

AIR QUALITY

MANAGEMENT DISTRICT

PRELIMINARY AUTHORITY TO CONSTRUCT**A/C NO.:** 25230**ISSUED BY:****DATE ISSUED:** xxxx, xx, 2017

DAVID R. GROSE

DATE EXPIRES: xxxx, xx, 2019**ISSUED TO:** PHILLIPS 66 COMPANY**LOCATION:** 76 BROADWAY, SACRAMENTO, CA 95818**DESCRIPTION:** APC VAPOR PROCESSING AND VAPOR CONTROL UNIT (VCU):

A. MANUFACTURER: RANE

B. TYPE: VAPOR COMBUSTION UNIT

C. BURNER RATING: 39.1 MMBTU/HR

D. FLOW RATE: 500 CFM

E. CAPACITY: 9,000 GAL/DAY, 90,000 GAL/HR, 630,000 GAL/DAY

F. PILOT FUEL: 21 SCFH PROPANE OR 54 SCFH NATURAL GAS

VAPOR BLADDER TANK VENTING TO VCU AND RECOVERING VAPORS FROM
LOADING RACK (A/C 25229):

G. MANUFACTURER: RANE

H. TANK NO.: 2794:

I. TYPE: INTERNAL BLADDER

J. CAPACITY: 9,800 CF HOLDING CAPACITY

CONTINUOUS PARAMETER MEASURING SYSTEM:

K. MEASURING: TEMPERATURE

AUTHORITY TO CONSTRUCT CONDITIONS**START-UP REQUIREMENTS**

S1. After completing the equipment installation authorized under this Authority to Construct (ATC), the permit holder must contact the Sacramento Metropolitan Air Quality Management District (SMAQMD) to arrange a start-up inspection. SMAQMD may be contacted at (916) 874-4800.

[Basis: SMAQMD Rule 201, Section 405]

S2. This Authority to Construct may serve as a temporary Permit to Operate provided that:

A. The permit holder has notified SMAQMD that the equipment installation is complete and the facility is ready for a start-up inspection,

B. The equipment installed matches the equipment authorized in this Authority to Construct,

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- C. The equipment is operated in compliance with all conditions in this Authority to Construct, and
- D. The equipment and its operation complies with SMAQMD, state and federal laws and regulations.

[Basis: SMAQMD Rule 201, Section 303.1, 405]

S3. The permit holder agrees to indemnify and defend SMAQMD, its officers, agents, and employees if this permit, or the environmental review of the permit under the California Environmental Quality Act (CEQA) or the National Environmental Policy Act (NEPA), including any exemption determination, is challenged in state or federal court. This indemnification includes attorney fees awarded against SMAQMD, as well as attorney fees, court costs, legal fees, and other expenses incurred in defending the challenge. The District will provide written notice to the permit holder within 5 days if it receives a petition, complaint or other legal notice by a third party challenging this Authority to Construct (ATC) or the environmental review of the ATC. The permit holder may, within 10 days of notification, request cancellation of the ATC. If the permit holder requests cancellation, SMAQMD will cancel the permit within 5 days, and will notify the plaintiffs of the cancellation and request dismissal of the litigation.

[Basis: SMAQMD Rule 201, Section 405]

GENERAL

1. The equipment must be properly maintained and operated in accordance with the information submitted with the application and the manufacturer's recommendations at all times.

[Basis: SMAQMD Rule 201, Section 405 and Rule 202, Section 408.1]

2. The Air Pollution Control Officer and/or authorized representatives must be permitted to do all of the following:

- A. Enter the source premises or any location at which any records required by this ATC are kept.
- B. Access and copy any records required by this ATC.
- C. Inspect or review any equipment, operation, or method required under this ATC.
- D. Sample emissions from the source or require samples to be taken.

[Basis: SMAQMD Rule 201, Section 405]

3. This ATC does not authorize the emission of air contaminants in excess of those allowed by Division 26, Part 4, Chapter 3, of the California Health and Safety Code or the SMAQMD Rules and Regulations.

[Basis: SMAQMD Rule 201, Sections 303.1, 405]

4. The facility may not discharge air contaminants or other materials that cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

[Basis: SMAQMD Rule 402, Section 301]

5. A legible copy of this ATC must be maintained on the premises with the equipment.

[Basis: SMAQMD Rule 201, Section 401]

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EMISSION LIMITATIONS

6. The equipment must not discharge into the atmosphere any visible air contaminant other than uncombined water vapor for a period or periods aggregating more than three minutes in any one hour if the discharge is as dark or darker than Ringelmann No. 1 or is equal to or greater than 20% opacity.

[Basis: SMAQMD Rule 401, Section 301]

7. The vapor combustion unit must meet the following BACT standards:

A. VOC: 0.02 lb/1000 gallons loaded through the loading rack

B. NOx: 0.034 lb/1000 gallons loaded through the loading rack

[Basis: SMAQMD Rule 202, Section 408.2.a, and Rule 447, Section 301]]

8. The emissions from the vapor combustion unit must not exceed the following:

[Basis: SMAQMD Rules 201, Section 405 and 202, Section 408.2]

Pollutant	Emission Factors (A) (lb/1000 gallons loaded)	Emission Limits (B)	
		lb/day	lb/year
VOC	0.02	14.6	5,339
NOx	0.034	24.9	9,075
SOx	1.2E-04	0.1	32
PM10	1.6E-3	1.2	427
PM2.5	1.6E-03	1.2	427
CO	0.05	36.6	13,346

(A) Emission factors for SOx, PM10, and PM2.5 are from AP-42, Table 1.5.1 (07/08) and have been adjusted from a liquid basis to an equivalent amount of vapor assuming an uncontrolled emission factor of 8.4 lb of vapor as propane per 1000 gallons loaded and heating values of 24,548 Btu/lb of propane and 91,500 Btu/gallon of liquid propane. Emission factors for VOC and NOx are based on BACT emission limits. Emission factor for CO is based on the manufacture's guarantee.

(B) Emissions are based on operating at a maximum daily throughput of 630,000 gallons of gasoline, 69,300 gallons of ethanol, and 12.7% cross loading of 252,000 gallons of diesel, and operating 365 days per year. All emission limits are in English units.

Pollutant	Emission Factors (A) (lb/1000 gallons loaded)	Emission Limits (B) lb/quarter			
		Quarter 1 (Jan-Mar)	Quarter 2 (Apr-Jun)	Quarter 3 (Jul-Sept)	Quarter 4 (Oct-Dec)
VOC	0.02	1,316	1,331	1,346	1,346
NOx	0.034	2,238	2,263	2,288	2,288
SOx	1.2E-04	8	8	8	8

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Pollutant	Emission Factors (A) (lb/1000 gallons loaded)	Emission Limits (B) lb/quarter			
		Quarter 1 (Jan-Mar)	Quarter 2 (Apr-Jun)	Quarter 3 (Jul-Sept)	Quarter 4 (Oct-Dec)
PM10	1.6E-3	105	106	108	108
PM2.5	1.6E-03	105	106	108	108
CO	0.05	3,291	3,364	3,364	3,364

(A) Emission factors for SO_x, PM₁₀, and PM_{2.5} are from AP-42, Table 1.5.1 (07/08) and have been adjusted from a liquid basis to an equivalent amount of vapor assuming an uncontrolled emission factor of 8.4 lb of vapor as propane per 1000 gallons loaded and heating values of 24,548 Btu/lb of propane and 91,500 Btu/gallon of liquid propane. Emission factors for VOC and NO_x are based on BACT emission limits. Emission factor for CO is based on the manufacture's guarantee.

(B) Emissions are based on operating at a maximum daily throughput of 630,000 gallons of gasoline, 69,300 gallons of ethanol, and 12.7% cross loading of 252,000 gallons of diesel, and operating 90 days for the first quarter, 91 days for the second quarter, and 92 days each for the third and fourth quarters. All emission limits are in English units.

9. The Facility Cap emissions must not exceed the following limits:

[Basis: SMAQMD Rules 201, Section 405]

Pollutant	Maximum Allowable Facility Cap Emissions (A) (tons/year)
VOC	24.4

(A) The Phillips 66 Facility Cap VOC emissions is comprised of all VOC emissions from equipment listed in Attachment A, located at 66 Broadway and 76 Broadway, Sacramento, CA 95818 and calculated in accordance with method outlined in Attachment A.

EQUIPMENT OPERATION

10. The permit holder must, at all times, operate and maintain the equipment, including the associated air pollution control and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.

[Basis: 40 CFR 63 Subpart BBBBBB §63.11085(a)]

11. Organic vapors from the loading rack vapor recovery system (Authority to Construct 25229) must be vented to and controlled by the Vapor Control Unit.

[Basis: SMAQMD Rule 447, Section 303]

12. The vapor collection system and vapor control unit must be certified by the California Air Resources Board in accordance with CP-203: Certification Procedure for Vapor Recovery Systems of Terminals.

[Basis: SMAQMD Rule 447, Section 303]

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13. Within 30 days after initial startup, the permit holder must file an initial application for certification to the ARB Executive Officer in accordance with CP-203.

[Basis: SMAQMD Rule 447, Section 303]

14. The total volume of organic liquids loaded through the loading racks must not exceed the following:

[Basis: SMAQMD Rule 201, Section 405]

Fuel Type	Maximum Allowable Fuel Loading (A)	
	gallons/day	gallons/year
Gasoline and transmix	630,000	229,950,000
Ethanol	69,300	25,294,500
Diesel	252,000	91,980,000

(A) Annual throughput limits are based on the daily throughput limits times 365 days per year.

Fuel Type	Maximum Allowable Fuel Loading (A) gallons/quarter			
	Quarter 1 (Jan-Mar)	Quarter 2 (Apr-Jun)	Quarter 3 (Jul-Sept)	Quarter 4 (Oct-Dec)
Gasoline and transmix	56,700,000	57,330,000	57,960,000	57,960,000
Ethanol	6,237,000	6,306,300	6,375,600	6,375,600
Diesel	22,680,000	22,932,000	23,184,000	23,184,000

(A) Quarterly throughput limits are based on the daily throughput limits times 90 days for the first quarter, 91 days for the second quarter, and 92 days for the third and fourth quarters.

15. The vapor bladder tank must be maintained such that the VOC concentration in the airspace above the bladder does not exceed 3,000 parts per million, expressed as methane.

[Basis: SMAQMD Rule 447, Section 305]

16. The minimum temperature of the combustion stack must be 1,000 degrees Fahrenheit. If a source test demonstrates that the emission limits listed in Condition No. 7 can be met at a lower temperature, the applicant may lower the set point temperature with prior written approval from the Air Pollution Control Officer.

[Basis: SMAQMD Rule 201, Section 405]

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MONITORING REQUIREMENTS

17. The permit holder must install, calibrate, certify, operate, and maintain, according to the manufacturer's specifications, a continuous parameter monitoring system (CPMS) while gasoline vapors are displaced to the vapor processor systems.

[Basis: 40 CFR 63 Subpart BBBBBB §63.11092(b)]

18. The CPMS used to monitor the operation of the system must be:
- Capable of continuously measuring temperature;
 - Installed in the firebox or in the ductwork immediately downstream from the firebox in a position before any substantial heat exchange occurs.

[Basis: 40 CFR 63 Subpart BBBBBB §63.11092(b)(iii)(A)]

SOURCE TESTING REQUIREMENTS

19. Within 60 days of startup and annually thereafter, the permit holder must conduct a source test on the vapor combustion unit in accordance with the methods specified in 40 CFR Subpart XX §60.503.

[Basis: SMAQMD Rule 201, Section 303.2, Rule 447, Sections 303 and 501, 40 CFR 60 Subpart XX §60.503, and 40 CFR 63 Subpart BBBBBB §63.11092(a)]

20. An initial notification must be submitted to the SMAQMD 30 days prior to the source test.
- A source test plan must be submitted to SMAQMD 45 days prior to source test
 - All items needed for the source test must be provided by the applicant
 - Sampling ports.
 - Construction of the air pollution control system such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and procedures.
 - Provide a stack or duct free of cyclonic flow during performance tests as demonstrated by applicable test methods and procedures.
 - Safe sampling platforms.
 - Safe access to sampling platforms(s).
 - Utilities for sampling and testing equipment.

[Basis: SMAQMD Rule 201, Section 303.2]

21. Immediately before the performance test, the permit holder must use EPA Method 21 to monitor for leakage of vapor all potential sources in the terminals vapor collection system equipment while a gasoline tank truck is being loaded. The owner or operator must repair all leaks with readings of 500 ppm (as methane) or greater before conducting the performance test.

[Basis: 40 CFR 60 Subpart XX §60.503(b) and 40 CFR 63 Subpart BBBBBB §63.11092(a)(1)(i)]

22. The vapor combustion unit must be tested using the following methods:

- Sampling port locations – EPA Method 1 or 1A
- Volume of air-vapor mixture – EPA Method 2B
- O₂ – Method 3, 3A, or 3B
- NO_x – EPA Method 7E, or CARB 100
- CO – EPA Method 10 or CARB 100

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F. VOC - EPA Methods 18, 25, 25A, 25B, or California Air Resources Board Test Procedure TP-203.1.

[Basis: SMAQMD Rule 201, Section 303.2 and Rule 447, Section 501 and 40 CFR 60 Subpart XX §60.503(5)]

23. The performance test must be 6 hours long during which at least 300,000 liters of gasoline is loaded. If this is not possible, the test may be continued the same day until 300,000 liters of gasoline is loaded or the test may be resumed the next day with another complete 6-hour period. In the latter case, the 300,000-liter criterion need not be met. However, as much as possible, testing should be conducted during the 6-hour period in which the highest throughput normally occurs.

[Basis: 40 CFR 60 Subpart XX §60.503(c)(1)]

24. If the vapor control unit is intermittent in operation, the performance test must begin at a reference vapor holder level and must end at the same reference point. The test must include at least two startups and shutdowns of the vapor processor. If this does not occur under automatically controlled operations, the system must be manually controlled.

[Basis: 40 CFR 60 Subpart XX §60.503(c)(2)]

25. Vapor Bladder (Diaphragm) Airspace – Concentrations in the airspace above the vapor diaphragm must be determined by EPA Test Method 18 or California Air Resources Board Test Method 150, 1-100, or Test Procedure TP-204.3.

[Basis: SMAQMD Rule 447, Section 501]

26. A final source test report must be submitted the District within 60 days of test completion.

[Basis: SMAQMD Rule 201, Section 302.2]

RECORDKEEPING

27. The following records must be continuously maintained onsite for the most recent five year period and must be made available to the Air Pollution Control Officer upon request.

[Basis: SMAQMD Rule 201, Section 405, and Rule 451, Section 501]

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Frequency	Information to be Recorded
At All Times	A. Data recorded by the CPMS, which includes: i. Combustion temperature of the vapor combustion unit; ii. Time intervals during which loadings of gasoline cargo tanks have occurred, or alternatively, the operating parameter data only during such loadings, and iii. Date and time of the recorded measurement. [Basis: 40 CFR 63 Subpart BBBBBB §63.11094(f)(1)]
For each occurrence	B. Records of the occurrence and duration of each malfunction of operation of the air pollution control and monitoring equipment. C. Records of actions taken during periods of malfunction to minimize emissions and corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. [Basis: 40 CFR 63 Subpart BBBBBB §63.11094(g)]
Daily	D. Volume of gasoline, transmix, ethanol, and diesel loaded through the loading racks (gallons/day).
Quarterly	E. Volume of gasoline, transmix, ethanol, and diesel loaded through the loading racks (gallons/quarter). F. Total Facility Cap VOC emissions (A) calculated in accordance with the most recent version of Attachment A, as amended by the latest permit issued to Phillips 66 (pounds/quarter).
Annually	G. Volume of gasoline, transmix, ethanol, and diesel loaded through the loading racks (gallons/year). H. Total Facility Cap VOC emissions (A) calculated in accordance with the most recent version of Attachment A, as amended by the latest permit issued to Phillips 66 (tons/year)

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Frequency	Information to be Recorded
For each source test	I. A record of the source test performed pursuant to Condition Nos 19-26. J. A record of each performance test leak inspection required by Condition No. 21 must be kept on file at the bulk terminal. Inspection record must include, at a minimum, the following information: i. Date of inspection. ii. Findings (may indicate no leaks discovered or nature, location, and severity of each leak). iii. Leak determination method. iv. Corrective action (date each leak repaired and reasons for any repair interval in excess of 15 days). v. Inspector name and signature. vi. For each leak that is detected, the following specified information must be recorded: (a) The equipment type and identification number. (b) The nature of the leak (i.e., vapor or liquid) and the method of detection (i.e., sight, sound, or smell). (c) The date the leak was detected and the date of each attempt to repair the leak. (d) Repair methods applied in each attempt to repair the leak. (e) Repair delayed and the reason for the delay if the leak is not repaired within 15 calendar days after discovery of the leak. (f) The expected date of successful repair of the leak if the leak is not repaired within 15 days. (g) The date of successful repair of the leak. [Basis: SMAQMD Rule 201, Section 405 and 40 CFR Part 60 Subpart BBBBBB §63.11094(e)]

(A) The Phillips 66 Facility Cap VOC emissions is comprised of all VOC emissions from equipment listed in Attachment A, located at 66 Broadway and 76 Broadway, Sacramento, CA 95818.

REPORTING REQUIREMENTS

28. The permit holder must submit a semiannual compliance report to U.S. EPA and the District in accordance with the applicable provisions of 40 CFR Part 63 Subpart BBBBBB §63.11095(a).

[Basis: 40 CFR Part 63 Subpart BBBBBB §63.11095(a)]

29. The permit holder must submit a semiannual excess emissions report at the time of the semiannual compliance report to the U.S. EPA and the District. The report must include the information specified in 40 CFR Part 63 Subpart BBBBBB §63.11095(b)(1) through (5).

[Basis: 40 CFR Part 63 Subpart BBBBBB §63.11095(a)(2)]

30. The permit holder must submit a semiannual report including the number, duration, and a brief description of each type of malfunction which occurred during the reporting period and which caused or may have

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caused any applicable emissions limitation to be exceeded. The report must include a description of actions taken by the permit holder during a malfunction to minimize emissions, including actions taken to correct a malfunction. The report may be submitted as part of the semiannual compliance report.

[Basis: 40 CFR Part 63 Subpart BBBBBB §63.11095(d)]

EMISSION OFFSETS

31. Prior to commencing operation, Phillips 66 must provide sufficient emission reduction credits to the Air Pollution Control Officer to fully offset the following amount of emissions:

[Basis: SMAQMD Rule 201, Section 303.1]

VOC Emissions to be Offset (A) Pounds/Quarter			
Quarter 1	Quarter 2	Quarter 3	Quarter 4
1,316	1,331	1,346	1,346

(A) Emission offset ratios required by Rule 202, Section 303 have not been applied to the VOC emissions.

32. The borrowed emission reduction credits specified in Condition No. 31 are valid only if the facility operates in a manner consistent with the requirements of Rule 205 – COMMUNITY BANK AND PRIORITY RESERVE BANK and the facts, including the information provided in the application, that were presented to the Board of Directors

[Basis: SMAQMD Rule 205, Section 307.7]

33. In order for ownership of this process to be transferred, the new owner must provide replacement credits for those credits that were returned pursuant to Condition No. 31

[Basis: SMAQMD Rule 205, Section 315]

34. The permit holder must, upon determination of applicability and written notification by the District, comply with all applicable requirements of the Air Toxic “Hot Spots” Information and Assessment Act (California Health and Safety Code Section 44300 et seq.).

[Basis: SMAQMD Rule 201, Section 303.1]

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Your application for this air quality Authority to Construct was evaluated for compliance with Sacramento Metropolitan Air Quality Management District (SMAQMD), state and federal air quality rules. The following list identifies the rules that most commonly apply to the operation of your equipment. Other rules may also be applicable.

<u>SMAQMD RULE NO.</u>	<u>RULE TITLE</u>
201	GENERAL PERMIT REQUIREMENTS (8-24-06)
202	NEW SOURCE REVIEW (8-23-12)
401	RINGELMANN CHART (4-19-83)
402	NUISANCE (8-3-77)
406	SPECIFIC CONTAMINANTS (12-6-78)
420	SULFUR CONTENT OF FUELS (8-13-81)
447	ORGANIC LIQUID LOADING (4-2-98)
<u>FEDERAL</u>	<u>REGULATION TITLE</u>
40 CFR 60 SUBPART XX	STANDARDS OF PERFORMANCE FOR BULK GASOLINE TERMINALS
40 CFR 63 SUBPART BBBB	NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORY: GASOLINE BULK TERMINALS, BULK PLANTS, AND PIPELINE FACILITIES

The conditions on this Authority to Construct reflect some, but not all, of the requirements of these rules. Because other rule requirements may apply to the operation, the permit holder should be familiar with all of the rules and related requirements. In addition, because future changes in prohibitory rules may establish more stringent requirements that may supersede the conditions listed here, the permit holder should monitor proposed rules and rule adoption actions at SMAQMD.

For further information please consult your SMAQMD rulebook or contact the SMAQMD for assistance.

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xxxx, xx, 2017

PHILLIPS 66

66 BROADWAY AND 76 BROADWAY, SACRAMENTO, CA 95818

YEAR: _____

QUARTER:

JAN – MAR

☐

APR – JUN

☐

JUL – SEP

☐

OCT – DEC

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PERMIT NO.	EQUIPMENT	VOC EMISSION FACTOR (A)	QUARTERLY USAGE (B)	QUARTERLY VOC EMISSIONS (POUNDS/QUARTER) (A x B)
23443	TANK 3876 - EXT FLOATING ROOF	N/A ⁽¹⁾	_____ BARRELS	
23444	TANK 35018 - INT FLOATING ROOF	N/A ⁽¹⁾	_____ BARRELS	
23445	TANK 30017 - INT FLOATING ROOF	N/A ⁽¹⁾	_____ BARRELS	
23449	TANK 3875 - EXT FLOATING ROOF	N/A ⁽¹⁾	_____ BARRELS	
23847	TANK 3877 - ETHANOL OFFLOAD	N/A ⁽¹⁾	_____ BARRELS	
24758	IC ENGINE, DIESEL	0.2488 LB/HR ⁽³⁾	_____ HR/QTR	
25042	COMPONENT FUGITIVE EMISSIONS	N/A ⁽²⁾	N/A	
25229	LOADING RACK	0.02 LB/1,000 GALLONS	_____ 1,000 GALLONS	
25230	APC - VAPOR CONTROL UNIT	0.02 LB/1,000 GALLONS	_____ 1,000 GALLONS	
TOTAL FACILITY EMISSIONS (POUNDS/QUARTER): [MUST NOT EXCEED 24.4 TONS/YEAR VOC]				

(1) Emissions from internal and external floating roof tanks are based on emissions calculated using USEPA's TANKS version 4.09d, which calculates working loss emissions based on total throughput (barrels) and standing loss emissions based on tank type, material stored, tank condition, and climate data for Sacramento.

(2) Component fugitive emissions are based on a component specific emission factor and the total number of each component.

(3) Emission factor based on a VOC emission factor of 1.14 g/hp-hr and an engine horsepower of 99 bhp.