

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION I

DATE: June 24, 1994

SUBJ: Executive Summary: Air Compliance Status of Wheelabrator,  
Claremont New Hampshire facility

FROM: <sup>WCC</sup> William A. Osbahr, Environmental Engineer  
Stationary Source Compliance Section

TO: Files

I. Background

The purpose of this executive summary is to highlight the general air compliance status and enforcement activities surrounding Wheelabrator Claremont (WC) municipal solid waste incinerator. The need for this summary is required to answer an executive correspondence sent to Region 1 regarding WC. The executive correspondence has been referred to the Region since a constituent residing in New Hampshire has written to the office of the President of the United States. The constituent asked for assistance in looking into the compliance/enforcement activities surrounding this facility.

The constituent claims that EPA "has no intention of inspecting this facility and forcing it to function within the scope of the permits issued for its existence." I have performed an in depth review of WC's air compliance history in the EPA database, EPA files, and EPA inspection reports. I have also contacted the New Hampshire Department of Environmental Services (DES) to develop insight as to the source's compliance status regarding state regulations and its permit. After this review, I have determined that this source appears to be operating within compliance with its air permit, the State Implementation Plan (SIP), and the New Source Performance Standards (NSPS). I have also determined that both the DES and the state have monitored the compliance of this facility through annual inspections, quarterly emission reporting, and periodic stack testing.

The constituent has stated a desire to have WC separate metals from its ash as well as clean out metals from its ash landfill. It is important to note that there are no state or federally enforceable air regulations which require the action he has cited. It is my understanding that the Office of External Affairs has circulated this Executive Correspondence to other media in Region 1. Therefore, the issues covered in this summary will only cover applicable air pollution regulations.

## II. Description of Facility

TWC is a municipal waste combustor facility which generates 4.5 MW of electricity. The source consist of two mass burn incinerators. Each unit is capable of burning 100 tons/day of trash from 28 different towns and districts. A more complete and technical description can be found in the inspection reports and the permit contained in the Appendix A of this executive summary.

## IV. Description of Air Compliance/Enforcement Activities

WC is subject to regular inspections by the DES. In the last four years DES inspected the source on June 30, 1990, June 6, 1991, September 19, 1991, February 2, 1992 and May 5, 1993. All of these inspections showed the source to be in compliance with their permit, the applicable state regulations, and NSPS.

A stack test was required by the state in June 1993 in order to determine WC's compliance with the DES's Ambient Air Limits. The test results and subsequent modelling showed the source to be in compliance with Ambient Air Levels.

EPA inspected this facility on September 20, 1990 by Engineer Donald Dahl. From his inspection and subsequent analysis he found the facility to be in compliance with its applicable air pollution requirements.

On June 10, 1994, I contacted DES regarding any potential non-compliance issues at the source. Jack Glenn, coordinator of enforcement, explained that DES pays close attention to this facility and its operations. He explained that the plant is operated in an efficient manner and plant personnel play close attention to compliance issues. DES has plans to inspect this facility early in the summer but at this time they do not have an exact.

Clearly it can be seen that there has been, and will continue to be, a substantial amount of air compliance/enforcement activities regarding this facility. Since reviewing this facility's compliance status, I have compiled the following documents contained in Appendix A:

WC's State issued Permit to Operate

EPA's December 17, 1990, Inspection Report

DES's January 21, and February 18, 1992, Inspection Report

DES's May 12, and May 17, 1993, Inspection Report

DES's March 4, 1994, Ambient Air Impact Analysis Modelling

V. Summary

This source undergoes an adequate amount of scrutiny from both EPA and DES in order to ensure its compliance with applicable air pollution regulations. DES has a grant agreement to maintain its enforcement program within EPA standards. DES administers an effective and efficient air enforcement program in New Hampshire. Its air inspectors are all licensed professional engineers. Past EPA/State program oversights show the high standards which the DES maintains in its diligent enforcement program. I feel that the constituents claims of lack of enforcement against WC do not apply to EPA or DES's air enforcement programs.

File

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION I

DATE: December 17, 1990

SUBJ: Industrial Survey - Wheelabrator-Claremont,  
Claremont, New Hampshire

FROM: Donald Dahl, Environmental Engineer *DJD*  
Control Technology and Compliance Section

TO: Files

I. Background Information

Date of Inspection: September 20, 1990

Weather Conditions: 60's partly cloudy

Source Contact: Chuck Conklin; Operations Supervisor  
(603) 542-8764

Mailing Address: RFD 2, Box 298  
Claremont NH 03743

Location: See attached map

II. Purpose of Inspection

Due to high visibility and potential harm, municipal waste combustors should be inspected on a frequent basis. In FY'90 I targeted both of the large municipal incinerators in New Hampshire for inspections. Wheelabrator Claremont is one of these incinerators.

III. Process Description

Wheelabrator operates two mass burn incinerators which generate 4.5 MW of electricity per hour. Each unit burns approximately 100 tons/day of trash from 28 different towns and districts.

a. Incinerator

Units Nos. 1 and 2 are identical in the practical sense. Each one consists of four zones. Zone No. 2 is usually the combustion zone. Sometimes the burn will take place in zone No. 3 if the moisture content of the trash is high.

The units are fed using front end loaders to keep a 15 foot deep pit filled. Some metals and batteries are removed by workers in the tipping room. However removal of metals and batteries is mainly accomplished at the town's transfer

areas.

After zone 2, the volatile gases are burned in zones 3 and 4. The combustion gases then pass through the superheater, evaporator, and economizer. Unit No. 1 was being retrofitted by adding additional sections to the economizer at the time of inspection.

To control odors combustion air is taken from the tipping floor and a slight (0.10-0.25 in) vacuum is maintained on the boiler.

Fly ash from superheater and evaporator sections is reinjected into the incinerator. Fly ash from economizer and baghouse is mixed with bottom ash and land filled in Newport, New Hampshire.

b. SO<sub>2</sub> control

To control SO<sub>2</sub> and HCL emissions, dry lime is injected counter currently into the exiting gas stream. A venturi is used to increase turbulence; thereby, enhancing the interface of acid gases and lime. New Hampshire has requested that Wheelabrator use 7.1 lbs lime/1000 lbs of steam produced. This amount was derived from initial stack testing. Unlike Concord, Claremont has not experienced lime clogging. The amount of lime is not measured on a continuous basis. A sonar reading is taken once per day to determine the amount used.

c. Particulate Control

To control particulate matter emissions, this facility utilizes a 3 module fabric filter. Each module contains 225 bags. The fabric filter was designed to operate on two modules according to Mr. Conklin. This allows the facility to continue operations when a module is taken off line for repairs. The gas enters module No. 3 first.

A pressure drop of 3-5 inch w.g. across the fabric filter is desired for proper removal. A stack gas temperature around 380 °F is desirable for heavy metal collection.

Leaks due to bag failure are detected by two methods: 1) increase opacity, 2) cool air on diaphragm. The diaphragms are manually checked once per shift. The bags are inspected for wear during every shutdown. Bag lifetime is around 1.5-2 years.

Bags are cleaned every 400 seconds using pulse air cleaning duration of 20 seconds.

4. Inspection

I arrived at the facility at 12:05. Zero percent opacity was noted.

As previously stated, Unit No. 1 was shutdown for modifications. Unit No. 2 was operating at full load (26,000 lbs/hr of steam). Operating data can be found in Table I. According to literature, this plant was operating within usual design specs (pressure drop of 3-5 inches w.g. across the baghouse, stack temperature of 380 °F, and excess oxygen at 6-10 %).

#### 5. Compliance

The Ard has issued two enforcement actions to Claremont. On May 4, 1989, this facility was cited for operating without a proper CO monitor. The CO monitor had failed relative accuracy tests on 5/28-6/6/87 and 2/15-2/19/88.

On May 17, 1990, unit No. 1 and unit No. 2 were both cited for exceeding CO limits in their permits.

#### Temporary Permit Nos. TP-C-52 and TP-C-53

On July 15, 1986, the ARD issued two Temporary Permits to SES Claremont for the construction of two MSW incinerators.

The permits contain limits on CO, NOx, SO<sub>2</sub>, opacity, TSP, HCL, dioxin, and furan. (See permits in file)

All of the above were tested during stack testing on 5/28 - 6/6/87 and 7/14-7/17/87. Source tested in compliance with all limits.

In addition to the stack testing, Claremont was required to continuously measure CO emissions. During my inspection the CO monitor was registering 15 ppm. This equates to less than 10% of the standard.

Opacity, limited to 20%, was showing 2% on the COM. A VE showed 0%.

#### NSPS Subpart E

This Subpart has a particulate limit which is less stringent (0.08 gr/dscf compared to 0.02 gr/dscf in its federally-enforceable permit).

#### 6. Conclusion

This facility appears to be well operated and has demonstrated compliance with its permit except for CO emissions during the past winter. Data now shows compliance; however, 1991 winter data will be the indicator if the modifications lowered CO emissions. CO emissions are always higher during the winter due to poorer fuel.

Table I  
Operating Data Unit No. 2

Steam Flow (lbs/hr)	26,000
Electricity Generated (MW)	1.6
Excess O <sub>2</sub>	8.5
Baghouse delta P (in. w.g.)	
Module 3	- 4.4 - -
Module 2	4.0
Module 1	4.0
Furnace Temperature (°F)	1800-2000
Steam Pressure (psig)	600
Steam temperature at turbine inlet (°F)	706
CO (ppm)	15
Opacity (% - COM)	2.1
Baghouse Temperature (°F)	386



# Permit to Operate

Permit No: PO-C-363  
County: Sullivan  
Permit Fee: \$900

*Unit # ' PO-C-362  
is identical*

This certifies that:  
**Wheelabrator Claremont Company, L.P.**  
has been granted a Permit to Operate for:  
**Unit #2 Von Roll MSW Incinerator, Grissom Lane, Claremont, NH**

a device which emits air pollutants into the ambient air as set forth in equipment registration forms (ARA 1-6), filed with this Division under the date of February 6, 1986 in accordance with RSA 25-C of the New Hampshire laws of 1979, (amended 1981). This permit is valid until March 31, 1995. Permit renewal is subject to Division requirements and must be accompanied by the appropriate permit renewal fee.

This permit is valid provided the device is operated in accordance with all the legally enforceable conditions specified in items 1-5 below:

1. The emissions of air pollutants are limited by the New Hampshire Code of Administrative Rules CHAPTERS Env-A 100-1300.
2. The maximum operating rate is limited to: See Attached Sheets.
3. The operating hours of the device are limited to: 24 hours/day, 365 days/yr.
4. The opacity of emissions may not exceed 20% based on three minute averages.
5. Other conditions: See attachment.  
The owner or operator of the device covered by this permit shall notify the Director 30 days prior to any proposed change to the physical structure or operation of the device covered by this permit which increases or decreases the amount of a specific air pollutant emitted by such device or which results in the emission of any additional air pollutant. The change shall not take place until a new permit application is submitted and acted upon by the Director pursuant to Env-A 600.

Any unavoidable malfunction, breakdown, or upset of the device, which results in emissions greater than those stipulated in this permit, must be reported to the Division within 8 working hours of the occurrence.

This permit (or a copy) should be appropriately displayed near the device for which it is issued.  
Concord, NH April 1, 1992

*Dennis R. Furdella*  
Director, Air Resources Division

A. Facility Operation

1. All equipment, facilities, and systems installed as used to achieve compliance with the terms and conditions of this Permit to Operate shall at all times be maintained in good operating order and be operated as efficiently as possible so as to minimize air pollutant emissions.

B. Operating Limitations

1. Maximum charge rate is 9,583 lb/hour of MSW based upon type 2 waste and 4500 BTU/lb at a capacity of 43.1 MMBTU/hour. The MSW can be a mix of types 0, 1, 2, 3 and 6 wastes.
2. Maximum of 8760 hours per year at 8333 lb/hour of type 2 waste as defined above.
3. Steam rate is limited to a maximum of 27,500 lb/hour at 655°F and 605 psig or the maximum rate as established during emission compliance tests.
4. Maximum municipal solid waste throughput is 36,500 tons per year.
5. The incineration shall meet Good Engineering Practice and comply with the Division's "Dioxin Emission Control Policy Guideline for Incinerators and Resource Recovery Facilities" approved April 17, 1986 by the New Hampshire Air Resource Commission.
6. No toxic/hazardous wastes shall be burned that are subject to the Resource Conservation and Recovery Act (RCRA).
7. During bottom or fly ash removal/handling, no fugitive dust is to be allowed and all fires must be burned out or extinguished.
8. The flue gas bypass shall be used for emergency shut down when the following occur:
  - a. high temperature flue gas.
  - b. high pressure flue gas.

9. Operating limits and parameters shall be established in reference to SES Claremont L.P. correspondence dated June 20, 1986 "Compliance with the HCL Reduction Standard".
10. During incinerator startup the baghouse shall not be bypassed.
11. A surrogate thermocouple shall be located in the incinerator above the combustion zone to provide continuously recorded temperatures.
12. An auxilliary fuel burning system shall be utilized to maintain the temperatures in the combustion zone (Condition B 5).
13. Other operating conditions may be placed at a later date.

C. Emissions

1. The particulate emission rate is limited to 0.02 grains per dry standard cubic foot (DSCF) corrected to 12% carbon dioxide.
2. The sulfur dioxide (SO<sub>2</sub>) emission rate is limited to 26.5 pounds per hour.
3. The nitrogen oxides (NOX) emission rate is limited to 26.5 pounds per hour.
4. The carbon monoxide (CO) emission rate is limited to the following emission limitations:
  - a. Twelve (12) pounds per hour which is equivalent to the following stack gas concentration (ppmdv) corrected to 7% oxygen (3 hour rolling average):

<u>Steam Production (lb/hour)</u> <u>(3 hour rolling average)</u>	<u>CO (ppmdv at 7% O<sub>2</sub>)</u> <u>(3 hour rolling average)</u>
0-18,000	270
19,000	262
20,000	254
21,000	245
22,000	237
23,000	229
24,000	221
25,000	212
26,000	204
26,500	200

C. 4. (continued)

- b. One hundred (100) ppm<sub>dv</sub> corrected to 7% oxygen, 4 day rolling average, as specified in the "Dioxin Emission Control Policy", approved by the N.H. Air Resources Commission, 4/17/86.
- c. Four hundred (400) ppm<sub>dv</sub> corrected to 7% oxygen, 8 hour rolling average as specified in the "Dioxin Emission Control Policy".
5. The hydrogen chloride (HCL) emission rate is limited to 7.5 pounds per hour and the device shall comply with Env-A 1201.071.
6. The dioxin and furan emission rates are limited to  $3.4 \times 10^{-7}$  TCDD and  $4.75 \times 10^{-6}$  TCDF pounds per hour per unit. These emission rates may change if and when new emission and ambient limits are provided by USEPA or by others and adopted by the Division.
7. The opacity of the emissions shall not exceed 20% based on three minute averages.

D. Air Pollution Control Equipment

Wheelabrator Claremont Co. shall continuously operate and maintain the following air pollution controls to minimize emissions.

1. Each incinerator shall be equipped with a baghouse for the control of particulate matter.
2. Each incinerator shall be equipped with dry lime injection system for the control of HCL and acid gas emissions.
3. Each incinerator shall be equipped with a thermocouple system for the control of dioxin and furan emissions.

**E. Malfunction**

The Division shall be notified by telephone within 8 working hours following the failure of air pollution control equipment, or of a process to operate in a normal manner which results in an increase in emissions above any allowable limit stated in Condition C. In addition, the Division shall be notified in writing within fifteen (15) days of any such failure. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of the initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed under Condition C and the methods utilized to restore normal operations. Compliance with this malfunction notification provision shall not excuse or otherwise constitute a defense to any violations of this permit or of any law or regulations which such malfunction may cause.

**F. Emission Tests**

Compliance stack testing shall be required by the Division as necessary to ensure that the emission limits set forth in this permit are not exceeded.

1. The Division shall be notified in writing at 30 days prior to emission test to allow time for the development of an approvable performance test plan and to arrange for an observer to be present at the test.
2. For performance test purposes, sampling ports, platforms and access shall be provided by Wheelabrator Claremont Co. on the incinerator exhaust systems in accordance with 40 CFR 60.8(E).

**G. Continuous Emission Monitoring**

1. Wheelabrator Claremont Company shall maintain and operate the following continuous monitoring systems in the boiler and/or the exhaust stack:
  - A. A continuous emission monitoring/recording (CEM) system to measure stack opacity, O<sub>2</sub>, CO, and combustion temperatures. The CEM system shall conform to all the requirements in Env-A 802.09. The temperature system shall meet the Division's approval
  - B. A hydrogen chloride monitor/recording (CEM) system shall be installed at a later date when the Division determines when an instrument is available and certifiable

G. Continuous Emission Monitoring (continued)

- C. NOX and SO<sub>2</sub> monitor/recorders (CEM) shall be required if or when it becomes necessary for compliance.
2. Wheelabrator Claremont Company shall maintain a file for all measurements, including continuous monitoring systems performance evaluation; all continuous monitoring systems or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by Env-A 802.09 and Env-A 802.10 in a permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurement, maintenance, reports and records.
3. Wheelabrator Claremont Company shall submit a written report of all excess emissions to the Division for every calendar quarter as specified in Env-A 802.09. In addition, lime usage data shall be reported and these data shall include the following:
  - A. Monthly refuse processed (tons).
  - B. Steam produced (pounds).
  - C. Lime used (tons).
  - D. Pounds of lime used per 1000 pounds of steam produced.
4. Opacity excess emissions shall be defined as any air pollutant for a period or periods aggregating more than three minutes in any one hour which exhibits 20% opacity or greater.
5. For emission limits set forth in Condition C2, C3, C4a, C5 and C6 a gaseous excess emission shall be defined as any three hour period during which the average emissions as measured by the continuous monitoring system exceed the specified limit.
6. Excess emissions indicated by the CEM system shall be considered violations of the applicable emission limit for the purposes of this permit.

H. Prevention of Significant Deterioration (PSD)

The facility emissions of criteria pollutants shall not exceed 250 tons per year. If the emissions of any criteria pollutant (SO<sub>2</sub>, NOX, CO, HC and particulates) are greater than 250 ton per year PSD shall apply to the facility.

Wheelabrator /Claremont Company, L.P.  
Unit #2 Von Roll Incinerator  
PO-C-363

i. Stack Criteria

The minimum stack height will be 150 feet above ground level and the flue diameters shall be no greater than 2.6 feet.