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TESORO LOGISTICS OPERATIONS, LLC WILMINGTON SALES TERMINAL	Processed by FL03	Checked by <u>EST</u>

EVALUATION FOR PERMITS TO CONSTRUCT
FOR A BIODIESEL PROJECT

COMPANY NAME AND LOCATION ADDRESS

Tesoro Logistics, LLC (Wilmington Sales Terminal)
1930 E. Pacific Coast Highway
Wilmington, CA 90744

Facility ID# 167981

APPLICATIONS & DESCRIPTION

A/N 546309

New Fixed Roof Storage Tank (Biodiesel)

See draft permit for detailed equipment description.

A/Ns 546310-313

Modification of Bulk Loading Systems 1, 2, 3, & 4 (to include biodiesel capabilities)

A/N 546308

Title V Revision Application

BACKGROUND

Tesoro Logistics Operations, LLC operates a petroleum product storage and distribution facility (known as the Wilmington Sales Terminal or WST) located in Wilmington, CA. The WST is a Title V facility which operates, under AQMD permits, three petroleum storage tanks, four tank truck bulk loading systems, one waste water storage system with a carbon adsorption system, and an air pollution control system (thermal oxidizer). The thermal oxidizer controls VOC vapors that are displaced during the tank truck loading operations at the four permitted tank truck bulk loading systems.



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Tesoro Logistics has submitted this set of applications (A/Ns 546308-313) for a project which will allow the facility to have the capability of storing and unloading/loading biodiesel fuel. The facility is currently permitted to handle gasoline, petroleum diesel, and jet fuel only. The project will involve the construction of a new biodiesel storage tank as well as modifications to the existing four bulk loading systems to accommodate biodiesel product. The modifications will involve the installation of pumps, meters and associated piping and fugitive components (valves, connectors, etc.).

NOV/NC HISTORY

A Notice of Violation (NOV) was issued to the Wilmington Sales Terminal in October of 2012 for violating the Rule 462(d)(1)(F) leak threshold. Two leaks were found on vapor recovery hoses and one leak on the bladder tank. The leaks were repaired expeditiously and the facility is currently in compliance.

PROCESS DESCRIPTION

Biodiesel will arrive by tank truck and will be unloaded at Bulk Loading System No. 1 and placed in a new fixed roof storage tank. Biodiesel products are typically lipid esters made from the esterification of animal or vegetable fats/oils. It may be handled/obtained in pure form but also may contain a small percent of added petrochemical (naphthalene, diesel fuel, etc.) to serve as a denaturing ingredient, much like ethanol which is denatured with gasoline when the end use is for fuel purposes. However, in Tesoro's case, the biodiesel is not denatured and is known as B100. The pure non-denatured biodiesel will then be blended with petroleum diesel at the four bulk loading systems and loaded into tank trucks. The blended product consists of 50% biodiesel product and 50% petroleum diesel product and will be transported in the trucks for further distribution into the marketplace. The organic vapors (VOC) displaced from the tank trucks as a result of loading the biodiesel will be collected and routed to an existing permitted thermal oxidizer (Permit to Construct No. 525928) where the vapors will be destroyed.



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EQUIPMENT CONSTRUCTION/MODIFICATIONS & ASSOCIATED EMISSIONS

New Biodiesel Storage Tank

Tesoro will be installing a new fixed roof storage tank to store the biodiesel product. The biodiesel product (lipid esters) are "heavy organics" with high boiling points (300 to 700 degrees Fahrenheit) and low vapor pressures (<.002 psia). See MSDS for product specifications.

Tesoro ran the EPA Tanks 4.09d program using their own biodiesel data (VP .009 psi) and 342 turnovers per year (as opposed to the 180 turns stated on the tank summary form) and arrived at a maximum emissions total of 466.2 pounds per year which they computed to be 1.3 pounds per day (a copy of tank run is included in this file).

As a comparison, another tank run was performed (a copy included in this file) using petroleum diesel as the representative commodity since Tesoro wishes the tank to be able to store biodiesel and petroleum diesel product. Petroleum diesel has vapor pressures ranging (.006 psi to .0096 psi) throughout the year depending on seasonal temperature changes. A throughput of 360 turnovers per year (30 turnovers per month) yielded an emission rate of 423.11 pounds per year with the maximum monthly emission rate of 41.55 pounds per month occurring in August. This equates to 1.4 pounds per day on a 30-day average. In summary, both approaches yield nearly identical emission rates for both biodiesel and petroleum diesel products.

In either case, since the VOC emissions exceed 1 lb/day and BACT would be required, which, for a major source, would require that the storage tank be vented to a vapor recovery system with a minimum 95% control efficiency. Since Tesoro Logistics prefers not to employ BACT for this tank, the 360 tank turnovers per year was lowered to 168 turnovers per year (14 turnovers per calendar month) and re-run in the Tanks program. The results are as follows:

Maximum monthly emissions (August) = 29.18 lbs/mo = 0.98 lbs/d = .041 lbs/hr

Annual emissions = 295.97 pounds per year.



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Bulk Loading Racks

Tesoro Logistics Wilmington Sales Terminal currently operates four existing bulk loading systems (Nos. 1, 2, 3, & 4). Each system is allowed under AQMD permit to load gasoline, denatured ethanol (as the gasoline's oxygenate), and diesel fuel. In addition to these commodities, Bulk Loading System No. 2 is allowed to load jet fuel. Finally, Bulk Loading System No. 3 is allowed to unload denatured ethanol. The four bulk loading systems are allowed a combined loading throughput of 120,000,000 million gallons in any one calendar month. Each system (along with the thermal oxidizer that vents them) is required to meet an emission limit of .08 pounds of VOC per 1000 gallons of product loaded as required by Rule 462 and which also is designated as BACT at the time the oxidizer was permitted.

The modification to the bulk loading systems will include the addition of two 60 H.P. biodiesel loading pumps/metering system that will be common to all four bulk loading systems. In addition, Bulk Loading System No. 1 will include two 60 H.P. unloading pumps to offload biodiesel product from tank trucks for transfer into the new biodiesel storage tank (Tank No. 4504). All existing diesel loading arms at all four bulk loading systems will be used for all loading/unloading of biodiesel and no new hose/arm assemblies are needed.

Tesoro Logistics is not requesting any increases in loading throughput as a result of adding biodiesel loading capability. In addition, there are no requested changes to the emission limitation of .08 pounds per 1000 gallons of product loaded. Thus, the emissions from the tank truck loading portion of systems remain unchanged.

However, fugitive emissions will result from the addition and operation of the loading/unloading pumps as well as from valves and flanges installed in the additional piping. Tesoro Logistics ran a fugitive component calculation based on the 500 ppm screening limit in the fugitive component correlation spreadsheet used by AQMD (copy in this file). This calculation has been checked and found to be correct. The total sum of fugitive emissions from 147 valves, 4 pumps, and 196 flanges are summarized as follows:

1889.52 lbs/yr = 157.46 pounds per month = 5.2 lbs/d (30-day average).

Required Offsets

Total emissions to be offset from project (new tank + modification to bulk loading systems) =

.98 lbs/d + 5.2 lbs/d = 6.18 lbs/d x 1.2 offset factor = 7.42 lbs/d ≈ 7 lbs/d



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Thus, 7 pounds of ERCs will be required for the project. Tesoro has 3 pounds registered to the WST and another 6 pounds that are currently being transferred to the WST.

Toxic Emissions

As a worst case, it will be assumed that all of the emissions from the storage tank and fugitive components will be from petroleum diesel, when in actuality, for the fugitives, have of the emissions are from pure biodiesel and do not have toxic compounds.

For the storage tank, the emissions of petroleum diesel are:

.034 lbs/hr = 295.97 lbs/yr

For the fugitive components for the loading racks, the emissions of petroleum diesel are:

.22 lbs/hr = 1889.52 lbs/yr

In actuality, the fugitive components could be divided by four to compute risk on a permit unit basis (four bulk loading systems) but as a worse case it will be viewed as a single area source of emissions for worst case HRA purposes.

The toxic speciation of diesel is as shown below.

TAC	Wt.% in Vapor
Benzene	0.20
Ethylbenzene	0.32
n-Hexane	0.04
Toluene	2.3
Naphthalene	0.13

Based on this speciation, a Tier 2 HRA for both the storage tank and fugitive emission sources were performed (see copies in this file). No thresholds were exceeded for either MICR or Hazard Indices.



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ADDITIONAL CHANGES

In addition to the inclusion of the new biodiesel additions to the equipment description, some other changes will be included in the equipment description. The ethanol unloading pumps were incorrectly designated as 40 H.P. and are in actuality 60 H.P. and will be designated as such. In addition, the number of gasoline and diesel loading arms for Bulk Loading System No. 2 and Bulk Loading System No. 4 were transposed and this will be changed to reflect the proper configuration.

Lastly, there is some Rule 219 equipment no longer at the facility that will be removed (with appropriate Section K changes) and Section A will be also be updated with current contact information. These changes will be included in the final permit issuance as administrative changes under Regulation XXX.

RULES EVALUATION

Rule 212

The increase in MICR is less than 1 in one million for each permit unit, and there is no school within 1000 feet; and the emission thresholds in subdivision (g) are not exceeded. Therefore, no public notice is required.

Rule 401

Visible emissions are not expected under proper operation of this equipment.

Rule 402

No nuisance complaints are expected with proper operation of the equipment.

Rule 462

Biodiesel vapor pressure less than 1.5 psia and is not subject to Rule 462, but vapors will continue to be vented to vapor control device.



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Rule 463

The tank contents are heavy liquids with vapor pressures less than 0.5 psi and therefore the tank roof requirements do not apply; compliance with all other applicable requirements of this rule is expected.

Rule 466/466.1

Facility is required to comply with these rules as the rules are currently listed as applicable Section K the Title V permit for this facility. Continued compliance is expected.

Rule 1149

Facility expected to comply with degassing requirements of this rule as applicable and will be required as such on new biodiesel tank.

Rule 1173

This rule not applicable to this facility but portions of it may apply in so much as they are included in other conditions that are imposed and tagged as BACT.

Rule 1178

This facility has not reported emissions in AER greater than 20 tons per year, therefore this rule is not applicable.

Reg. XIII

BACT

Emission increases for storage tanks less than one pound per day, no BACT required. Emission increases for fugitive components are 5.2 pounds per day. BACT will be imposed by a condition requiring the use of bellow sealed valves where feasible and an explanation as to justify instances where bellow sealed valves were not employed (company has projected that approximately half of the total valves to be installed will be of the bellow sealed type.



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Displaced vapors from tank trucks from loading of tank trucks will be routed to existing thermal oxidizer; total loading throughput remains unchanged as does the performance standard (.08 lbs/1000 gallons organic liquid loaded) of the loading systems/thermal oxidizer; no emission increase from tank truck loading will therefore occur.

Offsets

Total VOC emissions from project in the amount of 7 pounds per day (including 1.2 offset factor) are required to be offset. Tesoro has secured 9 pounds of ERCs, though 6 of these pounds need to be transferred to this facility ID number (a ERC Change of Title application has been filed).

Modeling

No modeling for VOCs is required.

Major Polluting Facility

This project constitutes a greater than one pound increase and is a Major Polluting Facility and subject to the requirements of 1303(b)(5). Per the Form 400-CEQA, it is accepted that the project is not subject to CEQA and thus also satisfies that no alternative analysis is required. Tesoro has certified Statewide Compliance (see letter in file). Protection of Visibility is not applicable since the project does not emit particulate matter.

General

The facility is currently in compliance with all applicable rules and regulations of the District and thus meets the requirements of 1303(b)(4).

Rule 1401

The increases in toxic emissions from both the new biodiesel storage tank and the fugitive components to be installed on the bulk loading systems each result in an MICR of less than one in one million and Hazard Indices less than 1.0.

Regulation XX

This facility is not a RECLAIM facility.



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Regulation XXX

This facility is a Title V facility and the project has an emission increase of 7 pound per day of VOC emissions, therefore it will be sent to EPA for 45-day review as a de minimus significant permit revision.

CEQA

The CEQA Applicability Form (400-CEQA) indicates that the project does not have any impacts which trigger the preparation of a CEQA document.

40CFR6 60 Subpart K_b

These new storage tank stores commodities with vapor pressures below 3.5 kPa (0.5 psi) is not subject to this NSPS.

40CFR6 60 Subpart XX

This NSPS regulates the loading of gasoline into tank trucks and is not applicable to the loading of biodiesel; even so, vapors generated from the loading of biodiesel will be vented to air pollution control equipment and the emission standard of this rule (35 MG/Liter loaded) will easily be met.

40CFR 63 Subpart R (Gasoline Distribution MACT)

This facility is not a major source of HAPs and is thus only subject to the minor source requirements (recordkeeping) of this Subpart as stated in the facility-wide condition in Section D with supporting conditions in Section J of Title V permit. Continued compliance is expected.

40CFR 63 Subpart BBBBBB (Gasoline Distribution GACT)

As a minor source under Subpart R, this facility is required to comply with this Subpart as required by a facility-wide condition in Section D with supporting conditions in Section J of Title V permit. Continued compliance is expected.



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40CFR 63 Subpart EEEE (Organic Liquids Distribution MACT)

This facility is not a major source of HAPs and is not subject to this NESHAP.

RECOMMENDATIONS

Propose the biodiesel project to EPA for 45-day review (expedited) as a de minimus significant permit revision (see sample permit) prior to issuing PC-POs in Section D of Title V Facility Permit.