

STATE OF NEW HAMPSHIRE  
DEPARTMENT OF ENVIRONMENTAL SERVICES  
AIR RESOURCES DIVISION  
CONCORD, NEW HAMPSHIRE

**NOTICE OF PREVENTION OF SIGNIFICANT DETERIORATION  
(PSD)/NONATTAINMENT NEW SOURCE REVIEW (NSR) PERMIT REVIEW,  
PUBLIC HEARING, AND COMMENT PERIOD**

Pursuant to the New Hampshire Code of Administrative Rules, Env-A 621, 40 C.F.R. 52.21(q), and 40 C.F.R. 124, notice is hereby given that the Director of the New Hampshire Department of Environmental Services, Air Resources Division (Director), has received an application for a PSD/NSR Permit from, and based on the information received to date, has made a preliminary determination to grant a PSD/NSR Permit to:

**University of New Hampshire (UNH)**

**22 Colovos Road**  
**Durham, NH 03824**

**For a Landfill Gas to Energy (LFGTE) Facility at the following locations:**

**Cogeneration Plant:**

**University of New Hampshire**  
**22 Colovos Road**  
**Durham, NH 03824**

**Landfill Gas Processing Facility:**

**Rochester Neck Road**  
**Rochester, NH 03839**

UNH proposes to construct and operate a Landfill Gas to Energy (LFGTE) facility at the Turnkey Landfill located in Rochester, NH. Landfill gas (LFG) generated at the Turnkey Landfill will be treated and transferred by pipeline to the UNH cogeneration plant in Durham, which is located approximately twelve miles from the Turnkey Landfill. The pollutant emitting equipment at the Rochester location which require permitting are two 2,233 horsepower (hp) LFG fired reciprocating engines, one thermal oxidizer rated at 36 million British Thermal Units per hour (MMBtu/hr), and two LFG utility flares rated at 125.4 MMBtu/hr and 105 MMBtu/hr. A LFG fired supplemental turbine rated at 43.6 MMBtu/hr is proposed to be located at the UNH cogeneration plant in Durham.

1. UNH is required to obtain nitrogen oxide (NO<sub>x</sub>) emission offsets in the ratio of 1.2:1, or approximately 50 tons. UNH currently holds 33 offsets from previous NO<sub>x</sub> reductions at their facility, and the balance of these NO<sub>x</sub> emission offsets will be obtained from the State of New Hampshire in accordance with NH Code of Admin. Rules, Chapter Env-A 3000: Emission Reduction Credits Trading Program.

2. The emissions resulting from the installation of the Proposed Facility, as well as a determination of applicability of PSD/NSR program requirements for each regulated pollutant, are listed in the table set forth below:

<b>Table 1: Applicability of PSD and NSR Program Requirements</b>					
<b>Pollutant</b>	<b>Regulatory Program</b>	<b>Maximum Project Emissions in tons per year (tpy)</b>	<b>Net Emissions Increase (tpy)</b>	<b>Significant Emissions Threshold (tpy)</b>	<b>Is Proposed Modification Significant? (Yes/No)</b>
Nitrogen Oxides (NO <sub>x</sub> )	NSR	41.52	41.52	25	Yes
Nitrogen Oxides (NO <sub>x</sub> )	PSD	41.52	41.52	40	Yes
Carbon Monoxide (CO)	PSD	155.22	155.22	100	Yes
Particulate Matter (PM)/ PM less than 10 microns (PM <sub>10</sub> )	PSD	23.14	23.14	25/15	No/Yes (Significant for PM <sub>10</sub> only)
Sulfur Dioxide	PSD	24.52	24.52	40	No
Volatile Organic Compounds (VOC)	NSR	48.24	48.24	25	No*
Total Reduced Sulfur/ Hydrogen Sulfide	PSD	0.69	0.69	10	No
Lead	PSD	<0.01	<0.01	0.6	No

\* Note: While the proposed VOC increase is above the 25 ton per year significant modification threshold, UNH is currently a minor source of VOC under the NSR Program (VOC emissions < 50 tpy) and therefore does not trigger Non-Attainment NSR for this project. However, this project will result in UNH becoming a new major source of VOC emissions and future projects will be reviewed with respect to the 25 ton per year significant modification threshold.

As shown in Table 1, there will be significant net emissions increases of NO<sub>x</sub>, CO, and PM<sub>10</sub> and therefore are subject to PSD requirements for these pollutants, including the application of Best Available Control Technology (BACT). In addition, there will be a significant net emissions increase of NO<sub>x</sub> and therefore is also subject to NSR requirements, including the application of Lowest Achievable Emission Rate (LAER). All BACT and LAER limits proposed by the applicant were evaluated and the determination of BACT and LAER, including the type of equipment, and the prescribed pollutant emission limitations are set forth in Table 2 below.

<b>Table 2: Summary of Proposed BACT/LAER Limitations (All Emission Limitations Based on 3-hour Averaging Period)</b>			
<b>Pollutant</b>	<b>Device</b>	<b>Emission Limitation</b>	<b>Control Technology BACT/LAER</b>
Nitrogen Oxides (NOx)	Two 2,233 horsepower (hp) Reciprocating Engines	0.50 grams per brake horsepower-hour (g/bhp-hr)  (limit is per engine)	Lean Burn Design, Air/Fuel Ratio Controller, Intercooler Good Combustion Practices (GCP) BACT/LAER
	Two Utility Flares	0.068 lb/MMBtu (limit is per flare)	Open Flares, GCP, BACT/LAER
	Solar Mercury 50 Turbine	5 parts per million (ppm) @15% O2	Dry Low NOx Combustion Technology, GCP, BACT/LAER
	Thermal Oxidizer	0.065 lb/MMBtu	N/A
Carbon Monoxide (CO)	Two 2,233 hp Reciprocating Engines	2.75 g/bhp-hr (limit is per engine)	GCP BACT
	Two Utility Flares	0.370 lb/MMBtu (limit is per flare)	GCP BACT
	Solar Mercury 50 Turbine	10 parts per million (ppm) @15% O2	GCP BACT
	Thermal Oxidizer	0.065 lb/MMBtu	N/A
Particulate Matter < 10 Microns (PM10)	Two 2,233 hp Reciprocating Engines	0.1 g/bhp-hr (limit is per engine)	GCP BACT
	Two Utility Flares	0.042 lb/MMBtu (limit is per flare)	GCP BACT
	Solar Mercury 50 Turbine	0.042 lb/MMBtu	GCP BACT
	Thermal Oxidizer	0.042 lb/MMBtu	N/A

An ambient air quality impact analysis has determined that the facility's air emissions will not cause a significant impact on air quality and does not violate any state or federal air quality standards, nor exceed any PSD increments. Details regarding the degree of increment consumption are contained in the Preliminary Determination.

Sources triggering NSR requirements must obtain NOx emissions offsets, at a ratio of 1.2 offsets for each permitted ton of NOx. Permitted NOx emissions from this project are 41.52 tons per year, therefore UNH must obtain 50 tons of NOx offsets. UNH currently holds 33 tons of offsets from the shutdown of an on-campus waste incinerator in November 1995. The remaining 17 tons of NOx offsets will be transferred from the State of New Hampshire to UNH. These 17 tons of offsets reverted to state ownership after Dow Chemical (formerly Hampshire Chemical Corporation) ceased operations at their 2 Spit Brook Road facility in Nashua, NH in 2005.

All information, to the extent permitted by N.H. RSA 91-A and RSA 125-C:6, VII, submitted by the applicant; the Department's analysis of the effect of the proposed facility on air quality; the Preliminary Determination; and all other materials, if any, considered in making the Preliminary Determination are available for inspection with the Director, New Hampshire Department of Environmental Services, Air Resources Division, located at 29 Hazen Drive, P.O.

Box 95, Concord, N.H. 03302-0095, (603) 271-1370. Information may be reviewed at the Department's office during working hours from 8 a.m. to 4 p.m., Monday through Friday. The draft permit and Preliminary Determination are available for download on the Department's web site at [http://des.nh.gov/ard\\_intro.htm](http://des.nh.gov/ard_intro.htm). Additional information may also be obtained by contacting **Gary Milbury, Jr.** at the above address and phone number. The application, draft permit, and Preliminary Determination are also available for review at the following town offices (note: please contact the town office to verify current office hours):

1. Durham Town Hall, 15 Newmarket Road, Durham, NH 03824.
2. Rochester City Hall, 31 Wakefield Street, Rochester, NH 03867.
3. Madbury Town Hall, 13 Town Hall Road, Madbury NH 03823.
4. Dover City Hall, 288 Central Ave., Dover, NH 03820.

A public hearing has been scheduled for **Wednesday, July 18, 2007 at 6 p.m.** at the **Elliott Alumni Center (1925 Room), 9 Edgewood Road, Durham, NH 03824.** Comments provided at the public hearing, as well as written comments filed with the Director in accordance with Env-A 621.02 and received no later than **Wednesday, July 18, 2007**, shall be considered by the Director in making a final decision.

Robert R. Scott  
Director  
Air Resources Division