NJ RUTGERS UNIV (08242)

Date: 10/5/2020

New Jersey Department of Environmental Protection
Reason for Application

Permit Being Modified

Permit Class: BOP **Number:** 200001

Description of Modifications: 5-year Title V renewal

New Jersey Department of Environmental Protection
Facility Profile (General)

Facility Name (AIMS): NJ RUTGERS UNIV

Facility ID (AIMS): 08242

Street Address: 360 MARTIN LUTHER KING BLVD
NEWARK, NJ 07102

Mailing Address: RUTGERS ENVIRONMENTAL HEALTH AND SAFETY
74 ST 1603
PISCATAWAY, NJ 08854

State Plane Coordinates:

X-Coordinate:	695,484
Y-Coordinate:	582,622
Units:	New Jersey State Plane 8
Datum:	NAD83
Source Org.:	County
Source Type:	Digital Image

County: Essex

Location Description: Rutgers the State University of New Jersey Newark Campus

Industry:

Primary SIC:	8220
Secondary SIC:	
NAICS:	611310

New Jersey Department of Environmental Protection
Facility Profile (General)

Contact Type: Air Permit Information Contact

Organization: Rutgers Universtiy
Name: Richard Bankowski
Title: Rutgers University
Phone: (848) 445-3015 x
Fax: (732) 445-3109 x
Other: ( ) - x
Type:
Email: richard.bankowski@rutgers edu

Org. Type: State
NJ EIN: 99999912008

Mailing Address: Rutgers University
74 Street 1603
Piscataway, NJ 08854

Contact Type: BAQE - Engineering

Organization: Rutgers Universtiy
Name: Richard Bankowski
Title: Rutgers University
Phone: (848) 445-3015 x
Fax: (732) 445-3109 x
Other: ( ) - x
Type:
Email: richard.bankowski@rutgers edu

Org. Type: State
NJ EIN: 99999912008

Mailing Address: Rutgers University
74 Street 1603
Piscataway, NJ 08854

Contact Type: BOP - Operating Permits

Organization: Rutgers Universtiy
Name: Richard Bankowski
Title: Rutgers University
Phone: (848) 445-3015 x
Fax: (732) 445-3109 x
Other: ( ) - x
Type:
Email: richard.bankowski@rutgers edu

Org. Type: State
NJ EIN: 99999912008

Mailing Address: Rutgers University
74 Street 1603
Piscataway, NJ 08854

New Jersey Department of Environmental Protection
Facility Profile (General)

Contact Type: BTS - Technical Services

Organization: Rutgers Universtiy
Name: Richard Bankowski
Title: Rutgers University
Phone: (848) 445-3015 x
Fax: (732) 445-3109 x
Other: ( ) - x
Type:
Email: richard.bankowski@rutgers edu

Org. Type: State
NJ EIN: 99999912008

Mailing Address: Rutgers University
74 Street 1603
Piscataway, NJ 08854

Contact Type: Emission Statements

Organization: Rutgers Universtiy
Name: Richard Bankowski
Title: Rutgers University
Phone: (848) 445-3015 x
Fax: (732) 445-3109 x
Other: ( ) - x
Type:
Email: richard.bankowski@rutgers edu

Org. Type: State
NJ EIN: 99999912008

Mailing Address: Rutgers University
74 Street 1603
Piscataway, NJ 08854

Contact Type: Environmental Officer

Organization: Rutgers Universtiy
Name: Richard Bankowski
Title: Rutgers University
Phone: (848) 445-3015 x
Fax: (732) 445-3109 x
Other: ( ) - x
Type:
Email: richard.bankowski@rutgers edu

Org. Type: State
NJ EIN: 99999912008

Mailing Address: Rutgers University
74 Street 1603
Piscataway, NJ 08854

New Jersey Department of Environmental Protection
Facility Profile (General)

Contact Type: Fees/Billing Contact

Organization: Rutgers Universtiy
Name: Richard Bankowski
Title: Rutgers University
Phone: (848) 445-3015 x
Fax: (732) 445-3109 x
Other: ( ) - x
Type:
Email: richard.bankowski@rutgers.edu

Org. Type: State
NJ EIN: 99999912008

Mailing Address: Rutgers University
74 Street 1603
Piscataway, NJ 08854

Contact Type: General Contact

Organization: Rutgers Universtiy
Name: Richard Bankowski
Title: Rutgers University
Phone: (848) 445-3015 x
Fax: (732) 445-3109 x
Other: ( ) - x
Type:
Email: richard.bankowski@rutgers edu

Org. Type: State
NJ EIN: 99999912008

Mailing Address: Rutgers University
74 Street 1603
Piscataway, NJ 08854

Contact Type: NOx RACT Annual Adjust. Report Contact

Organization: Rutgers Universtiy
Name: Richard Bankowski
Title: Rutgers University
Phone: (848) 445-3015 x
Fax: (732) 445-3109 x
Other: ( ) - x
Type:
Email: richard.bankowski@rutgers.edu

Org. Type: State
NJ EIN: 99999912008

Mailing Address: Rutgers University
74 Street 1603
Piscataway, NJ 08854

New Jersey Department of Environmental Protection
Facility Profile (General)

Contact Type: On-Site Manager

Organization: Rutgers Universtiy
Name: Richard Bankowski
Title: Rutgers University
Phone: (848) 445-3015 x
Fax: (732) 445-3109 x
Other: ( ) - x
Type:
Email: richard.bankowski@rutgers edu

Org. Type: State
NJ EIN: 99999912008

Mailing Address: Rutgers University
74 Street 1603
Piscataway, NJ 08854

Contact Type: Operator

Organization: Rutgers Universtiy
Name: Richard Bankowski
Title: Rutgers University
Phone: (848) 445-3015 x
Fax: (732) 445-3109 x
Other: ( ) - x
Type:
Email: richard.bankowski@rutgers edu

Org. Type: State
NJ EIN: 99999912008

Mailing Address: Rutgers University
74 Street 1603
Piscataway, NJ 08854

Contact Type: Owner (Current Primary)

Organization: Rutgers Universtiy
Name: Rutgers University
Title: Rutgers University
Phone: (848) 445-3015 x
Fax: (732) 445-3109 x
Other: ( ) - x
Type:
Email: richard.bankowski@rutgers edu

Org. Type: State
NJ EIN: 99999912008

Mailing Address: Rutgers University
74 Street 1603
Piscataway, NJ 08854

New Jersey Department of Environmental Protection
Facility Profile (General)

Contact Type: Regulation Officer

Organization: Rutgers Universtiy
Name: Richard Bankowski
Title: Rutgers University
Phone: (848) 445-3015 x
Fax: (732) 445-3109 x
Other: ( ) - x
Type:
Email: richard.bankowski@rutgers edu

Org. Type: State
NJ EIN: 99999912008

Mailing Address: Rutgers University
74 Street 1603
Piscataway, NJ 08854

Contact Type: Responsible Official

Organization: Rutgers University
Name: Antonio Calcado
Title: SR VP for Institutional Planning & OPS
Phone: (848) 445-2474 x
Fax: (732) 445-3944 x
Other: ( ) - x
Type:
Email: antonio.calcado@rutgers.edu

Org. Type: State
NJ EIN: 99999912006

Mailing Address: Rutgers University
33 Knightsbridge Road
Piscataway, NJ 08854

Contact Type: Security Contact

Organization: Rutgers Universtiy
Name: Rutgers University
Title: Rutgers University
Phone: (732) 848-3015 x
Fax: (732) 445-3109 x
Other: ( ) - x
Type:
Email: richard.bankowski@rutgers edu

Org. Type: State
NJ EIN: 99999912008

Mailing Address: Rutgers University
74 Street 1603
Piscataway, NJ 08854

New Jersey Department of Environmental Protection
Facility Profile (General)

Contact Type: **Title V Compliance Certification Contact**

Organization: Rutgers Universtiy

Name: Richard Bankowski

Title: Rutgers University

Phone: (848) 445-3015 x

Fax: (732) 445-3109 x

Other: ( ) - x

Type:

Email: richard.bankowski@rutgers edu

Org. Type: State

NJ EIN: 99999912008

Mailing Address: Rutgers University
74 Street 1603
Piscataway, NJ 08854

NJ RUTGERS UNIV (08242) Date: 10/5/2020

New Jersey Department of Environmental Protection
Facility Profile (Permitting)

1. Is this facility classified as a small business by the USEPA?	No
2. Is this facility subject to N.J.A.C. 7:27-22?	Yes
3. Are you voluntarily subjecting this facility to the requirements of Subchapter 22?	No
4. Has a copy of this application been sent to the USEPA?	No
5. If not, has the EPA waived the requirement?	No
6. Are you claiming any portion of this application to be confidential?	No
7. Is the facility an existing major facility?	Yes
8. Have you submitted a netting analysis?	Yes
9. Are emissions of any pollutant above the SOTA threshold?	No
10. Have you submitted a SOTA analysis?	No
11. If you answered "Yes" to Question 9 and "No" to Question 10, explain why a SOTA analysis was not required	
12. Have you provided, or are you planning to provide air contaminant modeling?	No

NJ RUTGERS UNIV (08242)

Date: 10/5/2020

New Jersey Department of Environmental Protection
Insignificant Source Emissions

IS NJID	Source/Group Description	Equipment Type	Location Description	Estimate of Emissions (tpy)								
				VOC (Total)	NOx	CO	SO	TSP	PM-10	Pb	HAPS (Total)	Other (Total)
IS1	Boilers (Natural Gas, < 1 MMBTU/hr)	Boiler	various	0.005	0.096	0.081	0.001	0.007	0.526	0.000	0.00000000	0.000
IS2	Clothes Dryers (Natural Gas, Under 300 MBTU/hr)	Fuel Combustion Equipment (Other)	various	0.001	0.017	0.007	0.000	0.001	0.004	0.000	0.00000000	0.000
IS3	Heaters (Natural Gas, < 1 MMBTU/hr)	Fuel Combustion Equipment (Other)	various	0.001	0.014	0.012	0.000	0.001	0.076	0.000	0.00000000	0.000
IS4	Ovens (Natural Gas, < 1 MMBTU/hr)	Fuel Combustion Equipment (Other)	various	0.001	0.011	0.009	0.000	0.001	0.012	0.000	0.00000000	0.000
IS5	Diesel UST	Storage Vessel	Central Heating Plant	0.660	0.000	0.000	0.000	0.000	0.000	0.000	0.00000000	0.000
IS6	Emergency Generators (Natural Gas, < 1 MMBTU/hr, < 37 kW)	Emergency Generator	various	0.021	0.308	0.132	0.000	0.000	0.000	0.000	0.00000000	0.000
IS7	Emergency Generators (Diesel, < 1 MMBTU/hr, < 37 kW)	Emergency Generator	various	0.000	0.016	0.004	0.001	0.001	0.000	0.000	0.00000000	0.000
IS8	Boilers on Natural gas under 300 MBTU/hr	Boiler	various	0.002	0.034	0.014	0.000	0.003	0.003	0.000	0.00000000	0.000
IS9	Heaters on Natural gas under 300 MBTU/hr	Fuel Combustion Equipment (Other)	various	0.003	0.056	0.024	0.000	0.005	0.005	0.000	0.00000000	0.000
IS10	Ovens on Natural gas under 300 MBTU/hr	Fuel Combustion Equipment (Other)	various	0.001	0.022	0.009	0.000	0.002	0.002	0.000	0.00000000	0.000
Total				0.000								

New Jersey Department of Environmental Protection
Equipment Inventory

Equip. NJID	Facility's Designation	Equipment Description	Equipment Type	Certificate Number	Install Date	Grand-Fathered	Last Mod. (Since 1968)	Equip. Set ID
E2	7327 - HLLC	Diesel EG - HLLC Bldg 3.9 MMBTU/hr 350KW	Emergency Generator		12/13/2019	No	12/13/2019	

NJ RUTGERS UNIV (08242)

Date: 10/5/2020

New Jersey Department of Environmental Protection
Emission Points Inventory

PT NJID	Facility's Designation	Description	Config.	Equiv. Diam. (in.)	Height (ft.)	Dist. to Prop. Line (ft)	Exhaust Temp. (deg. F)			Exhaust Vol. (acfm)			Discharge Direction	PT Set ID
							Avg.	Min.	Max.	Avg.	Min.	Max.		
PT19	7327 HLLC EG	7327 HLLC Bldg Diesel EG 3.9- 350KW	Round	4	15	1,000	1,000.0	950.0	1,053.0	2,500.0	2,000.0	2,895.0	Up	

NJ RUTGERS UNIV (08242)

Date: 10/5/2020

New Jersey Department of Environmental Protection
Emission Unit/Batch Process Inventory

U 7 7327 HLCC EG HLCC bldg 7327 Diesel EG 350KW

UOS NJID	Facility's Designation	UOS Description	Operation Type	Signif. Equip.	Control Device(s)	Emission Point(s)	SCC(s)	Annual Oper. Hours		VOC Range	Flow (acfm)		Temp. (deg F)	
								Min.	Max.		Min.	Max.	Min.	Max.
OS1	7327 HLLC	HLLC Bldg 7327 Diesel EG 3.9 MMBTU/hr 350KW	Standby	E2		PT19	2-03-001-07	12.0	100.0		2,000.0	2,895.0	950.0	1,053.0

New Jersey Department of Environmental Protection
Potential to Emit

Subject Item: **E2 7327 - HLLC**

Operating Scenario:

Step:

Air Contaminant Category (HAPS)	Fugitive Emissions	Emissions Before Controls	Emissions After Controls	Total Emissions	Units	Alt. Em. Limit
CO	0.00000000	1.42590000	1.42590000	1.42590000	lb/hr	No
HAPs (Total)	0.00000000	0.00000000	0.00000000	0.00000000	lb/hr	No
NOx (Total)	0.00000000	5.46610000	5.46610000	5.46610000	lb/hr	No
Pb	0.00000000	0.00000000	0.00000000	0.00000000	lb/hr	No
PM-10 (Total)	0.00000000	0.11880000	0.11880000	0.11880000	lb/hr	No
SO2	0.00000000	0.00000000	0.00000000	0.00000000	lb/hr	No
TSP	0.00000000	0.11880000	0.11880000	0.11880000	lb/hr	No
VOC (Total)	0.00000000	0.00000000	0.00000000	0.00000000	lb/hr	No

Subject Item: **U7 7327 HLCC EG**

Operating Scenario: **OS0 Summary**

Step:

Air Contaminant Category (HAPS)	Fugitive Emissions	Emissions Before Controls	Emissions After Controls	Total Emissions	Units	Alt. Em. Limit
CO	0.00000000	0.07130000	0.07130000	0.07130000	tons/yr	No
HAPs (Total)	0.00000000	0.00000000	0.00000000	0.00000000	tons/yr	No
NOx (Total)	0.00000000	0.27330000	0.27330000	0.27330000	tons/yr	No
Pb	0.00000000	0.00000000	0.00000000	0.00000000	tons/yr	No
PM-10 (Total)	0.00000000	0.00590000	0.00590000	0.00590000	tons/yr	No
SO2	0.00000000	0.00000000	0.00000000	0.00000000	tons/yr	No
TSP	0.00000000	0.00590000	0.00590000	0.00590000	tons/yr	No
VOC (Total)	0.00000000	0.00000000	0.00000000	0.00000000	tons/yr	No

000000 E2 (Emergency Generator)
Print Date: 10/5/2020

Make:	Caterpillar
Manufacturer:	Caterpillar
Model:	C13
Maximum rated Gross Heat Input (MMBtu/hr-HHV):	3.90
Will the equipment be used in excess of 500 hours per year?	○ Yes ● No
Have you attached a diagram showing the location and/or the configuration of this equipment?	○ Yes ● No
Have you attached any manuf.'s data or specifications to aid the Dept. in its review of this application?	○ Yes ● No

Comments:

08242 NJ RUTGERS UNIV BOP000000 U7 OS1 (Fuel Information Table)
Print Date: 10/5/2020

Fuel Type:	Diesel fuel
Description (if other):	
Amount of Sulfur in Fuel (%):	0.0015
Amount of Ash in Fuel (%):	0.01
Fuel Heating Value:	139,000.00
Units:	BTU/gal
Estimated Maximum Amount of Fuel Burned Annually:	2,790.00
Units:	gal/yr
Estimated Actual Amount of Fuel Burned Annually:	335.00
Units:	gal/yr
Comments:	

New Jersey Department of Environmental Protection
Division of Air Quality

Attachment to the RADIUS Air Operating Permit Renewal Application

Submittal Date: _____

Facility Name: Rutgers Newark Campus _____ PI#: 8242 _____

This package must be submitted as an attachment to the RADIUS Air Operating Permit Renewal Application. The forms contained in this package must not be altered. Use of any non-standard forms will require resubmittal of the renewal application. If the file is too large to submit, please perform a Save As to optimize the file for Fast Web View using Adobe PDF software. Contact the Department if this does not solve the problem, and you still have issues submitting this package.

New Jersey Department of Environmental Protection
401 East State Street, 2nd Floor, P.O. Box 420, Mail Code 401-02, Trenton, NJ 08625-0420

Operating Permits Helpline 609-633-8248

Revised Apr 16, 2020

Table of Contents

Applying for an Air Operating Permit Renewal

This summary was prepared to assist you in renewing an operating permit. To continue lawful operation of a facility that has obtained an approved operating permit, a permittee must initiate the renewal of the operating permit by submitting a timely and administratively complete permit application. A complete operating permit renewal application consists of the RADIUS Air Operating Permit Renewal application forms and all forms contained in this package, along with any supporting documents (if needed).

1. **Timely**
   To be considered timely pursuant to N.J.A.C. 7:27-22.30(c), the Department must receive an administratively complete renewal application at least 12 months prior to expiration of the operating permit. The applicant is encouraged to voluntarily submit the renewal application at least 15 months prior to expiration of the operating permit, so that any deficiencies in the application can be addressed prior to the application due date. Only applications, which are administratively complete by the application deadline, will be eligible for coverage by an application shield.

2. **Administratively Complete**
   To be deemed administratively complete pursuant to N.J.A.C. 7:27-22.30(d), an operating permit renewal application must include all information requested in the RADIUS Air Operating Permit Renewal application forms and all forms contained in this package.

3. **Application Shield**
   The Department will grant an application shield when a timely and administratively complete application is received pursuant to N.J.A.C. 7:27-22.30(g). An application shield grants the right to operate the facility upon the expiration of its operating permit. If an operating permit has expired, the conditions of the operating permit remain enforceable until the operating permit is reissued. Unless a facility obtained an application shield, the right to operate the facility terminates upon the expiration of its operating permit pursuant to N.J.A.C. 7:27-22.30(i).

4. **Permit Changes During Renewal Process**
   Minor changes, such as those that would qualify for a seven-day-notice change or administrative amendment, may be made with the renewal pursuant to N.J.A.C. 7:27-22.30(d). Significant changes, such as those qualifying for a minor or significant modification, must be submitted as a separate permit application. The Department at its discretion may include approval of these proposed changes along with the approval of the renewal application.

5. **New HAP Reporting Thresholds**
   Pursuant to N.J.A.C. 7:27-22.30(l), for any operating permit expiring on or after February 12, 2021, HAP emissions from a source operation that equal or exceed the reporting threshold specified in N.J.A.C. 7:27-17.9(a) must be included during this operating permit renewal process. For any instance in which a HAP is being added or revised solely due to a change in the reporting threshold, the HAP(s) may be included by submitting emission calculations as an attachment to the renewal application. Otherwise, the HAP(s) must be included through the submittal of a permit modification application pursuant to N.J.A.C. 7:27-22.23 or N.J.A.C. 7:27-22.24 as applicable. If you are unsure how to proceed, please contact the Department at (609) 633-8248.

6. **Changes to Insignificant Source Operations**
   A permittee may, pursuant to N.J.A.C. 7:27-22.21(a), make certain changes to an insignificant source operation, or to the use thereof, without notifying the Department or EPA until the renewal of the operating permit. In the application for the renewal of the operating permit, the permittee shall identify any such changes which affect information in the operating permit. Such changes could include the addition or deletion of insignificant source operations that have occurred during the term of the operating permit. Additions and revisions to existing insignificant source operations shall be made by completing the Insignificant Source Emissions screen in RADIUS, while deletions shall be requested in the Reason for Application screen in RADIUS.

The forms contained in this attachment must not be altered. Use of any non-standard forms will require resubmittal of the renewal application.

Section 1
Compliance Requirements

A. Compliance Assurance Monitoring (CAM) Applicability Determination

EPA developed 40 CFR 64 (Compliance Assurance Monitoring or "CAM") in order to provide reasonable assurance that facilities comply with emission limitations by monitoring the operation and maintenance of their control devices. In general, CAM applies to emission units that meet all of the following conditions:

1. The emission unit is located at a major source for which a Title V permit is required;
2. The emission unit is subject to an emission limitation or standard for a specific contaminant;
3. The emission unit uses a control device to achieve compliance with that specific contaminant's federally enforceable limit or standard;
4. The emission unit has potential pre-control or post-control emissions (of that specific contaminant) of at least 100% of the major source amount (see 40 CFR 64.2 - "Major facility"); and
5. The emission unit is not otherwise exempt from CAM (for exemptions, see 40 CFR 64.2(b)).

To learn more about the CAM program and for guidance on how to prepare a CAM plan, check EPA's website: https://www.epa.gov/air-emissions-monitoring-knowledge-base/compliance-assurance-monitoring.

After reviewing the information above, check the following boxes as applicable:

☑ **NO**, my facility **does not** have any emission units subject to CAM requirements.

☐ **YES**, my facility **does** have one or more emission units subject to CAM requirements, and

☐ A CAM plan is provided with this operating permit renewal application.

☐ A CAM plan will be submitted during the technical review of this renewal application.

B. Health Risk Assessment

1. Consistent with N.J.A.C. 7:27-22.3(cc), the Department will review each operating permit renewal application to ensure that emissions of Hazardous Air Pollutants (HAPs) do not pose a public health risk.

2. After receipt of the renewal application, the Department will notify applicants if a Facility-Wide Risk Assessment must be performed. A plot plan and air dispersion modeling protocol will be required in that case.

3. Previous Facility-Wide Risk Assessment, additions and changes in toxicity values or standards, and changes in the air model and/or the facility's location (in an Environmental Justice area, near a sensitive population etc.) will determine the need for health risk assessment.

C. Acid Rain Program

To learn more about Acid Rain Program, check EPA's website: https://www.epa.gov/airmarkets/acid-rain-program.

Check the following boxes as applicable:

☑ **NO**, this facility **is not subject** to the Acid Rain Program, codified at 40 CFR 72.

☐ **YES**, this facility **is subject** to the Acid Rain Program, codified at 40 CFR 72, and

- ☐ There have been no changes affecting my facility's Acid Rain Permit and a renewal application is provided with this operating permit renewal application.
- ☐ There have been changes affecting my facility's Acid Rain Permit and a revised/updated application is provided with this operating permit renewal application.

D. N.J.A.C. 7:27-18 Netting Analysis and General Operating Permit Determination

Air permit applications requesting air emissions increases are required to include a netting analysis to determine if the resulting net emission increase at the facility constitutes a significant net emission increase pursuant to N.J.A.C. 7:27-18.7. These netting analyses must be kept on site or submitted to the Department consistent with the Department's guidance included in the memo listed under "N.J.A.C. 7:27-18 Netting Analysis" and the "General Procedures for General Operating Permits" on the Department's webpage http://www.state.nj.us/dep/aqpp/permitguide.html and http://www.state.nj.us/dep/aqpp/gop.html, respectively. The Department intends to review these analyses at least once in 5 years unless no permit modifications proposing emissions increases were made and no GOPs were obtained during the past 5-year permit term. All netting analyses corresponding to a modification to increase emissions or a GOP must be submitted to the Department. Any netting analyses submitted with a modification application during the 5-year permit term do not need to be submitted again with the permit renewal application.

Check the following boxes as applicable:

☐ **NO**, this facility **has not made** permit changes resulting in emissions increases, including GOPs, since the last permit renewal.

☑ **YES**, this facility **has made** permit changes resulting in emissions increases, including GOPs, since the last permit renewal, and

- ☐ One or more netting analyses, prepared consistent with N.J.A.C. 7:27-18.7 during this permit term, were provided with a modification application during the 5-year permit term.
- ☑ One or more netting analyses, prepared consistent with N.J.A.C. 7:27-18.7 during this permit term, are provided with this permit renewal application.
- ☐ One or more netting analyses, prepared consistent with N.J.A.C. 7:27-18.7 during this permit term, will be submitted during the technical review of this permit renewal application.

Attachment to the RADIUS Air Operating Permit Renewal Application

Section 2

Certification

No additional certification is required when submitting the operating permit renewal application through NJDEP Online: http://www.nj.gov/dep/online/.

Complete the information below when submitting the operating permit renewal application on an electronic storage device, through the mail. Click on the icon on the signature line to add an image of a signature saved on your computer. If you do not have one, print the form out and manually sign on the line.

Facility PI#: 8242

Facility Name: Rutgers Newark Campus

Responsible Official:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attached documents and, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil and criminal penalties, including the possibility of fine or imprisonment or both, for submitting false, inaccurate or incomplete information.

Name: _____ **Signature:** _____ **Date:** _____

Individuals with Direct Knowledge:

I certify under penalty of law that I believe the information provided in this document is true, accurate and complete. I am aware that there are significant civil and criminal penalties, including the possibility of fine or imprisonment or both, for submitting false, inaccurate or incomplete information.

Name: _____ **Signature:** _____ **Date:** _____

Section Being Certified: _____

Name: _____ **Signature:** _____ **Date:** _____

Section Being Certified: _____

Name: _____ **Signature:** _____ **Date:** _____

Section Being Certified: _____

Name: _____ **Signature:** _____ **Date:** _____

Section Being Certified: _____

The forms contained in this attachment must not be altered. Use of any non-standard forms will require resubmittal of the renewal application.

Section 3
Summary of 7-Day Notice Changes

Instructions
Complete this form if any 7-day notice changes were submitted to the NJDEP since the approval of the initial operating permit or most recent renewal thereof. With this information, the NJDEP will include the provisions of any eligible 7-day notice changes into the renewed permit.

No.	Date of 7-Day Notice	Brief Description of Change
		NA

Section 4
Summary of the results from Stack Testing and Monitoring

Instructions
Complete this form if the permit required stack emissions testing, continuous emissions monitors or continuous opacity monitors.

Subject Item U / BP	OS / Ref #	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement	In Compliance?	
						Yes	No
U4	OS1 & OS2 Ref#3	The owner or operator of any industrial/commercial/institutional boiler or other indirect heat exchanger with a maximum gross heat input rate at least five million BTU per hour, but less than 50 million BTU per hour, shall adjust the combustion process annually in ccordance with the procedure set forth at N.J.A.C. 7:27-19.16 and the following schedule: For an	Monitored by periodic emission monitoring annually. [N.J.A.C. 7:27-16.8 (c)3i] &. [N.J.A.C. 7:27-19.7(g)3]	Recordkeeping by manual logging of parameter or storing data in a computer data system upon occurrence of event. The owner or operator of the equipment or source operation adjusted shall ensure that each adjustment is retained for a minimum of five years, to be made readily accessible to the Department upon request. Such record shall contain the	Submit a report: As per the approved schedule. The owner or operator shall ensure that an annual adjustment combustion process report is submitted electronically to the Department (Regional Enforcement Office listed on the first page of the Operating Permit) within 45 days after the adjustment of the combustion process is	✔	
U4	OS3 Ref#3	The owner or operator of any boiler serving an ICI boiler with a maximum gross heat input rate of at least 50 million BTU per hour or greater shall adjust its combustion process in accordance with the procedure set forth at N.J.A.C. 7:27-19.16 and the following schedule: For any ICI boiler or other indirect heat exchanger with a maximum	Monitored by periodic emission monitoring annually. When conducting a combustion adjustment, the permittee shall: i. Inspect the burner, and clean or replace any components of the burner as necessary; ii. Inspect the flame pattern and make any adjustments to the burner necessary to	Other: The owner or operator of the equipment or source operation adjusted shall ensure that each adjustment is recorded in a log book or computer data system and retained for a minimum of five years, to be made readily accessible to the Department upon request. Such record shall contain the following information for each annual	Submit a report: As per the approved schedule. Beginning 01/01/09, the owner or operator shall ensure that an annual adjustment combustion process report is submitted electronically to the Department within 45 days after the adjustment of the combustion process is completed. The electronic report shall be in the format	✔	

Make additional copies of this form if needed.

Section 5
Compliance Status

Instructions
Please read these instructions prior to completing the following form.

1. Subject Item: List each subject item from Section D, Compliance Plan and Inventories, of the operating permit in this column. Subject items include Facility (FC), Group (GR), Non-Source Fugitive Emissions (FG), Insignificant Source (IS), Batch Process (BP), and Emission Unit (U). (Operating Scenario and Reference Numbers are required only for Non-Compliance permit requirements. See item 2 below).

2. Compliance Status: Provide compliance status for each subject item in this column. If all the permit requirements for a subject item (for example an emission unit) are in compliance, write "In Compliance". If one or more permit requirements are out of compliance for a particular subject item, provide the Operating Scenario and Reference Number for each out of compliance requirement in the first column and write "Non-Compliance" in the 2nd column. (Reference Numbers for each applicable requirement are located in the first column of Facility Specific Requirements, Section D of the permit).

3. Method Used to Determine Compliance: Describe how compliance was determined in this column. If all the permit requirements for a subject item (for example an emission unit) are in compliance, write "Consistent with all methods listed in monitoring and recordkeeping permit requirements". If one or more permit requirements are out of compliance for a particular subject item, provide the Operating Scenario and Reference Number for each out of compliance requirement in the first column and provide specific method used to determine compliance in the 3rd column.

4. Compliance Schedule: insert a "No" if there are no compliance schedules included in this application to address non-compliance issues for which "Non-Compliance" was inserted in the 2nd column. Insert a "Yes" if a compliance schedule is included in this renewal application to address non-compliance issues in the approved permit or non-compliance issues disclosed in this application.

Section 5
Compliance Status

Instructions
Read the instructions on the previous page before completing this form.

Subject Item OS / Ref #	Compliance Status (In Compliance Non-Compliance)	Method Used to Determine Compliance	Is a Compliance Schedule Attached? (Yes/No)
Subject Item FC *OS / Ref #*	In Compliance	Consistent with all methods listed in monitoring and recordkeeping permit requirements	No
Subject Item IS1 *OS / Ref #*	In Compliance	Consistent with all methods listed in monitoring and recordkeeping permit requirements	No
Subject Item IS2 *OS / Ref #*	In Compliance	Consistent with all methods listed in monitoring and recordkeeping permit requirements	No

Make additional copies of this form if needed.

Section 5
Compliance Status

Instructions
Read the instructions on the previous page before completing this form.

Subject Item OS / Ref #	Compliance Status (In Compliance Non-Compliance)	Method Used to Determine Compliance	Is a Compliance Schedule Attached? (Yes/No)
Subject Item IS3 *OS / Ref #*	In Compliance	Consistent with all methods listed in monitoring and recordkeeping permit requirements	No
Subject Item IS4 *OS / Ref #*	In Compliance	Consistent with all methods listed in monitoring and recordkeeping permit requirements	No
Subject Item IS5 *OS / Ref #*	In Compliance	Consistent with all methods listed in monitoring and recordkeeping permit requirements	No

Make additional copies of this form if needed.

Section 5
Compliance Status

Instructions
Read the instructions on the previous page before completing this form.

Subject Item OS / Ref #	Compliance Status (In Compliance Non-Compliance)	Method Used to Determine Compliance	Is a Compliance Schedule Attached? (Yes/No)
Subject Item IS6 *OS / Ref #*	In Compliance	Consistent with all methods listed in monitoring and recordkeeping permit requirements	No
Subject Item IS7 *OS / Ref #*	In Compliance	Consistent with all methods listed in monitoring and recordkeeping permit requirements	No
Subject Item U1 *OS / Ref #*	In Compliance	Consistent with all methods listed in monitoring and recordkeeping permit requirements	No

Make additional copies of this form if needed.

Section 5
Compliance Status

Instructions
Read the instructions on the previous page before completing this form.

Subject Item OS / Ref #	Compliance Status (In Compliance Non-Compliance)	Method Used to Determine Compliance	Is a Compliance Schedule Attached? (Yes/No)
Subject Item U2 *OS / Ref #*	In Compliance	Consistent with all methods listed in monitoring and recordkeeping permit requirements	No
Subject Item U3 *OS / Ref #*	In Compliance	Consistent with all methods listed in monitoring and recordkeeping permit requirements	No
Subject Item U4 *OS / Ref #*	In Compliance	Consistent with all methods listed in monitoring and recordkeeping permit requirements	No

Make additional copies of this form if needed.

Section 5
Compliance Status

Instructions
Read the instructions on the previous page before completing this form.

Subject Item OS / Ref #	Compliance Status (In Compliance Non-Compliance)	Method Used to Determine Compliance	Is a Compliance Schedule Attached? (Yes/No)
Subject Item U5 *OS / Ref #*	In Compliance	Consistent with all methods listed in monitoring and recordkeeping permit requirements	No
Subject Item U6 *OS / Ref #*	In Compliance	Consistent with all methods listed in monitoring and recordkeeping permit requirements	No
Subject Item NA *OS / Ref #*		NA	

Make additional copies of this form if needed.

Section 5
Compliance Schedules

Instructions
Complete this form if the permit included any compliance schedules (Section D of the permit) or if there are any non-compliance issues at the time of completing this application form. Check the appropriate box to indicate whether the compliance schedule has been updated, removed, or added.

Subject Item OS / Ref #	Requirement	Compliance Schedule	Compliance Schedule		
			Updated	Removed	Added
Subject Item NA	NA	NA			
OS / Ref #					
Subject Item NA	NA	NA			
OS / Ref #					
Subject Item NA	NA	NA			
OS / Ref #					

Make additional copies of this form if needed.

NETTING ANALYSIS RESULTS

Consistent with N.J.A.C. 7:27-18.7

Instructions

This spreadsheet calculates netting terms for the contemporaneous period and compares the net emission increase of each air contaminant to the significant net emission increase level for that air contaminant set forth in N.J.A.C. 7:27-18.7 Table 3. If the net emission increase is equal to or greater than the applicable significant net emission increase level, it is a significant net emission increase. In addition to this spreadsheet, applicants must provide backup calculations for the data entered in this spreadsheet.

Authority & Applicability

Pursuant to N.J.A.C. 7:27-18, a netting analysis must be conducted for the following: (1) all modifications resulting in an emission increase, and (2) all General Operating Permit Registrations. In addition, for modifications, a copy of the netting analysis must be submitted to the Department consistent with the Department guidance (see link below). All netting analyses, including for GOPs, must be submitted with the Operating Permit renewal application.

When to Require Submission o fN.J.A.C. 7:27-18 Netting Analysis: http://www.state.nj.us/dep/aqpp/permitguide/NettingAnalysis.pdf

Netting Equation and Definitions

$$NI = IP + INP + IF + IA - DO - DC$$

NI = The net emission increase at a facility.

IP = Any increase(s) in the allowable emissions of the air contaminant which occurred during the contemporaneous period and which were authorized by permits issued by the Department.

INP = Any increase(s) in the allowable emissions of the air contaminant which occurred during the contemporaneous period and which came from any equipment or control apparatus for which no permit was in effect at the time of the increase.

IF = Any increase in fugitive emissions of the air contaminant from the facility during the contemporaneous period.

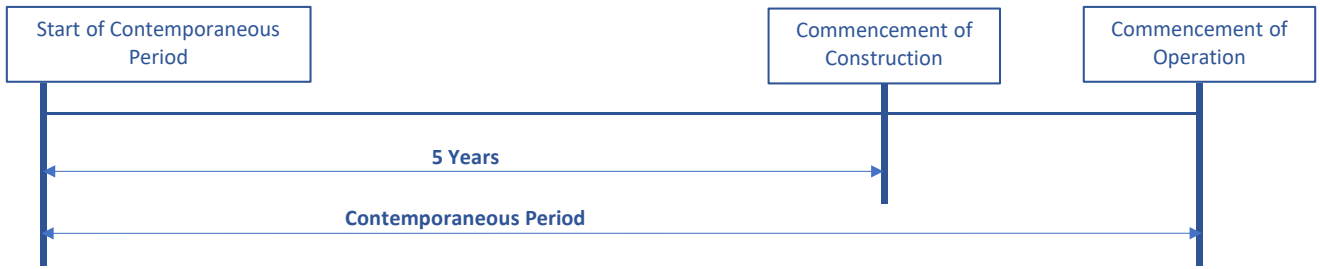
IA = Any proposed increase in allowable emissions of the air contaminant from the newly constructed, reconstructed, or modified equipment or control apparatus which is the subject of the permit application.

DO = Any increase(s) in the allowable emissions of the air contaminant which occurred during the contemporaneous period, if emission offsets were secured for these increases from the facility or from another facility.

DC = The sum of all creditable emission reductions at the facility during the contemporaneous period, not including any creditable emissions reductions previously used as emission offsets at the facility or any other facility. All permanent reductions of emissions must be in effect on or before the initiation of operation of the equipment that is subject of the permit application.

Contemporaneous Period Data

When using the spreadsheet, facilities must enter all the existing contemporaneous period data. This is necessary to establish the facility baseline for the netting analysis calculation being performed. Contemporaneous period is defined as the five years prior to the commencement of construction; and the period between the commencement of the construction and the initiation of operation of the newly constructed, reconstructed, or modified equipment.



NETTING ANALYSIS RESULTS

Consistent with N.J.A.C. 7:27-18.7

Facility Information → Facility PI: 08242 Facility Name: Rutgers Newark campus BOP Activity: 200001

Calculation of NI for this Permit Action - NO DATA ENTRY REQUIRED

This table is automatically populated after Table 1 and Table 2 below are completed.

Air Contaminant	IP Emission Increase from Permitted Sources	INP Emission Increase from Non-Permitted Sources	IF Emission Increase from Fugitive Emissions	IA Emission Increase from the Current Modification	DO Emission Decrease from Emission Offsets	DC Emission Decrease from Creditable Emission Reductions	NI Net Emission Increase at the Facility	Significant Net Emission Increase Thresholds (N.J.A.C. 7:27-18.7 Table 3)	Significant Net Emission Increase? Yes/No
VOC	0.12	0.00	0.00	0.00	0.00	0.00	0.12	25	No
NOx	5.33	0.00	0.00	0.27	0.00	0.00	5.60	25	No
CO	0.52	0.00	0.00	0.07	0.00	0.00	0.59	100	No
SO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40	No
TSP	0.02	0.00	0.00	0.01	0.00	0.00	0.03	25	No
PM10	0.02	0.00	0.00	0.01	0.00	0.00	0.03	15	No
PM2.5	0.02	0.00	0.00	0.01	0.00	0.00	0.03	10	No

Table 1 - Calculation of Total IA for this Permit Action (Modification or GOP) - ENTER ALL DATA FOR THIS PERMIT ACTION

Equipment ID	Emission Unit / Batch Process	Equipment Description	Start of Constr. Date	Start of Operation Date	VOC TPY	NOx TPY	CO TPY	SO2 TPY	TSP TPY	PM10 TPY	PM2.5 TPY
E2	GOP	HLLC bldg. D -EG 2000KW GOP190001	12/13/2019	1/1/2020	0.00	0.27	0.07	0.00	0.01	0.01	0.01
				Totals for this Permit Action (IA):	0.00	0.27	0.07	0.00	0.01	0.01	0.01

Table 2 - Total IP, INP, IF, DO, & DC for the Contemporaneous Period – ENTER ALL DATA FOR THE CONTEMPORANEOUS PERIOD SHOWN BELOW

Contemporaneous Period Start: 1/1/2014 Contemporaneous Period End: 1/1/2020

Use the Equipment ID drop-down filter to uncheck blank rows before printing.

Equipment ID	Emission Unit / Batch Process	Equipment Description	BOP Activity	Permit Approval Date	Netting Term	VOC TPY	NOx TPY	CO TPY	SO2 TPY	TSP TPY	PM10 TPY	PM2.5 TPY
E74984	U1-OS9	15 Washington NG -Blr 2 MMBTU/hr	150001	8/17/2015	IP	0.00	0.06	0.05	0.00	0.00	0.00	0.00
E74985	U1-OS10	15 Washington NG -Blr 2 MMBTU/hr	150001	8/17/2015	IP	0.00	0.06	0.05	0.00	0.00	0.00	0.00
E74986	U1-OS17	15 Washington NG -Blr 2 MMBTU/hr	150001	8/17/2015	IP	0.00	0.06	0.05	0.00	0.00	0.00	0.00
E74987	U1-OS18	15 Washington NG -Blr 2 MMBTU/hr	150001	8/17/2015	IP	0.00	0.06	0.05	0.00	0.00	0.00	0.00

NETTING ANALYSIS RESULTS

Consistent with N.J.A.C. 7:27-18.7

Equipment ID	Emission Unit / Batch Process	Equipment Description	BOP Activity	Permit Approval Date	Netting Term	VOC TPY	NOx TPY	CO TPY	SO2 TPY	TSP TPY	PM10 TPY	PM2.5 TPY
E74988	U2-OS6	15 Washington NG-EG 300KW	150001	8/17/2015	IP	0.02	0.72	0.06	0.00	0.00	0.00	0.00
E74989	U2-OS7	15 Washington NG-EG 350KW	150001	8/17/2015	IP	0.02	0.83	0.06	0.00	0.00	0.00	0.00
E72281	U2-OS1	Facilities Off. NG -Blr 2.382 MMBTU/hr	170002	3/7/2017	IP	0.04	1.77	0.10	0.00	0.01	0.01	0.01
E1	U6-OS1	Life Science II Diesel -EG 2000KW	160001	3/7/2017	IP	0.04	1.77	0.10	0.00	0.01	0.01	0.01

Rutgers University Newark Campus Netting Analysis Calculations 10-1-20
PI 08242
BOP200001

Emission factors lb/MMCF Boiler on Natural Gas

MMCF/yr based on Percentage of Emission Unit Annual Fuel Limits

IA

Bldg No.	Building	NJID	Equip	MMBTU/hr	U total MMBTU	U MMCF Limit	% of U Limit	MMCF/yr	VOC TPY	NOX TPY	CO TPY	SO2 TPY	TSP TPY	PM-10 TPY	PM-2.5 TPY
									5.5	100	84	0.6	7.6	7.6	7.6
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
								sub totals							

MMCF/yr based on Percentage of Emission Unit Annual Fuel Limits

IP

Bldg No.	Building	NJID	Equip	MMBTU/hr	U total MMBTU	MMCF Limit	% of Limit	MMCF/yr	VOC TPY	NOX TPY	CO TPY	SO2 TPY	TSP TPY	PM-10 TPY	PM-2.5 TPY
7498	15 Washington	E74984	NG Boiler	2	8	4.4	25%	1.10	0.00	0.06	0.05	0.00	0.00	0.00	0.00
7498	15 Washington	E74985	NG Boiler	2	8	4.4	25%	1.10	0.00	0.06	0.05	0.00	0.00	0.00	0.00
7498	15 Washington	E74986	NG Boiler	2	8	4.4	25%	1.10	0.00	0.06	0.05	0.00	0.00	0.00	0.00
7498	15 Washington	E74987	NG Boiler	2	8	4.4	25%	1.10	0.00	0.06	0.05	0.00	0.00	0.00	0.00
7228	Facilities Office Boiler	E72281	NG Boiler	2.382	32.546	67.4	7%	4.93	0.01	0.25	0.21	0.00	0.02	0.02	0.02
								sub-totals	0.03	0.47	0.39	0.00	0.04	0.04	0.04

Emissions Based on Permitted 100 hours for Maintenance and Testing Emission factors lb/hour from permit

IP

Bldg No.	Building	NJID	Equip	MMBTU/hr	hours /yr			lbs/hr	VOC	NOX	CO	SO2	TSP	PM-10	PM-2.5
									0.35	14.4	1.12	NA	0.05	0.05	0.05
7498	15 Washington	E74988	NG EG #1 300KW	3.53	100			TPY	0.02	0.72	0.06	0.00	0.00	0.00	0.00
Bldg No.	Building	NJID	Equip	MMBTU/hr	hours /yr			lbs/hr	0.41	16.6	1.29	NA	0.05	0.05	0.05
7498	15 Washington	E74989	NG EG #2 350KW	4.06	100			TPY	0.02	0.83	0.06	0.00	0.00	0.00	0.00
Bldg No.	Building	NJID	Equip	MMBTU/hr	hours /yr			lbs/hr	0.71	35.30	1.94	NA	0.16	0.16	0.16
7250	Life Sciences II	E1	Diesel EG 2000KW	19.32	100			TPY	0.04	1.77	0.10	0.00	0.01	0.01	0.01
Bldg No.	Building	NJID	Equip	MMBTU/hr	hours /yr			lbs/hr	0.00	5.47	1.43	NA	0.12	0.12	0.12
7327	HLLC	E2	Diesel EG 350KW	3.9	100			TPY	0.00	0.27	0.07	0.00	0.01	0.01	0.01

					VOC	NOX	CO	SO2	TSP	PM-10	PM-2.5
IA	**Net Increases TPY**				**0.10**	**4.05**	**0.68**	**0.00**	**0.05**	**0.05**	**0.05**

Rutgers Newark Campus 08242
BOP170002
HAP analysis

Natural Gas Boilers U1

Emission Unit			HAPS	Benzene	Formaldehyde	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Manganese	Mercury	Cobalt	7,12-Dimethylbenz(a)Anthracene	Selenium	Benzo(a)pyrene	Nickel
U1 15 Natural boilers firing NG < 5 MMBTU/hr		Emission factors lb/MMCF		0.0021	0.07548	0.00061	0.0034	1.8	0.0002	0.000012	0.0011	0.0014	0.00038	0.00026	0.000084	0.000016	0.000024	0.0000012	0.0021
Permitted NG (MMCF/yr)	67.4		HAPS lbs/yr	0.14154	5.08735	0.04111	0.22916	121.32000	0.01348	0.00081	0.07414	0.09436	0.02561	0.01752	0.00566	0.00108	0.00162	0.00008	0.14154
		HAP Reporting Threshold lb/yr.		6	3.5	1.4	2000	2000	0.01	0.02	0.01	1000	0.6	2	0.005	0.0007	925	0.04	0.6
			Reportable	N	y	N	N	N	y	N	y	N	N	N	y	y	N	N	N
			TPY	NA	**0.002544**	NA	NA	NA	**0.000007**	NA	**0.000037**	NA	NA	NA	**0.000003**	**0.000001**	NA	NA	NA

Emergency Generators on Natural Gas U2

Emissions based on 100 hours /yr for testing and maintenance

Emission Point / Unit -OS	E72291 - PT3-U2-OS1			HAPS	Benzene	Formaldehyde	Acetaldehyde	Acrolein	(1,3)-Butadiene	Carbon Tetrachloride	Chloroform	Ethylene Dibromide	Methylene Chloride	1,1,2,2 Tetrachloroethane	1,1,2 Trichloroethane	PAM
Building	Olson Hall		Emission factors lb/MMBTU		0.00194	0.0552	0.00776	0.00778	0.00082	0.0000607	0.0000471	0.0000735	0.000147	0.0000663	0.0000527	0.000134
Permitted MMBTU/hr	2.96	MMBTU/yr	296	HAPS lbs/yr	0.57424	16.33920	2.29696	2.30288	0.24272	0.01797	0.01394	0.02176	0.04351	0.01962	0.01560	0.03966
		HAP Reporting Threshold lb/yr.			6	3.5	21	1	1.5	8	2	0.08	0.01	0.8	3	2
				Reportable	N	y	N	y	N	N	N	N	y	N	N	N
				TPY	NA	**0.008170**	NA	**0.001151**	NA	NA	NA	NA	**0.000022**	NA	NA	NA

Emissions based on 100 hours /yr for testing and maintenance

Emission Point / Unit -OS	E74921 - PT7-U2-OS2			HAPS	Benzene	Formaldehyde	Acetaldehyde	Acrolein	(1,3)-Butadiene	Carbon Tetrachloride	Chloroform	Ethylene Dibromide	Methylene Chloride	1,1,2,2 Tetrachloroethane	1,1,2 Trichloroethane	PAM
Building	Center for Law and Justice		Emission factors lb/MMBTU		0.00194	0.0552	0.00776	0.00778	0.00082	0.0000607	0.0000471	0.0000735	0.000147	0.0000663	0.0000527	0.000134
Permitted MMBTU/hr	2.86	MMBTU/yr	286	HAPS lbs/yr	0.55484	15.78720	2.21936	2.22508	0.23452	0.01736	0.01347	0.02102	0.04204	0.01896	0.01507	0.03832
		HAP Reporting Threshold lb/yr.			6	3.5	21	1	1.5	8	2	0.08	0.01	0.8	3	2
				Reportable	N	y	N	y	N	N	N	N	y	N	N	N
				TPY	NA	**0.007894**	NA	**0.001113**	NA	NA	NA	NA	**0.000021**	NA	NA	NA

Emissions based on 100 hours /yr for testing and maintenance

Emission Point / Unit -OS	E75007 - PT14-U2-OS3			HAPS	Benzene	Formaldehyde	Acetaldehyde	Acrolein	(1,3)-Butadiene	Carbon Tetrachloride	Chloroform	Ethylene Dibromide	Methylene Chloride	1,1,2,2 Tetrachloroethane	1,1,2 Trichloroethane	PAM
Building	Neilson Dinning Hall		Emission factors lb/MMBTU		0.00194	0.0552	0.00776	0.00778	0.00082	0.0000607	0.0000471	0.0000735	0.000147	0.0000663	0.0000527	0.000134
Permitted MMBTU/hr	2.95	MMBTU/yr	295	HAPS lbs/yr	0.57230	16.28400	2.28920	2.29510	0.24190	0.01791	0.01389	0.02168	0.04337	0.01956	0.01555	0.03953
		HAP Reporting Threshold lb/yr.			6	3.5	21	1	1.5	8	2	0.08	0.01	0.8	3	2
				Reportable	N	y	N	y	N	N	N	N	y	N	N	N
				TPY	NA	**0.008142**	NA	**0.001148**	NA	NA	NA	NA	**0.000022**	NA	NA	NA

Emissions based on 100 hours /yr for testing and maintenance

Emission Point / Unit -OS	PT45-U2-OS3			HAPS	Benzene	Formaldehyde	Acetaldehyde	Acrolein	(1,3)-Butadiene	Carbon Tetrachloride	Chloroform	Ethylene Dibromide	Methylene Chloride	1,1,2,2 Tetrachloroethane	1,1,2 Trichloroethane	PAM
Building	Universxity Square Housing		Emission factors lb/MMBTU		0.00194	0.0552	0.00776	0.00778	0.00082	0.0000607	0.0000471	0.0000735	0.000147	0.0000663	0.0000527	0.000134
Permitted MMBTU/hr	3.94	MMBTU/yr	394	HAPS lbs/yr	0.76436	21.74880	3.05744	3.06532	0.32308	0.02392	0.01856	0.02896	0.05792	0.02612	0.02076	0.05280
		HAP Reporting Threshold lb/yr.			6	3.5	21	1	1.5	8	2	0.08	0.01	0.8	3	2
				Reportable	N	y	N	y	N	N	N	N	y	N	N	N
				TPY	NA	**0.010874**	NA	**0.001533**	NA	NA	NA	NA	**0.000029**	NA	NA	NA

Emissions based on 100 hours /yr for testing and maintenance

Emission Point / Unit -OS	E72271 -PT12-U2-OS4			HAPS	Benzene	Formaldehyde	Acetaldehyde	Acrolein	(1,3)-Butadiene	Carbon Tetrachloride	Chloroform	Ethylene Dibromide	Methylene Chloride	1,1,2,2 Tetrachloroethane	1,1,2 Trichloroethane	PAM
Building	Englehard Hall		Emission factors lb/MMBTU		0.00194	0.0552	0.00776	0.00778	0.00082	0.0000607	0.0000471	0.0000735	0.000147	0.0000663	0.0000527	0.000134
Permitted MMBTU/hr	1.77	MMBTU/yr	177	HAPS lbs/yr	0.34338	9.77040	1.37352	1.37706	0.14514	0.01074	0.00834	0.01301	0.02602	0.01174	0.00933	0.02372
		HAP Reporting Threshold lb/yr.			6	3.5	21	1	1.5	8	2	0.08	0.01	0.8	3	2
				Reportable	N	y	N	y	N	N	N	N	y	N	N	N
				TPY	NA	**0.004885**	NA	**0.000689**	NA	NA	NA	NA	**0.000013**	NA	NA	NA

Emissions based on 100 hours /yr for testing and maintenance

Emission Point / Unit -OS	E72264 - PT17226 -U2-OS5			HAPS	Benzene	Formaldehyde	Acetaldehyde	Acrolein	(1,3)-Butadiene	Carbon Tetrachloride	Chloroform	Ethylene Dibromide	Methylene Chloride	1,1,2,2 Tetrachloroethane	1,1,2 Trichloroethane	PAM
Building	Central Heating Plant		Emission factors lb/MMBTU		0.00194	0.0552	0.00776	0.00778	0.00082	0.0000607	0.0000471	0.0000735	0.000147	0.0000663	0.0000527	0.000134
Permitted MMBTU/hr	4.18	MMBTU/yr	418	HAPS lbs/yr	0.81092	23.07360	3.24368	3.25204	0.34276	0.02537	0.01969	0.03072	0.06145	0.02771	0.02203	0.05601
		HAP Reporting Threshold lb/yr.			6	3.5	21	1	1.5	8	2	0.08	0.01	0.8	3	2
				Reportable	N	y	N	y	N	N	N	N	y	N	N	N
				TPY	NA	**0.011537**	NA	**0.001626**	NA	NA	NA	NA	**0.000031**	NA	NA	NA

Emissions based on 100 hours /yr for testing and maintenance

Emission Point / Unit -OS	E74988 - PT16 -U2-OS6			HAPS	Benzene	Formaldehyde	Acetaldehyde	Acrolein	(1,3)-Butadiene	Carbon Tetrachloride	Chloroform	Ethylene Dibromide	Methylene Chloride	1,1,2,2 Tetrachloroethane	1,1,2 Trichloroethane	PAM
Building	15 Washington		Emission factors lb/MMBTU		0.00194	0.0552	0.00776	0.00778	0.00082	0.0000607	0.0000471	0.0000735	0.000147	0.0000663	0.0000527	0.000134
Permitted MMBTU/hr	3.53	MMBTU/yr	353	HAPS lbs/yr	0.68482	19.48560	2.73928	2.74634	0.28946	0.02143	0.01663	0.02595	0.05189	0.02340	0.01860	0.04730
		HAP Reporting Threshold lb/yr.			6	3.5	21	1	1.5	8	2	0.08	0.01	0.8	3	2
				Reportable	N	y	N	y	N	N	N	N	y	N	N	N
				TPY	NA	**0.009743**	NA	**0.001373**	NA	NA	NA	NA	**0.000026**	NA	NA	NA

Emissions based on 100 hours /yr for testing and maintenance

Emission Point / Unit -OS	E74989 - PT17 -U2-OS7			HAPS	Benzene	Formaldehyde	Acetaldehyde	Acrolein	(1,3)-Butadiene	Carbon Tetrachloride	Chloroform	Ethylene Dibromide	Methylene Chloride	1,1,2,2 Tetrachloroethane	1,1,2 Trichloroethane	PAM
Building	15 Washington		Emission factors lb/MMBTU		0.00194	0.0552	0.00776	0.00778	0.00082	0.0000607	0.0000471	0.0000735	0.000147	0.0000663	0.0000527	0.000134
Permitted MMBTU/hr	4.06	MMBTU/yr	406	HAPS lbs/yr	0.78764	22.41120	3.15056	3.15868	0.33292	0.02464	0.01912	0.02984	0.05968	0.02692	0.02140	0.05440
		HAP Reporting Threshold lb/yr.			6	3.5	21	1	1.5	8	2	0.08	0.01	0.8	3	2
				Reportable	N	y	N	y	N	N	N	N	y	N	N	N
				TPY	NA	**0.011206**	NA	**0.001579**	NA	NA	NA	NA	**0.000030**	NA	NA	NA

U2- TOTAL HAPS		HAPS lbs/yr		5.09250	144.90000	20.37000	20.42250	2.15250	0.15934	0.12364	0.19294	0.38588	0.17404	0.13834	0.35175
	HAP Reporting Threshold lb/yr.			6	3.5	21	1	1.5	8	2	0.08	0.01	0.8	3	2
			Reportable	N	y	N	y	y	N	N	y	y	N	N	N
			TPY	NA	**0.072450**	NA	**0.010211**	**0.001076**	NA	NA	**0.000096**	**0.000193**	NA	NA	NA

U3 Emergency Generators on Diesel U3

Emissions based on 100 hours /yr for testing and maintenance

Emission Point / Unit -OS	E72311 - PT4-U3-OS2			HAPS	Benzene	Formaldehyde	Acetaldehyde	Acrolein	(1,3)-Butadiene
Building	Police Station		Emission factors lb/MMBTU		0.00093	0.00118	0.000762	0.000925	0.0000391
Permitted MMBTU/hr	1.12	MMBTU/yr	112	HAPS lbs/yr	0.10450	0.13216	0.08534	0.10360	0.00438
		HAP Reporting Threshold lb/yr.			6	3.5	21	1	1.5
				Reportable	N	N	N	N	N
				TPY	NA	NA	NA	NA	NA

Emissions based on 100 hours /yr for testing and maintenance

Emission Point / Unit -OS	E74961 - PT15-U3-OS3			HAPS	Benzene	Formaldehyde	Acetaldehyde	Acrolein	(1,3)-Butadiene
Building	Woodrward Dorms		Emission factors lb/MMBTU		0.00093	0.00118	0.000762	0.000925	0.0000391
Permitted MMBTU/hr	2.96	MMBTU/yr	296	HAPS lbs/yr	0.27617	0.34928	0.22555	0.27380	0.01157
		HAP Reporting Threshold lb/yr.			6	3.5	21	1	1.5
				Reportable	N	N	N	N	N
				TPY	NA	NA	NA	NA	NA

Emissions based on 100 hours /yr for testing and maintenance

Emission Point / Unit -OS	E1009 - PT1001-U3-OS4			HAPS	Benzene	Formaldehyde	Acetaldehyde	Acrolein	(1,3)-Butadiene
Building	Magna One (1 Washington)		Emission factors lb/MMBTU		0.00093	0.00118	0.000762	0.000925	0.0000391
Permitted MMBTU/hr	3.16	MMBTU/yr	316	HAPS lbs/yr	0.29483	0.37288	0.24079	0.29230	0.01236

HAP Reporting Threshold lb/yr.		6	3.5	21	1	1.5
	Reportable	**N**	**N**	**N**	**N**	**N**
	TPY	**NA**	**NA**	**NA**	**NA**	**NA**

U3 TOTAL HAPS	HAPS lbs/yr	0.57193	0.72334	0.46711	0.56703	0.02397
HAP Reporting Threshold lb/yr.		6	3.5	21	1	1.5
	Reportable	**N**	**N**	**N**	**N**	**N**
	TPY	**NA**	**NA**	**NA**	**NA**	**NA**

(3) Central Heating Plant Boilers on Natural gas U4

Emission Unit	U4		HAPS	Benzene	Formaldehyde	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Manganese	Mercury	Cobalt	7,12-Dimethylbenz(a)Anthracene	Selenium	Benzo(a)pyrene	Nickel
U4 Central Heating Plant Boilers on Natural Gas		Emission factors lb/MMCF		0.0021	0.07548	0.00061	0.0034	1.8	0.0002	0.000012	0.0011	0.0014	0.00038	0.00026	0.000084	0.000016	0.000024	0.0000012	0.0021
Permitted NG (MMCF/yr)	285		HAPS lbs/yr	0.59850	21.51180	0.17385	0.96900	513.00000	0.05700	0.00342	0.31350	0.39900	0.10830	0.07410	0.02394	0.00456	0.00684	0.00034	0.59850
		HAP Reporting Threshold lb/yr.		6	3.5	1.4	2000	2000	0.01	0.02	0.01	1000	0.6	2	0.005	0.0007	925	0.04	0.6
			Reportable	**N**	**y**	**N**	**N**	**N**	**y**	**N**	**y**	**N**	**N**	**N**	**y**	**y**	**N**	**N**	**N**
			TPY	**NA**	**0.010756**	**NA**	**NA**	**NA**	**0.000029**	**NA**	**0.000157**	**NA**	**NA**	**NA**	**0.000012**	**0.000002**	**NA**	**NA**	**NA**

1 Washington (8) NG boilers U5

Emission Unit			HAPS	Benzene	Formaldehyde	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Manganese	Mercury	Cobalt	7,12-Dimethylbenz(a)Anthracene	Selenium	Benzo(a)pyrene	Nickel
U5 8 Natural boilers firing NG		Emission factors lb/MMCF		0.0021	0.07548	0.00061	0.0034	1.8	0.0002	0.000012	0.0011	0.0014	0.00038	0.00026	0.000084	0.000016	0.000024	0.0000012	0.0021
Permitted NG (MMCF/yr)	19.4		HAPS lbs/yr	0.04074	1.46431	0.01183	0.06596	34.92000	0.00388	0.00023	0.02134	0.02716	0.00737	0.00504	0.00163	0.00031	0.00047	0.00002	0.04074
		HAP Reporting Threshold lb/yr.		6	3.5	1.4	2000	2000	0.01	0.02	0.01	1000	0.6	2	0.005	0.0007	925	0.04	0.6
			Reportable	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**y**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
			TPY	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**0.000011**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Diesel Emergency Generator -U6

Emissions based on 100 hours /yr for testing and maintenance

Emission Point / Unit -OS	E1 - PT18 - U6 - OS1			HAPS	Benzene	Formaldehyde	Acetaldehyde	Acrolein	(1,3)-Butadiene
Building	Life Science II		Emission factors lb/MMBTU		0.00093	0.00118	0.000762	0.000925	0.0000391
Permitted MMBTU/hr	19.32	MMBTU/yr	1932	HAPS lbs/yr	1.80256	2.27976	1.47218	1.78710	0.07554
		HAP Reporting Threshold lb/yr.			6	3.5	21	1	1.5
				Reportable	**N**	**N**	**N**	**y**	**N**
				TPY	**NA**	**NA**	**NA**	**0.000894**	**NA**