

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE APPLICATION PROCESSING AND CALCULATIONS	TOTAL PAGES:	PAGE NO.:
	18	1
	APPL. NO.	DATE
	See below	10/23/09
	PROCESSED BY	File name
SKC		<i>166</i>

Title V Revision

APPLICANT	Equilon Enterprises, LLC
MAILING ADDRESS	20945 S. Wilmington Ave. Carson, CA 9 810
EQUIPMENT LOCATION	Berths 167-169 Mormon Island, 90744

EQUIPMENT DESCRIPTION:

APPLICATION NO. 479015

see draft permit

ALTERATION TO MARINE LOADING/UNLOADING FACILITIES SERVING BERTHS NOS. 167, 168 AND 169 CONSISTING OF:

MAST NO.2

1. LOADING/UNLOADING MAST WITH TWO CHUGGER HOISTS, AIR OPERATED.

BY THE REMOVAL OF:

1. ONE DEBALLAST RISER, 1'-0" DIA.
2. ONE DEBALLAST RISER, 0'-6" DIA.
3. FIVE LIGHT/DARK OIL RISER, EACH 1'-0" DIA.
4. ONE LUBE OIL RISER, 1'-0" DIA.
5. ONE LIGHT/DARK OIL RISER, 0'-8" DIA.

AND THE ADDITION OF

1. TWO 16 INCH LINES (RISERS) EACH WITH ONE EIGHT INCH CONNECTION.
2. CARBON ADSORPTION SYSTEM NO. 1, TWO CARBON ADSORPTION UNITS, IN SERIES, 2000 LBS. EACH, VENTING MAST NOS. 2 & 3 (COMMON IN MAST NOS. 2 & 3).

MAST NO.3

1. LOADING/UNLOADING MAST WITH TWO CHUGGER HOISTS, AIR OPERATED.

BY THE REMOVAL OF:

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

TOTAL PAGES:	PAGE NO.:
18	2
APPL. NO.	DATE
See below	10/23/09
PROCESSED BY	File name
SKC	

ENGINEERING AND COMPLIANCE

APPLICATION PROCESSING AND CALCULATIONS

1. ONE DEBALLAST RISER, 0'-6" DIA.
2. THREE LIGHT/DARK OIL RISER, EACH 1'-0" DIA.
3. TWO LIGHT/DARK OIL RISER, EACH 0'-8" DIA.

AND THE ADDITION OF:

1. TWO 16 INCH LINES (RISERS) EACH WITH ONE EIGHT INCH CONNECTION.
2. CARBON ADSORPTION SYSTEM NO. 1, TWO CARBON ADSORPTION UNITS, IN SERIES, 2000 LBS. EACH, VENTING MAST NOS. 2 & 3 (COMMON IN MAST NOS. 2 & 3).

MAST NO.5

1. LOADING/UNLOADING MAST WITH TWO (2) CHUGGER HOISTS, AIR OPERATED.

BY THE REMOVAL OF:

1. ONE DEBALLAST RISER, 1'-0" DIA.
2. ONE DEBALLAST RISER, 0'-6" DIA.
3. FOUR LIGHT/DARK OIL RISERS, EACH 1'-0" DIA.
4. ONE LIGHT/DARK OIL RISER, 0'-8" DIA.
5. ONE LUBE OIL RISER, 1'-0" DIA.

AND THE ADDITION OF

1. TWO 16 INCH LINES (RISERS) EACH WITH ONE EIGHT INCH CONNECTION.
2. CARBON ADSORPTION SYSTEM NO. 2, TWO CARBON ADSORPTION UNITS, IN SERIES, 2000 LBS. EACH, VENTING MAST NOS. 4 & 5 (COMMON IN MAST NOS. 4 & 5).

MAST NO.4

1. LOADING/UNLOADING MAST WITH ONE CHUGGER HOIST, AIR OPERATED.

BY THE ADDITION OF

1. TWO 16 INCH LINES (RISERS) EACH WITH ONE EIGHT INCH CONNECTION.
2. CARBON ADSORPTION SYSTEM NO. 2, TWO CARBON ADSORPTION UNITS, IN SERIES, 2000 LBS. EACH, VENTING MAST NOS. 4 & 5 (COMMON IN MAST NOS. 4 & 5).

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE APPLICATION PROCESSING AND CALCULATIONS	TOTAL PAGES:	PAGE NO.:
	18	3
	APPL. NO.	DATE
	See below	10/23/09
	PROCESSED BY	File name
	SKC	

MAST NO.6

1. LOADING/UNLOADING MAST WITH ONE CHUGGER HOIST, AIR OPERATED.

GENERAL

1. PUMP, MI-10, BLACK/JET/DIESEL OIL, CENTRIFUGAL TYPE WITH PACKED GLAND, 150-HP.
2. PUMP, MI-13, LIGHT/BLACK OIL, CENTRIFUGAL TYPE WITH SINGLE MECHANICAL SEAL, 400-HP.
3. PUMP, MI-16, RECOVERED OIL, CENTRIFUGAL TYPE WITH SINGLE MECHANICAL SEAL, 20-HP.
4. PUMP, MI-32, RECOVERED OIL/BALLAST WATER, CENTRIFUGAL TYPE WITH SINGLE MECHANICAL SEAL, 20-HP.
5. PUMP, MI-37, LIGHT/BLACK OIL, CENTRIFUGAL TYPE WITH SINGLE MECHANICAL SEAL, 800-HP.
6. PUMP, MI-38, LIGHT/BLACK OIL, CENTRIFUGAL TYPE WITH SINGLE MECHANICAL SEAL, 800-HP.
7. PUMP, MI-394, SUMP WITH PACKED GLANDS, 5-HP.
8. PUMP, MI-395, SUMP WITH PACKED GLANDS, 5-HP.
9. PUMP, MI-8445, RECOVERED OIL, DOUBLE DIAPHRAGM TYPE, AIR DRIVEN.
10. PUMP, MI-8446, RECOVERED OIL, GEAR TYPE WITH SINGLE MECHANICAL SEAL, 34- H.P.
11. PUMP, MI-8447, RECOVERED OIL/WATER, CENTRIFUGAL TYPE WITH SINGLE MECHANICAL SEAL, 7-1/2 H.P.

BY THE REMOVAL OF

1. PUMP, MI-11, RECOVERED OIL, RECIPROCATING TYPE WITH PACKED GLAND, 7-1/2 H.P.
2. PUMP, MI-12, LIGHT/BLACK OIL, CENTRIFUGAL TYPE WITH SINGLE MECHANICAL SEAL, 125-HP.
3. PUMP, MI-15, LIGHT/BLACK OIL, CENTRIFUGAL TYPE WITH SINGLE MECHANICAL SEAL, 40-HP.
4. PUMP, MI-16A, RECOVERED OIL, RECIPROCATING TYPE WITH PACKED GLAND, AIR DRIVEN (STANDBY).

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE APPLICATION PROCESSING AND CALCULATIONS	TOTAL PAGES:	PAGE NO.:
	18	4
	APPL. NO.	DATE
	See below	10/23/09
	PROCESSED BY	File name
SKC		

5. PUMP, MI-30, LIGHT/BLACK OIL, CENTRIFUGAL TYPE WITH SINGLE MECHANICAL SEAL, 700-HP.
6. PUMP, MI-31, LIGHT/BLACK OIL, CENTRIFUGAL TYPE WITH SINGLE MECHANICAL SEAL, 150-HP.
7. PUMP, MI-275, LUBE OIL, CENTRIFUGAL TYPE WITH SINGLE MECHANICAL SEAL, 350-HP.

AND THE ADDITION OF:

1. PUMP, MI-11, RECOVERED OIL, PNEUMATIC, DOUBLE DIAPHRAGM.
2. PUMP, MI-15A, LIGHT/DARK OIL, CENTRIFUGAL TYPE WITH SINGLE MECHANICAL SEAL, 30-HP.
3. PUMP, MI-16A, RECOVERED OIL, PNEUMATIC, DOUBLE DIAPHRAGM
4. PUMP, MI-40, LIGHT/DARK OIL, CENTRIFUGAL TYPE WITH DOUBLE MECHANICAL SEAL, 1750-HP.
5. TWO PUMPS, PNEUMATIC, DOUBLE DIAGRAM.

Conditions:

- 1) CONSTRUCTION AND 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) ALL MARINE TANKERS ENGAGED IN A LOADING, LIGHTERING, BALLASTING, OR UNLOADING EVENT AT THIS FACILITY SHALL BE EQUIPPED WITH SEGREGATED BALLAST TANKS, WHICH ARE IN GOOD OPERATING CONDITIONS.
[RULE 1142]
- 4) THE MARINE LOADING OF "LIGHT OIL" PRODUCTS SHALL NOT EXCEED 165,000 BARRELS PER DAY AVERAGED OVER ONE CALENDAR MONTH.
[RULE 1303(b)(2) OFFSETS]
- 5) THE MARINE UNLOADING OF "LIGHT OIL AND DARK OIL" PRODUCTS SHALL NOT EXCEED 242,000 BARRELS PER DAY AVERAGED OVER ONE CALENDAR MONTH.
[RULE 1303(b)(2) OFFSETS]

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE APPLICATION PROCESSING AND CALCULATIONS	TOTAL PAGES:	PAGE NO.:
	18	5
	APPL. NO.	DATE
	See below	10/23/09
	PROCESSED BY	File name
	SKC	

- 6) THE MARINE LOADING OF "DARK OIL" PRODUCTS SHALL NOT EXCEED 77,000 BARRELS PER DAY AVERAGED OVER ONE CALENDAR MONTH.
[RULE 1303(b)(2) OFFSETS]
- 7) "LIGHT OIL" SHALL BE DEFINED AS LIQUIDS HAVING VAPOR PRESSURES GREATER THAN 0.1 PSIA AT ACTUAL OPERATING CONDITIONS.
[RULE 1303(b)(2) OFFSETS]
- 8) "DARK OIL" SHALL BE DEFINED AS LIQUIDS HAVING VAPOR PRESSURES LESS THAN OR EQUAL TO 0.1 PSIA AT ACTUAL OPERATING CONDITIONS.
[RULE 1303(b)(2) OFFSETS]
- 9) RECORDS OF LOADING VOLUME AND UNLOADING VOLUME OF LIQUIDS SHALL BE MAINTAINED AND MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.
[RULE 204]
- 10) THE LINES FOR MAST NOS 2, 3, 4, OR 5 SHALL NOT BE REFILLED WITH PRODUCT UNLESS THE LINES ARE CONNECTED TO THE PASSIVE CARBON ADSORPTION SYSTEMS.
[RULE 1303(b)(2) OFFSETS]
- 11) THE VOLATILE ORGANIC COMPOUND (VOC) CONCENTRATION AT THE OUTLET OF THE CARBON ADSORPTION SYSTEMS SHALL NOT EXCEED 500 PPMV AS METHANE.
[RULE 1303(b)(2) OFFSETS]
- 12) VOLATILE ORGANIC COMPOUND (VOC) CONCENTRATION SHALL BE MEASURED AT THE OUTLET OF THE VAPOR CONTROL SYSTEM DAILY FOR THE FIRST 7 OPERATING DAYS AND AT LEAST ONCE EVERY WEEK THEREAFTER. THE OPERATOR SHALL USE A FLAME IONIZATION DETECTOR OR A DISTRICT APPROVED ORGANIC VAPOR ANALYZER CALIBRATED IN PARTS PER MILLION BY VOLUME (PPMV) OF METHANE (IF ANOTHER AGENT IS USED, THE MEASUREMENT SHALL BE CORRELATED TO AND EXPRESSED AS METHANE). THE INSTRUMENT SHALL BE MAINTAINED AND CALIBRATED PER EPA METHOD 21.
[RULE 1303(b)(2) OFFSETS]
- 13) WHENEVER THE VOC CONCENTRATION AT THE OUTLET OF THE SECONDARY CARBON VESSEL EXCEEDS 500 PPMV AS METHANE, THE CARBON VESSELS SHALL BE REPLENISHED WITH FRESH CARBON OR RE-SEQUENCED AND THE CARBON REPLENISHED AS FOLLOWS:
 - A. SPENT CARBON IN THE PRIMARY CARBON ADSORBER SHALL BE REPLACED WITH FRESH ACTIVATED CARBON, AND
 - B. VAPOR FLOW SHALL BE RE-ROUTED SUCH THAT THE SECONDARY CARBON VESSEL BECOMES THE PRIMARY VESSEL AND THE REPLENISHED VESSEL BECOMES THE SECONDARY VESSEL.
[RULE 204, RULE 1303(B)(2)-OFFSETS]

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE APPLICATION PROCESSING AND CALCULATIONS	TOTAL PAGES:	PAGE NO.:
	18	6
	APPL. NO.	DATE
	See below	10/23/09
	PROCESSED BY	File name
	SKC	

- 14) RECORDS SHALL BE MAINTAINED TO PROVE COMPLIANCE WITH CONDITIONS ABOVE, THE RECORDS SHALL BE KEPT IN A FORMAT APPROVED IN WRITING BY THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD). THE RECORDS SHALL BE MAINTAINED FOR AT LEAST FIVE YEARS, AND MADE AVAILABLE TO SCAQMD PERSONNEL UPON REQUEST.
[RULE 204]
- 15) THE ACTIVATED CARBON USED IN THE PRIMARY AND SECONDARY CARBON ADSORBERS SHALL HAVE A CARBON TETRACHLORIDE ACTIVITY NUMBER NOT LESS THAN 60% AS MEASURED BY ASTM METHOD D3467-99 OR A BUTANE ACTIVITY NUMBER OF NOT LESS THAN 23.5% AS MEASURED BY ASTM METHOD 5228-92.
[RULE 204]
- 16) SPENT CARBON REMOVED FROM THE SYSTEM SHALL BE MAINTAINED OR STORED IN CLOSED CONTAINERS PRIOR TO REMOVAL FROM THE SITE.
[RULE 204]
- 17) THE OPERATOR SHALL SUBMIT TO THE SCAQMD IN WRITING THE RESULTS OF THE FIRST MONTH OF OPERATION UNDER THIS PERMIT, INCLUDING BUT NOT LIMITED TO, MONITORING DATA SUFFICIENT TO PROVE COMPLIANCE WITH EACH CONDITION OF THIS PERMIT. SUBMITTAL SHALL BE WITHIN 45 DAYS OF INITIAL OPERATION OF THIS PERMIT UNIT AND SHALL BE ADDRESSED TO:
- MR. SEAN CULLINS
SCAQMD
TOXICS AND WASTE MANAGEMENT TEAM
ENGINEERING AND COMPLIANCE DIVISION
21865 COPLEY DRIVE
DIAMOND BAR, CA 91765
[RULE 204, RULE 1303(B)(2)-OFFSETS]
- 18) THIS PERMIT SHALL EXPIRE IF CONSTRUCTION OF THIS EQUIPMENT IS NOT COMPLETE WITHIN ONE YEAR FROM THE DATE ISSUANCE OF THIS PERMIT UNLESS AN EXTENSION IS GRANTED BY THE EXECUTIVE OFFICER.
[RULE 205]

Periodic Monitoring:

- 19) ALL CARBON BEDS SHALL BE REPLACED ONCE PER YEAR AND RECORDS SHALL BE KEPT WHEN THE CARBON BEDS ARE REPLACED.
[RULE 300004(A)(4)-PERIODIC MONITORING, 1303(a)(1)-BACT]

Emissions and Requirements:

- 20) THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

VOC: 2 LBS/1000 BBLS ORGANIC LIQUID, RULE 1142

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE APPLICATION PROCESSING AND CALCULATIONS	TOTAL PAGES:	PAGE NO.:
	18	7
	APPL. NO.	DATE
	See below	10/23/09
	PROCESSED BY	File name
	SKC	

APPLICATION NO. 479011

Equipment Description:

STORAGE TANK NO. M28, HYDROCARBON LIQUID, FIXED ROOF TYPE, 9,593 BARREL CAPACITY, 38'-5" DIA. X 48'-0" H.

Conditions:

- 1) OPERATION OF THIS EQUIPMENT SHALL BE 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) THIS TANK SHALL NOT BE USED FOR STORING PETROLEUM LIQUIDS HAVING VAPOR PRESSURES GREATER THAN 0.022 PSIA UNDER ACTUAL STORAGE CONDITIONS.
[RULE 1303(b)(2) OFFSETS]
- 4) THROUGHPUT OF ORGANIC LIQUIDS TO THIS TANK SHALL NOT EXCEED 240,341 GALLONS IN ANY ONE MONTH.
[RULE 1303(b)(2) OFFSETS]
- 5) MONTHLY RECORDS SHALL BE KEPT FOR TYPE OF MATERIAL STORED, TRUE VAPOR PRESSURE, AND THROUGHPUT. RECORDS SHALL BE MAINTAINED AND MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.
[RULE 204]

Periodic Monitoring: None

Emissions and Requirements:

- 6) THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

VOC: RULE 463

BACKGROUND

This facility is a Title V facility primarily a marine bulk loading/unloading facility and tank storage facility consisting of various size tanks used to store various petroleum products. The

<i>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</i> <i>ENGINEERING AND COMPLIANCE</i> <i>APPLICATION PROCESSING AND CALCULATIONS</i>	TOTAL PAGES:	PAGE NO.:
	18	8
	APPL. NO.	DATE
	See below	10/23/09
	PROCESSED BY	File name
	SKC	

facility currently operates a marine loading/unloading facility and several storage tanks. The Title V Revision application is 500997.

The marine terminal serves berths 167-169 of the Los Angeles Harbor. The load/unload masts operated at this facility are currently configured with a multiple manifold system (a separate pipeline system for each type of petroleum product) which allows the distribution of off loaded product to the facility's on shore storage tanks. This modification is to reduce the number of fugitive components associated with manifold piping at locations where releases to water could occur. This is a standard/requirement from the Marine Facilities Division of the California State Lands Commission. These standards are called the Marine Oil Terminal Engineering and Maintenance Standards (MOTEMS).

The marine loading/unloading system is currently operating under permit no. F16877. Tank M28 is an existing tank however it is currently not in operation nor does it have an active permit.

The project consist of consolidating the multiple pipeline manifold system into a dual pipeline (two lines per load/unload mast). This project will affect mast nos. 2, 3, 4, and 5, mast no. 6 will not be changed. The dock to shore pipe is currently configured as a multiple pipeline system, each line supporting a separate product (ie. on line for gasoline, another for diesel and another for ethanol). The proposed pipeline modification will reduce the total number of fugitive components and will result in a net emissions decrease from fugitive components. There will be no change in throughput products for this system. The total number of risers will decrease from 23 risers to 4 risers. A simplified flow diagram of the proposed changes to Masts # 2, 3, 4, and 5 are included in Attachment A.

In order to facilitate reducing the number of lines to two lines per load/unload mast. The lines will be pumped dry after each unload operation in order to clean the pipeline and avoid cross contamination from multiple products. Prior to loading/unloading the next product the pipeline will be re-packed (back filled with product), the displaced air in the pipeline will be vented to two carbon adsorption canister in series. There will be two of these two carbon adsorptions systems. Each carbon canister will be 2000 lbs. One system will be venting mast nos. 2 & 3, the other will be venting mast nos. 4 and 5. Mast no. 6 will not be modified, therefore it will not be repacked nor vented. Because these carbon systems will be passive systems, a separate application for air pollution control devices will not be required and they will be included in the basic equipment.

The company estimates that the lines need to be repacked approximately 30 times per month, and anywhere from 5,000 to 10,000 gallons of displaced air per repack. The repacking will occur at a rate of approximate 250 gallons per minute. It will take between 20 to 40 minutes to

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE APPLICATION PROCESSING AND CALCULATIONS	TOTAL PAGES:	PAGE NO.:
	18	9
	APPL. NO.	DATE
	See below	10/23/09
	PROCESSED BY	File name
	SKC	

repack the line. Shell will monitor the carbon canisters and change them ~~once~~ ^{every 6 months} breakthrough has occurred. ^{before}

Storage tank M-28

The facility proposes to utilize storage tank M-28 (a/n 479011) in order to collect diesel product drained (pumped) from the pipeline after each loading/unloading event. This tank is a fixed roof tank and will not be vented to any air pollution control device.

There have been no NOV's or NOC's issued for this equipment within the last 5 years.

A msn.com live search indicated that there is no K-12 school within 1000 ft. of the equipment.

EMISSION CALCULATIONS

Operating Hours: 24 hrs/day, 30 days/month, 12 month/year
Maximum flow rate 200 scfm.

Fugitive Emissions Calculations,

The applicant has provided a list of all the fugitive components as well as a list of the net number of components changed for this modification. (see list included in this file). Based on the information provided by the applicant there will be an overall decrease in components which will result in an overall decrease in VOC emissions. See summary chart below.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE APPLICATION PROCESSING AND CALCULATIONS	TOTAL PAGES:	PAGE NO.:
	18	10
	APPL. NO.	DATE
	See below	10/23/09
	PROCESSED BY	File name
SKC		

FUGITIVE EMISSION CALCULATIONS

New Source Unit with BACT		Service	pre-modification	Proposed Change	Post Modification	BACT Emission Factor (lbs/yr)	Total Annual Emissions Pre modification (lbs/yr)	Total Annual Emissions Change (lbs/yr)	Total Annual Emissions post modification (lbs/yr)
Valves	Sealed Bellows	Gas/Vapor and Light Liquid	0	0	0	0.00	0.00	0.00	0.00
	SCAQMD Approved I & M Program	Gas/Vapor	0	0	0	23.00	0.00	0.00	0.00
		Liquid Light	501	-2	499	19.00	9519.00	-38.00	9481.00
		Heavy Liquid	437	0	437	3.00	1311.00	0.00	1311.00
Pumps	Sealless Type	Light Liquid	0	0	0	0.00	0.00	0.00	0.00
	Double Mechanical Seals or Equivalent Seals	Light Liquid	6	0	6	104.00	624.00	0.00	624.00
	Single Mechanical Seals	Heavy Liquid	6	-1	5	80.40	482.40	-80.40	402.00
Compressors	Gas/Vapor	0	0	0	514.00	0.00	0.00	0.00	
Flanges (ANSI B 16.5-1988)	All	4515	-377	4138	1.50	6772.50	-565.50	6207.00	
Pressure Relief Valves	All	49	0	49	0.00	0.00	0.00	0.00	
Process Drains with P-Trap or Seal Pot	All	0	0	0	79.60	0.00	0.00	0.00	
Totals						Lbs/yr	18708.90	-683.90	18025.00
						Lbs/day	51.26	-1.87	49.38

Line Repacking Emissions

Emissions due to line repacking will be based on the following:

After product has been transferred from the ships into tanks, the lines will be pumped dry. Prior to more product being pumped from the ships, the unloading lines will need to be back filled with the next product that will be pumped from the ship. Back filling the lines will

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE APPLICATION PROCESSING AND CALCULATIONS	TOTAL PAGES:	PAGE NO.:
	18	11
	APPL. NO.	DATE
	See below	10/23/09
	PROCESSED BY	File name
	SKC	

displace at worse case 10,000 gallons of air. Product will be pumped back into the line at a rate of approximately 250 gpm. The displace air will be vented into one of two passive carbon adsorption systems.

At the exhaust of the carbon adsorption systems, the emissions will be limited to a maximum of 500 ppmv measured as methane.

The worse case product that can be vented will be gasoline.

Given

10,000 gallons vented => 1336 cubic feet vented per repacking

- 1 repacks per day
- 30 repacks per month
- 7 days/week
- 52 weeks/year
- 365 days/year

Repacking time
 10,000 gallons / 250 gpm = 40 minutes
 it will take less than 1 hour to repack the line

Emissions per repacking

$$\text{lbs} = \text{ppm}_0 \times 10^{-6} \times \text{scfh} \times (1 \text{ lb mole}/379 \text{ ft}^3) \times \text{MW}$$

	Pollutant	ppmv	Scf*	MW	Lbs/hr	lbs/day	lbs/year
VOC	R1	10000.0	1336	16.04	0.57	0.57	206
	R2	500.00	1336	16.04	0.03	0.03	10

* 1336 correlates to 10,000 gallons of displaced air from the line.

Combining the change in emissions due to this modification

VOC	R1	R2	R1	R2	R2
	lbs/hr	lbs/hr	lbs/day	lbs/day	Lbs/yr
Line repacking	0.57	0.03	0.57	0.03	10
fugitive	-0.08	-0.08	-1.87	-1.87	-684
Total:	0.49	-0.05	-1.30	-1.84	--674

Although there will be an overall the emissions data for NSR and AEIS are shown below as future emissions.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE APPLICATION PROCESSING AND CALCULATIONS	TOTAL PAGES:	PAGE NO.:
	18	12
	APPL. NO.	DATE
	See below	10/23/09
	PROCESSED BY	File name
	SKC	

Total HC	Hourly	Hourly	Daily	Daily	30 day av	Annual
	R1	R2	R1	R2	R2	R2
	lbs/hr	lbs/hr	lbs/day	lbs/day	Lbs/day	Lbs/yr
Premod	12.33	12.33	296.00	296.00	296.00	108040
Change	0.490	-0.050	-1.30	-1.84	-2	-674
Postmod	12.82	12.28	294.70	294.16	294	107366

There will be an overall decrease in emissions therefore offsets are not required.

1401 Toxic Emissions

Because there an overall decrease in emissions, there will be no increase in toxic emissions therefore a 1401 evaluation is not required.

Carbon breakthrough

VOC emissions and time for carbon break through

22.27 cfm flow rate for an hour for total of 1336 cu. ft. = 10,000 gallons displaced air
4000 lbs/carbon
10000.00 ppm inlet (worst case estimate)
0.028 lbs/day R2 daily max (calculated based on maximum ppmv outlet limit)
20 % carbon adsorption
16.04 lbs/mole methane

carbon breakthrough 4000 lbs x 0.05 = 200 lbs

As the inlet ppm decreases the time required for change out of the carbon decreases and should be adjusted accordingly

The calculations for the ppmv are based upon the above equations. (see spreadsheet)

Hours before breakthrough = lbs adsorbed/(lbs inlet - lbs outlet)

= 200 lbs/(0.57lbs/hr - 0.028 lbs/hr)

Inlet ppm	inlet lbs/hr	outlet ppmv	outlet lbs/hr	breakthrough hours
10000	0.57	500	0.028	369

Since they operate less than 1 hour per day, it will take over 369 days before breakthrough therefore it is very unlikely to occur rapidly. The carbon shall be changed when the outlet of the carbon reaches 500 ppmv, which will take about 1 year. There are also two sets of carbon

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE APPLICATION PROCESSING AND CALCULATIONS	TOTAL PAGES:	PAGE NO.:
	18	13
	APPL. NO.	DATE
	See below	10/23/09
	PROCESSED BY	File name
	SKC	

beds, this evaluation is based on the worst case where all the product that is loaded is vented through on one carbon bed.

Storage Tank M-28 Emission Calculations

The emission from Tank M-28 were performed by the applicant using Tanks 4.09d

Emissions Difference Calculations

Operation Schedule
 2,884,092 gallons/year
 24 hours/day
 7 days/week
 365 weeks/year

Tanks Program Results

Emissions lbs/yr	working loss	breathing loss	Total emissions
Current	71.48	71.27	142.75

Daily emissions

Tanks Program Results for July (highest emissions month)

	Monthly	Daily	hourly
	lbs/mo	lbs/day	lbs/hr
VOC	14.8	0.493	0.021

The percentages of toxic compounds are based on data submitted by the applicant

	Percentage	hourly	daily	monthly	annual
Benzene	0.2	0.0000411	0.000987	0.00691	0.360
Toluene	2.05	0.0004214	0.01011	0.0708	3.69
Xylene	1.01	0.000208	0.0050	0.035	1.82
Ethylbenzene	0.31	0.0000637	0.001529	0.0107	0.56

A tier 1 risk assessment was performed and this equipment passed see results included in this file. A summary is shown below.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE APPLICATION PROCESSING AND CALCULATIONS	TOTAL PAGES:	PAGE NO.:
	18	14
	APPL. NO.	DATE
	See below	10/23/09
	PROCESSED BY	File name
SKC		

Tier 1 Results	
Cancer/Chronic ASI	Acute ASI
2.22E-02	2.43E-06
PASSED	PASSED

EVALUATION

RULE 212 Standards for Approving Permits and Issuing Public Notice

This modification meets all the criteria in Rule 212 for permit approval. This modified equipment is designed so it can be expected to operate without emitting air contaminants in violation of sections 41700, 41701, and 44300 of the State Health and Safety Code or in violation of AQMD's rules and regulations. The fugitive emissions from the loading/unloading racks did not constitute a significant project because 1) the modified permit unit is not located within 1000 feet of a school. 2) The emissions increase did not exceed the daily maximum specified in subdivision (G) of Rule 212; and 3) The new modified permit unit did not have an increased cancer risk greater than, or equal to, one in a million (1×10^{-6}) during a lifetime of 70 years or pose a risk of nuisance.

Rule 401 Visible Emissions

Visible emissions are not expected under normal operating conditions from the marine loading system and the storage tank M28.

Rule 402 Nuisance

No Nuisance complaints are expected provided that the operation is conducted according to design. Compliance with Rule 402 is expected.

Tank M28 Rule 463 Organic Liquid Storage

This rule applies to any above ground tank with a capacity of 19,815 gallons or greater for storing organic liquids. Compliance with Rule 463 is expected with proper record keeping and inspections.

<i>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</i> <i>ENGINEERING AND COMPLIANCE</i> <i>APPLICATION PROCESSING AND CALCULATIONS</i>	TOTAL PAGES:	PAGE NO.:
	18	15
	APPL. NO.	DATE
	See below	10/23/09
	PROCESSED BY	File name
SKC		

Rule 466 Pumps and Compressors

The District's Rule 466 establishes standards for the fugitive emissions from all pumps and compressors that handle organic liquids with a Reid Vapor Pressure (RVP) of 1.55 psia or greater. This facility will handle organic liquids with a RVP of 1.55 psia or greater. There is currently no violation for rule 466 and the company intends to continue to comply with this rule, therefore this facility should comply.

Rule 1142 Marine Tank Vessel Operations

Rule 1142 requires that volatile organic compounds are limited to 5.7 grams per cubic meter (2 lbs per 1,000 barrels) of liquid loaded into a marine tank vessel; this equipment will require this rule.

Rule 1173 Fugitive Emissions of Volatile Organic Compounds

This Rule specifies leak control, identification, operator inspection, maintenance, and recordkeeping requirements for valves pumps, compressors, pressure relief valves, and other components from which fugitive VOC emissions may emanate. Based on reviewing previous inspection records, this equipment is currently in compliance and should continue to comply with the rule requirements of Rule 1173.

Tank M28 Rule 1178 Further reductions of VOC from Storage Tanks at Petroleum Refineries

This Rule applies to facilities with VOC emissions that exceed 20 tons per year and equipment with a vapor pressure of 0.1 or greater. This product to be stored in this tank will be limited to less than 0.022 psi, therefore this will not apply.

Regulation XIII - New Source Review

Marine Loading System.

1303(a) Best Available Control Technology

This application is for a modification to a marine loading/unloading system. A carbon absorption system will be employed for the line repacking, which is considered BACT therefore BACT is provided for the loading racks this equipment serves.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE APPLICATION PROCESSING AND CALCULATIONS	TOTAL PAGES:	PAGE NO.:
	18	16
	APPL. NO.	DATE
	See below	10/23/09
	PROCESSED BY	File name
	SKC	

Fugitive Equipment BACT.

There will be an overall decrease in component count as well as an overall decrease in fugitive emissions. BACT is not triggered for fugitive equipment.

1303(b)(1) – Modeling

Modeling is not required for VOC emissions, therefore this equipment exempt from this requirement.

1303(b)(2) – Emission Offsets

Marine Loading System

Because there is an overall decrease in emissions from the marine loading system, offsets will not be required.

Tank M28

Offsets are required for emissions increases of 0.5 lbs/day. Because the only increase in emissions is 0.49 lbs/day for this tank for VOC emissions, which is less than 0.5 lbs/day offsets are not required for this modification.

Rule 1401: New Source Review of Toxic Air Contaminant

Marine loading/unloading

For the marine loading/unloading system, there will be an overall decrease in emissions therefore a risk assessment is not required

Storage Tank M28

A tier I risk assessment was performed and this equipment passed for both acute ASI and chronic ASI. (See results included in this file.)

Reg XX: REGIONAL CLEAN AIR INCENTIVES MARKET (RECLAIM)

This facility is not a RECLAIM facility, therefore it is not subject to Regulation XX.

<i>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</i> <i>ENGINEERING AND COMPLIANCE</i> <i>APPLICATION PROCESSING AND CALCULATIONS</i>	TOTAL PAGES:	PAGE NO.:
	18	17
	APPL. NO.	DATE
	See below	10/23/09
	PROCESSED BY	File name
	SKC	

REGULATION XXX – TITLE V PERMITS

Rule 3000 General

This regulation defines permit application and issuance procedures as well as compliance requirements associated with the program. Rule 3000 (b)(1)(D)
This permit is a de minimus permit revision which involves issuing a final permit to construct for equipment previously issued a title V permit.

Rule 3004 Permit Types and Content

RULE 3004(A)(4) Monitoring, recordkeeping and reporting requirements. The company will monitor and control fugitive emissions in accordance with an SCAQMD approved Inspection and Maintenance (I & M) Program and EPA NSPS with monthly inspection and maintenance (I & M) and 500 ppm by OVA. Valves which do not leak during two successive monthly inspections will revert to a quarterly inspection interval.

40 CFR Part 64 – Compliance Assurance Monitoring (CAM) Rule

This rule specifies the monitoring, reporting and recordkeeping criteria that must be conducted by Title V facilities to demonstrate ongoing compliance with emission limitations and standards. Per 40 CFR Part 64.2(b)(1)(i). The requirements of this part shall not apply to the emission limitations proposed by the Administrator after November 15, 1990 pursuant to section 111 or 112 of the ACT. Since this Title V facility is subject to Neshaps Rule for Gasoline Distribution which is 40 CFR Subpart R promulgated on December 14, 1994, it is exempt from CAM rule.

CEQA California Environmental Quality ACT

CEQA requires that the environmental impacts of proposed projects be evaluated and that feasible methods to reduce, avoid or eliminate identified significant adverse impacts of these projects be considered. The CEQA Applicability Form (400-CEQA) submitted indicates that the project does not have any impacts which trigger the preparation of a CEQA document. The expected impacts of the project on the environment are not significant; therefore a CEQA analysis is not required.

<i>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</i> <i>ENGINEERING AND COMPLIANCE</i> <i>APPLICATION PROCESSING AND CALCULATIONS</i>	TOTAL PAGES:	PAGE NO.:
	18	18
	APPL. NO.	DATE
	See below	10/23/09
	PROCESSED BY	File name
SKC		

RECOMMENDATION

THE FOLLOWING DISPOSITION IS RECOMMENDED:

Based on the above evaluation, a permit to operate is recommended for tank no. M28, a/n 479011 and will be issued in revised section D of the title V. A permit to construct is recommended for the marine loading/unloading facility, a/n 479015 and will be issued in a revision for section H of the Title V Permit.