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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
FIELD OPERATIONS - BUREAU OF AIR QUALITY

COMPLIANCE PERMIT
REVISED

August 2, 2001

In accordance with provisions of the Air Pollution Control Act, the act of January 8, 1960, P.L. 2119, as amended, and after due consideration of an application received under Chapter 127 of the Rules and Regulations of the Department of Environmental Protection, the Department hereby issues this permit for the operation of the (***"Major Nox Emitting Facility" AND "Major VOC Emitting"***) Facility described below:

Permit No.	CP-23-0001	**Major Emitting Facility for**	NOx and VOC
Air Cleaning Device	Low NOx Burners on Boiler No. 6 and Spud burners on Boiler No. 7	**Related Plan Approvals**	PA-23-0001P and PA-23-0001R
Owner	Sunoco, Inc. (R&M)	**RACT Proposal**	Control NOx from all Sources
Address	P.O. Box 426	**Location**	Delaware and Green Streets
	Marcus Hook, PA 19061-0426		Marcus Hook Borough
Attention	Mr. Kevin Robles		Delaware County
	Production Manager		

This permit is subject to the following conditions:

1. That the source(s) and any associated air cleaning devices are to be:
   a. operated in such a manner as not to cause air pollution;
   b. in compliance with the specifications and conditions of any applicable plan approvals and operating permits; and
   c. operated and maintained in a manner consistent with good operating and maintenance practices.
2. This permit is valid only for the specific equipment, location and owner described above. This permit is valid for a period of five years for all sources listed in this Operating Permit ***except those sources listed as No. 6 Boiler or No. 7 Boiler. Upon completion and demonstration as described in this Compliance Permit, the company shall apply for a revised Operating Permit.***

(SEE ADDITIONAL CONDITIONS ATTACHED)

Violation of this or any other provision of Article III of the Rules and Regulations of the Department of Environmental Protection will result in suspension or revocation of this permit and/or prosecution under Section 9 of the Air Pollution Control Act.

Issued 06/08/95

Francine Carlini
Regional Manager
Air Quality

Expires ~~06/08/00~~

cc: Central Office
Administration
SEFO
Re (RN01)17-14

CONDITIONS (continued):

3. General Requirements:

A. This Compliance Permit, CP-23-0001 is issued to Sunoco, Inc. (R & M) for the operation of oxides of nitrogen (NOx) emission sources and volatile organic compounds (VOCs) emissions sources regulated under 25 Pa. Code Sections 129.91 - 129.95. This Compliance Permit also specifies Sunoco, Inc. (R & M) Reasonably Available Control Technology (RACT) requirements for sources of NOx and VOCs.

E. All records that are required to be kept by this permit shall be stored at the refinery. All records shall be produced at the time of the Department's request.

5. NOx RACT Implementation and Source Specific Conditions:

A. The following conditions apply only to the:

No. 1 CO Boiler
15 BH No. 2 Boiler
15 BH No. 4 Boiler
17-2A BTX Reforming Heater
17-1A Octane Reforming HTR H-101
15 BH No. 3 Boiler
15 BH No. 5 Boiler
10-4 Catalytic Cracker Feed Heater

1. RACT shall be an annual tune-up on the combustion process for the following units listed in Condition 5.A.:

a. Inspection, adjustment, cleaning, or replacement of fuel burning equipment, including the burners and moving parts necessary for proper operation as specified by the manufacturer.

b. Inspection of the flame pattern or characteristics and adjustments necessary to minimize total emissions of NOx and, to the extent practicable, minimize the emissions of CO.

c. Inspection of the air-to-fuel ratio control system and adjustments necessary to ensure proper calibration and operation as specified by the manufacturer.

2. Each adjustment conducted under the procedures in Condition S.A.1. shall be recorded in a permanently bound log book:

a. the date of the tuning procedure
b. the name of the service company and technicians
c. the final operating rate or load
d. the final CO and NOx emission rates
e. the final excess oxygen rate

CONDITIONS (continued):

3. Emissions of volatile organic compounds (VOCs) shall be minimized by annual combustion tuning and/or good operating practices.

4. The initial tune-up on the combustion process shall be performed by May 31, 1996. Subsequent combustion tune-ups shall be performed annually.

5. The following air contaminant emissions limits, on a twenty-four (24) hour basis, are approved for the combustion sources/units listed in Condition 5.A. The company shall use the results of the required stack test for each combustion source/unit to determine compliance with the individual combustion source/unit emission limit. The Department reserves the right to establish and impose more stringent limitations based on test results from stack testing:

   a. For the No. 1 CO Boiler, the emissions of oxides of nitrogen (NOx) shall be limited to 0.25 lb/MMBtu when firing refinery gas.

   b. For the 15 BH No. 2 boiler, which tires a combination of refinery fuel gas and refinery oil, the emissions of NOx shall be limited to 0.4 lb/MMBtu when firing refinery fuel oil, 0.25 lb/MMBtu when firing refinery fuel gas.

   c. For the 15 BH No. 3 boiler, which fires a combination of refinery fuel gas and refinery fuel oil, the emissions of NOx shall be limited to: 0.4 lb/MMBtu when firing refinery fuel oil, 0.25 1b/MMBtu when firing refinery fuel gas.

   d. For the 15 BH No. 4 boiler, which fires a combination of refinery fuel gas and refinery fuel oil, the emissions of NOx shall be limited to: 0.4 lb/MMBtu when firing refinery fuel oil, 0.25 lb/MMBtu when firing refinery fuel gas.

   e. For the BH No. 5 boiler, which fires a combination of refinery fuel gas and refinery fuel oil, the emissions of NOx shall be limited to: 0.4 lb/MMBtu when firing refinery fuel oil, 0.25 lb/MMBtu when firing refinery fuel gas.

   £ For the 17-2A BTX Reforming Heater, the emissions of NOx shall be limited to 0.25 lb/MMBtu when firing refinery fuel gas.

   g. For the 10-4 Catalytic Cracker Feed Heater, the emissions of NOx shall be limited to 0.25 lb/MMBtu when tiring refinery fuel gas.

   h. For the 17-lA Octane Reforming HTR H-101, the emissions of NOx shall be limited to 0.25 lb/MMBtu when firing refinery fuel gas.

6. The company shall test at least one of the units contained in Condition 5.A. or Condition 5.H. per year and shall have all the units tested once prior to the

CONDITIONS (continued):

expiration of this permit. The company shall test only units that are not permanently shutdown or equipped with certified CEMs.

7. Stack testing shall be done in accordance with the provisions of 25 Pa. Code Chapter 139 and with the Conditions below:

   a. At least thirty (30) days prior to the test, the Regional Air Quality Manager shall be informed of the date and time of the test.

   b. At least sixty (60) days prior to the test, the company shall submit to the Department for approval the procedures for the test and a sketch with dimensions indicating the location of sampling ports arid other data to ensure the collection of representative samples.

   c. Within sixty (60) days after the source test(s), two copies of the complete test report, including all Operating Conditions, shall be submitted to the Regional Air Quality Manager for approval.

   d. When stack testing is performed on the 15 BH Nos. 2, 3, 4, and 5 boilers, the test shall include but not be limited to performing the stack test when the boiler is firing all refinery fuel gas and all refinery fuel oil.

8. The 17-1A Octane Reforming, HTR H-101 was permanently removed from service on February 1, 1997. The 17-1A Octane Reforming HTR H-101 shall not be operated without prior written approval from the Department.

9. The No. 2, No. 3, and No. 4 boilers were permanently removed from service in May 1999 and shall not be operated without prior approval from the Department.

B. The following conditions apply only to the No. 1 Boiler:

1. This permit does not restrict the hours of operation of the No. 1 boiler.

   a. RACT shall be an annual tune-up on the combustion process for the No. 1 boiler.

      (i) Inspection, adjustment, cleaning, or replacement of fuel burning equipment, including the burners and moving parts necessary for proper operation as specified by the manufacturer.

      (ii) Inspection of the flame pattern or characteristics and adjustments necessary to minimize total emissions of NOx, and, to the extent practicable, minimize the emissions of CO.

CONDITIONS (continued):

(iii) Inspection of the air-to-fuel ratio control system and adjustments necessary to ensure proper calibration and operation as specified by the manufacturer.

b. Each adjustment conducted under the procedures in Condition 5.B.1. shall be recorded in a permanently bound log book:

(i) the date of the tuning procedure,
(ii) the name of the service company and technicians,
(iii) the final operating rate or load,
(iv) the final CO and NOx emission rates,
(v) the final excess oxygen rate.

c. Emissions of volatile organic compounds (VOCs) shall be minimized by annual combustion tuning and/or good operating practices.

d. The initial tune-up on the combustion process shall be performed by May 31, 1996. Subsequent combustion tune-ups shall be performed annually.

e. The initial stack test, to verify compliance with Condition 5.B.2, on the No. 1 boiler shall be completed by May 31, 1996:

2. The following air contaminant emissions limits are approved for the No. 1 boiler. The Department reserves the right to establish and impose more stringent limitations based on test results from stack testing:

a. The emissions of NOx on a twenty-four (24) hours basis shall be limited to 0.25 lb/MMBtu when firing refinery fuel gas.

3. Sufficient data shall be recorded, in a format approved by the Department, so that compliance with Condition 5.B can be determined. Records shall be kept for a minimum of five (5) years and shall be made available to the Department upon request.

4. An annual stack test shall be conducted to ensure compliance with Condition 5.B.2. Testing shall be done in accordance with the provisions of 25 Pa. Code Chapter 139 and with the conditions below:

a. At least thirty (30) days prior to the test, the Regional Air Quality Manager shall be informed of the date and time of the test.

b. At least sixty (60) days prior to the test, the company shall submit to the Department for approval the procedures for the test and a sketch with dimensions indicating the location of sampling ports and other data to

CONDITIONS (continued):

ensure the collection of representative samples.

c. Within thirty (30) days after the source test(s), two copies of the complete test report, including all Operating Conditions, shall be submitted to the Regional Air Quality Manager for approval.

5. Emissions of VOCs shall be minimized by annual combustion tuning and/or good operating practices.

6. The No. 1 boiler shall be limited in the amount of fuel that can be fired by the installation of travel stops on the fuel flow control valves on both the refinery fuel gas and refinery fuel oil lines. The amount of fuel that can be fired shall be limited to 533.16×10^6 scf/yr of refinery gas and 2.03×10^6 gal/yr of refinery fuel oil on a twelve (12) month rolling sum.

7. The No. 1 boiler was permanently removed from service in May 1999 and shall not be operated without prior approval from the Department.

C. The following conditions apply only to the No. 6 boiler:

1. This permit does not restrict the hours of operation of the No. 6 boiler.
2. RACT for the No. 6 Boiler shall be the installation and operation of six (6) low NOx burners. The six (6) low NOx burners shall be installed within 240 days of the issuance of this Compliance Permit and related Plan Approval.

3. To establish a final emission limitation for NOx at least six (6) months of data from the CEMs on No. 6 boiler shall be submitted to the Department. The final emission limitation will be determined using the Shapiro-Wilk statistical method.

4. The following air contaminant emissions limits, on a twenty-four (24) hour basis, are approved for the No. 6 boiler, which fires a combination of refinery fuel gas and/or natural gas. The Department reserves the right to establish and impose more stringent limitations based on test results from stack testing and/or continuous emission monitoring:

   a. For the No. 6 boiler, the emissions of NOx shall be limited to: 0.25 lb/MMBtu when combusting refinery fuel gas and/or natural gas.

5. Sufficient data shall be recorded, in a format approved by the Department, so that compliance with Condition 5.C. can be determined. Records shall be kept for a minimum of five (5) years and shall be made available to the Department upon request.

6. An initial stack test shall be conducted to ensure compliance with Condition 5.C.4. Testing shall be done in accordance with the provisions of 25 Pa. Code Chapter 139 and with the conditions below:

CONDITIONS (continued):

a. At least thirty (30) days prior to the test, the Regional Air Quality Manager shall be informed of the date and time of the test.

b. At least sixty (60) days prior to the test, the company shall submit to the Department for approval the procedures for the test and a sketch with dimensions indicating the location of sampling ports and other data to ensure the collection of representative samples.

c. Within sixty (60) days after the source test(s), two copies of the complete test report, including all operating conditions, shall be submitted to the Regional Air Quality Manager for approval.

7. The NOx emission rate and oxygen (O2) content of the flue gas of the No. 6 boiler shall be determined by the use of certified continuous emission monitors (CEMs).

8. To establish a final emission limitation for NOx, at least six (6) months of data from the CEMs on the No. 6 boiler shall be submitted to the Department. The final NOx emission limitation will be determined using the Shapiro-Wilk statistical method.

D. The following conditions apply only to the No. 7 boiler:

1. This permit does not restrict the hours of operation of the No. 7 boiler.
2. RACT for the No. 7 boiler shall be the installation and operation of four (4) spud burners and the derating of the boiler from 300 MMBtu/hr on an annual average to 245 MMBtu/hr on an annual average. The four (4) spud burners have been installed.

3. The initial stack test, to verify compliance with Condition 5.D.5 on the No. 7 boiler has been completed.

4. The NOx emission rate and the oxygen (O2) content of the flue gas of the No. 7 boiler shall be determined by the use of certified continuous emissions monitors (CEMs).

5. The following air contaminant emissions limits, on a twenty-four (24) hour basis, are approved for the No. 7 boiler. The Department reserves the right to establish and impose more stringent limitations based on results from the CEMs:

a. For the No.7 boiler, the emissions of NOx shall be limited to 0.25 lb/MMBtu when combusting refinery fuel gas and/or natural gas.

CONDITIONS (continued):

6. Sufficient data shall be recorded, in a format approved by the Department, so that compliance with Condition 5.D. can be determined. Records shall be kept for a minimum of five (5) years and shall be made available to the Department upon request.

7. To establish a final emission limitation for NOx, at least six (6) months of data from the CEMs on the No. 7 boiler shall be submitted to the Department. The final NOx emission limitation will be determined using the Shapiro-Wilk statistical method.

8. Emissions of VOCs shall be minimized by annual combustion tuning and/or good operating practices.

9. The company shall install travel stops on the fuel flow control valves on both the refinery fuel gas and natural gas supply lines, or install and demonstrate software controls on both the refinery fuel gas and natural gas supply line control valves in order to limit the No. 7 boiler to 245 MMBtu/hr.

E. The following conditions apply only to the Diesel Stormwater Pumps:

1. The total usage of diesel oil shall not exceed 105,851 gallons per year. The owner shall keep records of the date and the amount of diesel fuel delivered.

2. Sufficient data shall be recorded, in a format approved bythe Department, so that compliance with Condition 5.B.1. can be determined. Records shall be kept for a minimum of five (5) years and shall be made available to the Department upon request.

3. The Diesel Stormwater Pumps shall be maintained and operated in accordance with manufacturer's specifications [25 Pa. Code Section 129.93(c)]. The sources shall also be operated and maintained in accordance with good air pollution control practices.

4. This Operating Permit is issued to the owner for the operation of the following six (6) stationary diesel engines to drive six (6) pumps to move storm water and process wastewater. This Operating Permit consolidates all Plan Approval(s) bearing the No. 23-329-001A. The following conditions are not a determination of RACT:

	Engines	Pumps
a.	P-05A-06A	1250 HP Diesel Pump
b.	P-05A-06B	1250 HP Diesel Pump
c.	P-05A-04A	2250 HP Diesel Pump
d.	P-05A-04B	2250 HP Diesel Pump

CONDITIONS (continued):

e. P-05A-02A 1750 HP Diesel Pump
f. P-05A-02B 1750 HP Diesel Pump

a. The owner shall use diesel oil for these six (6) stationary diesel engines.

b. The operation of the engines shall not result in the atmospheric emissions in excess of the following:

Pollutant	Atmospheric Emissions, TPY
Nitrogen Oxides	23.79
VOC	0.91

c. The owner shall operate and maintain monitoring devices, which measure and record the following:

(A) the date of operation
(B) the starting and ending time of the operation
(C) the percent of full load during the operation

F. The following conditions apply to the 15-5 TDP Unit HTR H-02, 15-5 TDP Unit HTR H -03, 12 Plant Flare, and 10 Plant Flare:

1. The 15-5 TDP Unit HTR H-02, 15-5 TDP Unit HTR H-03, 12 Plant Flare, and 10 Plant Flare shall be maintained and operated in accordance with manufacturers specifications 25 Pa. Code Section 129.93(c). The sources shall also be operated and maintained in accordance with good air pollution control practices.

2. Sufficient data in a format approved by the Department, shall be recorded so that compliance with Condition 5.17. can be determined. Records shall be kept for five (5) years and shall be made available to the Department upon request.

G. The following conditions apply to the 15-5 TDP Unit HTR-01, 17-1A Octane Reforming HTR H-102, 17-1A Octane Reforming HTR H-103, 17-1A Octane Reforming HTR H-104, 17-2A BTX Reforming HTR-04, 17-2A BTX Reforming HTR-05, and 12-3 Crude and Vacuum Distillation Desulfturization HTR H- 102A:

1. RACT for the emission sources listed above is for continued operation according to current work practices.

2. The emission sources listed above shall also be operated and maintained in accordance with good air pollution control practices.

3. The 17-1A Octane Reforming HTR H-102, 17-1A Octane Reforming HTR H-

CONDITIONS (continued):

103, and 17-1A Octane Reforming HTR H-104 were permanently removed from service on February 1, 1997. The process heaters shall not be operated without prior written approval from the Department.

H. The following conditions apply to the 12-3 crude and vacuum distillation HTR-301, 12-3 crude and vacuum distillation H3006, and 15-1 crude distillation HTR-03:

1. RACT for the sources listed above are low NOx burners, which the sources already have installed and are operating.

2. The sources listed above shall be operated and maintained in accordance with good air pollution control practices.

3. For the 12-3 Crude and Vacuum Distillation HTR-301, the emissions of NOx shall be limited to 0.064 lb/MMBtu when firing refinery fuel gas.

4. For the 12-3 Crude and Vacuum Distillation H3006, the emissions of NOx shall be limited to 0.131 lb/MMBtu when firing refinery fuel gas.

5. For the 15-1 Crude Distillation HTR-03, the emissions of NOx shall be limited to 0.161 lb/MMBtu when firing refinery fuel gas.

6. The company shall test at least one of the units contained in Condition 5.A.5. or Condition 5.H. in order to determine compliance with Conditions 5.H.3., 5.A.4., and 5.H.5. per year and shall have all the units tested once prior to the expiration of this permit. The company shall test only units that are not permanently shutdown or equipped with certified CEMs.

   a. At least thirty (30) days prior to the test, the Regional Air Quality Manager shall be informed of the date and tune of the test.

   b. At least sixty (60) days prior to the test, the company shall submit to the Department for approval the procedures for the test and a sketch with dimensions indicating the location of sampling ports and other data to ensure the collection of representative samples.

   c. Within sixty (60) days after the source test(s), two copies of the complete test report, including all operating conditions, shall be submitted to the Regional Air Quality Manager for approval.

CONDITIONS (continued):

6. VOC RACT Implementation and Source Specific Conditions.

The following conditions cover the VOC sources listed below, located at the Marcus Hook Refinery in Marcus Hook Borough, Delaware County:

- Marine Vessel Loading,
- Truck Loading (xylene and toluene),
- Cooling Towers,
- Middle Creek Wastewater Conveyance, and
- Combustion Sources.

A. Marine Vessel Loading

1. Source Description - Marine Vessel Loading includes the following sources of emissions:

   a. The loading of gasoline MTBE, raffinate, and other petroleum products with RVP's greater than 4 psi into marine vessels from loading Docks Nos. 1-A, 1 -B, and 3-B.

   b. The loading of benzene into marine vessels from loading Dock No. 3-B.

   c. The loading of toluene and xylene into marine vessels from loading Docks 1-A, 1-B, and 3-B.

2. Control Technology

   For sources specified in Condition 6.A.1., the VOC emissions from the barge loading operations at Docks 1-A, 1-B, and 3-B shall be captured by the respective vapor recovery systems and distributed via a piping network to the refinery vapor control system.

3. Docks 1-A and 1-B Facility

   a. All Volatile Organic Compound (VOC) vapors that result from loading gasoline or other petroleum products, as specified in Condition 6.A.(1) above, shall be processed through the vapor recovery system.

   b. Benzene shall not be loaded at the Docks 1-A and 1-B facility.

   c. All VOC vapors collected by the vapor recovery system shall be fed as primary fuel to the process heaters and boilers in the refinery. The VOC vapors shall be destroyed at a minimum of 90 percent by weight.

CONDITIONS (continued):

d. Only one dock at a time shall conduct a barge loading operations.

4. Dock 3-B Facilities

a. This Operating Permit is not intended to restrict the types of petroleum products that can be loaded through the marine vapor recovery system at the Dock 3-B facility.

b. Benzene from the sources specified in 6.A.1. and VOC emissions shall be collected and added to the existing refinery vapor control system. All collected benzene and VOC emissions shall be combusted in combustion units and process heaters, which provide at least 98 percent destruction efficiency. The 98 percent destruction efficiency shall be maintained for benzene control in conformance with 40 C.F.R. Section 61.302.

c. The owner shall only load benzene marine vessels which have been determined to be vapor tight in conformance with 40 C.F.R. Section 61.302(e)(1).

d. The owner shall operate its vapor collection system in such a manner that all pressure-vacuum vents remain closed and that system pressures do not exceed 0.8 times the relief set vents pressure of the pressure-vacuum vents (40 C.F.R. Section 61.302(j)).

e. The owner shall inspect the vapor collection system for leaks and promptly repair any leaks in conformance with 40 C.F.R. Section 61.302(k), in accordance with 40 C.F.R. Sections 61.242 - 11 (e) and (f).

f. Vent systems that contain valves that could divert a vent stream from a control device shall have carsealed opened all valves in the vent system from the emission source to the control device, and carsealed closed all valves in the vent system that would lead the vent stream to the atmosphere, either directly or indirectly, bypassing the control device in accordance with 40 C.F.R. Section 61.302(1).

5. Emission Limitations

The total VOC emissions from Docks 1-A and 1-B barge loading operation for the sources specified in Condition 6.A.1. shall be limited to a minimum of 90 percent control efficiency at any time.

CONDITIONS (continued):

6. Monitoring Requirements

   a. Gasoline or other petroleum products having a Reid vapor pressure of 4 psi, or greater, (except benzene) shall not be loaded into an organic liquid cargo vessel unless the following exist to indicate compliance with the monitoring/operating requirements of 25 Pa. Code Section 129.81:

      (i) The VOC vapors displaced by the loading operation are processed through a vapor recovery or destruction device operated to reduce the VOCs by at least 90 percent by weight.

      (ii) The vapor collection and transport system employed to carry VOCs to the vapor control system is maintained and operated in accordance with requirements of 25 Pa. Code Sections 129.81(1)(ii)(a)(b) and (c).

      (iii) The pressure and vacuum relief valve settings of the liquid vessel shall comply with requirements of 25 Pa. Code Section 129.81(1)(iii).

   b. For the sources specified in Condition 6.A.1., only marine vessels (barges) with vapor collection equipment compatible with the company's vapor collection system may be loaded at the loading Docks 1-A, 1-B, and 3-B.

   c. Following 40 C.F.R. Section 61.303(f), the owner or operator of the Dock 3-B facility shall install, calibrate, maintain, and operate a recording pressure measurement device (magnehelic gauge or equivalent device) and an audible and visible alarm system that is activated when the vacuum pressure specified in 40 C.F.R. Section 61.302(e)(1) is not attained.

7. Recordkeeping Requirements:

   a. The company shall record monthly the following information:

      - the type of material loaded at Docks 1-A and 1-B; and,
      - the quantity of material loaded at Docks 1-A and 1-B.

   b. The company shall record the type and the amount of each material transferred through the Dock 3-B loading facility.

   c. Records required under this Operating Permit shall be kept for a period of five (5) years and shall be made available to the Department upon request.

CONDITIONS (continued):

B. Tank Truck Loading:

1. Source Description

VOC emissions from this source include vapors displaced during xylene and toluene truck loading.

2. Control Technology:

The company shall use the submerged loading method to reduce vapor loss during xylene and toluene truck loading.

3. Operating Requirements:

a. The company shall limit the total maximum volume of material loaded to 16,905,000 gal/yr of toluene and 9,960,000 gal/yr of xylene. Both limits shall be based on 12-month rolling sum calculated monthly.

b. The company shall operate and maintain xylene and toluene truck loading activity in accordance with good air pollution control practices. At a minimum, the trucks shall comply with DOT inspection and testing requirements in conformance with 49 C.P.R. Section 180.407.

4. Emission Limitation:

The company shall limit the total VOC emissions from the toluene and xylene truck loading operations to a maximum of 7.8 tons/yr as a 12-month rolling sum calculated monthly. This limitation is calculated based on submerged filling dedicated normal service, as is the current practice at the Marcus Hook Refinery

5. Recordkeeping Requirements:

a. The company shall record the type and daily throughput of the material loaded to demonstrate compliance with Conditions 6.13.3. and 6.13.4. of this section.

b. Records required under this pennit shall be kept for a period of five (5) years and shall be made available to the Department upon request.

C. Cooling Towers

1. Source Description

CONDITIONS (continued):

This source consists of thirteen (13) cooling towers at the Marcus Hook Refinery as follows:

Cooling Towers	Water Rate (gal/min)	Maximum Potential Emissions (tons VOC/yr
12 Plant South	12,800	2.35
12 Plant North	6,000	1.10
10 Plan A (West)	21,800	4.01
10 Plant A (East)	19,900	3.66
15-2S Old	16,000	2.94
15-2S New	30,000	5.52

Cooling Towers	Water Rate (gal/min)	Maximum Potential Emissions (tons VOC/yr)
15-6 MTBE	8,000	1.47
15-2B	25,000	4.60
15-2 POLY	12,400	3.26
17-1, 17-1A	17,600	3.24
17-1P	12,000	2.21
17-2	10,600	1.95
17-2A	10,800	1.99
Total		**38.30**

Emissions from the cooling towers occur due to leaks in refinery heat exchangers, which allow VOCs to enter cooling water streams. The annual VOC emissions from the cooling towers shall be based on 12-month rolling sum calculated monthly.

2. Operating Requirements

To minimize VOC emissions from the cooling towers, the company shall operate and maintain the cooling tower system in a manner consistent with good operating and maintenance (O&M) practices. The company shall use its equipment inspection and monitoring program (I & M) to minimize and repair exchanger leaks.

3. The company shall perform any calculations necessary to demonstrate compliance with the applicable requirements and make it available to the Department upon request.

CONDITIONS (continued):

D. Middle Creek Wastewater Conveyance

1. Source Description

The Middle Creek wastewater system was an open conveyance located within the refinery that collected process wastewater and stormwater before being discharged to DELCORA, a third party regional wastewater treatment plant. The wastewater system consisted of separators, the conveyance, junction boxes, and storage tanks. The 1990 Baseline Emissions from the Middle Creek wastewater conveyance system are 1,105.2 tons/yr. The conveyance system includes sources regulated under 25 Pa. Code Section 129.55 and 25 Pa. Code Sections 129.91 through 129.95.

The following sources are regulated under 25 Pa. Code Sections 129.91 through 129.95:

Source Description		VOC Emissions After RACT (tons/yr)
1A	Separator	12.22
1C	Separator	7.82
1D	Separator	25.90
16	Separator	28.96
12	Separator Flume	0.00
1F	Separator Flume	0.00
14	Separator Discharge Flume	6.60
16	Separator Discharge Flume	1.31
Wastewater Conveyance Channel		426.59
Total After RACT		**509.40**

2. RACT Determination

The following technology shall be considered RACT for VOC emission reduction from the wastewater conveyance system at the Marcus Hook refinery:

a. Use of a bio-treatment unit to control the No. 16 separator effluent discharge.

b. Enclosing the No. 14 separator flume for discharge to the No. 16 separator.

3. RACT Emission Limitation

The company shall limit the VOC emissions of the sources specified in 6.D.1 above to 509.4 tons per year or less as a 12-month rolling sum.

4. Emission Requirements Beyond RACT (Middle Creek Abatement Project)

CONDITIONS (continued):

The Middle Creek Abatement Project (MCAP) was undertaken to replace the preexisting wastewater conveyance with enclosed piping to reduce emissions from this system. This project was a result of the Toxicity Characteristics Rule under RCRA and 40 C.F.R. 61, Subpart FF, National Emission Standards for Benzene Waste Operations. By applying more stringent technology, the MCAP has further reduced VOC emissions from the wastewater conveyance system. The system was permitted on September 14, 1995 under Operating Permit No. 23-312-190.

a. The following control devices are required:

Source	Control Device	Emission Rates, lbs/yr	
		VOC	Benzene
Conveyance Channel	Scaled Piping	<0.1	<0.01
East Process Sum	Vent to Carbon Canister	3.7	0.07
West Process Sum	Vent to Carbon Canister	6.2	0.12
15 Plant Separator	Vent to Carbon Canister	0.1	0
DELCORA Sump	Vent to Carbon Canister	0.4	0.02*
12 Plant Separator	Vent to Carbon Canister	<0.1	<0.01
Cleaning 15 Separator	Cleanin Process	694.6	7.54
2 Process Surge Tanks	Floating Roof on each Tank	<0. I	<0.01
Slop Oil Tank	Internal Floating Roof	1,120.0	12.40
Totals (lbs/yr)		**1,825.0**	**20.15**
Total (Tons/yr)		0.9	0.01

b. The following sources shall remain permanently shut down:

Source Description:

	Source Description	VOC Emissions (tons/yr)
10	Separator	40.03
1F	Separator	7.10
lA	Separator	12.22
1C	Separator	7.82
1D	Separator	25.90
16	Separator	28.96
12	Separator Flume	0.00
1F	Separator Flume	0.00
14	Separator Discharge Flume	6.60
16	Separator Dischar a Flume	1.31
	Total	**129.94**

CONDITIONS (continued):

5. Operating Requirements

The company shall operate in the following manner:

a. The conveyance system shall be enclosed, and wastewater from the separator shall be "hardpiped" to enclosed sumps.

b. Process vapors shall be collected in a closed system and transferred through gasholders to activated carbon absorbers that have an efficiency of 98 percent.

6. Emission Limitations

The VOC emissions and benzene emissions from the sources listed in Condition 6.D.1. above shall not exceed 0.21 pounds/hr, 0.9 tons/yr, and 0.002 pounds/hr, 0.01 tons/yr, respectively. The annual limitations are calculated based on 8,760 hours of operation.

E. Combustion Units/Sources

1. The company shall limit the total annual VOC emissions from the combustion units and combustion sources listed in Appendix A to a maximum of 93.1 tons/year as a 12-month rolling sum calculated monthly.

2. The company shall perform all the calculations necessary to demonstrate compliance with Condition 6.E.1. of this section and make it available to the Department upon request.

b. The individual drain systems shall be installed, checked or inspected, and operated in accordance with 40 C.F.R. Sections 60.692 - 2 or 40 C.F.R. Sections 60.693 - 1.

c. Each oil-water separator tank shall be equipped and operated with the required control devices in compliance with 40 C.F.R. 60.692 - 3 or 40 C.F.R. Sections 60.693 - 2.

d. The vapor recovery systems (carbon adsorbers) shall be operated at all times to recover the VOC emissions vented to them with an efficiency of 95 percent or greater (40 C.F.R. percent 60.692 - 5(b)).

e. The closed vent systems shall be operated in accordance with 40 C.F.R. Sections 60.692 - 5(d) and (e).

f. The carbon absorbers shall be monitored in accordance with 40 C.F.R. Section 60.695(a)(3)(ii).

CONDITIONS (continued):

g. The company shall comply with recordkeeping requirements in accordance with 40 C.F.R. Section 60.697.

h. The company shall comply with reporting requirements in accordance with 40 C.F.R. Section 60.698.

CONDITIONS (continued):

Appendix A

Identity of Sources and Control Options

Source Description	Annual Average Capacity MMBtu/hr	Fuel	Control Technology
No. 1 CO Boiler	167.1	FG	Combustion Tuning
12-3 Crude and Vacuum Distillation, H3006	241.5	NG/FG	Low NOx Burners
15 Boiler House, No. 1 Boiler	88.9	FG/FO	Derating
15 Boiler House, No. 2 Boiler	99.0	FG/FO	Combustion Tuning
15 Boiler House, No. 3 Boiler	99.0	FG/FO	Combustion Tuning
15 Boiler House, No. 4 Boiler	99.0	FG/FO	Combustion Tuning
15 Boiler House, No. 5 Boiler	170.0	FG/FO	Combustion Tuning
15 Boiler House, No. 6 Boiler	246.0	FG/FO	Low NOx Burners
15 Boiler House, No. 7 Boiler	245.0	FG/FO	Spud Burners
15-1 Crude Distillation, New Crude HTR-03	249.0	FG/NG	Low NOx Bunrers
17-2A BTX Reforming Heater	1.82.5	FG	Combustion Tuning
10-4 Catalytic Cracker Feed Heater	33.2	FG	Combustion Tuning
12-3 Crude and Vacuum Distillation, Vacuum HTR H-301	79.9	FG/NG	Low NOx Burners
12-3 Crude and Vacuum Distillation, Desulf. HTR H-102A	33.8	FG	None

FG = Refinery Fuel Gas
FO = Refinery Fuel Oil
NG = Natural Gas

CONDITIONS (continued):

Appendix A

Identity of Sources and Control Options

(Continued)

Source Description	Annual Average Capacity MMBtu/hr	Fuel	Control Technology
15-5 TDP Unit, HTR H-01	40.5	FG	None
15-5 TDP Unit, HTR H-02	15.5	FG	Presumptive
15-5 TDP Unit, HTR H-03	11.9	FG	Presumptive
17-1A Octane Reforming, HTR 11-101	139.2	FG	None
17-1A Octane Reforming, HTR 11-102	33.2	FG	None
17-1A Octane Reforming, HTR 11-103	42.7	FG	None
17-1A Octane Reforming, HTR II-104	25.0	FG	None
17-2A BTX Reforming, HTR-04	40.0	FG	None
17-2A BTX Reforming, HTR-05	30.7	FG	None
15 Boiler House Hi-Vis, Heater	12.0	FG	None
17 Plant Compressor Engines (4)	10.0	NG	None
12 Plant Flare	-	-	Presumptive
10 Plant Flare			Presumptive
6 Diesel Stormwater Pumps		Diesel	Presumptive

FG = Refinery Fuel Gas
FO = Refinery Fuel Oil
NG = Natural Gas

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