STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0668-AOP-R6 AFIN: 18-00120

1. PERMITTING AUTHORITY:

   Arkansas Department of Environmental Quality
   5301 Northshore Drive
   North Little Rock, Arkansas 72118-5317

2. APPLICANT:

   The Premcor Refining Group, Inc. (Premcor - West Memphis Terminal)
   1282 South 8th Street
   West Memphis, Arkansas 72301

3. PERMIT WRITER:

   Adam McDaniel

4. NAICS DESCRIPTION AND CODE:

   NAICS Description: Petroleum Bulk Stations and Terminals
   NAICS Code: 424710

5. SUBMITTALS:

   8/29/2013

6. REVIEWER'S NOTES:

   The Premcor Refining Group, Inc. (Premcor) owns and operates a gasoline-marketing terminal located in West Memphis, AR. The facility submitted a modification application to update Specific Condition #16 to add language excluding filling events when a tank is being filled with diesel or another product with vapor pressure below 5.2 kPa (0.75 psia) and add language that the maximum days idle does not apply if the tank contains diesel or another product with vapor pressure below 5.2 kPa (0.75 psia). Also, Specific Condition #29 was modified to specifically limit the throughput for a calendar day (midnight to midnight). Also, some emissions were corrected from the previous permit. The total permitted annual emission rate limit changes associated with this modification includes -0.24 tpy Phenol and +0.28 tpy Methanol.

7. COMPLIANCE STATUS:

   The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

   The facility was inspected on April 9, 2013 which revealed one violation. The facility exceed the throughput limit for Specific Condition #29 on five occasions which included January 4th, 13th, 14th, 24th, and February 7th of 2013.

   After further review, the facility only exceeded the limit once on January 23, 2013. Due to inaccurate records, the facility received two penalties. They received one for inaccurate records and one for exceeding the throughput limit. The facility shall maintain accurate records of the volume of gasoline loaded to keep from violating the throughput limit.

8. PSD APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N

b) Is the facility categorized as a major source for PSD? Y

- *Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list, or*
- *CO_2e potential to emit ≥ 100,000 tpy and ≥100 tpy/≥250tpy of combined GHGs?*

If yes, explain why this permit modification is not PSD.

There wasn't any modifications or construction associated with this application. Also, the only emissions changes weren't high enough to warrant a PSD analysis.

9. GHG MAJOR SOURCE (TITLE V):

Indicate one:

☐ Facility is classified as a major source for GHG and the permit includes this designation

☒ Facility does not have the physical potential to be a major GHG source

☐ Facility has restrictions on GHG or throughput rates that limit facility to a minor GHG source. Describe these restrictions: _____

10. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
02a & 02b	VOC	NSPS 40 CFR Part 60 Subpart XX
02a & 02b	HAPs	NESHAPS 40 CFR Part 63 Subpart R
22	VOC HAPs	NESHAPS 40 CFR Part 63 Subpart Y
12	VOC HAPs	NSPS 40 CFR Part 60 Subpart Kb

11. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

12. NAAQS EVALUATIONS AND NON-CRITERIA POLLUTANTS:

a) NAAQS:

This permitting action does not involve a significant modification as defined in 40 CFR 52.21. Criteria pollutants were not evaluated for impacts on the NAAQS.

b) Non-Criteria Pollutants:

1st Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Department has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m^3), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

There were no emission changes in permit modification #0668-AOP-R6. Since some of the HAPs were below reportable levels, a few of the unnecessary HAPs were removed from the table.

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Benzene	1.60	0.18	33.19	No
Ethylbenzene	86.84	9.55	2.59	Yes
Hexane	176.24	19.39	60.12	No
2,2,4-Trimethylpentane	1,401.47	154.16	56.78	Yes
Phenol	19.25	2.12	0.21	Yes
Toluene	75.36	8.29	39.29	No
Xylenes	434.19	47.76	11.76	Yes
PACs *	0.20	0.02	0.0082	Yes
Styrene	85.20	9.37	0.4283	Yes
Methanol	262.09	28.83	24.24	Yes

*Coal tar pitch volatiles TLV used for PACs as listed by the ACGIH.

2nd Tier Screening (PAIL)

AERMOD air dispersion modeling was performed on the estimated hourly emissions from the following sources, in order to predict ambient concentrations beyond the property boundary. The Presumptively Acceptable Impact Level (PAIL) for each compound has been deemed by the Department to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

There were no emission changes in permit modification #0668-AOP-R6. Since some of the HAPs didn't need to be reported, some of the HAPs were removed from the table.

Pollutant	PAIL ($\mu g/m^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu g/m^3$)	Pass?
Toluene	753.62	263.2	Y
Hexane	1762.4	404.5	Y

AERMOD air dispersion modeling was performed on the estimated hourly emissions from the following sources, in order to predict ambient concentrations beyond the property boundary. Human health risk assessment was performed to demonstrate that the projected ambient benzene concentrations do not result in unacceptable impacts to human health.

The acute exposure analysis was performed to evaluate the potential for acute health effects. Acute inhalation values used were the Acute Inhalation Exposure Guideline and the Emergency Planning Guidelines. The acute inhalation exposure analysis was performed by comparing the predicted 1-hr maximum with the appropriate acute toxicity benchmark. The acute analysis results follow:

Pollutant	1-hr AEGL-1 ($\mu g/m^3$)	ERPG ($\mu g/m^3$)	Predicted Maximum 1-hr impact ($\mu g/m^3$)	Pass?
Benzene	166,124	159,734	1,463	Y

To evaluate long-term exposure of benzene, a screening level risk assessment was completed by comparing modeled air concentrations with USEPA human health Screening Levels (SLs). SLs are risk-based chemical and media specific derived from standardized equations combining exposure information assumptions with EPA toxicity data and based on the methods presented in the *Risk Assessment Guidance for Superfund: Volume I, Human Health Evaluation Manual (Part B)*. For purposes of this screening level a risk assessment hazard quotient of 1.0 and a target cancer risk of 1E-6 were used to calculate the SLs. For the chronic analysis, the last five years of meteorological data were modeled and the highest annual average concentrations of the last five years were compared with the SLs. The chronic analysis results follow:

Exposure Scenario	Carcinogenic SL ($\mu g/m^3$)	Non-Carcinogenic SL ($\mu g/m^3$)	Modeled Annual Average Concentration ($\mu g/m^3$)	<SL (Y/N)
Offsite Worker	1.57	131	0.862 (highest value at nearby industrial facility)	Y
Resident	0.312	31.3	0.297 (highest value at nearby residence)	Y

13. CALCULATIONS:

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equip Efficiency	Comments
	MACT requirements	VOC:10mg/L* CO: 10mg/L* NO_X: 4mg/L* *of gas loaded	Vapor Combustion Unit	98%	• Specifications VCU: -A capture efficiency of 99.2% is used therefore 0.8% is used as the loading rack fugitive emissions
02a	• Stream Properties (Gasoline): -Saturation Factor, S =1.0 -Vapor Molecular Weight, MW=62 lb/lbmol -True Vapor Pressure, P=7.4 psia -Liquid Temperature, T=64.0 F=523.6 R -Throughput=225000 gal/hr- -Assume RVP 13 Gasoline - -RVP 13 Gasoline is produced only during cooler months. -The saturation factor of 1.0 is conservative since the loading rack employs submerged loading/dedicated normal service. • Stream Properties (Distillate): -Saturation Factor, S =1.0 -Vapor Molecular Weight, MW=130 lb/lbmol -True Vapor Pressure, P=0.0076 psia -Liquid Temperature, T=64.0 F=523.6 R -Throughput=225000 gal/hr • Stream Properties (Jet Kerosene): -Saturation Factor, S =1.0 -Vapor Molecular Weight, MW=130 lb/lbmol -True Vapor Pressure, P=0.009 psia -Liquid Temperature, T=64.0 F=523.6 R -Throughput=225000 gal/hr • Loading Rack Emission Rate (Gasoline, Distillate, Jet Kerosene): -Loading Loss, LL=12.46 * (S * P * MW) / T -LL(lb/hr)= LL (lb/1000 gal) * Throughput -VCU Input=LL (lb/yr) * Capture Efficiency/100 -VCU Emissions (Output)=Throughput * VCU Rating * Vapor wt% (HAPs Speciation Table below) -Rack Fugitive Emissions=LL (lb/yr) * (1 - Capture Efficiency/100) * Vapor wt% (HAPs Speciation Table below) -Total Emissions=VCU Emissions + Rack Fugitives -VCU Control Efficiency=(Input - Output) / Input				
03-20	• Based on AP-42, February 1996, Section 7.1.3.1. • and Vapor		Double sealed floating roofs for all		VOC hourly rates are based on 1 turnover per hour for floating roof tanks and 1 turnover per day for fixed

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equip Efficiency	Comments
	speciation data based on analyses conducted at various Valero facilities (See Table below)		tanks in gasoline service		roof tanks; annuals are based on throughput limits (summation of barge and truck loading totals) HAP hourly rates are based on 1 turnover per hour for floating roof tanks and 1 turnover per day for fixed roof tanks and Vapor Speciation Data. HAP annuals are based on throughput limits (summation of barge and truck loading totals)
	• Product Throughput (gal/yr) Gasoline = 957,740,000 (gal/yr) Diesel = 944,468,000 (gal/yr) Jet Kerosene = 64,132,000 (gal/yr) • Distillates include diesel, kerosene, and other petroleum products with equal or lower vapor pressure. Emission calculations for distillate storage are based on • Kerosene (jet kerosene or distillate fuel oil No. 1), which is the most volatile of the distillate fuels. Gasoline tanks, including the slop tank, may store any of the products since gasoline is the most volatile of all the products.				
21	AP-42 Table 5.1-2	0.2 lb VOC/ Mgal water	None	NA	Hourly rates are based on 800gpm (worst case) Annual Average Flow = 95 (gal/min) [Equivalent to 50 MMgal/yr permit limit]
22	AP-42 Section 5.2	Gasoline: VOC=3.4 (lb /Mgal) Diesel: VOC=0.012 (lb/Mgal) HAP=(VOC) * (Vapor Speciation Data) (see table below)	None	NA	Throughput limits: Gasoline=131,250 gal/hr Gasoline=252,000 gal/yr Diesel=630,000 gal/yr
	• Gasoline barge loading emission factor obtained from AP-42 (6/08), Table 5.2-2, under the "typical overall situation" category • Diesel barge loading emission factor obtained from AP-42 (6/08), Table 5.2-6 • Industry Standard for Speciation (see following HAPs Speciation table below)				
	Industry Standard for	see following			

SN	Emission Factor Source	Emission Factor	Control Equipment	Control Equip Efficiency	Comments
	Speciation	HAPs Speciation table below			
	EPA-453/R-95-017		-	-	All factors in kg/hr/src: valves - 0.000043 Loading valves - 0.00043 open-ended lines - 0.0023 flanges - 0.000008 pump seals - 0.00054
23	Table 2-2 (for open-ended lines) and 2-3 (for others) of "Protocol for Equipment Leak Estimates," EPA-453/R-95-017. These calculations conservatively assume that all components are in light liquid service. Number of Components and Equipment: Valves =1000 Loading Arm Valves=92 Open-Ended Lines=15 Flanges=2500 Pump Seals=92 HAP=(VOC) * (Pollutant Speciation Data)				

HAPs Speciation Table*				
HAP		Vapor wt.%		
		Gasoline	Jet Kerosene	Distillate Fuel #2
Benzene	71-43-2	0.4800	5.553	6.110
Ethylbenzene	100-41-4	0.0300	1.719	0.700
Hexane	110-54-3	0.8900	6.377	7.890
Cumene	98-82-8	0.0000	0.387	0.180
Naphthalene	91-20-3	0.0000	0.136	0.090
Isooctane	540-84-1	0.8800	0.000	0.780
Phenol	108-95-2	0.0000	0.524	0.000
Toluene	108-88-3	0.5800	5.292	3.410
Xylenes	1330-20-7	0.1500	5.421	4.280
PACs	--	0.0000000	0.000	0.020
Biphenyl	92-52-4	0.0000	0.127	0.000
Styrene	100-42-5	0.0000	0.000	1.050

*Vapor speciation data based on analyses conducted at various Valero facilities (all Valero terminals are using the same data to establish permit limits).

14. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
02a	VOC, CO, NO_X	Custom	6 hours	NESHAP requirement

15. MONITORING OR CEMS:

The permittee must monitor the following parameters with CEMS or other monitoring equipment (temperature, pressure differential, etc.)

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
02a	Flame presence	Thermocouple, UV, or other flame indicator.	Continuously	Y*
03-20	Condition of seals	visible	Initial and not to exceed 10 years thereafter	**
22	Estimated annual emissions	calculations	yearly	N

16. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
02a	Loading Rack Throughput	677,740,000 gal/yr gas, 314,468,000 gal/yr diesel, biodiesel or combination, and 64,132,000 gal/yr jet kerosene	Monthly	Y
02a	Vapor Tightness Record of all trucks	-	-	N
02a	Record of each truck loaded	-	-	N
02a	Record of each non vapor-tight truck loaded	-	-	Y
02a	Record of each non vapor-tight truck reloaded	-	-	Y
02a	Logbook of leak inspection of all equipment in gasoline service	NA	Monthly	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
03-20	Throughput	957.74 MMgal gas 944.468 MMgal diesel, biodiesel or combination 64.132 MMgal jet kerosene	Monthly	Y
21	Throughput	50 MMgal/yr	Monthly	Y
22	Barge Loading	Throughput (gal/day): Gasoline=3,150,000	Daily	Y
		Throughput (gal/yr): Gasoline=225,000,000 Diesel=630,000,000	Monthly	Y
03 through 09, 11, 12, 13, 18, 19, and 20	-Roof Landing -Max Days Idle	2 per 12 month period 10 days	Monthly	N
10	-Roof Landing -Max Days Idle	24 per 12 month period 12 days	Monthly	N

17. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
All sources are VOC only which should be without opacity except for SN-02a. SN-02a has the requirement, "No visible emissions except for periods not to exceed 5 minutes in any consecutive 2 hour period." This provision is a NESHAP requirement.			

18. DELETED CONDITIONS:

Former SC	Justification for removal
None	

19. GROUP A INSIGNIFICANT ACTIVITIES:

Source Name	Group A Category	Emissions (tpy)						
		PM/PM_{10}	SO_2	VOC	CO	NO_X	HAPs	
							Single	Total
Additive Tank 1 (6,000 gal)	A-3			0.25				
Additive Tank 2 (8,000 gal)	A-3			0.33				
Additive Tank 3 (1,000 gal)	A-3			0.04				
Additive Tank 4 (1,000 gal)	A-3			0.04				
Additive Tank 5 (1,000 gal)	A-3			0.07				
Additive Tank 6 (8,000 gal)	A-3			0.33				
Distillate Fuel Tank (550 gal)	A-3			0.62				
TOTAL	A-3			1.68				
Off-loading Skid for Biodiesel	A-13			<0.1				

* The calculations performed in TANKS 4.09b conservatively assume one complete tank turnover each day of the year.

20. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

List all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
0668-AOP-R5

21. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.

_____

Phillip Murphy, P.E.

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 08-26-13

Facility Name: The Premcor Refining Group, Inc.
(Premcor- West Memphis Terminal)
Permit Number: 0668-AOP-R6
AFIN: 18-00120

$/ton factor	23.42	Annual Chargeable Emissions (tpy)	604.33
Permit Type	Modification	Permit Fee $	1000

Minor Modification Fee $	500
Minimum Modification Fee $	1000
Renewal with Minor Modification $	500
Check if Facility Holds an Active Minor Source or Minor Source General Permit	☐
If Hold Active Permit, Amt of Last Annual Air Permit Invoice $	0
Total Permit Fee Chargeable Emissions (tpy)	0.34
Initial Title V Permit Fee Chargeable Emissions (tpy)	

HAPs not included in VOC or PM: *Chlorine, Hydrazine, HCl, HF, Methyl Chloroform, Methylene Chloride, Phosphine, Tetrachloroethylene, Titanium Tetrachloride*

Air Contaminants: *All air contaminants are chargeable unless they are included in other totals (e.g., H2SO4 in condensible PM, H2S in TRS, etc.)*

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
PM		0	0	0		
PM_{10}		0	0	0	0	0
SO_2		0	0	0	0	0
VOC		585.14	585.2	0.06	0.06	585.2
CO		43.7	43.7	0		
NO_X		17.5	17.5	0	0	17.5
Benzene	☐	3.88	3.88	0		
Ethylbenzene	☐	0.5	0.5	0		
Hexane	☐	6.48	6.48	0		
2,2,4-Trimethylpentane	☐	5.16	5.16	0		
Phenol	☐	0.36	0.12	-0.24		
Toluene	☐	4.3	4.3	0		
Xylene	☐	1.93	1.93	0		
PACs	☐	0.06	0.06	0		
Styrene	☐	0.19	0.19	0		
Methanol	☑	1.35	1.63	0.28	0.28	1.63