

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 9	PAGE 1
	APPL NO 534027	DATE 9/21/12
	PROCESSED BY TGL	CHECKED BY

**EVALUATION FOR
CONTINUOUS ASSURANCE MONITORING (CAM) PLAN**

APPLICANT'S NAME: TESORO LOGISTICS OPERATIONS, LLC

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EQUIPMENT LOCATION: SAME AS ABOVE

FACILITY ID: 167981

APPLICATION NO. 534027:

Compliance Assurance Monitoring (CAM) Plan submitted for air pollution control equipment operating under Permit to Construct No. 525916 and is described as follows:

VAPOR RECOVERY SYSTEM SERVING TANK TRUCK LOADING FACILITY NOS. 1, 2, 3, AND 4 CONSISTING OF:

1. THERMAL OXIDIZER, JOHN ZINK, MODEL NO. ZCT-3-8-45-2/8-X, DIRECT GAS FIRED, 77.8 MMBTU/HR, WITH THE FOLLOWING EQUIPMENT:
2. LIQUID SEAL DRUM, V-201, 3'-0" DIA. X 6'-0" H.
3. COMBUSTION AIR BLOWER 3 HP
4. COMBUSTION STACK, 8'-0" DIA. X 45'-0" H.
5. KNOCK OUT TANK, BELOW GRADE, 560 GALLON CAPACITY, WITH A DISCHARGE PUMP, P 101, CENTRIFUGAL, WITH MECHANICAL SEAL, 5 HP.
6. EXHAUST BLOWER, 5 HP.
7. BLADDER TANK, NO. 260002, 35'-0" DIA. X 35'-10" H., 6170 BBL CAPA

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 9	PAGE 2
	APPL NO 534027	DATE 9/21/2012
	PROCESSED BY TGL	CHECKED BY

BACKGROUND/PROCESS DESCRIPTION:

Tesoro Logistics is applying for a renewal of its Title V permit (Application No. 534019). A Compliance Assurance Monitoring (CAM) Plan (Application No. 534027) is required as a part of this Title V renewal process and is the subject of this evaluation.

Tesoro Logistics owns and operates a petroleum products bulk terminal. Petroleum products are received primarily via pipeline and are placed in storage tanks prior to being loaded into tank trucks via four loading racks. The petroleum products are then distributed to the marketplace for sale. Commodities loaded consist of gasoline and diesel fuels. The gasoline is blended at the racks with oxygenate in the amount required by State law (10% by volume). The oxygenate used as standard practice in the industry is denatured ethanol (corn ethanol containing 2.5% to 5% gasoline by volume).

The fuel vapors (VOCs) generated by the tank truck loading operation are contained in vapor recovery hoses and initially routed to a bladder tank. From the bladder tank the vapors are fed to a John Zink thermal oxidizer rated at 77.8 Btu per hour. The oxidizer is required by permit condition to operate at a minimum temperature of 1100 degrees to combust (destroy) the VOCs to carbon dioxide and water. In actual practice, the oxidizer is typically operated at temperatures in the 1350°F to 1550°F (chart recorder data include in this file). The most recent source test conducted in April 2012 indicates (the test has yet to be reviewed and approved by AQMD source testing staff) that the oxidizer meets the applicable emission limits and operational parameters required by rules and permit conditions as can be seen from the table below.

2012 Source Test – Preliminary Results

Rule/Permit Condition	Limit/Requirement	Average Value Measured
Rule 462 Condition No. 5	.08 lbs/1000 gals Loaded	0.00096 lbs/1000 gals loaded
40CFR60 Subpart XX Condition No. 8	35 MG/liter Loaded	0.115 MG/liter loaded
Condition No. 4	1100°F (Minimum)	1364°F

A summary of the above source test results is contained in this file. Prior approved source tests show similar results and compliance status.

Tesoro Logistics also operates a carbon adsorber (see A/N 469140/PO G3769 under ID 151984) that vents an underground tank that primarily contains waste water, storm water, and co-mingled product. The outlet of the carbon adsorber is limited to 500 ppmv VOC as a BACT requirement and is verified on a monthly basis using a hydrocarbon analyzer and to date, there are no known

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES	PAGE
	9	3
	APPL NO 534027	DATE 10/12/2012
	PROCESSED BY TGL	CHECKED BY

violations of this emission limitation. This equipment was not mentioned in the CAM Plan submitted by Tesoro Logistics but will be evaluated for CAM applicability and included if required.

CAM APPLICABILITY

The CAM is applicable to Pollutant Specific Emissions Units (PSEUs or “basic” equipment) sources that meet three criteria. PSEUs must:

1. be subject to an emission limitation or standard; and
2. use a control device to achieve compliance; and
3. have a pre-controlled emissions equal to or greater than the Major Source Threshold

1. Tank Truck Loading Racks Venting to Thermal Oxidizer

As stated earlier, the tank truck loading racks are subject to emission limitations under SIP approved AQMD Rule 462 (.08 pounds VOC per 1000 gallon of organic liquid loaded) and under 40 CFR 60 Subpart XX (35 milligrams VOC per liter of gasoline loaded). Being that Tesoro Logistics loads gasoline, a significant amount of pre-controlled emissions are generated and thus an air pollution control device is required to meet the said emission limitations. Therefore, the first two Cam applicability criteria are met.

For the South Coast Basin, the Major Source Threshold (MST) for VOC is 10 tons per year and is based on the pre-controlled emissions from the PSEU (basic process equipment) that is vented to the control device used to achieve compliance. The following summarizes the emissions from the basic process equipment and its associated control device that may be subject to the CAM.

Basic Process Equipment (PSEUs)	Pre-Controlled VOC Emissions (PTE, tons/year)	VOC MST (tons/year)	Associated Control Equipment
Four Tank Truck Loading Racks (See Section D of Proposed Title V Renewal Permit)	9130	10	Thermal Oxidizer (See Section H of Proposed TV Renewal Permit)

The pre-controlled PTE was calculated using the loading loss equation from EPA’s AP-42 assuming RVP 13.5 gasoline being loaded at 70° F at the maximum permitted loading rate of 120,000,000 gallons per month. The calculation is shown below:

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 9	PAGE 4
	APPL NO 534027	DATE 9/21/2012
	PROCESSED BY TGL	CHECKED BY

$L_L = 12.46 \times \text{SMP}/T$ where,

L_L is the loading loss (pre-controlled emissions) per 1000 gallons of gasoline loaded; S is the saturation factor; M is the vapor molecular weight of gasoline; P is the true vapor pressure of gasoline at 70° F and T is the ambient temperature in ° Rankine. Therefore,

$$L_L = (12.46)(1)(62)(8.7)/(460 + 70) = 12.68 \text{ lbs}/1000 \text{ gallons loaded.}$$

Annual emissions then become:

$$12.68 \text{ lbs}/1000 \text{ gals loaded} \times 1,200,000 \text{ gals loaded/ mo} \times 12 \text{ mo/yr} \times \text{ton}/2000 \text{ lbs} =$$

9129.6 tons/yr

This pre-controlled emission rate easily exceeds the 10 tpy MST threshold and the CAM is indeed applicable to the thermal oxidizer venting the tank truck loading racks.

2. Underground Wastewater/Co-Mingled Product Storage Tank Venting to Carbon Adsorber

Though some carbon adsorption systems are exempt from CAM due to continuous emissions monitoring (like those systems subject to a Rule 462 CMS Plan), the carbon adsorption system that passively vents an underground storage tank at Tesoro Logistics is monitored on a monthly basis and is not continuous. The adsorber is subject to an emission limitation (500 ppmv as a BACT requirement) and it is probable that under certain operational scenarios (e.g. a gasoline spill) the working loss from the gasoline accumulating in the tank would easily exceed the 500 ppm emission limit. Consequently, it can be assumed that the carbon adsorption unit at Tesoro is required to meet the imposed 500 ppm emission limitation. However, in reviewing the original evaluation under A/N 324518 for the initial permit issued for this carbon adsorber, the estimated pre-controlled VOC emissions are estimated at approximately 317 pounds per year, well below the MST of 10 tons per year (a copy of this evaluation is included in this folder). Therefore, it is concluded that CAM is not applicable to the carbon adsorption unit at Tesoro Logistics.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES	PAGE
	9	5
	APPL NO 534027	DATE 10/12/2012
	PROCESSED BY TGL	CHECKED BY

CAM PLAN: SUBMITTAL REQUIREMENTS

The CAM is promulgated in 40CFR 64 and contains specific federal monitoring and permit requirements for air pollution control systems that vent basic process equipment at Title V facilities.

A CAM Plan submittal must:

- a. Describe the indicators to be monitored;
- b. Describe the ranges or the process to set indicator ranges;
- c. Describe the performance criteria for the monitoring, including
 - specifications for obtaining representative data
 - verification procedures to confirm the monitoring's operational status
 - quality assurance and control procedures
 - monitoring frequency
 - 4 times per hour (minimum) if post control emissions are equal to or exceed the major source threshold
 - 1 time per day (minimum) if post control emissions are less than the major source threshold
 - data averaging period;
- d. Provide a justification for the use of parameters, ranges, and monitoring approach;
- e. Provide emissions test data; and, if necessary,
- f. Provide an implementation plan for installing, testing, and operating the monitoring.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 9	PAGE 6
	APPL NO 534027	DATE 9/21/2012
	PROCESSED BY TGL	CHECKED BY

The CAM Plan submittal requirements and associated fulfillment is summarized in the table below.

Plan Submittal Requirement	Fulfillment as found in Tesoro's CAM Submittal Document Dated February 2012
Identify Indicator	Tesoro has identified the temperature in the thermal oxidizer combustion chamber as the primary indicator (See Page 2 & Page 4 of Appendix A).
Identify Monitoring Approach	Tesoro has stated that a thermocouple is used to monitor the indicator (See Pages 4 & 5 of Appendix A).
Performance Criteria	The thermocouple is located in the exhaust stack in an appropriate distance downstream from the combustion chamber to ensure proper residence time and combustion temperature (See Page 2).
a. Data Representativeness	
b. Verification of Operational Status	The thermocouple is observed daily (See Page 5 of Appendix A).
c. QA/QC Practices and Criteria	Daily & annual performance procedures & quarterly preventative maintenance procedures are conducted to ensure good QA/QC (See Pages 5 & 6 of Appendix A).
d. Monitoring Frequency	The temperature in the thermal oxidizer combustion chamber is continuously monitored (See Page 5 of Appendix A).
Data Collection Procedure	The strip chart/electronic data recorders collect temperature in the thermal oxidizer combustion chamber in constant real time readings (See Page 5 of Appendix A).

In addition, Part 64 requires Title V permits to have the following items:

- a. The approved monitoring approach, including the indicators and the means to measure the indicator(s) to be monitored;
- b. A definition of exceedances or excursions;
- c. The duty to conduct monitoring;
- d. Minimum data availability and averaging period requirements; and
- e. Milestones for testing, installation, or final verification (as applicable).

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 9	PAGE 7
	APPL NO 534027	DATE 10/12/2012
	PROCESSED BY TGL	CHECKED BY

Permits may also contain requirements for a facility to develop and implement a Quality Improvement Plan (QIP) in the event excessive exceedances/excursions (designated as a deviation in Regulation XXX) occur.

The requirements and associated fulfillment of the Title V permit for Tesoro Logistics is summarized in the table below.

Permit Requirement	Fulfillment
Shall include indicators to be monitored	Condition No. 4 of thermal oxidizer permit requires the temperature of the combustion chamber be continuously monitored.
Shall include Monitoring Approach	Condition No. 4 of the thermal oxidizer permit requires that the indicator (temperature) be monitored with a thermocouple.
Shall include definition of excursions & exceedances.	Condition No. 4 of thermal oxidizer permit defines excursions/exceedances (as deviations per Regulation XXX) as measured temperatures that are below 1100 °F.
Shall include duty to conduct monitoring	Both the thermal oxidizer permit and the Rule 462 CMS Plan rigorously mandate monitoring in a prescribed manner.
Shall include requirements for data availability & averaging period	The Title V permit requires pertinent data and records to be available for 5 years; Condition No. 4 of thermal oxidizer permit sets the averaging period for temperature determination at 15 minutes (excluding start-up and shutdown).
Shall include milestones for installation, testing, & verification	Thermal oxidizer and CMS (thermocouple and recorder) are currently installed and operating*; on-going annual testing for compliance is required by Condition No. 5 of thermal oxidizer.
May include Quality Improvement Plan (QIP)	Condition No. 4 on thermal oxidizer includes criteria for submittal of a QIP.

*Proposed modified CMS plan on file (A/N 534013) to add multiple thermocouples and digital recorders.

RECOMMENDATION

Propose the CAM Plan (A/N 534013) with the Title V renewal (A/N 534019) to EPA for 45-day review and to the public (via newspaper notice) for 30-day comment period; add the following CAM condition to the permit for the thermal oxidizer in Section H at Tesoro Logistics:

- 4) THE OPERATOR SHALL OPERATE AND MAINTAIN THIS EQUIPMENT ACCORDING TO THE FOLLOWING REQUIREMENTS:

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 9	PAGE 8
	APPL NO 534027	DATE 9/21/2012
	PROCESSED BY TGL	CHECKED BY

WHENEVER THE THERMAL OXIDIZER IS IN OPERATION, A TEMPERATURE NOT LESS THAN 1100 DEGREES FAHRENHEIT (ON A 15-MINUTE AVERAGE) AND A 0.3 SECOND GAS RESIDENCE TIME SHALL BE MAINTAINED IN THE COMBUSTION CHAMBER EXCEPT FOR PERIODS OF START-UP AND SHUTDOWN. START-UP IS DEFINED AS THE PERIOD FROM IGNITION TO THE TIME WHEN 1100 DEGREES FAHRENHEIT IS ACHIEVED, NOT TO EXCEED 30 MINUTES. SHUTDOWN IS DEFINED AS THE PERIOD FROM WHEN THE VAPOR VALVE BEGINS TO SHUT AND IS COMPLETELY CLOSED SHUT, NOT TO EXCEED 30 MINUTES. TO COMPLY WITH THIS CONDITION, THE OPERATOR SHALL INSTALL AND MAINTAIN A TEMPERATURE MEASUREMENT AND RECORDING DEVICE TO CONTINUOUSLY INDICATE THE TEMPERATURE IN THE COMBUSTION CHAMBER OR IN A LOCATION IN THE DUCTWORK/EXHAUST STACK DOWNSTREAM FROM THE COMBUSTION CHAMBER. THE TEMPERATURE MEASUREMENT DEVICE SHALL BE INSTALLED AND OPERATED IN COMPLIANCE WITH CONDITIONS SET FORTH IN AN APPROVED RULE 462 COMPLIANCE PLAN.

THE OPERATOR SHALL OPERATE AND MAINTAIN A TEMPERATURE MEASURING AND RECORDING SYSTEM TO CONTINUOUSLY MEASURE AND RECORD THE COMBUSTION CHAMBER TEMPERATURE PURSUANT TO THE OPERATION AND MAINTENANCE REQUIREMENTS SPECIFIED IN 40 CFR PART 64.7. SUCH A SYSTEM SHALL HAVE AN ACCURACY OF WITHIN 1% OF THE TEMPERATURE BEING MONITORED AND SHALL BE INSPECTED, MAINTAINED, AND CALIBRATED ON AN ANNUAL BASIS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS USING AN APPLICABLE AQMD OR EPA APPROVED METHOD.

FOR THE PURPOSE OF THIS CONDITION, A DEVIATION SHALL BE DEFINED AS WHEN A COMBUSTION CHAMBER TEMPERATURE OF LESS THAN 1100 DEGREES FAHRENHEIT OCCURS DURING NORMAL OPERATION (i.e..EXCLUDING START-UP AND SHUTDOWN) OF THE EQUIPMENT IT SERVES. THE OPERATOR SHALL REVIEW THE RECORDS OF THE COMBUSTION CHAMBER TEMPERATURE ON A DAILY BASIS TO DETERMINE IF DEVIATION OCCURS OR SHALL INSTALL AN ALARM SYSTEM TO ALERT THE OPERATOR WHEN A DEVIATION OCCURS.

WHENEVER A DEVIATION OCCURS, THE OPERATOR SHALL INSPECT THIS EQUIPMENT TO IDENTIFY THE CAUSE OF SUCH A DEVIATION, TAKE IMMEDIATE CORRECTIVE ACTION TO MAINTAIN THE COMBUSTION CHAMBER TEMPERATURE AT OR ABOVE 1,400 DEGREES FAHRENHEIT, AND KEEP RECORDS OF THE DURATION AND CAUSE (INCLUDING UNKNOWN CAUSE, IF APPLICABLE) OF THE DEVIATION AND THE CORRECTIVE ACTION TAKEN.

ALL DEVIATIONS SHALL BE REPORTED TO THE AQMD ON A SEMI-ANNUAL BASIS PURSUANT TO THE REQUIREMENTS SPECIFIED IN 40 CFR PART 64.9 AND CONDITIONS NOS. 22 AND 23 OF SECTION K OF THIS PERMIT. THE SEMI-ANNUAL MONITORING REPORT SHALL INCLUDE THE TOTAL OPERATING TIME OF THIS EQUIPMENT AND THE TOTAL ACCUMULATED DURATION OF ALL DEVIATIONS FOR EACH SEMI-ANNUAL REPORTING PERIOD SPECIFIED IN CONDITION NO. 23 IN SECTION K OF THIS PERMIT.

THE OPERATOR SHALL SUBMIT AN APPLICATION FOR A QUALITY IMPROVEMENT PLAN (QIP) IN ACCORDANCE WITH 40 CFR PART 64.8 TO THE AQMD IF AN ACCUMULATION OF DEVIATIONS EXCEEDS 5 PERCENT DURATION OF THIS EQUIPMENT'S TOTAL OPERATING TIME FOR ANY SEMI-ANNUAL REPORTING PERIOD SPECIFIED IN CONDITION NO. 23 IN SECTION K OF THIS PERMIT. THE REQUIRED QIP SHALL BE SUBMITTED TO THE AQMD

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES	PAGE
	9	9
	APPL NO 534027	DATE 10/12/2012
	PROCESSED BY TGL	CHECKED BY

WITHIN 90 CALENDAR DAYS AFTER THE DUE DATE FOR THE SEMI-ANNUAL MONITORING REPORT.

THE OPERATOR SHALL INSPECT AND MAINTAIN ALL COMPONENTS OF THIS EQUIPMENT ON AN ANNUAL BASIS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE OPERATOR SHALL KEEP ADEQUATE RECORDS IN A FORMAT THAT IS ACCEPTABLE TO THE AQMD TO DEMONSTRATE COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS SPECIFIED IN THIS CONDITION AND 40CFR PART 64.9 FOR A MINIMUM OF FIVE YEARS. [RULE 1303(a)(1) BACT, RULE 462, 3004(a)(4) PERIODIC MONITORING, 40CFR PART 64]