

# STATEMENT OF BASIS for Paulsboro Refining Co.

## TITLE V OPERATING PERMIT SIGNIFICANT MODIFICATION

Program Interest (PI): 55829 / Permit Activity Number: BOP220001

### I. FACILITY INFORMATION

Paulsboro Refining Co. is located at 800 Billingsport Road, Paulsboro, NJ 08066, Gloucester County and consists of a petroleum refinery. The facility is owned and is operated by Paulsboro Refining Company LLC.

The facility is classified as a major facility based on its potential to emit 1,473.44 tons per year of volatile organic compounds, 1,344 tons per year of nitrogen oxides, 746.4 tons per year of carbon monoxide, 3,566 tons per year of sulfur dioxides, 345.8 tons per year of total suspended particulates, and 546.9 tons per year of particulate matter under 10 microns.

It is also classified as a major hazardous air pollutant (HAP) facility. A HAP emitting facility is designated as major when the allowed emissions exceed 10 tons per year of any individual hazardous air pollutant or 25 tons per year of any combination of individual hazardous air pollutants that may be emitted simultaneously.

This permit allows individual hazardous air pollutants to be emitted at a rate not to exceed 0.013 tons per year of Acrolein, 0.000021 tons per year of Arsenic, 9.26 tons per year of Benzene, 0.00882 tons per year of Cadmium, 15 tons per year of Carbon Disulfide, 0.000009 tons per year of Cobalt, 0.000002 tons per year of Dimethylbenz(a)anthracene, 1.5 tons per year of Ethylbenzene, 1.4081 tons per year of Formaldehyde, 16.31 tons per year of Hexane, 8.6 tons per year of Hydrogen Chloride, 243 tons per year of Hydrogen Cyanide, 0.003 tons per year of Lead, 1.45 tons per year of Naphthalene, 0.4 tons per year of Phenol, 0.004 tons per year of Polycyclic Organic Matter, 8.6 tons per year of Toluene, and 3.8 tons per year of Xylene.

### II. AREA ATTAINMENT CLASSIFICATION

The Federal Clean Air Act (CAA) sets National Ambient Air Quality Standards (NAAQS) for six common air pollutants. These commonly found air pollutants (also known as "criteria pollutants") are particulate matter, ground-level ozone, carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), and lead. The US Environmental Protection Agency (USEPA) also classifies areas as "attainment" or "nonattainment" for each criteria pollutant, based on the magnitude of an area's problem. Nonattainment classifications are used to specify what air pollution reduction measures an area must adopt, and when the area must reach attainment. Currently, the entire State of New Jersey is designated as nonattainment for the 8-hour ozone NAAQS. New Jersey is designated attainment for all other pollutants. For nonattainment classification refer to <https://www.epa.gov/green-book/green-book-national-area-and-county-level-multi-pollutant-information>.

### III. BACKGROUND AND HISTORY

The equipment that emits air contaminants from this facility include a fluid catalytic cracking regenerator controlled by a wet gas scrubber, cold solvent degreasers, a utility plant with boilers and a combustion turbine with duct burners, a wastewater treatment plant sewer system controlled by carbon adsorbers, a marine barge gasoline loading unit controlled by a thermal oxidizer, fixed roof storage tanks storing VOC's, external floating roof tanks storing material with Vapor Pressure <= 13 psia @ 70 degrees F, fugitive landfill vents, process heaters, diesel fired emergency generators, and diesel fired engines.

This is a Permit Modification and includes the following changes:

- 1) Split old Emission Unit U57 (Refinery Diesel Engines) into two emission units for non-emergency (U57) and emergency (U58) engines;
- 2) Add a 66 BHP rental diesel engine (Emission Unit U57 OS27, E839) to power a belt press at the Wastewater Treatment Plant. The engine will be on-site for more than one year and is subject to NSPS Subpart IIII;
- 3) Specify the emission factors used in the potential to emit calculations for all engines in Emission Units U57 and U58; and
- 4) Delete the following engines that are no longer on-site:

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U57 OS7 – OM Diesel Engine (475 BHP)  
U57 OS17 – Utilities Instrument Air Compressor (560 BHP)  
U57 OS20 – FCCU Sootblower (560 BHP)  
U57 OS23 – Utility Plant Air Compressor Diesel Engine (560 BHP)  
U57 OS25 – Kenny Atlantic Compound (71 BHP)  
U57 OS26 – Dock Sump Diesel Engine (75 BHP)  
U58 OS2 – Fire Pump @ Tank 1185 (1500 BP)  
U58 OS24 - Cooling Tower #3 Engine (600 BHP)

This modification will also change the facility-wide emission limits as listed in the following table:

Allowable Emission Limits	Facility's Potential Emissions (tons per year)*									
	VOC (total)	NO <sub>x</sub>	CO	SO <sub>2</sub>	TSP (total)	PM <sub>10</sub> (total)	PM <sub>2.5</sub> (total)	Pb	HAPs (total)	CO <sub>2e</sub> (total)
Current Permit	1,482.56	1,443.93	733.03	3,575.8	352.26	553.36	13.5	0.003	309.4	4,038,600
Proposed Permit	1,473.44	1,344	706.4	3,566	345.8	546.9	7.04	0.003	309.4	4,038,600
Change (+ / -)	-9.12	-99.93	-26.63	-9.8	-6.46	-6.46	-6.46	0	0	0

VOC Volatile Organic Compounds

NO<sub>x</sub> Nitrogen Oxides

CO Carbon Monoxide

SO<sub>2</sub> Sulfur Dioxide

TSP Total Suspended Particulates

\* Other Any other air contaminant regulated under the Federal Clean Air Act. This permit does not contain any air pollutants under this category.

PM<sub>10</sub> Particulates under 10 microns

PM<sub>2.5</sub> Particulates under 2.5 microns

Pb Lead

HAPs Hazardous Air Pollutants

CO<sub>2e</sub> Carbon Dioxide equivalent

#### IV. CASE-BY-CASE DETERMINATIONS

No case-by-case determinations were required for this modification.

#### V. EMISSION OFFSET REQUIREMENTS

This modification is not subject to Emission Offset requirements.

#### VI. BASIS FOR MONITORING AND RECORDKEEPING REQUIREMENTS

The facility's operating permit includes monitoring, recordkeeping and reporting requirements that are sufficient to demonstrate the facility's continued compliance with the applicable requirements consistent with the following:

- Provisions to implement the testing and monitoring requirements of N.J.A.C. 7:27-22.18, the recordkeeping and reporting requirements of N.J.A.C. 7:27-22.19, and all emissions monitoring and analysis procedures or compliance assurance methods required under the applicable requirements, including any procedures and methods promulgated pursuant to 40 CFR 64; and
- Where the applicable requirement does not require direct periodic monitoring of emissions, the Department requires periodic monitoring of surrogate parameters sufficient to yield reliable data from the relevant time period that are representative of the facility's compliance with the permit.

For the Emission Unit U57 OS27 WWTP Belt Press Diesel Engine, the facility monitors the hours of operation as the surrogate for the long-term (TPY) emission limits for VOC, NO<sub>x</sub>, and CO.

- In some cases, direct periodic monitoring of emissions and/or surrogate parameters is not required due to one or more of the following:

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- Equipment size and capacity limitations,
- Subject equipment being permitted at the maximum rated capacity,
- There is no specific state or Federal standard that applies to this piece of equipment,
- Not a pollutant of concern for this piece of equipment,
- Agreements with EPA on the frequency of testing and monitoring for combustion sources.

#### VII. APPLICABLE STATE AND FEDERAL RULES

This modification is subject to New Jersey Air Pollution Control Regulations, codified in N.J.A.C. 7:27-1 through 34, as applicable. A complete text of these regulations is available at:

<http://www.nj.gov/dep/aqm/rules27.html>

This modification is also subject to Federal regulations listed below.

NSPS Subpart A: General Provisions

NSPS Subpart IIII: Stationary Compression Ignition Internal Combustion Engines

The Greenhouse Gas (GHG) emissions from this facility are 4,038,600 TPY CO<sub>2</sub>e and there is no GHG emissions increase. This modification is not subject to PSD rules at 40 CFR 52.21.

#### VIII. FACILITY'S COMPLIANCE STATUS

The Responsible Official at the facility has certified that the facility currently meets all applicable requirements of the Federal Clean Air Act and the New Jersey Air Pollution Control Act. Based on this certification, the Department's evaluation of the information included in the facility's application, and a review of the facility's compliance status, the Department has concluded that this air pollution control operating permit should be approved.

This operating permit includes a permit shield, pursuant to the provisions of N.J.A.C. 7:27-22.17. A permit shield provides that compliance with the relevant conditions of the operating permit shall be deemed compliance with the specific applicable requirements that are in effect on the date of issuance of the draft operating permit, and which form the basis for the conditions in the operating permit.

Prior to the expiration of the Operating Permit's five-year term, the facility will be required to apply for a renewal, at which time the Department will evaluate the facility and issue a public notice with its findings.

#### IX. EXEMPT ACTIVITIES

The facility's operating permit does not include exempt activities such as office and interior maintenance activities, maintenance shop activities, food preparation facilities, cafeterias and dining rooms, etc. A complete list of exempt activities, as allowed by the Operating Permit rule, can be found at N.J.A.C. 7:27-22.1.

FACILITY NAME (FACILITY ID NUMBER)  
BOP050001

Activity Number assigned  
by the Department

## New Jersey Department of Environmental Protection Facility Specific Requirements

Emission Unit Number  
assigned by the Facility

Brief description of  
emission unit

**Emission Unit:** U40 Sewage Sludge Incinerators  
**Operating Scenario:** OS Summary

OR

**OS2 Fluidized Bed Incinerator**

OS Summary lists all rules and requirements  
that apply to an emission unit. An emission unit  
may contain one or more pieces of equipment  
and corresponding operating scenarios.

OSX denotes the operating scenario number and lists the rules  
and requirements that apply to a scenario. An operating  
scenario represents various ways (or scenarios) a piece of  
equipment is permitted to operate.

Item  
Number

Description of applicable  
requirement

Monitoring method to  
ensure compliance

Recordkeeping to show  
facility's compliance

Actions and submittals  
required for the facility

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
3	The permittee shall conduct an annual performance test for each pollutant in Table 2 of 40CFR62 Subpart LLL between 11 and 13 calendar months after the previous performance test or within 60 days of a process change. [40 CFR 62.16000(a)]	Other: Conduct the performance test using the test methods, averaging methods and minimum sampling volumes or durations as specified in 40CFR62 Subpart LLL and according to the testing, monitoring and calibration requirements specified in 40 CFR 62.16015(a). [40 CFR 62.16000(a)].	Other: (1) Maintain records of the results of initial, annual and any subsequent performance tests conducted to determine compliance with the emission limits and standards and/or to establish operating limits, as applicable. [40 CFR 62.16025(e)].	Submit a report: Annually to the Administrator and to the Department. The permittee shall submit an annual compliance report as specified in 40 CFR 62. [40 CFR 62.16000(d)]

Rule citation for  
applicable requirement

Rule citation for  
monitoring requirement

Rule citation for  
recordkeeping requirement

Rule citation for submittal/  
action requirement

### Explanation Sheet for Facility Specific Requirements