



Connecticut Department of

ENERGY &  
ENVIRONMENTAL  
PROTECTION

BUREAU OF AIR MANAGEMENT  
NEW SOURCE REVIEW PERMIT  
TO CONSTRUCT AND OPERATE A STATIONARY SOURCE

Issued pursuant to Title 22a of the Connecticut General Statutes (CGS) and Section 22a-174-3a of the Regulations of Connecticut State Agencies (RCSA).

Owner/Operator:	Kimberly-Clark Corporation
Address:	58 Pickett District Road, New Milford, CT 06776
Equipment Location:	58 Pickett District Road, New Milford, CT 06776
Equipment Description:	Solar Titan 130 Combustion Turbine #1 with Eclipse 30FFB-SP Supplemental Burner

Town-Permit Numbers:	130-0070
Town-Premises Numbers:	130-0006
Modification Issue Date:	August 15, 2012
Prior Permit Issue Dates:	10/09/07, 03/30/10
Expiration Date:	None

/s/ Anne Gobin for  
Daniel C. Esty  
Commissioner

August 15, 2012  
Date

## PERMIT FOR FUEL BURNING EQUIPMENT

### DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION BUREAU OF AIR MANAGEMENT

The conditions on all pages of this permit and attached appendices shall be verified at all times except those noted as design specifications. Design specifications need not be verified on a continuous basis; however, if requested by the commissioner, demonstration of compliance shall be shown.

#### PART I. OPERATIONAL CONDITIONS

##### A. Operating Limits

1. Fuel Type: Natural Gas
2. Maximum Fuel Consumption over any Consecutive 12 Month Period: 1502 MMcf(Turbine) and 215 MMcf (Supp. Burner)
3. Maximum Fuel Sulfur Content (% by weight, dry basis): <0.003

##### B. Design Specifications

1. Maximum Fuel Firing Rate(s)(cf/h): 171,412(Turbine) and 24,510 (Supp. Burner)
2. Maximum Gross Heat Input (MMBtu/h): 174.84 (Turbine) and 25 (Supp. Burner)
3. Nameplate Capacity (MW): 14.986

##### C. Stack Parameters

1. Minimum Stack Height (ft): 78
2. Minimum Exhaust Gas Flow Rate @ 100% Load (acfm): 118,257
3. Minimum Stack Exit Temperature @ 100% Load (°F): 325
4. Minimum Distance from Stack to Property Line (ft): 308

#### PART II. CONTROL EQUIPMENT DESIGN SPECIFICATIONS

##### A. Selective Catalytic Reduction (SCR)

1. Make and Model: Cormetech CM-21
2. Catalyst Type: Homogeneous Honeycomb
3. Minimum Gas Flow Rate at Maximum Rated Capacity (acfm): 349,386
4. Pressure Drop (in H<sub>2</sub>O): 3.4 @ 425,000 lb/h, 429°F
5. Design NO<sub>x</sub> Emission Rate (ppmvd @ 15% O<sub>2</sub>): ≤ 2.5

##### B. Low NO<sub>x</sub> Burner

1. Make and Model: Solar Turbine Titan 130 Burners
2. Guaranteed NO<sub>x</sub> Emission Rate (ppmvd @ 15% O<sub>2</sub>): 15

##### C. Catalytic Oxidizer

1. Make and Model: EmeraChem Modular ADCAT Catalytic Oxidizer
2. Design Removal Efficiency: ≥90% (CO), ≥85% (VOC)

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#### PART III. CONTINUOUS EMISSION MONITORING REQUIREMENTS AND ASSOCIATED EMISSION LIMITS

CEM shall be required for the following pollutant/operational parameters and enforced on the following basis:

<u>Pollutant/Operational Parameter</u>	<u>Averaging Times</u>	<u>Emission Limit</u>	<u>Units</u>
NOx	24 hour rolling	2.5 <sup>1</sup>	ppmvd @ 15% O <sub>2</sub>

<sup>1</sup> - Except during periods of start-up and shutdown.

#### PART IV. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS

##### A. Monitoring

1. The Permittee shall use non-resettable totalizing fuel metering devices to continuously monitor fuel fed to this permitted turbine and supplemental burner.
2. The Permittee may elect not to monitor the total sulfur content of the natural gas, in accordance with 40 CFR §60.4365 Subpart KKKK, if the potential emissions do not exceed 0.060 lb SO<sub>2</sub>/MMBtu. This demonstration may be made using the purchase contract specifying that the fuel sulfur content for the natural gas is less than or equal to 20 grains of sulfur/100 standard cubic feet and results in potential emissions not exceeding 0.060 lb SO<sub>2</sub>/MMBtu. This determination shall be done on an annual basis pursuant to 40 CFR §60.4415 Subpart KKKK.
3. The Permittee shall install and operate a NO<sub>x</sub> CEMS in accordance with 40 CFR §60.4345 Subpart KKKK.

##### B. Record Keeping

1. The Permittee shall keep records of annual fuel consumption of the turbine and supplemental burner. Annual fuel consumption shall be based on any consecutive 12 month time period and shall be determined by adding the current month's fuel usage to that of the previous 11 months. The Permittee shall make these calculations within 30 days of the end of the previous month.
2. The Permittee shall maintain records of all tune-ups, repairs, replacement of parts and other maintenance to this source and control equipment.

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**PART IV. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS,  
continued**

3. The Permittee shall calculate and record the hourly, monthly and consecutive 12 month PM-10/PM-2.5, SO<sub>2</sub>, NO<sub>x</sub>, CO, and VOC emissions in units of tons. The consecutive 12 month emissions shall be determined by adding (for each pollutant) the current month's emissions to that of the previous 11 months. Such records shall include a sample calculation for each pollutant. The Permittee shall make these calculations within 30 days of the end of the previous month. Emissions during startup and shutdown shall be counted towards the annual emission limitation in Part V.D of this permit.
4. The Permittee shall keep records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the stationary gas turbine; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative. [40 CFR §60.7(b)]  
  
Such records shall contain the following information:
  - a. type of event (startup, shutdown, or malfunction),
  - b. equipment affected,
  - c. date of event,
  - d. duration of event (minutes).
5. The Permittee shall keep all records required by this permit for a period of no less than five years and shall submit such records to the commissioner upon request.

**C. Reporting**

1. The Permittee shall submit all required reports to the commissioner as required pursuant to RCSA §22a-174-22(1) and 40 CFR §60.4375(a) Subpart KKKK.

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#### PART V. ALLOWABLE EMISSION LIMITS

The Permittee shall not exceed the emission limits stated herein at any time.

##### A. *Combustion Turbine #1*

Steady-state Operation

Criteria		
<u>Pollutants</u>	<u>lb/h</u>	<u>tpy</u>
PM	1.55	6.78
PM-10	1.55	6.78
PM-2.5	1.55	6.78
SO <sub>x</sub>	0.245	1.07
NO <sub>x</sub>	1.62	7.08
VOC	0.161	0.705
CO	0.982	4.3

##### B. *Supplemental Burner*

Steady-state Operation

Criteria		
<u>Pollutants</u>	<u>lb/h</u>	<u>tpy</u>
PM	0.211	0.925
PM-10	0.211	0.925
PM-2.5	0.211	0.925
SO <sub>x</sub>	0.0147	0.0644
NO <sub>x</sub>	0.409	1.79
VOC	0.0202	0.0866
CO	0.206	0.902

##### C. *Start-up and Shutdown Events*

Start-up: The period of time from initiation of combustion firing until the combustion turbine reaches steady-state operation and until the control equipment attains its normal operation temperature and steady state operation. Duration of start-up shall not exceed 75 minutes.

Shutdown: The period of time from the initiation of the shutdown process of the combustion turbine until the point at which the combustion process has stopped. Duration of shutdown shall not exceed 45 minutes.

Emissions during these events shall be counted toward the annual emissions limits.

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#### PART V. ALLOWABLE EMISSION LIMITS, continued

##### *Start-up and Shutdown Emissions*

<u>Criteria Pollutants</u>	<u>Start-up lb/event</u>	<u>Shutdown lb/event</u>
NO <sub>x</sub>	13.80	6.00
VOC	6.57	3.56
CO	74.07	40.53

#### D. Total Emissions (Combustion Turbine #1 and Supplemental Firing)

<u>Criteria Pollutants</u>	<u>lb/h</u>	<u>lb/MMBtu</u>	<u>ppmvd @ 15% O<sub>2</sub></u>	<u>tpy</u>
PM	1.76	0.0088		7.71
PM-10	1.76	0.0088		7.71
PM-2.5	1.76	0.0088		7.71
SO <sub>x</sub>	0.259	0.0014		1.14
NO <sub>x</sub>	2.03 <sup>1</sup>	0.0093 <sup>1</sup>	2.5 <sup>1</sup>	8.87 <sup>2</sup>
VOC	0.181 <sup>1</sup>			0.8 <sup>2</sup>
CO	1.19 <sup>1</sup>			5.66 <sup>2</sup>

<sup>1</sup> - Except during periods of start-up and shutdown, when the event based emission limits apply.

<sup>2</sup> - Includes steady-state, start-up and shutdown emissions.

#### E. Hazardous Air Pollutants

<u>Hazardous Air Pollutants</u>	<u>MASC<sup>1</sup> (µg/m<sup>3</sup>)</u>
Sulfuric Acid	723.89
Arsenic	1.81
Beryllium	0.36
Chromium	90.49
Nickel	180.97
Cadmium	14.48
Formaldehyde	434.34
Copper	72.39
Ammonia	13030.06

<sup>1</sup> - Maximum allowable stack concentration

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**F.** Demonstration of compliance with the above emission limits shall be met by calculating the emission rates using emission factors from the following sources:

1. Manufacturer's Data
2. AP-42, April 2000, Combustion Turbines
3. Fuel sulfur content of <0.003%

**G.** The above statement shall not preclude the commissioner from requiring other means (e.g. stack testing) to demonstrate compliance with the above emission limits, as allowed by state or federal statute, law or regulation.

#### PART VI. STACK EMISSION TEST REQUIREMENTS

Stack testing shall be performed in accordance with the latest Emission Test Guidelines available on the DEEP website:

[http://www.ct.gov/dep/cwp/view.asp?a=2684&q=322076&depNav\\_GID=1619](http://www.ct.gov/dep/cwp/view.asp?a=2684&q=322076&depNav_GID=1619)

Stack emission testing shall be required for the following pollutant(s):

None at this time

PM-2.5     SO<sub>x</sub>     NO<sub>x</sub>     CO     VOC     Pb

Other (HAPs): \_\_\_\_\_, \_\_\_\_\_,

Initially, testing for filterable PM-2.5 was performed. Within one year following the US EPA's promulgation of a condensable PM-2.5 reference test method, the Permittee shall test for both filterable and condensable PM-2.5.

NO<sub>x</sub> performance testing shall be performed in accordance with 40 CFR §60.4405 Subpart KKKK.

Stack testing for CO and VOC shall be performed every five years from the date of the last stack test.

#### PART VII. APPLICABLE REGULATORY REFERENCES

RCSA §§22a-174-3a; 22a-174-18; 22a-174-19; 22a-174-29(b); 22a-174-22

These references are not intended to be all inclusive - other sections of the regulations may apply.

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#### PART VIII. SPECIAL REQUIREMENTS

**A.** For this CHP Project, the Permittee shall be utilizing internal offsets to net out of major NSR requirements. These internal offsets are the result of the decommissioning of seven diaper machines (in 2004), decommissioning of Boiler #1 (R-130-0017) and Boiler #2 (R-130-0018), as well as modifications to Tissue Machine Hood Burner #1 (P-130-0026) and Tissue Machine Hood Burner #2 (P-130-0014). The diaper machines #1-#4 were registered sources (R-130-0062, -0063, -0064, -0065) and #5-#7 were exempt units. The following is a list of the scheduled milestones and dates completed.

1. Combustion Turbine #2 (P-130-0071), start-up - **April 15, 2008**
2. Combustion Turbine #1 (P-130-0070), start-up - **June 25, 2008**
3. Tissue Hood Burner #1 (P-130-0026), hood and burner upgrade - **June 14, 2008**
4. Tissue Hood Burner #2 (P-130-0014), hood and burner upgrade - **July 31, 2008**
5. Boiler #2, decommissioned - **April 15, 2008**
6. Boiler #1, decommissioned - **October 14, 2008**

**B.** The Permittee shall operate and maintain this source and control equipment in accordance with the manufacturer's specifications and written recommendations.

**C.** *Noise (for non-emergency use)*

The Permittee shall operate this facility at all times in a manner so as not to violate or contribute significantly to the violation of any applicable state noise control regulations, as set forth in RCSA §§22a-69-1 through 22a-69-7.4.

**D.** The Permittee shall comply with all applicable sections of the following New Source Performance Standard(s) at all times.

40 CFR Part 60, Subparts: A, KKKK

Copies of the Code of Federal Regulations (CFR) are available online at the U.S. Government Printing Office website.

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#### PART IX. ADDITIONAL TERMS AND CONDITIONS

- A. This permit does not relieve the Permittee of the responsibility to conduct, maintain and operate the regulated activity in compliance with all applicable requirements of any federal, municipal or other state agency. Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state and local law.
  
- B. Any representative of the DEEP may enter the Permittee's site in accordance with constitutional limitations at all reasonable times without prior notice, for the purposes of inspecting, monitoring and enforcing the terms and conditions of this permit and applicable state law.
  
- C. This permit may be revoked, suspended, modified or transferred in accordance with applicable law.
  
- D. This permit is subject to and in no way derogates from any present or future property rights or other rights or powers of the State of Connecticut and conveys no property rights in real estate or material, nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the facility or regulated activity affected thereby. This permit shall neither create nor affect any rights of persons or municipalities who are not parties to this permit.
  
- E. Any document, including any notice, which is required to be submitted to the commissioner under this permit shall be signed by a duly authorized representative of the Permittee and by the person who is responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that any false statement made in the submitted information may be punishable as a criminal offense under section 22a-175 of the Connecticut General Statutes, under section 53a-157b of the Connecticut General Statutes, and in accordance with any applicable statute."
  
- F. Nothing in this permit shall affect the commissioner's authority to institute any proceeding or take any other action to prevent or abate violations of law, prevent or abate pollution, recover costs and natural resource damages, and to impose penalties for violations of law, including but not limited to violations of this or any other permit issued to the Permittee by the commissioner.

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BUREAU OF AIR MANAGEMENT****PART IX. ADDITIONAL TERMS AND CONDITIONS, continued**

- G.** Within 15 days of the date the Permittee becomes aware of a change in any information submitted to the commissioner under this permit, or that any such information was inaccurate or misleading or that any relevant information was omitted, the Permittee shall submit the correct or omitted information to the commissioner.
- H.** The date of submission to the commissioner of any document required by this permit shall be the date such document is received by the commissioner. The date of any notice by the commissioner under this permit, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three days after it is mailed by the commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" means calendar day. Any document or action which is required by this permit to be submitted or performed by a date which falls on a Saturday, Sunday or legal holiday shall be submitted or performed by the next business day thereafter.
- I.** Any document required to be submitted to the commissioner under this permit shall, unless otherwise specified in writing by the commissioner, be directed to: Office of Director; Engineering & Enforcement Division; Bureau of Air Management; Department of Energy and Environmental Protection; 79 Elm Street, 5th Floor; Hartford, Connecticut 06106-5127.

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