



COMMONWEALTH OF MASSACHUSETTS  
 EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION  
 WESTERN REGIONAL OFFICE

ARGEO PAUL CELLUCCI  
 Governor

TRUDY COXE  
 Secretary

DAVID B. STRUHS  
 Commissioner

April 17, 1998

Mr. Robert Vilsack, General Counsel  
 Medusa Minerals Co. - Lee  
 P.O. Box 5668  
 Cleveland, Ohio 44101

Re: BAPCD - Lee  
 Medusa Minerals Co. - Lee  
 Regulation 310 CMR 7.19(12)  
 Application # 1-E-94-110  
 Transmittal # 96492  
 NOx RACT Emission Control Plan  
 DOCKET NOS. 96-126; 96-127  
 EMISSION CONTROL PLAN  
 FINAL APPROVAL

Dear Mr. Vilsack:

The Department of Environmental Protection, Bureau of Waste Prevention, Western Regional Office ("Department"), has completed its review of the Emission Control Plan ("ECP") submitted on October 25, 1994, for the proposed implementation of Reasonably Available Control Technology ("RACT") for nitrogen oxides generated from kiln #1 at Medusa Minerals Co. - Lee ("Medusa", formerly known as Lee Lime Corporation) lime manufacturing facility ("Facility") located at 110 Marble Street, Lee, Massachusetts. The ECP was submitted in accordance with Regulation 310 CMR 7.19(3) RACT for Sources of nitrogen oxides ("NOx") as contained in 310 CMR 7.00 of the Air Pollution Control Regulations ("Regulations") adopted by the Department pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142A - 142M.

*This ECP Approval supersedes the ECP Approval issued by the Department on September 12, 1996, in its entirety. This document is an attachment to the Settlement Agreement executed by the Department and Medusa on May 14, 1998*

The Department has determined that Medusa's rotary kiln # 1 is subject to Regulation 310 CMR 7.19(12) (Miscellaneous RACT) because of its potential to emit more than 25 tons per year of NOx. This regulation requires any person who owns, leases, operates, or controls an emission unit subject to the Miscellaneous RACT category to submit a NOx RACT ECP, and have the ECP approved by the Department pursuant to 310 CMR 7.19 (3). The emission control plan and the subsequent plan approval issued by the Department under 310 CMR 7.19(12) must also be approved by the U.S. Environmental Protection

Agency ("EPA") as a revision to the Massachusetts State Implementation Plan ("SIP").

The Department hereby approves Medusa's NOx RACT Emission Control Plan; a stamped approved copy of the NOx RACT ECP application form is enclosed.

### I. Process Description

#### Kiln (Miscellaneous RACT)

Kiln #1 is a Kennedy rotary lime kiln with a 40 MMBtu/hour energy input capacity. Crushed limestone that may have been passed through a dryer and a screen is transferred and preheated in the preheater. The preheated limestone is transferred to the rotary kiln where it is retained to complete its reaction to quicklime. The kiln length is shorter than typical rotary kilns and requires operation at higher temperatures than found at longer kilns to produce a similar quality quicklime product. The quicklime is then transferred to the deheater for cooling and later transferred to a storage tank.

Kiln #1 is equipped and approved to burn coal, natural gas, #2 oil, or #6 oil. Kiln #1 starts up with natural gas and uses natural gas intermittently to maintain temperature. The coal is delivered to kiln #1 through a hopper which feeds a Raymond roller mill. The coal is pulverized in the roller mill. Air bled from the quicklime deheater heats the coal to 150-180°F. The coal is fired into the kiln and ignited by a natural gas pilot. Natural gas is burned with the coal during startup until the temperature of the kiln is sufficiently high to sustain the combustion reaction. When using #6 oil, the oil is heated and delivered to a jet kiln burner. Both the coal and #6 oil burners are positioned so that the flame tip contacts the moving limestone bed. System controls include a limestone feed regulator to maintain a set temperature in the kiln and a coal feed regulator. Temperature sensors are located in the kiln combustion chamber, kiln exhaust, preheater, deheater and baghouse. All temperatures are automatically recorded, except for the combustion chamber temperature, which has been recorded by hand each shift. Medusa has previously installed a temperature recorder for the combustion chamber; the existence and operation of this recorder is a condition of this ECP approval. Alarms are present to inform the operator if temperatures exceed maximum limits in the kiln or in the Raymond roller mill.

**Table I**  
**Kiln Description**

Type	Rotary
Manufacturer	Kennedy
Date in Service	1948
Max. Heat Input (MMBtu/hr)	40
Prod. Capacity (tpd quicklime)	100

**Burner**

Type	Hauck Mfr. Co. cust. kiln jet
Number per Kiln	1
Primary Fuel	2.5% S coal
Max. Firing Rate	2000 lb/hr
Secondary Fuel	2.2% S #6 oil
Max. Firing Rate	260 gal/hr

**I.D. Fan**

Manufacturer	Kennedy Van Saun Company
Model No.	84 Special Simplex

**Baghouse**

Type	8 Zone Pulse Jet Baghouse
Manufacturer	Fuller Company, Catasauqua, PA
Cloth Area	8000 square feet
Air/Cloth ratio	5:1
Bags	Nomex needled scrim supported felt, 5" dia x 8', max temp: 425°F
Pressure Drop	6" w.c.
Capacity	40,000 acfm, 400°F

Medusa operates the kiln at its maximum rated production capacity of 40 million Btu per hour. Operators feed as much coal to the kiln as will burn efficiently with the inlet combustion air at maximum flow. Limestone feed to the kiln is adjusted to produce the desired quality quicklime.

included in the NOx RACT evaluation and determined by Medusa not to represent RACT:

Post Combustion Technologies

	<u>Reason</u>
selective catalytic reduction (SCR)	Technically infeasible
selective non-catalytic reduction (SNCR)	Technically infeasible

Combustion Modifications

flue gas recirculation	Excessive cost per ton of pollutant removed
low NOx burners	Technically infeasible
fuel switching (coal to #6 oil, #6 oil to #2 oil)	Excessive cost per ton of pollutant removed

Medusa has concluded that current operation procedures represent RACT.

Based upon its review of Medusa's application, the Department has found that the modifications proposed by Medusa and referenced in this FINAL APPROVAL will achieve a level of control consistent with 310 CMR 7.19(12) requiring the implementation of RACT at the facility. The Department hereby grants FINAL APPROVAL for the installation described herein and in the NOx RACT ECP submittal pursuant Regulation 310 CMR 7.19(12), subject to the following provisions:

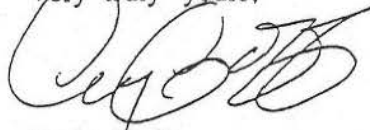
IV. Operation Limits

1. Medusa shall limit the NOx and CO emissions from kiln #1 to no more than the emissions specified in Table III listed above in this Approval, based on a three (3) hour average as specified for EPA test methods for NOx and CO used to verify compliance.
2. Medusa shall maintain kiln #1 temperature at or below 2250°F when burning coal, based on a 7 day rolling average. This averaging time shall be used in the interim until 12 months of temperature data is collected using a required data logger and until a final maximum temperature and averaging time is issued by the Department (see provision 5).
3. Medusa shall at any future time, upon request from the Department, perform stack testing on kiln #1 to demonstrate compliance with the emission limits established herein. Stack testing shall be conducted in accordance with the appropriate EPA test methods, as contained in 40 CFR 60, Appendix A.

V. Monitoring, Recordkeeping and Reporting Requirements

4. Medusa shall operate and maintain a continuous temperature monitor, recorder and data logger for kiln #1.
5. Within 30 days after collection of a full year of data, Medusa shall submit a copy of the first 12 months of temperature data to the Department collected pursuant to paragraph IV(2) above. The submittal shall include a proposed maximum temperature and averaging time and supporting rationale.

Very truly yours,



Craig Goff  
Permit Section Chief  
Bureau of Waste Prevention  
Western Region

CCG/ccg  
Enclosures  
Medusa/ECP

cc: Don Squires, Walter Sullivan, DEP-DAQC, 1 Winter Street, Boston, MA 02108  
Lee Board of Health  
EPA



Massachusetts Department of Environmental Protection  
Bureau of Waste Prevention - Air Quality

# BWP AQ 08-A

Application for Approval of Emission Control Plan (ECP): Oxides of Nitrogen (NO<sub>x</sub>)

96492

Transmittal#

Facility ID (if known)

## A Facility Information

**INSTRUCTIONS:**  
All questions and items in this form must be completed. If a particular item is not relevant, it should be indicated as such with a brief explanation where necessary. DO NOT LEAVE ANY QUESTIONS UNANSWERED OR INCOMPLETE. Incomplete submittals will result in processing/approval delays:

1. Facility Name  
Lee Lime Corporation
2. Street Address  
110 Marble Street  
P.O. Box 710
3. City/Town  
Lee
4. ZIP Code  
01238
5. Mailing Address if different from above:  
P.O. Box 710  
Lee, MA 01238
6. Telephone Number  
(413) 243-0053
7. FAX Number  
(413) 243-4323

RECEIVED

DEP  
Western Region

## B Applicability (See Regulation 310 CMR 7.19(3))

This form is to be used by the owner, leaser, operator or controller of a facility applicable to an emission or design standard contained in 310 CMR 7.19. This completed form and necessary documentation will serve as the Emission

Control Plan (ECP) submittal required by 310 CMR 7.19(3). YOU ARE ADVISED TO OBTAIN A COPY OF THE REGULATIONS FOR DETAILS ON STANDARDS AND ECP SUBMITTAL REQUIREMENTS.

## C Additional Items

In addition to completion of this form, the following items must also be included, when applicable, to satisfy the requirements of a complete application.

- Manufacturer's Specifications and Brochures for Process Equipment, Add-on Air Pollution Control Equipment, Fans/Blowers, etc.
- Supplemental Forms for Add-on Air Pollution Control Equipment, if applicable.
- Schematic Process Diagram - Dimensional plan showing process equipment, hoods, duct work, dampers, fans, temperature/pressure sensing devices, other monitors, air pollution control equipment, and all vents, by-passes or discharges to the atmosphere.
- Calculations - Detailed calculation sheets showing the manner in which pertinent quantitative data, including emission calculations, were determined.



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Application for Approval of Emission Control Plan (ECP): Oxides of Nitrogen (NO<sub>x</sub>)

96492

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Facility ID (if known)

## D Equipment Description

Complete for any piece of equipment at the facility which emits NO<sub>x</sub> (use additional pages if necessary):

	Unit 1	Unit 2	Unit 3
1. Equipment/process line I.D.#	#1	#2	#8
2. a. Is unit subject to a NO <sub>x</sub> RACT?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
b. If yes, which regulation (see section N)	7.19(12)	7.19(12)	7.19(12)
4. Type of equipment: (boiler, oven, turbine, diesel, etc.)	kiln	dryer	kiln
5. Manufacturer	Kennedy	McDermott	Vulcan
6. Model number	rotary	rotary	rotary
7. a. Maximum energy input capacity (MMBTU/HR)	40	40	40
b. For internal combustion engines only: energy conversion efficiency of unit (10 <sup>6</sup> BTU/brake hp-hr)	N/A	N/A	N/A
8. Date of installation	1948	1972	1969
9. Modifications since installation:			
a. type of modification	--	--	--
b. date of modification	--	--	--
10. DEP Air Quality approvals (if any):			
a. approval number	N/A	N/A	N/A
b. date of approval	N/A	N/A	N/A
c. modifications to approval (date and approval number)	N/A	N/A	N/A

## E Fuel Data

	Unit 1	Unit 2	Unit 3
1. Primary fuel:			
a. type and grade	coal	hot oil #4	coal
b. sulfur content (% by weight)	2.5	1.5	2.5
c. gross heating value	13,000 BTU/lb.	146,000 BTU/gal.	13,000 BTU/lb.
d. nitrogen content (% by weight)	1.1%	0.6%	1.1%
2. Secondary, standby or auxiliary fuel:			
a. type and grade	hot oil #6	nat. gas	hot oil #6
b. sulfur content (% by weight)	2.2%	0%	2.2%



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Application for Approval of Emission Control Plan (ECP): Oxides of Nitrogen (NO<sub>x</sub>)

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Transmittal

Facility ID (if known)

## E Fuel Data (cont.)

	Unit 1	Unit 2	Unit 3
c. gross heating value	150,000 BTU/gal.	1050 BTU/ft <sup>3</sup>	150,000 BTU/gal.
d. nitrogen content (% by weight)	0.92%	0%	0.92%

### 3. Historical fuel usage:

Provide the following information on usage of primary and auxiliary fuel use in each of the last two years. (Indicate year and gallons per year, pounds per year, cubic feet per year, etc.):

a. last year: (1993)			
(i) primary fuel	2783 tons	22,802 gal.	0
(ii) secondary fuel	0	106,602 ccf	0
b. year previous to last year: (1992)			
(i) primary fuel	262,087 gal	41,107 gal	0
(ii) secondary fuel	473 tons	128,000 ccf	0

## F Burner Data

Complete for each piece of equipment at the facility which emits NO<sub>x</sub> (use additional pages if necessary):

	Unit 1	Unit 2	Unit 3
1. Burner manufacturer	Hauck Manuf. Co.	Genco	Hauck Manuf. Co.
2. Model number	custom kiln jet burner	FP-40 flamepacer	custom kiln jet burner
3. Type of burner	air atomizer	air atomizer	air atomize
4. Date of installation	8/82	7/72	8/69
5. Number of burners in each combustion unit	1	1	1
6. Maximum fuel firing rate (all burners firing): (indicate gal/hr, lbs/hr, cubic feet per hour, etc)	1 ton/hr 260 gal/hr	260 gal/hr	1 ton/hr 260 gal/hr





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Application for Approval of Emission Control Plan (ECP): Oxides of Nitrogen (NO<sub>x</sub>)

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Transmittal#
Facility ID (if known)

## G NO<sub>x</sub> Emission Rates and Standards

Emission rates and standards should be expressed in units of lb/10<sup>6</sup> BTU; PPM at a given O<sub>2</sub> exhaust concentration; g/hp-hr; or other appropriate units as indicated in regulations or dictated by equipment.

1. Indicate NO<sub>x</sub> emission rate for each fuel combusted, in each unit, as the units currently operate (i.e. before modifications to meet RACT standard):

NO <sub>x</sub> emission rate (Indicate rate and units):	Unit 1	Unit 2	Unit 3
a. primary fuel	4.5 lb. NO <sub>x</sub> /ton	55 lb NO <sub>x</sub> /1,000gal	4.5 lb NO <sub>x</sub> /ton
b. secondary fuel	55 lb/ 1,000 gal	140 lb/MCF	55 lb/ 1,000 gal

2. Indicate NO<sub>x</sub> emission RACT standard for each fuel combusted in each unit. Emission standards are contained in the regulations (310 CMR 7.19). If applying for an alternative RACT or not subject to one of the categories of 7.19, enter the alternative/RACT. If the unit is not subject to any NO<sub>x</sub> RACT standard, enter the same value as indicated in item #1 above:

NO <sub>x</sub> emission standard (indicate standard and units):	Unit 1	Unit 2	Unit 3
a. primary fuel	4.5 lb NO <sub>x</sub> /ton	55 lb/ 1,000 gal	4.5 lb/ ton
b. secondary fuel	55 lb/ 1,000 gal	140 lb/ MCF	55 lb/ 1,000 gal

3. Is additional documentation included for any Large Boilers (≥ 100,000,000 BTU/hr) applying for an alternative RACT as allowed in 7.19(4)(c)?

Yes  Not applying for alternative large boiler RACT

4. If a unit is subject to 7.19(12), miscellaneous RACT, or is applying for an alternative RACT, is additional material included in this application as required by 310 CMR 7.19(3)(d), including:

a. a demonstration and description of the RACT emission standard(s) proposed for this facility?

Yes  Not applying miscellaneous nor alternative RACT

b. Information necessary to support the demonstration, such as technological and economic considerations, etc.?

Yes  Not applying miscellaneous nor alternative RACT

5. If a unit will utilize seasonal fuel switching (7.19(2)(f)) is documentation on the calculation of emission standard included?

Yes  Not utilizing seasonal fuel switching

6. Will there be cofiring of fuels (7.19(15)), i.e. more than one fuel burned simultaneously, in combination, or in any one day?

Yes  No



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Application for Approval of Emission Control Plan (ECP): Oxides of Nitrogen (NO<sub>x</sub>)

96492
Transmittal#
Facility ID (if known)

## II Potential Emissions (optional section)

POTENTIAL EMISSIONS are used to determine applicability to air pollution control regulations and compliance fees. Unless otherwise restricted, potential emissions are calculated from the maximum operational capacity of the equipment as described in previous sections D operated 8,760 hours per year. If you wish to limit potential emissions for the entire facility you must complete this section; this will be treated as part of the facility design and the limitation will be specifically stated in this Emission Control Plan Approval. This is not required as part of the Emission Control Plan.

1. Do you wish to limit potential emissions?

yes       no      If no, proceed to section I.      If yes, complete sections 2 and 3.

2. In order to issue a permit limiting the facility's potential emissions, the Department must have a method to monitor compliance with the restriction. In other words, an enforceable permit condition must be available to the Department. The following questions require the facility to set a limit on the maximum amount of fuel combusted (per month and per year) and therefore, the maximum amount of emissions possible. This will become the means to monitor and enforce the restriction. Alternative methods of restricting potential emissions will be evaluated on a case-by-case basis and the applicant should contact the Department before proposing such alternatives. Any such alternative method must be consistent with the U.S. EPA's June 13, 1989 guidance entitled, "Guidance on Limiting Potential to Emit in New Source Permitting". (Copies of this guidance are available from DEP offices).

Note: this should be completed for ALL NO<sub>x</sub> emitting processes at the facility, not only those subject to RACT.

### A. Fuel restriction:

Enter amount of fuel and units (gallons, cubic feet, etc). This usage will become the facility's allowable usage. This amount can never be exceeded without prior Department approval.

	Unit 1	Unit 2	Unit 3	Total
I. maximum per month:				
amount primary fuel	.....	.....	.....	.....
amount secondary fuel	.....	.....	.....	.....
II. maximum per year:				
amount primary fuel	.....	.....	.....	.....
amount secondary fuel	.....	.....	.....	.....

B. Describe any other physical or operational limitation on the capacity of the equipment to emit a pollutant, including air pollution control equipment, restriction on hours of operation, or on the type or amount of material combusted, stored or processed that will be used to restrict emissions:

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Application for Approval of Emission Control Plan (ECP); Oxides of Nitrogen (NO<sub>x</sub>)

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Transmitted

Facility ID (if known)

## H Potential Emissions (cont.)

3. Emissions from proposed fuel restriction:

Calculate emissions that will result from the restrictions as described in Items #1 and #2 above. Use emission standards as described in Section G for units subject to NO<sub>x</sub>. For units without an emission standard stated in Section G above (i.e. not subject to RACT), use best available data from your existing air permit, Department-accepted stack tests, or CEM data. If no data exists, use the factors\* provided below.

	Unit 1	Unit 2	Unit 3	Total
NO <sub>x</sub> emissions (tons)				
a. maximum per month:				
primary fuel	7.4	5.22	7.4	20.02
secondary fuel	5.22	1.95	5.22	12.39
b. maximum per year:				
primary fuel	88.7	62.6	88.7	240
secondary fuel	62.6	23.36	62.6	148.56

\* Emission factors, NO<sub>x</sub>:

**BOILERS**

- 67 lbs of NO<sub>x</sub> for every 1000 gallons of oil burned in Boilers > 100 MMBtu/hr
- 55 lbs of NO<sub>x</sub> for every 1000 gallons of oil burned in Boilers 0.5 to 100 MMBtu/hr using Residual Fuels (#6, #5, #4)
- 20 lbs of NO<sub>x</sub> for every 1000 gallons of oil burned in Boilers 0.5 to 100 MMBtu/hr using Distillate Fuels (#2, #1)
- 18 lbs of NO<sub>x</sub> for every 1000 gallons of oil burned in Boilers Less than 0.5 MMBtu/hr using Distillate Fuels (#2, #1)
- 550 lbs of NO<sub>x</sub> for every 1,000,000 cubic feet of gas burned in Boilers > 100 MMBtu/hr
- 140 lbs of NO<sub>x</sub> for every 1,000,000 cubic feet of gas burned in Boilers Between 10 and 100 MMBtu/hr
- 100 lbs of NO<sub>x</sub> for every 1,000,000 cubic feet of gas burned in Boilers Less than 10 MMBtu/hr

Diesel engines, turbines and other combustion equipment. NO<sub>x</sub> calculated from equipment manufacturers specifications. The Department reserves the right to require testing of fuel for nitrogen content and/or stack and CEM testing.

## I RACT Strategy

1. Provide details on how the facility plans to meet the limits in the regulations (new equipment, alternative fuels, add-on controls, combustion modifications, etc):

See attached source specific NO<sub>x</sub> RACT plan

2. Which, if any, of the units will be shutdown as a result?

None



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## I RACT Strategy (cont.)

3 Will compliance be achieved through averaging of units?

- Yes       No

If yes, the averaging must conform to the requirements and limitations of 7.19(14) and 7.00 appendix B(4). Describe in detail the methods for measuring such compliance, below and in Section K, record keeping:

.....

.....

.....

4. Will the facility use an Air Pollution Control Device to reduce NO<sub>x</sub> emissions and comply with the standards?

- Yes       No

If yes, attach additional specifications and the appropriate Supplemental BWP form for air pollution control equipment. Indicate equipment and form used:

.....

.....

.....

5. Will the facility be installing new equipment to comply with the standards?

- Yes       No

If yes, the appropriate plans application form, BWP AQ 01,02 or 03 must be completed for the new equipment.

## J Compliance Implementation

Provide a schedule for implementation of changes necessary to comply with the RACT standard. Include the following dates, at a minimum:

Purchase of air pollution control equipment  
 Delivery of air pollution control equipment  
 Installation of air pollution control equipment  
 Start-up of air pollution control equipment  
 Compliance testing of air pollution control equipment

Identification of necessary modifications  
 Modification of equipment

Purchase of new equipment  
 Delivery of new equipment  
 Installation of new equipment  
 Start-up of new equipment  
 Compliance testing of new process equipment

Purchase of monitoring equipment  
 Delivery of monitoring equipment  
 Installation of monitoring equipment  
 Start-up of monitoring equipment  
 Testing of monitoring equipment

EXEMPT UNIT



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## D Equipment Description

Complete for any piece of equipment at the facility which emits NO<sub>x</sub> (use additional pages if necessary):

	Unit 4	Unit 2	Unit 3
1. Equipment/process line I.D.#	#5		
2. a. Is unit subject to a NO <sub>x</sub> RACT?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> yes <input type="checkbox"/> no
b. If yes, which regulation (see section N)			
4. Type of equipment: (boiler, oven, turbine, diesel, etc.)	Dryer		
5. Manufacturer	Stansteel		
6. Model number	Rotary		
7. a. Maximum energy input capacity (MMBTU/HR)	9.87 MMBTU		
b. For internal combustion engines only: energy conversion efficiency of unit (10 <sup>6</sup> BTU/brake hp-hr)	-----		
8. Date of installation	1965		
9. Modifications since installation:			
a. type of modification	----		
b. date of modification	----		
10. DEP Air Quality approvals (if any):			
a. approval number	N/A		
b. date of approval			
c. modifications to approval (date and approval number)			

## E Fuel Data

	Unit 1	Unit 2	Unit 3
1. Primary fuel:			
a. type and grade	natural gas		
b. sulfur content (% by weight)	0		
c. gross heating value	1050 BTU/CF		
d. nitrogen content (% by weight)	0		
2. Secondary, standby or auxiliary fuel:			
a. type and grade	#2 oil		
b. sulfur content (% by weight)	0.3		



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Application for Approval of Emission Control Plan (ECP): Oxides of Nitrogen (NO<sub>x</sub>)

## H Potential Emissions (optional section)

POTENTIAL EMISSIONS are used to determine applicability to air pollution control regulations and compliance fees. Unless otherwise restricted, potential emissions are calculated from the maximum operational capacity of the equipment as described in previous sections D operated 8,760 hours per year. If you wish to limit potential emissions for the entire facility you must complete this section; this will be treated as part of the facility design and the limitation will be specifically stated in this Emission Control Plan Approval. This is not required as part of the Emission Control Plan.

1. Do you wish to limit potential emissions?

yes     no    If no, proceed to section I.    If yes, complete sections 2 and 3. N/A

2. In order to issue a permit limiting the facility's potential emissions, the Department must have a method to monitor compliance with the restriction. In other words, an enforceable permit condition must be available to the Department. The following questions require the facility to set a limit on the maximum amount of fuel combusted (per month and per year) and therefore, the maximum amount of emissions possible. This will become the means to monitor and enforce the restriction. Alternative methods of restricting potential emissions will be evaluated on a case-by-case basis and the applicant should contact the Department before proposing such alternatives. Any such alternative method must be consistent with the U.S. EPA's June 13, 1989 guidance entitled, "Guidance on Limiting Potential to Emit in New Source Permitting". (Copies of this guidance are available from DEP offices).

Note: this should be completed for ALL NO<sub>x</sub> emitting processes at the facility, not only those subject to RACT.

### A. Fuel restriction:

Enter amount of fuel and units (gallons, cubic feet, etc). This usage will become the facility's allowable usage. This amount can never be exceeded without prior Department approval.

	Unit 1	Unit 2	Unit 3	Total
i. maximum per month:				
amount primary fuel	.....	.....	.....	.....
amount secondary fuel	.....	.....	.....	.....
ii. maximum per year:				
amount primary fuel	.....	.....	.....	.....
amount secondary fuel	.....	.....	.....	.....

B. Describe any other physical or operational limitation on the capacity of the equipment to emit a pollutant, including air pollution control equipment, restriction on hours of operation, or on the type or amount of material combusted, stored or processed that will be used to restrict emissions:

.....  
.....  
.....  
.....  
.....



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Application for Approval of Emission Control Plan (ECP): Oxides of Nitrogen (NO<sub>x</sub>)

## H Potential Emissions (cont.)

### 3. Emissions from proposed fuel restriction:

Calculate emissions that will result from the restrictions as described in Items #1 and #2 above. Use emission standards as described in Section G for units subject to NO<sub>x</sub>. For units without an emission standard stated in Section G above (i.e. not subject to RACT), use best available data from your existing air permit, Department-accepted stack tests, or CEM data. If no data exists, use the factors\* provided below.

	Unit 1	Unit 2	Unit 3	Total
NO <sub>x</sub> emissions (tons)				
a. maximum per month:				
primary fuel	0.5			0.5
secondary fuel	0.48			0.48
b. maximum per year:				
primary fuel	6.13			6.13
secondary fuel	5.76			5.76

\* Emission factors, NO<sub>x</sub>:

#### BOILERS

- 67 lbs of NO<sub>x</sub> for every 1000 gallons of oil burned in Boilers > 100 MMBtu/hr
- 55 lbs of NO<sub>x</sub> for every 1000 gallons of oil burned in Boilers 0.5 to 100 MMBtu/hr using Residual Fuels (#6, #5, #4)
- 20 lbs of NO<sub>x</sub> for every 1000 gallons of oil burned in Boilers 0.5 to 100 MMBtu/hr using Distillate Fuels (#2, #1)
- 18 lbs of NO<sub>x</sub> for every 1000 gallons of oil burned in Boilers Less than 0.5 MMBtu/hr using Distillate Fuels (#2, #1)
- 550 lbs of NO<sub>x</sub> for every 1,000,000 cubic feet of gas burned in Boilers > 100 MMBtu/hr
- 140 lbs of NO<sub>x</sub> for every 1,000,000 cubic feet of gas burned in Boilers Between 10 and 100 MMBtu/hr
- 100 lbs of NO<sub>x</sub> for every 1,000,000 cubic feet of gas burned in Boilers Less than 10 MMBtu/hr

Diesel engines, turbines and other combustion equipment. NO<sub>x</sub> calculated from equipment manufacturers specifications. The Department reserves the right to require testing of fuel for nitrogen content and/or stack and CEM testing.

## I RACT Strategy

### 1. Provide details on how the facility plans to meet the limits in the regulations (new equipment, alternative fuels, add-on controls, combustion modifications, etc):

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### 2. Which, if any, of the units will be shutdown as a result?

.....

.....

.....





Massachusetts Department of Environmental Protection  
Bureau of Waste Prevention - Air Quality

# BWP AQ 08-A

Application for Approval of Emission Control Plan (ECP): Oxides of Nitrogen (NO<sub>x</sub>)

96492

Transmitted

Facility ID (if known)

## I RACT Strategy (cont.)

3 Will compliance be achieved through averaging of units?

- Yes
- No

If yes, the averaging must conform to the requirements and limitations of 7.19(14) and 7.00 appendix B(4). Describe in detail the methods for measuring such compliance, below and in Section K, record keeping:

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.....

.....

.....

4. Will the facility use an Air Pollution Control Device to reduce NO<sub>x</sub> emissions and comply with the standards?

- Yes
- No

If yes, attach additional specifications and the appropriate Supplemental BWP form for air pollution control equipment. Indicate equipment and form used:

.....

.....

.....

.....

5. Will the facility be installing new equipment to comply with the standards?

- Yes
- No

If yes, the appropriate plans application form. BWP AQ 01,02 or 03 must be completed for the new equipment.

## J Compliance Implementation

Provide a schedule for implementation of changes necessary to comply with the RACT standard. Include the following dates, at a minimum:

- Purchase of air pollution control equipment
- Delivery of air pollution control equipment
- Installation of air pollution control equipment
- Start-up of air pollution control equipment
- Compliance testing of air pollution control equipment
  
- Purchase of new equipment
- Delivery of new equipment
- Installation of new equipment
- Start-up of new equipment
- Compliance testing of new process equipment

- Identification of necessary modifications
- Modification of equipment
  
- Purchase of monitoring equipment
- Delivery of monitoring equipment
- Installation of monitoring equipment
- Start-up of monitoring equipment
- Testing of monitoring equipment



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## K Record keeping/Monitoring

Describe record keeping procedures and any process monitoring equipment (temperatures, flow meters) including CEMS that will be used by the facility to demonstrate continuous compliance.

N/A

Note:  
Records kept to demonstrate compliance shall be kept on site for five years and shall be made available to representatives of the Department and EPA upon request.

## L Testing

Testing may be required by the Department. Describe those design considerations incorporated into the equipment to allow for emission testing (stack test port locations, equipment enclosures, etc).

N/A

## M Certification

This form must be signed by the owner or by a responsible company official working at the location of the source. Even if an agent has been designated to fill out this form, the owner or responsible officer must sign it.

Certification:

'I certify that I have examined the above and that to the best of my knowledge it is true and complete. (Signature subjects signer to the provisions of the General Statutes regarding false and misleading statements)'

*[Handwritten Signature]*

9/12/96

*[Handwritten Signature]*

Signature Frank McQuade

President

Title

Lee Lime Corporation

Representing

10/24/94

Date