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OWNER/OPERATOR:

COID: 800057

KINDERMORGAN LIQUID TERMINALS, LLC
1100 TOWN AND COUNTRY RD
ORANGE, CA 92868

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EQUIPMENT LOCATION:

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CARSON, CA 90810

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AREA MANAGER
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EQUIPMENT DESCRIPTION

A/N 510107
TV DeMinimus Significant Revision

Group 1: Change of Conditions to Existing Equipment (Page 5)

<i>Application No.</i>	<i>Equipment</i>	<i>Action</i>
469053 <i>(prev A/N 342316: R-F16482)</i>	Rack 1A	Add NSR limit, add VOC limit of 0.0565 lb/1000 gal, replace pump 40 with pumps 40a and 40b, clarify pump 49 vent.
469087 <i>(prev A/N 342317: R-F 16483)</i>	Rack 1B	Add NSR limit, remove reference to flow meters, add VOC limit of 0.0565 lb/1000 gal, replace pump 40 with pumps 40a and

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		40b, clarify pump 49 vent.
469091 <i>(prev A/N 342308: R-F16479)</i>	Rack 2A	Add NSR limit, add VOC limit of 0.0565 lb/1000 gal, replace pump 40 with pumps 40a and 40b, clarify pump 49 vent.
469092 <i>(prev A/N 342309: R-F16480)</i>	Rack 2B	Add NSR limit, add VOC limit of 0.0565 lb/1000 gal, replace pump 40 with pumps 40a and 40b, clarify pump 49 vent.
469094 <i>(prev A/N 342312: R-F16481)</i> <i>(P/C 528298)</i>	Rack 2C	Add NSR limit, add VOC limit of 0.0565 lb/1000 gal, Incorporate P/C 528298 - replace pump 40 with pumps 40a and 40b, reduce allowable fugitives from 350 to 250 ppm, clarify pump 49 vent.
469095 <i>(prev A/N 296232: D86568)</i> <i>(C-07629 – relocation P/C issued 1980 to P/O P-59234)</i>	Tank Truck Load/Unload Additive	Clarify description of slop sump, remove descriptions of 2 HP motor, correct HPs, update obsolete condition limiting 20K gpd, remove R462 CARB certification thruput limits since this rack does not load R462 liquids. Removed emission limits under E&R since this equipment is not subject to R462, XX, nor R.

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Group 2: Plan(s) for Section I (page 14)

<i>Application No.</i>	<i>Equipment</i>	<i>Action</i>
543659	Rule 463 Plan	Approve Plan

Applications to be cancelled:

A/N 452195 (Rack 1A) - superceded by newer A/N 469053

A/N 452196 (Rack 1B) - superceded by newer A/N 469087

A/N 530482 (Rack 1B-Admin change) – requested changes incorporated in A/N 469087

A/N 446996 (additive) - superceded by newer A/N 469095

A/N 452197 (additive) - superceded by newer A/N 469095

A/N 426352 (R463 Plan) - superceded by newer A/N 543659

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Permit to Construct to be cancelled:

A/N 528298 (Rack 2C) – incorporate new pumps 40a and 40b into above A/Ns (common to racks 1A, 1B, 2A, 2B) and reduce allowable fugitive limit based on revised fugitive count:

“BY THE REMOVAL OF:

PUMP NO. 40, LOADING, CENTRIFUGAL, WITH MECHANICAL SEAL AND 100 HP MOTOR (COMMON TO LOADING FACILITY 1-A, 1-B, 2-A AND 2-B)

AND THE ADDITION OF

TWO (2) PUMPS NOS. 40a, 40b, LOADING, CENTRIFUGAL, EACH WITH MECHANICAL SEAL AND 75 HP MOTOR (COMMON TO LOADING FACILITY 1-A, 1-B, 2-A AND 2-B), ONE AS BACKUP.”

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FACILITY BACKGROUND:

Kinder Morgan Liquids Terminals (KMLT), a subsidiary of Kinder Morgan Energy Partners, operates an existing petroleum product storage tank farm, gasoline bulk loading racks, and a pipeline transfer center at its Carson Terminal, located at the southeast corner of Alameda Street and Sepulveda Boulevard in the City of Carson. This is a major petroleum products terminal which consists of about 90 storage tanks, five gasoline loading racks, two vapor recovery and disposal systems, and other ancillary equipment. The total storage capacity is about 4.26 million barrels and the gasoline loading racks handle an average of 1.9 million gallons per day.

The tanks are connected by a pipeline system that allows products to move about the facility as well as with nearby refineries. In addition, large capacity shipping pumps connect the facility to the intrastate and interstate pipeline system from which petroleum products can be transfer to Southern California, Nevada, and Arizona.

The Carson Terminal has been a Title V facility since 5/17/10, and the facility is currently covered by Facility Permit ID 800057.

There are no NC's or complaints during the last three years. There is one NOV (P51973) for monthly thruput exceedance in Tank 80005, and violation is "closed" as of 2/1/12. Facility currently in compliance.

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GROUP 1 (Change of Conditions to Existing)

A/N 469053

TWO POSITION TANK TRUCK LOADING RACK, 1-A (LANES 7 & 8) CONSISTING OF:...

(see draft permit)

A/N 469087

TANK TRUCK LOADING RACK, 1-B (LANES 9 & 10) CONSISTING OF:

(see draft permit)

A/N 469091

TWO POSITION GASOLINE AND DIESEL TANK TRUCK LOADING RACK, 2-A (LANES 1 & 2) CONSISTING OF:

(see draft permit)

A/N 469092

TWO POSITION GASOLINE AND DIESEL TANK TRUCK LOADING RACK, 2-B (LANES 3 & 4) CONSISTING OF:

(see draft permit)

A/N 469094

TWO POSITION TANK TRUCK LOADING RACK, 2-C (LANES 5 & 6) CONSISTING OF:

(see draft permit)

A/N 469095

ONE POSITION TRUCK, PETROLEUM PRODUCT BOTTOM UNLOADING, ADDITIVE BOTTOM LOADING FACILITY CONSISTING OF:

(see draft permit)

INTRODUCTION:

These applications were originally submitted 5/10/07 as part of the "18 tank project" where commodity vapor pressures were modified upon issuance of a Facility Permit to reflect actual operating conditions. Based on an agreement with AQMD Management, only offsets would be required for emission increases due to the vapor pressure increases (no BACT required). KMLT took a "hit" on the allowable emission limit on the two afterburners to generate the ROG offsets in a "concurrent facility modification". Permits to Operate were issued for the

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tanks (17 tanks permits were issued at the finale on January 1, 2010. The afterburners were granted Permits to Construct (A/N's 449620, 449622) with a lower allowable emission limit of 0.045 lb/1000 gal on 8/18/08 (along with the groundwater collection and treatment system which also needed offsets). Later the afterburner were "reissued" in early 2010 to "return" some of the emissions back to the VRU since less offsets were actually needed. The VRU's were reissued with a VOC limit of 0.0565 lb/1000 gal.

These rack applications will now be processed to include a facility total loading throughput limit of 6,405,840 gallons per day (194,844,300 gal/mo of R462 product), which was a factor in determining and generating needed offset amounts, in order to "tie" the "18-tank project" together. An additional amount of non-Rule 462 product (less than 1.5 psia) will also be added where the emissions from the amount added will be less than 0.41 lb/day.

Additionally, A/N 452195 (Rack 1A), A/N 452196 (Rack 1B), A/N's 446996 & 452197 (Tank Truck Load/Unload Additive) were submitted for Admin changes (HP ratings of pumps changed/corrected/removed, remove turbine meter). These applications will be cancelled and the requested changes incorporated into applications (A/N 469053 (Rack 1A), A/N 469087 (Rack 1B), A/N 469095 (Additive)).

Also, pump 49 (common to all five racks) is vented to the afterburners, but is first directed to a vapor tank (no. 9548) prior to the afterburners. KMLT has requested that this equipment description be clarified to reduce confusion.

Also, A/N 528298 (Rack 2C) was submitted October 13, 2011 to replace Pump No. 40 with two new pumps. A Permit to Construct was issued 1/11/2012. Pump 40 is "common to" all 5 racks and this change will also be incorporated into A/N 469053, 469087, 469091, 469092, and 469094. Additionally, P/C 528298 was issued with a fugitive limit of 350 ppm (to remain below the offset trigger). After construction and a re-count of fugitive components, this limit will be reduced to 250 ppm to stay below the 0.41 pound offset trigger for Major Sources. Permit to Construct A/N 528298 will be cancelled. (See Excel Spreadsheets 500 ppm components removed (0.8 lb/day) and 250 ppm components added (1.21 lb/day) and based on fugitive count from P. Liao 1/16/2013 email attachment.

PROJECT DESCRIPTION:

The Facility Permit issued to KMLT in May 2005 listed a facility throughput of 14,000,000 GPD when vent gases are directed to the primary thermal oxidizer (condition P1.1), 4,800,000 GPD when vent gases are directed to the backup thermal oxidizer (condition P1.2), and 16,000,000 GPD as a total daily facility throughput (including incoming crude)

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(condition P1.3). These thrupt limits were carried over to the Initial TV Permit issued May 17, 2010.

Subsequent conversations with KMLT staff indicated that these thrupt amounts are maximum thrupt as certified by CARB testing, not NSR/Reg 13 limits. A search of historical records/applications/evaluations show that the actual loading varies from 1.1 mm GPD (per AER in 1987) to 6,405,840 GPD (max loading capacity per engr. eval. in A/N 225392-4 dated 7-8-90 (Racks 2A,B,C).

The facility thrupt loading limit of 6,405,840 gpd (194,844,300 gallons/month) will replace the higher CARB limits.

EMISSIONS CALCULATIONS:

(5 gasoline racks)

Based on a facility thrupt gasoline loading of 6,405,840 gpd and allowable emissions of 0.0565 lb/1000 gallons:

$$\begin{aligned} \text{VOC (R2gas)} &= 6,405,840 \text{ gal/day} * 0.0565 \text{ lb/1000 gal} * 1/5 \text{ racks} \\ &= 72.386 \text{ lb/day per rack} \\ *1/24 &= 3.016 \text{ lb/hr (gasoline)} \end{aligned}$$

$$\begin{aligned} \text{VOC (R1gas)} &= 3.016 \text{ lb/hr} * (1/0.02) \text{ (Assuming 98\% DRE across afterburners)} \\ &= 150.8 \text{ lb/hr} \\ &= 3619.3 \text{ lb/day} \end{aligned}$$

In order to determine an additional amount of non Rule 462 commodity (ie. jet kerosene or lower TVP) loading where there will be less than 0.41 lb/day emission increase (no offsets):

$$L = 12.46 \text{ SPM/T}$$

$$\text{Where } S = 0.6$$

$$P1 = 1.5 \text{ psia (non R462 product)}$$

$$P2 = 0.011 \text{ psia @70 deg (jet kerosene – highest non R462 product)}$$

$$M = 130$$

$$T = 530$$

$$\begin{aligned} L1 &= 12.46 (0.6)(1.5)(130)/530 \\ &= 2.75 \text{ lb/1000 gal} \end{aligned}$$

$$\begin{aligned} L2 &= 12.46(0.6)(0.011)(130)/530 \\ &= 0.02 \text{ lb/1000 gal uncontrolled} \end{aligned}$$

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At 98% DRE = $L_2(R_2 \text{ low vp}) = 0.0004 \text{ lb/1000 gal}$

If we set allowable increase ROG(R2 low vp) = 0.4 lb/day (or 0.0167 lb/hr), then:

Allowable low VOC throughput = $(0.4 \text{ lb/day}) / (0.0004 \text{ lb/1000 gal})$
 = 1,000,000 gal/day jet kerosene/diesel/etc where $VP \leq 0.011 \text{ psia}$

Facility Throughput = 6,405,840 gasoline + 1,000,000 gpd low vp
 = 7,405,840 gpd
 365 1/12 = 225,260,967 gallons per month

Each rack: ROG (R2) = $3.016 + 0.0167 = 3.03 \text{ lb/hr}$
 ROG (R1) = $3.03 * 0.02 = 151.5 \text{ lb/hr}$

(Additive Rack- A/N 469095)

From historical files (A/N C-07629, evaluation dated June 12, 1980), the additive loading rate was 2000 bbl/yr (7000 gal/mo), $VP = 0.122$ (for xylene with solute added), $MW = 106$, $T = 530 \text{ deg R}$, $S = 0.6$, $Eff = 0\%$ (no control). However, both permits issued under C-07629 and subsequently 296232 contained a permit condition limiting the thruput to no more than 20,000 GPD of organic liquid with TVP of 1.5 psia or greater. This was a "standard condition" back in 1980 when C-07629 was issued a "relocation" permit and was used to "define" this rack as a non-Class III facility so that a vapor collection/disposal system would not be required (R462 version October 5, 1979). Currently, R462 requires vapor control for any Class A facility which loads organic liquid with vapor pressure greater than or equal to 1.5 psia to meet 0.08 lb/1000 gal. Since this rack is not controlled, a new condition limiting the vapor pressure (0.122 psia true) and thruput (7000 gal/mo) to such that there is no change in emissions (no offsets, no BACT) will be added.

Additive Loading Losses: VOC emissions from loading petroleum products into tank trucks can be calculated by using the equation in EPA AP-42, 5.2:

$$L = 12.46 \text{ SPM/T}$$

Where: L = VOC emissions in lbs/1000 gal loaded
 M = Molecular wt. of vapor, 106 lb/lb-mole (from C-07629)
 P(1) = True VP, 0.122 psia @ 70 deg. (From C-07629, PREMOD)

T = 530 deg R (70 F + 460)(from C-07629)
 S = Saturation factor, 0.6 (sub. fill, ded.normal service, Table 5.2-1,AP-42)

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For uncontrolled,

$$L(1) = 0.18 \text{ lb/1000 gal loaded}$$

Pre = Post:

$$R1/R2(\text{ROG load}) = 0.18 \text{ lb/1000} * 7000 \text{ gal/mo}$$

$$= 1.28 \text{ lb/mo}$$

$$* 1/30 = 0.043 \text{ lb/day (30-day)}$$

$$* 1/24 = 0.00177 \text{ lb/hr}$$

$$= 15.3 \text{ lb/yr}$$

$$= 0.00766 \text{ tpy}$$

Emissions Summary:

Equipment (ROG)	PreMod <lb/hr>	PreMod <lb/day>	PostMod <lb/hr>	PostMod <lb/day>	Project Change +/-
One Rack	3.016	72.38	3.03	72.72	
Five Racks		367 (30day)		367.4 (30-day)	+0.4
Additive loading		0.043		0.043	+0
Total Project					+0.4

Project increase is 0.4 lb/day, so offsets are not required.

Health Risk Assessment:

There is a 0.4 lb/day (146 lb/yr) increase of ROG emissions from this project. Although the emission increase is due to the additional diesel/jet kerosene/low vapor pressure commodity, we will assume gasoline TACs to be conservative:

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TAC Emissions (Assume 150 lb/yr)

TAC	Wt.% Vapor	in	Emissions, lbs/yr	Emissions, lb/hr
Benzene	2.80		4.2	0.00048
Ethyl benzene	0.10		0.15	0.00002
n-Hexane	4.13		6.20	0.00071
Toluene	1.46		2.19	0.00025
Xylenes	0.51		0.77	0.00009
Naphthalene	0.0014		0.0021	2.4E-7
Methanol	1.60		2.4	0.00027
Hydrogen fluoride	1.00		1.5	0.00017
Hydrogen sulfide	1.00		1.5	0.00017
Styrene	0.16		0.24	0.00003
Butadiene	0.11		0.17	0.00002
Cresol	0.0013		0.00195	2.23E-7
Phenol	0.0015		0.00225	2.57E-7

In accordance with the procedures prescribed in the District's Risk Assessment Procedures for Rules 1401 and 212, a Tier 2 analysis was performed (see Excel Spreadsheet Tier 2 Risk Assessment).

Assume: Volume Source
 Residential = 1200 m
 Commercial = 160 m
 Dimensions: H = 6 ft.
 Area = 500 ft² (estimated "footprint" of rack)

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The results indicate that the MICR for the residential receptor is 5.03E-09 and for the offsite worker is 3.39E-08. Thus, the MICR is less one in one million and each chronic and acute index is also well below the threshold limit of 1.0.

EVALUATION

Rules:

Rule 462

This is a Class A facility and the five gasoline racks will comply with the emission limit of 0.08 lb/1000 gal when vented to afterburners since conditions limit (on Emissions and Requirements portion) emissions to VOC = 0.0565 lb/1000 gal.

The additive LOADING and gasoline-diesel UNLOADING rack is exempt from R462 as long as it loads organic liquids with vapor pressure of less than 1.5 psia. Additive vapor pressure is typically lower than 1.5 psia, but a condition will be added to restrict additive to less 0.122 psia.

Compliance with R462 is expected.

Reg 13

There is an increase of 0.4 lb/day of ROG combined from this project associated with this modification/change of conditions. BACT is not required. Offsets are not required. Compliance expected.

Rule 1401

There is an increase in risk from these racks associated with this modification/change of conditions. Based on Tier 2, the risk is less than one in a million (residential and commercial) and HIA/HIC are less than one. Compliance expected.

40 CFR 60 Subpart XX

The five loading racks are subject to XX and are vented to two afterburners which will meet an emission limit of 35 mg/L (0.29 lb/1000 gal). Compliance expected.

40 CFR 63 Subpart EEEE

The five loading racks are subject to applicable requirements of this rule. Compliance expected.

40 CFR 63 Subpart R

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The five loading racks are subject to Subpart R and will comply with the emission limit of 10 mg/L (0.08 lb/1000 gal).

TV:

This is a TV facility and the project qualifies as a De Minimus Significant revision. It will require a 45-day EPA review period prior to issuance of the permits.

CONCLUSION:

Conditional Permits to Operate are recommended after completion of the 45-day EPA review period.

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GROUP 2 (Rule 463 Plan)

A/N 543659
RULE 463 PLAN

This application was submitted on 10/9/2012 and has been evaluated for compliance with the requirements of Rule 463 (e)(1)(A) and 463 (e)(3)(A). The plan is recommended for approval.

This is a Title V facility which is a petroleum product storage and distribution bulk terminal.

EVALUATION OF INSPECTION AND MAINTENANCE PLAN

A. INVENTORY OF TANKS:

This plan contains inventory of all tanks subject to Rule 463. The tank information listed on Table 1 of Attachment A of the submitted plan satisfies the requirements of Rule 463(e)(1)(A.).

B. PROPOSED SELF-INSPECTION:

The company will perform inspections of the subject tanks according to the schedule listed on Pages 1-2 "Proposed Inspection Schedule" of the submitted plan.

C. CERTIFIED TANK INSPECTORS:

Operator has indicated that certified inspectors will be used for the inspection program. See Pages 1-2 of submitted plan.

RECOMMENDATION:

This plan complies with the requirements of Rule 463. A Rule 463 Inspection and Maintenance Plan approval is recommended to be added in Section I under a TV permit revision after 45-day EPA review.