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REPORT OF EMISSION TESTS

THE NEW JERSEY AIR POLLUTION CONTROL CODE

NEW JERSEY ADMINISTRATIVE CODE 7:27-8.1 et seq.

BAYSHORE REGIONAL SEWAGE AUTHORITY
100 OAK STREET
UNION BEACH, NEW JERSEY
PLANT I.D. NO. 20057

TECHNICAL SERVICES COPY

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF ENVIRONMENTAL QUALITY
BUREAU OF AIR POLLUTION CONTROL

MARCH 29, 1982

TECHNICAL SERVICES COPY

STACK TEST REPORT
BAYSHORE REGIONAL SEWAGE AUTHORITY
100 OAK STREET
UNION BEACH, NEW JERSEY
PLANT I.D. NO. 20057

PURPOSE:

The purpose of the test was to determine whether the emission rates to the atmosphere from the Incinerator (N.J. Stack No. 42) were within the standards stated on Permit No. P-9055, as filed under N.J.A.C. 7:27-8.3 (a and b).

PERSONNEL:

The tests were performed by personnel of the New Jersey State Department of Environmental Protection, Bureau of Air Pollution Control Operations. Those participating were:

Frank Papp, Senior Environmental Technician

Joseph Piecyk, Assistant Environmental Technician

Scott Hawthorne, Environmental Technician

Michael Ormsby, Assistant Environmental Technician

Peter Burkhalter, Environmental Specialist

The sample analyses were done at the Bureau of Air Pollution Control Operations Laboratory located in Ewing Township, New Jersey by:

Henry Smith, Principal Chemist

William Ormand, Principal Environmental Specialist

Gloria Griffith, Principal Laboratory Technician

SAMPLING DATES:

The Incinerator (N.J. Stack No. 42) was tested on March 31, April 1, 2, 7, 8, and July 6, 7, 8, and 9, 1981.

PLANT OPERATING CONDITIONS:

All sources were operating at the following production rates, as verified by plant and state personnel.

For all test runs the Incinerator was burning at a rate of 1800 gallons of sludge per hour.

The Number 2 fuel oil firing rate average 62.5 gallons/hour for the testing period.

Permit No. P-9055 lists a maximum incineration rate of 1500 pounds per hour of various organic and inorganic sewage solids, fuel oil, and air.

SAMPLING PROCEDURE:

Particulate test techniques and sample recovery were essentially as described in N.J.A.C. 7:27B-1 et seq., SAMPLING AND ANALYTICAL PROCEDURES FOR DETERMINING EMISSIONS OF PARTICLES FROM MANUFACTURING PROCESSES AND FROM COMBUSTION OF FUELS. Since particulate tests were conducted for compliance with N.J.A.C. 7:27-11.1 et seq., particles found in the impinger were included in the total collected particulate weight.

For all particulate test runs the sampling train consisted of a stainless steel buttonhook nozzle, a heated glass-lined stainless steel probe, a heated glass fiber filter assembly, a teflon hose, one Greenburg-Smith impinger containing 100 mls. of distilled water, a mist knockout (dry), a desiccant, a vacuum pump, a dry gas test meter, and an orifice meter, all connected in series.

For all heavy metals test runs the sampling train consisted of a stainless steel buttonhook nozzle, a heated glass-lined stainless steel probe, a heated glass fiber filter assembly, a teflon hose, Two Greenburg-Smith impingers each containing 100 mls. of 0.1 N nitric acid, a mist knockout (dry), a desiccant, a vacuum pump, a dry gas test meter, and an orifice meter, all connected in series.

All heavy metal samples were analyzed using the principle of Absorption Flame Photometry (Atomic Absorption).

For all SO_2 and SO_3 test runs the sampling train consisted of a stainless steel buttonhook nozzle, a heated glass-lined stainless steel probe, a heated glass fiber filter assembly, a teflon hose, a Greenburg-Smith impinger containing 100 mls. of 80% isopropyl alcohol, two Greenburg-Smith impingers each containing 100 mls. of 3% H_2O_2, a desiccant, a vacuum pump, a dry gas test meter, and an orifice meter, all connected in series.

SAMPLING PROCEDURE:

Analytical procedures for the Sulfur Oxides were in accordance with the SHELL DEVELOPMENT COMPANY METHOD. (Emeryville Method Series 4S16/59a, Analytical Department, Shell Development Company, Emeryville, California, 1959). (Equivalent to EPA Reference Method 8).

For all HCl test runs the sampling train consisted of a stainless steel buttonhook nozzle, a glass-lined stainless steel probe, a heated glass fiber filter assembly, a teflon hose, two Greenburg-Smith impingers each containing 100 mls. of 5% KOH, a mist knockout (dry), a desiccant, a vacuum pump, a dry gas test meter, and an orifice meter all connected in series.

HCl is absorbed in a 5% potassium hydroxide solution. The absorbed chlorides are precipitated with silver nitrate and are determined using a spectrophotometer.

For all nitrogen oxides test runs the sampling train consisted of a heated glass-lined stainless steel probe, an evacuated two liter round bottom boiling flask encased and equipped with a three-way stopcock, a thirty-six inch U-tube manometer, a three-way stopcock, tygon tubing, and a vacuum pump.

All nitrogen oxides samples were analyzed colorimetrically using the Phenoldisulfonic Acid Procedure. (EPA Reference Method 7).

For all total hydrocarbon test runs the sampling train consisted of a heated glass-lined stainless steel probe, two midget impingers each containing 10 mls. of distilled water, a mist knockout (dry), a teflon lined vacuum pump, a dry gas test meter, and a tedlar bag, all connected in series.

All gas samples were analyzed with a Perkin-Elmer Model 900 Gas Chromatograph using a 5 cc volume gas sampling valve and a flame ionization detector. A 6 foot Chromosorb 104 Column was used for component separation and the helium carrier gas flow rate was 30 ml/min. The water samples were analyzed in the same manner except that 0.05 ml. of the samples were injected by syringe instead of the gas sampling valve. The instrument was calibrated with methane and, therefore, all results shown are in equivalent methane.

TEST RESULTS:

Incinerator (N.J. Stack No. 42)

RUN	DATE	GAL/MIN #2 FUEL OIL	% CO_2 FROM FUEL OIL	INLET % CO_2	CORRECTED* % CO_2
1	07-06-81	0.8333	3.95%	7.00%	3.05%
2	07-06-81	0.8333	3.79%	6.60%	2.81%
3	07-07-81	1.4583	6.24%	7.80%	1.56%

*The above corrected CO_2 is the CO_2 from the incineration of the sludge minus the CO_2 contribution from the auxiliary number 2 fuel oil.

Particulates

per Louis Mikolajczyk, State of NJ:
ave feed rate = 3000 dry lb/hr

RUN	DATE	GRAINS/DSCF CORRECTED TO 12% CO_2	
		ALLOWABLE	ACTUAL
1	07-06-81	0.10	0.119
2	07-06-81	0.10	0.149
3	07-07-81	0.10	0.242

The above allowable emission rate is based upon the standards stated on Permit No. P-9055, as filed under N.J.A.C. 7:27-8.3 (a and b).

Heavy Metals

RUN	DATE	CADMIUM LBS/HR	CHROMIUM LBS/HR	LEAD LBS/HR	NICKEL LBS/HR	MERCURY LBS/HR	ARSENIC LBS/HR
1	07-08-81	.000837	.000224	0	.000336	0	.0000118
2	07-08-81	.000206	.000165	0	0	0	.0000124
3	07-09-81	.000518	.000172	0	0	0	.0000116

TEST RESULTS CONT'D:

Sulfur Compounds

RUN	DATE	LBS/HR SO_2	LBS/HR SO_3	LBS/HR SO_3/H_2SO_4
1	03-31-81	4.41	4.28	0.05
2	04-01-81	0.06	3.29	0.05
3	04-02-81	2.55	0.20	0.05

Hydrochloric Acid

RUN	DATE	PPM	LBS/HR
1	04-07-81	2.74	0.10
2	04-07-81	0.57	0.02
3	04-08-81	0.29	0.01

Hydrocarbons

RUN	DATE	SCFM	PPM	LBS/HR
1	03-31-81	10843*	8.81	0.12
2	04-01-81	10244**	3.00	0.04
3	04-02-81	10742***	4.79	0.07

*SCFM flow data was obtained from the Run No. 1 sulfur test.

**SCFM flow data was obtained from the Run No. 2 sulfur test.

***SCFM flow data was obtained from the Run No. 3 sulfur test.

TEST RESULTS CONT'D:

Nitrogen Oxides

RUN	DATE	SCFM	PPM	LBS/HR
1	03-31-81	10843*	2.55	0.9779
2	03-31-81	10843*	3.26	1.2501
3	04-02-81		None Detected	None Detected

*SCFM flow data was obtained from the Run No. 1 sulfur test.

CONCLUSION:

The test results indicate that the particulate emission rates from the Incinerator (N.J. Stack No. 42) exceeded the standards stated on Permit No. P-9055, as filed under N.J.A.C. 7:27-8.3 (a and b) during all test runs.

The test results also indicate emissions into the atmosphere of Heavy Metals, Sulfur Compounds, Total Hydrocarbons, Nitrogen Oxides, and Hydrochloric Acid, which are not listed as air contaminants on Permit No. P-9055, as filed under N.J.A.C. 7:27-8.3 (a and b).

Louis Mikolajczyk
Supervisor
Technical Services Section
Bureau of Air Pollution
Control Operations

LM:LSS:eac

BAYSHORE REGIONAL SEWERAGE AUTHORITY
100 OAK STREET
UNION BEACH N J
INCINERATOR STACK
RUN NO I PARTICULATES 07-06-81 N J NO 42

SAMPLE POINT	DELTA P (" H20)	STACK TEMP (DEG F)	METER TEMP (DEG F)
01	0.62	100	84
02	1.10	110	85
03	0.42	110	85.5
04	0.20	105	86
05	0. 0	105	86
06	0.85	105	86.5
07	0.70	100	86.5
08	0.48	100	87
0	0.24	115	87
10	0.28	120	88.5
11	0.68	120	8[illegible]
12	0.74	120	[illegible]0
AVGS:	0.5669	109.1414	86.7500

CONDENSATE(ML): 64.80
BARO PRESS(IN HG): 30.06
METER VOLUME(CF): 2[illegible].680
ORSAT VALUES: CO2: 7.60
O2: 11.40
CO: 0.00
N2: 81.00
STATIC PRESS(IN H20): 0.05
PITOT FACTOR: 0.840
SAMPLING TIME(MIN): 60
NOZZLE DIAM(IN): 0.197
STACK DIAM(IN): 24
SAMPLE WGT(GMS): 0.0316
ACFM = 8284.3028
SCFM = 7714.5681

% MOISTURE = 9.5864

GAS DENSITY = 0.[illegible]866
STACK PRESSURE(IN HG) = 30.0637
VELOCITY(FPS) = 43.[illegible]508

% ISOKINETIC = 102.0052

EMISSION RATE(LBS/HR) = 1.0132

0.8336 front half

front half = $\frac{0.026}{.0316} \times 1.0132 =$

BAYSHORE REGIONAL SEWERAGE AUTHORITY
100 OAK STREET
UNION BEACH N J
INCINERATOR STACK
RUN NO II PARTICULATES 07-06-81 N J NO 42

SAMPLE POINT	DELTA P (" H20)	STACK TEMP (DEG F)	METER TEMP (DEG F)
01	0.82	120	[illegible]3
02	1.02	135	[illegible]4
03	0.54	130	[illegible]4.5
04	0.18	130	[illegible]5
05	0.85	130	[illegible]4.5
06	0.[illegible]5	120	[illegible]4.5
07	0.85	120	[illegible]4
08	0.78	120	[illegible]6.5
0[illegible]	0.26	120	[illegible]8
10	0.43	120	[illegible]8
11	0.[illegible]0	120	[illegible]9
12	0.80	115	[illegible]
AVGS:	0.6675	123.3185	5.8333

CONDENSATE(ML): [illegible]7.00
BARO PRESS(IN HG): 30.06
METER VOLUME(CF): 32.583
% MOISTURE = 12.8142
ORSAT VALUES: CO2: 6.60
O2: 12.40
CO: 0.00
N2: 81.00
GAS DENSITY = 0.9699
STATIC PRESS(IN H20): 0.05
STACK PRESSURE(IN HG) = 30.0637
PITOT FACTOR: 0.840
VELOCITY(FPS) = 48.6[illegible]2
SAMPLING TIME(MIN): 60
NOZZLE DIAM(IN): 0.1[illegible]7
% ISOKINETIC = 105.6741
STACK DIAM(IN): 24
SAMPLE WGT(GMS): 0.03[illegible]4
EMISSION RATE(LBS/HR) = 1.21[illegible]5
ACFM = [illegible]178.1381
SCFM = 833[illegible].2054

front half = $\frac{0.0228}{0.0394} \times 1.2195 = 0.7057$ lb/hr

BAYSHORE REGIONAL SEWERAGE AUTHORITY
100 OAK STREET
UNION BEACH N J
INCINERATOR STACK
RUN NO III PARTICULATES 07-07-81 N J NO 42

SAMPLE POINT	DELTA P (" H20)	STACK TEMP (DEG F)	METER TEMP (DEG F)
01	0.95	140	86
02	0.87	140	86.5
03	0.20	140	86.5
04	0.28	140	86.5
05	0.85	140	86.5
06	0.96	138	87
07	0.98	140	87.5
08	1.05	140	88
09	0.70	135	88
10	0.26	135	89
11	0.38	135	89.5
12	0.37	135	90
AVGS:	0.7114	138.1644	87.5833

CONDENSATE(ML) 130.10
BARO PRESS(IN HG): 30.12
METER VOLUME(CF): 33.602
ORSAT VALUES CO2: 0.00
O2: 10.20
CO: 0.00
N2: 80.80
STATIC PRESS(IN H20): 0.05
PITOT FACTOR: 0.840
SAMPLING TIME(MIN): 60
NOZZLE DIAM(IN): 0.187
STACK DIAM(IN): 24
SAMPLE WGT(GMS): 0.0403
ACFM = 9602.1138
SCFM = 8507.8243

% MOISTURE = 15.8206

GAS DENSITY = 0.0666
STACK PRESSURE(IN HG) = 30.1237
VELOCITY(FPS) = 50.9422

% ISOKINETIC = 112.3000

EMISSION RATE(LBS/HR) = 1.1737

front half = $\frac{0.0317}{0.0403} \times 1.1737 = 0.9232$

BAYSHORE REGIONAL SEWERAGE AUTHORITY
100 OAK STREET
UNION BEACH N J
INCINERATOR STACK
RUN NO I HEAVY METALS 07-08-81 N J NO 42

SAMPLE POINT	DELTA P (" H20)	STACK TEMP (DEG F)	METER TEMP (DEG F)
01	1.14	130	.0
02	0.85	130	.1
03	0.25	130	.1
04	0.34	130	.1
05	0.78	130	.1
06	0.84	130	.2
07	0.88	130	.2
08	0.84	130	.3
09	0.20	135	.3
10	0.10	135	.3.5
11	0.65	135	.4
12	0.82	135	.4.5
AVGS:	0.547	131.6643	.2.1667

CONDENSATE(ML): 88.60
BARO PRESS(IN HG): 30.10
METER VOLUME(CF): 30.177
% MOISTURE = 12.5725
ORSAT VALUES: CO2: 8.80
O2: 9.80
CO: 0.00
N2: 81.40
GAS DENSITY = 0.1784
STATIC PRESS(IN H20): 0.05
STACK PRESSURE(IN HG) = 30.1037
PITOT FACTOR: 0.840
VELOCITY(FPS) = 46.0568
SAMPLING TIME(MIN): 60
NOZZLE DIAM(IN): 0.187
% ISOKINETIC = 105.3578
STACK DIAM(IN): 24

ACFM = 8681.2652
SCFM = 7776.4881

BAYSHORE REGIONAL SEWERAGE AUTHORITY
100 OAK STREET
UNION BEACH N J
INCINERATOR STACK
RUN NO II HEAVY METALS 07-08-81 N J NO 42

SAMPLE POINT	DELTA P (" H20)	STACK TEMP (DEG F)	METER TEMP (DEG F)
01	0.85	140	96
02	0.98	140	97
03	0.98	140	97.5
04	0.38	140	98
05	0.94	140	98
06	0.92	140	98
07	0.95	140	98
08	0.82	140	98.5
09	0.30	140	99.5
10	0.38	140	99.5
11	0.98	140	99.5
12	0.90	140	101
AVGS:	0.7555	140.0000	98.3750

CONDENSATE(ML): 131.60
BARO PRESS(IN HG): 30.10
METER VOLUME(CF): 34.866
ORSAT VALUES: CO2: 8.60
O2: 9.60
CO: 0.00
N2: 81.80
STATIC PRESS(IN H20): 0.05
PITOT FACTOR: 0.840
SAMPLING TIME(MIN): 60
NOZZLE DIAM(IN): 0.197
STACK DIAM(IN): 24

% MOISTURE = 15.7504

GAS DENSITY = 0.9643
STACK PRESSURE(IN HG) = 30.1037
VELOCITY(FPS) = 52.6544

% ISOKINETIC = 110.8033

ACFM = 9924.8466
SCFM = 8766.9471

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BAYSHORE REGIONAL SEWERAGE AUTHORITY
100 OAK STREET
UNION BEACH N J
INCINERATOR STACK
RUN NO III HEAVY METALS 07-09-81 N J NO 42

SAMPLE POINT	DELTA P (" H20)	STACK TEMP (DEG F)	METER TEMP (DEG F)
01	0.90	120	91
02	0.85	125	91.5
03	0.18	130	92
04	0.61	140	92
05	0.90	140	92
06	0.92	145	92.5
07	0.98	130	92.5
08	0.51	130	93.5
09	0.16	130	94
10	0.46	130	94
11	0.82	140	94
12	0.89	140	94.5
AVGS:	0.6420	133.3117	92.7917

CONDENSATE(ML): 139.30
BARO PRESS(IN HG): 30.00
METER VOLUME(CF): 31.991
ORSAT VALUES: CO2: 10.20
O2: 8.00
CO 0.00
N2: 81.80
STATIC PRESS(IN H20): 0.05
PITOT FACTOR: 0.840
SAMPLING TIME(MIN): 60
NOZZLE @IAM(IN): 0.197
STACK DIAM(IN): 24

ACFM = 9123.9522
SCFM = 8150.3441

% MOISTURE = 17.6431

GAS DENSITY = 0.9621
STACK PRESSURE(IN HG) = 30.0037
VELOCITY(FPS) = 48.4054

% ISOKINETIC = 113.0011

BAYSHORE REGIONAL SEWERAGE AUTHORITY
100 OAK STREET
UNION BEACH N J
INCINERATOR STACK
RUN NO I SULFUR 03-31-81 N J NO 42

SAMPLE POINT	DELTA P (" H20)	STACK TEMP (DEG F)	METER TEMP (DEG F)
01	0.85	140	77
02	1.00	140	77
03	1.30	140	79
04	1.20	160	80
05	1.05	120	81
06	1.00	140	86
07	1.45	140	86
08	1.10	140	89
AVGS:	1.1118	139.9583	81.8750

CONDENSATE(ML): 174.30
BARO PRESS(IN HG): 30.09
METER VOLUME(CF): 43.298
% MOISTURE = 16.2171
ORSAT VALUES: CO2: 10.00
O2: 8.20
CO: 0.00
N2: 81.80
GAS DENSITY = 0.9672
STATIC PRESS(IN H20): 0.20-
STACK PRESSURE(IN HG) = 30.0753
PITOT FACTOR: 0.8573
VELOCITY(FPS) = 65.1193
SAMPLING TIME(MIN): 60
NOZZLE DIAM(IN): 0.204
% ISOKINETIC = 107.5038
STACK DIAM(IN): 24

ACFM = 12274.3683
SCFM = 10843.1110

BAYSHORE REGIONAL SEWERAGE AUTHORITY
100 OAK STREET
UNION BEACH N J
INCINERATOR STACK
RUN NO II SULFUR 04-01-81 N J NO 42

SAMPLE POINT	DELTA P (" H20)	STACK TEMP (DEG F)	METER TEMP (DEG F)
01	0.45	140	60
02	1.15	120	60
03	1.05	120	60
04	1.00	110	60
05	1.00	120	59
06	0.90	120	60
07	1.10	120	59
08	1.22	120	59
AVGS:	0.9677	121.2240	59.6250

CONDENSATE(ML): 121.00
BARO PRESS(IN HG): 29.94
METER VOLUME(CF): 40.780
ORSAT VALUES: CO2: 8.20
O2: 10.60
CO: 0.00
N2: 81.20
STATIC PRESS(IN H20): 0.20-
PITOT FACTOR: 0.8573
SAMPLING TIME(MIN): 60
NOZZLE DIAM(IN): 0.204
STACK DIAM(IN): 24

% MOISTURE = 12.0875

GAS DENSITY = 0.9784
STACK PRESSURE(IN HG) = 29.9253
VELOCITY(FPS) = 59.6052

% ISOKINETIC = 106.5039

ACFM = 11235.0132
SCFM = 10244.8562

BAYSHORE REGIONAL SEWERAGE AUTHORITY
100 OAK STREET
UNION BEACH N J
INCINERATOR STACK
RUN NO III SULFUR 04-02-81 N J NO 42

SAMPLE POINT	DELTA P (" H20)	STACK TEMP (DEG F)	METER TEMP (DEG F)
01	1.08	10	58
02	0.90	115	58
03	1.03	115	58
04	1.10	120	57
05	0.92	120	59
06	1.12	120	60
07	1.23	120	60
08	1.20	120	62
AVGS:	1.0696	117.4946	59.0000

CONDENSATE(ML): 109.50
BARO PRESS(IN HG): 30.04
METER VOLUME(CF): 42.823
ORSAT VALUES: CO2: 8.60
O2: 10.60
CO: 0.00
N2: 80.80
STATIC PRESS(IN H20): 0.20-
PITOT FACTOR: 0.8573
SAMPLING TIME(MIN): 60
NOZZLE DIAM(IN): 0.204
STACK DIAM(IN): 24

% MOISTURE = 10.5509

GAS DENSITY = 0.9866
STACK PRESSURE(IN HG) = 30.0253
VELOCITY(FPS) = 62.0969

% ISOKINETIC = 104.9571

ACFM = 11704.6598
SCFM = 10742.0390

BAYSHORE REGIONAL SEWERAGE AUTHORITY
100 OAK STREET
UNION BEACH N J
INCINERATOR STACK
RUN NO I HYDROCHLORIC ACID 04-07-81 N J NO 42

SAMPLE POINT	DELTA P (" H20)	STACK TEMP (DEG F)	METER TEMP (DEG F)
01	1.08	120	61
02	0.90	120	65
03	1.12	125	67
04	0.92	100	70
05	1.04	85	68
06	1.04	85	72
07	1.06	90	73
08	0.95	90	75
AVGS:	1.0123	101.7617	68.8750

CONDENSATE(ML): 64.80
BARO PRESS(IN HG): 30.42
METER VOLUME(CF): 40.934
ORSAT VALUES: CO2: 8.40
O2: 10.60
CO: 0.00
N2: 81.00
STATIC PRESS(IN H20): 0.20-
PITOT FACTOR: 0.8573
SAMPLING TIME(MIN): 60
NOZZLE DIAM(IN): 0.203
STACK DIAM(IN): 24

% MOISTURE = 6.8454

GAS DENSITY = 1.0007
STACK PRESSURE(IN HG) = 30.4053
VELOCITY(FPS) = 58.7930

% ISOKINETIC = 98.0892

ACFM = 11081.9209
SCFM = 10455.3545

BAYSHORE REGIONAL SEWERAGE AUTHORITY
100 OAK STREET
UNION BEACH N J
INCINERATOR STACK
RUN NO II HYDROCHLORIC ACID 04-07-81 N J NO 42

SAMPLE POINT	DELTA P (" H20)	STACK TEMP (DEG F)	METER TEMP (DEG F)
01	1.14	90	77
02	1.18	90	79
03	1.23	90	78
04	1.10	95	81
05	1.05	120	80
06	1.18	115	80
07	1.32	110	81
08	1.18	115	81
AVGS:	1.1713	103.0586	79.6250

CONDENSATE(ML): 115.30
BARO PRESS(IN HG): 30.42
METER VOLUME(CF): 42.450
% MOISTURE = 11.3982
ORSAT VALUES: CO2: 9.00
O2: 10.00
CO: 0.00
N2: 81.00
GAS DENSITY = 0.3844
STATIC PRESS(IN H20): 0.20-
STACK PRESSURE(IN HG) = 30.4053
PITOT FACTOR: 0.8573
VELOCITY(FPS) = 63.8347
SAMPLING TIME(MIN): 60
NOZZLE DIAM(IN): 0.203
% ISOKINETIC = 96.7627
STACK DIAM(IN): 24

ACFM = 12032.2271
SCFM = 11325.7829

BAYSHORE REGIONAL SEWERAGE AUTHORITY
100 OAK STREET
UNION BEACH N J
INCINERATOR STACK
RUN NO III HYDROCHLORIC ACID 04-08-81 N J NO 42

SAMPLE POINT	DELTA P (" H20)	STACK TEMP (DEG F)	METER TEMP (DEG F)
01	0.98	120	68
02	1.04	120	70
03	1.20	120	70
04	1.06	120	71
05	0.95	120	70
06	1.15	120	72
07	1.35	120	72
08	0.75	120	72
AVGS:	1.0531	120.0000	70.6250

CONDENSATE(ML): 91.00
BARO PRESS(IN HG): 30.28
METER VOLUME(CF): 41.772
ORSAT VALUES: CO2: 9.40
O2: 9.40
CO: 0.00
N2: 81.20
STATIC PRESS(IN H20): 0.20-
PITOT FACTOR: 0.8573
SAMPLING TIME(MIN): 60
NOZZLE DIAM(IN): 0.203
STACK DIAM(IN): 24

% MOISTURE = 9.2501

GAS DENSITY = 0.9945
STACK PRESSURE(IN HG) = 30.2653
VELOCITY(FPS) = 61.2639

% ISOKINETIC = 101.4711

ACFM = 11547.6531
SCFM = 10552.1648

Form VEM-024 T

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

check with Permit Section for any updated permit. Permits have not update

DIVISION OF ENVIRONMENTAL QUALITY
BUREAU OF AIR POLLUTION CONTROL

CERTIFICATE TO OPERATE CONTROL APPARATUS OR EQUIPMENT (5 YEARS)

Permit and Certificate Number 009055 DEP Plant ID 20057

(Mailing Address)	(Plant Location)
Bayshore Regional Sewerage Authority 100 Oak St. Union Beach, N. J. 07735	Same Monmouth County

Applicant's Designation of Equipment Incinerator

N.J. Stack No. 0 4 2 No. of Stacks 0 1 No. of Sources 0 0 1

Approval 9 (Mo.) 14 (Day) 77 (Year) Start Up ____ (Mo.) ____ (Day) ____ (Year) Expiration 8 (Mo.) 25 (Day) 85 (Year)

THIS PERMANENT (5YEAR) CERTIFICATE IS BEING ISSUED UNDER THE AUTHORITY OF CHAPTER 106,P.L.1967(NJSA26:2C-9.2). THE POSSESSION OF THIS DOCUMENT DOES NOT RELIEVE YOU FROM THE OBLIGATION OF COMPLYING WITH ALL OTHER PROVISIONS OF TITLE 7, CHAPTER 27, OF THE NEW JERSEY ADMINISTRATIVE CODE.

YOU MAY BE ENTITLED TO AN EXEMPTION OF TAXATION IF YOUR EQUIPMENT IS TAXED AND IS CONSIDERED TO BE AN AIR POLLUTION ABATEMENT FACILITY. A TAX EXEMPTION APPLICATION MAY BE OBTAINED FROM THIS SECTION.

IF IT IS NECESSARY TO AMEND YOUR EMERGENCY STANDBY PLANS, PLEASE CONSULT WITH THE APPROPRIATE FIELD OFFICE. (SEE OTHER SIDE)

QUESTIONS ABOUT THIS DOCUMENT SHOULD BE DIRECTED TO THE PERMITS AND CERTIFICATES SECTION AT 609 - 292 - 6716 OR THE ADDRESS BELOW.

NOTE: This document must be readily available for inspection at the source location.

Approved by: William F. Hart
Supervisor
Permits & Certificates Section

N.J. Department of Environmental Protection
Bureau of Air Pollution Control
CN-027
Trenton, N.J. 08625

AUG 29 1980

NJ42

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

APPLICATION FOR CERTIFICATE TO OPERATE CONTROL APPARATUS OR EQUIPMENT

TO: New Jersey State Department of Environmental Protection
·Bureau of Air Pollution Control
P. O. Box 1390
Trenton, New Jersey 08625

Date September 2, 1971

Use Instructions, Air-D-14

Sec. A

1. Reference Permit No. ~~5365~~ 6249 SIC No. -
2. Full Business Name Bayshore Regional Sewerage Authority
3. Address of equipment and/or control apparatus:

No.	Street	Municipality	County
Oak Street		Union Beach	Monmouth

4. Location on premises (Bldg., Dept., area, etc.) Plant Control Building

Sec. B

1. Identify process equipment Municipal Sewage Solids Incinerator with Wet Scrubbing of Exhaust Gases
2. List air polluti on control apparatus
3. Date equipme nt to be put in use ~~August, 1973~~

Sec. C

Plant Contact:

Name (Print or Type)	Telephone No.
Andrew L. Simonsen	739-1095
Title	**Telephone Extension**
Chairman	

This application is submitted in accordance with the provisions of N.J.S.A. 26:2C-9.2, and to the best of my knowledge and belief is true and correct.

Bayshore Regional Sewerage Authority

915 Union Avenue

Union Beach, New Jersey

Mailing Address, Zip

A. Simonsen

Signature – all copies

Andrew L. Simonsen

Name (Print or Type)

Chairman

Title

DO NOT WRITE BELOW

CERTIFICATE TO OPERATE CONTROL APPARATUS OR EQUIPMENT

TEMPORARY DURATION	5 YEAR DURATION
Certificate No.	Certificate No. CT 9055
Date Approved	Date Approved Aug 26, 1975
Expiration date	Expiration date Aug 26, 1980
Approved by: *Supervisor, Permits & Certificates*	Approved by: John Dowe *Supervisor, Permits & Certificates*

M6042

Submit original and seven (7) copies

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

SEP 8 1971

N.J. STATE DEPT. OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR POLLUTION CONTROL

APPLICATION FOR PERMIT TO CONSTRUCT, INSTALL OR ALTER CONTROL APPARATUS OR EQUIPMENT

TO: New Jersey State Department of Environmental Protection
Bureau of Air Pollution Control
P. O. Box 1390
Trenton, New Jersey 08625

Date September 2, 1971

Use instructions, Air-D13

Sec. A

1. Full Business Name Bayshore Regional Sewerage Authority
2. Address of equipment and/or control apparatus:

No.	Street	Municipality	County
	Oak Street	Union Beach	Monmouth

3. Location on premises (Bldg., Dept., area etc.) Plant Control Building
4. Nature of Business Municipal Wastewater Collection and Treatment SIC No. —

Sec. B

1. [X] New process equipment and new air pollution control apparatus
   [ ] New air pollution control apparatus on existing process equipment
   [ ] New process equipment with no control apparatus
   [X] Other: Construction - Equipment & Associated Control Apparatus
2. Prior permit numbers covering this installation. Specify. 5365
3. Estimated starting date January, 1972 Estimated completion July, 1973

Sec. C

1. Description of operation Incineration of solids removed during treatment of municipal wastewater and wet scrubbing of exhaust gases.
2. Identify process equipment See attachments for details.
3. Raw materials (names) various organic and inorganic sewage solids; fuel oil; and air

   Total pounds per hour 1500 Total pounds per batch —
4. Operating procedure: 16(or 24) 5(or 3)
   [X] Continuous: — hrs. per day — days per [X] week [ ] month
   [ ] Batch: — hrs. per batch — Batches per [ ] day [ ] week

Sec. D

Physical and chemical nature of air contaminants which must evolve from operation and be emitted into the open air:

AIR CONTAMINANTS	AMOUNTS OF CONTAMINANTS	
	With Control Apparatus	Without Control Apparatus
Particulates	less than 0.05 grains per SCF (12% CO_2)	more than 0.1 gr/SCF
Smoke	less than No.1 Ringelmann	more than No. 1 Ringelmann
Unburned Waste and Ash	Not Visible	Visible
Odors	None	Noticeable

(Continue on reverse side)

Sec. E

1. Describe air pollution control apparatus The unit is a commercial wet venturi scrubber with recirculated ash slurry. Accumulated ash is removed from system with separator and cooling water is returned to plant flow for waste treatment.
2. Efficiency of control apparatus: _____ %
3. Height of discharge above ground 38 ft.
4. Distance from discharge to nearest property line 285 ft.
5. Volume of gas discharged into open air 6,613 cu. ft. per min. at stack conditions
6. Exit linear velocity at point of discharge 2515 ft. per minute at stack conditions
7. Temperature at point of discharge 120 °F
8. Will emissions comply with existing local requirements? Yes
9. Initial cost of control apparatus $ 25,000.00
10. Estimated annual operating cost $ 500.00

This application is submitted in accordance with the provisions of N.J.S.A. 26:2C-9.2, and to the best of my knowledge and belief is true and correct.

Bayshore Regional Sewerage Authority
915 Union Avenue
Union Beach, New Jersey
Mailing Address
Zip Code

Signature – all copies
Andrew L. Simonsen
Name (Print or type)
Chairman
Title
739-1095
Telephone No.

DO NOT WRITE BELOW

PERMIT TO CONSTRUCT, INSTALL OR ALTER CONTROL APPARATUS OR EQUIPMENT

Application for permission to construct, install or alter the equipment and/or control apparatus as set forth above is APPROVED.

Date 8/14/1971
PERMIT NO. [illegible]

Approved by: [signature]
Supervisor, Permits & Certificates

Submit original and three (3) copies

M5379