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APPLICATION PROCESSING AND CALCULATIONS	AA	#/Phillips 66 CDT

PERMIT TO CONSTRUCT AND OPERATE

APPLICANT	Phillips 66 Pipeline, LLC.
MAILING ADDRESS	13500 S. Broadway Los Angeles, CA 90061
EQUIPMENT LOCATION	Same as above

EQUIPMENT DESCRIPTION:

A/N 546861

SOIL VAPOR EXTRACTION AND TREATMENT SYSTEM, FOR NON-HALOGENATED HYDROCARBON IN-SITU SOIL REMEDIATION ONLY CONSISTING OF:

1. VAPOR EXTRACTION WELL(S) AND DUCT(S).
2. ONE VAPOR-LIQUID SEPARATOR.
3. EXTRACTION BLOWERS, WITH A MAXIMUM FLOW RATE OF 500 SCFM.
4. THERMAL OXIDIZER, SOLLECO, MODEL 500, SERIAL NO. C1126, DIRECT GAS FIRED, WITH A 550,000 BTU/HR ECLIPSE, MODEL WX0050, NATURAL GAS BURNER WITH SUPPLEMENTAL FIRING AND A FULLY MODULATING AUTOMATIC TEMPERATURE CONTROL SYSTEM.
5. CATALYTIC OXIDIZER MODULE, MONOLITH CATALYST, 0.96 CUBIC FEET OF ACTIVE VOLUME, WITH A FULLY MODULATING TEMPERATURE CONTROL SYSTEM.
6. EXHAUST STACK, MINIMUM HEIGHT OF 13 FEET ABOVE GRADE, WITHOUT A WEATHER CAP.

Conditions:

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN COMPLIANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
   [RULE 204]

2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
   [RULE 204]

3. UPON COMPLETION, ANY VAPOR EXTRACTION WELLS AND DUCTS SHALL BE CAPPED TO PREVENT VAPORS FROM VENTING TO THE ATMOSPHERE. VAPORS SHALL NOT BE EXTRACTED FROM THE SOIL UNLESS THEY ARE VENTED TO THE VAPOR CONTROL SYSTEM, WITH NO DETECTABLE LEAK BETWEEN THE OUTLET OF THE BLOWER AND THE OUTLET OF THE VAPOR CONTROL SYSTEM.
[RULE 1303(a)(1)-BACT]

4. AN IDENTIFICATION TAG OR NAMEPLATE SHALL BE DISPLAYED ON THE EQUIPMENT TO SHOW MANUFACTURER MODEL NO. AND SERIAL NO. THE TAG(S) OR PLATE(S) SHALL BE ISSUED BY THE MANUFACTURER AND SHALL BE ADHERED TO THE EQUIPMENT IN A PERMANENT AND CONSPICUOUS POSITION.
[RULE 204]

5. A COPY OF THIS PERMIT, THE CURRENT CONTACT PERSON NAME, PHONE NUMBER, AND COMPANY NAME SHALL BE DISPLAYED IN A PERMANENT AND CONSPICUOUS LOCATION NEAR THE EQUIPMENT.
[RULE 204]

6. A FLOW INDICATOR SHALL BE INSTALLED AND MAINTAINED AT ALL INLET STREAMS TO THE VAPOR CONTROL SYSTEM TO INDICATE THE TOTAL AIR FLOW RATE IN CUBIC FEET PER MINUTE (CFM). THE TOTAL FLOW RATE SHALL NOT EXCEED 500 SCFM. IF A PRESSURE SENSOR DEVICE IS USED IN PLACE OF THE FLOW INDICATOR, A CONVERSION CHART SHALL BE MADE AVAILABLE TO INDICATE THE CORRESPONDING FLOW RATE, IN CFM, TO THE PRESSURE READING. THE FLOW RATE SHALL BE RECORDED ON EACH MONITORING VISIT.
[RULE 1303(b)(2)-OFFSETS]

7. VOLATILE ORGANIC COMPOUNDS (VOCS) SHALL BE MEASURED AT THE OUTLET OF THE OXIDIZER DAILY DURING THE FIRST SEVEN DAYS OF OPERATION, THEN AT LEAST ONCE A WEEK THEREAFTER. THE OPERATOR SHALL USE A PID, FID OR OTHER AQMD APPROVED ORGANIC VAPOR ANALYZER (OVA) CALIBRATED IN PARTS PER MILLION BY VOLUME (PPMV) EXPRESSED AS HEXANE. CALIBRATIONS SHALL BE PERFORMED IN CONJUNCTION WITH EACH MONITORING EVENT. THE INSTRUMENT SHALL BE MAINTAINED AND CALIBRATED PER EPA METHOD 21.
[RULE 1303(b)(2)-OFFSETS]

8. SAMPLES SHALL BE COLLECTED AND ANALYZED ONCE DURING THE FIRST WEEK OF OPERATION FOR VOLATILE ORGANIC COMPOUNDS IN PPMV AS HEXANE AND SPECIATED FOR BENZENE AND MTBE (AND OTHER TOXIC COMPOUNDS AS REQUIRED IN (E)) AS FOLLOWS:

   A. BAG/SUMMA CANISTER SAMPLES SHALL BE COLLECTED AT THE INLET AND OUTLET OF THE OXIDIZER.

   B. SAMPLING AND ANALYSIS SHALL BE CONDUCTED BY AN INDEPENDENT LABORATORY PER RULE 304.

C. SAMPLING SHALL CONFORM TO CARB METHOD 422 OR EQUIVALENT. SAMPLES WITH HIGH MOISTURE SHALL BE COLLECTED USING AN APPROPRIATE METHOD SUCH AS SCAQMD METHOD 25.1/25.3 OR OTHER METHODS APPROVED BY SCAQMD.

D. ANALYSIS SHALL BE CONDUCTED USING EPA METHOD 8015/8021 AND EPA METHOD 8260 OR OTHER METHOD APPROVED BY SCAQMD.

E. THE INLET SAMPLE SHALL ALSO BE ANALYZED FOR ALL VOLATILE ORGANIC COMPOUNDS THAT WERE BOTH DETECTED BY THE PHASE II SITE ASSESSMENT (SOIL AND GROUNDWATER CHARACTERIZATION STUDIES) AND FOUND ON THE RULE 1401 COMPOUND LIST. IF NO ASSESSMENTS OF SOIL OR GROUNDWATER EXIST, THE INLET SAMPLE SHALL BE ANALYZED FOR ALL VOLATILE ORGANIC COMPOUNDS LISTED IN SCAQMD RULE 1401, UNLESS OTHERWISE APPROVED IN WRITING BY SCAQMD.

[RULE 1303(b)(2)-OFFSETS, RULE 1401]

9. SAMPLES SHALL BE COLLECTED AND ANALYZED ONCE A MONTH FOR VOLATILE ORGANIC COMPOUNDS IN PPMV AS HEXANE AND SPECIATED FOR BENZENE AND MTBE AS FOLLOWS:

A. BAG/SUMMA CANISTER SAMPLES SHALL BE COLLECTED AT THE INLET AND OUTLET OF THE OXIDIZER.

B. SAMPLING SHALL CONFORM TO CARB METHOD 422 OR EQUIVALENT. SAMPLES WITH HIGH MOISTURE SHALL BE COLLECTED USING AN APPROPRIATE METHOD SUCH AS SCAQMD METHOD 25.1/25.3 OR OTHER METHODS APPROVED BY SCAQMD.

C. ANALYSIS SHALL BE CONDUCTED USING EPA METHOD 8015/8021 AND EPA METHOD 8260 OR OTHER METHOD APPROVED BY SCAQMD.

[RULE 1303(b)(2)-OFFSETS, RULE 1401]

10. THE VOC CONCENTRATION AT THE OUTLET OF THE VAPOR CONTROL SYSTEM SHALL NOT EXCEED 20 PPMV MEASURED AS HEXANE.
[RULE 1303(b)(2)-OFFSETS]

11. THE BENZENE CONCENTRATION AT THE OUTLET OF THE VAPOR CONTROL SYSTEM SHALL NOT EXCEED 0.07 PPMV.
[RULE 1401]

12. THE METHYL T-BUTYL ETHER (MTBE) CONCENTRATION AT THE OUTLET OF THE VAPOR CONTROL SYSTEM SHALL NOT EXCEED 0.2 PPMV.
[RULE 1401]

13. THE FUEL COMBUSTION NOX CONCENTRATION OF THIS EQUIPMENT SHALL NOT EXCEED 60 PPMV AS REQUIRED IN RULE 1147.
[RULE 1147]

14. THE LABORATORY DETECTION LIMITS FOR BENZENE AND MTBE SHALL BE LOWER THAN THE EMISSION LIMITS SPECIFIED IN CONDITIONS NO. 11 AND 12. [RULE 1401]

15. A BLOWER SHUT-DOWN INTERLOCK SHALL BE INSTALLED AND MAINTAINED TO AUTOMATICALLY SHUT DOWN THE BLOWER WHENEVER THE MINIMUM OPERATING TEMPERATURES SPECIFIED IN THIS PERMIT ARE NOT ACHIEVED. [RULE 1303(b)(2)-OFFSETS]

16. THE OPERATOR SHALL SUBMIT IN WRITING THE RESULTS OF THE FIRST MONTH OF MONITORING, GRAB SAMPLES' ANALYSIS, THE WEEKLY VAPOR INLET FLOW RATE READINGS (SCFM), AND THE INITIAL VERIFICATION OF SOIL CHARACTERIZATION ANALYSIS. THE RESULTS SHALL BE SUBMITTED TO THE ATTENTION OF:

    SCAQMD, REFINERY AND WASTE MANAGEMENT TEAM, 21865 COPLEY DRIVE, DIAMOND BAR, CA 91765. THE SUBMITTAL SHALL INCLUDE A COPY OF THE ACTIVE PERMIT. [RULE 204, RULE 1303(b)(2)-OFFSETS]

17. PRIOR TO OPERATING THIS EQUIPMENT UNDER WHICH THIS PERMIT IS GRANTED, THE OPERATOR SHALL NOTIFY SCAQMD BY SUBMITTING A RULE 1166 NOTIFICATION FORM WITH THE APPROPRIATE FEES AS PER THE FORM INSTRUCTIONS. THE NOTIFICATION INFORMATION SHALL INCLUDE:

    1. THE PERMIT NUMBER OF THE EQUIPMENT.

    2. THE NAME AND PHONE NUMBER OF A CONTACT PERSON.

    3. THE PROJECT START DATE AND THE ESTIMATED PROJECT COMPLETION DATE. [RULE 1166]

18. RECORDS SHALL BE KEPT TO PROVE COMPLIANCE WITH ALL THE PERMIT CONDITIONS OF THIS PERMIT. RECORDS SHALL BE MAINTAINED ON FILE FOR AT LEAST TWO YEARS AND MADE AVAILABLE TO THE AQMD PERSONNEL UPON REQUEST. [RULE 204, RULE 1303(b)(2)-OFFSETS, RULE 1303(a)(1)-BACT]

PERIODIC MONITORING:

19. TEMPERATURE INDICATOR AND RECORDING DEVICES WITH AN ACCURACY OF PLUS OR MINUS 20 DEGREES FAHRENHEIT SHALL BE MAINTAINED AT THE OUTLET OF THE THERMAL OXIDIZER. THE TEMPERATURE AT THE OUTLET OF THE THERMAL OXIDIZER SHALL NOT BE LESS THAN 1400 DEGREES FAHRENHEIT, WHENEVER THE VAPOR CONTROL SYSTEM IS OPERATING IN THE THERMAL MODE. [RULE 1303(a)(1)-BACT, 3004(a)(4) PERIODIC MONITORING]

20. TEMPERATURE INDICATOR AND RECORDING DEVICES WITH AN ACCURACY OF PLUS OR MINUS 15 DEGREES FAHRENHEIT SHALL BE MAINTAINED AT THE INLET OF THE CATALYST BED. WHENEVER THE VAPOR CONTROL SYSTEM IS OPERATING IN THE CATALYTIC MODE THE TEMPERATURE AT THE INLET OF THE CATALYST BED SHALL NOT BE LESS THAN 650 DEGREES FAHRENHEIT, AND THE TEMPERATURE AT THE OUTLET SHALL NOT BE GREATER THAN 1200 DEGREES FAHRENHEIT. [RULE 1303(a)(1)-BACT, 3004(a)(4) PERIODIC MONITORING]

21. THE TEMPERATURE RECORDING DEVICE SHALL CONTAIN A CONTINUOUS MONITORING STRIP CHART OR DIGITAL DATA ACQUISITION SYSTEM. [RULE 1303(a)(1)-BACT, 3004(a)(4) PERIODIC MONITORING]

22. AN ANNUAL CATALYST ACTIVITY TEST SHALL BE PERFORMED TO DEMONSTRATE THE CATALYST MEETS MANUFACTURER SPECIFICATIONS. [RULE 1303(a)(1)-BACT, 3004(a)(4) PERIODIC MONITORING]

EMISSIONS AND REQUIREMENTS:

23. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

VOC: RULE 1166
NOX: RULE 1147

A/N 540860

MINOR REVISION OF TITLE V FACILITY PERMIT

BACKGROUND

Application 546861was submitted to replace the burner in one of two Solleco thermal/catalytic oxidizers currently permitted under A/N 536747 to clean up gasoline and other fuels that have leaked throughout the years at the company's LA bulk terminal. The reason for the burner change out is to comply with Rule 1147 because a source test conducted November 2012 showed the NOx emissions at 97.7 ppmv (60 ppmv limit). The unit has been shut down awaiting the installation of the new burner.

The prior permit was issued to Conocophillips under application 471400, and then the change of ownership to Phillips 66 was made under application 536747. Application 540216 was submitted to fix some administrative changes to the wording of the permit. Application 540216 will be cancelled because it is superseded by A/N 546861. The current permit is under Phillips 66 under application 536747, permit G25409 under the Title V permit under ID 171326.

Application number 546860 was filed for Minor Revision of the Title V facility permit. The changes are minor because this application will include the change is source test frequency from once a year to once every 5 years for two regenerative VRUs (A/N 540219 and A/N 540221) that are controlled by a CEMS.

This application was submitted for expedited processing, but no expedited processing fee will be charged since it was processed the under normal processing.

EQUIPMENT DESCRIPTION

A 15 horsepower, 500 SCFM vacuum pump will be used to draw up the vapors from various wells to this oxidizer. A controller modulates a valve to allow the proper amount of fuel, well flow, and air to maintain a preset percent LEL (15000 ppmv for thermal operation, or 27% LEL – 3500 ppmv for catalytic oxidation). When the vapor concentration drops, a catalyst module can be inserted in the stack of the oxidizer to operate in catalytic mode.

The maximum well concentration of 14000 ppmv TPH (Total Petroleum Hydrocarbons) will be treated at a temperature of 1450 ^{O}F in the thermal oxidizer mode. Natural gas will be used in the thermal oxidizer mode or in the catalytic oxidizer mode as needed to reach combustion temperatures. The catalytic oxidizer will have an operating temperature of 700 ^{O}F. The gasses to the catalyst will rise in temperature from 700 to 1000 ^{O}F. The temperature rise across the catalyst will be about 50 degrees per 300 ppmv of petroleum hydrocarbons burned. The destruction efficiency is 99%. The table below lists the average well values found at this site for BTX contaminates. The control system will operate 24 hrs/day.

COMPOUND	R1 (PPMV) AVE	R1 (PPMV) MAX
TPH (thermal Oxidizer) TPH (Catalytic Oxidizer)	13000 3500	14000
BENZENE	10	43
ETHYLBENZENE		4
TOLUENE		55
XYLENES		5.7
MTBE	10	140

The current operation uses the thermal oxidizer, but the company would like to retain the catalytic option. The catalytic oxidizer module is not in place when the unit is operating in thermal oxidizer mode. The new burner will result in lower emissions since its rating is lower at 550,000 Btu/hr compared the currently permitted 850,000 Btu/hr.

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CALCULATIONS

Given: 99 % Control efficiency
Inlet flow rate = 500 SCFM molar volume = 379 ft^3
850 feet to nearest residence (304.8 M)
45 feet to nearest commercial site (13.7 M)
No rain cap
13 ft stack height (3.96 M)
22 in ID stack diameter (0.559 M)
Building downwash dim – 60 ft x 90 ft x 25 ft (18.3 m x 30.2 m x 7.6 m)

Mass emission rate (lb/hr) =
(Conc. ppmv)(60 min/hr)(V blower scfm)(MW lb/lb-mole)
1xEE6 (379 ft3/lb-mole)

V blower (scfm)	500	efficiency	99	
COMPOUND	MW	PPMv	R1 (lb/hr)	R2 (lb/hr)
HC (as hexane)	86.16	14000	95.481	0.95481
Benzene	78.11	43	0.266	0.00266
Toluene	92.14	55	0.401	0.00401
Ethylbenzene	106.167	4	0.034	0.00034
Xylene	106.168	5.7	0.048	0.00048
MTBE	106.168	140	1.177	0.01177
TPH (At 20 ppmv exit conc.)	86.16	2000	13.640	0.13640

NOx emission factor adjusted to 60 ppmv

FUEL PRODUCTS OF COMBUSTION

Burner Rating (btu/hr) =	550000				
HV fuel heating value =	1050				
Gas (sch) = (btu/hr)/(HV fuel heating value		523.8			
	CO	NOx	PM10	ROG	SOx
	lb/mmcf	lb/mmcf	lb/mmcf	lb/mmcf	lb/mmcf
Form B-1 factors	35	77.7	7.5	7	0.83
Actual (lb/hr)	0.018	0.041	0.004	0.004	0.000
Hours/day	24	24	24	24	24
Actual (lb/day)	0.440	0.977	0.094	0.088	0.010

RISK ASSESSMENT

The installation of a smaller low NOx burner will reduce; therefore the risk is not impacted and is exempted as per 1401(g)(1)(B). Below is the risk from the current burner for reference.

Maximum Individual Cancer Risk (MICR)-
A tier III Screening Risk Assessment was performed building downwash was to be considered. This entailed using the EPA SCREEN3 model to determine the maximum 1 hour concentrations at the corresponding commercial and residential receptor distances. Building downwash was included in the model because the nearest building is closer than 5 stack heights from the source. The resulting highest concentrations were used in the Rule 1401 Risk Assessment Program file version 709e05 to determine the Tier III MICR. A control efficiency of 99 % was used at a distance of 304.8 meters residential, 13.7 meters commercial receptor, and a 13 feet stack height in the city of Fullerton. The risk, at the reported values, was used to ratio down the exit concentrations to coincide with a risk of 0.5 in a million for each of the two units for a total of 1 in a million.

Maximum Individual Cancer Risk (MICR)

MICR = 0.5E-6 (see attached excel risk assessment spread sheet)

Maximum allowed Benzene exhaust concentration –
Benzene = 6.8 ppmv(1-0.99) = 0.07 ppmv

Maximum allowed MTBE exhaust concentration –
MTBE = 21.5 ppmv(1-0.99) = 0.2 ppmv

EVALUATION

Rule 212 A public notice is not required since no school is located within 1000 feet of the site, and the composite risk of the two new oxidizers will be kept under 1 in a million..

Rule 401 The equipment is not expected to emit visible emissions.

Rule 402 The equipment is not expected to emit odorous emissions.

Rule 1147 The new burner is expected to comply with the 60 ppmv limit set in table I of this rule. Please note that this unit was shut off and lockout/tagged on 12-28-2012 because rule 1147(c)(4) allows ten years to come into compliance for units

previously modified. In this case the previous modification was in the year 2003 thus only allowing operation until the year 2013.

Rule 1166 Compliance with 1166(c)(3) is expected

Reg. X National emission Standards for Hazardous Air Pollutants

40CFR63 Subpart R - The facility is not considered a major source because it does not emit or have the potential emit ≥ 10 tons/yr of a single hazardous air pollutant, or ≥ 25 tons/yr of any combination of hazardous air pollutants. Minor source R is applicable, and is included in the facility wide conditions on the Title V permit, as is 40CFR63 Subpart BBBBBB.

Reg. XIII 1303(a) - The thermal/catalytic oxidizer system is accepted as BACT for the control of ROG.
1303(b)(1) - The emissions are below table A-1 limits, hence modeling is not required.
1303(c)(4) - The emissions are exempted from offset because the modification was made solely to comply with a District rule (1147) and the rating of the equipment is not increasing.

RULE 1401 Exempted per 1401(g)(1)(B) per 1041The attached Excel spreadsheet shows that the cancer burden is less than 0.5 and the Screen3 model and Tier III risk analysis is calculated at a risk of 1 in a million using T-BACT for the two oxidizers combined. All chronic and acute hazard indices are below 1.0 for all organ receptors.

RULE 3000 –Title V This bulk terminal is a Title V facility. The change of the burner is an administrative permit revision since a portion of the permit equipment is being removed and replaced with equipment that does not result in an emission increase as per 3000(b)(1)(F).

The Title V revision application number 546860 will include a revision to the monitoring frequency of the VRUs, thus this application will be a minor permit revision. The source test frequency will change from once a year to once every 5 years for the two regenerative VRUs (A/N 540219 and A/N 540221) that are controlled by a CEMS. Please note that the CEMs for VOC (which is subject to quarterly or annual relative accuracy tests) is considered to be more stringent then an annual source test.

RECOMMENDATION

THE FOLLOWING DISPOSITION IS RECOMMENDED:

Issue a P/C-P/O and a Minor Revision of the Title V facility permit subject to the permit conditions under the Title V section D, subject to a 45 day EPA review period.

Cancel application number 540216.