



March 4, 2015

Rob Fitzroy
San Luis Obispo County Department of Planning and Building
SLO County Government Center
San Luis Obispo, CA 93408

**SUBJECT: Approval of Air Quality Mitigation for the Santa Maria Refinery
Throughput Increase Project**

Over the past months, the San Luis Obispo County Air Pollution Control District (SLOCAPCD) has worked with Phillips 66 to ensure compliance with Conditions of Approval for Development Permit # DRC2008-00146, which was approved by the County Board of Supervisor via Resolution No. 2013-35. Based on the SLOCAPCD review of data submitted by Phillips 66 on February 26, 2015 (Attachment 1), the District finds Phillips 66 has demonstrated compliance or has developed an ongoing method to demonstrate compliance for the following conditions:

Condition 7 (AQ-1.1) The SLOCAPCD has issued an Authority to Construct for the Crude Oil Throughput Increase Project at the Santa Maria Refinery. Through the application process and modifications proposed by Phillips 66, SLOCAPCD engineering staff have determined that there will be no net increase of NO_x or ROG from the Throughput Increase Project, provided Phillips 66 complies with the requirements outline in the SLOCAPCD letter dated March 2, 2015 and associated Authority to Construct # 6015 (Attachment 2). In addition, Phillips 66 has agreed to an emission limit for Boilers B-504 and B-506 that result in a 14.2 lbs/day reduction in NO_x emissions.

Condition 8 (AQ-1.2) To reduce ROG and NO_x emissions from the mobile sources (i.e., coke and sulfur truck trips) associated with the Throughput Increase Project, Phillips 66 has agreed to use newer trucks (i.e., engine model year 2007 or newer) as detailed in their letter dated February 26, 2015 (Attachment 1). Through the use of a cleaner truck fleet, Phillips 66 can demonstrate reduction of ROG + NO_x emissions of 134.43 lbs/day and diesel particulate matter emissions of 5.5 lbs/day. SLOCAPCD agrees with the data presented Phillips 66's letter. As stated in that letter, each year Phillips 66 will need to show that the trucks utilized for coke and sulfur hauling do in fact achieve the required 89 lbs/day of ROG + NO_x reductions needed to meet Conditions of Approval AQ-1. If Phillips 66 fails to demonstrate compliance with this measure, then off-site mitigation will be required as outlined in Condition 9 (AQ-1.3).

Condition 9 (AQ-1.3) As long as Phillips 66 demonstrates compliance with AQ1.1 and AQ1.2, no off-site mitigation measures are required. If Phillips 66 fails to continue to demonstrate compliance with AQ-1.1 and AQ-1.2 as outlined above, off-site mitigation will be required.

Condition 10 (AQ-2) On April 28, 2014, the SLOCAPCD received the final version of Phillips 66's Odor Control Plan. The SLOCAPCD submitted a letter to Phillips 66 on May 8, 2014 indicating the Plan was approved and met the conditions and requirements of mitigation measure AQ-2 of the final EIR (Attachment 3).

Condition 11 (AQ-3) Phillips 66 participates in the California Air Resources Board (CARB) Statewide Cap and Trade Program. CARB's website www.arb.ca.gov/cc/capandtrade/capandtrade.htm tracks compliance with this program. The latest CARB 2013 Compliance Report show Phillips 66 is in compliance with the Cap and Trade Program; therefore, demonstrating the surrendering of the necessary carbon tonnage (i.e., 10,470 tons CO₂e/year) needed to meet the Conditions of Approval AQ-3 for this project compliance for the most recent reporting year. As part of this mitigation measure, each year Phillips 66 will need to demonstrate compliance with the Cap and Trade Program, failure to do so will result in off-site mitigation.

With the implementation of the measures identified above, the APCD finds Phillips 66 in compliance with the Air Quality Conditions of Approval for the Throughput Increase Project. Please contact me at 805-781-5998 if you have any questions.

Sincerely,



Aeron Arlin Genet
Planning, Monitoring and Outreach Manager

cc: Don Bristol, Phillips 66
Kristen Kopp, Phillips 66
Bill Henry, SWCA Environmental Consultants



Phillips 66
Santa Maria Refinery
2555 Willow Road
Arroyo Grande, CA 93420

February 26, 2015

Ms. Aeron Arlin-Genet, Manager
Planning and Outreach
Air Pollution Control District
County of San Luis Obispo
3433 Roberto Court
San Luis Obispo, CA 93401

**Resolution No. 2013-35 - Crude Throughput Increase Project
Conditions of Approval Numbers 7, 8, and 9
Phillips 66 Company, Santa Maria Refinery**

Dear Ms. Arlin-Genet:

This letter is to submit Phillip 66's mitigation efforts to satisfy the Conditions of Approval Numbers 7, 8, and 9 listed in Attachment 2 of the San Luis Obispo County Board of Supervisors Resolution No. 2013-35 for the Crude Throughput Increase Project (Throughput Project) dated February 26, 2013. These Conditions are intended to mitigate air quality impacts (emissions) identified in the Final EIR as exceeding San Luis Obispo County APCD (SLOAPCD) emission thresholds. The Final EIR, dated October 2012, determined that the Throughput Project did not exceed any annual emission thresholds, and that only two daily emission increases for NOx/ROG and Truck PM need to be mitigated. These are shown in Table 4.1-16 of the EIR as summarized in the following table.

Table 1. EIR Mitigation Requirements

Thresholds	(a)	(b)	(a) - (b)
	Project Emissions Lbs/Day	Thresholds Lbs/Day	Mitigation Required Lbs/Day
NOx + ROG	128.1	25	103.1
Diesel Particulate	2.7	1.25	1.45

At this time, Phillips 66 has mitigated these emissions and therefore requests that for the purposes of CEQA, these Conditions (Number 7, 8, and 9) are considered complete.

IMPLEMENTED MITIGATION MEASURES

The EIR provided Phillips 66 with a three step approach to achieve Project emission reductions. The refinery decided to reduce Project emissions using two of the three steps. The EIR requires a reduction of 103.1 lb/d NOx+ROG to mitigate Project emissions below District thresholds (Table 1). The refinery has implemented emission reductions under guidelines from the EIR of AQ-1.1 and AQ-1.2, as described below. The implemented mitigations result in reductions of (14.2 + 129.34 lb/d NOx) + (5.09 lb/d ROG) for a total reduction of 148.63 lb/d NOx / ROG, thus exceeding the offsetting requirement for CEQA by almost 45%.

Table 2. Mitigated Project Emissions

Thresholds	Mitigation Required Lbs/Day	AQ-1.1 Reductions Lbs/Day	AQ-1.2 Reductions Lbs/Day	Total Offsets Lbs/Day
NOx	103.1	14.2	129.34	143.54
ROG			5.09	5.09
Diesel Particulate	1.45		5.50	5.50

Steps taken by Phillips 66 to reduce Project emissions to less than SLOAPCD thresholds:

1. (AQ-1.1) Reduce Project NOx emissions (Boilers):

Phillips 66 submitted an Authority-to-Construct (Application # 6047) to modify the firing controls on the B-504 and B-506 boilers to reduce NOx. These modifications were completed and the actual emission reductions were verified during the 2014 Annual Source Test. The test report was submitted to the District on November 11, 2014 (ENV14-283).

The boiler modifications resulted in calculated and verifiable NOx emission reductions, determined to be 2.6 Tons/year, or 14.2 lbs/day. The details and calculations of these results were submitted to the District under the New Source Review Permitting Process for this Project.

2. (AQ-1.2) Reduce Project NOx+ROG (Trucks):

In 2013, the truck hauling fleet was contacted and advised by Phillips 66 that it would soon limit trucks hauling products from this refinery to trucks with engines or retrofits meeting standards for model year 2007 and newer. A means to ensure and track continuous compliance was then developed and implemented with the assistance of the fleet. The current 2015 inventory is attached. In summary, the inventory shows:

- Total number of trucks in fleet = 358 trucks
- Trucks with model year engines 2006 and older = 46
- Trucks with model year engines between 2007 and 2009 = 61
- Trucks with model year engines 2010 and newer = 251

NOTE: As the inventory shows, some of the 2006 model year and older trucks are retrofitted with control devices. However, for emission calculations these trucks will be assumed to be without controls. There are also four trucks listed without engine model year information which will not be included.

The EIR assumed that all trucks hauling refinery products were of engine model year 2006 and older vintage. As outlined in Condition of Approval # 8, trucks meeting standards for 2007 and 2010 model years can be used to mitigate emissions. For Model year 2006 and older, the emission factor from the EIR will be used in the calculations.

The Air Resources Board EMFAC 2011 program was used to determine emission factors for 2007 -2009 model year, and 2010 and newer model trucks (See Attachment 1). The following table shows the calculated emission reductions associated with these newer model trucks.

Table 3. Truck Fleet Emission Reductions Using 2007 and Newer Engine Standards

Project Base Line (From EIR)

		T-7 tractor diesel	EMISSION FACTORS						PEAK DAY lbs/day			
Truck Fleet % of Model Year	Truck Model Year	Data Source	Material Shipped	Units	ROG	NOX	PM10	PEAK ROUND TRIPS /DAY	LENGTH OF ROUND TRIP	ROG	NOX	PM10
	Aggr 2007 and earlier	EIR Appendix Page A-10		lbs/mile	0.00124	0.02626	0.00098					
			Coke					47.6	150			
			Sulfur					4.9	150			
100%	< 2007		Coke + Sulfur	lbs/mile	0.00124	0.02626	0.00098	52.50	150	9.77	206.80	7.72

ARB Emission Factors for 2007 to 2009 Model Year Trucks for Project year 2015

		T-7 tractor diesel	ARB EMISSION FACTORS			
Year	Truck Model Year	Data Source	Units	ROG	NOX	PM10
2015	2007 - 2009	EMFAC 2011	grms/mile	0.358621	7.146875	0.095006
			lbs/mile	0.000791	0.015756	0.000209

ARB Emission Factors for 2010 Model Year Trucks and newer for Project year 2015

		T-7 tractor diesel	ARB EMISSION FACTORS			
Year	Truck Model Year	Data Source	Units	ROG	NOX	PM10
2015	2010 and newer	EMFAC 2011	grms/mile	0.193798	2.443278	0.077981
			lbs/mile	0.000427	0.005386	0.000172

Mitigated Results: 2015 Truck Fleet Emissions

		T-7 tractor diesel	EMISSION FACTORS						PEAK DAY lbs/day			
Year	Truck Fleet % of Model Year	Truck Model Year	Material Shipped	Units	ROG	NOX	PM10	PEAK ROUND TRIPS /DAY	LENGTH OF ROUND TRIP	ROG	NOX	PM10
2015	12.85%	< 2007	Coke + Sulfur	lbs/mile	0.00124	0.02626	0.00098	6.75	150	1.25	26.57	0.99
2015	17.04%	2007 - 2009	Coke + Sulfur	lbs/mile	0.000791	0.015756	0.000209	8.95	150	1.06	21.14	0.28
2015	70.11%	> 2009	Coke + Sulfur	lbs/mile	0.000427	0.005386	0.000172	36.81	150	2.36	29.74	0.95
			Total					52.50		4.67	77.46	2.22

	ROG	NOX	PM10
Emission Reductions Lbs/Day	5.09	129.34	5.50

As the calculations in Table 3 show, the Project offset emissions of 103.1 lbs/day of NOx + ROG is more than mitigated by the refinery initiative to limit trucks hauling products to those meeting cleaner engine standards. This Phillips 66 requirement for cleaner trucks results in a reduction of 134.43 lbs/day NOx + ROG. It also results in a reduction of 5.50 lbs/day of diesel PM; or nearly four times the amount required to mitigate the Project increase of 1.45 lbs/day.

To ensure verifiable emission reduction on a continuous basis, per Condition of Approval # 8, a new refinery Procedure was developed to track the annual truck fleet inventory, including the model year of each truck engine. Please refer to attached Procedure SMF 9.12.19 for details of this program. Please note that this procedure limits trucks hauling coke and sulfur from the refinery to engine standards for model year 2007 and newer.

CONCLUSIONS

Phillips 66 has taken the initiative in advance of permitting and reduced Project NOx + ROG and PM emissions well below the required mitigation levels. In summary, trucks entering the refinery to haul coke and sulfur are required to meet emission standards for model year 2007 and newer engines.

Compliance with requirements for Project reductions can be determined and verified at any time by using the annual truck inventory to define the truck model year fleet mix as follows:

To meet mitigation levels the truck NOx emission reduction must be at least:

$$103.1 \text{ lbs/day} - 14.2 \text{ lbs/day} = 88.9 \text{ lbs/day (NOx reduction)}$$

- Let X = % trucks with model year 2007 to 2009
- Let Y = % trucks with model year 2010 and newer
- Let Z = NOx Emission Reduction from truck fleet newer than 2007, Lbs/day
- Total truck miles per day = 52.5 Trips/day x 150 miles/trip = 7875 miles/day

NOx emission reduction =

$$7875 \text{ miles/day} * ((X * (0.02626 \text{ lbs/mile} - 0.015756 \text{ lbs/mile}) + (Y * (0.02626 \text{ lbs/mile} - 0.005386 \text{ lbs/mile}))) / 100 =$$

$$7875 \text{ miles/day} * ((X * 0.0105 \text{ lbs/mile}) + (Y * 0.02087 \text{ lbs/mile})) / 100 = Z \text{ lbs/day}$$

If Z lbs/day > 88.9 lbs/day then the truck fleet is in compliance

With the information submitted in this letter, Phillips 66 is requesting District approval that Conditions of Approval 7, 8 and 9 for this Project are complete.

If you have any questions or concerns, please contact me at (805) 343-3206.

Sincerely,



Ed Breuninger
Environmental Engineer

EDB:bes

Attachments

Attachment 1

2007 to 2009 Model Year Truck Emission Factor

EMFAC2011 Emission Rates									
Region Type: Air District									
Region: San Luis Obispo County APCD									
Calendar Year: 2015									
Season: Annual									
Vehicle Classification: EMFAC2007 Categories									
Region	CalYr	Season	Veh_Class	Fuel	MdlYr	Speed (miles/hr)	ROG_RUNEX (gms/mile)	NOX_RUNEX (gms/mile)	PM10_RUNEX (gms/mile)
San Luis Obispo County APCD	2015	Annual	T7	DSL	2007	45	0.358620785	7.146875363	0.095006203

2010 and Newer Model Year Truck Emission Factor

EMFAC2011 Emission Rates									
Region Type: Air District									
Region: San Luis Obispo County APCD									
Calendar Year: 2015									
Season: Annual									
Vehicle Classification: EMFAC2007 Categories									
Region	CalYr	Season	Veh_Class	Fuel	MdlYr	Speed (miles/hr)	ROG_RUNEX (gms/mile)	NOX_RUNEX (gms/mile)	PM10_RUNEX (gms/mile)
San Luis Obispo County APCD	2015	Annual	T7	DSL	2010	45	0.193797849	2.443277924	0.077980919

ATTACHMENT 2



Air Pollution Control District
San Luis Obispo County

March 4, 2015

Ms. Kristen Kopp
Phillips 66 Company
2555 Willow Road
Arroyo Grande, CA 93420

SUBJECT: Issuance of an Air Pollution Control District Authority to Construct for a Crude Oil Throughput Increase at the Santa Maria Refinery.

Dear Ms. Kopp:

Enclosed you will find an Air Pollution Control District Authority to Construct to increase the crude oil refining throughput. This action is being taken in response to your application number 6015 received by us on December 23, 2013. This Authority to Construct is being issued with the stipulation that the modified Permit to Operate 44-53 will include the following conditions:

1. Prior to increasing the existing throughput limit to 48,950 barrels per day (wet basis) and 16,860,000 barrels per year (12 month rolling period, wet basis), Phillips 66 shall:
 - a. Demonstrate compliance with all the mitigation measures of the Final Environmental Impact Report for this project and obtain approval from the San Luis Obispo County Planning and Building Department.
 - b. Submit APCO approved Reactive Organic Gas (ROG) Emission Reduction Credits in the amount of 0.522 tons per year.
 - c. Submit APCO approved Sulfur Oxides (SOx) Emission Reduction Credits in the amount of 3.14 tons per year.
2. Oxides of Nitrogen (NOx) emissions from Boilers B-504 and B-506 shall not exceed 0.029 pounds per million BTU heat input.

Pursuant to Rule 202 of the District's Rules and Regulations, this Authority to Construct shall expire and the application shall be canceled one (1) year from the date of issuance, if unused. As per District Rule 208, appeals to District actions on permits may be made in writing to the Hearing Board within thirty (30) days of receipt of the permit. Contact this office at the completion of construction so that an engineering inspection of your facility may be scheduled.

Also enclosed is an Authority to Construct fee invoice in the amount of \$9,142.50. Please make your check payable to the San Luis Obispo County Air Pollution Control District and pay this amount within thirty (30) calendar days of the invoice date to keep your Authority to Construct valid. If you have any questions, feel free to contact Dean Carlson at this office at (805) 781-5912.

Very truly yours,

LARRY R. ALLEN
Air Pollution Control Officer



GARY E. WILLEY
Manager, Engineering Division

Enclosures

CC: Aeron Arlin Genet
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Air Pollution Control District
San Luis Obispo County

AUTHORITY TO CONSTRUCT

AN AUTHORITY TO CONSTRUCT IS GRANTED AS OF:

March 4, 2015

THIS AUTHORIZATION DOES NOT IMPLY APPROVAL FROM ANY OTHER PUBLIC AGENCY

TO: Phillips 66 Company
Legal Owner 2555 Willow Road
or Operator Arroyo Grande, CA 93420

FOR: Modification to the existing crude oil throughput permit limits to increase the maximum daily limit to 48,950 barrels per day, and increase the annual limit to 16,860,000 barrels per year.

Location: Phillips 66 Company - 2555 Willow Road, Arroyo Grande

Conditions:

1. Prior to increasing the existing throughput limit rate to 48,950 barrels per day (wet basis) and 16,860,000 barrels per year (12 month rolling period, wet basis), Phillips 66 shall:
 - a. Demonstrate compliance with all the mitigation measures of the Final Environmental Impact Report for this project and obtain approval from the San Luis Obispo County Planning and Building Department.
 - b. Submit APCO approved Reactive Organic Gas (ROG) Emission Reduction Credits in the amount of 0.522 tons per year.
 - c. Submit APCO approved Sulfur Oxides (SOx) Emission Reduction Credits in the amount of 3.14 tons per year.

This Authority to Construct is not a Permit to Operate. Approval or denial of the application for Permit to Operate the above equipment will be made after an inspection to determine if the equipment has been constructed in accordance with the approved plans and specifications and if the equipment can be operated in compliance with all Rules and Regulations of the San Luis Obispo County Air Pollution Control District.

*Please notify **Dean Carlson** at (805) 781-5912 or at the letterhead address when construction of equipment is complete. This Authority to Construct will expire one (1) year from the date shown, if unused.*

LARRY R. ALLEN
Air Pollution Control Officer

GARY E. WILLEY
Manager, Engineering Division

Application Number: 6015
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Air Pollution Control District
San Luis Obispo County

May 8, 2014

Don Bristol
Phillips 66
Santa Maria Refinery
2555 Willow Road
Arroyo Grande, CA 93420

Subject: Air Quality Mitigation: Odor Control Plan for the Crude Throughput Increase at the Santa Maria Refinery

On April 28, 2014, the San Luis Obispo County Air Pollution Control District (APCD) received the updated version of the Odor Control Plan that incorporated the revisions that we collectively discussed during our April 24 meeting. Upon review of this Odor Control Plan, the APCD has found that it meets the conditions and recommended specifications as defined in the AQ-2 mitigation measure of the Final EIR for this project. The APCD approves the Odor Control Plan as submitted.

APCD Engineering staff are currently working with refinery staff on the permitting process, to ensure compliance with mitigation measures AQ1.1 which requires BACT (or equivalent onsite methods) to reduce NOx emissions. Once the APCD permit conditions have been finalized, the associated emission reductions (i.e., ROG + NOx) will be applied to AQ-1.1. In addition, P66 has also stated a commitment to utilize a cleaner transportation fleet for truck delivery within the scope of your company contracts (AQ-1.2). The specific reductions from converting from the existing fleet to a cleaner fleet are being calculated by your staff. If additional reductions are needed to bring the project's emissions below the APCD's CEQA significance thresholds, the APCD will work with you to finalize the additional measures (AQ-1.3).

Lastly, the APCD is working with you and the Air Resources Board to develop a reporting mechanism to ensure the greenhouse gas reductions that are secured through the State's Cap and Trade program are being realized to meet the conditions of mitigation measure AQ-3. Based on the status of these efforts, we envision the air quality mitigation measures for the Crude Throughput Input project will be finalized with the next few months. Once complete, all the air quality conditions in the FEIR will be finalized.

We look forward to working with P66 to finalize the air quality mitigation measures for this project. Please contact me if you have any additional questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Aeron Arlin Genet', written over a horizontal line.

Aeron Arlin Genet
Manager, Planning and Outreach Division

Cc: Murry Wilson, SLO County Planning and Building Department

(5/1)