Federal Operating Permit
Article 1

This permit is based upon the requirements of Title V of the Federal Clean Air Act and Chapter 80, Article 1 of the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution. Until such time as this permit is reopened and revised, modified, revoked, terminated or expires, the permittee is authorized to operate in accordance with the terms and conditions contained herein. This permit is issued under the authority of Title 10.1, Chapter 13, §10.1-1322 of the Air Pollution Control Law of Virginia. This permit is issued consistent with the Administrative Process Act, and 9 VAC 5-80-50 through 9 VAC 5-80-300 of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution of the Commonwealth of Virginia.

Authorization to operate a Stationary Source of Air Pollution as described in this permit is hereby granted to:

Permittee Name:	Western Refining Yorktown, Inc.
Facility Name:	Western Yorktown Refinery
Facility Location:	Route 173, 3 miles east of Route 17 in York County Grafton, Virginia 23962
Registration Number:	60116
Permit Number:	TRO-60116

October 4, 2007
Effective Date

October 3, 2012
Expiration Date

_____
Francis L. Daniel

October 4, 2007
Signature Date

Table of Contents

I. Facility Information

Permittee
Western Refining Yorktown, Inc.
2201 Goodwin Neck Road
Grafton, VA 23692

Responsible Official
John Rossi
Vice President of Refining

Facility
Western Yorktown Refinery
2201 Goodwin Neck Road
Grafton, VA 23692

Contact Person
Peter G. Buckman
Senior Environmental Advisor
(757) 898-9763

County-Plant Identification Number: 51-199-00004

Facility Description: NAICS 324110 – Western Yorktown Refinery operates under NAICS Code Number 324110 as a petroleum refinery. The facility contains approximately thirteen different process units that are involved in one of the following four processes in converting crude oil into useable products: separation, conversion, treating, and blending. Process units can make a product that is immediately ready for retail, ready for blending into finished products, or requires further processing at another process unit. In addition to gasoline, the refinery manufactures propane, butane, jet fuels, furnace oils, distillate fuels, petroleum coke, and sulfur.

Western Yorktown Refinery operates 24 hours per day, 365 days per year with an employee base of over 200 people. The throughput, or manufacturing capacity, is set by a combination of economic factors and physical equipment capacities. In 2004, the refinery processed an average of 58,000 barrels (2,436,000 gallons) of crude oil per day. The refinery in the past has refined up to 65,000 barrels of crude oil per day, however, the refinery's maximum capacity has not yet been demonstrated.

II. Emission Units

The refinery has several process units that contain emission units such as fuel burning equipment, loading racks and oil/water separators, tanks, and other equipment that emit pollutants via stacks and vents (some with air pollution control device), as well as fugitive emissions. The following key defines the prefix for the equipment identification:

- P Process unit that may have F, R, T, S and A as subparts.
- F Fuel burning equipment
- R Loading rack and oil/water separators
- T Tanks
- S Stack/vent
- A Air pollution control device

Emission Unit ID or Process Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Fuel Burning Equipment							
F1	S001	Utility Boiler B-1701A, Babcock & Wilcox (before 1972)	138 MMBTU/hr (NSPS Subpart J)	N/A	N/A	N/A	11/01/06 SOP
F2	S002	Utility Boiler B-1701B, Babcock & Wilcox (before 1972)	138 MMBTU/hr (NSPS Subpart J)	N/A	N/A	N/A	11/01/06 SOP
F3	S003	Coker Furnace BA-101 (1990)	97 MMBTU/hr (NSPS Subpart J)	N/A	N/A	N/A	4/12/90 NSR and 11/01/06 SOP
F4	S004	Crude Atmospheric/CO Furnace B-101 (1978)	311 MMBTU/hr (NSPS Subpart J)	N/A	N/A	N/A	11/01/06 SOP

Emission Unit ID or Process Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
F5	S004	Crude Vacuum Furnace B-102 (1978)	79 MMBTU/hr (NSPS Subpart J)	N/A	N/A	N/A	11/01/06 SOP
F6	S005	Ultra Furnace F-101 (before 1972, modified 2002)	64 MMBTU/hr (NSPS Subpart J)	N/A	N/A	N/A	4/22/02 NSR and 11/01/06 SOP
F8	S005	Ultra Furnace F-201 (before 1972)	28 MMBTU/hr (NSPS Subpart J)	N/A	N/A	N/A	11/01/06 SOP
F9	S005	Ultra Furnace F-301 (before 1972)	38 MMBTU/hr (NSPS Subpart J)	N/A	N/A	N/A	11/01/06 SOP
F10	S005	Ultra Furnace F-302 A & B(1990)	79 MMBTU/hr each, (NSPS Subpart J)	N/A	N/A	N/A	9/28/90 NSR which is superseded by 4/22/02 NSR, and 11/01/06 SOP
F11	S005	Ultra Furnace F-303 (before 1972)	50 MMBTU/hr (NSPS Subpart J)	N/A	N/A	N/A	11/01/06 SOP
F12	S005	Ultra Furnace F-304 (before 1972)	35 MMBTU/hr (NSPS Subpart J)	N/A	N/A	N/A	11/01/06 SOP
F13	S005	Ultra Furnace F-305/6 (1990)	20 MMBTU/hr (NSPS Subpart J)	N/A	N/A	N/A	9/28/90 NSR which is superseded by 4/22/02 NSR, and 11/01/06 SOP

Emission Unit ID or Process Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
F14	S005	Ultra Furnace F-307 (before 1972)	13 MMBTU/hr (NSPS Subpart J)	N/A	N/A	N/A	11/01/06 SOP
F15	S006	USLD process heater F-561 (2006)	11.4 MMBTU/hr (NSPS Subpart J and MACT Subpart DDDDD)	N/A	N/A	N/A	3/13/06 NSR
F16	S006	USLD process heater F-562 (2006)	7.1 MMBTU/hr (NSPS Subpart J and MACT Subpart DDDDD)	N/A	N/A	N/A	3/13/06 NSR
F17	S006	USLD process heater F-563 (2006)	18.6 MMBTU/hr (NSPS Subpart J and MACT Subpart DDDDD)	N/A	N/A	N/A	3/13/06 NSR
F18	S007	H_2 Plant reaction furnace H-101A (2006)	64.6 MMBTU/hr (NSPS Subpart J and MACT Subpart DDDDD)	N/A	N/A	N/A	3/13/06 NSR
F19	S007	H_2 Plant reaction furnace H-101B (2006)	64.6 MMBTU/hr (NSPS Subpart J and MACT Subpart DDDDD)	N/A	N/A	N/A	3/13/06 NSR
F20	S020	GDU Process heater (F-675, 2007)- gasoline charge heater.	37.7 MMBTU/hr (NSPS Subpart J and MACT Subpart DDDDD)	N/A	N/A	N/A	9/28/06 NSR

Emission Unit ID or Process Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
F21	S021	GDU Process heater (F-676, 2007)- gasoline stabilizer reboiler, 2007	51.2 MMBTU/hr (NSPS Subpart J and MACT Subpart DDDDD)	N/A	N/A	N/A	9/28/06 NSR
Process Units							
P1	S004	Crude Unit (before 1972)- Crude distillation unit that separates crude oil by boiling fractions. Includes distillation towers, pressure vessels, heat exchangers, pumps, valves, flanges, etc.	3.2 MB/hr	N/A	N/A	N/A	12/20/77 NSR for two furnaces (B-101 and B-102) which are now covered in 11/01/06 SOP, and 8/19/98 NSR for two electric compressors (J-135 A and J-135B)
P2	S004	Fluidized Catalytic Cracking Unit (FCCU, before 1972)- Upgrades high boiling range oil into gasoline and distillate blending components. Includes distillation towers, furnaces, regenerator, pumps, valves, flanges, etc.	1.5 MB/hr	Hamon Research Cottrell Electrostatic Precipitator	A1	PM	11/01/06 SOP

Emission Unit ID or Process Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
P3	N/A	Polymer Unit (before 1972)- The polymerization unit upgrades gaseous hydrocarbons into high octane, lower vapor pressure gasoline blending components, and the oxygenation unit produces oxygenated ethers for gasoline blending from alcohols and gaseous hydrocarbons. Includes distillation towers, pressure vessels, heat exchangers, pumps, valves, flanges, etc.	0.31 MB/hr	N/A	N/A	N/A	N/A
P4	N/A	Ether Unit (1986)- Converts hydrocarbons and methanol to MTBE. Includes distillation towers, pressure vessels, heat exchangers, pumps, valves, flanges, etc.	1.2 MB/hr	N/A	N/A	N/A	8/19/98 NSR
P5	N/A	Coker (before 1972)- Converts heavy hydrocarbons, sludge, and resins into petroleum coke and lighter gasoline and distillate boiling range hydrocarbons. Includes distillation towers, pressure vessels, heat exchangers, pumps, valves, flanges, etc.	1.1 MB/hr	N/A	N/A	N/A	4/12/90 NSR for coker furnace, and 12/26/90 NSR for coke crusher

Emission Unit ID or Process Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
P6	S008	Naphtha Desulfurization Unit and Ultra Former (NDU/UF, before 1972) that catalytically upgrades low octane naphtha to high octane gasoline blending components. Includes distillation towers, pressure vessels, heat exchangers, pumps, valves, flanges, etc.	0.6 MB/hr	Ceilcote wet gas scrubber	A2	HCl	9/28/90 NSR which is superseded by 4/22/02 NSR
P7	N/A	Distillate Desulfurizing Unit (DDU, before 1972)- Removes sulfur from gas oil, distillate, and heavy hydrocarbons. Includes distillation towers, pressure vessels, heat exchangers, pumps, valves, flanges, etc.	1.1 MB/hr	N/A	N/A	N/A	9/28/90 NSR which is superseded by 4/22/02 NSR
P8	N/A	Ultra-Low Sulfur Diesel Unit (ULSD, 2006)- Removes sulfur from diesel. Includes distillation towers, pressure vessels, heat exchangers, pumps, valves, flanges, etc.	0.5 MB/hr	N/A	N/A	N/A	3/13/06 NSR
P9	N/A	Hydrogen plant (H2, 2006)- Generates hydrogen from fuel gas and natural gas. Includes distillation towers, pressure vessels, heat exchangers, pumps, valves, flanges, etc.	658 MSCFH	N/A	N/A	N/A	3/13/06 NSR

Emission Unit ID or Process Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
P10	N/A	Utilities- Refinery boilers that generate steam for use in the refinery. Includes boilers, pressure vessels, heat exchangers, pumps, valves, flanges, etc.	N/A	N/A	N/A	N/A	11/01/06 SOP for boilers B-1701A and B-1701B
P11	S009	Sulfur Recovery Units (SRU-1, pre-1972, and SRU-2, 2006)- Remove sulfur from the refinery gas stream and fuel gas. Includes contact towers, pressure vessels, heat exchangers, pumps, valves, flanges, etc. The associated Sour Water Stripping System is rated at 15,000 gal/hour through tank T-700	2.3 LT/hr	Tail Gas Unit (TGU, 2006)	A3	SO_2, TRS	3/13/06 NSR
P12	S010	Refinery flare (Flare 1, before 1972)- For pollution control and processing of excess refinery fuel gas, supporting process units P1-P7 and P10-P11.	N/A	N/A	N/A	N/A	N/A
P13	S011	Refinery flare (Flare 2, 2006)- For pollution control, supporting new process units P8, P9, and P18.	N/A	N/A	N/A	N/A	3/13/06 NSR
P14	S012	Auxiliary flare (before 1972)- For pollution control and processing of excess refinery fuel gas when Flare 1 or Flare 2 is out of service.	N/A	N/A	N/A	N/A	N/A

Emission Unit ID or Process Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
P15	N/A	Storage tanks (various construction dates)- Store products and/or blend to make final products. Includes heat exchangers, pumps, valves, flanges, etc.	Various	N/A	N/A	N/A	A few tanks are permitted in NSR for process units: Wastewater treatment tanks in 2/25/97 NSR; tanks 700, 503 and 504 in 3/13/06 NSR; tanks 623 and 624 in 9/28/06 NSR
P16	S018	Wastewater Treatment Plant (WWTP, before 1972, modified 1997)- Recovers hydrocarbons and wastewater. Includes tanks, oil/water separators (R5 through R9), sewers (ISBL (Inside the Battery Limit), and OSBL (Outside the Battery Limit)), and sumps (WWTP sump L-1650 and Exchange Pad Sump L-1651).	N/A	Carbon canisters	A12	VOC, benzene	2/25/1997 NSR
P18	S019	Gasoline Desulfurization Unit (GDU, 2007)- Gasoline desulfurization process with reactor, separator, stabilizer, regenerator, reducer, other miscellaneous process equipment, and multiple valves, pumps, connectors, flanges, vents, etc.	1.25 MB/hr	Regenerator Caustic Scrubber	A13	SO_2	9/28/06 NSR
Loading Racks and Oil/Water Separators							
R1	S013	Gasoline truck loading rack, modified 2002.	85,600 gal/hr	John Zink Vapor Combustion Unit (VCU)	A7	VOC, benzene	10/10/02 NSR

Emission Unit ID or Process Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
R2	N/A	Petroleum marine loading	420,000 gal/hr	N/A	N/A	N/A	N/A
R3	N/A	LPG/Butane truck loading rack	10,000 gal/hr	N/A	N/A	N/A	N/A
R4	N/A	LPG/Butane railcar loading rack	50,000 gal/hr	N/A	N/A	N/A	N/A
R5	S014	Oil/Water Separators- Recover hydrocarbons from DDU, NDU, UF, Utilities, and USLD.	60,000 gal/hr	Carbon canister	A8	VOC, benzene	2/25/97 NSR
R6	S015	Oil/Water Separators- Recover hydrocarbons from Crude Unit and FCCU.	60,000 gal/hr	Carbon Canister	A9	VOC, benzene	2/25/97 NSR
R7	S016	Oil/Water Separators- Recover hydrocarbons from Coker.	60,000 gal/hr	Carbon canister	A10	VOC, benzene	2/25/97 NSR
R8	S017	Oil/Water Separators- Recover hydrocarbons from WWTP CPI separators, and induced gas flotation (IGF) units.	120,000 gal/hr	Carbon Canister	A11	VOC, benzene	2/25/97 NSR
R9	S017	Oil/Water Separators- Recover hydrocarbons from WWTP IGF units.	120,000 gal/hr	Carbon canister	A11	VOC, benzene	2/25/97 NSR

*The Size/Rated capacity is provided for informational purposes only, and is not an applicable requirement.
MM= million; M= thousand; MB= 1000 barrels; LT= long ton

III. Fuel Burning Equipment Requirements

A. Limitations

Unit ID/ Process ID-Name	Name/Description of Unit	Pollutants	Description of Applicable Requirement/ Emission Limit/Standard/Work Practice	Citation
F1 and F2/ P10-Utilities	Refinery boilers B-1701A and B-1701B	PM	Maximum allowable emission, E, in pounds of particulate per MMBTU input, by the following equation: $E = 1.0906H^{-0.2594}$, where H is the total capacity in millions of Btu per hour, rolling 12-month basis.	9 VAC 5-40-900. Standard for particulate matter.
F1 and F2/ P10-Utilities	Refinery boilers B-1701A and B-1701B	SO_2	2.64 lbs/MMBTU, rolling 12-month basis	9 VAC 5-40-930. Standard for sulfur dioxide.
F3/ P5-Coker	Coker Furnace BA-101	PM/PM-10	0.49 lbs/hour, 2.1 tons/year, rolling 12-month basis	4/12/1990 NSR, Part I, Condition 5
F3/ P5-Coker	Coker Furnace BA-101	SO_2 /H_2S	2.6 lbs/hour, 11.6 tons/year, rolling 12-month basis; 0.10 grains H_2S per dry standard cubic foot	4/12/1990 NSR, Part I, Conditions 4 and 5
F3/ P5-Coker	Coker Furnace BA-101	CO	3.4 lbs/hour, 15.0 tons/year, rolling 12-month basis	4/12/1990 NSR, Part I, Condition 5
F3/ P5-Coker	Coker Furnace BA-101	NO_2	13.7 lbs/hour, 60.1 tons/year, rolling 12-month basis	4/12/1990 NSR, Part I, Condition 5
F3/ P5-Coker	Coker Furnace BA-101	VOC	0.3 lbs/hour, 1.3 tons/year, rolling 12-month basis	4/12/1990 NSR, Part I, Condition 5
F3/ P5-Coker	Coker Furnace BA-101	Opacity	5% opacity	4/12/1990 NSR, Part I, Condition 6
F3/ P5-Coker	Coker Furnace BA-101		The approved fuel for Coker Furnace BA-101 is refinery fuel gas. A change in the fuel may require a permit to modify and operate.	4/12/1990 NSR, Part I, Condition 8

Unit ID/ Process ID-Name	Name/Description of Unit	Pollutants	Description of Applicable Requirement/ Emission Limit/Standard/Work Practice	Citation
F4/ P1- Crude Unit	Crude Atmospheric / CO Furnace B-101	PM	Maximum allowable emission, E, in pounds of particulate per MMBTU input, by the following equation: $E = 1.0906H^{-0.2594}$, where H is the total capacity in MMBTU per hour, rolling 12-month basis (refinery fuel gas only).	9 VAC 5-40-900. Standard for particulate matter.
F4/ P1- Crude Unit	Crude Atmospheric / CO Furnace B-101	SO_2	2.64 lbs/MMBTU rolling 12-month basis (refinery fuel gas only)	9 VAC 5-40-930. Standard for sulfur dioxide.
F5/ P1- Crude Unit	Crude Vacuum Furnace B-102	PM	Maximum allowable emission, E, in pounds of particulate per MMBTU input, by the following equation: $E = 1.0906H^{-0.2594}$, where H is the total capacity in MMBTU per hour, rolling 12-month basis (refinery fuel gas only).	9 VAC 5-40-900. Standard for particulate matter.
F5/ P1- Crude Unit	Crude Vacuum Furnace B-102	SO_2	2.64 lbs/MMBTU, rolling 12-month basis (refinery fuel gas only)	9 VAC 5-40-930. Standard for sulfur dioxide.
F4 and F5/ P1- Crude Unit	Crude Atmospheric / CO Furnace, and Crude Vacuum Furnace B-101 & B-102	Opacity	COMS measured opacity of 30% or less will not cause a violation of the Standard for Visible Emissions	9 VAC 5-40-940.B
F6/ P7- DDU	Furnace F-101	N/A	The F-101 furnace shall be fired at a rate not to exceed 44 MMBTU per hour. The permittee shall calculate the maximum hourly furnace firing rate using hourly refinery fuel gas throughput and hourly refinery fuel gas heating value test data.	Condition 6, 4/22/02 NSR permit
F6/ P7- DDU	Furnace F-101	PM/PM-10	1.5 tons/year , rolling 12-month basis	Condition 10, 4/22/02 NSR permit
F6/ P7- DDU	Furnace F-101	SO_2	5.2 tons/year, rolling 12-month basis	Condition 10, 4/22/02 NSR permit

Unit ID/ Process ID-Name	Name/Description of Unit	Pollutants	Description of Applicable Requirement/ Emission Limit/Standard/Work Practice	Citation
F6/ P7-DDU	Furnace F-101	NO_2	19.3 tons/year , rolling 12-month basis	Condition 10, 4/22/02 NSR permit
F6/ P7-DDU	Furnace F-101	CO	16.2 tons/year, rolling 12-month basis	Condition 10, 4/22/02 NSR permit
F6/ P7-DDU	Furnace F-101	VOC	1.1 tons/year , rolling 12-month basis	Condition 10, 4/22/02 NSR permit
F6/ P7-DDU	Furnace F-101	Opacity	5% opacity	Condition 11, 4/22/02 NSR permit
F8/ P6-NDU/UF	Furnace F-201	PM	Maximum allowable emission, E, in pounds of particulate per MMBTU input, by the following equation: $E = 1.0906H^{-0.2594}$, where H is the total capacity in millions of Btu per hour.	9 VAC 5-40-900. Standard for particulate matter.
F8/ P6-NDU/UF	Furnace F-201	SO_2	2.64 lbs/MMBTU, rolling 12-month basis	9 VAC 5-40-930. Standard for sulfur dioxide.
F9/ P6-NDU/UF	Furnace F-301	PM	Maximum allowable emission, E, in pounds of particulate per MMBTU input, by the following equation: $E = 1.0906H^{-0.2594}$, where H is the total capacity in millions of Btu per hour, rolling 12-month basis.	9 VAC 5-40-900. Standard for particulate matter.
F9/ P6-NDU/UF	Furnace F-301	SO_2	2.64 lbs/MMBTU, rolling 12-month basis	9 VAC 5-40-930. Standard for sulfur dioxide.
F10/ P6-NDU/UF	Furnace F-302 A&B	NOx	NOx emissions shall be controlled by the use of low-NOx burners	Condition 4, 4/22/02 NSR permit
F10/ P6-NDU/UF	Furnace F-302 A&B	PM/PM-10	0.3 lbs/hour, and 1.1 tons/year, rolling 12- month basis	Condition 8, 4/22/02 NSR permit
F10/ P6-NDU/UF	Furnace F-302 A&B	SO_2	2.3 lbs/hour, and 10.3 tons/year, rolling 12- month basis	Condition 8, 4/22/02 NSR permit

Unit ID/ Process ID-Name	Name/Description of Unit	Pollutants	Description of Applicable Requirement/ Emission Limit/Standard/Work Practice	Citation
F10/ P6-NDU/UF	Furnace F-302 A&B	NO_2	0.08 lbs/MMBTU, 6.3 lbs/hour, and 27.4 tons/year, rolling 12- month basis	Condition 8, 4/22/02 NSR permit
F10/ P6-NDU/UF	Furnace F-302 A&B	CO	3.1 lbs/hour, and 13.8 tons/year, rolling 12- month basis	Condition 8, 4/22/02 NSR permit
F10/ P6-NDU/UF	Furnace F-302 A&B	VOC	0.2 lbs/hr, and 1.1 tons/year , rolling 12- month basis	Condition 8, 4/22/02 NSR permit
F10/ P6-NDU/UF	Furnace F-302 A&B	Opacity	5% opacity	Condition 11, 4/22/02 NSR permit
F11/ P6-NDU/UF	Furnace F-303	PM	Maximum allowable emission, E, in pounds of particulate per million BTU input, by the following equation: $E = 1.0906H^{-0.2594}$, where H is the total capacity in millions of Btu per hour, rolling 12-month basis.	9 VAC 5-40-900. Standard for particulate matter.
F11/ P6-NDU/UF	Furnace F-303	SO_2	2.64 lbs/MMBTU, rolling 12-month basis	9 VAC 5-40-930. Standard for sulfur dioxide.
F12/ P6-NDU/UF	Furnace F-304	PM	Maximum allowable emission, E, in pounds of particulate per million BTU input, by the following equation: $E = 1.0906H^{-0.2594}$, where H is the total capacity in millions of BTU per hour, rolling 12-month basis.	9 VAC 5-40-900. Standard for particulate matter.
F12/ P6-NDU/UF	Furnace F-304	SO_2	2.64 lbs/MMBTU, rolling 12-month basis	9 VAC 5-40-930. Standard for sulfur dioxide.
F13/ P6-NDU/UF	Furnace F-305/6	NOx	NOx emissions shall be controlled by the use of low-NOx burners	Condition 4, 4/22/02 NSR permit
F13/ P6-NDU/UF	Furnace F-305/6	PM/PM-10	0.1 lbs/hour, and 0.3 tons/year, rolling 12- month basis	Condition 9, 4/22/02 NSR permit
F13/ P6-NDU/UF	Furnace F-305/6	SO_2	0.6 lbs/hour, and 2.6 tons/year, rolling 12- month basis	Condition 9, 4/22/02 NSR permit

Unit ID/ Process ID-Name	Name/Description of Unit	Pollutants	Description of Applicable Requirement/ Emission Limit/Standard/Work Practice	Citation
F13/ P6-NDU/UF	Furnace F-305/6	NO_2	0.08 lbs/MMBTU, 1.6 lbs/hour, and 6.9 tons/year , rolling 12- month basis	Condition 9, 4/22/02 NSR permit
F13/ P6-NDU/UF	Furnace F-305/6	CO	0.8 lbs/hour, and 3.5 tons/year, rolling 12- month basis	Condition 9, 4/22/02 NSR permit
F13/ P6-NDU/UF	Furnace F-305/6	VOC	0.1 lbs/hr, and 0.3 tons/year , rolling 12- month basis	Condition 9, 4/22/02 NSR permit
F13/ P6-NDU/UF	Furnace F-305/6	Opacity	5% opacity	Condition 11, 4/22/02 NSR permit
F14/ P6-NDU/UF	Furnace F-307	PM	Maximum allowable emission, E, in pounds of particulate per million BTU input, by the following equation: $E = 1.0906H^{-0.2594}$, where H is the total capacity in millions of Btu per hour, rolling 12-month basis.	9 VAC 5-40-900. Standard for particulate matter.
F14/ P6-NDU/UF	Furnace F-307	SO_2	2.64 lbs/MMBTU, rolling 12-month basis	9 VAC 5-40-930. Standard for sulfur dioxide.
F15 to 19/ P8&P9-ULSD &H2	Furnaces F-561, F-562, F-563, H-101A and H-101B	NOx	NOx emissions shall be controlled by the use of ultra low-NOx burners	Condition 3 of 3/13/06 NSR permit
F15 to 19/ P8&P9-ULSD &H2	Furnaces F-561, F-562, F-563, H-101A and H-101B	CO	CO emissions shall not exceed 400 ppmvd corrected to 3% oxygen (3-run average). This standard applies at all times except during periods of startup, shutdown, or malfunction.	Condition 11 of 3/13/06 NSR permit
F15 to 19/ P8&P9-ULSD &H2	Furnaces F-561, F-562, F-563, H-101A and H-101B	PM/PM-10	1.1 lbs/hour, and 4.9 tons/year, combined, rolling 12-month basis	Condition 17 of 3/13/06 NSR permit
F15 to 19/ P8&P9-ULSD &H2	Furnaces F-561, F-562, F-563, H-101A and H-101B	SO_2	4.0 lbs/hour, and 17.3 tons/year, combined, rolling 12-month basis	Condition 17 of 3/13/06 NSR permit
F15 to 19/ P8&P9-ULSD &H2	Furnaces F-561, F-562, F-563, H-101A and H-101B	NOx	5.6 lbs/hour, and 24.3 tons/year, combined, rolling 12-month basis	Condition 17 of 3/13/06 NSR permit

Unit ID/ Process ID-Name	Name/Description of Unit	Pollutants	Description of Applicable Requirement/ Emission Limit/Standard/Work Practice	Citation
F15 to 19/ P8&P9-ULSD &H2	Furnaces F-561, F-562, F-563, H-101A and H-101B	CO	12.3 lbs/hour, and 53.8 tons/year, combined, rolling 12-month basis	Condition 17 of 3/13/06 NSR permit
F15 to 19/ P8&P9-ULSD &H2	Furnaces F-561, F-562, F-563, H-101A and H-101B	VOC	0.8 lbs/hour, and 3.5 tons/year, combined, rolling 12-month basis	Condition 17 of 3/13/06 NSR permit
F15 to 19/ P8 & P9-ULSD &H2	Furnaces F-561, F-562, F-563, H-101A and H-101B	Opacity	Visible emissions from the stacks shall not exceed 10% opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 20% opacity as determined by EPA Method 9 (reference 40 CFR 60 Appendix A). This condition applies at all times except during startup, shut down, and malfunction.	Condition 18 of 3/13/06 NSR permit
F20/ P18-GDU	Process heaters F-675 and F-676	NOx	NOx emissions shall be controlled by the use of ultra low-NOx burners.	Condition 3 of 9/28/06 NSR permit
F20/ P18-GDU	Process heaters F-675	PM/PM-10	0.3 lbs/hour, and 1.2 tons/year, rolling 12-month basis	Condition 18 of 9/28/06 NSR permit
F20/ P18-GDU	Process heaters F-675	SO_2	1.0 lbs/hour, and 4.3 tons/year, rolling 12-month basis	Condition 18 of 9/28/06 NSR permit
F20/ P18-GDU	Process heaters F-675	NOx	1.1 lbs/hour, and 5.0 tons/year, rolling 12-month basis	Condition 18 of 9/28/06 NSR permit
F20/ P18-GDU	Process heaters F-675	CO	400 ppmvd @ 3% O_2 (three-run average of stack test results as required by MACT Subpart DDDDD) and 8.3 tons/year, rolling 12-month basis	Condition 18 of 9/28/06 NSR permit
F20/ P18-GDU	Process heaters F-675	VOC	0.2 lbs/hour, and 0.9 tons/year, rolling 12-month basis	Condition 18 of 9/28/06 NSR permit
F21/ P18-GDU	Process heaters F-676	PM/PM-10	0.4 lbs/hour, and 1.7 tons/year, rolling 12-month basis	Condition 19 of 9/28/06 NSR permit

Unit ID/ Process ID-Name	Name/Description of Unit	Pollutants	Description of Applicable Requirement/ Emission Limit/Standard/Work Practice	Citation
F21/ P18-GDU	Process heaters F-676	SO_2	1.3 lbs/hour, and 5.9 tons/year, rolling 12-month basis	Condition 19 of 9/28/06 NSR permit
F21/ P18-GDU	Process heaters F-676	NOx	1.5 lbs/hour, and 6.8 tons/year, rolling 12-month basis	Condition 19 of 9/28/06 NSR permit
F21/ P18-GDU	Process heaters F-676	CO	400 ppmvd @ 3% O_2 (three-run average of stack test results as required by MACT Subpart DDDDD) and 11.2 tons/year, rolling 12-month basis	Condition 19 of 9/28/06 NSR permit
F21/ P18-GDU	Process heaters F-676	VOC	0.3 lbs/hour, and 1.2 tons/year, rolling 12-month basis	Condition 19 of 9/28/06 NSR permit
F20 & 21/ P18-GDU	Process heaters F-675 and F-676	Opacity	Visible emissions from the stacks shall not exceed 5% as determined by EPA Method 9 (reference 40 CFR 60 Appendix A). This condition applies at all times except during startup, shut down, and malfunction.	Condition 25 of 9/28/06 NSR permit

1. **Fuel**- No fuel oil may be burned at any refinery process heater (furnaces) or boiler. The approved fuels are natural gas and refinery fuel gas only.
(9 VAC 5-80-110, Condition 7 of 4/22/02 NSR permit, Condition 12 of 3/13/06 NSR, Condition 14 of 9/28/06 NSR, and Condition 4 of 11/01/06 SOP)

2. **Requirements by Reference**- All refinery process heaters and boilers shall be considered "fuel gas combustion devices" as defined in 40 CFR 60 Subpart J, New Source Performance Standards for Petroleum Refineries. Except where this permit is more restrictive than the applicable requirement, the refinery process heaters and boilers shall comply with all requirements of 40 CFR Subpart J as they apply to fuel gas combustion devices, including operational provisions, monitoring, notifications, recordkeeping, and reporting.
(9 VAC 5-80-110 and Condition 5 of 11/01/06 SOP)

3. **Fuel throughput**- The fuel burning equipment at the USLD & H2 plant (P8 and 9) including furnaces F-561, F-562, F-563, H-101A, and H-101B combined shall consume no more than 1.306×10^9 MMBTU/year of natural gas and refinery fuel gas, calculated monthly as the sum of each consecutive 12-month period.
(9 VAC 5-80-110 and Condition 13 of 3/13/06 NSR permit)

4. **Fuel throughput**- The process heater F- 675 shall consume no more than 3.3×10^5 MMBTU of natural gas and refinery fuel gas combined per year, calculated monthly as the sum of each consecutive 12-month period. The permittee shall monitor the heat consumption by measuring the daily volume of fuel used as well as the daily heat value of the fuel used. The fuel consumption shall be measured by orifice plate flow meters that shall be calibrated annually. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9 VAC 5-80-110 and Condition 15 of 9/28/06 NSR)

5. **Fuel throughput**- The process heater F- 676 shall consume no more than 4.5×10^5 MMBTU of natural gas and refinery fuel gas combined per year, calculated monthly as the sum of each consecutive 12-month period. The permittee shall monitor the heat consumption by measuring the daily volume of fuel used as well as the daily heat value of the fuel used. The fuel consumption shall be measured by orifice plate flow meters that shall be calibrated annually. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9 VAC 5-80-110 and Condition 16 of 9/28/06 NSR)

6. **Emission Limits**- Emissions from the fuel burning equipment at the refinery shall not exceed the limitations specified in Table III.A.
(9 VAC 5-80-110)

7. **Emission Limits**- SO_2 emissions from all fuel burning equipment listed in Table III.A that use refinery fuel gas shall be controlled by limiting the hydrogen sulfide content of the refinery fuel gas to 0.10 grains/dscf and 160 ppmvd pursuant to 40 CFR 60.104 of NSPS Subpart J.
(9 VAC 5-80-110, Condition 4 of 4/12/90 NSR, Condition 3 of 4/22/02 NSR, Condition 4 of 3/13/06 NSR, Condition 4 of 9/28/06 NSR permit, and Condition 5 of 11/01/06 SOP)

8. **Existing Source Standard for Visible Emissions**- No owner or other person shall cause or permit to be discharged into the atmosphere from any fuel burning equipment unit any visible emissions which exhibit greater than 20% opacity, except for one six minute period in any one hour of not more than 60% opacity. Failure to meet the requirements of this section because of the presence of water vapor shall not be a violation of this section. This standard is applicable to the following emission units: utility boilers B-1701A and B-1701B, furnaces B-101, B-102, F-201, F-301, F-303, F-304 and F-307.
(9 VAC 5-80-110 and 9 VAC 5-40-940)

9. **Operation**- Emissions from fuel burning equipment listed in Table III.A shall be controlled by proper operation and maintenance. Fuel burning equipment operators shall be trained in the proper operation of all such equipment. Training shall consist of a review and familiarization of the manufacturer's operating instructions, at minimum.
(9 VAC 5-80-110, Condition 6, Part II of 4/12/90 NSR, Condition 41 of 3/13/06 NSR, and Condition 49 of 9/28/06 NSR Permit)

10. **Requirements by Reference**- Except where this permit is more restrictive than the applicable requirement, the boilers and process heaters shall be operated in compliance with the requirements of 40 CFR 60 Subpart J and 40 CFR 63 Subpart DDDDD, as applicable, including operational provisions, monitoring, notifications, recordkeeping and reporting.
(9 VAC 5-80-110, Condition 19 of 3/13/06 NSR permit, Condition 17 of 9/28/06 NSR permit, and Condition 5 of 11/01/06 SOP)

B. Monitoring

1. The H_2S concentration (dry basis) of refinery fuel gas feed to fuel burning equipment listed in Table III.A shall be monitored and recorded by a continuous monitoring system (CMS) in accordance with 40 CFR 60.105(a)(4)of NSPS Subpart J. All fuel burning equipment listed in Table III.A having a common source of refinery fuel gas may be monitored at only one location, if monitoring at this location accurately represents the H_2S concentration in the fuel gas being burned. H_2S monitoring is not required for purchased natural gas. Each CMS shall be provided with adequate access for inspection, and shall be in operation when the fuel burning equipment listed in Table III.A is operating.

   The CMS span value shall be 425 mg/dscm H_2S. Quarterly performance evaluations for the CMS shall use Performance Specification 7 of 40 CFR 60 Appendix B and with provisions of 40 CFR Appendix F. Annual relative accuracy evaluations for the CMS shall use Method 11 of 40 CFR 60 Appendix A.

   Should the H_2S CMS not be available to monitor H_2S and estimate SO_2 emissions, then monitoring shall be made by fuel gas H_2S analysis at a frequency of once per 8-hour shift. One analysis is acceptable for all furnaces on any common fuel gas system.

   In accordance with alternative monitoring provisions of 40 CFR 60.13(i), pressure swing adsorption (PSA) tail gas combusted at the Hydrogen Plant furnaces (H-101A and H-101B) shall be monitored for the presence of H_2S by analyzing samples from the outlet of the Hydrogen Plant desulfurization reactors (V-101A and V-101B) daily using a Draeger tube with a range of 0-10 ppm H_2S.

   (9 VAC 5-80-110, Condition 9 of Part I of 4/12/90 NSR, Condition 13 of 4/22/02 NSR, Condition 4 of 3/13/06 NSR, and Condition 12 of 9/28/06 NSR)

2. SO_2 emissions from fuel burning equipment shall be monitored and calculated using records of firing, fuel type, and the refinery fuel gas H_2S content from H_2S CMS records. Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. (9 VAC 5-80-110 E)

3. Emissions of CO, NOx, PM, PM-10, VOC, and TSP from the fuel burning equipment shall be monitored and calculated using records of fuel consumption, type of fuel used, and appropriate data on fuel properties. Emissions shall be calculated monthly as the sum of each consecutive 12-month period using Chapter 1, Sections 3 and 4 of AP-42, 5th Edition, Supplement B or other appropriate emission factors (e.g. permitted emission factors, manufacturer's specifications) as approved by DEQ. Data calculated monthly shall be used to determine compliance with ton per year and pound per hour emission limitations. (9 VAC 5-80-110 E)

4. The permittee shall monitor opacity from the Crude Atmospheric/CO Furnace B-101, and the Crude Vacuum Furnace B-102 using a continuous opacity monitor system (COMS). (9 VAC 5-80-110 E)

5. DEQ has determined that no violation of the Standard for Visible Emissions for Crude Unit operation (B-101 and B-102), as determined by EPA Method 9, will occur at COMS recorded values up to 30 percent opacity. COMS values up to 30 percent opacity demonstrate compliance with the visual 20 percent opacity limitation. (9 VAC 5-80-110 B and 9 VAC 5-40-940 B)

6. The permittee shall perform a six-minute visible emission evaluation (VEE) using EPA Method 9 (reference 40 CFR 60, Appendix A) for each of the stacks of combustion units BA-101, F-101, F-302 A & B, F-305/6, F-675 and F-676 once per calendar month during daylight hours of operation. If visible emissions are noted from the stack, operational adjustment or maintenance shall be performed on the unit to eliminate the visible emissions. If visible emissions continue after maintenance actions, a VEE shall be immediately conducted on the stack for at least one hour to determine compliance with the opacity limit (5%). All VEE results and corrective actions shall be recorded in operation logbooks or equivalent records. (9 VAC 5-80-110 E and Condition 35 of 9/28/06 NSR)

7. The permittee shall perform a six-minute visible emission evaluation (VEE) using EPA Method 9 (reference 40 CFR 60, Appendix A) for each of the stacks of combustion units F-201, F-301, F-303, F-304, F-307, F-561, F-562, F-563, H-101A and H-101B once per calendar month during daylight hours of operation. If the initial 6-minute observation yields an opacity of less than 50% of the applicable opacity limitation, then no further action is required. If the initial 6-minute observation yields an opacity of greater than 50% of the applicable opacity limitation, then the permittee shall perform an 18-minute Method 9 opacity evaluation consisting of not less than three 6-minute observations. If the 18-minute Method 9 evaluation yields an average (average of the three 6-minute observations) opacity of less than 50% of the applicable opacity limitation, then no further action is required. If the 18-minute Method 9 evaluation yields an average opacity of greater than 50% of the applicable opacity limitation, then the permittee shall perform a 1-hour EPA Method 9 evaluation consisting of not less than ten 6-minute observations to determine compliance with the applicable opacity limits and take appropriate corrective action. All VEE results and corrective actions shall be recorded in operation logbooks or equivalent records.
(9 VAC 5-80-110 E)

8. The permittee shall perform a six-minute visible emission evaluation (VEE) using EPA Method 9 (reference 40 CFR 60, Appendix A) for each of the stacks of combustion units B-1701A and B-1701B once per calendar quarter during daylight hours of operation. If the initial 6-minute observation yields an opacity of less than 50% of the applicable opacity limitation, then no further action is required. If the initial 6-minute observation yields an opacity of greater than 50% of the applicable opacity limitation, then the permittee shall perform an 18-minute Method 9 opacity evaluation consisting of not less than three 6-minute observations. If the 18-minute Method 9 evaluation yields an average (average of the three 6-minute observations) opacity of less than 50% of the applicable opacity limitation, then no further action is required. If the 18-minute Method 9 evaluation yields an average opacity of greater than 50% of the applicable opacity limitation, then the permittee shall perform a 1-hour EPA Method 9 evaluation consisting of not less than ten 6-minute observations to determine compliance with the applicable opacity limits and take appropriate corrective action. All VEE results and corrective actions shall be recorded in operation logbooks or equivalent records.
(9 VAC 5-80-110 E)

C. Recordkeeping

1. The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Director, Tidewater Regional Office. These records shall include, but are not limited to:

   a. Records of burner type (i.e. low NOx burner) for units F-302 A & B, F-305/6, F-561, F-562, F-563, H-101A, H-101B, F-675 and F-676 as required in permits.

b. Records necessary to demonstrate compliance with the hourly heat input limitation for unit F-101. These records shall include, but are not limited to, hourly throughput of refinery fuel gas in standard cubic feet, refinery fuel gas test data indicating the hourly heating value of the fuel gas in BTUs, and hourly calculations of heat input to the furnace in BTUs.

c. CMS records and analysis records for H_2S content in fuel gas, including performance and relative accuracy evaluations of the CMS.

d. Records of firing and fuel H_2S content for the calculation of SO_2 emissions from fuel burning equipment.

e. Records of fuel consumption, type of fuel used, and appropriate data on fuel properties for the calculations of CO, NOx, PM, PM-10, VOC, and TSP emissions, using Chapter 1, Sections 3 and 4 of AP-42, 5th Edition, Supplement B or other appropriate emission factors (e.g. permitted emission factors, manufacturer's specifications) as approved by DEQ. Data calculated monthly shall be used to determine compliance with ton per year and pound per hour emission limitations.

f. Annual throughput of natural gas and refinery fuel gas for units F-561, F-562, F-563, H-101A, and H-101B combined in MMBTU/year, calculated monthly as the sum of each consecutive 12-month period.

g. Annual consumption of natural gas and refinery fuel gas for each of the units F-675 and F-676 in MMBTU/year, calculated monthly as the sum of each consecutive 12-month period, including records of flow meter calibrations, daily volume, and heat value of fuels consumed.

h. Records of all opacity determinations by EPA Method 9 and relevant corrective actions in logbooks or equivalent records.

i. COMS records.

j. CO stack test results.

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five (5) years.
(9 VAC 5-80-110 F, Condition 14 of 4/22/02 NSR, Condition 20 of 3/13/06 NSR, Condition 36 of 9/28/06 NSR)

2. The permittee shall maintain records of the required training including a statement of time, place and nature training provided. The permittee shall have available good written operating procedures and a maintenance schedule for the fuel burning equipment listed in Table III.A. These procedures shall be based on the manufacturer's recommendations, at minimum. All records required by this condition shall be kept on site and made available for inspection by the DEQ.
(9 VAC 5-80-110, Condition 24 of 11/01/06 SOP, and Condition 36 of 9/28/06 NSR)

D. Testing

1. **Stack Test -** Initial performance tests shall be conducted for CO from units F-561, F-562, F-563, H-101A, H-101B, F-675 and F-676 to determine compliance with the emission limit of 400 ppmvd. The tests shall be performed, reported and demonstrate compliance within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of the permitted facility. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30, 40 CFR 63.7520, test methods and procedures contained in 40 CFR 63.7520 and Table 5 of 40 CFR 63 Subpart DDDDD, and 40 CFR 60 Appendix A. Tests shall be conducted while firing refinery fuel gas and/or natural gas.

   The details of the tests are to be arranged with the Tidewater Regional Office. The permittee shall submit a test protocol to the Tidewater Regional Office at least 30 days prior to testing. One copy of the test results shall be submitted within 60 days after test completion to the Tidewater Regional Office, and shall conform to the test report format enclosed with this permit.

   (9 VAC 5-80-110, Condition 11 of 3/13/06 NSR, and Condition 26 of 9/28/06 NSR)

2. **Stack Test** – Annually and upon request by the DEQ, the permittee shall conduct additional performance tests for CO from units F-561, F-562, F-563, H-101A, H-101B, F-675 and F-676 to demonstrate compliance with the 400 ppmdv emission limit contained in this permit. Each annual performance test must be conducted between 10 and 12 months after the previous performance test. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30, 40 CFR 63.7520, test methods and procedures contained Table 1 and Table 5 of 40 CFR 63 Subpart DDDDD, and 40 CFR 60 Appendix A. Tests shall be conducted while firing refinery fuel gas and/or natural gas.

   The details of the tests are to be arranged with the Tidewater Regional Office. The permittee shall submit a test protocol to the Tidewater Regional Office at least 30 days prior to testing. One copy of the test results shall be submitted to the Tidewater Regional Office and the U.S. EPA at the address in the Notification and Reporting section III.E.1 within 60 days after test completion with the Notification of Compliance Status, and shall conform to the test report format enclosed with this permit.
   (9 VAC 5-80-110, Condition 11 of 3/13/06 NSR, and Condition 30 of 9/28/06 NSR)

3. The permitted facility shall be constructed so as to allow for emissions testing at any time using appropriate methods. Upon request from the Department, test ports shall be provided at the appropriate locations.
(9 VAC 5-40-30, 9 VAC 5-50-30, and 9 VAC 5-80-110)

4. If testing is conducted in addition to the monitoring specified in this permit, the permittee shall use the appropriate method(s) in accordance with procedures approved by the DEQ.
(9 VAC 5-80-110)

E. Notification and Reporting

1. **Initial Notifications for Process Heaters (F-675 and F-676)**- The permittee shall furnish written notification to the Tidewater Regional Office of:

   a. The actual date on which construction of the process heaters F-675 and F-676 of the gasoline desulfurization process commenced within 30 days after such date.

   b. The anticipated start-up date of the process heaters F-675 and F-676 postmarked not more than 60 days nor less than 30 days prior to such date.

   c. The actual start-up date of the process heaters F-675 and F-676 within 15 days after such date.

   d. The anticipated date of performance tests and performance evaluations of the process heaters F-675 and F-676, postmarked at least 30 days prior to such date.

   Copies of the written notification referenced in items a through d above are to be sent to:
   Associate Director
   Office of Air Enforcement (3AP10)
   U.S. Environmental Protection Agency Region III
   1650 Arch Street
   Philadelphia, PA 19103-2029

   (9 VAC 5-80-110, and Condition 38 of 9/28/06 NSR permit)

2. **Notification of Compliance Status Report for Process Heaters (F-675 and F-676)**- Notification of Compliance Status Report for the process heaters shall be submitted within 60 days of completion the initial compliance determination test as required by MACT Subpart DDDDD (40 CFR 63.7545).
(9 VAC 5-80-110, and Condition 39 of 9/28/06 NSR permit)

3. **Semi-Annual Reports for Process Heaters**- The permittee shall submit the semi-annual reports for the process heaters subject to MACT Subpart DDDDD Section 40 CFR 63.7550 to the Director, Tidewater Regional Office within 30 days after the end of each semi-annual period. The time periods to be addressed are January 1 to June 30, and July 1 to December 31.

   One copy of the semi-annual reports shall be submitted to the U.S. EPA Region III at the address specified above.
   (9 VAC 5-80-110, and Condition 40 of 9/28/06 NSR permit)

4. **Semi-Annual Report for Refinery Fuel Gas**- The permittee shall submit a semi-annual report to the Director, Tidewater Regional Office for the H_2S CMS and H_2S analyses of refinery fuel gas. The report shall contain all occurrences, by exception, during the previous six calendar months of H_2S concentrations exceeding 0.10 grains/dscf. The report shall be filed in accordance with the reporting requirements in the General Conditions of this permit.
   (9 VAC 5-80-110 F)

5. **Semi-Annual Emission Report**- The permittee shall submit a semi-annual emission report to the Director, Tidewater Regional Office for the monthly calculations showing emissions above emission limits on a 12-month average basis for the 12-calendar month period preceding submittal of the report and periods when the type of fuel used is not refinery fuel gas. The report shall be filed in accordance with the reporting requirements in the General Conditions of this permit.
   (9 VAC 5-80-110 F)

6. **Semi-Annual COMS Report-** The permittee shall provide a semi-annual report to the Director, Tidewater Regional Office for the COMS of the Crude operations. The report shall contain all occurrences, by exception, during the previous six calendar months of excess emissions greater than 30 percent opacity. The report shall be filed in accordance with the reporting requirements in the General Conditions of this permit.
   (9 VAC 5-50-50 and 9 VAC 5-80-110 F)

7. **Semi-Annual Opacity Report-** The permittee shall submit a semi-annual opacity report to the Director, Tidewater Regional Office for all fuel combustion units with monthly or quarterly opacity monitoring by EPA Method 9. The report shall include any periods when Method 9 opacity evaluations indicated an exceedance of opacity limitations. The report shall be filed in accordance with the reporting requirements in the General Conditions of this permit.
   (9 VAC 5-40-50, 9 VAC 5-50-50, and 9 VAC 5-80-110 F)

IV. Fluidized Catalytic Cracking Unit Requirements (FCCU, Process Unit ID# P2)

A. Limitations

Process Unit Name	Name/Description of Unit	Pollutants	Description of Applicable Requirement/ Emission Limit/Standard/Work Practice	Citation
FCCU	FCCU regenerator vent, through Crude Furnace B-101, to combined stack B-100 (ID# S004)	PM	PM emissions shall not exceed 1 lb per 1000 lbs of coke burned beginning 6 months after the completion of the scheduled refinery maintenance turnaround (TAR). The TAR shall be completed by December 31, 2006, unless an extension is granted by EPA.	Condition 7, 11/01/06 SOP
FCCU	FCCU regenerator vent, through Crude Furnace B-101, to combined stack B-100 (ID# S004)	CO	CO emissions shall not exceed 500 ppmvd on an hourly average basis as measured by a CEM in accordance with MACT UUU.	Condition 8, 11/01/06 SOP
FCCU	FCCU regenerator vent, through Crude Furnace B-101, to combined stack B-100 (ID# S004)	SO_2	Emission limit: 65 ppmv corrected to 0% oxygen on a 365-day rolling average basis as measured by a continuous emission monitor (CEM) located at the combined stack (B-100). The 365-day SO_2 emission limit shall apply at all times that the FCCU is operating and shall include periods of start-up, shutdown, and malfunction.	Condition 9, 11/01/06 SOP
FCCU	FCCU regenerator vent, through Crude Furnace B-101, to combined stack B-100 (ID# S004)	SO_2	Emission limit: 106 ppmv corrected to 0% oxygen on a 7-day rolling average basis as measured by a CEM located at the combined stack (B-100). The 7-day SO_2 emission limit shall apply at all times that the FCCU is operating (other than extended Crude Unit outages) and shall include periods of start-up, shutdown, and malfunction.	Condition 10, 11/01/06 SOP

Process Unit Name	Name/Description of Unit	Pollutants	Description of Applicable Requirement/ Emission Limit/Standard/Work Practice	Citation
FCCU	FCCU regenerator vent, through Crude Furnace B-101, to combined stack B-100 (ID# S004)	SO_2	During periods when the Crude Unit is out of service, the FCCU shall meet an SO_2 emission limit of 338 ppmv corrected to 0% oxygen on a 7-day rolling average basis as measured by a CEM located at the combined stack (B-100). The alternate emission limit shall apply only during those 7-day time periods when the Crude Unit is not operating and was not operating for the prior four calendar days. Use of the alternate emission limit shall be restricted to one time period of no more than 20 days in any consecutive 24-month time period. SO_2 emissions from the FCCU during a Crude Unit outage shall be included in the 365-day rolling average SO_2 emission limit calculation.	Condition 11, 11/01/06 SOP
FCCU	FCCU regenerator vent, through Crude Furnace B-101, to combined stack B-100 (ID# S004)	SO_2	The permittee shall notify the United States Environmental Protection Agency (EPA) and the Virginia Department of Environmental Quality (DEQ) within seven days of invoking the alternate emission limit of 338 ppmv corrected to 0% oxygen on a 7-day rolling average basis as measured by a CEM located at the combined stack (B-100)	Condition 22, 11/01/06 SOP

Process Unit Name	Name/Description of Unit	Pollutants	Description of Applicable Requirement/ Emission Limit/Standard/Work Practice	Citation
FCCU	FCCU regenerator vent, through Crude Furnace B-101, to combined stack B-100 (ID# S004)	SO_2	The calculation of the 7-day and 365-day SO_2 emissions from the FCCU shall include all "valid hours" of operation of the FCCU. For the purpose of meeting the FCCU 365-day and 7-day rolling SO_2 emission limits, a "valid hour" shall mean an hour in which the FCCU is operating and the SO_2 CEM is providing data for at least 45 minutes of the hour. A "day" shall mean a calendar day. The 7-day and 365-day rolling average SO_2 emissions shall be weighted averages calculated as follows: Daily Weighting Factor = (Valid hours/day) x (Daily average SO_2 Emissions) Rolling Average SO_2 Emissions= Σ Daily Weighting Factor $\div \Sigma$ Valid hours/day	Condition 12, 11/01/06 SOP
FCCU	FCCU regenerator vent, through Crude Furnace B-101, to combined stack B-100 (ID# S004)	Nickel	Nickel emissions shall not exceed 0.029 lbs/hour.	MACT Subpart UUU, 40 CFR 63.1564(a)(1)
FCCU	FCCU regenerator vent, through Crude Furnace B-101, to combined stack B-100 (ID# S004)	Nickel	Operating limit- Daily average Ni operating value shall be maintained no higher than the limits established during the performance test.	MACT Subpart UUU, 40 CFR 63.1564(a)(2)

1. **Emission Control**- Particulate emissions from the FCCU shall be controlled by an electrostatic precipitator. The electrostatic precipitator shall be provided with adequate access for inspection and shall be in operation when the FCCU is operating.
(9 VAC 5-80-110 and Condition 6 of 11/01/06 SOP)

2. **Emission Limits**- Emissions from the FCCU shall not exceed the limitations specified in Table IV.A.
(9 VAC 5-80-110)

3. **Requirements by Reference**- Except where this permit is more restrictive than the applicable requirement, the FCCU shall be operated in compliance with the requirements of 40 CFR 63 Subpart UUU, including operational provisions, monitoring, notifications, recordkeeping and reporting.
(9 VAC 5-80-110 and Condition 13 of 11/01/06 SOP)

B. Monitoring

1. **CO CEMS** - Continuous Emission Monitoring Systems, meeting the design specifications of 40 CFR Part 60, Appendix B, shall be installed to measure and record the emissions of CO from the FCCU as ppmv. The CEMS shall be installed, calibrated, maintained, audited and operated in accordance with the requirements of 40 CFR 60.13, and Appendices B and F, and MACT Subpart UUU. Data shall be reduced to 1-hour averages. The span value for the CO monitor shall be 1,000 ppm in accordance with MACT Subpart UUU.
(9 VAC 5-80-110 and Condition 18 of 11/01/06 SOP)

2. **SO_2 CEMS** - Continuous Emission Monitoring Systems, meeting the design specifications of 40 CFR Part 60, Appendix B, shall be installed to measure and record the emissions of SO_2 from the FCCU as ppmv corrected to 0% oxygen. The CEMS shall be installed, calibrated, maintained, audited and operated in accordance with the requirements of 40 CFR 60.13, and Appendices B and F. Data shall be reduced to 7-day and 365-day rolling averages.
(9 VAC 5-80-110 and Condition 19 of 11/01/06 SOP)

3. **COMS** - Continuous Opacity Monitoring Systems, meeting the design specifications of 40 CFR Part 60, Appendix B, shall be installed to measure and record the opacity of emissions from the FCCU. The COMS shall be installed, calibrated, maintained and operated in accordance with the requirements of 40 CFR 60.13 and Appendix B, and MACT Subpart UUU. Data shall be reduced to six-minute averages. Hourly average opacity shall be determined and recorded from the six-minute averages.
(9 VAC 5-80-110 and Condition 20 of 11/01/06 SOP)

4. **COMS Performance Evaluations** - Performance evaluations of the COMS shall be conducted in accordance with 40 CFR Part 60, Appendix B, and shall take place during the PM and Ni initial performance tests to establish operating limits for the FCCU in accordance with Compliance Assurance Monitoring (CAM) and MACT Subpart UUU requirements, respectively. One copy of the performance evaluation report shall be submitted to EPA and to the Tidewater Regional Office within 45 days of the evaluation. The COMS shall be installed and operational prior to conducting initial performance tests. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation and calibration of the device. A 30 day notification, prior to the demonstration of continuous monitoring system's performance, and subsequent notifications shall be submitted to the Tidewater Regional Office and EPA.
(9 VAC 5-80-110 and Condition 21 of 11/01/06 SOP)

5. **Continuing Compliance Determination**- The permittee shall demonstrate continuous compliance with Ni emission limit and operating limit by determination of the daily average Ni operating value from COMS data, the equilibrium catalyst Ni concentration, and the stack gas flow rate, and keeping the operating value from exceeding the limit established during the performance test, as required by MACT Subpart UUU, 40 CFR 63.1564(c)(1). (9 VAC 5-80-110 and MACT Subpart UUU)

6. **Compliance Assurance Monitoring (CAM) for PM Emissions-** The permittee shall monitor, operate, calibrate and maintain the electrostatic precipitator controlling the PM emissions from the FCCU according to the CAM plan submitted by the facility, including the following:

Monitoring, Frequency, Records	Performance Criteria	Indicator Range; Averaging Period
COMS, located on the FCCU/Crude Unit Combined Stack (ID#S004). Opacity shall be continuously recorded and data reduced to six-minute averages. Hourly average opacity shall be determined and recorded from the six-minute averages.	Performance Specification 1 of 40 CFR 60 Appendix B.	Opacity is the performance indicator. The indicator range (compliance limit) is established via a performance test of PM emissions using EPA Method 5 B or 5 F, and comparison to COMS results. The opacity performance indicator shall be the daily average of all hourly average opacity readings. The daily average opacity shall be compared to the established indicator range to determine compliance.

7. **Compliance Assurance Monitoring (CAM) -** The permittee shall conduct the monitoring and fulfill the other obligations specified in 40 CFR 64.7 through 40 CFR 64.9. (9 VAC 5-80-110 E and 40 CFR 64.6 (c))

8. **Compliance Assurance Monitoring (CAM) -** At all times, the permittee shall maintain the monitoring equipment, including, but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment. (9 VAC 5-80-110 E and 40 CFR 64.7 (b))

9. **Compliance Assurance Monitoring (CAM) -** Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the permittee shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the FCCU is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of compliance assurance monitoring, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The permittee shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by inadequate maintenance or improper operation are not malfunctions.

   (9 VAC 5-80-110 E and 40 CFR 64.7 (c))

10. **Compliance Assurance Monitoring (CAM) -** Upon detecting an excursion or exceedance, the permittee shall restore operation of the FCCU (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup and shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator, designated condition, or below the applicable emission limitation or standard, as applicable.

    (9 VAC 5-80-110 E and 40 CFR 64.7 (d)(1))

11. **Compliance Assurance Monitoring (CAM) -** Determination that acceptable procedures were used in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.

    (9 VAC 5-80-110 E and 40 CFR 64.7(d)(2))

12. **Compliance Assurance Monitoring (CAM) -** If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify the Director, Tidewater Regional Office and, if necessary, submit a proposed modification to this permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions,

modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.

(9 VAC 5-80-110 E and 40 CFR 64.7(e))

13. **Compliance Assurance Monitoring (CAM) -** If the number of exceedances or excursions exceeds 5 percent duration of the operating time for the FCCU for a semiannual reporting period, the permittee shall develop, implement and maintain a Quality Improvement Plan (QIP) in accordance with 40 CFR 64.8. If a QIP is required, the permittee shall have it available for inspection. The QIP initially shall include procedures for evaluating the control performance problems and, based on the results of the evaluation procedures, the permittee shall modify the plan to include procedures for conducting one or more of the following, as appropriate:

    a. Improved preventative maintenance practices;

    b. Process operation changes;

    c. Appropriate improvements to control methods;

    d. Other steps appropriate to correct control performance; and

    e. More frequent or improved monitoring.

    (9 VAC 5-80-110 E and 40 CFR 64.8(a) and (b))

C. Recordkeeping

1. The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit, applicable NSPS Subparts J, and MACT Subpart UUU. The content and format of such records shall be arranged with the Director, Tidewater Regional Office. These records shall include, but are not limited to:

    a. CEMS and COMS operation records for the FCCU.

    b. Records of periods when the Crude Unit is out of service.

    c. Records of advanced notice to EPA and DEQ regarding use of alternate SO_2 emission limit.

    d. SO_2 emission calculation summary of 7-day and 365-day rolling averages.

    e. CO emission calculation summary to demonstrate compliance with emission limit.

    f. Calculation summary to demonstrate compliance with Ni operating value.

g. Results of all stack tests, performance evaluations, calibrations, calibration checks, and QA/QC.

h. Periods of start-up, shutdown, and malfunction

i. Scheduled and unscheduled maintenance, and operator training.

j. Quarterly reports to EPA as referred to in Condition IV.E.1.

k. Semiannual compliance reports as required by MACT Subpart UUU at 40 CFR 63.1575(c).

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.
(9 VAC 5-80-110 and Condition 24 of 11/01/06 SOP)

2. **Compliance Assurance Monitoring (CAM) Recordkeeping -** The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan (QIP) required pursuant to §64.8 and any activities undertaken to implement a quality improvement plan (QIP), and other supporting information required to be maintained under this part (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions).
(9 VAC 5-80-110 E and 40 CFR 64.9(b))

D. Testing

1. **Stack Test** - Initial performance tests shall be conducted for PM emissions and/or nickel emissions from the FCCU to determine compliance with the emission limits. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30 and 9 VAC 5-60-30, and the test methods and procedures contained in MACT Subpart UUU. The details of the tests are to be arranged with EPA, and the Tidewater Regional Office. The permittee shall submit a test protocol at least 30 days prior to testing. One copy of the test results shall be submitted to the EPA, and the Tidewater Regional Office within 45 days after test completion and shall conform to the test report format enclosed with this permit.
(9 VAC 5-80-110 and Condition 17 of 11/01/06 SOP)

2. If testing is conducted in addition to the monitoring specified in this permit, the permittee shall use the appropriate method(s) in accordance with procedures approved by the DEQ.
(9 VAC 5-80-110)

E. Notification and Reporting

1. Beginning with the first full calendar quarter after August 29, 2001, and ending when the Consent Decree entered in *United States et al. v. BP Exploration and Oil Co. et al*., Civil No. 2:96 CV 095 RL (Northern District of Indiana, Lozano J., August 29, 2001) is legally

terminated, the permittee shall submit to EPA within thirty (30) days after the end of each calendar quarter a calendar quarterly progress report ("calendar quarterly report") covering the Western Yorktown Refinery. This calendar quarterly report shall contain the following:

a. Progress report on the implementation of process requirements, operating limits, emission limits, and compliance determinations in the 11/01/06 SOP;

b. A summary of the emissions data as outlined in the 11/01/06 SOP for the calendar quarter;

c. A description of any problems anticipated with respect to meeting the requirements of the 11/01/06 SOP; and

d. Any such additional matters as the permittee believes should be brought to the attention of EPA.

(9 VAC 5-80-110 F and Condition 23 of 11/01/06 SOP)

2. **Compliance Assurance Monitoring (CAM) Reporting** - the permittee shall submit CAM reports as part of the Title V semi-annual monitoring reports required by General Condition C.3 of this permit to the Director, Tidewater Regional Office. Such reports shall include at a minimum:

a. Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;

b. Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and

c. A description of the actions taken to implement a quality improvement plan (QIP) during the reporting period as specified in §64.8. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.

(9 VAC 5-80-110 F and 40 CFR 64.9(a))

3. The permittee shall submit semi-annual compliance report as required by MACT Subpart UUU at 40 CFR 63.1675(c).
(9 VAC 5-80-110 F and 9 VAC 5-60-100)

4. The permittee shall submit a semi-annual excess emission report to the Director, Tidewater Regional Office, for all FCCU monitoring other than CAM. The report shall be filed in accordance with the reporting requirements in the General Conditions of this permit. (9 VAC 5-80-110F)

V. Crude Unit (Process Unit ID# P1) Compressors and Ether Unit (Process Unit ID# P4)

A. Limitations

Unit Name	Name/Description of Unit	Pollutants	Description of Applicable Requirement/ Emission Limit/Standard/Work Practice	Citation
Crude	Compressors J-135A and J-135B	VOC	Emission Limit: 1.4 tons/year combined on a rolling 12-month basis	Conditions 11of 08/19/98 NSR Permit
Ether	Ether Unit	VOC	Emission limit: 20.8 tons/year on a rolling 12-month basis	Condition 10 of 08/19/98 NSR Permit

1. **Emission limits**- The permittee shall not exceed the emission limitations in Table V.A. (9 VAC 5-80-110)

2. **Emission Controls**- Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere, except as provided in 40 CFR 60.482-1(c) and 40 CFR 60.482-3(h) and (i), pursuant to 40 CFR 60.482-3(a). The compressor seal system and the barrier fluid system shall meet the requirements of 40 CFR 60.482-3(b) to (c).
(9 VAC 5-80-110 and Condition 8 of 8/19/98 NSR permit)

3. **Emission Controls**- Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm volatile organic compounds (VOC) above background as determined by methods specified in 40 CFR 60.485(c). After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as soon as practicable but no later than five (5) calendar days after the pressure release. As an alternative, the permittee may elect to comply with the provisions of 40 CFR 60.482-4(c) and 60.482-10.
(9 VAC 5-80-110, and Condition 6 of 8/19/98 NSR permit)

4. **Emission Control**- Flares used to comply with the standards of 40 CFR 60.482-10 shall comply with the requirements of 40 CFR 60.18.
(9 VAC 5-80-10 H, and Condition 9 of 8/19/98 NSR permit)

5. **Requirement by reference**- Except where this permit is more restrictive than the applicable requirement, the permitted facility is to be operated in compliance with the applicable requirements under NSPS Subpart GGG- Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries, and Subpart VV- Standards of Performance for Equipment Leaks in the Synthetic Organic Chemical Manufacturing Industries. Compliance with 40 CFR 60.482-1 to 40 CFR 60.482-10 shall be determined by review of records and reports, performance test results, and inspection using the methods and procedures specified in 40 CFR 60.485.
(9 VAC 5-80-110 and Condition 3 of 8/19/98 NSR permit)

B. Monitoring

1. Each barrier fluid system shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both (40 CFR 60.482-3(d)).
Each barrier fluid sensor shall be checked daily or equipped with an audible alarm (40 CFR 60.482-3(e)).
If the sensor indicates failure of the seal system, the barrier fluid system, or both, a leak is detected (40 CFR 60.482-3(f)). Leaks shall be repaired no later than fifteen (15) calendar days after detection (40 CFR 60.482-3(g)(1)). A first attempt at repair of leaks shall be made no later than five (5) calendar days after detection (40 CFR 60.482-3(g)(2)). A first attempt of repair is as defined in 40 CFR 60.481.
As an alternative, the permittee may elect to comply with the provisions of 40 CFR 60.482-3(h), (i), or (j).
(9 VAC 5-80-110, and Condition 8 of 8/19/98 NSR permit)

2. Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in 40 CFR 60.485(b) as required by 40 CFR 60.482-2(a)(1), except as provided in 40 CFR 60.482-1(c) and paragraphs (d), (e), and (f) of 40 CFR 60.482-2. Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal as required by 40 CFR 60.482-2(a)(2).
(9 VAC 5-80-110, and Condition 4 of 8/19/98 NSR permit)

3. Each valve in gas/vapor service or in light liquid service shall be monitored monthly to detect leaks by the methods specified in 40 CFR 60.485(b) as required by 40 CFR 60.482-7(a) and shall comply with paragraphs (b) through (e) of 40 CFR 60.482-7, except as provided in paragraphs (f), (g), and (h) of 40 CFR 60.482-7, 40 CFR 60.483-1, 40 CFR 60.483-2, and 40 CFR 60.482-1(c).
(9 VAC 5-80-10 H, and Condition 5 of the 8/19/98 NSR permit)

4. Pumps and valves in heavy liquid service, pressure relief devices in light liquid service, and flanges and other connectors shall be monitored within five (5) calendar days by the method specified in 40 CFR 60.485(b) if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method as required by 40 CFR 60.482-8(a). The equipment listed above shall be monitored as described in 40 CFR 60.482-8(b) through (d), as applicable.
(9 VAC 5-80-110 H, and Condition 7 of 8/19/98 NSR permit)

C. Recordkeeping

1. The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit and with 40 CFR 60.590 Subpart GGG and 40 CFR 60.482-1 to 40 CFR 60.487 Subpart VV. These records shall include:

   a. Annual VOC emissions from the Ether Unit and the compressors based on component counts, service, and type, calculated monthly as the sum of each consecutive 12-month period.

   b. Records of seal design for the compressors.

   c. Monitoring records.

   d. Records in accordance with the recordkeeping requirements of 40 CFR 60.486.

   These records shall be available on-site for inspection by DEQ and shall be current for the most recent 5-year period.
   (9 VAC 5-80-110 and Condition 12 of 8/19/98 NSR permit)

2. In order to minimize the duration and frequency of excess emissions due to malfunction of air pollution control equipment associated with the Ether Unit, the permittee shall:

   a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance. These records shall be maintained on site for a period of 5 years and shall be made available to DEQ personnel upon request; and

   b. Maintain an inventory of spare parts that are needed to minimize the duration of air pollution control equipment breakdowns.

   (9 VAC 5-80-110 and Condition 17 of 8/19/98 NSR permit)

3. The permittee shall have available written operating procedures for all air pollution control equipment associated with the Ether Unit. Operators shall be trained in the proper operation of all such equipment and shall be familiar with the written operating procedures. These procedures shall be based on the manufacturer's recommendations, at minimum. The permittee shall maintain records of training provided including names of trainees, date of training, and nature of training.
(9 VAC 5-80-110 and Condition 18 of 8/19/98 NSR permit)

D. Testing

1. If testing is conducted in addition to the monitoring specified in this permit, the permittee shall use the appropriate method(s) in accordance with procedures approved by the DEQ.
(9 VAC 5-80-110)

E. Reporting

1. The permittee shall submit semiannual reports of all emission data and operating parameters to demonstrate compliance in accordance with NSPS Subpart GGG and Subpart VV, 40 CFR 60.487. The reports shall be made for six-month periods following the initial compliance date and shall be submitted to the Director, Tidewater Regional Office.
(9 VAC 5-80-110 and Condition 13 of 8/19/98 NSR permit)

VI. Coker (Process Unit ID# P5)

A. Limitations

Unit Name	Name/Description of Unit	Pollutants	Description of Applicable Requirement/ Emission Limit/Standard/Work Practice	Citation
COKER	Coke Crusher	PM	Wet suppression on feed coke and hopper, crusher discharge, and screening	Conditions 3-5 of 12/26/1990 NSR Permit
COKER	Coke Crusher	PM	Emission limits: 3.4 lbs/hour, and 4.2 tons/year on a rolling 12-month basis	Condition 8 of 12/26/1990 NSR Permit
COKER	Coke Crusher	PM-10	Emission limits: 1.3 lbs/hour, and 1.6 tons/year on a rolling 12-month basis	Condition 8 of 12/26/1990 NSR Permit
COKER	Coke Crusher	Fugitive Dust	Wet suppression or other methods to prevent fugitive dust emissions from open storage stockpiles, conveying equipment and yard traffic	Condition 6 of 12/26/1990 NSR Permit

Unit Name	Name/Description of Unit	Pollutants	Description of Applicable Requirement/ Emission Limit/Standard/Work Practice	Citation
COKER	Coke Crusher	N/A	Limit: 600,000 tons of coke consumption per year on a rolling 12-month basis, based on the weight of crushed coke shipped.	Condition 7 of 12/26/1990 NSR Permit
COKER	Coke Crusher	OPACITY	5% opacity limit on the coke crusher, conveying of coke, and screening of crushed coke	Condition 9 of 12/26/1990 NSR Permit

1. **Emission Limits**- The permittee shall not exceed the limitations in Table VI.A.
(9 VAC 5-80-110 B)

2. **Emission controls**- Particulate emissions from the initial loading of the hopper shall be controlled by pre-wetting the feed coke and wet suppression on the feed hopper as necessary. Particulate emissions from the coke crusher discharge, and screening of crushed coke shall be controlled by wet suppression or other reasonable methods, as necessary, so as to prevent particulate matter from becoming airborne.
Pre-wetting and wet suppression shall be applied as necessary to avoid visible emissions. The processing of wet coke and/or the lack of any visible emissions shall preclude the need for pre-wetting or wet suppression. Operation of wet suppression is not required during freezing weather conditions.
Compliance with the above wet suppression requirements shall demonstrate compliance with the coke crusher TSP and PM-10 emission limits, and the opacity limit.
(9 VAC 5-80-110 B, and Condition 3 through 5 of 12/26/90 NSR permit)

B. Monitoring

1. The presence of any visible emissions from the operation of the Coke Crusher shall prompt the use of wet suppression except as otherwise specified by this permit. Operating personnel will verify daily the presence or absence of visible emissions and whether wet suppression is used.
(9 VAC 5-80-110 E)

2. The visible emissions monitoring requirements of Condition V.B.1 of this document shall be considered adequate monitoring to determine compliance with PM/PM-10, fugitive dust, and opacity limitations.
(9 VAC 5-80-110 E)

C. Recordkeeping

1. The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Director, Tidewater Regional Office. These records shall include, but are not limited to:

   a. Documentation of results of visible emissions evaluations and loss of wet suppression required on feed coke and hopper, the crusher discharge, and screening activities. The permittee shall keep records of periods when the Coke Crusher was operated without required wet suppression. Such records shall contain a brief explanation of the existing weather conditions (i.e., rain, extreme cold, etc.) or any malfunction (leak, faulty pump, etc.) which precluded the use of wet suppression.

   b. Documentation of the quantity of coke consumed by the coke crusher per year, as determined by the weight of crushed coke shipped, calculated monthly as the sum of each consecutive 12-month period.

   These records shall be available on site for inspection by the DEQ and shall be current for the most recent five (5) years.

   (9 VAC 5-80-110 F, and Condition 11 of 12/26/90 NSR Permit)

D. Testing

1. If testing is conducted in addition to the monitoring specified in this permit, the permittee shall use the appropriate method(s) in accordance with procedures approved by the DEQ.
   (9 VAC 5-80-110)

E. Reporting

1. The permittee shall provide a semi-annual report to the Director, Tidewater Regional Office containing, by exception, periods when required wet suppression was not used. The report shall be filed in accordance with the reporting requirements in the General Conditions of this permit.
   (9 VAC 5-80-110 F)

2. The permittee shall provide a semi-annual monitoring report to the Director, Tidewater Regional Office containing, by exception, periods when the quantity of coke crushed was greater than 600,000 tons per year on a 12-month rolling sum basis. The report shall be filed in accordance with the reporting requirements in the General Conditions of this permit.
   (9 VAC 5-80-110 F)

VII. Naphtha Desulfurization Unit and Ultraformer Unit (NDU/UF) (Process Unit ID# P6)

A. Limitations

1. **Emission controls**- VOC emissions from the dependanizer distillation column and associated hardware in the ultraforming process including valves, pumps flanges, compressors, pressure relief devices, sampling connection systems, and various other connectors in VOC service shall be controlled by complying with NSPS Subpart GGG- Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries.
(9VAC 5-80-110 and Condition 5 of 4/22/02 NSR permit)

2. **Emission controls**- VOC emissions from the ultraformer regenerator shall vent to a flare that meets the control device requirements in 40 CFR 63.11(b) in accordance with MACT Subpart UUU Section 40 CFR 63.1566(a)(1)(i).
(9 VAC 5-80-110 and 9 VAC 5-60-100)

3. **Emission limits**- During coke burn-off and catalyst rejuvenation, HCl emissions from the ultraformer regenerator shall not exceed 10 ppmv (dry basis) corrected to 3% excess oxygen as required by MACT Subpart UUU Section 40 CFR 63.1567(a)(1)(ii) and 63.1567(c)(1).
(9 VAC 5-80-110 and 9 VAC 5-60-100)

4. **Operating limits**- During coke burn-off and catalyst rejuvenation, the daily pH of the scrubbing liquid exiting the ultraformer scrubber must not fall below the limit established during the performance test; and the daily average liquid-to-gas ratio must not fall below the limit established during performance test, as required by MACT Subpart UUU Section 40 CFR 63.1567(a)(2).
(9 VAC 5-80-110 and 9 VAC 5-60-100)

5. **Work practice standards**- The permittee shall install a car seal or lock and key device placed on the mechanism by which the bypass device flow position is controlled when the bypass device is in the closed position such that the bypass line valve cannot be opened without breaking the seal or removing the device as required by MACT Subpart UUU Section 40 CFR 63.1569(a)(1).
(9 VAC 5-80-110 and 9 VAC 5-60-100)

6. **Requirement by reference**- Except where this permit is more restrictive than the applicable requirement, the permitted facility is to be operated in compliance with the applicable requirements under MACT Subpart UUU- National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units.
(9 VAC 5-80-110 and 9 VAC 5-60-100)

B. Monitoring

1. The permittee shall monitor the dependanizer distillation column and associated hardware for equipment leaks as required by NSPS Subpart GGG and Subpart VV Sections 40 CFR 60.592, and 60.482-1 through 60.483-2. Compliance with 40 CFR 60.482-1 to 40 CFR 60.482-10 shall be determined by review of records and reports, performance test results, and inspection using the methods and procedures specified in 40 CFR 60.485.
(9 VAC 5-80-110 and Condition 5 of 4/22/02 NSR permit)

2. The permittee shall continuously monitor the ultraformer regenerator scrubber pH, scrubbing liquid flow rate, and regenerator vent gas flow as required by MACT Subpart UUU Section 40 CFR 63.1567(c)(1). The hourly and daily average pH and liquid-to-gas ratios shall be determined and recorded, and the daily average values shall be maintained above the limits established during performance test.
(9 VAC 5-80-110 and 9 VAC 5-60-100)

3. The permittee shall visually inspect the locked bypass line valve at least once a month and record whether it is maintained in the closed position and whether flow is present in the line, as required by MACT Subpart UUU Section 40 CFR 63.1569(c)(1).
(9 VAC 5-80-110 and 9 VAC 5-60-100)

C. Recordkeeping

1. The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Director, Tidewater Regional Office. These records shall include, but are not limited to:

   a. Records of equipment leak monitoring for the dependanizer distillation column and associated hardware in accordance with the recordkeeping requirements of 40 CFR 60.486.

   b. Records of ultraformer performance testing

   c. Monitoring records for HCl vent emissions, scrubbing liquid pH, liquid-to-gas ratios, and the bypass line inspection for the ultraformer regenerator.

   These records shall be available on site for inspection by the DEQ and shall be current for the most recent five (5) years.
   (9 VAC 5-80-110 and 9 VAC 5-60-100)

D. Testing

1. The permittee shall conduct performance test for HCl emissions, and the bypass line of the ultraformer as required by MACT Subpart UUU Sections 40 CFR 63.1566(b)(2) and (3), 63.1567(b)(2)and (3), and 63.1569(b)(1), respectively.
   (9 VAC 5-80-110 and 9 VAC 5-80-100)

2. If testing is conducted in addition to the monitoring specified in this permit, the permittee shall use the appropriate method(s) in accordance with procedures approved by the DEQ.

(9 VAC 5-80-110)

E. Reporting

1. The permittee shall submit semiannual reports of all emission data and operating parameters for the depentanizer distillation column and associated hardware to demonstrate compliance in accordance with NSPS Subpart GGG and Subpart VV, Section 40 CFR 60.487. The reports shall be made for six-month periods following the initial compliance date and shall be submitted to the Director, Tidewater Regional Office.
   (9 VAC 5-80-110 and Condition 5 of 04/22/02 NSR permit)

2. The permittee shall submit semiannual compliance report for the ultraformer process to the Director, Tidewater Regional Office as required by MACT Subpart UUU Section 40 CFR 63.1575.
   (9 VAC 5-80-110 and 9 VAC 5-60-100)

VIII. Ultra Low Sulfur Diesel (ULSD) Unit and Hydrogen Plant (H2)(Process Unit # P8 and P9, respectively)

A. Limitations

Unit Name	Name/Description of Unit	Pollutants	Description of Applicable Requirement/ Emission Limit/Standard/Work Practice	Citation
P8 and P9	Flare 2	PM/PM-10	Emission limits: 3.4 lbs/hour, and 14.7 tons/year on a rolling 12-month basis	Conditions 16 of 3/13/06 NSR Permit
P8 and P9	Flare 2	NOx	Emission limits: 0.5 lbs/hour, and 2.0 tons/year on a rolling 12-month basis	Condition 16 of 3/13/06 NSR Permit
P8 and P9	Flare 2	CO	Emission limits: 2.5 lbs/hour, and 10.9 tons/year on a rolling 12-month basis	Condition 16 of 3/13/06 NSR Permit
P8 and P9	Flare 2	VOC	Emission limits: 0.9 lbs/hour, and 4.1 tons/year on a rolling 12-month basis	Condition 16 of 3/13/06 NSR Permit

1. **Emission Controls** – Volatile organic compound (VOC) emissions from each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or other connector in VOC service at the ULSD unit and the H2 Plant shall be controlled by compliance with the applicable provisions of 40 CFR 60.592 that reference 40 CFR 60.482-1 through 60.482-10.
   (9 VAC 5-80-110 and Condition 5 of 3/16/06 NSR permit)

2. **Emission Controls** – Volatile organic compound (VOC) emissions from wastewater systems and individual drain systems associated with the ULSD unit and the H2 Plant shall be controlled by compliance with the applicable provisions of 40 CFR 60.692-1 and 40 CFR 60.692-2, except during periods of startup, shutdown, or malfunction.
   (9 VAC 5-80-110 and Condition 6 of 3/13/06 NSR permit)

3. **Emission Controls** – Benzene-containing wastes from the ULSD unit and the H2 Plant shall be controlled by compliance with the applicable provisions of 40 CFR 61.342 through 61.353.
   (9 VAC 5-80-110 and Condition 7 of 3/13/06 NSR permit)

4. **Emission Controls** – Organic hazardous air pollutants (HAPs) from Group 1 miscellaneous process vents related to the ULSD unit and the H2 Plant shall be controlled by a flare that meets the requirements of 40 CFR 63.11(b).
   (9 VAC 5-80-110 and Condition 8 of 3/13/06 NSR permit)

5. **Emission Controls** – Organic hazardous air pollutants (HAPs) from Group 1 storage vessels related to the ULSD unit and the H2 Plant shall be controlled by complying with the applicable provisions of 40 CFR 63.646.
(9 VAC 5-80-110 and Condition 9 of 3/13/06 NSR permit)

6. **Emission Controls** – Organic hazardous air pollutants (HAPs) from wastewater streams related to the ULSD unit and the H2 Plant shall be controlled by complying with the applicable provisions of 40 CFR 63.647. Organic hazardous air pollutants (HAPs) from equipment leaks related to the ULSD unit and the H2 Plant shall be controlled by complying with the applicable provisions of 40 CFR 63.648.
(9 VAC 5-80-110 and Condition 10 of 3/13/06 NSR permit)

7. **Throughput Limit**- The annual throughput of diesel fuel through each of the fixed-roof tanks (T-503 and T-504) shall not exceed 4,380,000 barrels (184,000,000 gallons) per year each, calculated monthly as the sum of each consecutive 12-month period.
(9 VAC 5-80-1180 and Condition 14 of 3/13/06 NSR permit)

8. **Emission Limits -** VOC emissions from process tanks, process drains, valves, relief valves, pump seals, compressor seals, and miscellaneous connections and open end lines related to the ULSD unit and the H2 plant combined shall not exceed the limits specified below:

   Volatile Organic Compounds 28.9 tons/yr

   These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Condition VIII.A.7.
   (9 VAC 5-80-110 and Condition 15 of 3/13/06 NSR permit)

9. **Emission Limits –** Emissions from Flare 2 as related to the ULSD and the H2 processes shall not exceed the limits in the above Table VIII.A. Compliance with these emission limits may be determined as stated in conditions on flares in Section XIII of this permit.
(VAC 5-80-110 and Condition 16 of 3/13/06 NSR permit)

10. **Requirements by Reference -** Except where this permit is more restrictive than the applicable requirement, the process equipment shall be operated in compliance with applicable requirements of 40 CFR 60 Subpart GGG- Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries (referencing Subpart VV- Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemical Manufacturing Industry) and Subpart QQQ- Standards of Performance for VOC emissions from Petroleum Refinery Wastewater Systems, 40 CFR 61 Subpart FF- National Emission Standards for Benzene Waste Operation, and 40 CFR 63 Subpart CC- National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries.
(9 VAC 5-80-110 and Condition 19 of 3/13/06 NSR permit)

B. Monitoring

1. Equipment in the USLD and H2 processes shall be monitored for the Leak Detection and Repair (LDAR) requirements of 40 CFR 60 Subparts GGG and VV, and 40 CFR 63 Subpart CC.
   (9 VAC 5-80-110, and Condition 5 and 8 of 3/13/06 NSR permit)

C. Recordkeeping

1. The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Director, Tidewater Regional Office. These records shall include, but are not limited to:

   a. Annual throughput of diesel fuel product through tank T-503 and through Tank T-504 in barrels or gallons, calculated monthly as the sum of each consecutive 12-month period.

   b. All monitoring, recordkeeping, notifications, and reporting requirements as required by 40 CFR 60 Subpart VV, GGG, and QQQ, 40 CFR 61 Subpart FF, and 40 CFR 63 subpart CC.

   These records shall be available on site for inspection by the DEQ and shall be current for the most recent five (5) years.
   (9 VAC 5-80-110 F, and Condition 20 of 3/13/06 NSR Permit)

D. Testing

1. If testing is conducted in addition to the monitoring specified in this permit, the permittee shall use the appropriate method(s) in accordance with procedures approved by the DEQ.
   (9 VAC 5-80-110)

E. Reporting

1. The permittee shall provide a semi-annual monitoring report to the Director, Tidewater Regional Office containing, by exception, periods when the quantity of diesel fuel through each of the fixed-roof tanks (T-503 and T-504) exceeds 4,380,000 barrels (184,000,000 gallons) on a 12-month rolling sum basis. The report shall be filed in accordance with the reporting requirements in the General Conditions of this permit.
   (9 VAC 5-80-110 F and Condition 20 of 3/13/06 NSR permit)

2. The permittee shall submit reports as required by 40 CFR 60 Subparts VV, GGG, and QQQ, 40 CFR 61 Subpart FF, and 40 CFR 63 subpart CC.
   (9 VAC 5-80-110 F and Condition 20 of 3/13/06 NSR permit)

IX. Sulfur Recovery Units (SRU-1 and SRU-2, Process Unit ID# P11) and Sour

Water Stripping System (with Tank T-700)

A. Limitations

Unit Name	Name/Description of Unit	Pollutants	Description of Applicable Requirement/ Emission Limit/Standard/Work Practice	Citation
SRU-1 and SRU-2	Sulfur Recovery Unit/ Tail Gas Unit	SO_2	Emission Limit- SO_2 emissions from the sulfur recovery units (SRU-1 and SRU-2) shall not exceed 250 ppmvd at 0% excess air on a rolling 12-hour basis as specified in 40 CFR 60.104, NSPS Subpart J.	Condition 25 of 3/13/06 NSR permit.
SRU-1 and SRU-2	Sulfur Recovery Unit/ Tail Gas Unit	SO_2	Emission limit: SO_2 emissions shall not exceed 384.6 lbs/hr and 87.6 tons/year	Condition 28 of 3/13/06 NSR permit
SRU-1 and SRU-2	Sulfur Recovery Unit/ Tail Gas Unit	NOx	Emission limit: NO_2 emissions shall not exceed 1.0 lbs/hr and 4.3 tons/year	Condition 28 of 3/13/06 NSR permit
SRU-1 and SRU-2	Sulfur Recovery Unit/ Tail Gas Unit	CO	Emission limit: CO emissions shall not exceed 7.0 lbs/hr and 30.7 tons/year	Condition 28 of 3/13/06 NSR permit
Tanks- Sour Water Stripping System	Sour water tank T-700	VOC	Emission limit: VOC emissions shall not exceed 1.7 tons/year	Condition 29 of 3/13/06 NSR permit
SRU-1 and SRU-2	Sulfur Recovery Unit/ Tail Gas Unit Stack S009	OPACITY	10% opacity limit except during one six-minute period in any one hour in which visible emissions shall not exceed 20% as determined by EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown, and malfunction	Condition 31of 3/13/06 NSR permit

1. **Emission Limits**- Emissions from the Sulfur Recovery Units (SRU-1 and SRU-2, Process Unit P11) and Sour Water Stripping System (Tank T-700, Process Unit P15) shall not exceed the limitations specified in Table IX.A.
   (9 VAC 5-80-110)

2. **Emission Controls**- Upon startup of SRU-1 or SRU-2 following the 2006 planned SRU maintenance turnaround, SO_2 emissions from each of the Sulfur Recovery Units (SRU-1 and SRU-2) shall be controlled by a tail gas unit (TGU). The TGU shall be in operation when either SRU is in operation except for maintenance shutdowns of the TGU. Planned maintenance shutdowns of the TGU shall not exceed 14 days per calendar year. During days when maintenance shutdowns of the TGU occur, production from the SRU in operation at that time shall not exceed 44 long tons (98,560 pounds) of sulfur per day.
(9 VAC 5-80-110 and Condition 22 of 3/13/06 NSR permit)

3. **Emission Controls**- SRU-1 shall not be operated in tandem with SRU-2. SRU-1 shall be operated only as a backup unit to SRU-2 during periods of maintenance shutdowns of SRU-2.
(9 VAC 5-80-110 and Condition 23 of 03/13/06 NSR permit)

4. **Emission Controls** – Volatile organic compound (VOC) emissions from Tank 700 associated with the sour water stripping system shall be controlled by an external floating roof with a secondary rim-mounted shoe seal.
9 VAC 5-80-110 and Condition 24 of 03/13/06 NSR permit)

5. **Production Limit** – Sulfur recovery rates from the sulfur recovery units (SRU-1 and SRU-2) shall not exceed 54.2 long tons (121,408 pounds) per day combined except for days when the TGU is not operating due to planned maintenance shutdowns when sulfur recovery rates from the sulfur recovery units combined shall not exceed 44 long tons (98,560 pounds) per day.
(9 VAC 5-80-110 and Condition 26 of 3/13/06 NSR permit)

6. **Throughput Limit** - The annual throughput of sour water through the sour water tank (Tank 700) shall not exceed 3,129,000 barrels (131,400,000 gallons) per year, calculated monthly as the sum of each consecutive 12-month period.
(9 VAC 5-80-110 and Condition 30 of 3/13/03 NSR permit)

7. **Operation Limitation**- When in operation, SRU-1 shall be operated in accordance with the SRU-1 Optimization Study to optimize its performance.
(9 VAC 5-80-110 and Condition 14 of 11/01/06 SOP)

8. **Operation Limitation**- The permittee shall maintain a plan for Maintenance and Operation of the SRUs (SRU-1, SRU-2, and the tail gas unit (TGU)), supplemental control devices, and upstream processes in accordance with good air pollution practices for minimizing emissions as required by 40 CFR 60.11(d)(15) and approved by EPA. The plan shall provide for continuous operation between scheduled maintenance turnarounds for minimization of emissions from the SRUs. The permittee shall comply with the plan at all times, including periods of startup, shutdown, and malfunction of the SRUs.
(9 VAC 5-80-110 and Condition 15 of 11/01/06 SOP)

9. **Requirements by Reference**- Except where this permit is more restrictive than the applicable requirement, SRU-1, SRU-2 and TGU shall be operated in compliance with the requirements of 40 CFR 60 Subpart J, and 40 CFR 63 Subpart UUU, including operational provisions, monitoring, notifications, recordkeeping and reporting.
(9 VAC 5-80-110, Condition 32 of 3/13/06 NSR permit, and Condition 16 of 11/01/06 SOP)

B. Monitoring

1. **SO_2 CEMS**- Compliance with SO_2 emission standard shall be demonstrated by a CEMS for continuously monitoring and recording the concentration (dry basis, zero percent excess air) of SO_2 emissions into the atmosphere at the common SRU stack (ID# S009) as specified in 40 CFR 60.105(a)(5). The monitor shall include an oxygen monitor for correcting the data for excess air. The span values for this monitor shall be 500 ppm SO_2 and 25 percent O_2. The performance evaluations for this SO_2 monitor under 40 CFR 60.13(c) shall use Performance Specification 2. Methods 6 or 6C and 3 or 3A shall be used for conducting the relative accuracy evaluations. For the purposes of reports under 40 CFR 60.7(c), periods of excess emissions shall include all 12-hour periods during which the average concentration of SO_2 as measured by the SO_2 continuous monitoring system under 40 CFR 60.105(a)(5) exceeds 250 ppm (dry basis, zero percent excess air).
(9VAC 5-80-110 and Condition 25 of 3/13/06 NSR permit)

2. **Visible Emissions Evaluations**- The permittee shall perform a six-minute visible emission evaluation (VEE) using EPA Method 9 (reference 40 CFR 60, Appendix A) for SRUs/TGU stack (S009) once per calendar month during daylight hours of operation. If the initial 6-minute observation yields an opacity of less than 50% of the applicable opacity limitation, then no further action is required. If the initial 6-minute observation yields an opacity of greater than 50% of the applicable opacity limitation, then the permittee shall perform an 18-minute Method 9 opacity evaluation consisting of not less than three 6-minute observations. If the 18-minute Method 9 evaluation yields an average (average of the three 6-minute observations) opacity of less than 50% of the applicable opacity limitation, then no further action is required. If the 18-minute Method 9 evaluation yields an average opacity of greater than 50% of the applicable opacity limitation, then the permittee shall perform a 1-hour EPA Method 9 evaluation consisting of not less than ten 6-minute observations to determine compliance with the applicable opacity limits and take appropriate corrective action. All VEE results and corrective actions shall be recorded in operation logbooks.
(9 VAC 5-80-110 E)

C. Recordkeeping

1. The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Director, Tidewater Regional Office. These records shall include, but are not limited to:

   a. SO_2 CEMS records to demonstrate compliance with the SO_2 limit of 250 ppmvd.

b. Annual SO_2 emissions, calculated monthly as the sum of each consecutive 12-month period.

c. Daily sulfur recovery rate in long tons (or pounds) per day.

d. Records of number of days and the dates that the TGU undergoes maintenance shutdowns on a calendar year basis.

e. Records of number of days and the dates that SRU-2 undergoes maintenance shutdowns on a calendar year basis, and the dates the operation of SRU-1 on a backup basis.

f. Annual throughput of sour water through Tank T-700 in barrels or gallons, calculated monthly as the sum of each consecutive 12-month period.

g. Results of all stack tests, visible emissions evaluations, and performance evaluations.

h. SRU-1 Optimization Study as referred to in Condition IX.A.7.

i. Plan for Maintenance and Operation as referred to in Condition IX.A.8.

j. All monitoring, recordkeeping, and reporting requirements as required by 40 CFR 60 Subpart J and 40 CFR 63 Subpart UUU, including excess emission reports as specified in 40 CFR 60.105 (e)(4), and compliance reports as specified in 40 CFR 63.1575(c).

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five (5) years.
(9 VAC 5-80-110, Condition 33 of 3/13/06 NSR permit, and Condition 24 of 11/01/06 SOP Permit)

D. Testing

1. Initial Performance Tests – Within 60 days after achieving the maximum production rate at which the new sulfur recovery unit (SRU-2) will be operated, but not later than 180 days after initial startup of such facility and at such other times as may be required, the permittee shall conduct performance tests for the continuous SO_2 monitor in accordance with Performance Specification 2. The initial performance test for the continuous SO_2 monitor shall be performed in accordance with the provisions of 40 CFR 60.106(f)(1).
(9 VAC 5-80-110, and Condition 35 of 3/13/06 NSR permit)

2. If testing is conducted in addition to the monitoring specified in this permit, the permittee shall use the appropriate method(s) in accordance with procedures approved by the DEQ.
(9 VAC 5-80-110)

E. Reporting

1. Initial Notifications - The permittee shall furnish written notification to the Tidewater Regional Office:

   a. The actual date on which construction of the new sulfur recovery unit (SRU-2) and the upgraded sour water stripping system commenced within 30 days after such date.

   b. The actual start-up date of the new sulfur recovery unit (SRU-2) and the upgraded sour water stripping system within 15 days after such date.

   c. The anticipated date of continuous monitoring system performance evaluations postmarked not less than 30 days prior to such date.

   (9 VAC 5-80-110, and Condition 34 of 3/13/06 NSR permit)

2. Excess emission reports as specified in 40 CFR 60.105 (e)(4), and compliance reports as specified in 40 CFR 63.1575(c).
   (9 VAC 5-80-110, 9 VAC 5-50-410, and 9 VAC 5-60-100)

X. Gasoline Desulfurization Process (GDU, Process Unit ID# P18)

A. Limitations

Unit Name	Name/Description of Unit	Pollutants	Description of Applicable Requirement/ Emission Limit/Standard/Work Practice	Citation
GDU	Sorbent regenerator flue gas scrubber (A-13)	SO_2	Emission Limits: 3.2 lbs/hour and 14.0 tons/yr.	Condition 20 of 9/28/06 NSR permit.
GDU	Sorbent regenerator flue gas scrubber (A-13)	CO	Emission limits: 1.7 lbs/hour and 7.6 tons/year	Condition 20 of 9/28/06 NSR permit.
GDU	Flare 2 as related to the GDU process	PM/PM-10 (including condensables)	Emission limits: 2.7 lbs/hour and 0.6 tons/year	Condition 21 of 9/28/06 NSR permit
GDU	Flare 2 as related to the GDU process	CO	Emission limits: 2.0 lbs/hour and 0.5 tons/year	Condition 21 of 9/28/06 NSR permit
GDU	Equipment leaks as related to the GDU process	VOC	Emission limit: 22.1 tons/year	Condition 22 of 9/28/06 NSR permit
GDU	Tanks T-623 and T-624	VOC	Emission limits: 1.0 lbs/hour each, and 7.7 tons/year combined	Condition 23 of 9/28/06 NSR permit
GDU	The whole GDU process	PM/PM-10 (Including condensables)	Emission limit: 3.5 tons/year	Condition 24 of 9/28/06 NSR permit
GDU	The whole GDU process	SO_2	Emission limit: 24.4 tons/year	Condition 24 of 9/28/06 NSR permit
GDU	The whole GDU process	NOx	Emission limit: 11.8 tons/year	Condition 24 of 9/28/06 NSR permit
GDU	The whole GDU process	CO	Emission limit: 27.6 tons/year	Condition 24 of 9/28/06 NSR permit
GDU	The whole GDU process	VOC	Emission limit: 32.1 tons/year	Condition 24 of 9/28/06 NSR permit

1. **Emission Controls** – SO_2 emissions from the sorbent regenerator flue gas shall be controlled by a caustic scrubber (A-13). The scrubber shall be provided with adequate access for inspection and shall be in operation when the regenerator is operating.
(9 VAC 5-80-110 and Condition 5 of 9/28/06 NSR permit)

2. **Control Efficiency** - The caustic scrubber (A-13) shall maintain a control efficiency for SO_2 of at least 99.5 percent, to be demonstrated by stack test.
(9 VAC 5-80-110 and Condition 6 of 9/28/06 NSR permit)

3. **Emission Controls** – VOC and VOC-HAP emissions from each of the tanks T-623 and T 624 shall be controlled by an external floating roof with primary and secondary seal systems as required by 40 CFR 60 Subpart Kb and 40 CFR 63 Subpart CC. The tanks shall be provided with adequate access for inspection.
(9 VAC 5-80-110 and Condition 7 of 9/28/06 NSR permit)

4. **Emission Controls** – Equipment leaks of VOC and VOC-HAP from each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, flange or other connector, or instrumentation system of the gasoline desulfurization process shall be controlled by compliance with applicable requirements in 40 CFR 60 Subpart GGG and 40 CFR 63 Subpart CC.
(9 VAC 5-80-110 and Condition 8 of 9/28/06 NSR permit)

5. **Emission Controls** – VOC and VOC-HAP emissions from the process vent of the gasoline desulfurization process reactor shall be controlled by a flare (Flare 2) that meets the requirements of 40 CFR 60 Subpart J and 40 CFR 63 Subpart CC (specifically 40 CFR 63.643, and 63.644, referring to 63.11 (b)).
(9 VAC 5-80-110 and Condition 9 of 9/28/06 NSR permit)

6. **Emission Controls** –VOC-HAP emissions from benzene-containing wastes from the gasoline desulfurization process shall be controlled by compliance with applicable requirements of NESHAP Subpart FF (40 CFR 61.342 through 61.353).
(9 VAC 5-80-110 and Condition 10 of 9/28/06 NSR permit)

7. **Emission Controls** – VOC and VOC-HAP emissions from wastewater from the gasoline desulfurization process shall be controlled by compliance with applicable requirements of NSPS Subpart QQQ and MACT Subpart CC.
(9 VAC 5-80-110 and Condition 11 of 9/28/06 NSR permit)

8. **Tank Throughput** - The throughput of gasoline through each of the tanks T-623 and T-624 shall not exceed 10,950,000 barrels (459,900,000 gallons) per year each, calculated monthly as the sum of each consecutive 12-month period. The tank flow shall be measured by the tank level gauge that shall be calibrated at least annually. Compliance for the consecutive 12-month period shall be demonstrated monthly for each tank separately by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
(9 VAC 5-80-110 and Condition 13 of 9/28/06 NSR permit)

9. **Requirements by Reference** - Except where this permit is more restrictive than the applicable requirement, all equipment used in the gasoline desulfurization process shall be operated in compliance with the requirements of 40 CFR 60 Subpart J- Standards of Performance for Petroleum Refineries, Subpart Kb- Standard of Performance for Volatile Organic Liquid Storage Vessels for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984, Subpart GGG- Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries, and Subpart QQQ-Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater system, 40 CFR 61 Subpart FF- National Emission Standards for Benzene Waste Operations, and 40 CFR 63 Subparts CC- National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries. (9 VAC 5-80-110 and Condition 17 of 9/28/06 NSR permit)

10. **Emission Limits** – The permittee shall not exceed the emission limits in Table X.A. (9 VAC 5-80-110 B)

B. Monitoring

1. **CEMS for SO_2 Emissions from the Regenerator Caustic Scrubber Stack**- A Continuous Emission Monitoring System, meeting the design specifications of 40 CFR 60, Appendix B, and a flow meter shall be installed to measure and record SO_2 concentration and stack flow to enable calculation of SO_2 emissions from the regenerator scrubber stack as lbs/hr. Missing data of 1 hour or longer for any reasons shall be substituted by the highest lbs/hr from the preceding 24-hour data. The CEMS shall be installed, calibrated, maintained, audited and operated in accordance with 40 CFR 60.13, and Appendices B and F. The flow meter shall be calibrated annually. Data shall be reduced to daily averages, monthly averages, and 12-month rolling averages in tons/yr. (9 VAC 5-80-110 and Condition 31 of 9/28/06 NSR)

2. **CEMS Performance Evaluations** – Performance evaluations of the CEMS for SO_2 emissions from the regenerator caustic scrubber stack shall be conducted in accordance with 40 CFR Part 60, Appendix B, and shall take place during the performance tests under 9 VAC 5-50-30 or within 30 days thereafter. One copy of the performance evaluations report shall be submitted to the Tidewater Regional Office within 60 days of the evaluation. The CEMS shall be installed and operational prior to conducting initial performance tests. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation and calibration of the device. A 30 day notification, prior to the demonstration of the CEMS performance, and subsequent notifications shall be submitted to the Tidewater Regional Office. (9 VAC 5-80-110 and Condition 32 of 9/28/06 NSR permit)

3. **Compliance Assurance Monitoring (CAM) for SO_2 Emissions -** The permittee shall monitor, operate, calibrate and maintain the caustic scrubber controlling the SO_2 emissions from the Regenerator according to the following:

Monitoring, Frequency, Records	Performance Criteria	Indicator Range; Averaging Period
SO_2 CEMS, located on the Caustic Scrubber Stack (ID#S019), and the regenerator flue gas flow monitor located on the outlet of the regenerator (inlet to the scrubber) shall continuously monitor and record SO_2 concentration (dry basis) and flue gas flow rate, respectively.	Performance Specification 2 of 40 CFR 60 Appendix B and quality assurance procedures of 40 CFR 60 Appendix F. The flow monitor shall be calibrated annually.	SO_2 emission concentration (dry basis) as monitored by the SO_2 CEMS is the performance indicator. The indicator range (compliance limits) is established during a performance test of the gasoline desulfurization unit at a low and a high unit operating rate, representative of the normal and maximum operation capacity, respectively. At each operating condition, a stack test shall be performed to determine stack SO_2 concentration, and CEMS data shall be collected and reduced to hourly averages. A material balance shall be performed to determine the SO_2 control efficiency of the scrubber. A SO_2 concentration (dry basis) operating range shall be determined from test data that demonstrates compliance with permitted control efficiency and emission limits. Once the SO_2 emission concentration indicator range is determined, the concentration values shall be entered into the unit operating computer system. Exceedance of the indicator range will trigger the alarm to alert the unit operators to investigate the performance of the scrubber.

4. **Compliance Assurance Monitoring (CAM) -** The permittee shall conduct the monitoring and fulfill the other obligations specified in 40 CFR 64.7 through 40 CFR 64.9.
(9 VAC 5-80-110 E and 40 CFR 64.6 (c))

5. **Compliance Assurance Monitoring (CAM) -** At all times, the permittee shall maintain the monitoring equipment, including, but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.

   (9 VAC 5-80-110 E and 40 CFR 64.7 (b))

6. **Compliance Assurance Monitoring (CAM) -** Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the permittee shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the Gasoline Desulfurization Process is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of compliance assurance monitoring, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The permittee shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by inadequate maintenance or improper operation are not malfunctions.

   (9 VAC 5-80-110 E and 40 CFR 64.7 (c))

7. **Compliance Assurance Monitoring (CAM) -** Upon detecting an excursion or exceedance, the permittee shall restore operation of the Gasoline Desulfurization Process (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup and shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator, designated condition, or below the applicable emission limitation or standard, as applicable.

   (9 VAC 5-80-110 E and 40 CFR 64.7 (d)(1))

8. **Compliance Assurance Monitoring (CAM) -** Determination that acceptable procedures were used in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.

   (9 VAC 5-80-110 E and 40 CFR 64.7(d)(2))

9. **Compliance Assurance Monitoring (CAM) -** If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify the Director, Tidewater Regional Office and, if necessary, submit a proposed modification to this permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.
   (9 VAC 5-80-110 E and 40 CFR 64.7(e))

10. **Compliance Assurance Monitoring (CAM) -** If the number of exceedances or excursions exceeds 5 percent duration of the operating time for the Gasoline Desulfurization Process for a semiannual reporting period, the permittee shall develop, implement and maintain a Quality Improvement Plan (QIP) in accordance with 40 CFR 64.8. If a QIP is required, the permittee shall have it available for inspection. The QIP initially shall include procedures for evaluating the control performance problems and, based on the results of the evaluation procedures, the permittee shall modify the plan to include procedures for conducting one or more of the following, as appropriate:

    a. Improved preventative maintenance practices;

    b. Process operation changes;

    c. Appropriate improvements to control methods;

    d. Other steps appropriate to correct control performance; and

    e. More frequent or improved monitoring.

    (9 VAC 5-80-110 E and 40 CFR 64.8(a) and (b))

11. **Continuing Compliance Determination for Tanks (T-623 and T-624)-** Continuing compliance determination for the tanks shall be carried out as required by 40 CFR 60 Subpart Kb and 40 CFR 63 Subpart CC (40 CFR 63.646).
    (9 VAC 5-80-110 and Condition 33 of 9/28/06 NSR permit)

12. **Continuing Compliance Determination for Equipment Leaks**- Continuing compliance determination for equipment leaks shall be carried out as required by 40 CFR 63 Subpart CC (40 CFR 63.648).
(9 VAC 5-80-110 and Condition 34 of 9/28/06 NSR permit)

C. Recordkeeping

1. The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit and applicable 40 CFR 60 Subparts J, Kb, GGG, and QQQ, 40 CFR 61 Subpart FF, and 40 CFR 63 Subpart CC. The content and format of such records shall be arranged with the Director, Tidewater Regional Office. These records shall include, but are not limited to:

   a. Annual throughput of gasoline through each of the tanks (T-623 and T-624), calculated monthly as the sum of each consecutive 12-month period, including records of tank level gauge measurements and calibrations.

   b. Results of all stack tests, and performance evaluations.

   c. All CEMS data, calibrations, and calibration checks for the regenerator caustic scrubber.

   d. All testing and monitoring records for the tanks (T-623 and T-624) and equipment leaks.

   e. Periods of start-up, shutdown, and malfunction of the CEMS for the regenerator caustic scrubber.

   These records shall be available on site for inspection by the DEQ and shall be current for the most recent five (5) years.
   (9 VAC 5-80-110 and Condition 36 of 9/28/06 NSR permit)

2. **Compliance Assurance Monitoring (CAM) Recordkeeping** - The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan (QIP) required pursuant to §64.8 and any activities undertaken to implement a quality improvement plan (QIP), and other supporting information required to be maintained under this part (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions).
   (9 VAC 5-80-110 E and 40 CFR 64.9(b))

D. Testing

1. **Stack Test** - Initial performance tests shall be conducted for SO_2 from the regenerator caustic scrubber (A-13) to determine compliance with the permitted control efficiency and emission limits. The tests shall be performed, reported and demonstrate compliance within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of the permitted facility. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30, test methods and procedures contained in 40 CFR 60 Appendix A.

   The details of the tests are to be arranged with the Tidewater Regional Office. The permittee shall submit a test protocol to the Tidewater Regional Office at least 30 days prior to testing. One copy of the test results shall be submitted within 60 days after test completion to the Tidewater Regional Office, and shall conform to the test report format enclosed with this permit.
   (9 VAC 5-80-110 and Condition 27 of 9/28/06 NSR permit)

2. **Initial Compliance Determination for Tanks (T-623 and T-624)**- Initial compliance determination for the tanks shall be carried out as required by 40 CFR 60 Subpart Kb and 40 CFR 63 Subpart CC (40 CFR 63.646)
   (9 VAC 5-80-110 and Condition 28 of 9/28/06 NSR permit)

3. **Initial Compliance Determination for Equipment Leaks**- Initial compliance determination for equipment leaks shall be carried out as required by 40 CFR 63 Subpart CC (40 CFR 63.648).
   (9 VAC 5-80-110 and Condition 29 of 9/28/06 NSR permit)

4. **Emission Testing**- The gasoline desulfurization process shall be constructed so as to allow for emissions testing at any time, using appropriate methods. Sampling ports shall be provided when requested at the appropriate locations and safe sampling platforms and access shall be provided.
   (9 VAC 5-80-110 and Condition 37 of 9/28/06 NSR permit)

5. If testing is conducted in addition to the monitoring specified in this permit, the permittee shall use the appropriate method(s) in accordance with procedures approved by the DEQ.
   (9 VAC 5-80-110)

E. Notification and Reporting

1. **Notifications**- The permittee shall furnish written notification to the Tidewater Regional Office of:

a. The actual date on which construction of the gasoline desulfurization process commenced within 30 days after such date.

b. The anticipated start-up date of the gasoline desulfurization process postmarked not more than 60 days nor less than 30 days prior to such date.

c. The actual start-up date of the gasoline desulfurization process within 15 days after such date.

d. The anticipated date of performance tests and performance evaluations of the process heaters (F-675 and F-676), the caustic scrubber (A-13), CEMS, and other equipment as required by applicable NSPS and MACT Subparts, postmarked at least 30 days prior to such date.

Copies of the written notification referenced in items a through d above are to be sent to:

Associate Director
Office of Air Enforcement (3AP10)
U.S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029
(9 VAC 5-80-110 and Condition 38 of 9/28/06 NSR permit)

2. **Semi-Annual Reports for CEMS** - The permittee shall furnish written reports to the Director, Tidewater Regional Office of excess SO_2 emissions from the regenerator caustic scrubber stack on a semi-annual basis, postmarked within 30 days after the end of the each semi-annual period. The time periods to be addressed are January 1 to June 30, and July 1 to December 31. These reports shall include, but are not limited to the following information:

a. The magnitude of excess emissions, any conversion factors used in the calculation of excess emissions, and the date and time of commencement and completion of each period of excess emissions;

b. Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the process, the nature and cause of the malfunction (if known), the corrective action taken or preventative measures adopted;

c. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments; and

d. When no excess emissions have occurred or the continuous monitoring systems have not been inoperative, repaired or adjusted, such information shall be stated in that report. (9 VAC 5-80-110 and Condition 41 of 9/28/06 NSR permit)

3. **Compliance Assurance Monitoring (CAM) Reporting** - the permittee shall submit CAM reports as part of the Title V semi-annual monitoring reports required by General Condition C.3 of this permit to the Director, Tidewater Regional Office. Such reports shall include at a minimum:

   a. Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;

   b. Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and

   c. A description of the actions taken to implement a quality improvement plan (QIP) during the reporting period as specified in §64.8. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.

   (9 VAC 5-80-110 F and 40 CFR 64.9(a))

4. **Notification of Compliance Status Report for Tanks (T-623 and T-624)-** Notification of Compliance Status Report for the tanks (T-623 and T-624) shall be submitted within 150 days of initial start up as required by MACT Subpart CC (40 CFR 63.654(f)). (9 VAC 5-80-110 and Condition 42 of 9/28/06 NSR permit)

5. **Periodic Reports for Tanks (T-623 and T-624)-** Periodic Report for the tanks shall be submitted no later than 60 days after the end of each 6-month period following the required submittal date of the Notification of Compliance Status Report pursuant to MACT Subpart CC (40 CFR 63.654(g)). (9 VAC 5-80-110 and Condition 43 of 9/28/06 NSR permit)

6. **Notification of Compliance Status Report for Equipment Leaks-** Notification of Compliance Status Report for equipment leaks shall be submitted within 150 days of initial start up as required by MACT Subpart CC (40 CFR 63.654(d)). (9 VAC 5-80-110 and Condition 44 of 9/28/06 NSR permit)

7. **Periodic Reports for Equipment Leaks**- Periodic Report for equipment leaks shall be submitted no later than 60 days after the end of each 6-month period following the required submittal date of the Notification of Compliance Status Report pursuant to MACT Subpart CC (40 CFR 63.654(d)).
   (9 VAC 5-80-110 and Condition 45 of 9/28/06 NSR permit)

XI. Gasoline Truck Loading Rack (Process Unit ID# R1)

A. Limitations

Unit Name	Name/Description of Unit	Pollutants	Description of Applicable Requirement/ Emission Limit/Standard/Work Practice	Citation
R1	Gasoline truck loading rack	NOx	Emission limit: 8.1 tons/yr	Condition 6 of 10/10/02 NSR permit
R1	Gasoline truck loading rack	CO	Emission limit: 20.3 tons/yr	Condition 6 of 10/10/02 NSR permit
R1	Gasoline truck loading rack	VOC	Emission limit: 20.2 tons/yr	Condition 6 of 10/10/02 NSR permit
R1	Gasoline truck loading rack	VOC	Emission limit: 10 mg/liter of gasoline loaded	Condition 9 of 10/10/02 NSR permit

1. **Emission Controls**- Volatile organic compound (VOC) emissions from the truck loading rack shall be controlled by a vapor combustion unit (VCU). The VCU shall be provided with adequate access for inspection and shall be in operation when the truck loading rack is operating.
   (9 VAC 5-80-110 and Condition 3 of 10/10/02 NSR permit)

2. **Fugitive VOC Emission Controls**- Fugitive emission controls shall include the following, or equivalent, as a minimum: Volatile organic compounds shall not be intentionally spilled, discarded to sewers, stored in open containers, or handled in any other manner that would result in evaporation beyond that consistent with air pollution control practices for minimizing emissions.
   (9 VAC 5-80-110 and Condition 4 of 10/10/02 NSR permit)

3. **Throughput Limit**- The throughput of gasoline at the truck loading rack shall not exceed 485,163,840 gallons per year, calculated monthly as the sum of each consecutive 12-month period.
   (9 VAC 5-80-110 and Condition 5 of 10/10/02 NSR permit)

4. **Emission Limits-** The permittee shall not exceed the emission limits in Table XI.A.
   (9 VAC 5-80-110 B)

5. **VOC Emission Limitations** - The permittee shall load only vapor tight trucks using a vapor tight closed vent collection system to limit VOC emissions to 10 mg/liter of gasoline loaded as required by 40 CFR 63.650 referencing 63.422(a) through (c) as described below (terms are as defined in 40 CFR 63.421):

a. 63.422(a) – Comply with 40 CFR 60.502 except for paragraphs (b), (c), and (j) of that section:

(1) 60.502(a) – Vapor collection system designed to collect the total organic compounds vapors displaced from tank trucks during product loading.

(2) 60.502(d) - Vapor collection system designed to prevent any organic compounds vapors collected at one loading rack from passing to another loading rack.

(3) 60.502(f) – Loading of gasoline tank trucks made only into tanks equipped with vapor collection system compatible with the facility's vapor collection system.

(4) 60.502(g) – Terminal's and tank truck's vapor collection systems are connected during each loading of a gasoline tank truck.

(5) 60.502(h) – Vapor collection system and liquid loading equipment designed and operated to prevent gauge pressure in the delivery tank from exceeding 4,500 pascals during product loading.

(6) 60.502(i) – No pressure-vacuum vent in the gasoline terminal's vapor collection system shall begin to open at a system pressure of less than 4,500 pascals.

b. 63.422(b) – Emission limit of 10 mg of total organic compounds/L of gasoline loaded.

c. 63.422(c) – Take steps assuring that a nonvapor-tight gasoline cargo tank will not be reloaded until vapor tightness documentation is obtained.

(9 VAC 5-80-110, and Condition 9 of 10/10/02 NSR permit)

6. **Requirements by Reference-** Except as provided in paragraphs (b) through (c) of 40 CFR 63.650, the permittee shall comply with 40 CFR 63.421, 63.422(a) through (c), 63.425(a) through (c), 63.425(e) through (h), 63.427(a) and (b), and 63.428(b), (c), (g)(1), and (h)(1) through (h)(3). Except where this permit is more restrictive than the applicable requirement, the gasoline truck loading rack shall be operated in compliance with the requirements of 40 CFR 63, Subpart CC.

(9 VAC 5-80-110, and Condition 7 and 8 of 10/10/02 NSR permit)

B. Monitoring

1. The permittee shall install, calibrate, certify, operate, and maintain a continuous monitoring system (CMS) and recording device for the combustion zone temperature of the vapor combustion unit (VCU) in compliance with 40 CFR 63.427(a) and (b) as referenced in 40 CFR 63.650. The monitoring device shall record the start and stop times of the combustion of the truck loading vapors. Compliance with the minimum operating temperature will be determined from the daily average of the combustion temperature recorded during periods when vapors from truck loading are being combusted in the VCU.
   (9 VAC 5-80-110 and Condition 12 of 10/10/02 NSR permit)

2. The permittee shall demonstrate loadings of vapor tight gasoline tank trucks by (a) obtaining vapor tightness documentation, (b) recording the tank identification number as each gasoline truck is loaded, and (3) cross-checking the tank identification number with the vapor tightness documentation (40 CFR 60.502(e), as referenced in 40 CFR 63.422(a)).
   (9 VAC 5-80-110 and 40 CFR 63.650)

3. The permittee shall monitor the closed vent system of the gasoline truck loading rack and the VCU with the Leak Detection and Repair program according to 40 CFR 60.482-10, as referenced in 40 CFR 63.648.
   (9 VAC 5-80-110 and 40 CFR 63.648)

C. Recordkeeping

1. The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit and applicable requirements of MACT Subpart CC. The content and format of such records shall be arranged with the Director, Tidewater Regional Office. These records shall include, but are not limited to:

   a. Annual throughput of gasoline, calculated monthly as the sum of each consecutive twelve (12) month period.

   b. Records of performance tests on the loading rack and VCU.

   c. Emission factor for the VCU using the performance test results and a calculation method approved by the Tidewater Regional Office.

   d. CMS records of VCU operating temperature (40 CFR 63.428(c)).

   e. Records of truck vapor tightness test results (40 CFR 63.428(b)).

   These records shall be available on site for inspection by the DEQ and shall be current for the most recent five (5) years.
   (9 VAC 5-80-110 and Conditions 13 and 14 of 10/10/02 NSR permit)

D. Testing

1. **Initial Performance Test**- The permittee shall conduct an initial performance test on the loading rack and loading rack control (VCU) in accordance with 40 CFR 63.425(a). The initial performance test shall be conducted no more than 60 days following initial actual start-up of the expanded truck loading rack and loading rack control (VCU).
   A minimum operating temperature for the VCU combustion zone shall be established during product loading (40 CFR 63.425(b)).
   Any change to the operating parameter value shall be documented (40 CFR 63.425(c)).
   (9 VAC 5-80-110 and Condition 10 of 10/10/02 NSR permit)

2. **Truck Testing** - The permittee shall only load trucks that have met the testing requirements of 40 CFR 63.425(e) through (h) as referenced in 40 CFR 63.650:

   a. 63.425(e) – Conduct annual certification tests according to specified procedures.

   b. 63.425(f) – Conduct leak detection tests according to specified procedures.

   c. 63.425(g) – Conduct nitrogen pressure decay field tests according to specified procedures.

   d. 63.425(h) – Conduct continuous performance pressure decay tests according to specified procedures.

   (9 VAC 5-80-110 and Condition 11 of 10/10/02 NSR permit)

3. If testing is conducted in addition to the monitoring specified in this permit, the permittee shall use the appropriate method(s) in accordance with procedures approved by the DEQ.
   (9 VAC 5-80-110)

E. Reporting

1. The permittee shall submit semiannual report for the following, as required by 40 CFR 63.428(g)(1), and 63.428(h)(1) through (3):

   a. Each loading of a gasoline cargo tank for which vapor tightness documentation had not been previously obtained by the facility (63.428(g)(1)).

   b. Each exceedance or failure to maintain, as appropriate, the monitored operating parameter value (63.428(h)(1)).

   c. Each instance of loading a nonvapor-tight gasoline cargo tank (63.428(h)(2)).

d. Each instance of reloading a nonvapor-tight gasoline cargo tank (63.428(h)(3)).

(9 VAC 5-80-110 and Condition 13 of 10/10/02 NSR permit)

XII. Wastewater Treatment Plant (Process Unit ID# P16)

A. Limitations

Unit Name	Name/Description of Unit	Pollutants	Description of Applicable Requirement/ Emission Limit/Standard/Work Practice	Citation
P16	Tanks 23 and 24 (formerly tanks 85 and 86)	VOC	Emission limits: 6.1 lbs/hour and 27.8 tons per year VOC (combined), 12-month rolling average	Condition 5 of 2/25/97 NSR permit
P16	Tanks 907 and 908 (formerly tanks 87 and 88)	VOC	Emission limits: 1.9 lbs/hour and 8.4 tons per year VOC (combined), 12-month rolling average	Condition 6 of 2/25/97 NSR permit
P16	Tanks 909, 910, 911, 912, and 913 (formerly tanks 89, 90, 91, 92, and 93)	VOC	Emission limits: 4.9 lbs/hour and 21.5 tons per year VOC (combined), 12-month rolling average	Condition 7 of 2/25/97 NSR permit
P16	Fixed roof tanks 22, 25, 54, and 55 (formerly tanks 94, 96, 95, and 105)	VOC	Emission limits: 1.7 lbs/hour and 1.5 tons per year VOC (combined), 12-month rolling average	Condition 8 of 2/25/97 NSR permit
P16/R5-R7	Unit oil-water separators T-56A/B, T-57A/B, and T-58A/B (formerly 97, 98, and 99)	VOC	Emission limits: 0.6 lbs/hour and 2.5 tons per year VOC (combined), 12-month rolling average	Condition 9 of 2/25/97 NSR permit
P16/R9	IGF oil-water separators L-1638 (formerly 100)	VOC	Emission limits: 0.5 lbs/hour and 2.4 tons per year VOC (combined), 12-month rolling average	Condition 10 of 2/25/97 NSR permit
P16/R8	CPI oil-water separators L-1639, L-1640, L-1641, and L-1642 (formerly 101, 102, 103, and 104)	VOC	Emission limits: 3.6 lbs/hour and 16.0 tons per year VOC (combined), 12-month rolling average	Condition 11 of 2/25/97 NSR permit

1. **Emission Controls**- VOC emissions from each external floating roof tanks 23, 24, and 907 through 913 (formerly tanks 85 through 93) shall be controlled by a primary mechanical shoe seal and a secondary rim-mounted seal as required by NSPS Subpart Kb section 40 CFR 60.112b.
   (9 VAC 5-80-110 and Condition 3 of 2/25/97 NSR permit)

2. **Emission Controls**- VOC emissions from each of the fixed roof tanks 22, 25, 54, and 55 (formerly tanks 94, 96, 95, and 105, respectively), the oil/water separators T-56, T-57, T-58, and L-1638 through L-1642 (R5 through R9, formerly 97 through 104), and the sumps L-1650 and L-1651 (formerly 106 and 110) shall be controlled by carbon adsorption with an efficiency of 95% or greater as required by NSPS Subpart QQQ (40 CFR 60.692-5(b)). The carbon adsorption units shall be provided with adequate access for inspection.

   For the fixed roof tanks 22, 25, 54, and 55, the control requirements of 40 CFR 60 Subpart QQQ requiring a closed-vent control system shall be deemed adequate to comply with the closed-vent system control requirements of NESHAP Subpart FF sections 40 CFR 61.343(a)(1) and 40 CFR 61.349.
   (9 VAC 5-80-110 and Condition 4 of 2/25/97 NSR permit)

3. **Emission controls**-

   a. Each oil-water separator shall be equipped and operated with a fixed roof and closed vent system to route all organic vapors to a control device with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as required by NSPS Subpart QQQ Sections 40 CFR 60.692-3(b) and 60.692-5(e)(1), and NESHAP Subpart FF sections 40 CFR 61.347(a)(1) and 61.349.

   b. A flow indicator shall be installed on the vent stream of the carbon adsorption unit as required by NSPS Subpart QQQ Section 40 CFR 60.692-5(e)(3).

   (9 VAC 5-80-110, 9 VAC 5-60-70, and Condition 17 of 2/25/97 NSR permit)

4. **Emission controls**- VOC emissions from the ISBL underground sewer shall be controlled by a closed drain system with water and/or mechanical seals and controls as required by NSPS Subpart QQQ Section 40 CFR 60.692-2 and NESHAP Subpart FF Section 40 CFR 61.346(b).
   (9 VAC 5-80-110, 9 VAC 5-50-410, and 9 VAC 5-60-70)

5. **Emission controls**- VOC emissions from the OSBL aboveground sewer shall be controlled by a completely closed drain system according to NSPS Subpart QQQ alternative standards Section 40 CFR 60.693-1 and NESHAP Subpart FF Section 40 CFR 61.346 (b)(3).
   (9 VAC 5-80-110, 9 VAC 5-50-410, and 9 VAC 5-60-70)

6. **Emission Controls**- The permittee shall control benzene emissions from the activated sludge plant as required by NESHAP Subpart FF Section 40 CFR 61.348(b)(2) for Enhanced Biodegradation Unit.
   (9 VAC 5-80-110 and 9 VAC 5-60-70)

7. **Emission Limits**- VOC emissions from the tanks and oil-water separators shall not exceed the limits specified in Table XII.A. Compliance with the control requirements of NSPS Subpart Kb and QQQ, as applicable, shall signify compliance with the hourly emission limits.
(9 VAC 5-80-110 and Conditions 5 through 11 of 2/25/97 NSR permit)

8. **Group 1 Wastewater Stream**- Except as provided in MACT Subpart CC Section 40 CFR 63.647(b), the permittee shall comply with the requirements of MACT Subpart CC Section 40 CFR 63.647 that references NESHAP Subpart FF Sections 40 CFR 61.340 through 61.355 for each process wastewater stream that meets the definition of a Group 1 wastewater stream in 40 CFR 63.641.
(9 VAC 5-80-110, 9 VAC 5-60-70, and 9 VAC 5-60-100)

9. **Group 1 Wastewater Stream-** Any refinery Group 1 wastewater stream managed in a piece of equipment that is also subject to the provisions of NSPS Subpart QQQ is required to comply only with MACT Subpart CC Section 40 CFR 63.647. Tanks subject to both 40 CFR 63.647, NSPS Subpart Kb, and possibly 9 VAC 5-40-5220(B) and 40 CFR 63.646 shall comply only with NSPS Subpart Kb. For the fixed roof tanks 22, 25, 54, and 55, the control requirements of NSPS Subpart QQQ, requiring a closed-vent control system shall be deemed adequate to comply with the closed-vent system control requirements of NESHAP Subpart FF Sections 40 CFR 61.343(a)(1) and 40 CFR 61.349.
(9 VAC 5-80-110, 40 CFR 61.343(a), and 40 CFR 63.640 (o)(1))

10. **Requirements by Reference** - Except where this permit is more restrictive than the applicable requirements, the floating roof tanks 23, 24, and 907 through 913 (formerly tanks 85 through 93), the fixed roof tanks 22, 25, 54, and 55 (formerly tanks 94, 96, 95, and 105), the oil/water separators T-56, T-57, T-58, L-1638, L-1639, L-1640, L-1641, and L-1642 (R5 through R9, formerly 97 through 104), the sumps L-1650 and L-1651 (formerly 106 and 110), and the sewers (ISBL and OSBL) shall be installed and operated in compliance with the applicable requirements of NSPS Subpart Kb- Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modification Commences After July 23, 1984, NSPS Subpart QQQ- Standards of Performance for VOC emissions From Petroleum Refinery Wastewater Systems, NESHAP Subpart FF- National Emission Standard for Benzene Waste Operation, and MACT Subpart CC- National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries.
(9 VAC 5-80-110, 9 VAC 5-50-410, 9 VAC 5-60-70, 9 VAC 5-60-100, and Conditions 3 and 16 of 2/25/97 NSR permit)

B. Monitoring

1. The permittee shall perform visual seal inspection for excessive gaps initially and annually for each of the floating roof tanks 23, 24, and 907 through 913 as required by NSPS Subpart Kb Section 40 CFR 60.113b and NESHAP Subpart FF Section 40 CFR 61.351(a)(2).
(9 VAC 5-80-110, 9 VAC 5-60-70, and Condition 13 of 2/25/97 NSR permit)

2. The permittee shall inspect each external floating roof storage tank in accordance with 40 CFR 60.113b(b)(6) each time the vessel is emptied and degassed. The permittee shall notify the Director, Tidewater Regional Office, in writing at least 30 days prior to filling or refilling each external floating roof storage tank in accordance with 40 CFR 60.113b(b)(6)(ii).
(9 VAC 5-80-110, 40 CFR 60.113b (b)(6), and Condition 14 of 2/25/97 NSR permit)

3. The permittee shall visually inspect roof seals, access doors, and other openings of each oil-water separator fixed roof system on a quarterly basis to ensure that no cracks or gaps occur between the roof and wall and that access doors and other openings are closed and gasketed properly, as required by NSPS Subpart QQQ Section 40 CFR 60. 692-3 (a)(4), and NESHAP Subpart FF Section 40 CFR 61.347 (b).

   When a broken seal or gasket or other problem is identified, first efforts at repair shall be made as soon as practicable but not later than 15 calendar days after it is identified as required by NSPS Subpart QQQ Section 40 CFR 60. 692-3 (a)(5) and NESHAP Subpart FF Section 40 CFR 61.347 (c)
   (9 VAC 5-80-110, 9 VAC 5-50-410, and 9 VAC 5-60-70)

4. The permittee shall inspect the closed vent systems of each oil-water separator initially and semi-annually using EPA Method 21 (reference 40 CFR 60, Appendix A) to detect any leak at or above 500 ppmv in accordance with NSPS Subpart QQQ Sections 40 CFR 60.692-5(e) and 60.696(b) and NESHAP Subpart FF Section 40 CFR 61.349 (a)(1)(i).

   First effort to repair a leak shall be made as soon as practicable but no later than 5 calendar days after detection. Repair shall be completed no later than 15 days after detection as required by NESHAP Subpart FF Section 61.349 (g).
   (9 VAC 5-80-110 and Condition 18 of 2/25/97 NSR permit)

5. The permittee shall visually inspect the flow indicator of the closed vent system for each oil-water separator on a monthly basis.
   (9 VAC 5-80-110 and Condition 17 of 2/25/97 NSR permit)

6. The VOC concentration in the exhaust vent streams of each carbon adsorption unit shall be monitored on a regular schedule. The existing carbon shall be replaced with fresh carbon immediately when carbon breakthrough is indicated as required by NSPS Subpart QQQ, 40 CFR 60.695(a)(3)(ii) and NESHAP Subpart FF, 40 CFR 61.354(d). Each carbon adsorption unit shall be monitored on a daily basis or at intervals no greater than 20 percent of the design carbon replacement interval, whichever is greater.
   (9 VAC 5-80-110 and Condition 19 of 2/25/97 NSR permit)

7. The permittee shall visually check each drain of the ISBL underground sewer using water seal controls for indication of low water levels or other conditions on a monthly basis as required by NSPS Subpart QQQ, 40 CFR 60.692-2(a)(2) and NESHAP Subpart FF 40 CFR 61.346 (b)(4)(i).
   (9 VAC 5-80-110, 9 VAC 5-50-410, and 9 VAC 5-60-70)

8. The permittee shall visually check each unburied sewer line of the OSBL aboveground sewer quarterly for indication of cracks, gaps, or other problems that could result in VOC or benzene emissions as required by the alternative standards in NSPS Subpart QQQ, 40 CFR 60.693-1(e)(2) and NESHAP Subpart FF 40 CFR 61.346(b)(4)(iv).
(9 VAC 5-80-110, 9 VAC 5-50-410, and 9 VAC 5-60-70)

9. The permittee shall analyze waste stream leaving treatment process for benzene content on a monthly basis, as required by NESHAP Subpart FF Section 40 CFR 61.354(a)(1).
(9 VAC 5-80-110, and 9 VAC 5-60-70)

10. The permittee, where required to perform periodic measurement of benzene concentration in wastewater, or to monitor process or control device operating parameters, shall operate in a manner consistent with the minimum or maximum (as appropriate) permitted concentration or operating parameter values. Operation of the process, treatment unit, or control device resulting in a measured concentration or operating parameter value outside the permitted limits shall constitute a violation of the emission standards. Failure to perform required leak monitoring for closed vent systems and control devices or failure to repair leaks within the time period specified in 40 CFR Part 61 Subpart FF shall constitute a violation of 40 CFR 63.647.
(9 VAC 5-80-110 and 40 CFR 63.647(c))

C. Recordkeeping

1. The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit and applicable requirements of NSPS Subpart Kb and QQQ, NESHAP Subpart FF, and MACT Subpart CC. The content and format of such records shall be arranged with the Director, Tidewater Regional Office. These records shall include, but are not limited to:

   a. Records showing the dimension of each external floating roof storage tank and analysis showing the capacity of each storage vessels. These records shall be readily accessible and shall be kept for the life of the source in accordance with NSPS Subpart Kb, Section 40 CFR 60.116b (a) and (b).

   b. Inspection records for external floating roof tanks including records of each gap measurement performed. Each record shall identify the storage vessel in which the measurement was performed and shall include, at minimum, the date of the measurement, the raw data obtained in the measurement, and the associated seal measurement calculations.

   c. Inspection records for oil-water fixed roof systems.

   d. Inspection records for closed vent systems and flow indicators of the oil/water separators.

e. Monitoring records for the carbon adsorption units.

f. If a carbon adsorber that is not regenerated directly on-site in the control device is used, then the owner or operator shall maintain records of dates and times when the control device is monitored, when breakthrough is measured, and shall record the date and time that the existing carbon in the control device is replaced with fresh carbon in accordance with NSPS Subpart QQQ Section 40 CFR 60.697(f)(3)(x)(B).

g. The permittee shall maintain documentation demonstrating that the carbon adsorption units will achieve 95% control efficiency during maximum loading conditions for the life of the facility in accordance with NSPS Subpart QQQ Section 40 CFR 60.697(f)(3)(i).

h. The permittee shall maintain records of the location, date, and corrective action taken for problems that could result in VOC emissions in accordance with NSPS Subpart QQQ Section 40 CFR 60.697.

i. Inspection records of the ISBL below ground sewer.

j. Inspection records of the OSBL above ground sewer.

k. Analysis results for benzene in waste stream leaving treatment process.

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five (5) years unless otherwise indicated above.
(9 VAC 5-80-110 and Conditions 13.e, 15, 20, 21, and 22 of 2/25/97 NSR permit)

D. Testing

1. Before using any equipment installed in compliance with the provisions of 40 CFR 60.692-2 to 5, the permittee shall inspect such equipment for indications of potential emissions, defects, or other problems that may cause the requirements of this permit not to be met. Points of inspection shall include, but are not limited to, seals, flanges, joints, gaskets, hatches, caps, and plugs.
(9 VAC 5-80-110 and NSPS Subpart QQQ, 40 CFR 60.696(a))

2. Should DEQ request testing of the carbon adsorbers, the permittee shall be exempt from the General Provisions of 40 CFR 60.8 and shall use Method 21 to measure the emission concentrations of VOC, using 500 ppm as the no detectable emission limit. The instrument shall be calibrated each day before using following the calibration guidelines listed in 40 CFR 60.696(b)(1) and (2).
(9 VAC 5-80-110 and NSPS Subpart QQQ, 40 CFR 60.696(b))

3. Analysis of benzene content of waste streams shall be in accordance with procedures in NESHAP Subpart FF Section 40 CFR 61.355.
(9 VAC 5-80-110 and NESHAP Subpart FF Section 40 CFR 61.355)

4. If testing is conducted in addition to the monitoring specified in this permit, the permittee shall use the appropriate method(s) in accordance with procedures approved by the DEQ.
(9 VAC 5-80-110)

E. Notification and Reporting

1. The permittee shall submit a report semi-annually to the Director, Tidewater Regional Office, which calculates annual emissions of volatile organic compounds in tons per year from tanks 23 and 24 (combined), tanks 907 and 908 (combined), tanks 909 through 913 (combined), fixed roof tanks 22, 25, 54, and 55 (combined) and oil-water separators T-56, T-57, and T-58 (combined). Annual emissions shall be calculated monthly as the sum of each consecutive 12-month period. The permittee shall maintain records of the calculations for the most recent three-year period unless otherwise specified by DEQ.
(9 VAC 5-50-50 and 9 VAC 5-60-50, and Condition 12 of 2/25/97 NSR permit)

2. The permittee shall submit annual report of seal inspections for the floating roof tanks.
(9 VAC 5-80-110 and Condition 13 of 2/25/97 NSR permit)

3. The permittee shall notify the Director, Tidewater Regional Office, in writing at least 30 days in advance of any gap measurements required above in accordance with NSPS Subpart Kb Section 40 CFR 60.113b (b)(5).
(9VAC 5-80-110 and Condition 13 of 2/25/97 NSR permit)

4. The permittee shall submit a report to the Director, Tidewater Regional Office, within 60 days of performing any seal gap measurements in accordance with NSPS Subpart Kb Section 40 CFR 60.115b (b)(2). The report shall contain, at minimum, the date of the measurement, the raw data obtained in the measurement, and any associated seal measurement calculations.
(9VAC 5-80-110 and Condition 13 of 2/25/97 NSR permit)

5. If any seal gap measurement exceeds the limitations specified in NSPS Subpart Kb Section 40 CFR 60.113b(b)(4), the permittee shall submit a report to the Director, Tidewater Regional Office, within 30 days of the inspection, in accordance with 40 CFR 60.115b (b)(4). The report shall identify the vessel and shall include, at minimum, the date of the measurement, the raw data obtained in the measurement, the associated seal measurement calculations, and the date the vessel was emptied or the repairs made and the date of repair.
(9 VAC 5 80-110 and Condition 13 of 2/25/97 NSR permit)

6. The permittee shall submit quarterly, semiannual and annual summary reports of inspection results and action taken for the oil-water separators, the closed vent systems, the flow indicators, the carbon adsorption units, the ISBL below ground sewer, and the OSBL aboveground sewer, as required by NSPS Subpart QQQ Sections 40 CFR 60.698 (b) and (c) and NESHAP Subpart FF Sections 40 CFR 61.357 (d) and (e).
(9 VAC 5-80-110, 9 VAC 5-50-410, and 9 VAC 5-60-70)

7. The permittee shall submit quarterly, semiannual and annual summary reports of inspection results and action taken when the carbon adsorption units are not replaced at the predetermined interval as required by NSPS Subpart QQQ Sections 40 CFR 60.698 (d)(3)(ii) and NESHAP Subpart FF Sections 40 CFR 61.357 (d) and (e).
(9 VAC 5-80-110, 9 VAC 5-50-410, and 9 VAC 5-60-70)

8. The permittee shall submit quarterly and annual summary reports of inspection results and action taken for the activated sludge plant as required by NESHAP Subpart FF Sections 40 CFR 61.357 (d) and (e).
(9 VAC 5-80-110 and 9 VAC 5-60-70)

9. The permittee shall submit quarterly and annual reports of benzene analysis results as required by NESHAP Subpart FF Sections 40 CFR 61.357 (d) and (e).
(9 VAC 5-80-110 and 9 VAC 5-60-70)

XIII. Refinery Flares (Flare 1 and Flare 2, Process ID# P12 and P13, respectively)

This section addresses requirements on the flares that have not been included in other process units with NSR permits.

A. Limitations

1. Flares 1 and 2 shall be operated at all times when emissions may be vented to them in accordance with 40 CFR 60.18(e) and 63.11(b)(3), and as referenced in 40 CFR 63.643(a)(1) and 63.1566(a)(2).
(9 VAC 5 -80-110, 9 VAC 5-50-410, and 9 VAC 5-60-100)

2. Flares 1 and 2 shall be designed for and operated with no visible emissions except for periods not to exceed a total of 5 minutes during any 2 consecutive hours as determined using EPA Method 22 (reference 40 CFR 60 Appendix A), in accordance with 40 CFR 60.18(c)(1) and 63.11(b)(4), and as referenced in 40 CFR 63.643(a)(1) and 63.1566(a)(1).
(9 VAC 5 -80-110, 9 VAC 5-50-410, and 9 VAC 5-60-100)

3. Flares 1 and 2 shall be operated with a flame present at all times in accordance with 40 CFR 60.18(c)(2) and 63.11(b)(5), and as referenced in 40 CFR 63.643(a)(1) and 63.1566(a)(2).
(9 VAC 5 -80-110, 9 VAC 5-50-410, and 9 VAC 5-60-100)

4. Flares 1 and 2 shall be comply with the heat content and velocity requirements of 40 CFR 60.18(c)(3) and 63.11(b)(6), and as referenced in 40 CFR 63.643(a)(1) and 63.1566(a)(1). (9 VAC 5 -80-110, 9 VAC 5-50-410, and 9 VAC 5-60-100)

5. SO_2 emissions from Flare 2 shall be controlled by limiting the hydrogen sulfide content of the refinery fuel gas to 0.10 grains/dscf and 160 ppmvd pursuant to 40 CFR 60.104 of NSPS Subpart J (see also Condition III.A.7 of this permit).
(9 VAC 5-80-110, Condition 4 of 3/13/06 NSR, and Condition 4 of 9/28/06 NSR permit)

6. **Requirement by references-**

   a. Except where this permit is more restrictive than the applicable requirement, Flare 1 and Flare 2 are to be operated in compliance with the applicable requirements of MACT Subpart UUU- National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units, and MACT Subpart CC- National Emissions Standards for Hazardous Air Pollutants from Petroleum Refineries.

   b. Except where this permit is more restrictive than the applicable requirement, Flare 2 is to be operated in compliance with the applicable requirements of NSPS Subpart J- Standards of Performance for Petroleum Refineries.

   (9 VAC 5-80-110, 9 VAC 5-50-410, and 9 VAC 5-60-100)

B. Monitoring

1. The permittee shall annually inspect Flare 1 and Flare 2 RV Headers on HAP service relief valves for visible, audible, or olfactory indications of leaks as required by 40 CFR 60.482-10(f)(1)(ii), as referenced in 40 CFR 63.648(a).
(9 VAC 5 -80-110, 9 VAC 5-50-410, and 9 VAC 5-60-100)

2. Continuous Monitoring System- Flare 1 and Flare 2 shall be continuously monitored for the presence of the pilot flame by the use of a thermocouple, optical sensor, or any other equivalent device as required by 63.11(b)(5) and 40 CFR 60.18(f)(2).
(9 VAC 5-80-110, 9 VAC 5-50-410, and 9 VAC 5-60-100)

3. Continuous Compliance- The permittee shall collect flare monitoring data according to 40 CFR 63.1572, and record for each 1-hour period whether the monitor was continuously operating and the pilot light was continuously present during each 1-hour period as required by MACT Subpart UUU Section 40 CFR 63.1566(c)(1).
(9 VAC 5-80-110 and 9 VAC 5-60-100)

4. **Initial Visible Emission Evaluation**- The permittee shall perform a visible emission evaluation on Flare 1 and Flare 2 by EPA Method 22 (reference 40 CFR 60 Appendix A) for an observation period of 2 hours as required by 40 CFR 63.11(b)(4).
(9 VAC 5-80-110 and 9 VAC 5-60-100)

5. **Continuing Visible Emission Evaluation**- The permittee shall perform a six-minute visible emission evaluation using EPA Method 22 (reference 40 CFR 60, Appendix A) for Flare 1 and Flare 2 once per calendar month during daylight hours of operation. If no visible emission presence is observed, then no further action is required. If visible emission is observed for at least a minute, then the permittee shall continue for an 18-minute observation period. If there is no additional visible emission, then no further action is required. If there is an additional minute of visible emission, the monitoring shall continue for a 1-hour observation period. Again, if there is no additional visible emission, then no further action is required. If there is an additional minute of visible emission (a total of 3 minutes in that hour), the monitoring shall continue for a 2-hour observation period to determine compliance with the visible emission limits. If at any time during the observation period there are more than five minutes of visible emissions, then there is a violation requiring reporting and corrective action. All VEE results and corrective actions shall be recorded in operation logbooks or equivalent records.
(9 VAC 5-80-110 E)

6. The refinery fuel gas feed to Flare 2 (P13) shall be monitored and recorded for H_2S concentration and flow rate by a continuous monitoring system (CMS) as described in Condition III.B.1 of this permit.
(9 VAC 5-80-110, Condition 4 of 3/13/06 NSR permit, and Condition 12 of 9/28/06 NSR permit)

7. The permittee shall perform the evaluation of flare gas heat content and flare tip velocity as required by 40 CFR 63.11(b)(6) and (7), respectively, for Flare 1 and Flare 2.
(9 VAC 5-80-110 and 9 VAC 5-60-100)

C. Recordkeeping

1. The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Director, Tidewater Regional Office. These records shall include, but are not limited to:

   a. Inspection records.

   b. Records of flare outage or pilot flame absence for Flare 1 and Flare 2.

   c. Records of H_2S concentration and fuel consumption for Flare 2.

d. Records of all visible emission evaluations.

e. Records of all flare performance testing.

f. Records of all reports.

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five (5) years.
(9 VAC 5-80-110, 9 VAC 5-60-70, and 9 VAC 5-60-100)

D. Testing

1. If testing is conducted in addition to the monitoring specified in this permit, the permittee shall use the appropriate method(s) in accordance with procedures approved by the DEQ.
(9 VAC 5-80-110)

E. Notifications and Reporting

1. The permittee shall submit Notification of Compliance Status for the Flare 1 and Flare 2 as required by MACT Subpart UUU Section 40 CFR 63.1574(a)(3).
(9 VAC 5-80-110 and 9 VAC 5-60-100)

2. The permittee shall submit periodic report on flare pilot flame for Flare 1 and Flare 2 as required by 40 CFR 63.654(g)
(9 VAC 5-80-110 and 9 VAC 5-60-100)

3. The permittee shall submit semiannual compliance report for the Flare 1 and Flare 2 as required by 40 CFR 63.1575(b).
(9 VAC 5-80-110 and 9 VAC 5-60-100)

XIV. Tanks (Process ID #P15)

This section addresses tanks that have not been included in other process units with NSR permits.

A. Limitations

Unit Name	Name/Description of Unit	Pollutants	Description of Applicable Requirement/ Emission Limit/Standard/Work Practice	Citation
P15	Floating-roof storage tank 110	VOC	Equipment standard: Floating roof requirement.	Section 40 CFR 60.112 of NSPS Subpart K- Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.
P15	Floating-roof storage tanks E, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 300, 301, 600, 601, 602, 604, 605, 606, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 619, 620, 621, 622, 623, 624, 700, 701, 702	VOC	Equipment standard: Secondary seal requirements for external floating roof tanks.	9 VAC 5-40-5220 B- Standard for volatile organic compounds- Petroleum liquid storage- floating roof tanks.
P15	Floating-roof storage tanks E, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 300, 301, 409, 600, 601, 602, 604, 605, 606, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 619, 620, 621, 622, 623, 624, 700, 701, 702	HAP	Equipment standard: Roof, fitting, and seal requirements.	Section 40 CFR 63.646 of MACT Subpart CC- National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries. Referencing 40 CFR 63.119 of MACT Subpart G- National Emission Standards for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater.

1. Any Group 1 storage vessel, as defined in MACT Subpart CC, that is also subject to the requirements of NSPS Subpart K shall be required to only comply with the provisions of MACT Subpart CC pursuant to 40 CFR 63.640(n)(5). Only Tank 110 has been identified at the time of permit issuance as so qualified.
(9 VAC 5-80-110 and 9 VAC 5-60-100)

2. Compliance with MACT Subpart CC for any storage vessels in Table XIV.A shall be proof of compliance with the less-stringent applicable requirements such as 9 VAC 5-40-5220 B. (9 VAC 5-80-110)

3. At the time of permit issuance, only Tank 409 is an internal floating roof tank. All other tanks listed above subject to 40 CFR 63 Subpart CC are external floating roof tanks. Should geodesic domes or other form of fixed roof be installed on the above external floating roof tanks at any time after issuance of this permit, such tanks will become internal floating roof tanks and shall comply with the appropriate standards for internal floating roof tanks in 40 CFR 63 Subpart CC if degassing and cleaning were required. Such an addition shall not require a modification of this permit or require a construction permit.
(9 VAC 5-80-110 and 40 CFR 63.640(n))

4. The permittee shall comply with the control technology requirements of MACT Subpart CC Section 40 CFR 63.646 and MACT Subpart G Section 40 CFR 63.119, as appropriate, for the above existing Group 1 floating roof storage vessels at the first degassing and cleaning activity after August 18, 1998, or within 10 years after August 18, 1995, whichever is first. A Group 1 Storage Vessel, as defined in 40 CFR 63.641, is a storage vessel at an existing source that has a design capacity greater than or equal to 177 cubic meters, a stored-liquid maximum true vapor pressure greater than or equal to 10.4 kilopascals, a stored-liquid annual average true vapor pressure greater than or equal to 8.3 kilopascals, and an annual average HAP liquid concentration greater than 4 percent by weight total organic HAP. These requirements do not apply should a tank not storing a liquid meeting these properties.
(9 VAC 5-80-110 and 9 VAC 5-60-100)

5. For each Group 1 storage vessel storing a liquid for which the maximum true vapor pressure of the total organic HAPs in the liquid is less than 76.6 kilopascals, the permittee shall reduce HAP emissions to the atmosphere by operating and maintaining either a fixed roof and internal floating roof, an external floating roof, an external floating roof converted to an internal floating roof, or a closed vent system and control device, as required by 40 CFR 63.646(a) and 40 CFR 63.119(a)(1).
(9 VAC 5-80-110 and 9 VAC 5-60-100)

6. For each Group 1 storage vessel storing a liquid for which the maximum true vapor pressure of the total organic HAPs in the liquid is greater than or equal to 76.6 kilopascals, the permittee shall operate and maintain a closed vent system and control device, as required by 40 CFR 63.646(a) and 40 CFR 63.119(a)(2).
(9 VAC 5-80-110 and 9 VAC 5-60-100)

7. For each Group 1 storage vessel using an internal floating roof, the permittee shall adhere to the applicable operational guidelines in 40 CFR 63.119(b), as required by 40 CFR 63.646(a).
(9 VAC 5-80-110 and 9 VAC 5-60-100)

8. For each Group 1 storage vessel using an external floating roof, the permittee shall adhere to the applicable operational guidelines in 40 CFR 63.119(c), as required by 40 CFR 63.646(a). (9 VAC 5-80-110 and 9 VAC 5-60-100)

9. For each Group 1 storage vessel, the permittee shall adhere to the applicable operational guidelines in 40 CFR 63.646(f)(1) through (3). (9 VAC 5-80-110 and 9 VAC 5-60-100)

B. Monitoring

1. The permittee shall perform inspection of the tanks as required by 40 CFR 63.120 with the exception of the provisions for the gaskets, slotted membranes, and sleeve seals, pursuant to 40 CFR 63.646(e). (9 VAC 5-80-110 and 9 VAC 5-60-100)

2. To demonstrate compliance with 40 CFR 63.119(b) or with 40 CFR 63.119(d) for tanks with internal floating roof, the permittee shall comply with the requirements of 40 CFR 63.120(a)(1) through (a)(7):

   a. Visually inspect the internal floating roof and the seal through the manholes and roof hatches on the fixed roof at least once every 12 months as required by 40 CFR 63.120(a)(2)(i).

   b. Visually inspect the internal floating roof, the seal, the gaskets, slotted membranes, and sleeve seals (if any) every time the tank is emptied and degassed, and at least once every 10 years as required by 40 CFR 63.120(a)(2)(ii).

   c. If deficiencies are identified during inspections, repair or empty the vessel within 45 days unless an extension is granted as required by 40 CFR 63.120(a)(4).

   d. Notify the DEQ at least 30 calendar days prior to the refilling of each storage vessel as required by 40 CFR 63.120(a)(5) or as allowed by 63.646(l).

   e. If the inspection is not planned and the owner or operator could not have known about the inspection 30 calendar days in advance, notify the DEQ within 7 days prior to the refilling of each storage vessel as required by 40 CFR 63.120(a)(6) or as allowed by 63.646(l).

   f. If deficiencies are identified during inspections, repair the items as necessary so that none of the conditions specified in the paragraph exist before refilling the storage vessel with organic HAP as required by 40 CFR 63.120(a)(7). (9 VAC 5-80-110 and 9 VAC 5-60-100)

3. To demonstrate compliance with 40 CFR 63.119(c) for tanks with external floating roof, the permittee shall comply with the requirements of 40 CFR 63.120(b)(1) through (b)(10):

   a. Measure gaps between the vessel wall and the primary seal at least once every 5 years as required by 40 CFR 63.120(b)(1)(i).

   b. Measure gaps between the vessel wall and the secondary seal at least once a year as required by 40 CFR 63.120(b)(1)(iii).

   c. Conduct seal inspections using methods specified in 40 CFR 63.120(b)(2)-(6).

   d. If it is unsafe to perform the seal gap measurements, comply with the requirements of 40 CFR 63.120(b)(7).

   e. Seal repairs shall be made as required by 40 CFR 63.120(b)(8).

   f. Notify the DEQ 30 calendar days in advance of any gap measurements as required by 40 CFR 63.120(b)(9) or as allowed by 63.646(l).

   g. Visually inspect the external floating roof, the primary seal, the secondary seal, and fittings each time the vessel is emptied and degassed as required by 40 CFR 63.120(b)(10).

   h. If deficiencies are identified during inspections, repair the items as necessary so that none of the conditions specified in the paragraph exist before filling or refilling the storage vessel with organic HAP as required by 40 CFR 63.120(b)(10)(i).

   i. Notify the DEQ at least 30 calendar days prior to the refilling of each storage vessel as required by 40 CFR 63.120(b)(10)(11) or as allowed by 63.646(l).

   j. If the inspection is not planned and the owner or operator could not have known about the inspection 30 calendar days in advance, notify the DEQ within 7 days prior to the refilling of each storage vessel as required by 40 CFR 63.120(b)(10)(iii) or as allowed by 63.646(l).
   (9 VAC 5-80-110 and 9 VAC 5-60-100)

C. Recordkeeping

1. The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit and applicable requirements of MACT Subpart CC. The content and format of such records shall be arranged with the Director, Tidewater Regional Office. These records shall include, but are not limited to:

a. Records specified in MACT Subpart G Section 40 CFR 63.123 except as specified in 40 CFR 63.654(i).

b. For each Group 1 storage vessel, the permittee shall keep readily accessible records showing the dimensions of the storage vessel and an analysis showing the capacity of the storage vessel. These records shall be maintained on-site for as long as the vessel retains Group 1 status and is in operation, as required by 40 CFR 63.654(i) and 40 CFR 63.123(a).

c. Records of all tank inspections as required by 40 CFR 63.654(i) and 40 CFR 63.123(d).

d. Records of all reports submitted in accordance with 40 CFR 63.654(e).

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five (5) years unless otherwise indicated above.
(9 VAC 5-80-110, 9 VAC 5-50-410, and 9 VAC 5-60-100)

D. Testing

1. If testing is conducted in addition to the monitoring specified in this permit, the permittee shall use the appropriate method(s) in accordance with procedures approved by the DEQ.
(9 VAC 5-80-110)

E. Reporting

1. The permittee shall submit an initial Notification of Compliance Status report as required by 40 CFR 63.654(f). The permittee shall maintain a copy of the report on-site for the life of the facility.
(9 VAC 5-80-110 and 9 VAC 5-60-100)

2. The permittee shall submit Periodic Reports no later than 60 days after the end of each 6-month period following submission of the initial Notification of Compliance Status report as required by 40 CFR 63.654(g). The Periodic Reports shall include the information specified in 40 CFR 63.654(g)(1) through (g)(5).
(9 VAC 5-80-110 and 9 VAC 5-60-100)

3. The permittee shall submit reports of startup, shutdown, and malfunction required by 40 CFR 63.10(d)(5) pursuant to 40 CFR 63.654(h)(1). "Startup" and "shutdown" shall have the meaning defined in 40 CFR 63.641. "Malfunction" shall have the meaning defined in 40 CFR 63.2.
(9 VAC 5-80-110 and 9 VAC 5-60-100)

4. The permittee shall submit notifications of inspections as required by 40 CFR 63.654(h)(2).
(9 VAC 5-80-110 and 9 VAC 5-60-100)

XV. Facility-Wide Group 1 Miscellaneous Process Vents

A. Limitations

Unit Name	Name/Description of Unit	Pollutants	Description of Applicable Requirement/ Emission Limit/Standard/Work Practice	Citation
Entire facility	Group 1 Miscellaneous Process Vents	HAP	Reduce emissions of organic HAPs using a flare that meets the requirements of 40 CFR 63.11(b) of Subpart A of this part, or other control device as required by 40 CFR 63.643.	Section 40 CFR 63.643. Miscellaneous process vent provisions of MACT Subpart CC- National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries.

1. At the time of permit issuance, the permittee operates no Group 2 miscellaneous process vents to the atmosphere. Vents routed to the refinery fuel gas system are not subject to 40 CFR 63 Subpart CC, as they do not meet the definition of a miscellaneous process vent. Any other existing or subsequent vents that are routed to the fuel gas system or are otherwise exempt from the definition of a miscellaneous process vent in 40 CFR 63.641are not subject to 40 CFR 63 Subpart CC.
   (9 VAC 5-80-110 and 9 VAC 5-60-100)

2. All Group 1 miscellaneous process vents as defined in 40 CFR 63.641 and identified above shall be routed to a flare that meets the requirements of 40 CFR 63.11(b) or other control device as required in 40 CFR 63.643.
   (9 VAC 5-80-110 and 9 VAC 5-60-100)

B. Monitoring

1. When using a flare as the control device, for each Group 1 miscellaneous process vent, the permittee shall continuously monitor the flare for the presence of a flame according to 40 CFR 63.644(a)(2) and bypasses according to 40 CFR 63.644(c)(2). When using another control device, for each Group 1 miscellaneous process vent, the permittee shall monitor the control device and bypasses according to 40 CFR 63.644.
   (9 VAC 5-80-110 and 9 VAC 5-60-100)

C. Testing

1. To demonstrate compliance with 40 CFR 63.643, the permittee shall follow 40 CFR 63.116 (excluding 40 CFR 63.116(a)(1), (d) and (e)) except as provided in 40 CFR 63.645(b) through (d) and (i).
   (9 VAC 5-80-110 and 9 VAC 5-60-100)

2. If testing is conducted in addition to the monitoring specified in this permit, the permittee shall use the appropriate method(s) in accordance with procedures approved by the DEQ. (9 VAC 5-80-110)

D. Recordkeeping and Reporting

1. The permittee shall provide reports and maintain records as specified in 40 CFR 63.654(f), (g), and (h) and 40 CFR 63.654(i)(3) and (4), including records and reports of flare absence.

   Records shall be available on site for inspection by the DEQ and shall be current for the most recent five (5) years
   (9 VAC 5-80-110 and 9 VAC 5-60-100)

XVI. Facility-Wide Equipment Leaks

A. Limitations

Unit Name	Name/Description of Unit	Pollutants	Description of Applicable Requirement/ Emission Limit/Standard/Work Practice	Citation
Entire facility	Equipment leak from pumps, compressors, pressure relief valves, sampling connection systems, open-ended valves or lines, valves, or instrumentation systems in organic HAP service, as defined in 40 CFR 63.640.	VOC HAP	Emissions from equipment leak shall be controlled by a Leak Detection And Repair (LDAR) program as required by 40 CFR 63.648.	Section 40 CFR 63.648. Equipment leak standards of MACT Subpart CC- National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries.

1. Equipment leaks that are subject to MACT Subpart CC, and to 40 CFR Parts 60 and 61 are required to comply only with the equipment leak provisions of MACT Subpart CC pursuant to the overlapping provision 40 CFR 63.640(p).
   (9 VAC 5-80-110 and 9 VAC 5-60-100)

2. Pursuant to MACT Subpart CC, the permittee shall comply with the provisions of 40 CFR Part 60 Subpart VV, and 40 CFR 63.648 (b) except as provided in 40 CFR 63.648 (a)(1), (a)(2), and (c) through (i) for all equipment leak components in organic HAP service as shown in Table XVI.A above.
   (9 VAC 5-80-110, 9 VAC 5-60-100, and 40 CFR 63.648(a))

3. Equipment that is in vacuum service is excluded from the requirements of 60.482-2 to 60.482-10 if it is identified as required in 60.486(e)(5).
(9 VAC 5-80-110, 9 VAC 5-50-410, and 40 CFR 60.482-1(d))

4. Pumps in light liquid service shall comply with the requirements of 40 CFR 60.482-2:

   a. Each pump equipped with a dual mechanical system that includes a barrier fluid system may be exempt from the requirements of 60.482-6(a). (40 CFR 60.482-2(d))

   b. Any pump that is designated for no detectable emissions may be exempt from the requirements of 60.482-2(a), (c) and (d). (40 CFR 60.482-2(e))

   c. If any pump is equipped with a closed vent system it may be exempt from the requirements of 60.482-6(a) through (e). (40 CFR 60.482-2(f))

   (9 VAC 5-80-110, 9 VAC 5-50-410)

5. Compressors shall comply with the requirements of 40 CFR 60.482-3.

   a. Each compressor shall be equipped with a seal system that includes a barrier fluid system that prevents leakage of VOC to the atmosphere except as provided in 60.482-1(c) and 60.482-3(h) and (i). (40 CFR 60.482-3(a))

   b. Each compressor seal system shall meet the requirements of 60.482-3(b) through (d). (40 CFR 60.482-3)

   (9 VAC 5-80-110, 9 VAC 5-50-410)

6. Except during pressure releases release, the pressure relief device shall be operated with no detectable emissions. (40 CFR 60.482-4(a))

   a. After each pressure release, each pressure relief device in gas/vapor service shall be returned to a condition of no detectable emissions. (40 CFR 60.482-4(b))

   b. Any pressure relief device that is equipped with a closed vent system and control device as described in 40 CFR 60.482-10 is exempt from 60.482-4(a) and (b). (40 CFR 60.482-3(c)).

   (9 VAC 5-80-110, 9 VAC 5-50-410)

7. Sampling connection systems shall comply with 40 CFR 60.482-5.

   a. Each sampling connection system shall be equipped with a closed-purged, closed-loop, or closed-vent system except as provided in 40 CFR 60.482-5(c). (40 CFR 60.482-5(a))

   b. Each closed-purged, closed-loop, or closed-vent system shall comply with the requirements in 40 CFR 60.482-5(b)(1)-(3).

c. (9 VAC 5-80-110, 9 VAC 5-50-410)

8. Open-ended lines shall comply with 40 CFR 60.482-6.

   a. Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in 40 CFR 60.482-1(c). (40 CFR 60.482-6(a))

   b. Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed. (40 CFR 60.482-6(b))

   (9 VAC 5-80-110, 9 VAC 5-50-410)

9. Valves in gas/vapor service and in light liquid service shall comply with 40 CFR 60.482-7.
   (9 VAC 5-80-110, 9 VAC 5-50-410)

10. Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors shall comply with 40 CFR 60.482-8.
    (9 VAC 5-80-110, 9 VAC 5-50-410)

11. Delay of repair of equipment for which leaks have been found shall comply with 40 CFR 60.482-9.
    (9 VAC 5-80-110, 9 VAC 5-50-410)

12. Closed vent systems and control devices shall comply with 40 CFR 60.482-10.
    Flares used to comply with this subpart shall be subject to 40 CFR 60.18. (40 CFR 60.482-10(d))
    (9 VAC 5-80-110, 9 VAC 5-50-410)

B. Monitoring

1. The permittee shall monitor for equipment leaks by a Leak Detection And Repair (LDAR) program that incorporates the requirements of 40 CFR 63.648 with test method and procedures referenced there in.
   (9 VAC 5-80-110 and 9 VAC 5- 60-100)

2. The permittee shall monitor pumps in light liquid service as required by 40 CFR 60.482-2:

   a. Each pump in light liquid service shall be monitored monthly to detect leaks. (40 CFR 60.482-2(a)(1))

   b. Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquid dripping from the pump seal. (40 CFR 60.482-2(a)(2))

c. If an instrument reading of 10,000 ppm or greater is measured or there are indications of liquid dripping from the pump seal, a leak is detected. (40 CFR 60.482-2(b)(1) and (2))

d. When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected. (0 CFR 60.482-2(c)(1))

e. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. (40 CFR 60.482-2(c)(2))

(9 VAC 5-80-110 and 9 VAC 5- 50-410)

3. The permittee shall monitor compressors as required by 40 CFR 60.482-3:

a. Each sensor as required by 40 CFR 60.482-3(d) shall by checked or shall be equipped with an audible alarm. (40 CFR 60.482-3(e))

b. If the sensor indicates failure of the seal system, the barrier system, or both, a leak is detected. (40 CFR 60.482-3(f))

c. When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after it is detected. (40 CFR 60.482-3(g)(1))

d. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. (40 CFR 60.482-3(g)(2))

(9 VAC 5-80-110 and 9 VAC 5- 50-410)

4. The permittee shall monitor pressure relief devices in gas/vapor service as required by 40 CFR 60.482-4:

a. No later than 5 days after the pressure release, the pressure relief device in gas/vapor service shall be monitored to confirm the conditions of no detectable emissions. (40 CFR 60.482-4(b))

(9 VAC 5-80-110 and 9 VAC 5- 50-410)

5. The permittee shall monitor each valve in gas/vapor service and in light liquid service monthly to detect leaks as required by 40 CFR 60.482-7(a):

a. If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. (40 CFR 60.482-7(b))

b. Any valve for which a leak is not detected for two successive months may be monitored the first month of the quarter. (40 CFR 60.482-7(c)(1) and (2))

c. When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected. (40 CFR 60.482-7(d)(1))

d. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. (40 CFR 60.482-7(d)(2) and (e))

e. Any valve that is designated for no detectable emissions may be exempt from the requirements of 60.482-7(a). (40 CFR 60.482-7(f))

f. Any valve that is designated as unsafe to monitor may be exempt from the requirements of 60.482-7(a). (40 CFR 60.482-7(g))

g. Any valve that is designated as difficult to monitor may be exempt from the requirements of 60.482-7(a). (40 CFR 60.482-7(h))

(9 VAC 5-80-110 and 9 VAC 5- 50-410)

6. The permittee shall monitor pumps in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors as required by 40 CFR 60.482-8:

a. Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors shall be monitored within 5 days if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method. (40 CFR 60.482-8(a))

b. If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. (40 CFR 60.482-8(b))

c. When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected. (40 CFR 60.482-8(c)(1))

d. The first attempt at repair shall be made no later than 5 calendar days after each leak is detected. (40 CFR 60.482-8(c)(2))

(9 VAC 5-80-110 and 9 VAC 5- 50-410)

C. Recordkeeping

1. The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit and MACT Subpart CC as applicable. The content and format of such records shall be arranged with the Director, Tidewater Regional Office. These records shall include, but are not limited to:

a. Records and reports as required by 40 CFR 63.654.d(1) through (d)(3).

b. List of identification numbers for valves that are designated as leakless as defined in 40 CFR 63.648(c)(10). The permittee shall maintain this list on-site for the life of the facility as required by 40 CFR 63.654(d)(4).

c. The permittee shall identify, either by list or location (area or refining process unit), equipment in organic HAP service less than 300 hours per year within refining process units subject to 40 CFR 63, Subpart CC. The permittee shall maintain this list on-site for the life of the facility as required by 40 CFR 63.654(d)(5).

d. List of reciprocating pumps and compressors determined to be exempt from the seal requirements of 40 CFR 63.648(f) and (i). The permittee shall maintain this list on-site for the life of the facility as required by 40 CFR 63.654(d)(6).

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five (5) years unless otherwise indicated.
(9 VAC 5-80-110 and 9 VAC 5-60-100)

D. Testing

1. If testing is conducted in addition to the monitoring specified in this permit, the permittee shall use the appropriate method(s) in accordance with procedures approved by the DEQ.
(9 VAC 5-80-110)

E. Reporting

1. The permittee shall submit semiannual reports and other reports as required by 40 CFR 63.654(e).
(9 VAC 5-80-110 and 9 VAC 5-60-100)

XVII. Facility-Wide Site Remediation

1. **Requirements by Reference**- Site remediation activities at the facility shall reduce emissions of organic HAPs as applicable in accordance with 40 CFR 63 Subpart GGGGG-National Emission Standards for Hazardous Air Pollutants: Site Remediation. Records of initial and ongoing determinations for affected sources that are exempt from control requirements shall be kept as described in 40 CFR 63.7952(a)(4).
(9 VAC 5-80-100 and 9 VAC 5-60-100)

XVIII. Insignificant Emission Units

The following emission units at the facility are identified in the application as insignificant emission units under 9 VAC 5-80-720:

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
P15	All fixed roof tanks less than 40,000 gallons capacity or storing hydrocarbons with a vapor pressure less than 1.5 psi	9 VAC 5-80-720 B.2	VOC	
P15	All floating roof tanks storing hydrocarbons with a vapor pressure less than 1.5 psi and no applicable requirements	9 VAC 5-80-720 B.2	VOC	
P15	LPG truck and railcar loading	9 VAC 5-80-720 B.2	VOC	
P15	LPG storage	9 VAC 5-80-720 B.2	VOC	
N/A	Diesel fueled portable generators with 259,000 BTU/hour heat input or less	9 VAC 5-80-720 C.1.a		≤ 259,000 BTU/hr
N/A	Lube oil tanks and reservoirs and storage tanks less than 1000 gallons capacity	9 VAC 5-80-720 C.3		< 1,000 gallons
N/A	Emergency diesel engines operating less than 500 hours per year	9 VAC 5-80-720 C.4.b		≤ 645 horsepower
N/A	Insignificant activities listed by emission units in 9 VAC 5-80-720 A	9 VAC 5-80-720 A		
F7	Process heater F-102 in DDU process, using gas	9 VAC 5-80-720 B.1	SO_2, NOx, CO	

These emission units are presumed to be in compliance with all requirements of the federal Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping, or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

This section and table should be included in every permit, even if there are no insignificant activities identified in the permit application. If no insignificant activities have been identified, note "None Identified" in the first row of the table.

XIX. Permit Shield & Inapplicable Requirements

Compliance with the provisions of this permit shall be deemed compliance with all applicable requirements in effect as of the permit issuance date as identified in this permit. This permit shield covers only those applicable requirements covered by terms and conditions in this permit and the following requirements which have been specifically identified as being not applicable to this permitted facility:

Citation	Title of Citation	Description of Applicability
40 CFR 63 Subpart Y	National Emission Standards For Marine Tank Vessel Tank Loading Operations	Subpart Y does not apply to the Western Yorktown Refinery marine loading operations that meet the definition of offshore loading which is exempt from the MACT under 40 CFR 63.560(d)(6).
40 CFR 60 Subpart RRR	Standards of Performance For VOC Emissions From SOCMI Reactor Processes	None of the units in the refinery, including the Ether unit, are SOCMI chemical units. None of the reactors have vents direct to the atmosphere, which are regulated under Subpart RRR.
40 CFR 60 Subpart NNN	Standards of Performance For VOC Emissions From SOCMI Distillation Operations	None of the units in the refinery, including the Ether unit, are SOCMI chemical units. None of the distillation units have vents direct to the atmosphere, which are regulated under Subpart NNN.
40 CFR 60 Subpart XX	Standards of Performance For Bulk Gasoline Terminals	The loading rack at the refinery is not a bulk gasoline terminal and is not an affected facility under Subpart XX. It is regulated under 40 CFR 63 Subpart CC.
40 CFR 61 Subpart BB	National Emission Standard For Benzene Emissions From Benzene Transfer Operations	The permittee is not an affected facility as it is not involved in benzene transfer operations.
40 CFR 63 Subpart Q	National Emission Standards For Hazardous Air Pollutants For Industrial Process Cooling Towers	The rule only applies to industrial cooling towers that operated with chromium-based water treatment chemicals on or after September 8, 1994. Use of chromium-based chemicals was terminated prior to that date.
9 VAC 5 Article 25 (Rule 25)	Emission Standards For Volatile Organic Compound Storage And Transfer Operations	The refinery does not store or transfer VOL compounds. It is instead regulated under Rule 4-37 for Petroleum Liquid Storage and Transfer Operations and 40 CFR 63 Subpart CC
40 CFR 60 Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	The facility does not have any internal combustion engines that are subject to the rule.
40 CFR 63 Subpart ZZZZ	National Emission Standards For Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines	The facility does not have any internal combustion engines that are subject to the rule.

Nothing in this permit shield shall alter the provisions of §303 of the federal Clean Air Act, including the authority of the administrator under that section, the liability of the owner for any violation of applicable requirements prior to or at the time of permit issuance, or the ability to obtain information by the administrator pursuant to §114 of the federal Clean Air Act, (ii) the Board pursuant to §10.1-1314 or §10.1-1315 of the Virginia Air Pollution Control Law or (iii) the

Department pursuant to §10.1-1307.3 of the Virginia Air Pollution Control Law.
(9 VAC 5-80-140)

XX. General Conditions

A. Federal Enforceability

All terms and conditions in this permit are enforceable by the administrator and citizens under the federal Clean Air Act, except those that have been designated as only state-enforceable.
(9 VAC 5-80-110 N)

B. Permit Expiration

This permit has a fixed term of five years. The expiration date shall be the date five years from the date of issuance. Unless the owner submits a timely and complete application for renewal to the Department consistent with the requirements of 9 VAC 5-80-80, the right of the facility to operate shall be terminated upon permit expiration.

1. The owner shall submit an application for renewal at least six months but no earlier than eighteen months prior to the date of permit expiration.

2. If an applicant submits a timely and complete application for an initial permit or renewal under this section, the failure of the source to have a permit or the operation of the source without a permit shall not be a violation of Article 1, Part II of 9 VAC 5 Chapter 80, until the Board takes final action on the application under 9 VAC 5-80-150.

3. No source shall operate after the time that it is required to submit a timely and complete application under subsections C and D of 9 VAC 5-80-80 for a renewal permit, except in compliance with a permit issued under Article 1, Part II of 9 VAC 5 Chapter 80.

4. If an applicant submits a timely and complete application under section 9 VAC 5-80-80 for a permit renewal but the Board fails to issue or deny the renewal permit before the end of the term of the previous permit, (i) the previous permit shall not expire until the renewal permit has been issued or denied and (ii) all the terms and conditions of the previous permit, including any permit shield granted pursuant to 9 VAC 5-80-140, shall remain in effect from the date the application is determined to be complete until the renewal permit is issued or denied.

5. The protection under subsections F 1 and F 5 (ii) of section 9 VAC 5-80-80 F shall cease to apply if, subsequent to the completeness determination made pursuant section 9 VAC 5-80-80 D, the applicant fails to submit by the deadline specified in writing by the Board any additional information identified as being needed to process the application.

   (9 VAC 5-80-80 B, C and F, 9 VAC 5-80-110 D and 9 VAC 5-80-170 B)

C. Recordkeeping and Reporting

1. All records of monitoring information maintained to demonstrate compliance with the terms and conditions of this permit shall contain, where applicable, the following:

   a. The date, place as defined in the permit, and time of sampling or measurements.

   b. The date(s) analyses were performed.

   c. The company or entity that performed the analyses.

   d. The analytical techniques or methods used.

   e. The results of such analyses.

   f. The operating conditions existing at the time of sampling or measurement.
   (9 VAC 5-80-110 F)

2. Records of all monitoring data and support information shall be retained for at least five years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.
   (9 VAC 5-80-110 F)

3. The permittee shall submit the results of monitoring contained in any applicable requirement to DEQ no later than March 1 and September 1 of each calendar year. This report must be signed by a responsible official, consistent with 9 VAC 5-80-80 G, and shall include:

   a. The time period included in the report. The time periods to be addressed are January 1 to June 30 and July 1 to December 31.

   b. All deviations from permit requirements. For purposes of this permit, deviations include, but are not limited to:

      (1) Exceedance of emissions limitations or operational restrictions;

      (2) Excursions from control device operating parameter requirements, as documented by continuous emission monitoring, periodic monitoring, or compliance assurance monitoring which indicates an exceedance of emission limitations or operational restrictions; or,

      (3) Failure to meet monitoring, recordkeeping, or reporting requirements contained in this permit.

c. If there were no deviations from permit conditions during the time period, the permittee shall include a statement in the report that "no deviations from permit requirements occurred during this semi-annual reporting period."

(9 VAC 5-80-110 F)

D. Annual Compliance Certification

Exclusive of any reporting required to assure compliance with the terms and conditions of this permit or as part of a schedule of compliance contained in this permit, the permittee shall submit to EPA and DEQ no later than March 1 each calendar year a certification of compliance with all terms and conditions of this permit including emission limitation standards or work practices. The compliance certification shall comply with such additional requirements that may be specified pursuant to §114(a)(3) and §504(b) of the federal Clean Air Act. This certification shall be signed by a responsible official, consistent with 9 VAC 5-80-80 G, and shall include:

1. The time period included in the certification. The time period to be addressed is January 1 to December 31.

2. The identification of each term or condition of the permit that is the basis of the certification.

3. The compliance status.

4. Whether compliance was continuous or intermittent, and if not continuous, documentation of each incident of non-compliance.

5. Consistent with subsection 9 VAC 5-80-110 E, the method or methods used for determining the compliance status of the source at the time of certification and over the reporting period.

6. Such other facts as the permit may require to determine the compliance status of the source.

7. One copy of the annual compliance certification shall be sent to EPA at the following address:

   Clean Air Act Title V Compliance Certification (3AP00)
   U. S. Environmental Protection Agency, Region III
   1650 Arch Street
   Philadelphia, PA 19103-2029.

   (9 VAC 5-80-110 K.5)

E. Permit Deviation Reporting

The permittee shall notify the Director, Tidewater Regional Office within four daytime business hours after discovery of any deviations from permit requirements which may cause excess emissions for more than one hour, including those attributable to upset conditions as may be defined in this permit. In addition, within 14 days of the discovery, the permittee shall provide a written statement explaining the problem, any corrective actions or preventative measures taken, and the estimated duration of the permit deviation. Owners subject to the requirements of 9 VAC 5-40-50 C and 9 VAC 5-50-50 C are not required to provide the written statement prescribed in this paragraph for facilities subject to the monitoring requirements of 9 VAC 5-40-40 and 9 VAC 5-50-40. The occurrence should also be reported in the next semi-annual compliance monitoring report pursuant to General Condition XX.C.3 of this permit. (9 VAC 5-80-110 F.2 and 9 VAC 5-80-250)

F. Failure/Malfunction Reporting

In the event that any affected facility or related air pollution control equipment fails or malfunctions in such a manner that may cause excess emissions for more than one hour, the owner shall, as soon as practicable but no later than four daytime business hours after the malfunction is discovered, notify the Director, Tidewater Regional Office by facsimile transmission, telephone or telegraph of such failure or malfunction and shall within 14 days of discovery provide a written statement giving all pertinent facts, including the estimated duration of the breakdown. Owners subject to the requirements of 9 VAC 5-40-50 C and 9 VAC 5-50-50 C are not required to provide the written statement prescribed in this paragraph for facilities subject to the monitoring requirements of 9 VAC 5-40-40 and 9 VAC 5-50-40. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the owner shall notify the Director, Tidewater Regional Office.

1. The emission units that have continuous monitors subject to 9 VAC 5-40-50 C and 9 VAC 5-50-50 C are not subject to the 14 day written notification.

2. The emission units subject to the reporting and the procedure requirements of 9 VAC 5-40-50 C and the procedures of 9 VAC 5-50-50 C are as indicated in sections III through XVII of this permit, including:

   a. Fluidized Catalytic Cracking Unit with COMS, SO_2 CEMS, and CO CEMS

   b. Crude Unit furnace B-101 with COMS (combined stack with FCCU)

   c. Sulfur Recovery Units with SO_2 CEMS

   d. GDU Unit with SO_2 CEMS

   e. Refinery fuel gas with H_2S CMS

3. Each owner required to install a continuous monitoring system (CMS) or monitoring device subject to 9 VAC 5-40-41 or 9 VAC 5-50-410 shall submit a written report of excess emissions (as defined in the applicable subpart in 9 VAC 5-50-410) and either a monitoring systems performance report or a summary report form, or both, to the board semiannually. All semi-annual reports shall be postmarked by the 30th day following the end of each calendar semi-annual period (June 30th and January 30th). All reports shall include the following information:

   a. The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h) or 9 VAC 5-40-41 B 6, any conversion factors used, and the date and time of commencement and completion of each period of excess emissions;

   b. Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the source. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted;

   c. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments; and

   d. When no excess emissions have occurred or the continuous monitoring systems have not been inoperative, repaired or adjusted, such information shall be stated in the report.

   All malfunctions of emission units not subject to 9 VAC 5-40-50 C and 9 VAC 5-50-50 C require written reports within 14 days of the discovery of the malfunction.
   (9 VAC 5-20-180 C, 9 VAC 5-40-50, and 9 VAC 5-50-50)

G. Severability

The terms of this permit are severable. If any condition, requirement or portion of the permit is held invalid or inapplicable under any circumstance, such invalidity or inapplicability shall not affect or impair the remaining conditions, requirements, or portions of the permit.
(9 VAC 5-80-110 G.1)

H. Duty to Comply

The permittee shall comply with all terms and conditions of this permit. Any permit noncompliance constitutes a violation of the federal Clean Air Act or the Virginia Air Pollution Control Law or both and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or, for denial of a permit renewal application.
(9 VAC 5-80-110 G.2)

I. Need to Halt or Reduce Activity not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

(9 VAC 5-80-110 G.3)

J. Permit Modification

A physical change in, or change in the method of operation of, this stationary source may be subject to permitting under State Regulations 9 VAC 5-80-50, 9 VAC 5-80-1100, 9 VAC 5-80-1605, or 9 VAC 5-80-2000 and may require a permit modification and/or revisions except as may be authorized in any approved alternative operating scenarios.
(9 VAC 5-80-190 and 9 VAC 5-80-260)

K. Property Rights

The permit does not convey any property rights of any sort, or any exclusive privilege.
(9 VAC 5-80-110 G.5)

L. Duty to Submit Information

1. The permittee shall furnish to the Board, within a reasonable time, any information that the Board may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Board copies of records required to be kept by the permit and, for information claimed to be confidential, the permittee shall furnish such records to the Board along with a claim of confidentiality.
(9 VAC 5-80-110 G.6)

2. Any document (including reports) required in a permit condition to be submitted to the Board shall contain a certification by a responsible official that meets the requirements of 9 VAC 5-80-80 G.
(9 VAC 5-80-110 K.1)

M. Duty to Pay Permit Fees

The owner of any source for which a permit under 9 VAC 5-80-50 through 9 VAC 5-80-300 was issued shall pay permit fees consistent with the requirements of 9 VAC 5-80-310 through 9 VAC 5-80-350. The actual emissions covered by the permit program fees for the preceding year shall be calculated by the owner and submitted to the Department by April 15 of each year. The calculations and final amount of emissions are subject to verification and final determination by the Department.
(9 VAC 5-80-110 H and 9 VAC 5-80-340 C)

N. Fugitive Dust Emission Standards

During the operation of a stationary source or any other building, structure, facility, or installation, no owner or other person shall cause or permit any materials or property to be handled, transported, stored, used, constructed, altered, repaired, or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne. Such reasonable precautions may include, but are not limited to, the following:

1. Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of land;

2. Application of asphalt, water, or suitable chemicals on dirt roads, materials stockpiles, and other surfaces which may create airborne dust; the paving of roadways and the maintaining of them in a clean condition;

3. Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty material. Adequate containment methods shall be employed during sandblasting or other similar operations;

4. Open equipment for conveying or transporting material likely to create objectionable air pollution when airborne shall be covered or treated in an equally effective manner at all times when in motion; and,

5. The prompt removal of spilled or tracked dirt or other materials from paved streets and of dried sediments resulting from soil erosion.

   (9 VAC 5-40-90 and [9 VAC 5-50-90)

O. Startup, Shutdown, and Malfunction

At all times, including periods of startup, shutdown, soot blowing, and malfunction, owners shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with air pollution control practices for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Board, which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.
(9 VAC 5-50-20 E and 9 VAC 5-40-20 E)

P. Alternative Operating Scenarios

Contemporaneously with making a change between reasonably anticipated operating scenarios identified in this permit, the permittee shall record in a log at the permitted facility a record of the scenario under which it is operating. The permit shield described in 9 VAC 5-80-140 shall extend to all terms and conditions under each such operating scenario. The terms and conditions of each such alternative scenario shall meet all applicable requirements including the requirements of 9 VAC 5 Chapter 80, Article 1.
(9 VAC 5-80-110 J)

Q. Inspection and Entry Requirements

The permittee shall allow DEQ, upon presentation of credentials and other documents as may be required by law, to perform the following:

1. Enter upon the premises where the source is located or emissions-related activity is conducted, or where records must be kept under the terms and conditions of the permit.

2. Have access to and copy, at reasonable times, any records that must be kept under the terms and conditions of the permit.

3. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit.

4. Sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.

(9 VAC 5-80-110 K.2)

R. Reopening For Cause

The permit shall be reopened by the Board if additional federal requirements become applicable to a major source with a remaining permit term of three years or more. Such reopening shall be completed no later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to 9 VAC 5-80-80 F.

1. The permit shall be reopened if the Board or the administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.

2. The permit shall be reopened if the administrator or the Board determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

3. The permit shall not be reopened by the Board if additional applicable state requirements become applicable to a major source prior to the expiration date established under 9 VAC 5-80-110 D.

(9 VAC 5-80-110 L)

S. Permit Availability

Within five days after receipt of the issued permit, the permittee shall maintain the permit on the premises for which the permit has been issued and shall make the permit immediately available to DEQ upon request.
(9 VAC 5-80-150 E)

T. Transfer of Permits

1. No person shall transfer a permit from one location to another, unless authorized under 9 VAC 5-80-130, or from one piece of equipment to another.
(9 VAC 5-80-160)

2. In the case of a transfer of ownership of a stationary source, the new owner shall comply with any current permit issued to the previous owner. The new owner shall notify the Board of the change in ownership within 30 days of the transfer and shall comply with the requirements of 9 VAC 5-80-200.
(9 VAC 5-80-160)

3. In the case of a name change of a stationary source, the owner shall comply with any current permit issued under the previous source name. The owner shall notify the Board of the change in source name within 30 days of the name change and shall comply with the requirements of 9 VAC 5-80-200.
(9 VAC 5-80-160)

U. Malfunction as an Affirmative Defense

1. A malfunction constitutes an affirmative defense to an action brought for noncompliance with technology-based emission limitations if the requirements of paragraph 2 of this condition are met.

2. The affirmative defense of malfunction shall be demonstrated by the permittee through properly signed, contemporaneous operating logs, or other relevant evidence that show the following:

   a. A malfunction occurred and the permittee can identify the cause or causes of the malfunction.

   b. The permitted facility was at the time being properly operated.

   c. During the period of the malfunction the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit.

   d. The permittee notified the board of the malfunction within two working days following the time when the emission limitations were exceeded due to the malfunction. This notification shall include a description of the malfunction, any steps taken to mitigate emissions, and corrective actions taken. The notification may be delivered either orally or in writing. The notification may be delivered by electronic mail, facsimile transmission, telephone, or any other method that allows the permittee to comply with the deadline. This notification fulfills the requirements of 9 VAC 5-80-110 F 2 b to report promptly deviations from permit requirements. This notification does not release the permittee from the malfunction reporting requirement under 9 VAC 5-20-180 C.

   e. In any enforcement proceeding, the permittee seeking to establish the occurrence of a malfunction shall have the burden of proof.

f. The provisions of this section are in addition to any malfunction, emergency or upset provision contained in any applicable requirement.

(9 VAC 5-80-250)

V. Permit Revocation or Termination for Cause

A permit may be revoked or terminated prior to its expiration date if the owner knowingly makes material misstatements in the permit application or any amendments thereto or if the permittee violates, fails, neglects or refuses to comply with the terms or conditions of the permit, any applicable requirements, or the applicable provisions of 9 VAC 5 Chapter 80 Article 1. The Board may suspend, under such conditions and for such period of time as the Board may prescribe any permit for any of the grounds for revocation or termination or for any other violations of these regulations.
(9 VAC 5-80-190 C and 9 VAC 5-80-260)

W. Duty to Supplement or Correct Application

Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrections. An applicant shall also provide additional information as necessary to address any requirements that become applicable to the source after the date a complete application was filed but prior to release of a draft permit.
(9 VAC 5-80-80 E)

X. Stratospheric Ozone Protection

If the permittee handles or emits one or more Class I or II substances subject to a standard promulgated under or established by Title VI (Stratospheric Ozone Protection) of the federal Clean Air Act, the permittee shall comply with all applicable sections of 40 CFR Part 82, Subparts A to F.
(40 CFR Part 82, Subparts A-F)

Y. Asbestos Requirements

The permittee shall comply with the requirements of National Emissions Standards for Hazardous Air Pollutants (40 CFR 61) Subpart M, National Emission Standards for Asbestos as it applies to the following: Standards for Demolition and Renovation (40 CFR 61.145), Standards for Insulating Materials (40 CFR 61.148), and Standards for Waste Disposal (40 CFR 61.150).
(9 VAC 5-60-70 and 9 VAC 5-80-110 A.1)

Z. Accidental Release Prevention

If the permittee has more, or will have more than a threshold quantity of a regulated substance in a process, as determined by 40 CFR 68.115, the permittee shall comply with the requirements of 40 CFR Part 68.
(40 CFR Part 68)

AA. Changes to Permits for Emissions Trading

No permit revision shall be required under any federally approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in this permit.
(9 VAC 5-80-110 I)

BB. Emissions Trading

Where the trading of emissions increases and decreases within the permitted facility is to occur within the context of this permit and to the extent that the regulations provide for trading such increases and decreases without a case-by-case approval of each emissions trade:

1. All terms and conditions required under 9 VAC 5-80-110, except subsection N, shall be included to determine compliance.

2. The permit shield described in 9 VAC 5-80-140 shall extend to all terms and conditions that allow such increases and decreases in emissions.

3. The owner shall meet all applicable requirements including the requirements of 9 VAC 5-80-50 through 9 VAC 5-80-300.

(9 VAC 5-80-110 I)

XXI. State-Only Enforceable Requirements

The following terms and conditions are not required under the federal Clean Air Act or under any of its applicable federal requirements, and are not subject to the requirements of 9 VAC 5-80-290 concerning review of proposed permits by EPA and draft permits by affected states. (9 VAC 5-80-110 N and 9 VAC 5-80-300)

1. **Standard for Hydrogen Sulfide-** No owner or other person shall cause or permit to be discharged into the atmosphere from any refinery process gas stream any hydrogen sulfide emissions in excess of a concentration of 15 grains per 100 cubic feet of gas without burning or removing H_2S in excess of this concentration.
   (9 VAC 5-40-1380)

2. **Standard for Odor-** No owner or other person shall cause or permit to be discharged into the atmosphere from any affected facility any emissions which cause an odor objectionable to individuals of ordinary sensibility.
   (9 VAC 5-40-140)

3. **Standard for Toxic Pollutants-** If a stationary source or operation not part of a stationary source is not exempt under 9 VAC 5-60-200 C or D, then the following standards shall be met:

   a. Regardless of any other provision of these regulations, no owner or other person shall cause or permit to be discharged into the atmosphere from any affected facility any emissions of toxic pollutants in such quantities as to cause, or contribute to, any significant ambient air concentration that may cause, or contribute to, the endangerment of human health.

   b. The owner of an affected facility shall employ control strategies as may be directed by the board for the control of toxic pollutants. The board may consider the potency and toxicity of each regulated toxic pollutant as well as the technical and economic feasibility of any available control strategies. Possible control strategies may include but are not limited to emission control equipment, process changes, substitution of less toxic or non-toxic materials, or operation and maintenance procedures which lower or eliminate emissions of toxic pollutants.

   (9 VAC 5-60-220)