

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE APPLICATION PROCESSING AND CALCULATIONS	TOTAL PAGES:	PAGE NO.:
	5	1
	APPL. NO.	DATE
	501749	10-5-09
	PROCESSED BY	File name
AA	#/Chevron	

PERMIT TO OPERATE

APPLICANT	Chevron Products Company
MAILING ADDRESS	601 Vail Street Montebello, CA 90640-4951
EQUIPMENT LOCATION	Same as above

EQUIPMENT DESCRIPTION:

A/N 501749

STORAGE TANK, ETHANOL, 94'-0" DIA. X 48'-0" H., DOUBLE DECK TYPE, INTERNAL FLOATING ROOF, 50,000 BARREL CAPACITY, WELDED SHELL, WITH A LIQUID MOUNTED MECHANICAL SHOE PRIMARY SEAL AND A SINGLE WIPER SECONDARY SEAL.

- PERMIT CONDITIONS -

Conditions:

- 1) OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE 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 ORGANIC LIQUID HAVING A REID VAPOR PRESSURE OF GREATER THAN 4.5 PSIA.
[RULE 1303(b)(2)-OFFSETS]
- 4) THE THROUGHPUT OF ORGANIC LIQUID TO THIS TANK SHALL NOT EXCEED 190,000 BARRELS IN ANY ONE CALENDAR MONTH.
[RULE 1303(b)(2)-OFFSETS]
- 5) THE OPERATOR SHALL KEEP RECORDS IN A MANNER APPROVED BY THE DISTRICT, TO SHOW COMPLIANCE WITH CONDITION NO. 4 SUCH RECORDS SHALL BE MAINTAINED AND KEPT ON FILE AND SHALL BE MADE AVAILABLE TO THE EXECUTIVE OFFICER OR HIS AUTHORIZED REPRESENTATIVE UPON REQUEST.
[RULE 463, 40CFR 60 SUBPART Kb]

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE APPLICATION PROCESSING AND CALCULATIONS	TOTAL PAGES:	PAGE NO.:
	5	2
	APPL. NO.	DATE
	501749	10-5-09
	PROCESSED BY	File name
AA	#/Chevron	

- 6) THE OPERATOR SHALL MONITOR THE HYDROCARBON CONCENTRATION OF THE VAPOR SPACE USING AN EXPLOSIMETER OR EQUIVALENT DEVICE EVERY SIX MONTHS.
[RULE 463]
- 7) THE HYDROCARBON CONCENTRATION IN THE VAPOR SPACE ABOVE THE INTERNAL FLOATING ROOF SHALL NOT EXCEED 30% OF THE VAPOR LOWER EXPLOSIVE UNIT.
[RULE 463]

PERIODIC MONITORING: NONE

EMISSIONS AND REQUIREMENTS:

- 8) THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:
- VOC: RULE 463
 - VOC: RULE 1149
 - VOC: 40 CFR 60, SUBPART Kb

BACKGROUND

Chevron operates a gasoline and diesel bulk terminal in Montebello. Chevron would like to increase the throughput in its ethanol tank No. 6 from 143,000 to 190,000 barrels/month. The tank was previously limited to 100,000 barrels/month and increased to 143,000 barrels/month under application 484641.

No enforcement activity has been found in the inspectors report for this facility.

EQUIPMENT DESCRIPTION

Please refer to Chevron's report that is included in this application folder prepared by URS Corporation for a description of the equipment and more details. No changes have been made to the equipment itself, only the throughput will change. Increasing the throughput from 143,000 to 190,000 barrels/month will not impact the equipment configuration. The tank is still controlled by a liquid mounted primary seal, and wiper type secondary seal.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE APPLICATION PROCESSING AND CALCULATIONS	TOTAL PAGES:	PAGE NO.:
	5	3
	APPL. NO.	DATE
	501749	10-5-09
	PROCESSED BY	File name
	AA	#/Chevron

CALCULATIONS

The TANKS 4.09d program was used to calculate the emissions resulting from tank No. 6. The calculations are based on a denatured ethanol mixture of 95% ethanol and 5% gasoline corresponding to a Reid Vapor Pressure of 4.5 as found in the ethanol MSDS sheet in application 391355. URS has resubmitted the tank calculations for both before and after the increase in throughput. URS has informed me that the tank has 31 legs and thus the Typical Default Fittings calculations apply. The before and after throughput is based on 12 months, 30 days/month, and 24 hrs/day:

	VOC (lb/yr)	VOC (lb/day) max	VOC (lb/hr)max
Tank 6 (190,000 bbl/month)	1133.50	3.148	0.131
Tank 6 (143,000 bbl/month)	1073.82	2.983	0.124
Increase	59.68	0.166	0.007

Toxic emissions are calculated based on the weight percent of toxic compounds present in the VOC vapor. These values are generated by the tanks program as listed below:

TOXIC COMPOUND	LB/HR
Benzene (including benzene from gasoline)	3.96E-06
Toluene (methyl benzene)	1.31E-05
Ethyl benzene	9.39E-07
Xylenes (isomers and mixtures)	4.97E-06
Napthalene	1.46E-09
Butadiene, 1,3-	6.15E-08
Hexane (n-)	2.28E-05
Propylene	1.84E-05

A tier two toxic screening calculation was done by the applicant but the commercial receptor used was 1000 meter. The risk calculations were redone with a commercial receptor of 20 meters. This was estimated from a Google Map image of an adjacent commercial structure. Please refer to the attached Excel spreadsheet by the District engineer for the updated calculations. The resulting risk increased a little, but is still very small and has no impact on the risk evaluation.

	Applicant Values	District Values
Residential MICR	3.74E-11	4.07E-10
Commercial MICR	7.82E-11	1.76E-10

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE APPLICATION PROCESSING AND CALCULATIONS	TOTAL PAGES:	PAGE NO.:
	5	4
	APPL. NO.	DATE
	501749	10-5-09
	PROCESSED BY	File name
AA	#/Chevron	

EVALUATION

Rule 212 Standards for Approving Permits and Public Notice

A public notice is not required since a school is not located within 1000 feet of the site, the emissions are very low (0.14 lb/day), and the risk extremely low.

Rule 401 Visible emissions

The equipment is not expected to emit visible emissions.

Rule 402 Nuisance

The equipment is not expected to emit odorous emissions. No nuisance is expected.

Rule 463 Storage of Organic Liquid

The increase in throughput will continue to comply with this rule because the internal floating roof tank will continue to operate with the primary and secondary seals described in the equipment description.

Rule 1178 Further Reductions of VOC From Storage Tanks

The facility has never exceed the 20 ton threshold of this rule, thus this rule does not apply to this tank.

Reg. IX Standards of Performance for New Stationary Sources

40CFR60 Subpart Kb - Continued compliance is expected since the tank has an internal floating roof with the existing seals.

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.

Reg. XIII

1303(a) - The tank seals remain the same and meet BACT (though BACT is not required solely by this permit action).
1303(b)(2) – The emission increase is less than 0.5 pounds so no offsets are required.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE APPLICATION PROCESSING AND CALCULATIONS	TOTAL PAGES:	PAGE NO.:
	5	5
	APPL. NO.	DATE
	501749	10-5-09
	PROCESSED BY	File name
AA	#/Chevron	

RULE 1401 The attached Excel spreadsheet shows that the cancer burden is less than 0.5 and the Screen3 model is calculated at a risk of much lower than 1 in a million. All chronic and acute hazard indices are below 1.0 for all organ receptors.

Reg. XXX This is a Title V facility under the unitized ID 800032. A Title V revision application (500190) has been submitted for this change. This is De-minimus Significant Revision. Please note that this does not meet the requirements of Minor Permit Revision under 3000(b)(12)(A)(vi) because of the increase of a hazardous air pollutant.

RECOMMENDATION

THE FOLLOWING DISPOSITION IS RECOMMENDED:

Issue a permit to operate subject to the operating conditions enumerated in the permit.

TIER 2 SCREENING RISK ASSESSMENT REPORT

A/N: 501749
 Fac: 54284

Application deemed complete date: 10/01/09

2. Tier 2 Data

MET Factor	0.68
4 hr	0.84
6 or 7 hrs	0.83

Dispersion Factors tables

3	For Chronic X/Q
6	For Acute X/Q

Dilution Factors (ug/m3)/(tons/yr)

Receptor	X/Q	X/Q _{max}
Residential	1.0724	58.028
Commercial	2.37	110.1

Adjustment and Intake Factors

	AF _{ann}	DBR	EVP
Residential	1	302	0.96
Worker	1	149	0.38

A/N: 501749

Application deemed complete date: 10/01/09

TIER 2 RESULTS

5a. MICR

$MICR = CP \text{ (mg/(kg-day))}^{-1} * Q \text{ (ton/yr)} * (X/Q) * AFann * MET * DBR * EVF * 1.E-6 * MP$

Compound	Residential	Commercial
Benzene (including benzene from gasoline)	3.66E-10	1.58E-10
Toluene (methyl benzene)		
Ethyl benzene	7.54E-12	3.26E-12
Xylenes (isomers and mixtures)		
Naphthalene	1.62E-13	6.98E-14
Butadiene, 1,3-	3.41E-11	1.47E-11
Hexane (n-)		
Propylene		
Total	4.07E-10	1.76E-10
	PASS	PASS

No Cancer Burden, MICR < 1.0E-6

5b. Cancer Burden	no
X/Q for one-in-a-million:	
Distance (meter)	no data
Area (km ²):	
Population:	
Cancer Burden:	

6. Hazard Index

HIA = [Q(lb/hr) * (X/Q)max] * AF / Acute REL

HIC = [Q(ton/yr) * (X/Q) * MET * MF] / Chronic REL

Target Organs	Acute	Chronic	Acute Pass/Fail	Chronic Pass/Fail
Alimentary system (liver) - AL		3.31E-09	Pass	Pass
Bones and teeth - BN			Pass	Pass
Cardiovascular system - CV			Pass	Pass
Developmental - DEV	3.24E-07	7.75E-07	Pass	Pass
Endocrine system - END		3.31E-09	Pass	Pass
Eye	6.39E-08		Pass	Pass
Hematopoietic system - HEM	2.85E-07	4.65E-07	Pass	Pass
Immune system - IMM	2.85E-07		Pass	Pass
Kidney - KID		3.31E-09	Pass	Pass
Nervous system - NS	3.90E-08	8.45E-07	Pass	Pass
Reproductive system - REP	3.24E-07	2.16E-08	Pass	Pass
Respiratory system - RES	6.39E-08	4.02E-07	Pass	Pass
Skin			Pass	Pass

A/N: 501749

Application deemed complete date:

10/01/09

6a. Hazard Index Acute

$$\text{HIA} = [\text{Q}(\text{lb/hr}) * (\text{X/Q})_{\text{max}}] * \text{AF/ Acute REL}$$

Compound	HIA - Residential									
	AL	CV	DEV	EYE	HEM	IMM	NS	REP	RESP	SKIN
Benzene (including benzene from gasoline)			1.50E-07		1.50E-07	1.50E-07		1.50E-07		
Toluene (methyl benzene)			2.05E-08	2.05E-08			2.05E-08	2.05E-08	2.05E-08	
Ethyl benzene										
Xylenes (isomers and mixtures)				1.31E-08					1.31E-08	
Napthalene										
Butadiene, 1,3-										
Hexane (n-)										
Propylene										
Total			1.71E-07	3.37E-08	1.50E-07	1.50E-07	2.05E-08	1.71E-07	3.37E-08	

HIA - Commercial

Compound	AL	CV	DEV	EYE	HFM	IMM	NS	REP	RESP	SKIN
Benzene (including benzene from gasoline)			2.85E-07		2.85E-07	2.85E-07		2.85E-07		
Toluene (methyl benzene)			3.90E-08	3.90E-08			3.90E-08	3.90E-08	3.90E-08	
Ethyl benzene										
Xylenes (isomers and mixtures)				2.49E-08					2.49E-08	
Napthalene										
Butadiene, 1,3-										
Hexane (n-)										
Propylene										
Total			3.24E-07	6.39E-08	2.85E-07	2.85E-07	3.90E-08	3.24E-07	6.39E-08	

6b. Hazard Index Chronic

$$HIC = (Q(\text{ton/yr}) * (X/Q) * MET * MP) / \text{Chronic REL}$$

Compound	HIC - Residential												
	AL	BN	CV	DEV	END	EYE	HBM	IMM	KID	NS	REP	RFSF	SKIN
Benzene (including benzene from gasoline)				2.10E-07			2.10E-07			2.10E-07			
Toluene (methyl benzene)				1.39E-07						1.39E-07		1.39E-07	
Ethyl benzene	1.50E-09			1.50E-09	1.50E-09				1.50E-09				
Xylenes (isomers and mixtures)										2.26E-08		2.26E-08	
Naphthalene												5.17E-10	
Butadiene, 1,3-											9.79E-09		
Hexane (n-)										1.04E-08			
Propylene												1.95E-08	
Total	1.50E-09			3.51E-07	1.50E-09		2.10E-07		1.50E-09	3.82E-07	9.79E-09	1.82E-07	

6b. Hazard Index Chronic (cont.)

A/N: 501749

Application deemed complete date:

10/01/09

Compound	HIC - Commercial												
	AL	BN	CV	DEV	END	EYE	HEM	IMM	KID	NS	REP	RESP	SKIN
Benzene (including benzene from gasoline)				4.65E-07			4.65E-07						
Toluene (methyl benzene)				3.07E-07						3.07E-07		3.07E-07	
Ethyl benzene	3.31E-09			3.31E-09	3.31E-09				3.31E-09				
Xylenes (isomers and mixtures)										5.00E-08		5.00E-08	
Naphthalene												1.14E-09	
Butadiene, 1,3-											2.16E-08		
Hexane (n-)										2.29E-08			
Propylene												4.32E-08	
Total	3.31E-09			7.75E-07	3.31E-09		4.65E-07		3.31E-09	8.45E-07	2.16E-08	4.02E-07	