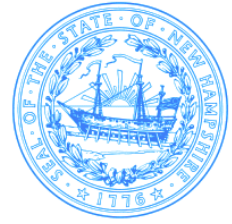




The State of New Hampshire  
**Department of Environmental Services**

**Thomas S. Burack, Commissioner**



July 27, 2016

Steven Gabrielle  
Chief Operating Officer  
EPP Renewable Energy, LLC.  
1605 North Cedar Crest Blvd., Suite 509  
Allentown, PA 18101

RE: On-Site Full Compliance Evaluation Report

Dear Mr. Gabrielle,

The New Hampshire Department of Environmental Services, Air Resources Division (NHDES) has completed a Full Compliance Evaluation of EPP Renewable Energy, LLC at Four Hills Landfill in Nashua, New Hampshire. The compliance evaluation included an on-site inspection completed on July 14, 2016. This is a copy of the On-Site Full Compliance Evaluation Report for your review and records.

NHDES did not identify deficiencies during this compliance evaluation, as detailed in this report.

If you have any questions, please contact me at (603) 271-0907 or email at [Thomas.Guertin@des.nh.gov](mailto:Thomas.Guertin@des.nh.gov).

Sincerely,

Thomas Guertin  
Sr. Compliance Assessment Specialist  
Air Resources Division

cc: Board of Aldermen, City of Nashua, 229 Main St., PO Box 2019, Nashua, NH 03061-2019

## Abbreviations and Acronyms

AAL	Ambient Air Limit
acf	actual cubic foot
ASTM	American Society of Testing and Materials
Btu	British thermal units
CAS	Chemical Abstracts Service
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CNG	Compressed Natural Gas
CO	Carbon Monoxide
Env-A	New Hampshire Code of Administrative Rules – Air Related Programs
ft	foot or feet
ft <sup>3</sup>	cubic feet
gal	gallon
HAP	Hazardous Air Pollutant as defined in Section 112 of the 1990 Clean Air Act Amendments
hp	horsepower
hr	hour
kW	kilowatt
lb	pound
LPG	Liquefied Petroleum Gas
MM	million
MSDS	Material Safety Data Sheet
MW	megawatt
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standard for Hazardous Air Pollutants
NG	Natural Gas
NHDES	New Hampshire Department of Environmental Services (the department)
NO <sub>x</sub>	Oxides of Nitrogen
NSPS	New Source Performance Standard
PM <sub>10</sub>	Particulate Matter < 10 microns
ppm	parts per million
psi	pounds per square inch
RACT	Reasonable Available Control Technology
RSA	Revised Statutes Annotated
RTAP	Regulated Toxic Air Pollutant
scf	standard cubic foot
SO <sub>2</sub>	Sulfur dioxide
TSP	Total Suspended Particulate
tpy	tons per consecutive 12-month period
ULSD	Ultra-low Sulfur Diesel (15 ppm)
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

## I. Facility Description

The City of Nashua, NH (AFS #3301100191) is the owner/operator of the Four Hills Landfill located at 840 West Hollis St., Nashua, NH. The landfill covers approximately 263 acres. It contains a closed, 65-acre, unlined municipal solid waste (MSW) landfill, a closed, unlined 11-acre C&D landfill, and active, lined, 28-acre Phase I & II landfill expansions. An active gas collection system consisting of a network of vertical extraction wells and horizontal gas collection trenches have been installed in the Phase I & II expansion and the closed MSW portion of the landfill. A vacuum blower is used to extract gas from the landfill and convey the gas through manifold piping to a LFGTE facility operated by EPP Renewable Energy, LLC (EPP). The LFGTE facility consists of a Caterpillar G3516 LFG-fired engine (two used interchangeably but not simultaneously) and a Caterpillar G3520 LFG-fired engine. The landfill and flare are covered under separate permits issued to the City of Nashua.

EPP is a major source under the Title V program for CO. EPP is a true minor source for NO<sub>x</sub>, SO<sub>2</sub>, PM, VOCs, and CO<sub>2</sub>e and an area source for HAPs.

Facility name and address	EPP Renewable Energy, LLC
Address	840 West Hollis St., Nashua, NH 03062
County	Hillsborough
Telephone	(603) 791-5061
AFS#	3301100231
Source Type	Major (Title V)
Date/Time of Inspection:	July 14, 2016, 9:30 AM
Type of Inspection:	On-site Full Compliance Evaluation
Inspected by:	Thomas Guertin, Sr. Compliance Assessment Specialist
Weather:	80s, Overcast, winds approximately 5-10 mph
Source Contact(s):	Linda Boyer, Environmental Manager Steven Gabrielle, COO Chuck Ford, Facilities Engineer,
Last compliance inspection conducted at facility:	Never inspected
Last Inspection Result:	Not Applicable
Permit Number(s):	TP-0169 Issued: October 23, 2015 Expires: April 30, 2017

The engines were originally the responsibility of Four Hills Landfill and hence the city of Nashua. In October 2015, with the issuance of Permit TP-0169, the responsibility was transferred to EPP.

## II. Emission Unit Identification

Table 1 below, taken from permit TP-0169, lists the permitted emission units.

Table 1 - Emission Unit Identification				
Emission Unit ID	Device Identification	Manufacturer Model Number Serial Number	Installation Date	Maximum Design Capacity and Fuel Type(s)
EU01	Engine #1	Caterpillar G3516 4EK00649	1995	11.6 MMBtu/hr LFG – equivalent to 382.1 scfm (22,925 scf/hr) 1148 bhp
EU07	Alternate Engine #1	Caterpillar G3516 CTL00209	2001	11.6 MMBtu/hr LFG – equivalent to 382.1 scfm (22,925 scf/hr) 1148 bhp Hour Meter: 41,885Hrs.
EU08	Engine #2	Caterpillar G3520 GZJ00176	July 2005	18.0 MMBtu/hr LFG – equivalent to 529.9 scfm (35,573 scf/hr) 2233 bhp Hour Meter: 54,706Hrs.

Facility-Wide Emissions (tpy)						
	TSP	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC	HAPS/RTAPS
Permitted Limits						
2015	2.64	3.11	13.36	20.72	0.03	0.26

## III. Stack Criteria

Table 2 below, taken from permit TP-0169, lists the permitted stack requirements for the facility's devices. During the inspection, NHDES observed the stack was vertical, with no modifications noted by the facility.

Table 2 – Stack Criteria			
Stack Number	Emission Unit ID	Minimum Height (feet above ground surface)	Maximum Exit Diameter (feet)
1	EU01 and EU07	46	0.83
2	EU08	46	0.83

#### IV. Operating and Emission Limitations

Table 3, taken from permit TP-0169, lists the enforceable operational and emission limits.

Table 3 - Operating and Emission Limitations				
Item #	Requirement	Applicable Emission Unit	Regulatory Basis	Compliant
1	<u>24-hour and Annual Ambient Air Limit</u> The emissions of any Regulated Toxic Air Pollutant (RTAP) shall not cause an exceedance of its associated 24-hour or annual AAL as set forth in Env-A 1450.01, <i>Table Containing the List Naming All Regulated Toxic Air Pollutants</i> .	Facility Wide	Env-A 1400 (State-only Enforceable Limit)	Yes
2	<u>Revisions of the List of RTAPs</u> In accordance with RSA 125-I:5 IV, if the department revises the list of RTAPs or their respective AALs or classifications under RSA 125-I:4, II and III, and as a result of such revision the owner or operator is required to obtain or modify the permit under the provisions of RSA 125-I or RSA 125-C, the owner or operator shall have 90 days following publication of notice of such final revision in the New Hampshire Rulemaking Register to file a complete application for such permit or permit modification.	Facility Wide	Env-A 1404.02 (State-only Enforceable Limit)	Yes
3	<u>Visible Emission Standard for Fuel Burning Devices Installed After May 13, 1970</u> The average opacity from fuel burning devices installed after May 13, 1970 shall not exceed 20 percent for any continuous 6-minute period.	EU01, EU07, & EU08	Env-A 2002.02	Yes
<b>Findings: EU07 was operating during the inspection. Opacity was observed at 0%.</b>				
4	<u>Activities Exempt from Visible Emission Standards</u> The average opacity shall be allowed to be in excess of those standards specified in Env-A 2002 for one period of 6 continuous minutes in any 60 minute period during startup, shutdown, and malfunction.	EU01, EU07 & EU08	Env-A 2002.04(c) (State-only Enforceable Limit)	Yes
5	<u>Particulate Emission Standards for Fuel Burning Devices Installed on or After January 1, 1985</u> The particulate matter emissions from fuel burning devices installed on or after January 1, 1985 shall not exceed 0.30 lb/MMBtu.	EU01, EU07 & EU08	Env-A 2003.03	Unknown
<b>Findings: Compliance with particulate standards can only be determined by stack testing, which has not been required for these devices, to date. However, at the time the permit was issued, NHDES had sufficient information to indicate that under normal operating conditions, these devices are capable of meeting the particulate matter standard.</b>				
6	<u>Engine Operation Limitation</u> The owner or operator shall not operate the two Caterpillar G3516 (EU01 and EU07) simultaneously until such time as an updated air dispersion model is conducted and approved by the department to evaluate compliance with the National Ambient Air Quality Standards (NAAQS).	EU01 & EU07	Env-A 606.06 & Env-A 607.01(w)	Yes

Table 3 - Operating and Emission Limitations				
Item #	Requirement	Applicable Emission Unit	Regulatory Basis	Compliant
<b>Findings: Since EU01 and EU07 are never installed at the same time, the engines cannot be operated simultaneously.</b>				
7	<p><u><b>RICE NESHAP - Existing Stationary RICE</b></u></p> <p>The owner or operator of non-emergency, non-black start stationary RICE which combusts landfill gas equivalent to 10 percent or more of the gross heat input on an annual basis and are subject to 40 CFR 63, Subpart ZZZZ shall:</p> <ol style="list-style-type: none"> <li>Change oil and filter every 1,440 hours of operation or annually, whichever comes first;</li> <li>Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary;</li> <li>Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary;</li> <li>Operate and maintain the stationary engine according to the manufacturer's emission-related operation and maintenance instructions (O&amp;M manual) or develop and follow your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions; and</li> <li>Minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.</li> </ol>	EU01, EU07 & EU08	40 CFR 63.6603, 40 CFR 63.6625 & 40 CFR 63.6640 (Subpart ZZZZ)	Yes
8	<p><u><b>RICE NESHAP - General Provisions</b></u></p> <p>The owner or operator must be in compliance with the operating limitations, and other requirements in 40 CFR Part 60, Subpart ZZZZ that apply at all times. At all times, the owner or operator must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the department which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.</p>	EU01, EU07 & EU08	40 CFR 63.6605(Subpart ZZZZ)	Yes

## V. Monitoring and Testing Requirements

Table 4 below, taken from permit TP-0169, lists the monitoring and testing requirements.

Table 4 - Monitoring and Testing Requirements						
Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis	Compliant
1	To Be Determined	When conditions warrant, the department may require the owner or operator to conduct stack testing in accordance with USEPA or other department approved methods.	Upon request by the department	Facility Wide	RSA 125-C:6, XI	Not Applicable
<b>Findings: NHDES did not require EPP to perform any additional stack testing during the inspection period.</b>						
2	Hours of Operation	Each engine shall be equipped with a non-resettable hour meter.	Continuous	EU01, EU07 & EU08	Env-A 604.01	Yes
3	Oil Analysis	<p>The oil analysis program for the engines must at a minimum analyze the following parameters:</p> <ol style="list-style-type: none"> <li>Total base number, viscosity, and percent water content;</li> <li>The condemning limits for the following parameters in a.) above are: <ol style="list-style-type: none"> <li>Total base number is less than 30% of the total base number of the oil when new;</li> <li>Viscosity of the oil has changed by more than 20% from the viscosity of the oil when new; or</li> <li>Percent water content (by volume) is greater than 0.5</li> <li>If all of the condemning limits listed in b.) above are not exceeded, the engine oil is not required to be changed;</li> <li>If any of the condemning limits listed in b.) above are exceeded, the engine oil must be changed within 2 business days of receiving the results of the analysis; and</li> <li>If the engine is not in operation when the results of the analysis are received, the engine oil must be changed within two business days or before commencing operation of the engine, whichever is later.</li> </ol> </li> </ol>	Annually if choosing to use the oil analysis program in lieu of the annual oil change specified in Table 3, Item 7	EU01, EU07 & EU08	40 CFR 63.6625(j) (Subpart ZZZZ)	Not Applicable
<b>Findings: EPP has not chosen to participate in the oil analysis program. It performs oil changes as required. However, it does have the oil analyzed as a back-up, in order to detect problems with the oil that may occur between oil changes.</b>						

## VI. Recordkeeping Requirements

Table 5 below, taken from permit TP-0169, lists the recordkeeping requirements.

Table 5 - Recordkeeping Requirements					
Item #	Requirement	Duration/Frequency	Applicable Unit	Regulatory Basis	Compliant
1	<u>Record Retention and Availability</u> Keep the required records on file. These records shall be available for review by the department upon request.	Retain for a minimum of 5 years	Facility Wide	Env-A 902	Yes
2	<u>General Recordkeeping Requirements for Combustion Devices</u> Maintain the following records of fuel characteristics and utilization for the fuel used in the combustion devices: a. Type (e.g. landfill gas) and amount of fuel burned in each device; or b. Type and amount of fuel burned in multiple devices and hours of operation of each device to be used to apportion fuel use between the multiple devices; and c. Sulfur content by weight or volume of fuel; and d. BTU content per cubic foot of fuel.	Monthly	EU01, EU07 & EU08	Env-A 903.03	Yes
3	<u>NESHAP Subpart ZZZZ Recordkeeping Requirements</u> The owner or operator shall keep records of the maintenance conducted on the stationary RICE in order to demonstrate that the owner or operator operated and maintained the stationary RICE according the manufacturer's emission-related written instructions (O&M manual) or your own maintenance plan including but not limited to the maintenance required in Table 3, Item 7 as applicable.	Maintain Up-to-date Data	EU01, EU07 & EU08	40 CFR 63.6655(d) & (e) (Subpart ZZZZ)	Yes



**Table 5 - Recordkeeping Requirements**

Item #	Requirement	Duration/Frequency	Applicable Unit	Regulatory Basis	Compliant
4	<p><u>General NO<sub>x</sub> Recordkeeping Requirements</u></p> <p>If the actual annual NO<sub>x</sub> emissions from all permitted devices located at the Facility are greater than or equal to 10 tpy, then record the following information:</p> <ol style="list-style-type: none"> <li>Identification of each fuel burning device;</li> <li>Operating schedule during the high ozone season (June 1 through August 31) for each fuel burning device identified in Table 5, Item 4.a, above, including: <ol style="list-style-type: none"> <li>Typical hours of operation per day;</li> <li>Typical days of operation per calendar month;</li> <li>Number of weeks of operation;</li> <li>Type and amount of each fuel burned;</li> <li>Heat input rate in MMBtu/hr;</li> <li>Actual NO<sub>x</sub> emissions for the calendar year and a typical high ozone day during that calendar year; and</li> <li>Emission factors and the origin of the emission factors used to calculate the NO<sub>x</sub> emissions.</li> </ol> </li> </ol>	Maintain Data for Annual Report	EU01, EU07 & EU08	Env-A 905.02	Yes
5	<p><u>Regulated Toxic Air Pollutants</u></p> <p>Maintain records documenting compliance with Env-A 1400.</p> <p>Compliance was demonstrated at the time of permit issuance as described in the department's Application Review Summary for application #15-0053. The source must update the compliance demonstration using one of the methods provided in Env-A 1405 if:</p> <ol style="list-style-type: none"> <li>There is a revision to the list of RTAPs lowering the AAL or De Minimis Value for any RTAP emitted from the Facility;</li> <li>The amount of any RTAP emitted is greater than the amount that was evaluated in the Application Review Summary;</li> <li>An RTAP that was not evaluated in the Application Review Summary will be emitted; or</li> <li>Stack conditions (e.g. air flow rate) change.</li> </ol>	Update prior to process changes and within 90 days of each revision of Env-A 1400	Facility Wide	Env-A 902.01 (State-only Requirement)	Yes

## VII. Reporting Requirements

Table 6 below, taken from permit TP-0169, lists the reporting requirements.

Table 6 - Reporting Requirements					
Item #	Requirement	Frequency	Applicable Emission Unit	Regulatory Basis	Compliant
1	<p><u>General Reporting Requirements</u></p> <p>a. Each report shall be separately and clearly labeled with:</p> <ol style="list-style-type: none"> <li>1. The name, mailing address and physical address of the source covered by the report;</li> <li>2. The operating period covered by the report;</li> <li>3. The permit number and condition or item number that requires the report submittal;</li> <li>4. The type of report, using the name of the report as specified in the reporting condition in the permit, that is being submitted; and</li> <li>5. The date the report was prepared;</li> </ol> <p>b. An owner or operator who submits a report that is a revision to a previously-submitted report shall clearly identify the previously-submitted report with the information specified in Table 6, Item 1.a. above, and indicate which portions of the report have been revised;</p> <p>c. The owner or operator may submit more than one report with a single cover, provided the owner or operator clearly identifies each report being submitted using the information required in Table 6, Items 1.a. and 1.b. above, if applicable, for each report;</p> <p>d. Each report submitted to the department and/or USEPA shall include the certification of accuracy statement outlined in Condition XII.B. of this permit and shall be signed by the responsible official; and</p> <p>e. The owner or operator shall submit reports as paper documents or by electronic means. The owner or operator who submits a report by electronic means shall separately mail or deliver a cover letter, signed by the responsible official that contains the information specified in Table 6, Items 1.a. through 1.c. above, as well as the date the report was submitted by electronic means.</p>	For each report submitted to the department	Facility Wide	Env-A 907.01 & 40 CFR 70.6(c)(1)	Yes

**Table 6 - Reporting Requirements**

Item #	Requirement	Frequency	Applicable Emission Unit	Regulatory Basis	Compliant
2	<p><u>Annual Emissions Report</u></p> <p>Submit an annual emissions report to the department which shall include the following information:</p> <ol style="list-style-type: none"> <li>Actual calendar year emissions from each emission unit of NO<sub>x</sub>, total VOCs, total filterable and condensable PM, filterable PM<sub>10</sub>, filterable PM<sub>2.5</sub>, CO, SO<sub>2</sub>, each HAP and each RTAP (reported by CAS number), CO<sub>2</sub>e, ammonia, and lead;</li> <li>The methods used in calculating emissions in accordance with Env-A 705.02, <i>Determination of Actual Emissions for Use in Calculating Emission-Based Fee</i>;</li> <li>The emission factors and the origin of the emission factors; and</li> <li>All information recorded in accordance with Table 5, Item 2.</li> </ol>	Annually (received by the department no later than April 15th of the following year)	EU01, EU07 & EU08	Env-A 907.02	Yes
3	<p><u>NO<sub>x</sub> Emission Statements Reporting Requirements</u></p> <p>If the actual annual NO<sub>x</sub> emissions from all permitted devices located at the Facility are greater than or equal to 10 tpy, then include the following information with the annual emission report:</p> <ol style="list-style-type: none"> <li>A breakdown of NO<sub>x</sub> emissions reported pursuant to Table 6, Item 3 by month; and</li> <li>All data recorded in accordance with Table 5, Item 4.</li> </ol>	Annually (received by the department no later than April 15th of the following year)	EU01, EU07 & EU08	Env-A 909	Yes
4	<p><u>Startup Notification</u></p> <p>Submit a notification to the department stating the date of initial startup of the device.</p>	Actual date of initial startup of the device, received by the department within 15 days after such date	EU08	Env-A 910.01	Yes
5	<p><u>Update to Air Pollution Dispersion Modeling Impact Analysis</u></p> <p>If an update to the facility's air pollution dispersion modeling impact analysis is required pursuant to Env-A 606.02, submit the information required pursuant to Env-A 606.04:</p> <ol style="list-style-type: none"> <li>With the permit application submitted for the change which triggered the analysis; or</li> <li>Within 15-days of completion of the change which triggered the analysis, if a permit application is not required.</li> </ol>	As specified	EU01, EU07 & EU08	Env-A 910.01	Yes

**Table 6 - Reporting Requirements**

Item #	Requirement	Frequency	Applicable Emission Unit	Regulatory Basis	Compliant
<b>Findings: Modeling was updated on April 19, 2015 which yielded a passing result for the criteria pollutants NO<sub>2</sub>, SO<sub>2</sub>, CO, PM, VOCs, and RTAPs.</b>					
6	<u>Permit Deviation Reporting Requirements</u> Prompt reporting of deviations from permit requirements shall be conducted in accordance with Section VIII of this permit.	Within 24 hours of discovery of excess emission	EU01, EU07 & EU08	Env-A 911.04(b)	Yes
7	<u>Emission Based Fees</u> Pay emission-based fees in accordance with Condition XI.	Annually (received by the department no later than April 15th of the following year)	EU01, EU07 & EU08	Env-A 700	Yes
8	<u>Semi-annual Permit Deviation and Monitoring Report</u> The owner or operator shall submit a semi-annual permit deviation and monitoring report, which contains a summary of all permit deviations that have occurred during the reporting period.	Semi-annually by July 31 <sup>st</sup> and January 31 <sup>st</sup> of each calendar year	EU01, EU07 & EU08	40 CFR 70.6(a)(3)(iii) (A)	Yes
9	<u>Annual Compliance Certification</u> Annual compliance certification shall be submitted in accordance with Condition XII of the permit.	Annually (no later than April 15 <sup>th</sup> of the following year)	EU01, EU07 & EU08	40 CFR 70.6(c)(1)	Yes

## VIII Permit Deviations

The Source is aware of the recordkeeping and reporting requirements for permit deviations. The Source did not have permit deviations to report during the inspection period.

## IX Other Findings

The following additional items were noted as a result of this inspection:

EU01 was removed from service in 2015. EPP will keep this engine in storage and exchange it with EU07 when repairs become necessary

## X Enforcement History and Status

There has been no enforcement actions taken against EPP during the inspection period.

## **XI Compliance Assistance, Recommendations and Corrective Actions**

During the inspection, no compliance assistance opportunities were identified.

Report Prepared By: Thomas V Guertin

Title: Senior Compliance Assessment Specialist

Signed:

