESULTS

acetone resd	gm	0.0029	0.0027	0.0019	0.0029		
adj part acet	gm	0.0434	0.0395	0.0296	0.0217		
total part	gm	0.2658	0.2092	0.1782	0.1412		
total water	gm	11.0000	13.5000	9.3000	11.2000		
		.2341	.1793	.1517	.1258		

ORSAT RESULTS

ZCO2	4.6000	5.4000	5.6000	5.2000	
ZO2	15.2000	14.8000	14.4000	14.8000	
ZCO	0.0000	0.0000	0.0000	0.0000	
ZN2	80.2000	79.8000	80.0000	80.0000	

SIGNATURE 

AP-42 Emission Factor Development
Paper Number 27

Type	Facility	Reference	Run	Pollutant	Emission Factor lb/ton	Emission Factor mg/Mg	Quality Rating
1	Raritan	27	5	Particulate Matter	3.88E+00	1.94E+06	B
1	Raritan	27	6	Particulate Matter	4.20E+00	2.10E+06	B
1	Raritan	27	7	Particulate Matter	3.41E+00	1.70E+06	B
1	Raritan	27	1	Hydrogen Chloride	2.09E+01	1.05E+07	B
1	Raritan	27	2	Hydrogen Chloride	1.18E+01	5.92E+06	B
1	Raritan	27	3	Hydrogen Chloride	1.41E+01	7.07E+06	B
1	Raritan	27	1	Carbon Monoxide	3.08E-01	1.54E+05	B
1	Raritan	27	2	Carbon Monoxide	1.73E-01	8.64E+04	B
1	Raritan	27	3	Carbon Monoxide	1.30E-01	6.48E+04	B
1	Raritan	27	4	Oxides of Nitrogen	2.13E+00	1.06E+06	B
1	Raritan	27	5	Oxides of Nitrogen	2.27E+00	1.13E+06	B
1	Raritan	27	6	Oxides of Nitrogen	1.81E+00	9.06E+05	B
1	Raritan	27	5	Total Hydrocarbons	2.45E-01	1.23E+05	B
1	Raritan	27	6	Total Hydrocarbons	2.10E-01	1.05E+05	B
1	Raritan	27	7	Total Hydrocarbons	2.84E-01	1.42E+05	B

AP-42 MWI emission factor development by Rob Harrison 6/8/93

ALTERED BY M. V. CAMPBELL 6/11/93

Test Report 27

Facility: Raritan Bay Health Services Corporation
Control type: 1

		Run 1	Run 2	Run 3	Avg
Charge rate (lb/hr)		650	579	926	718.3333
Charge rate (ton/hr)		0.325	0.2895	0.463	0.359167
Emissions (lb/hr)					
HCl		6.8	3.43	6.55	5.593333
CO		0.1	0.05	0.06	0.07
EF (lb/ton)	Rating				
HCl	B	20.92308	11.84801	14.14687	15.63932
CO	B	0.307692	0.172712	0.12959	0.203331

		Run 4	Run 5	Run 6	Run 7	Avg
Charge rate (lb/hr)		724	979	762	704	792.25
Charge rate (ton/hr)		0.362	0.4895	0.381	0.352	0.396125
Emissions (lb/hr)						
PM			1.9	1.6	1.2	1.566667
NOx		0.77	1.11	0.69		0.856667
THC			0.12	0.08	0.1	0.1
EF (lb/ton)	Rating					
PM	C		3.881512	4.199475	3.409091	3.830026
NOx	B	2.127072	2.26762	1.811024		2.068572
THC	B		0.245148	0.209974	0.284091	0.246404